

Meadow Lake Airport

Stormwater Management Plan (SWMP) and Report 100%

Falcon, CO
June 2026

Prepared for:

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Certification

Design Engineer's Statement:

The attached Stormwater Management Plan (SWMP) report and erosion control plans were prepared under my direction and supervision and are correct to the best of my knowledge and belief. This report has been prepared in accordance with applicable El Paso County requirements, the CDPS Construction General Permit, and other applicable criteria governing stormwater management, erosion control, and pollution prevention for construction activities. I accept responsibility for any liability caused by any negligent acts, errors, or omissions on my part in preparing this report.

Kevin Buffington, PE

Registered Professional Engineer

State of Colorado No. 62966

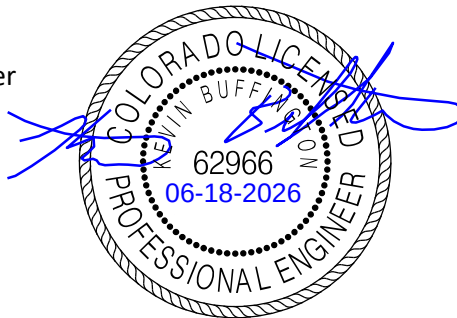


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Appendices

Appendix A: GEC Plan

Appendix B: Erosion and Stormwater Quality Control (ESQCP) Stormwater Permit Form

Appendix C: CDPS General Permit COR400000 Certification Copy of General Permit

Appendix D: Self-Inspection Form

Appendix E: General Site Information

I. Qualified Stormwater Managers

The SWMP is a living document. Both the SWMP Report and Grading Erosion Control (GEC) Plans shall be updated throughout the course of work to accurately reflect site conditions. The SWMP Administrator for Construction is responsible for ensuring that all stormwater, erosion control, and pollution prevention requirements are implemented, inspected, maintained, and documented throughout the project.

The following table contains the name, title, and contact information for the various SWMP Administrators.

Administrator Type	Name and Title	Contact Information (Phone and Email)
Owner's Representative	Dave Elliott	Falcon20Flier@msn.com 719.339.0928
SWMP Administrator for Design	Kevin Buffington, PE	Kevin.Buffington@Bolton-Menk.com 720-208-1331
Contractor		
SWMP Administrator for Construction		
SWMP Administrator for Construction		
Erosion Control Inspector		

II. Site Description

Location

The Meadow Lake Airport Apron reconstruction project is located at Meadow Lake Airport in the Town of Falcon, El Paso County, Colorado. The proposed improvements include reconstruction of taxiways and additional airplane parking. The project site lies within Section 05, Township 13 South, Range 64 West of the 6th Principal Meridian. Meadow Lake Airport is situated in the eastern portion of El Paso County, northeast of the Colorado Springs metropolitan area. The airport is located near the intersection of Judge Orr Road and US Highway 24.

The airport is surrounded by a mix of residential airpark, residential lots, and US Highway 24. The Meadow Lake Estates are integrated with the airport. Other, nearby platted subdivisions include Woodmen Hills, Falcon Heights, and Saddlehorn Ranch.

Figure 1 shows the project location.



Figure 1: Vicinity Map

Soils

Soils within the project area are classified as Columbine gravelly sandy loam, which is Hydrologic Soil Group A. This classification indicates a high infiltration rate and correspondingly lower runoff potential. Regarding the potential for hydraulic erosion, the K factor for the Columbine gravelly sandy loam remains low, as the coarser particles promote infiltration rather than runoff. With a wind erodibility index of 2 tons/acre/year, the soil is considered relatively resistant to aeolian erosion. The Natural Resources Conservation Service (NRCS) Web Soil Survey report is included in Appendix E.

Floodplains and Watersheds

No mapped floodplains exist within the project limits. The entirety of this project is located within “Zone X” (areas with less than a 0.2% chance of flood) on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel 08041C0554G, revised December 7, 2018. The referenced FEMA FIRM panel is included in Appendix E. No construction activities or disturbance in the floodplain will be allowed as part of these improvements.

The Meadow Lake Airport is located within the Solberg Ranch Basin of the Chico Creek watershed. Regional drainage patterns are characterized by broad, shallow overland flow with intermittent channels typical of the High Plains environment. Surface runoff in the project vicinity generally flows from north to southeast. Drainage is conveyed by unnamed swales and channels that ultimately form a tributary to Chico Creek. Chico Creek eventually joins the Arkansas River near Avondale, Colorado. There are no streams located within the construction site boundary.

The U.S. Fish and Wildlife Service identifies several riverine wetlands in the vicinity of the site. Both areas are contained within the existing, natural drainageways and are designated as R4SBC (riverine, intermittent, streambed, seasonally flooded). None of these wetlands fall within the project limits, and no impacts are anticipated as a result of these improvements.

Irrigation Facilities

No irrigation facilities are present on or in the vicinity of the site. No other significant utilities or encumbrances are known in the vicinity of the site.

Existing Vegetation

The land is flat prairie (slopes of 1-5%) with low growing grasses that are mowed. Based on photos and aerial photography of the site, the vegetative cover is comprehensive and is estimated to be 70%. The SWMP Administrator for Construction shall document existing cover prior to any disturbance.

Construction Activities and Sequence

This project is anticipated to disturb approximately 4.05 acres for clearing, excavation, grading, and all other associated construction activities. The Limits of Construction is comprised of approximately 4.92 acres.

Anticipated construction activities include clearing of existing grassed areas, removal of existing pavement, earthwork and grading, installation of stormwater infrastructure, subgrade preparation, and construction of new apron and associated paved surfaces. Construction is anticipated to begin during Summer of 2026 and finalized by Spring of 2027.

Prior to any land disturbance (including clearing, grubbing, and grading), initial control measures shown on the initial plan should be installed. Initial control measures such as silt fence, construction fence, vehicle tracking pads, check dams, sediment control logs, inlet protection, and stabilized staging areas.

The interim control measures shall be installed as construction progresses. This includes construction of the temporary sediment basin, culvert protection, and concrete washout areas.

After all major construction activities have been completed, all areas of the site must be permanently stabilized. Any nonpaved areas of the site must have permanent landscaping or vegetation reestablished.

Non-Stormwater Discharges

Non-stormwater discharges are not anticipated with these improvements and are not included in the scope of this report. The SWMP Administrator for Design must be contacted should any discharges other than those allowed under Colorado Department of Public Health and Safety (CDPS) General Permit COR400000 be required.

Below is a summary table of the non-stormwater discharges which are commonly allowed under the CDPS Low-Risk Discharge Guidance Documents. The SWMP Administrator for Construction shall update the table below and include a description of the applicable control measure(s) necessary.

Discharge Description	Notes
Uncontaminated springs	No known springs on site
Concrete or Masonry Washout (in ground structures only)	Portable, above ground washouts shall be used.

This does not match what is shown on page 2 of the ESQCP Form. Revise to remove discrepancy.

Clarify if you mean for Phase 1 or both. Because the title page does not state if this SWMP is supposed to be for both Phases or not. You can if you want, you just need to clarify.

Landscape Irrigation Return Flows (LIRFS)	Not anticipated
Emergency Fire Fighting	Not applicable
Discharges to the ground water used to wash vehicles, equipment, and building exterior	Not allowed

III. Potential Pollutants

The SWMP Administrator for Construction must prepare and maintain a list of all the potential pollutants and their location. They are to complete and revise the following table as necessary.

Potential Pollutant	Location
Soil and Sediment	Throughout the site. Temporary control measures shall be installed prior to commencing construction activities
Construction Debris and Waste	Stabilized Staging Area
Sanitary and Biological Materials	Portable toilets
Chemicals and Hazmat	Stabilized Staging Area
Equipment Related Pollutants	Stabilized Staging Area
Offsite flow to be conveyed through the site	North side of site
Vehicle Tracking Control	All access points to the site

IV. Control Measure Implementation

Effective inspection and maintenance procedures are essential to ensure that all erosion and sediment control measures function as intended throughout construction of the project. Regular inspections, proper documentation, and timely corrective actions are necessary for compliance with El Paso County MS4 requirements, CDPS Construction Stormwater Permit COR400000, and all applicable stormwater regulations. This section outlines the minimum requirements for inspection frequency, maintenance obligations, recordkeeping, and reporting procedures.

Inspection Requirements

The SWMP Administrator for Construction is responsible for conducting and documenting all site inspections. Inspections shall be performed only by personnel who have received training in stormwater management, erosion and sediment control, and the requirements of the CDPS General Permit.

The SWMP Administrator shall:

- Evaluate the condition and performance of all temporary and permanent control measures
- Review disturbed areas, material storage locations, staging areas, and access points
- Identify potential pollutant sources and verify proper containment
- Update the SWMP and site maps as conditions change
- Direct the contractor to implement necessary repairs or corrective actions

At a minimum, inspections shall occur at the following intervals:

- Every 14 days during active construction
- Within 24 hours after any significant precipitation event
- Weekly inspections when construction is paused but the site remains unstabilized
- Monthly inspections after all areas have achieved temporary stabilization
- As dictated by site conditions or regulatory requirements

Maintenance and Repair of Control Measures

All erosion and sediment control measures must be maintained in optimal working condition. The comprehensive maintenance requirements are shown on the control measure details. Generalized maintenance requirements include:

- Sediment shall be removed from inlet protection, sediment control log, silt fence, reinforced rock checks, or check dams once accumulation reaches one-third of the device height
- Repair or replacement of damaged or fallen silt fence
- Additional control measures and stabilization where erosion or rutting is observed
- Replacement of failing or washed out temporary stabilization (mulch, tackifier, or seed)
- Sediment removal or additional aggregate on vehicle tracking controls to ensure proper aggregate depth and performance
- Immediate correction of hazardous material storage issues, including leaks, unsecured containers, or inadequate secondary containment.

All maintenance actions must be completed as soon as reasonably possible, typically within 24–72 hours depending on severity.

Structural Control Measures

Structural control measures are temporary or permanent constructed features used to intercept, detain, filter, or stabilize stormwater runoff and sediment before pollutants can leave the site. For this project, structural controls shall be installed prior to or concurrent with applicable land disturbing activities and maintained throughout construction until final stabilization is achieved. The exact type, quantity, and location of each measure shall be adjusted in the field by the SWMP Administrator for Construction to reflect actual drainage patterns, work sequencing, contributing drainage area, and observed site conditions.

Silt Fence

Silt fence shall be used as a perimeter sediment control measure along downgradient edges of disturbed areas where sheet flow can be intercepted before leaving the site. Silt fence is not intended for concentrated flow or high-velocity runoff and shall be installed roughly along contour with the fabric trenched into the ground and posts securely anchored. It is intended to detain shallow runoff long enough to allow suspended sediment to settle.

Erosion Control Logs

Erosion control logs, also referred to as sediment control logs or wattles, shall be used to slow runoff, break up short slope lengths, protect disturbed perimeter edges, and provide localized sediment capture. These controls are appropriate along contours, around stockpiles, adjacent to drainage paths

with low to moderate flow, and as backup protection around sensitive areas. Logs shall be installed in continuous contact with the ground and securely staked to prevent bypass or displacement.

Inlet Protection

Inlet protection shall be installed at existing or newly constructed storm drain inlets that could receive sediment laden runoff from disturbed areas. Acceptable devices may include gravel bag rings, manufactured inserts, block and gravel barriers, or other approved protection appropriate for the inlet type and anticipated flow conditions. These controls are intended to reduce sediment entry into the storm drainage system while avoiding excessive ponding, flooding, or traffic hazards.

Vehicle Tracking Control

Vehicle tracking control, also referred to as a stabilized construction entrance, shall be provided at all primary construction access points to minimize the tracking of sediment onto paved roads and adjacent properties. These controls typically consist of a pad of angular aggregate placed over geotextile or another stabilized surface capable of removing mud from tires and undercarriages. If tracking is observed beyond the entrance, additional stone, maintenance, or supplemental measures shall be implemented immediately. Sediment deposited on paved surfaces shall be removed by dry methods such as sweeping or vacuuming rather than washing to the storm drainage system.

Check Dams / Reinforced Rock Checks

Check dams or reinforced rock checks may be installed within temporary swales, roadside ditches, or other narrow drainageways to reduce runoff velocity, encourage sediment deposition, and limit channel erosion. These measures shall be sized and spaced so that the crest of the downstream dam is at or below the toe of the upstream dam, creating a stepped flow profile.

Stabilized Staging Area

A stabilized staging area shall be designated for construction parking, material storage, fueling support activities, and temporary equipment placement as appropriate. The staging area should be located away from concentrated drainage paths, storm drain inlets, and sensitive areas to reduce the potential for pollutant discharge. Surface stabilization may consist of aggregate, pavement, or other durable treatment that limits rutting and sediment generation. Construction materials, waste receptacles, portable toilets, and chemical storage located within the staging area shall be managed in accordance with the materials handling and spill prevention requirements of this SWMP.

Concrete Washout

A designated concrete washout area shall be provided whenever concrete placement, sawcutting slurry, masonry work, or chute and tool cleaning occurs onsite. Portable, watertight, above ground washout containers are anticipated for this project. Washout facilities shall be clearly marked, located on a stable surface, and positioned away from drainageways, storm inlets, and areas subject to inundation.

Temporary Sediment Basin

A temporary sediment basin may be used where runoff from larger disturbed drainage areas must be detained to promote settling before discharge.

Non-Structural Control Measures

Non-structural control measures are operational, procedural, and planning practices used to reduce pollutant exposure and prevent stormwater contamination without relying solely on constructed devices. These measures shall be implemented throughout the project to support the structural controls identified in this SWMP and shall be adjusted as construction activities, weather conditions, and site conditions change.

