



STORMWATER MANAGEMENT PLAN

ELK VIEW ESTATES

El Paso County, CO

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SWMP Report Revision Log

REVISION #	DATE	BY	COMMENTS
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General Requirements

This Stormwater Management Plan (SWMP) has been prepared for Elk Ridge Development, the developer of the site, to fulfill the SWMP requirements of the State of Colorado. The SWMP identifies all potential pollution sources which may be expected to affect stormwater quality and the initial (construction phase) and final (after construction) erosion and sedimentation control requirements. It also specifies the use and maintenance of control measures, designed in accordance with sound engineering and hydrologic practices, to reduce pollutants and sediment in stormwater discharges associated with construction activity. The control measures are presented in detail in the text of this report and are shown on the Erosion and Sediment Control plans (Site Maps) included in the back of this report. This site must implement the provisions of this SWMP as written and updated from commencement of construction activity until final stabilization is complete. Both the owner and operator must apply as permittees, except for instances where the duties of the owner and operator are managed by the owner. The permittee is responsible for updating the SWMP as construction activity on the site dictates and documenting any changes within this document. Additionally, this SWMP details control measures and processes for spill prevention control and countermeasures which shall be adhered to on site.

I. Narrative Site Description

The project site is located entirely within the boundaries of Parcel 6223000044 as shown in the El Paso County Assessor records. The Site is located on the north side of Old Ranch Rd., approximately 1,300-ft west from the Milam Rd./Union Blvd. intersection with Old Ranch Rd. to the southeast property corner. More specifically, the Site is located in a portion of the Southeast One-Quarter of Section 23, Township 12 South, Range 66 West of the 6th Principal Meridian, County of El Paso, State of Colorado.

The site is bounded by single-family residential properties on the north, east and west, and by Old Ranch Road public Right-of-Way to the south.

The Site occupies approximately 17.10 acres of undeveloped land, consisting of natural vegetation and large trees, densely concentrated on the north side of the Site and a small dense portion on the south, adjacent to Old Ranch Rd. The site is currently zoned as RR-5 and is being rezoned to RR-2.5.

Nature of Construction Activity

The proposed development will be subdivided into (6) 2.5-acre or larger lots and the addition of private access road along the eastern property boundary, providing access to the future lots from Old Ranch Rd. Improvements will include cut/fill grading, storm sewer culverts, and private roadway installation.

Sequence of Major Activities

The projected sequence of work is expected to occur in the following order, with some overlap and adjustments as site conditions dictate:

- Install initial control measures
- Clear and grub
- Rough overlot grading
- Trench and install storm sewer
- Install interim control measures
- Fine grade the remainder of the site
- Pavement installation
- Removal of interim control measures
- Final stabilization

Construction is anticipated to begin in Fall 2026 and substantial completion of the project is anticipated in Spring 2027. Estimated date for final stabilization is in Spring 2027.

The major phases of construction and their associated control measures are listed in the following table.

	Clearing and Grubbing	Rough Grading	Utility Installation	Fine Grading	Paving	Final Stabilization
Dust Control	✓	✓	✓	✓	✓	✓
Concrete and Masonry Washout Area				✓	✓	
Good Housekeeping	✓	✓	✓	✓	✓	✓
Silt Fence	✓	✓	✓	✓	✓	
Inlet Protection	✓	✓	✓	✓	✓	
Vehicle Tracking Control	✓	✓	✓	✓	✓	
Stabilized Staging Area	✓	✓	✓	✓	✓	
Street Sweeping	✓	✓	✓	✓	✓	✓
Surface Roughening						✓
Seeding/Mulch						✓

Extent of Disturbance

The total area of the site is 17.10 acres. Construction of this project will account for disturbed and impervious areas as shown in the table below.

Total Disturbed Area (ac)	17.25
Pre-Construction Impervious Area (ac)	0.34

Post-Construction Impervious Area (ac)	1.13
Total new Impervious Area (ac)	0.79

The adjusted cut and fill quantities are listed below.

Cut Volume = 2,835 CY

Fill Volume = 6,603 CY

Net Volume = +3,767 CY (Fill)

Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the project site consists of a mix of soil types and Hydrologic Soil Groups (HSGs) shown in **Table 1** below.

Table 1 – USDA NRCS Soil Data

Soil Name	HSG	Percent of Site
Kettle Fravelly Loam Sand	B	44.6%
Peyton-Pring Complex (3 to 8 % slopes)	B	11.6%
Peyton-Pring Complex (8 to 15 % Slopes)	B	43.8%

The predominant HSG for the Site is type 'B'. Hydrologic soil group B soils have a moderate infiltration rate when thoroughly wet. Therefore these soils have a moderate rate of water transmission and moderate erosion potential. A copy of the NRCS Web Soil Survey report can be found in **Appendix A** for reference.

Existing Vegetation

The site currently exists as undeveloped land with native grasses and shrubs throughout (98% vegetative cover). Vegetative cover was determined by virtual site observation.

Potential Pollution Sources

During construction there is potential for pollution from grading, utility, and roadway construction activities. These activities include ground disturbance, refueling and maintenance of equipment, washing of equipment, concrete waste, and the on-site use of paints, solvents, and other chemicals required for construction. Additionally, there is potential for pollution from the concrete and masonry washout area, worker's trash and portable toilets. Requirements for locations of potential pollution sources are included in Section IV – Stormwater Management Controls. Locations of potential pollution sources will be shown and updated on the Site Maps by the Qualified Stormwater Manager (QSM). The QSM is also responsible for adhering to the Spill Prevention and Control Plan.

Non-Stormwater Discharges

Based on current information, the only non-stormwater discharges anticipated are emergency firefighting activities and discharge to the ground of concrete and masonry washout water.

A designated contained concrete and masonry washout area is located on the Site Map; infiltration discharge of concrete and masonry washout water from washing of tools and concrete and masonry mixer chutes may be discharged on this construction site provided that control measures in accordance with Part I.B.1.a.ii.(b) of the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity* are installed to prevent pollution of groundwater and discharges do not leave the site as surface runoff or reach receiving waters as defined by the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity*. On-site waste disposal of concrete is not authorized by the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity*.

Emergency firefighting activities that may occur on the site during active emergency response are permissible under the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity*.

If low risk discharges including potable water monitoring devices, potable water snowmelt, or uncontaminated groundwater to land occur, they must be discharged in accordance with the CDPHE Low Risk Discharge policies.

The following discharges are NOT allowable discharges under the state permit. Permittees may seek individual or alternate general permit coverage for these discharges, as appropriate and available.

- Water from external building washdown (regardless of whether soaps and/or solvents are used);
- Vehicle and equipment washing (regardless of whether soaps and/or solvents are used);
- Discharges from washout water that contain paints, oils, curing compounds, etc.;
- Discharges of fuels or and/or oils;
- Discharges from paved surfaces where High Polyaromatic Hydrocarbon (PAH) Sealant is applied;
- Discharges of reclaimed water approved for use in dust suppression; and
- Chemical additions to water of any kind.

Receiving Waters

Runoff will primarily follow existing drainage patterns, across the proposed lots, to the southwest. Runoff from the new access roads will be collected in roadside ditches to provide a runoff reduction for water quality before being discharged to the existing natural flow paths on-site. A new, private, pipe culvert will be constructed under the new access road to allow off-site flows to the east to continue westward, following existing drainage patterns and ultimately discharge into Kettle Creek. The Site is not adjacent to Kettle Creek or any of its tributaries.

Qualified Stormwater Manager

The Qualified Stormwater Manager (QSM) is an individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention and has the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of the CDPS General Permit. The Permittee(s) is responsible for ensuring that the inspector is a qualified stormwater manager. The Permittee(s) shall designate a QSM who will be the contact for all SWMP related issues and the person responsible for its accuracy, completeness, and implementation. The QSM should be a person with authority to adequately manage and direct day-to-day stormwater quality management activities at the site.

The QSM is responsible for holding a weekly stormwater meeting attended by the Permittee(s) with all contractors and subcontractors involved in ground-disturbing activities to review the requirements of the Permit(s), the SWMP, and address any problems that have arisen in implementing the SWMP or maintaining the BMPs. The QSM shall maintain a log of all weekly meetings and document the issues addressed in the meetings.

The name and contact information for the Qualified Stormwater Manager is:

Name: _____ Phone: _____

Other Permits

Other applicable permits include:

[El Paso County Erosion and Stormwater Quality Control Permit \(ESQCP\)](#)

Potential Pollutant Sources

Potential pollutant sources for this site include:

Disturbed and Stored Soils – The project site will be grubbed and overlotted graded prior to utility and roadway construction. This will be a one-time activity and should be completed relatively early in the project timeline. The areas of grading that will not require additional disturbance shall receive final landscaping within 7 days. Otherwise temporary seeding and mulching will be required within 7 days of last disturbance if no further disturbance is anticipated for at least 14 days. Any soil stockpiles utilized during construction will be covered with a tarpaulin when not in active use and will have silt fence installed along the base of the slope.

