STORMWATER MANAGEMENT PLAN

THE MARKET AT BENT GRASS

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 Evergreen 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 Site is identified as Parcels 5301000016, 5301000017, & 5301002007 as shown in the El Paso County Assessor records. The Site is located at the northeast corner of Woodmen Rd. and Bent Grass Meadows Dr. More specifically, the Site is located in a portion of the Southeast Quarter of Section 1, Township 13 South, Range 65 West of the 6th Principal Meridian, Couty of El Paso, State of Colorado.
The site is bounded to the north by Falcon Meadows at Bent Grass Filing No. 1 residential, to the east by Mountain View Electric Association property, to the south by Woodmen Frontage Rd. public R.O.W., and to the west by Bent Grass Meadows Dr. public R.O.W. A portion of the Falcon Drainage Basin Western Tributary Channel (**RWT210**) runs through the site, parallel to the eastern property boundary.

The Site occupies approximately 53.91 acres of undeveloped land, consisting of natural low-lying vegetation, dirt stockpiles, a natural drainage ditch along the southern property boundary, and a portion of the Falcon Watershed, Western Tributary channel along the eastern property boundary. Parcel 5301000016 is currently zoned as I-2 (limited use industrial) and the remaining parcels are zoned CR (Commercial Regional). The northern parcel, 5301000016, is to be re-zoned to CR and the other parcels are to maintain their current zoning.

Nature of Construction Activity

The proposed development will be subdivided into 14 commercial lots and 6 tracts. Improvements will include cut/fill grading, utility installation, storm sewer system, 2 private extended detention basins, 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 Summer 2027 and substantial completion of the project is anticipated in Spring 2028. Estimated date for final stabilization is in Summer 2028. 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 53.91 acres. Construction of this project will account for disturbed and impervious areas as shown in the table below.

Total Disturbed Area (ac)	48.35
Pre-Construction Impervious Area (ac)	1.54
Post-Construction Impervious Area (ac)	40.83
Total new Impervious Area (ac)	39.29

The adjusted cut and fill quantities are listed below.

Cut Volume = 103,808 CY

Fill Volume = 166,273 CY

Net Volume = 62,465 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
Blakeland-Fluvaquentic Haplaquolls	A/D	0.2%
Columbine Gravelly Sandy Loam	A	99.8%

The predominant HSG for the Site is type 'A'. Hydrologic Soil Group A soils have a high infiltration rate when thoroughly wet. Therefore, these soils exhibit a high rate of water transmission and generally have a low erosion and runoff 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 southeast. Runoff from the new internal roadways will be collected by the proposed storm system and carried to one of the

two proposed on-site extended detention basins. All flows from the site discharge into channel RWT210, which carried the flows to the east and eventually to Black Squirrel Creek. This channel runs north/south along the eastern edge of the project site.

The receiving water is not defined as a Colorado Outstanding Water.

Because wetlands were not found on or around the site, construction is not anticipated to have any negative affect on wetlands.

Habitat for threatened or endangered species is not expected to be encountered and will not place additional restrictions on stormwater.

Since this property has no historic designations, historic properties will not be encountered and will not place additional restrictions on stormwater.

II. Site Map

Vicinity Map



III. Stormwater Management Controls

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 overlot 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 an 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 course 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 an 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 project site will be collected in the proposed storm system and routed to one of two proposed permanent full-spectrum extended detention basins. The first EDB is located on the east edge of the site near the north end, the second EDB is located at the south end of the site. These EDBs will permanently provide runoff reduction for water quality before being discharged to the existing channel at the east portion of the 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 mee 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 are 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 form 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 The Markets at Bent Grass, 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 The Markets at Bent Grass* 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

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for El Paso County Area, Colorado



November 4, 2025

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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19—Columbine gravelly sandy loam, 0 to 3 percent slopes.....11

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: 1:3,410 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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 23, Aug 29, 2025

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
9	Blakeland-Fluvaquentic Haplaquolls	0.1	0.2%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	40.3	99.8%
Totals for Area of Interest		**40.3**	**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 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

9—Blakeland-Fluvaquentic Haplaquolls

Map Unit Setting

National map unit symbol: 36b6
Elevation: 3,500 to 5,800 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 46 to 55 degrees F
Frost-free period: 110 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 60 percent
Fluvaquentic haplaquolls and similar soils: 38 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Flats, hills
Landform position (three-dimensional): Side slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose and/or eolian deposits derived from arkose

Typical profile

A - 0 to 11 inches: loamy sand
AC - 11 to 27 inches: loamy sand
C - 27 to 60 inches: sand

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Description of Fluvaquentic Haplaquolls

Setting

Landform: Swales
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 12 inches: variable
H2 - 12 to 60 inches: stratified very gravelly sand to loam

Properties and qualities

Slope: 1 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 to 24 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 6w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: D
Ecological site: R048AY241CO - Mountain Meadow
Hydric soil rating: Yes

Minor Components

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

19—Columbine gravelly sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 367p
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 50 degrees F

Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Columbine and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Columbine

Setting

Landform: Fans, fan terraces, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 14 inches: gravelly sandy loam
C - 14 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 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: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XY214CO - Gravelly Foothill
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls

Percent of map unit: 1 percent
Landform: Swales
Hydric soil rating: Yes

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

National Flood Hazard Layer FIRMette

FEMA

104°37'38"W 38°56'49"N



104°37'1"W 38°56'21"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/2/2026 at 6:54 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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

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			

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

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

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

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

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

CONTROL MEASURES REQUIRING ROUTINE MAINTENANCE

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

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

Date Observed	Location	Control Measure	Maintenance Required	Date Completed

INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION

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

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

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

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

REPORTING REQUIREMENTS

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

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

a. Endangerment to Health or the Environment

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

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

b. Numeric Effluent Limit Violations

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

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

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

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

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

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

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

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

Notes/Comments