Good Housekeeping and Litter Control

The site shall be maintained in an orderly condition at all times to minimize the potential for trash, packaging, scrap material, and other floatable or windblown waste to leave the site. Litter, loose debris, and construction waste shall be collected routinely and placed in covered or otherwise secured containers located away from drainage paths and storm inlets. Dumpsters and waste receptacles shall be emptied before overflow occurs, and lightweight materials shall be covered, bundled, or otherwise secured during storage and transport.

Waste Management

All solid waste, sanitary waste, concrete residues, and other construction byproducts shall be managed to prevent contact with stormwater and off-site transport. Trash containers, portable toilets, and washout facilities shall be located on stable surfaces outside of drainageways and maintained in a condition that prevents leaks, tipping, or overflow. Waste materials shall not be buried, burned, washed into streets or drainage features, or allowed to accumulate outside designated management areas. Waste hauling and disposal shall be performed as necessary to maintain compliance and good site conditions.

Dust Control

Dust-generating activities shall be managed to reduce wind erosion and the off-site transport of fine sediment. Appropriate measures may include water application, surface roughening, temporary cover, reduced tracking, activity phasing, and prompt stabilization of inactive disturbed areas. Dust control measures shall be applied in a manner that avoids runoff, erosion, or sediment-laden discharges, and the use of chemical suppressants shall be evaluated carefully before use to ensure compatibility with permit requirements and site conditions.

Preservation of Existing Vegetation and Minimization of Disturbance

Existing vegetation and stable ground cover that do not require disturbance for construction should be preserved to the maximum extent practicable, particularly near drainage paths and the limits of disturbance. Disturbed areas shall be kept to the minimum necessary for each phase of work, and clearing shall be limited to areas where active construction is planned. Stockpiles, borrow areas, and temporary workspaces shall be managed to minimize unnecessary exposure of bare soil. Maintaining undisturbed vegetated buffers where feasible helps reduce erosion, slow runoff, and filter sediment before it leaves the site.

Construction Sequencing and Phased Stabilization

Construction activities shall be sequenced so that clearing, grading, utility work, paving, and stabilization occur in logical phases that limit the amount of exposed soil at any one time. Initial controls shall be installed before land disturbance begins in each phase, interim controls shall be adjusted as work progresses, and temporary or permanent stabilization shall be applied as soon as practicable when areas become inactive. Phased construction and stabilization reduce the duration of exposure to erosion and improves BMP effectiveness.

Corrective Actions

If inspections identify deficiencies or control measure failures, the SWMP Administrator for Construction shall:

- Document the deficiency in the inspection report.
- Identify the cause and potential impacts to receiving waters
- Direct the contractor to initiate corrective action immediately
- Verify and document completion of repairs
- Update the SWMP, site map, and pollutant source list as applicable

Documentation and Record Keeping

The SWMP Administrator for Construction must maintain all stormwater-related documentation onsite and in a location accessible to regulators during inspection. Required documents include:

- A current, signed copy of the CDPS COR400000 permit
- The most current SWMP, including all amendments and updated site maps
- Inspection reports for a minimum of three years following project completion
- Records of maintenance, repairs, and corrective actions
- Documentation of storm events that triggered additional inspections
- Training records for personnel with stormwater responsibilities
- Copies of correspondence with regulatory agencies, if applicable

V. Materials Handling Plan

Effective materials handling and pollution-prevention practices are essential to protecting stormwater quality throughout the duration of the project. This section outlines the anticipated pollutant sources, proper storage and handling protocols, and the procedures required to prevent, control, and respond to spills. These requirements establish the minimum standards for maintaining a safe, environmentally responsible, and well-managed construction site.

Potential Sources of Pollution, Spill Prevention, and Best Management Practices

The following is a summary of the anticipated pollutant sources that are anticipated or could occur during construction. The SWMP Administrator for Construction shall add additional items to the list as anticipated or discovered.

Sediment

Although soil is naturally occurring, it becomes a pollutant when construction activities disturb the ground and allow loose particles to be mobilized by wind or water. During storm events, exposed soils lacking stabilization can wash into drainageways, ditches, culverts, or directly into State waters. Suspended sediment increases turbidity which reduces light penetration and harms aquatic vegetation and habitat. Additionally, fine soil particles can bind to nutrients (nitrogen, phosphorus), metals, hydrocarbons, bacteria, and other harmful contaminants. To control sediment, construction control measures shall be properly located, installed, and maintained.

Construction Debris and Waste

Although many construction materials are inert when properly stored or contained, they become pollutants when they enter stormwater systems, drainageways, or State Waters. Potential pollution occurs when waste materials are exposed to precipitation, spilled, blown by wind, or left unmanaged on the site. Even non-toxic (plastic, packaging, concrete fragments, scrap lumber) debris can enter storm drains, culverts, ditches, or streams, causing blockage of drainage infrastructure, increased localized flooding, channel disruption, or habitat degradation. Other construction waste materials (such as cementitious materials, paints, solvents, adhesives, treated wood compounds, and bituminous materials) can leach or release harmful substances and can negatively affect aquatic ecosystems. Improperly managed waste disposal areas or dumpsters can allow waste to become mobile during storm events. Dust and lightweight debris can also leave the site via wind, landing in waterways or drainage systems. Readily available, covered, and leak-proof trash containers shall be located away from drainage flow paths and other sensitive areas. These containers must be emptied when full and refuse shall be disposed of properly. All errant trash and debris must be collected and disposed of daily. All construction materials (especially large, lightweight items) should be secured by tarps, ropes, or weights

to prevent them from blowing around the site. Additional trash receptacles should be ordered prior to construction activities that will produce large volumes of trash.

Sanitary and Biological Materials

Human waste is a high risk pollutant because it contains bacteria and organic matter that can contaminate stormwater and pose public health and environmental hazards. Human waste that is generated onsite is also considered a potential pollutant. Portable toilets shall be readily available, in adequate quantity, and adequately serviced to contain all human waste. Portable toilets shall be located on flat, stable ground at least 300 feet from the nearest waterway or storm inlet. All four corners of the facility must be securely staked to prevent tipping. Trailer-mounted facilities are also acceptable, but extreme care should be used to prevent overfilling, tipping, or splashing. A licensed service provider shall be hired to maintain, clean, and empty all human waste facilities. During service, hoses, tanks, and equipment shall be in proper working order and without leaks. All washwater must be captured and removed from the site (not released onto the ground or storm sewer).

Chemicals and Hazmat

Chemicals and hazardous materials—including fuels, oils, solvents, paints, pesticides, adhesives, and cleaning agents—pose a significant pollution risk on construction sites. If spilled, these substances can quickly enter storm drains, contaminate waterways, and sterilize the soil. Effective BMPs focus on storage, handling, containment, and spill prevention.

Proper storage of hazardous materials includes:

- Containers that are clearly labeled according to local, state, and federal regulations
- UV resistant, watertight, durable containers that are designed for the chemical
- Covered or sheltered areas, especially during wet, sunny, or hot weather
- Having and following the Safety Data Sheets (SDS)
- Storing chemicals a minimum of 500' from the nearest waterway or inlet
- Storing chemicals outside of the floodplain
- Ensuring that containers are adequately sealed and located on stable surfaces
- Locating storage areas above surrounding ground (to avoid ponding of stormwater)
- Routine inspections and repairs of storage containers and methods

Proper handling of hazardous materials includes:

- Do not apply chemicals outdoors if rain is expected
- Do not over-apply chemicals

Proper containment of hazardous materials includes:

- Adequately sized secondary containment such as trays, berms, or pans
- Routine inspections and repairs of containment measures

Proper materials handling and spill prevention include:

- Using procedures that minimize spills from tanks, pumps, and hoses
- Turning off equipment while fueling
- Installing overflow controls and leak detection devices where applicable
- Never leaving fueling operations unattended
- Replacing any leaking hoses, valves, swivels, handles, etc.
- Parking equipment away from drainageways and inlets

- Repairing leaking equipment in a timely manner (and placing absorbent mats underneath in the meantime)
- Removing equipment from the field for repairs (especially hydraulic)
- Removing equipment from the field for oil or coolant-related maintenance
- Do not over-grease machinery

Discovered or Unknown Hazards

The nature of construction and excavation often leads to the discovery of unknown hazmat. Transient encampments might leave contaminants including sharps, chemical byproducts from the manufacturing of illicit-substances, human waste, or other unknown hazmat. Unexploded ordnances, unmapped dumping locations, mysterious tanks, and other left-behind hazmat could also be encountered. Any discovery of hazmat shall be reported to the SWMP Administrator for Construction immediately.

Spill Response Plan

This Spill Response Plan outlines the required procedures for identifying, reporting, containing, cleaning, and documenting any spill that occurs on the construction site, ensuring protection of personnel, public health, and stormwater quality in accordance with project requirements and regulatory obligations. All spills must be reported immediately to the SWMP Administrator for Construction and any proper authorities as required. **Workers must not place themselves in danger. Workers should never attempt to clean up materials or situations for which they are not trained or qualified.**

Sediment

1. Stop the Source of the Release
 - Immediately identify where the control measure failure is occurring and halt the discharge of sediment-laden runoff.
2. Clean Up and Recover Escaped Sediment
 - Use shoveling, sweeping, or vacuuming to remove sediment
 - No flushing or washdown should occur, as this can convey sediment into the storm system
3. Repair or Replace the Failed Control Measure Immediately
 - Additional control measures may be necessary to prevent future occurrences
4. Inspect Upstream Areas, Downstream Areas, and Adjacent Areas for:
 - Disturbed soils contributing excess sediment
 - Excessive sediment accumulation at downstream storm inlets, ditches, and waterways
 - Adjacent control measures that may have been compromised
5. Dispose of Sediment and Contaminated Materials Properly
6. Document the Incident and Update the SWMP
 - Record in incident on the inspection report (included in the Appendix):
 - Nature and cause of the control measure failure
 - The extent of sediment release
 - Cleanup measures taken
 - Repairs and corrective actions
 - Any changes needed to prevent recurrence
 - Update the SWMP and site map to reflect improved practices
7. Implement Preventive Actions to Avoid Future Failures
 - Increase inspection frequency during wet conditions

- Reinforce or use stronger control measures at high-flow areas
- Stabilize slopes or exposed soils that repeatedly overload controls
- Improve drainage paths to reduce control measure stress

Construction Debris and Waste

1. Stop the Source of the Release
 - Immediately identify where trash or debris is escaping the designated containment area
 - Prevent additional debris displaced by wind, equipment, or runoff
 - Cease activities contributing to the release until controls are restored
2. Clean Up Escaped Trash and Debris
 - Remove debris using dry cleanup methods (sweeping, shoveling, hand collection)
 - Remove any debris that has accumulated in downwind controls or drainage infrastructure
3. Repair or Restore Trash Receptacles Including:
 - Torn tarps or covers
 - Damaged dumpsters or loose lids
 - Repair leaky or non-watertight dumpsters
4. Document the Incident and Corrective Actions
 - The type and quantity of debris released
 - The cause of the release
 - Cleanup methods used
 - Repairs completed
 - Follow-up actions to prevent recurrence
 - Update the SWMP and site map if any BMP changes are required
5. Implement Preventive Measures
 - Increase awareness during windy weather or before forecasted storms
 - Ensure dumpsters stay covered and are checked for leaks upon delivery
 - Secure loose materials and packaging
 - Improve site housekeeping practices

Sanitary and Biological Materials

1. Identify and Stop the Source of the Spill
 - Locate the source of the leak or overflow
 - Stabilize or upright tipped units and stop any active discharge
 - Shutoff equipment, close shutoff valves, blocks flow paths, isolate the affected area, etc.
2. Protect Storm Drains and Sensitive Areas
 - Deploy berms, sandbags, wattles, or containment mats to prevent waste from entering storm drains, gutters, or drainageways.
3. Contain the Spill
 - Place containment trays or mats beneath leaking units.
 - Build temporary berms or lay containment wattles around the affected area to prevent migration
 - Secure the area to limit access and protect workers from exposure to biohazards
4. Clean Up the Waste Safely

- Use absorbent materials (soil, absorbent pads, spill granules) to contain and collect liquid waste
 - Remove solids using shovels or appropriate tools and place in leakproof containers
 - Avoid flushing or washing—all wastewater must be fully contained and removed
5. Pump and Remove Wastewater Properly
 - All captured waste and wastewater must be pumped into a service vehicle and taken to an approved sanitary disposal location
 - Wastewater must not enter streets, gutters, or storm drains.
 6. Decontaminate the Area
 7. Report the Spill
 - Report significant spills, especially those involving storm drain impacts or large releases, to the appropriate local authority or environmental division
 - Follow local emergency contact requirements for spills involving stormwater contamination
 8. Document the Incident Including:
 - Nature and cause of the spill
 - Location and estimated volume
 - Cleanup procedures used
 - Waste disposal method and destination
 - Repairs completed
 - Preventive measures to avoid recurrence
 9. Implement Preventive Measures
 - Inspect portable toilets regularly for leaks, stability, and damage.
 - Ensure adequate service frequency to prevent overflows.
 - Place units away from storm drains, on flat, stable ground, and secure against tipping or wind.