Construction Vehicle Entrance and Vehicle Tracking of Sediments – There is potential for tracking of soils between the beginning of the grading process and the final stabilization of the site. Construction vehicle entrances shall be minimized to reduce the potential for tracking of soils off-site and vehicle tracking control shall be installed at each construction entrance. Vehicle tracking control is to be installed prior to land disturbance activities and sweeping is to take place as needed. Vehicle access to the exposed and disturbed subgrade will be limited primarily to roll on/off earthmoving equipment and heavy materials delivery trucks. The QSM is responsible for ensuring that access to exposed subgrade is limited, both in quantity and in timing relative to the tracking susceptibility of the soil as it relates to moisture content. The QSM must keep the adjacent parking areas and public rights-of-way free from mud and other tracked debris from the site.

Management of Contaminated Soils – Contaminated soils are not anticipated based on due diligence conducted for the project site. If suspect soils are encountered construction activity shall immediately halt and environmental professionals shall review the materials and provide recommendations on handling of materials. All handling of materials shall be in accordance with State and Federal regulations. The SWMP shall be updated and control measures installed to manage the potential new source of pollution.

Loading and Unloading Operations – Loading and unloading operations are expected during demolition and during the delivery and staging of materials and equipment. Additionally, imported materials may be necessary to achieve final grades. All loading and unloading operations of equipment shall be accomplished in areas protected by erosion and sediment controls. It is recommended that all equipment be cleaned on-site and within protected areas prior to exiting the site.

Outdoor Storage Activities – Outdoor storage is anticipated during construction activities including delivery and staging of materials. Potential chemicals include paint, fuel, oil, form oil, hydraulic fluid, plumbing glue, and fertilizer. Outdoor storage activities shall be limited to the designated stabilized staging area. All stored chemicals require protection from the elements and must be stored off the ground in some manner. An emergency spill kit is required to be in proximity of any stored chemicals and hazardous materials. The kit at a minimum would have a broom, chemical absorbent, shovel, and turn pallets. Good housekeeping practices shall be employed to prevent pollution associated with solid, liquid, and hazardous construction-related materials and wastes. Secondary containment (or equivalent protection) is required for individual containers 55 gallons or greater of petroleum products, chemicals, or solvents to contain spills and reduce the likelihood of contamination of State Waters and Waters of the United States. Spills and leaks must be minimized. Upon identification, spills and leaks must immediately be contained and mitigated. The QSM shall show storage locations on the site maps and update them as needed.

Fueling of Vehicles and Equipment – Vehicle and equipment fueling shall occur within the stabilized staging area. Fueling is expected to occur during all phases of construction activity. Under no circumstances shall fueling take place within 200 feet of any State Waters or Waters of the United States or within 50 feet of an inlet or ditch. Spill response kits shall be readily available and accessible at locations where fueling takes place. Please refer to the Hazardous Material Management and Spill Reporting Plan section for information on clean-up and disposal of spills.

Temporary on-site fuel tanks for construction vehicles shall meet all state and federal regulations. Tanks shall have approved spill containment with the capacity required by the applicable regulations. From NFPA 30: All tanks shall be provided with secondary containment (i.e. containment external to and separate from primary containment). Secondary containment shall be constructed of materials of sufficient thickness, density, and composition so as not to be structurally weakened as a result of contact with the fuel stored and capable of containing discharged fuel for a period of time equal to or longer than the maximum anticipated time sufficient to allow recovery of discharged fuel. It shall be capable of containing 110% of the volume of the primary tank if a single tank is used, or in the case of multiple tanks, 150% of the largest tank or 10% of the aggregate, whichever is larger.

The tanks shall be in sound condition free of rust or other damage which might compromise containment. Fuel storage areas will meet all EPA, OSHA and other regulatory requirements for signage, fire extinguisher, etc. Hoses, valves, fittings, caps, filler nozzles, and associated hardware shall be maintained in proper working condition at all times. The location of fuel tanks shall be shown on the Site Maps and shall be located to minimize exposure to weather and surface water drainage features.

Maintenance of Vehicles and Equipment – If equipment is to be maintained and stored in an open area this area should not be within the drip line of trees and not be within 100 feet of a watercourse or wetland. Runoff should be diverted away from watercourses and wetlands. Maintenance should be done on impervious areas surrounded with impervious berms. Where this is not possible, use pads designed to contain the pollutants which may leak or spill during maintenance operations. Impervious pads are particularly important on sandy and other coarse soils where spilled materials can easily leach into the groundwater. Equipment shall be checked before and after each use and, minimally, during the weekly stormwater inspection if otherwise idle. Periodic checks of the equipment wash areas shall be performed to ensure proper operation.

Hazardous Material Management and Spill Reporting Plan – Any hazardous or potentially hazardous material that is brought onto the construction site will be handled properly in order to reduce the potential for storm water pollution. All materials used on this construction site will be properly stored including the use of secondary containment measures, handled, dispensed and disposed of following all applicable

label directions. Flammable and combustible liquids will be stored and handled according to 29 CFR 1926.152. Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids.

Material Safety Data Sheets (MSDS) information will be kept on site for any and all applicable materials.

Please refer to the end of this section for the Spill Response and Control Plan.

Significant Dust or Particulate Generating Processes – Dust and airborne particulates can be expected during clearing and grubbing, site grading, saw cutting, and final stabilization activities. On areas of exposed soil, minimize dust through the appropriate application of water or other dust suppression techniques. Water application must be conducted in a manner to prevent discharge offsite. Dust mitigation shall be implemented as necessary.

Routine Maintenance Activities Involving Chemicals, Detergents, Fuels, Solvents, Oils, etc. – On-site routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc. shall occur within the stabilized staging area when possible and shall be kept to a minimum. Routine maintenance activities are expected to occur during all phases of construction activity. The QSM shall show storage locations on the appropriate plan sheets and update them as needed. All chemicals are to be protected from the elements. Spill response kits shall be readily available and accessible at locations where maintenance takes place. Please refer to the Hazardous Material Management and Spill Reporting Plan section for information on clean-up and disposal of spills.

On-Site Waste Management – Waste generation is expected as a result of construction activities. All waste shall be properly stored and disposed of to minimize the potential for pollution of stormwater or snowmelt runoff. Additionally, on-site waste should be stored such that wind will not transport refuse away from the storage area. This may include the use of storage containers, dumpsters, fencing or covers.

Concrete Truck/Equipment Washing (including truck chute and associated fixtures and equipment) – Concrete washout area shall be installed prior to any concrete placement on site. Signs shall be placed at the construction entrance(s), at the washout area, and elsewhere as necessary to clearly indicate the location of the concrete washout area. The washout area shall be repaired and enlarged or cleaned out as necessary to maintain capacity for wasted concrete. Concrete and concrete wash water shall be removed from the site and disposed of at an accepted waste facility.

Dedicated Asphalt and Concrete Batch Plants – A small temporary batch plant may be installed to allow on-site storage and mixing of concrete and masonry. This should be protected by sediment traps, silt fence, drainage swales or other perimeter protection as appropriate to keep stockpiled material within the plant area and located on the Site Maps by the QSM.

Non-Industrial Waste Management

- **Worker's Trash** – The site shall be policed at the end of each work day to be kept free of trash and debris resulting from workers day to day activities. If necessary, utilize clearly marked and protected containers for trash and debris at convenient locations throughout the site. Burying of waste on site is prohibited. Trash must be properly contained at the end of each day.
- **Waste Collection Areas** – Locate waste collection areas such as dumpsters away from streets, gutters, watercourses, and storm drains. Waste collection areas are best located near construction site entrances to minimize traffic on disturbed soils. Consider secondary containment around waste collection areas to minimize the likelihood of contaminated discharges.
- **Portable Toilets** – All personnel involved with construction activities must comply with state and local sanitary or septic system regulations. Temporary sanitary facilities will be provided at the site throughout the construction phase. They must be utilized by all construction personnel and must be serviced weekly by a commercial operator. The location of sanitary facilities shall be shown on the Site Maps. Portable toilets must be securely anchored a minimum of 10' behind curbs and are not allowed within 50' of inlets or within 50' of a water of the State or the municipal storm drain system. Consider secondary containment around portable toilets to minimize the likelihood of contaminated discharges.
- **Concrete and Saw Cutting Waste** – Concrete and asphalt cutting are expected during demolition activities. The waste material from these operations will be fully contained and cleaned up immediately by vacuum. Any remaining residue shall be cleaned by vacuum or street sweeping.