Chemicals and Hazmat

1. Identify and Stop the Source of the Spill
 - Immediately determine the source of the leak and what chemical is being released. Do not place yourself in danger! Always refer to the SDS and defer to properly trained professionals
 - Stop or isolate the spill at its origin using safe methods (e.g., closing valves, shutting off pumps)
2. Contain the Spill
 - Deploy spill-containment materials such as berms, absorbent socks, mats, or sandbags to build temporary containment around the spill
 - For liquids, use absorbents, pads, granules, or spill pillows suitable for the chemical type
 - Prevent chemicals from entering storm drains or drainageways
3. Clean Up the Spill Safely
 - Using proper PPE, collect all contaminated absorbents, materials, and debris
 - Cleanup must follow procedures outlined in the site's spill response plan and relevant hazardous materials regulations
4. Dispose of Contaminated Materials Properly

- Place all contaminated absorbents, PPE, soil, materials, and damaged containers in sealed, labeled, watertight containers.
 - Dispose of hazardous waste according to SDS instructions and federal/state hazardous-materials regulations.
 - Chemical waste must not be placed in dumpsters, storm drains, or sanitary sewers
5. Decontaminate the Area
 6. Report the Spill to:
 - The SWMP Administrator for Construction
 - The Project Safety Officer
 - Any local/state authorities required. Spills that reach waterways must always be reported.
 - Large spills or spills involving hazardous vapors, unknown chemicals, or injuries must also be reported to emergency services.
 7. Document the Incident
 - Type and quantity of chemical released
 - Cause of the spill
 - Affected areas and pathways
 - Cleanup and containment measures used
 - Disposal methods and locations
 - Follow-up actions
 8. Implement Preventive Measures
 - Inspect material storage areas, fueling zones, and equipment routinely to identify leak risks before spills occur

VI. Temporary, final, and long-term Stabilization Plan

Effective stabilization is essential to minimizing erosion and protecting water quality. Stabilization measures shall be implemented as soon as practicable following land-disturbing activities and maintained until permanent cover is established.

Temporary Seeding and Mulching

Temporary seeding can be used to stabilize disturbed areas that will be inactive for an extended period. Temporary stabilization shall be applied to any disturbed area where construction activities will cease for 14 days or longer. Temporary measures are intended to reduce the potential for wind and water erosion until construction resumes. Temporary stabilization includes:

- Mulching with certified weed-free straw at 1.5–2.0 tons/acre.
- Application of a hydraulic tackifier at manufacturer-recommended rates
- Application of a temporary seed mix

The temporary seed mix shall follow the Mile High Flood District's (MHFD) or other approved blend. The MHFD's seed mix is summarized below:

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species ^a (Common name)	Growth Season ^b	Pounds of Pure Live Seed (PLS)/acre ^c	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Sudangrass	Warm	5-10	½ - ¾
7. Sorghum	Warm	5-10	½ - ¾
8. Winter wheat	Cool	20-35	1 - 2
9. Winter barley	Cool	20-35	1 - 2
10. Winter rye	Cool	20-35	1 - 2
11. Triticale	Cool	25-40	1 - 2
^a Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch. ^b See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months. ^c Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.			

Permanent Seeding and Mulching

Timing

Native perennial grasses along the Front Range have the highest probability of success when planted during cool periods so they can vernalize without germinating too early. Permanent seeding should be performed during appropriate seeding windows (typically September 1st to May 15th). Seeding outside these windows will require approval from the Erosion Control Inspector.

Soil Preparation and Soil Amendments

Any salvaged topsoil shall be redistributed uniformly over all seeded areas. Visually different soil (such as soil from a wetland or other specialized area) should be placed in its original location. Soil shall be scarified or ripped to a depth of 4-6 inches to relieve compaction and be free of rocks greater than 4 inches. Soil should be tested to determine requirements for fertilizing and conditioning. For the most reliable germination and revegetation, additional organic matter (3 CY per 1,000 SF) should be applied to topsoil that is visibly devoid of organic matter. After conditioning, the seedbed shall be prepared to a firm but friable surface with clods less than 2 inches.

Seed Application Methods

Drill seeding is the preferred installation method and shall be utilized in all possible areas. Seeds shall be applied using a mechanical drill to a depth of ¼-¾". Rows shall have a maximum of 6" spacing. Mulch should be mechanically crimped to a depth of 4 and applied at a rate of 2.0 tons/acre.

Broadcast seeding should only be used in areas where drill seeding is not possible (narrow corridor, steep slopes, environmentally sensitive areas). Broadcasted areas shall receive twice the rate of pounds of live seed (PLS) per acre. Broadcast seed then shall be lightly harrowed and gently compacted.

For optimal germination, seeded areas should be kept in a damp condition for at least 14 days. Seeded areas shall be inspected monthly until permanent stabilization is achieved. Areas that experience erosion or poor germination shall be reseeded.

Permanent Seed Mixes

Seed blends should be adjusted to meet site-specific conditions, soil, and land use type. All seed mixes shall be free from noxious weed seeds including Russian or Canadian thistle, Coarse Fescue, European Bind Weed, Johnson Grass, Knap Weed, and Leafy Spurge. Seeds which have become wet, moldy, or otherwise damaged will not be acceptable. Seed mixes shall be approved by the Erosion Control Inspector.

Final Stabilization

The SWMP permit shall remain open, and surety (bond) held until final stabilization is achieved. Final stabilization in seeded areas is defined as:

- A uniform vegetative cover with an individual plant density of at least 70% pre-disturbance levels and no less than three plants per square foot with a minimum height of three inches.
- No bare areas larger than four square feet
- Free of significant erosion
- Free from infestation of noxious weeds

Permanent Control Measures

A proposed full spectrum detention pond is located on the eastern side of the site. The pond is designed to slowly release the water quality capture volume (WQCV) slowly over the course of 40 hours. It is also designed to attenuate the flow from larger storm events, and the discharge is designed to mimic the pre-development flow rates.

The proposed full-spectrum pond will have several benefits for the surrounding natural resources. First, hydraulic attenuation of peak flow will reduce erosion in downstream portions of the watershed. Second, detaining and releasing the WQCV over a period of 40 hours increases infiltration and can support a localized micro-habitat for different plants, pollinators, amphibians, and invertebrates.

VII. Conclusion

This Stormwater Management Plan (SWMP) has been prepared to support construction of the Meadow Lake Airport apron reconstruction project and to ensure compliance with applicable El Paso County requirements, the Colorado Discharge Permit System (CDPS) Construction General Permit COR400000, and other applicable local, state, and federal regulations. The proposed stormwater, erosion, sediment control, and pollution prevention measures have been selected based on site-specific conditions, anticipated construction activities, soil characteristics, drainage patterns, and nearby environmental features described in this report. When properly implemented and maintained, these measures are expected to effectively minimize the discharge of pollutants in stormwater runoff and protect downstream receiving waters throughout all phases of construction.

VIII. References

- National Oceanic and Atmospheric Administration (NOAA), National Weather Service. *Atlas 14 Point Precipitation Frequency Estimates* (Precipitation Frequency Data Server). Hydrometeorological Design Studies Center.
- Mile High Flood District (MHFD). *Urban Storm Drainage Criteria Manual (USDCM), Volumes 1–3*. Denver, Colorado.
- Federal Emergency Management Agency (FEMA). *Flood Insurance Rate Map (FIRM)*, El Paso County, Colorado and Incorporated Areas, Panel 08041C0554G, effective December 7, 2018.
- El Paso County Department of Public Works. *Engineering Criteria Manual (ECM)*. El Paso County, Colorado.
- El Paso County Department of Public Works. *Drainage Criteria Manual (DCM)*. El Paso County, Colorado.
- Federal Aviation Administration (FAA). *Advisory Circular (AC) 150/5320-5, Surface Drainage Design*. Washington, DC.
- Federal Aviation Administration (FAA). *Advisory Circular (AC) 150/5300-13, Airport Design*. Washington, DC.
- Natural Resources Conservation Service (NRCS). *Web Soil Survey*. United States Department of Agriculture.
- Colorado Department of Public Health and Environment (CDPHE). *Low Risk Discharge Guidance of Uncontaminated Groundwater to Land*. Water Quality Control Division, Denver, Colorado.
- Colorado Department of Public Health and Environment (CDPHE). *Colorado Discharge Permit System (CDPS) Construction Stormwater General Permit No. COR400000*. Water Quality Control Division, Denver, Colorado.

Appendix A: GEC Plan

MEADOW LAKE AIRPORT

GEC PLANS FOR

TRANSIENT APRON RECONSTRUCTION

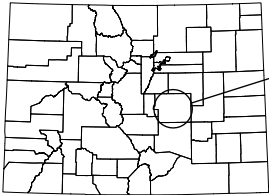
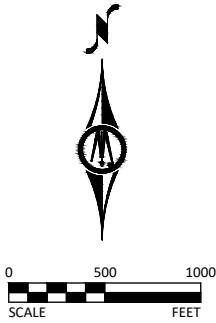
AIP 3-08-0063-030-2026
MEADOW LAKE AIRPORT ASSOCIATION
JUNE 2026

PROJECT LOCATION

EL PASO COUNTY:
COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/ OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/ OR ACCURACY OF THIS DOCUMENT. FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED. IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

COUNTY ENGINEER/ECM ADMINISTRATOR _____ DATE _____

MAP OF THE
MEADOW LAKE AIRPORT
EL PASO COUNTY, CO



CITY: PEYTON
COUNTY: EL PASO



EROSION CONTROL SHEET INDEX

SHEET NUMBER	SHEET TITLE
C2.00	GEC TITLE SHEET
C2.01	EROSION CONTROL PLAN - PRE-CONSTRUCTION
C2.02	EROSION CONTROL PLAN - DURING CONSTRUCTION
C2.03	EROSION CONTROL PLAN - POST-CONSTRUCTION
C2.04	EROSION CONTROL DETAILS
C2.05	EROSION CONTROL DETAILS
C2.06	EROSION CONTROL DETAILS
C2.07	EROSION CONTROL DETAILS

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

06/18/2026

ENGINEER OF RECORD SIGNATURE

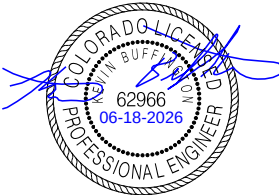
DATE

OWNER'S STATEMENT (FOR GEC PLAN WITHIN CONSTRUCTION DRAWING SET):
I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

OWNER SIGNATURE _____

DATE _____

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF COLORADO.



*DISCLAIMER: THIS PLAN SET IS INTENDED TO BE PRINTED IN COLOR. IF USER DOES NOT PRINT IN COLOR THEY ASSUME ALL ASSOCIATED RISKS.



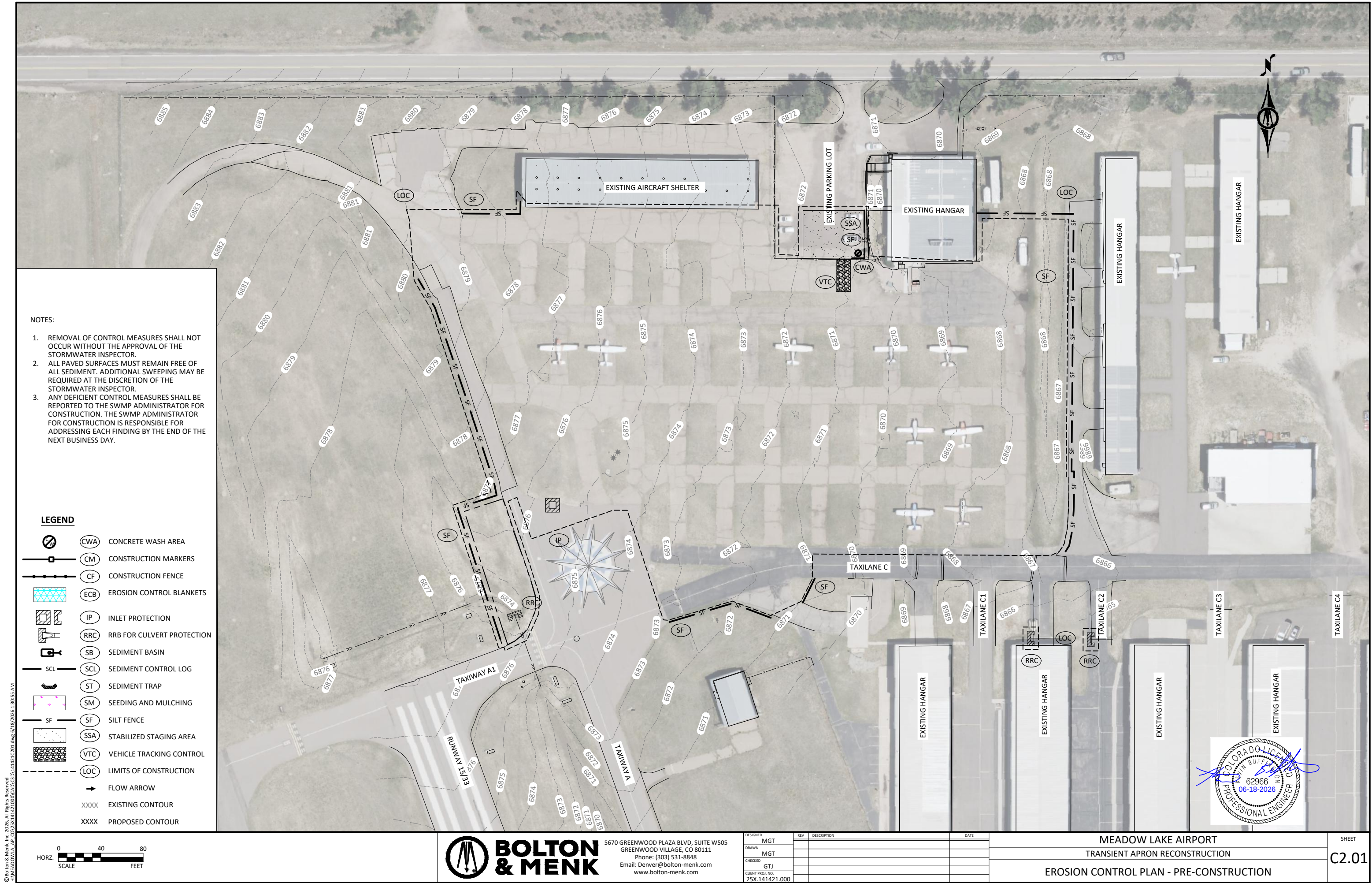
5670 GREENWOOD PLAZA BLVD, SUITE W505
GREENWOOD VILLAGE, CO 80111
Phone: (303) 531-8848
Email: Denver@bolton-menk.com
www.bolton-menk.com

DESIGNED	REV	DESCRIPTION	DATE
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GTJ			
CLIENT PROJ. NO.			
25X.141421.000			

MEADOW LAKE AIRPORT
TRANSIENT APRON RECONSTRUCTION
EROSION CONTROL TITLE SHEET

SHEET

C2.00



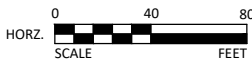
NOTES:

1. REMOVAL OF CONTROL MEASURES SHALL NOT OCCUR WITHOUT THE APPROVAL OF THE STORMWATER INSPECTOR.
2. ALL PAVED SURFACES MUST REMAIN FREE OF ALL SEDIMENT. ADDITIONAL SWEEPING MAY BE REQUIRED AT THE DISCRETION OF THE STORMWATER INSPECTOR.
3. ANY DEFICIENT CONTROL MEASURES SHALL BE REPORTED TO THE SWMP ADMINISTRATOR FOR CONSTRUCTION. THE SWMP ADMINISTRATOR FOR CONSTRUCTION IS RESPONSIBLE FOR ADDRESSING EACH FINDING BY THE END OF THE NEXT BUSINESS DAY.