Dewatering – Dewatering of excavations shall occur as permitted by a Water Quality Control Division Low Risk Guidance Document. Any water from dewatering operations shall be uncontaminated and discharge to a control measure and captured on-site for infiltration and/or evaporation. Under no circumstances shall construction dewatering water be allowed to leave the site as surface runoff. If contamination of groundwater is suspected, a separate construction dewatering permit will be required.

Spill Prevention and Control Plan

In the event of an accidental spill, immediate action will be undertaken by the General Contractor to contain and remove the spilled material. All hazardous materials will be disposed of by the Contractor in the manner specified by federal, state and local regulations and by the manufacturer of such products. As soon as possible, the spill will be reported to the appropriate agencies. As required under the provisions of the Clean Water Act, any spill or discharge entering waters of the United States will be properly reported. The General Contractor will prepare a written record of all spills and associated clean-up and will also notify El Paso County. The General Contractor will provide notice to Owner immediately upon identification of a reportable spill.

Any spills of petroleum products or hazardous materials in excess of Reportable Quantities as defined by EPA or the state or local agency regulations, shall be immediately reported to the EPA National Response Center (1-800-424-8802), the Colorado Department of Public Health and Environment (CDPHE) (1-877-518-5608), and El Paso County.

The State reportable quantity for petroleum products is 25 gallons or more (or that cause a sheen on nearby surface waters). Spills from regulated aboveground and underground fuel storage tanks must be reported to the State Oil Inspector within 24 hours (after-hours contact CDPHE Emergency Spill Reporting Line). This includes spills from fuel pumps. Spills or releases of hazardous substances from regulated storage tanks in excess of the reportable quantity (40 CFR Part 302.6) must be reported to the National Response Center, the local fire authority immediately, the State Oil Inspector, and El Paso County within 24 hours.

The reportable quantity for hazardous materials can be found in 40 CFR 302 at:

http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr302_main_02.tpl

In order to minimize the potential for a spill of petroleum product or hazardous materials to come in contact with storm water, the following steps will be implemented:

- a) All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, additives for soil stabilization, concrete, curing compounds and additives, etc.) will be stored including secondary containment measures in a secure location, under cover, when not in use.
- b) The minimum practical quantity of all such materials will be kept on the job site and scheduled for delivery as close to time of use as practical.
- c) A spill control and containment kit (containing for example, absorbent material such as kitty litter or sawdust, acid neutralizing agent, brooms, dust pans, mops, rags, gloves, goggles, plastic and

metal trash containers, etc.) will be provided on the construction site and location(s) shown on Site Maps. The kit should be inspected for completeness as a part of weekly stormwater inspections.

- d) All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.
- e) All products will be stored in and used from the original container with the original product label.
- f) All products will be used in strict compliance with instructions on the product label.
- g) The disposal of excess or used products will be in strict compliance with instructions on the products label and local regulations.

Spill Containment Methods

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

Equipment Staging and Maintenance Area: An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill containment cell placed beneath all stationary potential leak sources. An undetected leak from parked equipment will be cleaned up using hand shovels and containerized in a 55-gallon steel drum for offsite disposal.

Fueling Area: A small spill during fueling operations will be contained using fuel absorbent pads at the nozzle. The transfer of fuel into portable equipment will be performed using a funnel and/or hand pump and a spill pad used to absorb any incidental spills/drips. Any leaking tanks or drums will have fluids removed and transferred to another tank, drum, or container for the fluids. A spill response kit will be located near the fueling area or on the fuel truck for easy access. The spill response kit will include plastic sheeting, tarps, over pack drums, absorbent litter, and shovels.

Hazardous Material Storage Area: A spill from containers or cans in a hazardous material storage area will be contained within the storage cabinet these materials are kept in.

Unexpected Contaminated Soil: If contaminated soil is encountered during the project, the Owner/Construction Manager will be notified immediately. Small quantities of suspected contaminated

soil will be placed on a 6-mil plastic liner and covered with 6-mil plastic. A soil berm or silt fence will be used to contain the stockpile and prevent migration of contaminated liquids in the soil.

Spill Prevention and Containment Methods Table

Potential Spill Source	Response Method
Equipment Staging and Maintenance Area	Spill containment pad, spill kit, pumps, funnels
Fueling Area (site equipment only)	Spill containment pad, spill kit, pumps, funnels
Hazardous Material Staging Area	Spill containment pad, spill kit, pumps, funnels
Unexpected Contaminated Soil	Plastic liner, plastic cover, soil berm, hay bales, lined super sacks

Spill Countermeasures

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

1. Stop the Spill: The severity of a spill at the site is anticipated to be minimal as large containers/quantities of Hazardous Materials (HM) are not anticipated. The type of spill would occur while dispensing material at the HM storage facility and would likely be contained in secondary containment. Thus, the use spill kits or other available absorbent materials should stop the spill.
2. Warn Others: Notify co-workers and supervisory personnel of the release. Notify emergency responders if appropriate. For site personnel, an alarm system will consist of three one second blasts on an air horn sounded by the person discovering a spill or fire. In the event of any spill, the Superintendent and Project Manager shall be notified if the spill is 5 gallons or more the State will be contacted along with the Fire Department.
3. Isolate the Area: Prevent public access to the area and continue to minimize the spread of the material. Minimize personal exposure throughout emergency response actions.
4. Containment: A spill shall only be contained by trained personnel and if it is safe to do so. Do not place yourself in danger. Attempt to extinguish a fire only if it is in the incipient stage; trash can size or smaller. For larger spills, wait for the arrival of emergency response personnel and provide directions to the location of the emergency.
5. Complete a Spill and Incident Report: For each spill of a Hazardous Material a spill and incident report shall be completed and submitted to the Owner/Construction Manager and if applicable to the Engineer and the State of Colorado Department of Public Health and Environment

Control Measures for Stormwater Pollution Prevention

The following erosion control, sediment control, materials management, and site management measures shall be utilized and/or installed as indicated on the site maps to reduce the potential of the sources identified above to contribute pollutants to stormwater discharges.

The following structural control measures are anticipated to be implemented on this site:

Site maps and control details can be found in Appendix B of this document.

Erosion Control

Surface Roughening – Surface roughening consists of tracking, scarifying, imprinting, or tilling a disturbed area to provide temporary stabilization of disturbed areas. It creates variations in the soil surface that help to minimize wind and water erosion. Depending on the technique used, surface roughening may also help establish conditions favorable to establishment of vegetation. It is used to provide temporary stabilization of disturbed areas, such as when re-vegetation cannot be immediately established. It should also be performed after final grading. It should create depressions 2 to 6 inches deep and approximately 6 inches apart. The surface of exposed soil can be roughened with various techniques and equipment. Horizontal grooves (running parallel to the contours of the land) can be made using tracks from equipment treads, stair-step grading, ripping, or tilling. Surface roughening shall occur throughout the site as needed as earth moving operations proceed.

Temporary and Permanent Seeding – All denuded areas that will be inactive for 14 days or more must be stabilized temporarily with the use of fast-germinating annual grass/grain varieties appropriate for site soil and climate conditions, straw/hay mulch, wood cellulose fibers, tackifiers, netting and/or blankets. Stockpiles and drainage swales/berms must be stabilized to prevent erosion and dust issues. All areas at final grade must be seeded or sodded within 14 days after completion of work in that area. Prepare soil and seed immediately after final grade is achieved. At the completion of ground-disturbing activities the entire site must have permanent vegetative cover, meeting vegetative cover requirements, or mulch per landscape plan, in all areas not covered by hardscape (pavement, buildings, etc.). Except for small (<100 SF) level spots, seeded areas should be protected with mulch, tackifier, or a rolled erosion control product. Mulch must be crimped by disc or other machinery.

Mulching – Mulching consists of evenly applying a mulch product to disturbed soils and seedbeds and securing the mulch by crimping, tackifiers, netting, or other measures. Mulch products are intended to reduce rainfall impact (splash) erosion, decrease sheet erosion, promote rain and snowmelt infiltration, increase soil moisture retention, regulate soil temperature, and in most cases, improve soil texture and increase organic matter. Natural mulch products can include materials such as straw, cellulose products, pine needles, shredded wood, coconut fiber, rock, or bark. Synthetic mulch products combine a variety of

chemical bonding agents with natural mulch fibers or synthetic fibers. Mulch can be applied with either a standard mechanical dry application method or with hydromulching equipment. Disturbed areas shall be properly mulched and tacked or seeded, mulched, and tacked promptly after final grade is reached (within 14 days) on portions of the site not otherwise permanently stabilized. Mulching shall occur as necessary throughout the duration of construction. Mulch shall not be applied during windy conditions.

Check Dam – Check dams, also called ditch checks, dikes, wattles, etc. are temporary or permanent linear grade control structures placed in drainage channels perpendicular to flows to limit the erosivity of stormwater by reducing flow velocity. Check dams are typically constructed from rock, fiber logs (e.g. wattles), triangular sediment dikes, sand bags, and other materials and prefabricated systems. Reinforced check dams are typically constructed from rock and wire gabion. Straw/hay bales and silt fences should not be used for check dam applications, as they are not intended for concentrated flow areas. Although the primary function of check dams is to reduce the velocity of concentrated flows, a secondary benefit is sediment trapping upstream of the structure. Check dams can be used on mild or moderately steep slopes. Check dams may be used as temporary grade control facilities along waterways, along permanent swales that need protection prior to installation of a non-erodible lining, and along temporary channels, ditches or swales that need protection where construction of a nonerodable lining is not practicable. Reinforced check dams should be used in areas subject to high flow velocities. Check dams shall be installed when drainage ditches or swales are installed. They shall remain in place until final stabilization.

Wind Erosion and Dust Control – Wind erosion and dust control measures help to keep soil particles from entering the air as a result of land disturbing construction activities. These control measures include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered. Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies. Dust control shall be implemented throughout construction once the site has any exposed, bare soil. It shall be implemented until all bare soil has been covered by final stabilization.

Materials Management

Concrete and Masonry Washout Area – The concrete washout area shall be installed prior to any concrete placement on site. Signs shall be placed at the construction entrance(s), at the washout area, and elsewhere as necessary to clearly indicate the location of the concrete washout area. The washout area shall be repaired and enlarged or cleaned out as necessary to maintain capacity for wasted

concrete. Concrete shall be removed from the site and disposed of at an accepted waste facility. The concrete washout area shall be installed as shown on site maps prior to any concrete work. It shall remain in place until all concrete work is complete. Discharges that may reach groundwater must flow through soil that has buffering capacity prior to reaching groundwater, as necessary to meet the effluent limits in the *Colorado General Permit for Stormwater Discharges Associated with Construction*. The concrete washout area shall not be located in an area where shallow groundwater may be present, such as near natural drainages, springs, or wetlands.

Stockpile Management – Stockpile management includes measures to minimize erosion and sediment transport from soil stockpiles. Soil stockpiles shall be located away from all drainage system components including inlets. When practical, choose stockpile locations that will remain undisturbed for the longest period of time as the phases of construction progress. Place sediment control measures such as silt fence, straw wattles, or rock socks around the perimeter of all stockpiles. For stockpiles in active use, provide a stabilized designated access point on the upgradient side of the stockpile. Soils stockpiled for more than 60 days should be seeded and mulched with a temporary grass cover. Soil stockpile management shall be installed when soil stockpiling begins. It shall remain in place until all soil has been replaced or hauled off-site to a permanent location.

Good Housekeeping Practices – A clean and orderly work site reduces the possibility of accidental spills and reduces safety hazards to employees and subcontractors. It will also help minimize potential contamination of stormwater runoff. Housekeeping practices are to include providing waste management, establishing proper building material staging areas, designating paint and concrete washout areas, establishing proper equipment and vehicle fueling and maintenance practices, controlling equipment and vehicle washing and allowable non-stormwater discharges, and developing a spill prevention and response plan. Good housekeeping practices shall be employed throughout the duration of construction.

Sediment Control

Silt Fence – Silt fence is a synthetic permeable woven or non-woven geotextile fabric incorporating support stakes at intervals sufficient to support the fence (5-feet maximum distance between posts), water, and sediment retained by the fence. The fence is designed to retain sediment-laden storm water and allow settlement of suspended soils before the storm water flows through the fabric and discharges off-site. Silt fence shall be located on the contour to capture overland, low-velocity sheet flows. Silt fence shall be installed at the start of construction prior to any earth moving activities. Silt fence shall remain in place until site construction has been completed to a point where other control measures can control the remaining sediment concerns.

Storm Sewer Inlet Protection – Inlet protection devices intercept and/or filter sediment before it can be transported from a site into the storm drain system and discharged into a lake, river, stream, wetland, or other body of water. These devices also keep sediment from filling or clogging storm drain pipes, ditches, and downgradient sediment traps or ponds. Inlet protection may also include placement of a barrier to create a bypass of an inlet transferring flow downstream to a sediment trap, basin, or other inlet discharging to a non-critical area. The primary mechanism is to place controls in the path of flow sufficient to slow the sediment-laden water to allow settlement of suspended soils before discharging into the storm sewer. It is possible that as construction progresses from storm sewer installation through to paving that the inlet protection devices should change. All inlet protection devices create ponding of storm water. This should be taken into consideration when deciding on which device or devices should be used. Inlet protection shall be installed around all existing inlets at the start of construction prior to any earth moving activities and around all proposed inlets as they are constructed. Inlet protection shall remain in place until final stabilization (pavement and/or landscaping).

Site Management and Other Practices

Construction Phasing and Scheduling – Effective construction site management to minimize erosion and sediment transport includes attention to construction phasing, scheduling, and sequencing of land disturbing activities. On most construction projects, erosion and sediment controls will need to be adjusted as the project progresses and should be documented in the SWMP. All construction projects can benefit from upfront planning to phase and sequence construction activities to minimize the extent and duration of disturbance. Larger projects and linear construction projects may benefit most from construction sequencing or phasing, but even small projects can benefit from construction sequencing that minimizes the duration of disturbance. Typically, erosion and sediment controls needed at a site will change as a site progresses through the major phases of construction. Erosion and sediment control practices corresponding to each phase of construction must be documented in the SWMP.

Vehicle Tracking Control – Vehicles leaving construction sites can track sediment onto adjoining roadways. This sediment can create safety hazards and contribute significantly to sediment pollution in waterways. The purpose of a vehicle tracking control measure is to prevent soil and mud on work vehicles from being carried offsite and deposited on public roads, parking lots, and other areas. All points closed to the general public and providing access into the construction site shall include a marked construction exit with structural and nonstructural vehicle tracking controls. This may include tracking pads, minimizing site access, wash racks, graveled parking areas, maintaining vehicle traffic to paved areas, street sweeping, and sediment control measures. If a wheel wash system is installed, a sediment trap control must be installed to treat the wash water before it discharges from the site. Discharge must be directed to the sediment basin or sediment trap within the limits of construction as indicated. Vehicle

tracking controls shall be installed at all construction access points at the start of construction prior to any earth moving activities. They shall remain in place until permanent pavement is installed.

Stabilized Staging Area – This is a clearly designated area where construction equipment and vehicles, stockpiles, waste bins, and other construction-related materials are stored. The stabilized storage area consists of a stabilized surface, covered with 3-inch diameter aggregate or larger. The stabilized staging area shall be installed as shown on the site maps at the start of construction prior to any earth moving activities. It shall remain in place until permanent pavement is installed.

Street Sweeping and Vacuuming – Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway. Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways on or adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming. Street sweeping shall occur as needed and at a minimum once a day throughout the duration of construction.

Paving and Grinding Operations – Runoff from paving and grinding operations shall be managed to minimize pollutants entering storm drainage systems and natural waterways. Use runoff management practices during all paving and grinding operations such as surfacing, resurfacing, and saw cutting.

Offsite Control Measures

The SWMP must include a documented use agreement between the Permittee and the Owner or Operator of any control measures located outside of the permitted area that are utilized by the Permittee's construction site for compliance with this permit, but are not under the direct control of the Permittee. The Permittee is responsible for ensuring that all control measures located outside of their permitted area, that are being utilized by the Permittee's construction site, are properly maintained and in compliance with all terms and conditions of the permit. No offsite control measures are anticipated with this development.

Revising Control Measures and the SWMP

Should there be changes to the implemented control measures the QSM shall be notified and the SWMP modified to accurately reflect the field conditions. Examples include, but are not limited to, removal of control measures, identification of new potential pollutant sources, addition of control measures, modification of control measure installation and implementation criteria or maintenance procedures, and changes in items included in the Site Map and/or description. SWMP revisions must be made prior to changes in site conditions, except for Responsive SWMP Changes, as follows:

- SWMP revisions must be made immediately after changes are made in the field to address control measure installation and/or implementation issues; or

- SWMP revisions that require the development of supporting documentation (e.g. design of sediment basin capacity) must be made as soon as practicable, but in no case more than 72 hours, after change(s) in control measure installation and/or implementation occur at the site.

Notation must be included in the plan that identifies:

- The date of the site change
- The control measure removed or modified
- The location(s) of those control measure(s)
- Any changes to the control measure(s)

This SWMP should be viewed as a “living document” that is to be continuously reviewed and modified as part of the overall process of assessing and managing stormwater quality issues on-site.