LEGEND

- | | | |
|------|-------|----------------------------|
| | (CWA) | CONCRETE WASH AREA |
| | (CM) | CONSTRUCTION MARKERS |
| | (CF) | CONSTRUCTION FENCE |
| | (ECB) | EROSION CONTROL BLANKETS |
| | (IP) | INLET PROTECTION |
| | (RRB) | RRB FOR CULVERT PROTECTION |
| | (SB) | SEDIMENT BASIN |
| | (SCL) | SEDIMENT CONTROL LOG |
| | (ST) | SEDIMENT TRAP |
| | (SM) | SEEDING AND MULCHING |
| | (SF) | SILT FENCE |
| | (SSA) | STABILIZED STAGING AREA |
| | (VTC) | VEHICLE TRACKING CONTROL |
| | (LOC) | LIMITS OF CONSTRUCTION |
| | | FLOW ARROW |
| XXXX | | EXISTING CONTOUR |
| XXXX | | PROPOSED CONTOUR |

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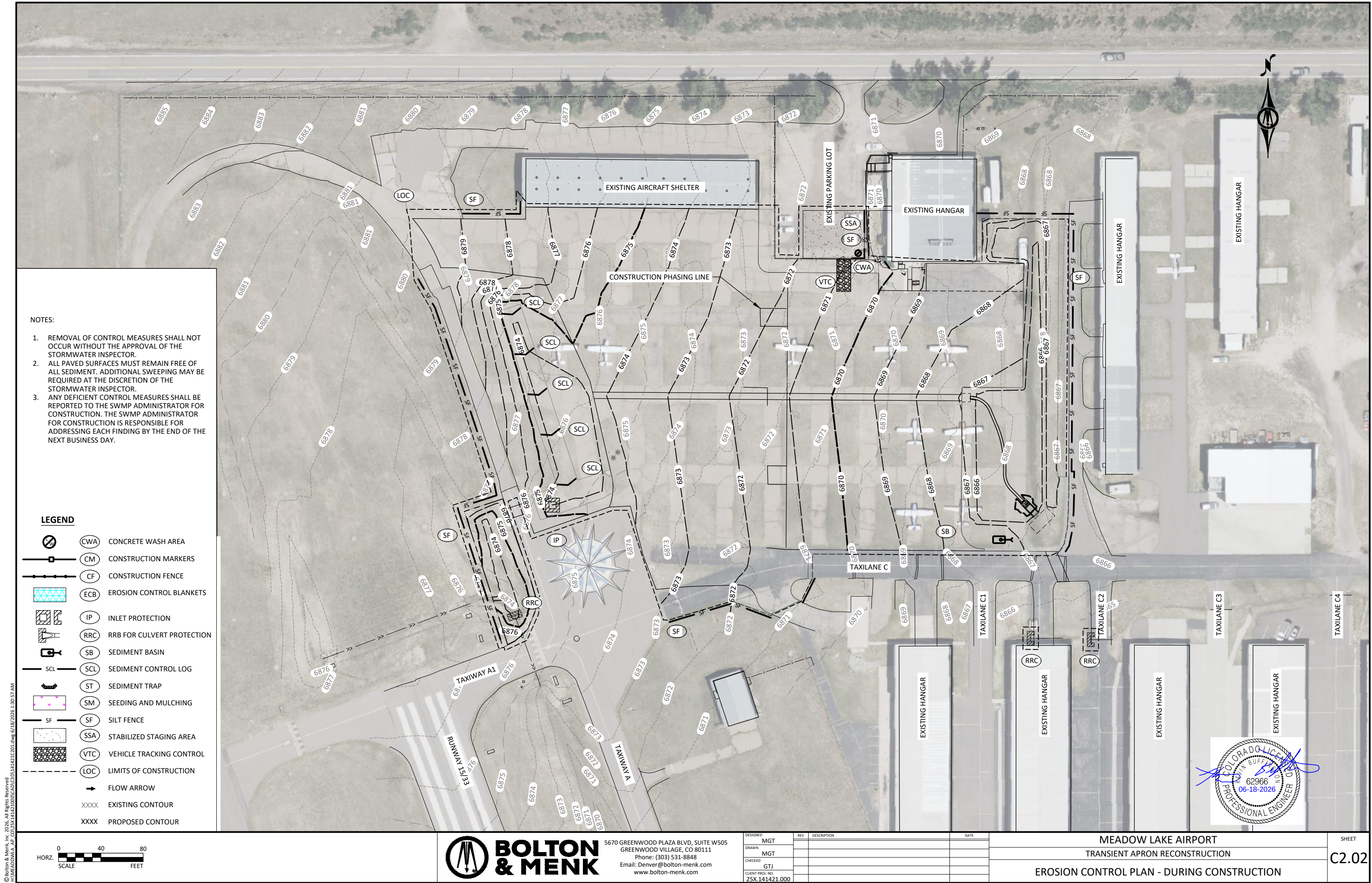
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MEADOW LAKE AIRPORT
TRANSIENT APRON RECONSTRUCTION
EROSION CONTROL PLAN - PRE-CONSTRUCTION



SHEET
C2.01



NOTES:

1. REMOVAL OF CONTROL MEASURES SHALL NOT OCCUR WITHOUT THE APPROVAL OF THE STORMWATER INSPECTOR.
2. ALL PAVED SURFACES MUST REMAIN FREE OF ALL SEDIMENT. ADDITIONAL SWEEPING MAY BE REQUIRED AT THE DISCRETION OF THE STORMWATER INSPECTOR.
3. ANY DEFICIENT CONTROL MEASURES SHALL BE REPORTED TO THE SWMP ADMINISTRATOR FOR CONSTRUCTION. THE SWMP ADMINISTRATOR FOR CONSTRUCTION IS RESPONSIBLE FOR ADDRESSING EACH FINDING BY THE END OF THE NEXT BUSINESS DAY.

LEGEND

- | | | |
|--|-------|----------------------------|
| | (CWA) | CONCRETE WASH AREA |
| | (CM) | CONSTRUCTION MARKERS |
| | (CF) | CONSTRUCTION FENCE |
| | (ECB) | EROSION CONTROL BLANKETS |
| | (IP) | INLET PROTECTION |
| | (RRB) | RRB FOR CULVERT PROTECTION |
| | (SB) | SEDIMENT BASIN |
| | (SCL) | SEDIMENT CONTROL LOG |
| | (ST) | SEDIMENT TRAP |
| | (SM) | SEEDING AND MULCHING |
| | (SF) | SILT FENCE |
| | (SSA) | STABILIZED STAGING AREA |
| | (VTC) | VEHICLE TRACKING CONTROL |
| | (LOC) | LIMITS OF CONSTRUCTION |
| | | FLOW ARROW |
| | XXXX | EXISTING CONTOUR |
| | XXXX | PROPOSED CONTOUR |



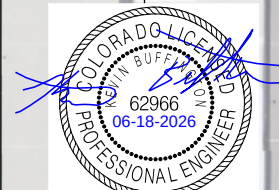
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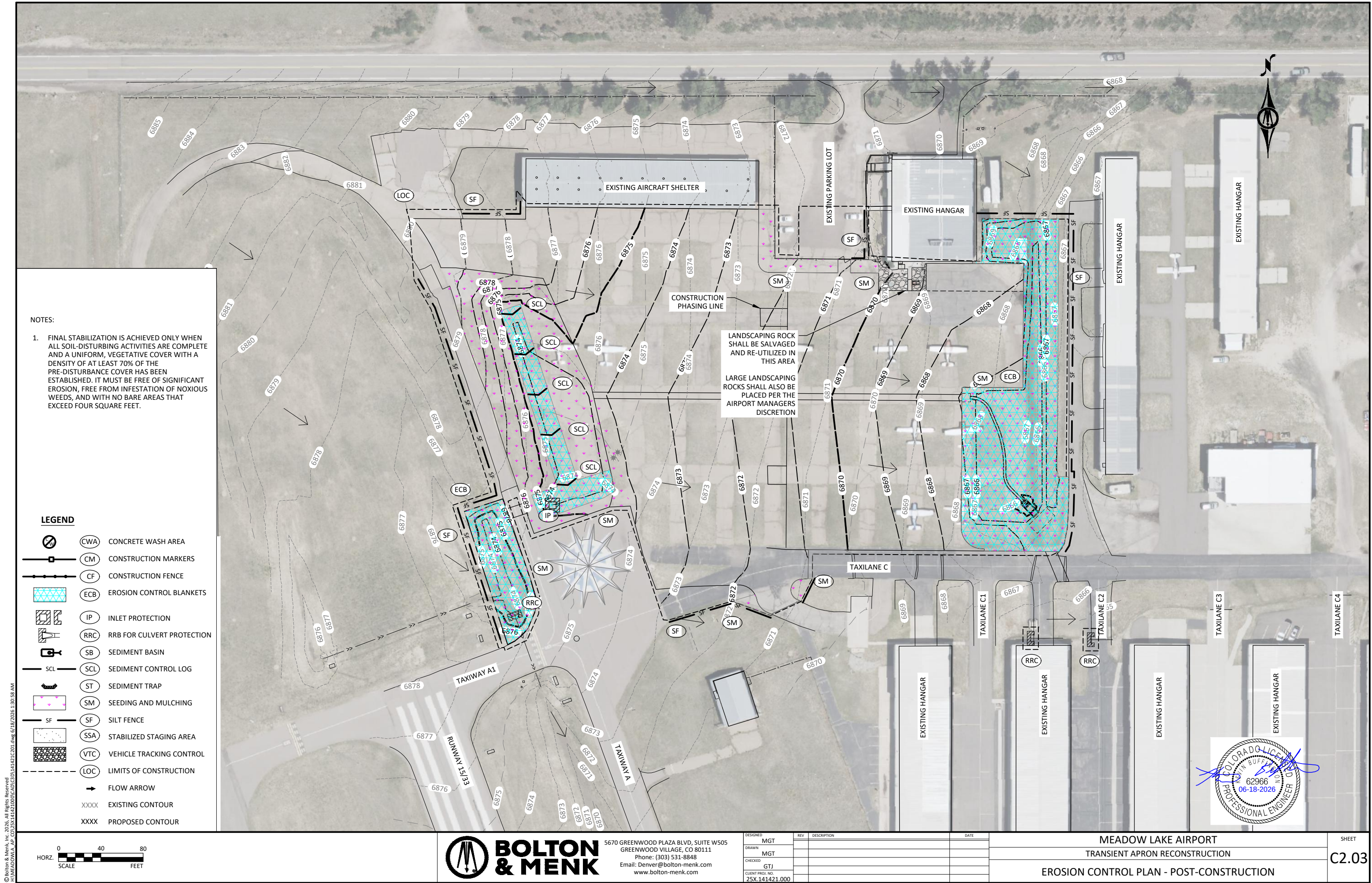
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MEADOW LAKE AIRPORT
TRANSIENT APRON RECONSTRUCTION
EROSION CONTROL PLAN - DURING CONSTRUCTION

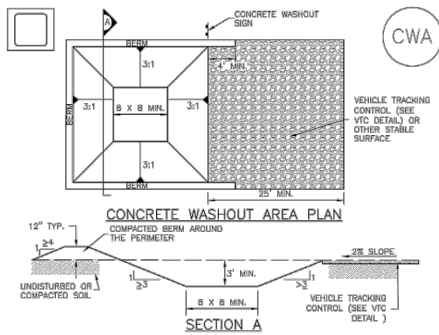
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Concrete Washout Area (CWA) MM-1



CWA-1. CONCRETE WASHOUT AREA

- CWA INSTALLATION NOTES**
1. SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
 2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFERABLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
 3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
 4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
 5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
 6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
 7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
 8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

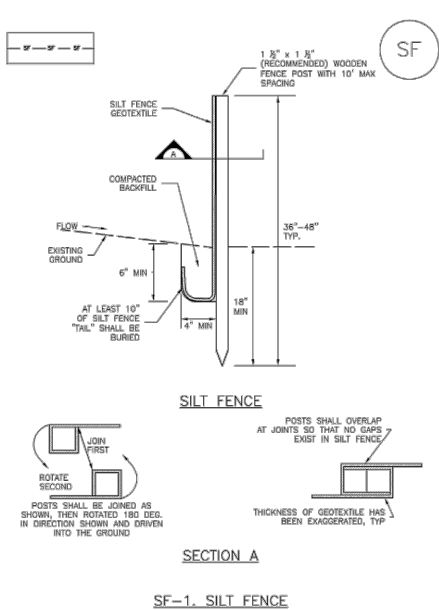
November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CWA-3