Permit Renewal

The duration of the permit is for a fixed term not exceeding five (5) years. If the Permittee desires to continue discharge beyond the original permit terms, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. The permit’s duration may be extended only through administrative extensions and not through interim modifications. Any noncompliance with the original permit constitutes a violation of the Colorado Water Quality Control Act and may be grounds for denial of a permit renewal application.

IV. Final Stabilization & Long-Term Stormwater Management

Permanent stabilization of the site will include establishment of native seeded areas along the roadway and in the roadside ditches, and pavement placement. The Permittee shall minimize soil compaction in areas where infiltration control measures are implemented or where final stabilization will be achieved through vegetative cover. Runoff from the new access roads will be collected in roadside ditches to provide a runoff reduction for water quality before being discharged to the existing natural flow paths on-site. Final site stabilization is achieved when the following are complete:

- All construction activities are complete.
- Permanent stabilization methods are complete. Permanent stabilization methods include, but are not limited to, permanent pavement or concrete, hardscape, xeriscape, stabilized driving surfaces, vegetative cover, or equivalent alternative stabilization methods. Vegetative cover must meet the following criteria:
 - Evenly distributed perennial vegetation, and
 - Coverage, at a minimum, equal to 70% of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.

- The permittee must ensure all temporary control measures are removed from the construction site once final stabilization is achieved, except when the control measure specifications allow the control measure to be left in place (e.g. biodegradable control measures, permanent sediment basin).

Inactivation of Permit Coverage

Once the criteria for final stabilization have been met, the Permittee shall make a request to terminate the permit through the Colorado Environmental Online Services (CEOS) system. If final stabilization is achieved in advance of the expiration date of the permit, the Division shall be promptly notified so the permit can be terminated.

The QSM shall provide a completed SWMP binder to the owner at the conclusion of the project which will include the original SWMP, all markups or other changes to the SWMP, and inspection and maintenance records. The owner shall keep this document on file for a minimum of 3 years after construction completion.

V. Inspection & Maintenance Procedures

The contractor must keep the approved SWMP on site at all times. The person(s) inspecting the site may be on the Permittee's staff or a third party hired to conduct stormwater inspections under the direction of the Permittee. The Permittee is responsible for ensuring that the inspector is a qualified stormwater manager. All regulatory authorities may inspect the land or site covered by the SWMP at any time, without prior notice, for compliance with the SWMP. If site conditions indicate that the objectives of this section are not being met, the operator shall make appropriate modifications to the SWMP. Any modification must be recorded on the owner's copy of the SWMP and the QSM notified. The Permittee must maintain inspection records on site with the SWMP and such records must be provided to the regulatory agencies for review upon request. At a minimum, the inspection report must include:

- i. The inspection date
- ii. Name(s), title(s) and signature(s) of personnel conducting the inspection
- iii. Weather conditions at the time of inspection
- iv. Phase of construction at the time of inspection
- v. Estimated acreage of disturbance at the time of inspection
- vi. Location(s) of and identification of control measures requiring routine maintenance
- vii. Location(s) of and identification of discharges of sediment or other pollutants from the site
- viii. Location(s) and identification of inadequate control measures
- ix. Location(s) and identification of additional control measures needed that were not in place at the time of inspection.

- x. Description of corrective action(s) for items vii, viii, and ix above, dates corrective action(s) were completed, including requisite changes to the SMP, as necessary.
- xi. Description of the minimum inspection frequency (either in accordance with Part I.D.2., I.D.3. or I.D.4.) utilized when conducting each inspection.
- xii. Deviations from the minimum inspection schedule as required in Part I.D.2.
- xiii. After adequate corrective action(s) and maintenance have been taken, or where a report does not identify incidents requiring corrective action or maintenance, the report shall contain a statement as required in Part I.A.3.f.

The State Construction Stormwater Site Inspection Report template has been included in Appendix D. The Permittee may provide their own inspection report if desired but must ensure it meets the requirements above. Any person(s) signing inspection documents required for compliance must make the following statement and provide the date of the statement:

“I verify that, to the best of my knowledge and belief, that if any corrective action items were identified during the inspection, those corrective actions are complete, and the site is currently in compliance with the permit.”

Inspection Schedules

Between the time this SWMP is implemented and final Inactivation Notice or Termination Application has been submitted, all disturbed areas and pollutant controls must be inspected with one of the following minimum frequencies:

- At least one inspection every 7 calendar days
- At least one inspection every 14 calendar days, plus post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion.

If more frequent inspections are required to ensure that control measures are properly maintained and operated, the inspection schedule must be modified to meet this need. The first site inspection must occur within 7 calendar days of the commencement of construction activities on site. The contractor and QSM shall adhere to the maintenance schedules listed in the details for each control measure. Permittees must conduct site inspections at least once every 7 calendar days for sites that discharge to a water body designated as an Outstanding Water by the Water Quality Control Commission. Preventative maintenance shall be coupled with periodic inspections.

Inspection Procedures

The purpose of site inspections is to assess performance of pollutant controls. Based on these inspections the contractor, in consultation with the QSM (if different) will decide whether it is necessary to modify this SWMP, add or relocate controls, or revise or implement additional control measures in order to prevent pollutants from leaving the site via stormwater runoff. The contractor has the duty to cause pollutant control measures to be repaired, modified, supplemented, or take additional steps as necessary

in order to achieve effective pollutant control. Note: If a control measure is covered by snow, mark the control measure as not applicable and document the reason the control measure cannot be inspected on the daily report.

The inspection must include observation of:

- The construction site perimeter and discharge points, including discharges into a storm sewer system
- All disturbed areas
- Areas used for material/waste storage that are exposed to precipitation
- Areas determined to have a significant potential for stormwater pollution, such as demolition areas, concrete washout areas, or construction vehicle entrances
- All erosion and sediment control measures identified in the SWMP
- Structural control measures that may require maintenance, such as secondary containment around fuel tanks or the condition of spill response kits

Examples of specific items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection, the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances. Additional information on maintenance requirements can be found in the BMP Fact Sheets in Volume 3 of the *Urban Storm Drainage Criteria Manual* by the Urban Drainage and Flood Control District.

- **Construction Exit and Track Out** – Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction exit shall be constructed where vehicles enter and exit. Exits shall be maintained or supplemented as necessary to prevent the release of sediment from vehicles leaving the site. Any sediment deposited on the roadway shall be swept as necessary throughout the day or at the end of every day and disposed of in an appropriate manner. Sediment shall NOT be washed into storm sewer systems.
- **Erosion Control Devices** – Rolled erosion control products (nets, blankets, turf reinforcement mats) and marginally vegetated areas (areas not meeting required vegetative densities for final stabilization) must be inspected weekly. Rilling, rutting and other signs of erosion indicate the erosion control device is not functioning properly and additional erosion control devices are warranted.

- **Material Storage Areas** – Material storage areas should be located to minimize exposure to weather. Inspections shall evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system or discharging from the site. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas. All state and local regulations pertaining to material storage areas will be adhered to.
- **Discharge Points** – All discharge points must be inspected to determine whether erosion and sediment control measures are effective in preventing discharge of sediment from the site or impacts to receiving waters. Stormwater discharges, including both peak flow rates and total stormwater discharge, shall be controlled to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.

Control Measure Maintenance/Replacement and Failed Control Measures

The *Colorado General Permit for Stormwater Discharges Associated with Construction Activity* requires that all erosion and sediment control practices and other protective measures identified in the SWMP be maintained in effective operating condition and in accordance with good engineering, hydrologic and pollution control practices. Sediment that has been collected by sediment controls, such as silt fence and inlet protection, shall be removed when observed to prevent failure of control measures, and remove the potential of that sediment from being discharged from the site if the control measure did fail. Removed sediment shall be properly disposed of on-site. Maintenance activities to correct problems noted during inspections must be documented as discussed in the documentation section below. The inspection process must also include procedures to ensure that, when needed, control measures are replaced or new control measures added to adequately manage the pollutant sources at the site. The permittee must take all necessary steps to minimize or prevent the discharge of pollutants from the permitted area and manage any stormwater run-on onto the site until a control measure is implemented and made operational and/or an inadequate control measure is replaced or corrected and returned to effective operating condition in compliance with the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity*. This procedure is part of the ongoing process of revising the control measures and the SWMP as discussed above, and any changes to control measures must be recorded in the SWMP. The SWMP must be modified as soon as practicable to reflect current conditions. Control measures that have failed or have the potential to fail without maintenance or modifications must be addressed as soon as possible, immediately in most cases, to prevent the discharge of pollutants. If it is infeasible to install or repair a control measure immediately after discovering the deficiency, the following information must be documented and kept on record:

- 1) Describe why it is infeasible to initiate the installation or repair immediately; and

- 2) Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.