Concrete Washout Area (CWA) MM-1

- CWA MAINTENANCE NOTES**
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
 5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
 6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
 7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

CWA-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Silt Fence (SF) SC-1



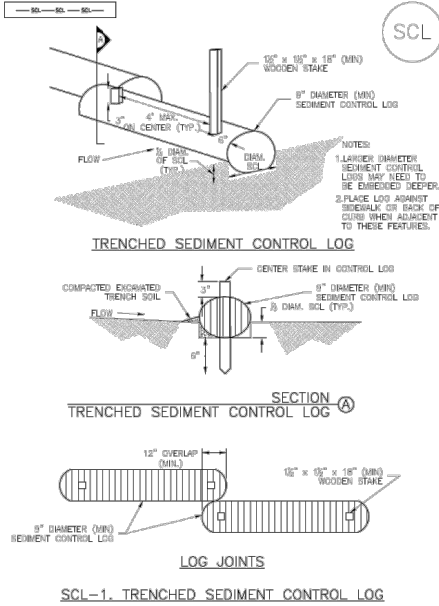
SF-1. SILT FENCE

Silt Fence (SF) SC-1

- SILT FENCE INSTALLATION NOTES**
1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-3 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
 2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
 3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
 4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
 5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
 6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
 7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- SILT FENCE MAINTENANCE NOTES**
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
 5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
 6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
 7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEED, AND MULCH OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SF-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

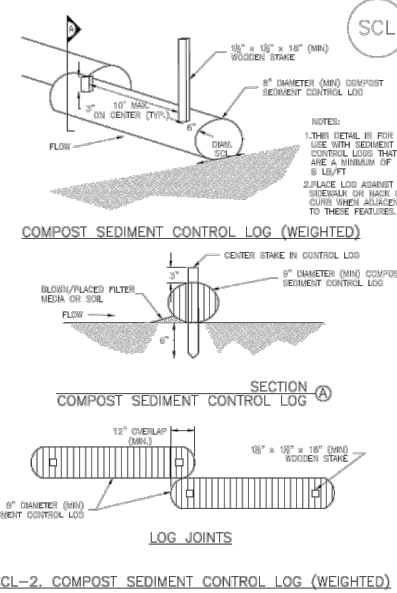
Sediment Control Log (SCL) SC-2



SCL-1. TRENCHED SEDIMENT CONTROL LOG

November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-3

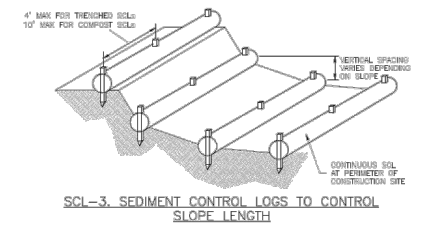
Sediment Control Log (SCL) SC-2



SCL-2. COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

SCL-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2015

Sediment Control Log (SCL) SC-2



SCL-3. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-5

Sediment Control Log (SCL) SC-2

- SEDIMENT CONTROL LOG INSTALLATION NOTES**
1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
 2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADE/REPAIR LAND-DISTURBING ACTIVITIES.
 3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSDOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES, AND OBVIOUS WEAR.
 4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SNALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
 5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.
 6. THE UP-UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL. THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.
 7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY STAKING, STAKES SHALL BE PLACED ON 4' CENTERS AND ENBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.
- SEDIMENT CONTROL LOG MAINTENANCE NOTES**
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/3 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
 5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEED, SEED, AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SCL-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual V



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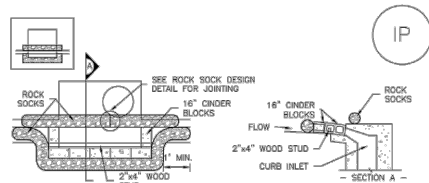
MEADOW LAKE AIRPORT
TRANSIENT APRON RECONSTRUCTION
EROSION CONTROL DETAILS

SHEET

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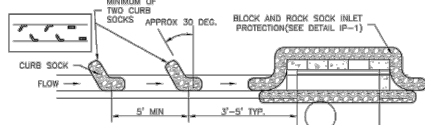
SC-6 Inlet Protection (IP)



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

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

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



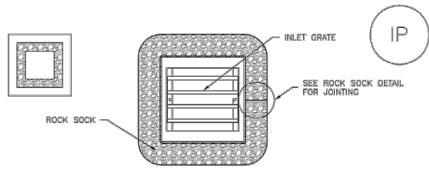
IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

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

IP-4 Urban Drainage and Flood Control District
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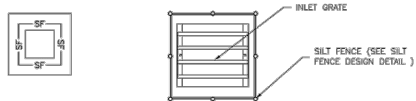
Inlet Protection (IP) SC-6



IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

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



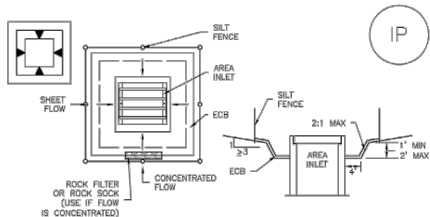
IP-4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

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

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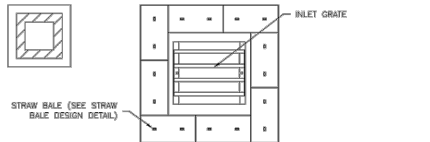
SC-6 Inlet Protection (IP)



IP-5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

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



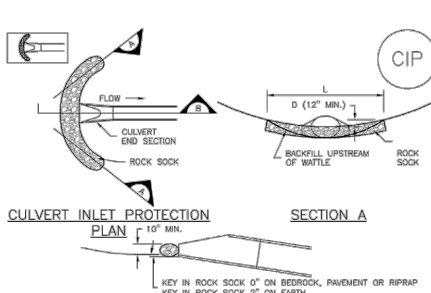
IP-6. STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

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

IP-6 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 August 2013

Inlet Protection (IP) SC-6



CIP-1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

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

CULVERT INLET PROTECTION MAINTENANCE NOTES

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

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

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

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SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF INLET PROTECTION.
-TYPE OF INLET PROTECTION (IP-1, IP-2, IP-3, IP-4, IP-5, IP-6)
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

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

INLET PROTECTION MAINTENANCE NOTES

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

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

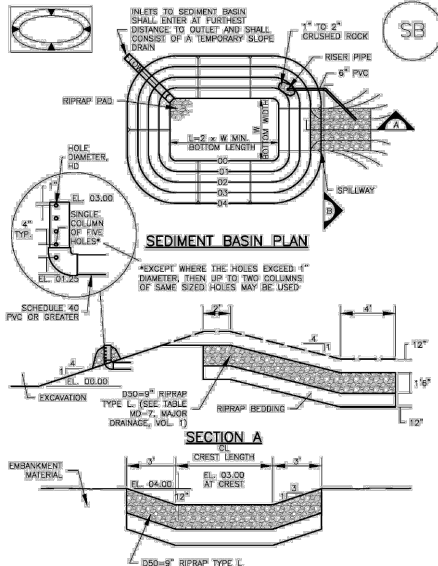
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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

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

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Urban Storm Drainage Criteria Manual Volume 3 August 2013

Sediment Basin (SB) SC-7



August 2013 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 SB-5

SC-7 Sediment Basin (SB)

TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN				
Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (HD), (in)	
1	12 $\frac{1}{2}$	2	$\frac{9}{16}$	
2	21	3	$\frac{1}{4}$	
3	29	6	$\frac{3}{8}$	
4	33 $\frac{1}{2}$	9	$\frac{1}{2}$	
5	38 $\frac{1}{2}$	9	$\frac{5}{8}$	
6	43	9	$\frac{3}{4}$	
7	47 $\frac{1}{2}$	11	$\frac{7}{8}$	
8	51	12	$\frac{1}{2}$	
9	55 $\frac{1}{2}$	13	$\frac{1}{2}$	
10	59 $\frac{1}{2}$	15	$\frac{1}{2}$	
11	61	16	$\frac{3}{4}$	
12	64	18	$\frac{1}{2}$	
13	67 $\frac{1}{2}$	19	$\frac{1}{2}$	
14	70 $\frac{1}{2}$	21	$\frac{1}{2}$	
15	73 $\frac{1}{2}$	22	$\frac{1}{2}$	

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF SEDIMENT BASIN.
-TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
-FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD.
-FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISSER HEIGHT H, NUMBER OF COLLARS N, HOLE DIAMETER HD AND PIPE DIAMETER D.
2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON OR BURNS AS A STORMWATER CONTROL.
4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
6. PIPE SCH 40 OR GREATER BE USED.
7. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

SB-6 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 August 2013

Sediment Basin (SB) SC-7

SEDIMENT BASIN MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).
5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.
6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)

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

August 2013 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual V



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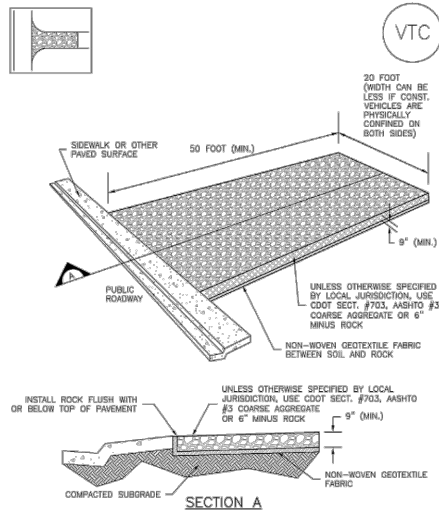
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MEADOW LAKE AIRPORT
TRANSIENT APRON RECONSTRUCTION
EROSION CONTROL DETAILS

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Vehicle Tracking Control (VTC) SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District VTC-3
Urban Storm Drainage Criteria Manual Volume 3

Temporary and Permanent Seeding (TS/PS) EC-2

Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-3 for appropriate seeding dates.

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species* (Common name)	Growth Season*	Pounds of Pure Live Seed (PLS)/acre [†]	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Sudangrass	Warm	5 - 10	½ - ¾
7. Sorghum	Warm	5 - 10	½ - ¾
8. Winter wheat	Cool	20 - 35	1 - 2
9. Winter barley	Cool	20 - 35	1 - 2
10. Winter rye	Cool	20 - 35	1 - 2
11. Triticale	Cool	25 - 40	1 - 2

* Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.

Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.

[†] See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

[‡] Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

June 2012 Urban Drainage and Flood Control District TS/PS-3
Urban Storm Drainage Criteria Manual Volume 3

SM-4 Vehicle Tracking Control (VTC)

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

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

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

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

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

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

VTC-6 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

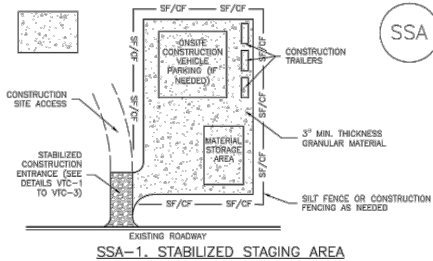
EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses

Common [‡] Name	Botanical Name	Growth Season [‡]	Growth Form	Seeds/ Pound	Pounds of PLS/acre
Alkalali Soil Seed Mix					
Alkali sacaton	<i>Sporobolus airoides</i>	Cool	Bunch	1,750,000	0.25
Basin wildrye	<i>Elymus cinereus</i>	Cool	Bunch	165,000	2.5
Sodier streambank wheatgrass	<i>Agropyron riparium 'Sodier'</i>	Cool	Sod	170,000	2.5
Jose tall wheatgrass	<i>Agropyron elongatum 'Jose'</i>	Cool	Bunch	79,000	7.0
Ariha western wheatgrass	<i>Agropyron smithii 'Ariha'</i>	Cool	Sod	110,000	5.5
Total					17.75
Fertile Loamy Soil Seed Mix					
Ephrium crested wheatgrass	<i>Agropyron cristatum 'Ephrium'</i>	Cool	Sod	175,000	2.0
Dural hard fescue	<i>Festuca ovina 'duraculula'</i>	Cool	Bunch	565,000	1.0
Lincoln smooth brome	<i>Bromus inermis layns 'Lincoln'</i>	Cool	Sod	130,000	3.0
Sodier streambank wheatgrass	<i>Agropyron riparium 'Sodier'</i>	Cool	Sod	170,000	2.5
Ariha western wheatgrass	<i>Agropyron smithii 'Ariha'</i>	Cool	Sod	110,000	7.0
Total					18.5
High Water Table Soil Seed Mix					
Meadow festal	<i>Alsopocurus pratensis</i>	Cool	Sod	900,000	0.5
Redtop	<i>Agrostis alba</i>	Warm	Open sod	5,000,000	0.25
Reed canarygrass	<i>Phalaris arundinacea</i>	Cool	Sod	68,000	0.5
Lincoln smooth brome	<i>Bromus inermis layns 'Lincoln'</i>	Cool	Sod	130,000	3.0
Pathfinder switchgrass	<i>Panicum virgatum 'Pathfinder'</i>	Warm	Sod	389,000	1.0
Alkar tall wheatgrass	<i>Agropyron elongatum 'Alkar'</i>	Cool	Bunch	79,000	5.5
Total					10.75
Transition Turf Seed Mix[‡]					
Rubens Canadian bluegrass	<i>Poa compressa 'Rubens'</i>	Cool	Sod	3,500,000	0.5
Dural hard fescue	<i>Festuca ovina 'duraculula'</i>	Cool	Bunch	565,000	1.0
Citation perennial ryegrass	<i>Lolium perenne 'Citation'</i>	Cool	Sod	247,000	3.0
Lincoln smooth brome	<i>Bromus inermis layns 'Lincoln'</i>	Cool	Sod	130,000	3.0
Total					7.5

TS/PS-4 Urban Drainage and Flood Control District June 2012
Urban Storm Drainage Criteria Manual Volume 3

Stabilized Staging Area (SSA) SM-6



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

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

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

November 2010 Urban Drainage and Flood Control District SSA-3
Urban Storm Drainage Criteria Manual Volume 3

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
 6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USPED STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

SSA-4 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-3. Seeding Dates for Annual and Perennial Grasses

Seeding Dates	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
	Warm	Cool	Warm	Cool
January 1-March 15			✓	✓
March 16-April 30	4	1,2,3	✓	✓
May 1-May 15	4		✓	
May 16-June 30	4,5,6,7			
July 1-July 15	5,6,7			
July 16-August 31				
September 1-September 30		8,9,10,11		
October 1-December 31			✓	✓

Mulch

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the Mulching BMP Fact Sheet for additional guidance.

Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary.

Protect seeded areas from construction equipment and vehicle access.

TS/PS-6 Urban Drainage and Flood Control Dist
Urban Storm Drainage Criteria Manual V



5670 GREENWOOD PLAZA BLVD, SUITE W505
GREENWOOD VILLAGE, CO 80111
Phone: (303) 531-8848
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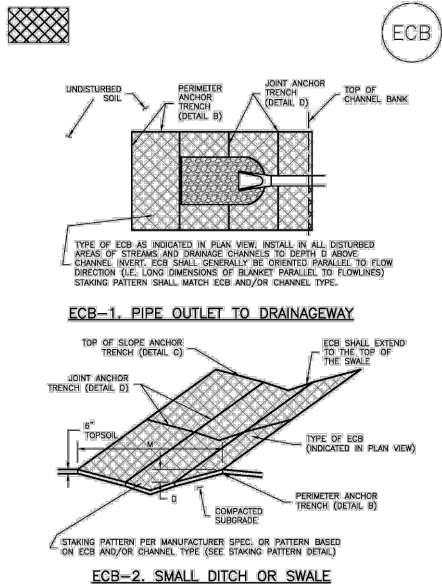
DESIGNED	MGT	REV	DESCRIPTION	DATE
DRAWN	MGT			
CHECKED	GTJ			
CLIENT PROJ. NO.	25X.141421.000			

MEADOW LAKE AIRPORT
TRANSIENT APRON RECONSTRUCTION
EROSION CONTROL DETAILS

SHEET

C2.06

Rolled Erosion Control Products (RECP) EC-6



December 2022 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RECP-5

EC-6 Rolled Erosion Control Products (RECP)

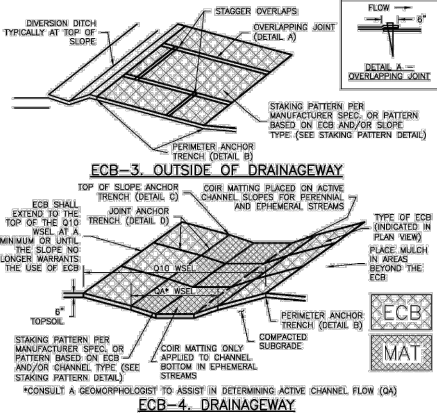
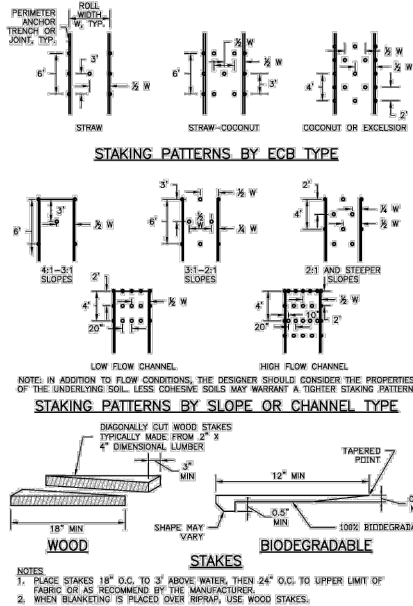


TABLE ECB-1, ECB MATERIAL SPECIFICATIONS				
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCLOSURE CONTENT	RECOMMENDED NETTING*
STRAW**	—	100%	—	DOUBLE/ NATURAL
STRAW-COCONUT	30% MIN.	70% MAX.	—	DOUBLE/ NATURAL
COIR MAT*	100%	—	—	DOUBLE/ NATURAL
EXCLOSURE	—	—	100%	DOUBLE/ NATURAL

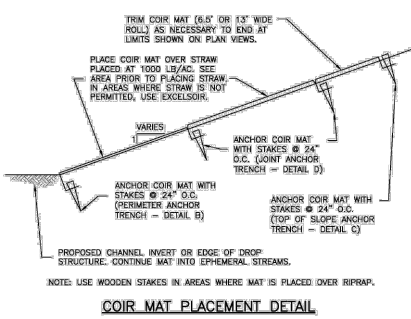
*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNELS.
**NATURAL NETTING INCLUDING SINGLE NETTING AND SYNTHETIC PHOTODEGRADABLE FIBER MAY BE ACCEPTABLE IN SOME JURISDICTIONS.

Rolled Erosion Control Products (RECP) EC-6



December 2022 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RECP-7

EC-6 Rolled Erosion Control Products (RECP)

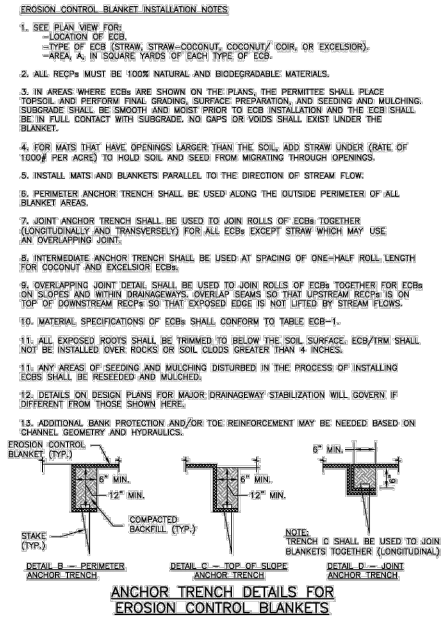


EROSION CONTROL BLANKET MAINTENANCE NOTES

1. INSPECT BMPs EACH MORNING, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE. REPEATED FAILURE WARRANTS THE NEED FOR REDESIGN OF THE EROSION CONTROL PROTECTION.
 4. ECBs SHALL BE LEFT IN PLACE TO BIODEGRADE UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
 5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REPLACED. ANY SUBGRADE AREAS BELOW THE EROSION CONTROL THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN BEYOND OF GRASS SHALL BE REPAIRED, RESEDED AND MULCHED AND THE ECB REINSTALLED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDOF STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

RECP-8 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 December 2022

Rolled Erosion Control Products (RECP) EC-6



December 2022 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RECP-9

GEC NOTES:

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON-SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE

- APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
 11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENEED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
 12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF-SITE.
 13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
 14. DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
 15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
 16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
 17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
 18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
 19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE

- DEVELOPMENT.
20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
 21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
 22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
 23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
 24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
 25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
 26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
 27. A WATER SOURCE SHALL BE AVAILABLE ON-SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
 28. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:
- COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD – PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN:PERMITS UNIT



BOLTON & MENK

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GREENWOOD VILLAGE, CO 80111
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Email: Denver@bolton-menk.com
www.bolton-menk.com

DESIGNED	MGT	REV	DESCRIPTION	DATE
DRAWN	MGT			
CHECKED	GTJ			
CLIENT PROJ. NO.	25X.141421.000			

MEADOW LAKE AIRPORT
TRANSIENT APRON RECONSTRUCTION
EROSION CONTROL DETAILS

SHEET

C2.07

Appendix B: Erosion and Stormwater Quality Control (ESQCP) Stormwater Permit Form



2880 International Circle, Suite 110
Colorado Springs, CO 80910
Phone: 719-520-6300
Email: Stormwater@elpasoco.com
publicworks.elpasoco.com/stormwater/

Stormwater Permit Number: ESQ

EL PASO COUNTY
STORMWATER PERMIT FORM
Erosion and Stormwater Quality Control Permit (ESQCP)

EPC Project Number: _____

There are multiple Stormwater Permits. Please refer to Engineering Criteria Manual (ECM) Appendix I to determine which permit is applicable to your project.

This form initially acts as the permit application. Only once this form has been signed & approved, all other required documents have been submitted & approved, and the Notice to Proceed has been issued, does this form become an active permit.

Part I. Property Owner or Authorized Representative (Co-Permit Holder)	
Company/Organization	
Name or Name of Representative	
Title	
Physical Address (not PO Box)	
Street Number and Street Name	
City, State, Zip Code	
Mailing Address (if differs from above)	
Street Number and Street Name	
City, State, Zip Code	
Phone Number - Office	
Phone Number - Cell	
Email Address	

Part II. Contractor/Operator (Co-Permit Holder)*	
Company/Organization	
Name or Name of Representative	
Title	
Physical Address (not PO Box)	
Street Number and Street Name	
City, State, Zip Code	
Mailing Address (if differs from above)	
Street Number and Street Name	
City, State, Zip Code	
Phone Number - Office	
Phone Number - Cell	
Email Address	

*This section can be left blank through design review but must be filled in no later than at the Pre-Con Meeting.



2880 International Circle, Suite 110
Colorado Springs, CO 80910
Phone: 719-520-6300
Email: Stormwater@elpasoco.com
publicworks.elpasoco.com/stormwater/

Stormwater Permit Number: ESQ

EL PASO COUNTY
STORMWATER PERMIT FORM
Erosion and Stormwater Quality Control Permit (ESQCP)

EPC Project Number: _____

Part III. Qualified Stormwater Manager (QSM)*

Company/Organization	
Name	
Phone Number - Office	
Phone Number - Cell	
Email Address	

*This section can be left blank through design review but must be filled in no later than at the Pre-Con Meeting.

Part IV. Project Information

Project Name	
Address (or nearest major cross streets)	
Acreage	Total: acres Proposed Disturbance: acres
Description of Project	
Schedule (input estimated month or season)	Start of Construction: Completion of Construction: Final Stabilization:



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Colorado Springs, CO 80910
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Stormwater Permit Number: ESQ

EL PASO COUNTY
STORMWATER PERMIT FORM
Erosion and Stormwater Quality Control Permit (ESQCP)

EPC Project Number: _____

REQUIRED SUBMISSIONS

See ECM Appendix I for the documentation required to be submitted, reviewed, and approved in conjunction with this Stormwater Permit Form.

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 damage to property or for injury to or death of any person, including but not limited to the Permit Holder(s), persons employed by the Permit Holder(s), or persons acting on behalf of the Permit Holder(s), from any cause. The Permit Holder(s) shall be responsible for any liability imposed by law and for damage to property or injuries to or death of any person, including but not limited to the Permit Holder(s), persons employed by the Permit Holder(s), and persons acting on behalf of the Permit Holder(s), arising out of work or other activity permitted and done under a permit, or arising out of the failure to perform the obligations under any permit with 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.

The Permit Holder(s) shall indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the Board of County Commissioners (BoCC) and ECM Administrator, from all claims, suits or actions of every name, kind and description brought for or on account of damage to property or injuries to or death of any person, including but not limited to the Permit Holder(s), persons employed by the Permit Holder(s), persons acting in behalf of the Permit Holder(s) and the public, resulting from the performance of work or other activity under the permit, or arising out of the failure to perform obligations under any permit with 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(s) waives any and all rights to any type of expressed or implied indemnity against the County, its officers or employees. It is the intent of the parties that the Permit Holder(s) will indemnify, save, and hold harmless the County, its officers and employees from any and all claims, suits or actions as set forth above regardless of the existence or degree of fault of or negligence, whether active or passive, primary or secondary, on the part of the County, the Permit Holder(s), persons employed by the Permit Holder(s), or persons acting in behalf of the Permit Holder(s).



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Stormwater Permit Number: ESQ

EL PASO COUNTY
STORMWATER PERMIT FORM
Erosion and Stormwater Quality Control Permit (ESQCP)

EPC Project Number: _____

APPLICATION AND PERMIT CERTIFICATION – PERMIT HOLDERS

We, as the Permit Holder(s), hereby certify that this application is correct and complete as per the requirements presented in the El Paso County Engineering Criteria Manual (ECM) and Drainage Criteria Manual (DCM) Volume 2. We, as the Permit Holder(s), have read and will comply with all of the requirements of the submitted Stormwater Management Plan (SWMP), Grading & Erosion Control (GEC) Plan, and any other documents specifying construction control measures to be used on the site, including permit conditions that may be required by the ECM Administrator. We understand that the approved plans are an enforceable part of the ESQCP. We further understand that we are to comply with all requirements set forth by the ECM and DCM Volume 2. We understand that the permitted area is that which is shown as the Limits of Disturbance on the GEC Plans. We further understand that a Construction Permit must be obtained and all necessary construction control measures are to be installed in accordance with the SWMP, GEC Plan, ECM, and DCM Volume 2 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. We understand that the construction control measures are to be maintained on the site and be modified as necessary to protect stormwater quality as the project progresses. We 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 Responsibility for Damage section above.

Signature of Owner or Representative

Date

Print Name of Owner or Representative

Signature of Contractor/Operator or Representative*

Date

*If signed by a Rep, an Affidavit of Signature Authority must be included

Print Name of Contractor/Operator or Representative

APPLICATION AND PERMIT CERTIFICATION – EL PASO COUNTY

The following signature from the ECM Administrator signifies the approval of this ESQCP Application.