If applicable, the Permittee must remove and properly dispose of any unauthorized release or discharge within and from the permitted area (e.g. discharge of non-stormwater, untreated stormwater containing pollutants, spill or leak not authorized by the Construction Stormwater Permit). The Permittee must also clean up any contaminated surfaces, if feasible to minimize discharges of the material in subsequent storm events, including water remaining from the response that contains pollutants after active emergency firefighting response is complete.

Record Keeping and Documentation

All erosion control measures and stabilizations shall be inspected weekly and after each precipitation or snow melt event. The Permittee must document inspection results and maintain a record of the results for a period of 3 years following closing of permit coverage. These records must be made available to the Owner, the City & County, the State, or the EPA upon request. The following items must be documented as part of the site inspections:

- The inspection date
- Name(s) and title(s) of personnel making the inspection
- Location(s) of discharges of sediment or other pollutants from the site
- Location(s) of control measures that need to be maintained
- Location(s) of control measures that failed to operate as designed or proved inadequate for a particular location
- Location(s) where additional control measures are needed that were not in place at the time of inspection
- Deviations from the minimum inspection schedule as indicated above
- Description and dates of corrective actions taken including requisite changes to the SWMP

After adequate corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Record of spills, leaks, or overflows that result in the discharge of pollutants must be documented and maintained. Information that should be recorded for all occurrences includes the time and date, weather conditions, reasons for the spill, who the spill was reported to, etc.

A complete copy of the SWMP shall be kept with the inspection and maintenance records for the aforementioned 3-year period.

VI. Conclusion

Conformance with Standards

The Stormwater Management report for Project at Elk View Estates, was prepared in compliance with the *El Paso County Engineering Criteria Manual Appendix I* and the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity*.

Drainage Concept

The proposed erosion and sediment control measures do not alter the proposed drainage patterns, volumes, or control points from the submitted *Final Drainage Report for Elk View Estates* applicable to this development.

VII. References

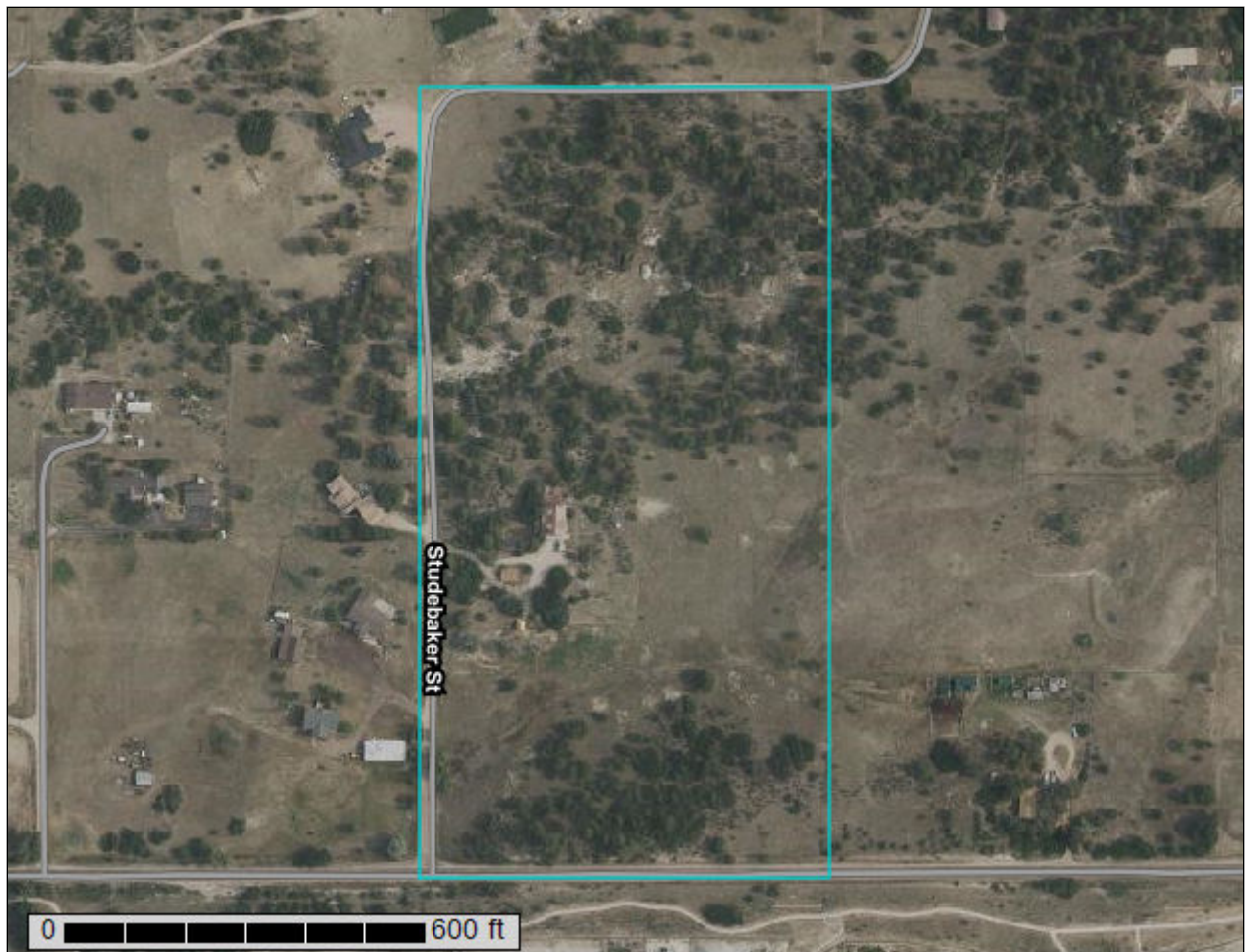
1. *Engineering Criteria Manual*, County of El Paso, January 9th, 2025 (with current revisions).
2. *Engineering Criteria Manual Appendix I*, County of El Paso, 2019 (with current revisions).
3. *Urban Storm Drainage Criteria Manual, Volume 3*, Mile High Flood District, March 2024 (with current revisions).
4. *General Permit Application and Stormwater Management Plan Preparation Guidance*, Colorado Department of Public Health and Environment, April 2019.

Appendix A – Reference Information

NRCS Web Soil Survey Information

FEMA Firm Panel

Custom Soil Resource Report for El Paso County Area, Colorado



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

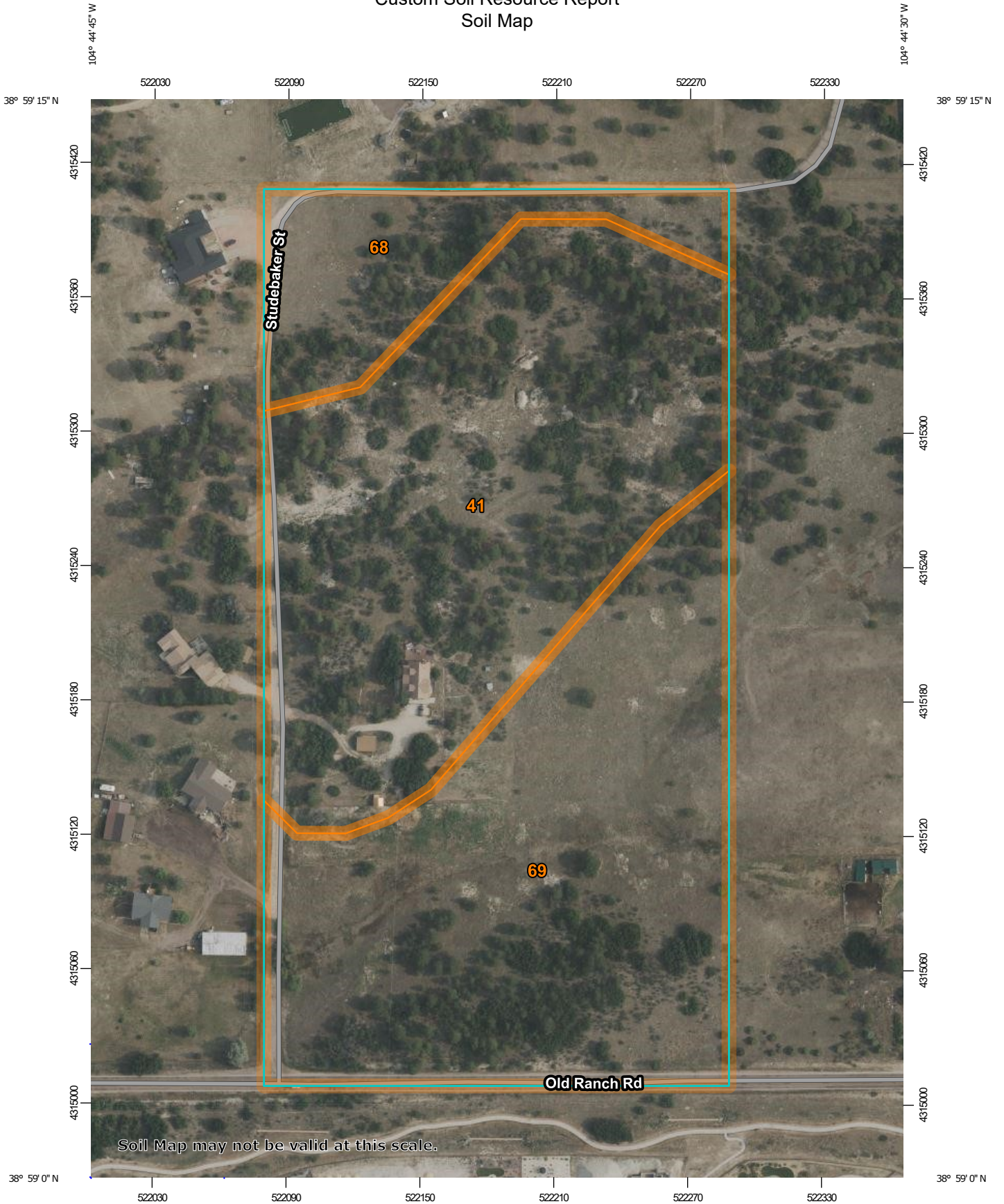
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Map Scale: 1:2,350 if printed on A portrait (8.5" x 11") sheet.




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


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado
 Survey Area Data: Version 22, Sep 3, 2024

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

Date(s) aerial images were photographed: Jul 23, 2024—Aug 4, 2024

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
41	Kettle gravelly loamy sand, 8 to 40 percent slopes	9.2	44.6%
68	Peyton-Pring complex, 3 to 8 percent slopes	2.4	11.6%
69	Peyton-Pring complex, 8 to 15 percent slopes	9.1	43.8%
Totals for Area of Interest		20.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

Custom Soil Resource Report

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Paso County Area, Colorado

41—Kettle gravelly loamy sand, 8 to 40 percent slopes

Map Unit Setting

National map unit symbol: 368h
Elevation: 7,000 to 7,700 feet
Farmland classification: Not prime farmland

Map Unit Composition

Kettle and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kettle

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose

Typical profile

E - 0 to 16 inches: gravelly loamy sand
Bt - 16 to 40 inches: gravelly sandy loam
C - 40 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 8 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F048AY908CO - Mixed Conifer
Hydric soil rating: No

Minor Components

Pleasant

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Other soils

Percent of map unit:

Hydric soil rating: No

68—Peyton-Pring complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 369f

Elevation: 6,800 to 7,600 feet

Farmland classification: Not prime farmland

Map Unit Composition

Peyton and similar soils: 40 percent

Pring and similar soils: 30 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peyton

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Arkosic alluvium derived from sedimentary rock and/or arkosic residuum weathered from sedimentary rock

Typical profile

A - 0 to 12 inches: sandy loam

Bt - 12 to 25 inches: sandy clay loam

BC - 25 to 35 inches: sandy loam

C - 35 to 60 inches: sandy loam

Properties and qualities

Slope: 3 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: R049XY216CO - Sandy Divide

Hydric soil rating: No

Description of Pring

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Arkosic alluvium derived from sedimentary rock

Typical profile

A - 0 to 14 inches: coarse sandy loam
C - 14 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R048AY222CO - Loamy Park
Hydric soil rating: No

Minor Components

Pleasant

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Other soils

Percent of map unit:
Hydric soil rating: No

69—Peyton-Pring complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 369g
Elevation: 6,800 to 7,600 feet
Farmland classification: Not prime farmland

Map Unit Composition

Peyton and similar soils: 40 percent

Pring and similar soils: 30 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peyton

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Arkosic alluvium derived from sedimentary rock and/or arkosic residuum weathered from sedimentary rock

Typical profile

A - 0 to 12 inches: sandy loam

Bt - 12 to 25 inches: sandy clay loam

BC - 25 to 35 inches: sandy clay loam

C - 35 to 60 inches: sandy loam

Properties and qualities

Slope: 8 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: R049XY216CO - Sandy Divide

Hydric soil rating: No

Description of Pring

Setting

Landform: Hills

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Arkosic alluvium derived from sedimentary rock

Typical profile

A - 0 to 14 inches: coarse sandy loam

C - 14 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

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Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: R048AY222CO - Loamy Park

Hydric soil rating: No

Minor Components

Pleasant

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

Other soils

Percent of map unit:

Hydric soil rating: No

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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, NNGS12
 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, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

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/>.

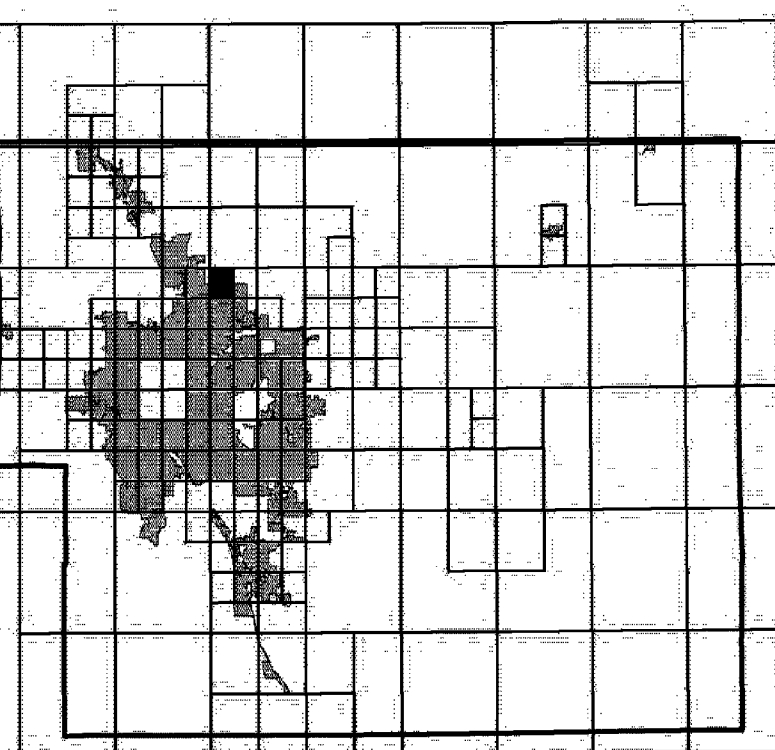
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfp>.

El Paso County Vertical Datum Offset Table

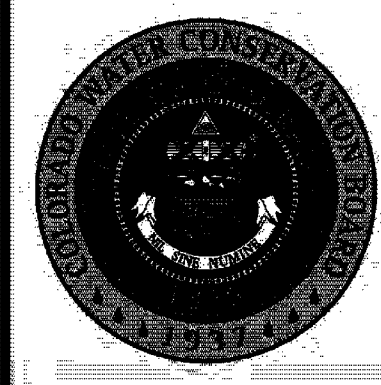
Flooding Source	Vertical Datum Offset (ft)

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.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 12 SOUTH, RANGE 65 WEST, AND TOWNSHIP 12 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 equaled 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, A99, X, 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 siluvial 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 decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); 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)
- Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile

MAP REPOSITORIES

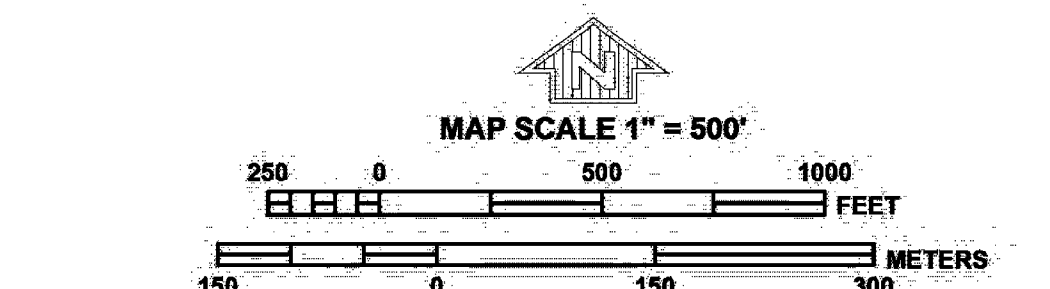
Refer to Map Repositories list on Map Index.

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.