Signature of ECM Administrator

Date

Appendix C: CDPS General Permit COR400000 Certification Copy of General Permit



COLORADO
Department of Public
Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

CDPS GENERAL PERMIT COR400000
STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY
AUTHORIZATION TO DISCHARGE UNDER THE
COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), this permit authorizes the discharge of stormwater associated with construction activities, as defined in this permit, to be certified under this permit from those locations authorized to discharge from authorized locations throughout the State of Colorado to specified surface waters of the state, in accordance with the eligibility and permit application requirements, effluent limitations, monitoring requirements, inspection requirements, and other conditions set forth in this general permit.

This permit specifically authorizes the facility listed on the certification to discharge in accordance with permit requirements and conditions set forth in Parts I and II hereof. All discharges authorized herein must be consistent with the terms and conditions of this permit.

This permit becomes effective on, 04/01/2024 and will expire at midnight 03/31/2029.

Issued and signed this 31st day of January, 2024 and Effective April 1, 2024.

Andrew Sayers-Fay, Permits Section Manager Water Quality Control Division
COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

PERMITS ACTION SUMMARY

Issued January 31, 2024, Effective April 1, 2024

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PART I

Note: At the first mention of terminology that has a specific connotation for the purposes of this permit, the terminology is electronically linked to the definitions section of the permit in Part I.E.

A. COVERAGE UNDER THIS PERMIT

1. Authorized Discharges

This general permit authorizes permittee(s) to discharge the following to state waters: stormwater associated with construction activity and specified non-stormwater associated with construction activity. The following types of stormwater and non-stormwater discharges are authorized under this permit:

a. Stormwater Discharges

- i. Stormwater discharges associated with construction activity.
- ii. Stormwater discharges associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site, or within ¼ mile of the construction site covered by this permit (e.g. borrow or fill areas).
- iii. Stormwater discharges associated with [dedicated asphalt, concrete batch plants, and masonry mixing stations](#) (Coverage under this permit is not required if alternative coverage has been obtained).

b. Non-Stormwater Discharges

The following non-stormwater discharges are allowable under this permit if the discharges are identified in the stormwater management plan in accordance with [Part I.C](#) and if they have appropriate [control measures](#) in accordance with [Part I.B.1](#).

- i. Discharges from uncontaminated springs that do not originate from an area of land disturbance.
- ii. Discharges to the ground of concrete or masonry washout water associated with the washing of concrete or masonry tools and concrete or masonry mixer chutes, and water used to wash vehicles, equipment and external buildings. Discharges of concrete or masonry washout water must not leave the site as surface runoff or reach receiving waters as defined by this permit. The addition of soaps, solvents and detergents is prohibited. Concrete or masonry on-site waste disposal is not authorized by this permit except in accordance with [Part I.B.1.a.ii\(c\)](#).
- iii. Discharges of landscape irrigation return flow.
- iv. Discharges from [diversions](#) of state waters within the permitted site.

c. Emergency Fire Fighting

Discharges resulting from emergency firefighting activities during the active emergency response are authorized by this permit.

2. Limitations on Coverage

Discharges not authorized by this permit include, but are not limited to, the discharges and activities listed below. Permittees may seek individual or alternate general permit coverage for the discharges, or utilize low risk discharge guidance (i.e. Surface Cosmetic Power Washing Operations to Land) or clean water policy documents (i.e. Clean Water Policy #14) as appropriate and available.

a. Discharges of non-stormwater

Discharges of non-stormwater, except the authorized non-stormwater discharges listed in Part I.A.1.b., are not eligible for coverage under this permit. Note: The prohibited discharges listed here are not an exhaustive list.

- i. Discharges to surface water from water used to wash vehicles, equipment and external building washdown water. The addition of soaps, solvents and detergents is prohibited.
- ii. Discharges from washout water for paint, form release oils, curing compounds, or other similar

construction materials. See [Part I.B.1.a.ii\(f\)](#).

- iii. Discharges of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
- iv. Discharges of reclaimed water, as defined in Regulation 84, that are approved for the use of construction dust suppression but are not applied in accordance with Regulation 84.
- v. Discharges related to the application of potable water for dust suppression. See [Part I.B.1.a.i\(j\)](#).
- b. Discharges currently covered by another individual or general permit.
- c. Discharges currently covered by a Water Quality Control Division (division) Low Risk Guidance document or Clean Water Policy.
- d. Discharges to outstanding waters that are long-term and/or have no or only short-term ecological or water quality benefit or clear public interest. See [Part I.B.2.b](#).
- e. Chemical additions.

Any chemical addition for the treatment of stormwater associated with construction activities is not authorized. This includes but is not limited to flocculants, polymers, and coagulants.

3. Permit Certification and Submittal Procedures

a. Duty to Apply

The owner(s)/operator(s) must apply for coverage under this permit for discharges from the following activities:

- i. Construction activity that will disturb one acre or more; or
- ii. Construction activity that is part of a [common plan of development or sale](#); or
- iii. Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:
 - (a) Contributes to a violation of a water quality standard; or
 - (b) Is a significant contributor of [pollutants](#) to state waters.

b. Application Requirements

To obtain authorization to discharge under this permit, applicants applying for coverage following the effective date of the renewal permit must meet the following requirements:

- i. Owners and operators submitting an application for permit coverage will be co-permittees subject to the same benefits, duties, and obligations under this permit.
- ii. Signature requirements: Both the [owner](#) and [operator](#) (permittees) of the construction site, as defined in Part I.E., must agree to the terms and conditions of the permit and submit a completed application that includes the signature of both the owner and the operator. In cases where the duties of the owner and operator are managed by the owner, both application signatures may be completed by the owner. Both the owner and operator are responsible for ensuring compliance with all terms and conditions of the permit, including implementation of the stormwater management plan.
- iii. The applicant(s) must develop a stormwater management plan in accordance with the requirements of Part I.C. The applicant(s) must also certify that the stormwater management plan is complete, or will be complete, prior to commencement of any construction activity.
- iv. In order to apply for certification under this general permit, the applicant(s) must submit a complete, accurate, and signed permit application form as provided by the division by electronic delivery at least 10 days prior to the commencement of construction activity, except those construction activities that are in response to a [public emergency related site](#). Public emergency related sites must apply for coverage no later than 14 days after the commencement of construction activities. The provisions of this part in no way remove a violation of the Colorado Water Quality Control Act if a [point source](#) discharge occurs prior to the issuance of a CDPS permit.

- v. The application in its entirety must be submitted via the division's online permitting system unless a waiver is granted by the division. If a waiver is granted, the application in its entirety, including signatures by both the owner and operator, must be submitted to:

Colorado Department of Public Health and Environment
Water Quality Control Division
Permits Section, WQCD-PS-B2
4300 Cherry Creek Drive South
Denver, CO 80246

- vi. The applicant(s) must receive written notification that the division granted permit coverage prior to conducting construction activities, except for construction activities that are in response to a public emergency related site.

c. Division Review of Permit Application

Within 10 days of receipt of the application, and following review of the application, the division may:

- i. Issue a certification of coverage under this general permit;
- ii. Request additional information necessary to evaluate the discharge;
- iii. Delay the authorization to discharge pending further review;
- iv. Notify the applicant that additional terms and conditions are necessary; or
- v. Deny the authorization to discharge under this general permit.

d. Alternative Permit Coverage

i. Division Required Alternative Permit Coverage:

The division may require an applicant or permittee to apply for an individual permit or an alternative general permit if it determines the discharge does not fall under the scope of this general permit, including if any additional terms and conditions are necessary in order to ensure that discharges authorized by this permit will not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality. In this case, the division will notify the applicant or permittee that an individual permit application is required.

ii. Permittee Request for Alternative Permit Coverage:

A permittee authorized to discharge stormwater under this permit may request to be excluded from coverage under this general permit by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the division at least 180 days prior to any discharge. When an individual permit is issued, the permittee's authorization to discharge under this permit is terminated on the effective date of the individual permit.

e. Submittal Signature Requirements

Documents required for submittal to the division in accordance with this permit, including applications for permit coverage and other documents as requested by the division, must include signatures by **both** the owner and the operator, except for instances where the duties of the owner and operator are managed by the owner.

Signatures on all documents submitted to the division as required by this permit must meet the Standard Signatory Requirements in [Part II.K](#) of this permit in accordance with 40 C.F.R.122.41(k).

i. Signature Certification

Any person(s) signing documents required for submittal to the division must make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

f. Field Wide Permit Coverage for Oil and Gas Construction

At the discretion of the division, a single permit certification may be issued to a single oil and gas permittee to cover construction activity related discharges from an oil and gas field at multiple locations that are not necessarily contiguous.

g. Permit Coverage without Application

Qualifying Local Program: When a small construction site is within the jurisdiction of a qualifying local program, the owner and operator of the construction activity are authorized to discharge stormwater associated with small construction activity under this general permit without the submittal of an application to the division. Sites covered by a qualifying local program are exempt from the following sections of this general permit: Part I.A.3.a.; Part I.A.3.b. (division application requirements); Part I.A.3.c. (division review); Part I.A.3.d. (division alternate permit coverage); Part I.A.3.f. (oil and gas field wide coverage); Part I.A.3.h. (permittee initiated actions); Part I.A.3.i. (residential lot coverage); Part I.A.3.j. (permit expiration and continuation of coverage); Part II.L.3 (transfer of ownership or control); II.W (fees).

Sites covered by a qualifying local program are subject to the following requirements:

- i. Local Agency Authority: This permit does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.
- ii. Permit Coverage Termination: When a site under a Qualifying Local Program is finally stabilized, coverage under this permit is automatically terminated.
- iii. Compliance with Qualifying Local Program: Qualifying Local Program requirements that are equivalent to the requirements of this permit are incorporated by reference. Permittees authorized to discharge under this permit must comply with the equivalent requirements of the Qualifying Local Program that has jurisdiction over the site as a condition of this permit.
- iv. Compliance with Remaining Permit Conditions. Requirements of this permit that are in addition to or more stringent than the requirements of the Qualifying Local Program apply in addition to the requirements of the Qualifying Local Program.
- v. Written Authorization of Coverage: The division or local municipality may require any owner/operator within the jurisdiction of a Qualifying Local Program covered under this permit to apply for, and obtain written authorization of coverage under this permit. The permittee must be notified in writing that an application for written authorization of coverage is required.

h. Permittee Initiated Permit Actions

Permittee initiated permit actions, including but not limited to modifications, contact changes, transfers, and terminations, must be conducted following Part II.L, Part I.A.3.e, division guidance and using appropriate division-provided forms.

- i. When a permittee modifies or terminates all or portions of permit coverage to another permittee, the “old” permittee completing the modification or termination must provide to the division the new permittee’s certification number(s) (ie. a land developer selling lots to home builders, etc.).
- ii. When a permittee transfers permit coverage to another permittee, the “new” permittee completing the transfer must provide to the division an agreement completed and signed by the “old” permittee.

- iii. When a permittee transfers permit coverage or modifies or terminates all or portions of permit coverage to another permittee, the “old” permittee completing the transfer, modification, or termination must provide to the division documentation of due diligence when the new permittee is not obtaining permit coverage. Documentation of due diligence may include certified letters, multiple attempts at email and phone contact.

i. Sale of Residence to Homeowner

Residential construction sites only: The permittee may remove residential lots from permit coverage once the lot(s) meets all of the following criteria:

- i. The residential lot(s) has(have) been sold to the homeowner(s) for private residential use;
- ii. A certificate of occupancy, or equivalent, is maintained on-site or electronically and is available during division inspections;
- iii. The lot(s) is (are) less than one acre of disturbance;
- iv. All construction activity conducted on the lot(s) by the permittee is complete, including the installation of sediment or erosion control measures that minimize sediment from exiting the lot, or the installation of temporary stabilization on remaining disturbance where the permittee is not responsible for final stabilization (i.e. backyard of single family home, etc.);
- v. The permittee is not responsible for final stabilization of the lot(s); and
- vi. The stormwater management plan was modified to indicate the lot(s) is (are) no longer part of the construction activity.

If the residential lot(s) meets the criteria listed above, then activities occurring on the lot(s) are no longer considered to be construction activities with a duty to apply and maintain permit coverage. Therefore, the permittee is not required to meet the final stabilization requirements and may terminate permit coverage for the lot(s).

j. Permit Expiration and Continuation of Permit Coverage

Authorization to discharge under this general permit will expire at midnight on March 31, 2029. While Regulation 61.4 requires the permittee to submit an application for continuing permit coverage 180 days before the permit expires, the division requires that a permittee or permittees desiring continued coverage under this general permit must reapply at least 90 days in advance of this permit expiration. The division will determine if the permittee(s) may continue to discharge stormwater under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. For permittees that have applied for continued permit coverage, discharges authorized under this permit prior to the expiration date will automatically remain covered by this permit until the earliest of:

- i. An authorization to discharge under a reissued permit, or a replacement of this permit, following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the new permit. (Note: the division may not reissue a permit certification if there are outstanding past due fees per Regulation 61.15(d)); or
- ii. The issuance and effect of a termination issued by the division; or
- iii. The issuance or denial of an individual permit for the facility's discharges; or
- iv. A formal permit decision by the division not to reissue this general permit, at which time the division will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or
- v. The division has informed the permittee that discharges previously authorized under this permit are no longer covered under this permit.