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0526G

FIRM FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 526 OF 1300
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:	COMMUNITY	NUMBER	PANEL	SUFFIX
	COLORADO SPRINGS, CITY OF	08060	0526	G
	EL PASO COUNTY	08059	0526	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 08041C0526G

MAP REVISED DECEMBER 7, 2018

Federal Emergency Management Agency

Appendix B – SWMP Site Maps and Details

GEC Plan (Site Maps)

Erosion Control Details

Contractor to insert the approved and signed Grading & Erosion Control Plan

Appendix C – ESQCP

Contractor to insert the approved and signed Erosion Stormwater Quality Control Permit

EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) EL PASO COUNTY APPLICATION AND PERMIT

PERMIT NUMBER _____

APPLICANT INFORMATION

Applicant Contact Information	
Owner	Dan Heisler, Elk Ridge Development, LLC
Name (person of responsibility)	Jeffrey Odor
Company/Agency	Galloway & Co.
Position of Applicant	Engineering Consultant
Address (physical address, not PO Box)	1155 Kelly Johnson Blvd
City	Colorado Springs
State	CO
Zip Code	80920
Mailing address, if different from above	
Telephone	719-900-7220
FAX number	
Email Address	JeffreyOdor@gallowayus.com
Cellular Phone number	

CONTRACTOR INFORMATION

Contractor	
Name (person of responsibility)	
Company	
Address (physical address, not PO Box)	
City	
State	
Zip Code	
Mailing address, if different from above	
Telephone	
FAX number	
Email Address	
Cellular Phone number	
Erosion Control Supervisor (ECS)*	
ECS Phone number*	
ECS Cellular Phone number*	

*Required for all applicants. May be provided at later date pending securing a contract when applicable.

PROJECT INFORMATION

Project Specifications	
Project Name	Elk View Estates
Legal Description	PARCEL A: THE EAST HALF OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER, EXCEPT THE SOUTH 30 FEET THEREOF, AND THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER, EXCEPT THE SOUTH 30 FEET THEREOF, ALL IN SECTION 23, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO. PARCEL B: THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE 6TH P.M. , EL PASO COUNTY, COLORADO.
Address (or nearest major cross streets)	Old Ranch Road & Studebaker Street
Acreage (total and disturbed)	Total: acres <u>17.10</u> Disturbed: acres <u>3.09</u>
Schedule	Start of Construction: Fall 2025 Completion of Construction: Spring 2025 Final Stabilization: Spring 2025
Project Purpose	The proposed development will be subdivided into (6) 2.5-acre or larger lots and the addition of private access road along the eastern property boundary, providing access to the future lots from Old Ranch Rd.
Description of Project	Improvements will include cut/fill grading, storm sewer culverts, and private roadway installation.
Tax Schedule Number	6223000044

FOR OFFICE USE ONLY

The following signature from the ECM Administrator signifies the approval of this ESQCP. All work shall be performed in accordance with the permit, the El Paso County Engineering Criteria Manual (ECM) Standards, City of Colorado Springs Drainage Criteria Manual, Volume 2 (DCM2) as adopted by El Paso County Addendum, approved plans, and any attached conditions. The approved plans are an enforceable part of the ESQCP. Construction activity, except for the installation of initial construction BMPs is not permitted until issuance of a Construction permit and Notice to Proceed.

Signature of ECM Administrator: _____ Date _____

1.1 REQUIRED SUBMISSIONS

In addition to this completed and signed application, the following items must be submitted to obtain an ESQCP:

- Permit fees
- Stormwater Management Plan (SWMP) meeting the requirements of DCM2 and ECM either as part of the plan set or as a separate document;
- Cost estimates of construction and maintenance of construction and permanent stormwater control measures (Cost estimates shall be provided on a unit cost basis for all stormwater BMPs);
- Financial surety in an amount agreeable to the ECM Administrator based on the cost estimates of the stormwater quality protection measures provided. The financial surety shall be provided in the form of a Letter of Credit, Surety with a Bonding Company, or other forms acceptable to El Paso County;
- Operation and Maintenance Plan for any proposed permanent BMPs; and
- Signed Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement, if any permanent Best Management Practices are to be located on site.

1.2 RESPONSIBILITY FOR DAMAGE

The County and its officers and employees, including but not limited to the ECM Administrator, shall not be answerable or accountable in any manner, for injury to or death of any person, including but not limited to a permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder, or for damage to property resulting from any activities undertaken by a permit holder or under the direction of a permit holder. The permit holder shall be responsible for any liability imposed by law and for injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder, or damage to property arising out of work or other activity permitted and done by the permit holder under a permit, or arising out of the failure on the permit holder's part to perform the obligations under any permit in respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work, or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit.

To the extent allowed by law, the permit holder shall indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description brought for or on account of injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder and the public, or damage to property resulting from the performance of work or other activity under the permit, or arising out of the failure on the permit holder's part to perform his obligations under any permit in respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work, or other activity or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit, except as otherwise provided by state law. The permit holder waives any and all rights to any type of expressed or implied indemnity against the County, its officers or employees.

1.3 APPLICATION CERTIFICATION

I, as the Applicant or the representative of the Applicant, hereby certify that this application is correct and complete as per the requirements presented in this application and the El Paso County Engineering Criteria Manual and Drainage Criteria Manual, Volume 2 and El Paso County Addendum.

I, as the Applicant or the representative of the Applicant, have read and will comply with all of the requirements of the specified Stormwater Management Plan and any other documents specifying stormwater best management practices to be used on the site including permit conditions that may be required by the ECM Administrator. I understand that the Best Management Practices are to be maintained on the site and revised as necessary to protect stormwater quality as the project progresses. I further understand that a Construction Permit must be obtained and all necessary stormwater quality control BMPs are to be installed in accordance with the SWMP and the El Paso County Engineering Criteria Manual and Drainage Criteria Manual, Volume 2 and El Paso County Addendum before land disturbance begins and that failure to comply will result in a Stop Work Order and may result in other penalties as allowed by law. I further understand and agree to indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description as outlined in Section 1.2 Responsibility for Damage.

Date: _____

Signature of Applicant or Representative

Print Name of Applicant or Representative

Permit Fee \$ _____

Surcharge \$ _____

Financial Surety \$ _____

Type of Surety _____

Total \$ _____

Appendix D – Inspection Report

State Inspection Report Template

Appendix D: Stormwater Inspection Report Template

Facility Name		Permittee					
Date of Inspection		Weather Conditions					
Permit Certification #		Disturbed Acreage					
Phase of Construction		Inspector Title					
Inspector Name							
Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager)			<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
YES	NO						
<input type="checkbox"/>	<input type="checkbox"/>						

INSPECTION FREQUENCY					
Check the box that describes the minimum inspection frequency utilized when conducting each inspection					
At least one inspection every 7 calendar days	<input type="checkbox"/>				
At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions	<input type="checkbox"/>				
<ul style="list-style-type: none"> This is this a post-storm event inspection. Event Date: _____ 	<input type="checkbox"/>				
Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency	<input type="checkbox"/>				
<ul style="list-style-type: none"> Post-storm inspections at temporarily idle sites 	<input type="checkbox"/>				
<ul style="list-style-type: none"> Inspections at completed sites/area 	<input type="checkbox"/>				
<ul style="list-style-type: none"> Winter conditions exclusion 	<input type="checkbox"/>				
Have there been any deviations from the minimum inspection schedule? If yes, describe below.	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
YES	NO				
<input type="checkbox"/>	<input type="checkbox"/>				

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

AREAS TO BE INSPECTED			
Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?			
	NO	YES	If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions Inadequate Control Measures Requiring Corrective Action form
Construction site perimeter	<input type="checkbox"/>	<input type="checkbox"/>	
All disturbed areas	<input type="checkbox"/>	<input type="checkbox"/>	
Designated haul routes	<input type="checkbox"/>	<input type="checkbox"/>	
Material and waste storage areas exposed to precipitation	<input type="checkbox"/>	<input type="checkbox"/>	
Locations where stormwater has the potential to discharge offsite	<input type="checkbox"/>	<input type="checkbox"/>	
Locations where vehicles exit the site	<input type="checkbox"/>	<input type="checkbox"/>	
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	

REPORTING REQUIREMENTS

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

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

a. Endangerment to Health or the Environment

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

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

b. Numeric Effluent Limit Violations

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

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

Has there been an incident of noncompliance requiring 24-hour notification?	NO	YES	
	<input type="checkbox"/>	<input type="checkbox"/>	If "YES" document below

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

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

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

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

Name of Qualified Stormwater Manager

Title of Qualified Stormwater Manager

Signature of Qualified Stormwater Manager

Date

Notes/Comments