B. EFFLUENT LIMITATIONS

1. Requirements for Control Measures Used to Meet Effluent Limitations

The permittee must implement control measures to [minimize](#) the discharge of pollutants from all potential pollutant sources at the site which, if applicable, includes run-on. Control measures used to meet effluent limitations must be installed prior to commencement of construction activities and prior to each phase of construction that introduces new potential pollutant sources. Control measures must be selected, designed, installed and maintained in accordance with [good engineering, hydrologic and pollution control practices](#). Control measures implemented at the site must be designed to prevent pollution or degradation of state waters.

a. Stormwater Pollution Prevention

The permittee must implement structural and/or nonstructural control measures that effectively minimize erosion, sediment transport, and the release of other pollutants related to construction activity.

i. Control Measures for Erosion and Sediment Control

Structural and non-structural control measures for erosion and sediment control may include, but are not limited to, wattles/sediment control logs, silt fences, earthen dikes, drainage swales, sediment traps, filter bags, subsurface drains, pipe slope drains, inlet protection, outlet protection, gabions, sediment basins, temporary vegetation, permanent vegetation, mulching, geotextiles, sod stabilization, and slope roughening, maintaining existing vegetation, preserving native topsoil, protection of trees, preservation of mature vegetation, phasing of site development, preserving natural topography, minimizing soil compaction in areas of vegetative final stabilization, and minimizing site access.

Specific control measures must meet the requirements listed below.

- (a) Vehicle tracking controls must be implemented to minimize vehicle tracking of sediment from disturbed areas. Vehicle tracking controls must include a structural control measure (e.g. tracking pad or wash rack) and may include a non-structural control measure (e.g. sweeping or restricting vehicle traffic to paved areas).
- (b) Stormwater runoff from all disturbed areas and soil storage areas must utilize or flow to one or more control measures to minimize erosion or sediment in the discharge. The control measure(s) must be selected, designed, installed and adequately sized in accordance with good engineering, hydrologic and pollution control practices for the intended application. The control measure(s) must contain or filter flows in order to prevent the [bypass](#) of flows without treatment and must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions (e.g. sheet or concentrated flow).
- (c) Selection of control measures should prioritize the use of control measures that minimize the potential for erosion (i.e. covering materials). Selection should also prioritize phasing construction activities to minimize the amount of soil disturbance at any point in time throughout the duration of construction.
- (d) Outlets that withdraw water from or near the surface must be installed when discharging from basins and impoundments, unless [infeasible](#).
- (e) Maintain pre-existing vegetation for areas within 50 horizontal feet of receiving waters as defined by this permit, unless infeasible. In addition to maintaining 50 horizontal feet of pre-existing vegetation upgradient of a receiving water (unless infeasible), the permittee must install control measures upgradient of the vegetative buffer that meets the requirements of this section, Part I.B.1.a.i.
- (f) Soil compaction must be minimized for areas where infiltration control measures are implemented or where [final stabilization](#) will be achieved through vegetative cover. If compaction does occur in areas where final stabilization will be achieved through vegetative cover, then decompaction of the soil must be completed prior to planting.

- (g) Unless infeasible, topsoil must be preserved for those areas of a site that will utilize vegetative final stabilization. Preserved topsoil can be left in place or stockpiled.
 - (h) Minimize the amount of soil exposed during construction activity, including the disturbance of [steep slopes](#).
 - (i) Diversion control measures used for clean water diversions must minimize soil transport and erosion within the entire diversion, minimize erosion during discharge, and minimize run-on into the diversion. The permittee must minimize the discharge of pollutants throughout the installation, implementation and removal of the diversion. Diversions must meet one or more of the following conditions:
 - (1) Lined or piped structures that result in no erosion for anticipated flow conditions.
 - (2) Diversion channels, berms, and coffer dams must be lined or composed of a material that minimizes potential for soil loss in the entire wetted perimeter during anticipated flow conditions (e.g. vegetated swale, non-erosive soil substrate). The entire length of the diversion channel must be designed such that the maximum flow velocity for the type of material(s) exposed to the anticipated flows ensures the calculated maximum shear stress of flows in the channel is not expected to result in physical damage to the channel or liner nor result in discharge of pollutants. Additionally, the conditions relied on to minimize soil loss must be maintained for the projected life of the diversion (e.g. use of a vegetated swale must be limited to a period of time that ensures vegetative growth, minimizes erosion and maintains stable conditions).
 - (3) An alternative diversion criteria, approved by the division prior to implementation. The diversion method must be designed to minimize the discharge of pollutants and to prevent the potential for pollution or degradation to state waters as a result of the diverted flow through the diversion structure. In addition, the alternative diversion method must minimize the discharge of pollutants throughout the installation, implementation and removal of the diversion.
 - (j) Minimize dust. 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 unless authorized by a separate CDPS or NPDES permit.
 - (k) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- ii. Practices for Other Common Pollutants
- (a) Bulk storage (individual containers of 55 gallons or greater) for petroleum products and other liquid chemicals must have secondary containment, or equivalent protection, in order to contain [spills](#) and to prevent spilled material from entering state waters.
 - (b) Spills and leaks must be minimized. Upon identification, spills and leaks must immediately be contained and mitigated per the spill prevention and response plan, as applicable (i.e. oil, grease, fluids associated with vehicle and equipment maintenance, toxic chemicals, hazardous substances, etc.).
 - (c) Control measures designed for concrete washout waste, masonry operations, stucco waste, vehicle/equipment washing, and external building washdown must be implemented. This includes washout waste discharged to the ground as authorized under this permit and washout waste from concrete trucks and masonry operations contained on site. The permittee must ensure washing activities do not contribute pollutants to stormwater runoff, or receiving waters in accordance [Part I.A.1.b.ii](#). 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 this permit, including [Part I.B.3.a](#). The concrete or masonry washout location (including vehicle/equipment and external building washdown water, if applicable) must not be located in an area where shallow groundwater may be present and would result in buffering capacity not being adequate, such as near natural drainages, springs, or wetlands. This permit authorizes discharges to the ground of

concrete washout waste, but does not authorize on-site waste disposal per [Part I.B.3.d.](#)

- (d) In the event that water remains onsite and contains pollutants either from firefighting activities or picked up from the site (i.e. in a gutter, sediment basin, etc.) after active emergency response is complete, the permittee must ensure the remaining water containing pollutants is properly removed and disposed of in order to minimize pollutants from discharging from the site, unless infeasible.
- (e) Minimize the exposure of fertilizers, pesticides, and herbicides to stormwater during storage. Store and apply fertilizers, pesticides, and herbicides per manufacturer's directions.
- (f) For washing applicators and containers used for paint, form release oils, curing compounds, or other similar construction materials, the wash water must be directed into a leak-proof container or leak-proof and lined pit designed so no discharges to groundwater occur or overflows occur due to inadequate sizing or precipitation. Liquid and hardened wastes must be appropriately disposed.

iii. Stabilization Requirements

The following requirements must be implemented for each site.

- (a) Temporary stabilization must be implemented for earth disturbing activities on any portion of the site where ground disturbing construction activity has permanently ceased, or temporarily ceased for more than 14 calendar days. Temporary stabilization methods may include, but are not limited to, tarps, soil tackifier, and hydromulch. The permittee may exceed the 14-day schedule when either the function of the specific area of the site requires it to remain disturbed or physical characteristics of the terrain and climate prevent stabilization. The stormwater management plan must document the constraints necessitating the alternative schedule, provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map. Minimum inspection frequency and scope, as directed in Part I.D., must be followed for temporarily stabilized areas.
- (b) Final stabilization must be implemented for all construction sites covered under this permit. Final stabilization is reached when the following are complete:
 - (1) All construction activities are complete.
 - (2) Permanent stabilization methods are complete. Permanent stabilization methods include, but are not limited to, permanent pavement or concrete, hardscape, xeriscape, stabilized driving surfaces and storage areas, vegetative cover, or equivalent permanent alternative stabilization methods. The division may approve alternative final stabilization criteria for specific operations. Vegetative cover must include the following criteria:
 - a. Evenly distributed perennial vegetation, which may include trees and shrubs;
 - b. Vegetation coverage, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site; and
 - c. If applicable, adherence to stabilization requirements does not negate the permittee's requirement to comply with the local jurisdiction's plant species requirements.
- (c) Final stabilization must be designed and installed as a permanent feature. All control measures must be removed from the construction site, except when the control measure specifications allow the control measure to be left in place (i.e. bio-degradable control measures, permanent sedimentation basin, etc). Final stabilization measures for obtaining a vegetative cover or alternative stabilization methods include, but are not limited to, the following as appropriate:
 - (1) Seed mix selection and application methods;
 - (2) Soil preparation and amendments;
 - (3) Soil stabilization methods to provide adequate protection to minimize erosion (e.g. crimped straw, hydro mulch or rolled erosion control products);
 - (4) Appropriate sediment control measures as needed until final stabilization is achieved;

- (5) Permanent pavement, hardscape, xeriscape, stabilized driving surfaces;
- (6) Conversion of construction site back to prior cropland use. The permittee is not required to plant the crop prior to termination; and
- (7) Other alternative stabilization practices as applicable.

b. Routine Maintenance

The permittee must ensure that all control measures remain in effective operating condition and are protected from activities that would reduce their effectiveness. Control measures must be routinely maintained in accordance with good engineering, hydrologic and pollution control practices. Observations leading to the required routine maintenance of control measures can be made during a site inspection, or during general observations of site conditions. The necessary repairs or modifications to a [control measure requiring routine maintenance](#), as defined in Part I.E., must be conducted to maintain an effective operating condition. Control measures requiring routine maintenance are not subject to the requirements in [Part I.B.1.c](#) below.

c. Corrective Actions

The permittee must assess the adequacy of control measures at the construction site, and the need for changes to those control measures, to ensure continued effective performance.

When an [inadequate control measure](#), as defined in Part I.E., is identified, the following corrective action requirements apply. The permittee is not in compliance with the permit until the inadequate control measure is replaced or corrected and returned to effective operating condition in compliance with [Part I.B.1](#) and the general requirements in [Part I.B.3](#). If the inadequate control measure results in noncompliance that meets the conditions of [Part II.L](#), the permittee must also meet the requirements of that section.

- i. 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. If it is infeasible to install or repair the control measure immediately after discovering the deficiency, the following must be documented in the stormwater management plan in [Part I.D.5.c](#) and kept on record in accordance with the recordkeeping requirements in Part II.
 - (a) Describe why it is infeasible to initiate the installation or repair immediately; and
 - (b) Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.
- ii. 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 such as sediment, spill, or leak not authorized by this permit.) The permittee must 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. Permittees are prohibited from hosing down an area to clean surface spills or leaks unless the wash water is adequately captured to not discharge off the site or to land and the captured water is properly disposed. In addition, the permittee must mitigate any accumulation of sediment outside of the site boundaries.

2. Discharges to an Impaired Waterbody or Outstanding Water

a. [Total Maximum Daily Load](#) (TMDL)

If the discharge from the site of permit coverage flows to or could reasonably be expected to flow to any water body for which a TMDL has been approved, and stormwater discharges associated with construction activity were assigned a pollutant-specific Wasteload Allocation (WLA) under the TMDL, the division may:

- i. Ensure the WLA is implemented properly through alternative local requirements, such as by a municipal stormwater permit; or

- ii. Notify the permittee of the WLA and amend the permittee's certification to add specific effluent limits, other requirements, and compliance schedules, as necessary and appropriate. The permittee may be required to do the following:
 - (a) Under the permittee's stormwater management plan, implement specific control measures based on requirements of the WLA, and evaluate whether the requirements are met through implementation of existing stormwater control measures or if additional control measures are necessary. Document the calculations or other evidence demonstrating that the requirements are expected to be met; and
 - (b) If the evaluation shows that additional or modified control measures are necessary, describe the type and schedule for the control measure additions or modifications.
- iii. Discharge monitoring may also be required. The permittee may maintain coverage under the general permit provided they comply with the applicable requirements outlined above.
- b. Outstanding Waters
 - i. Discharges to outstanding waters must be short-term and have a long-term ecological or water quality benefit or clear public interest. A state outstanding waters map can be found [here](#).
 - ii. Sites that discharge to outstanding waters are required to have an increased inspection frequency found in [Part I.D.3](#).
- c. The division may require individual or alternate general permit coverage per [Part I.A.3.d.i](#).

3. General Requirements

- a. Discharges authorized by this permit must not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality.
- b. The division may require sampling and testing, on a case-by-case basis, in the event that there is reason to suspect that the stormwater management plan is not adequately minimizing pollutants in stormwater or in order to measure the effectiveness of the control measures in removing pollutants in the effluent. Such monitoring may include Whole Effluent Toxicity testing.
- c. The permittee must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts and other local agencies including applicable requirements in Municipal Stormwater Management Programs developed to comply with CDPS permits. The permittee must comply with local stormwater management requirements, policies and guidelines including those for erosion and sediment control.
- d. The division may include additional requirements as specified in the applicable watershed protection Control Regulations 71-74.
- e. All construction site wastes must be properly managed to prevent potential pollution of state waters. This permit does not authorize on-site waste disposal.
- f. This permit does not relieve the permittee of the reporting requirements in 40 CFR 110, 40 CFR 117 or 40 CFR 302. Any discharge of hazardous material must be handled in accordance with the division's Noncompliance Notification Requirements (see [Part II.L](#) of the permit).

C. STORMWATER MANAGEMENT PLAN REQUIREMENTS

1. Stormwater Management Plan General Requirements

- a. The permittee must develop, implement, and maintain a stormwater management plan for each construction site listed under [Part I.A.3.a](#), including, but not limited to, construction activity that will disturb one acre or more and/or are part of a common plan of development or sale covered by this permit.
 - i. The plan must be prepared in accordance with good engineering, hydrologic and pollution control practices.

- ii. For [public emergency related sites](#), the plan must be created no later than 14 days after the commencement of construction activities.
- b. The permittee must implement the provisions of the plan as written and updated, from commencement of construction activity until final stabilization is complete. The division may review the plan.
- c. A copy of the plan must be retained onsite or be onsite when construction activities are occurring at the site unless the permittee specifies another location and obtains written approval from the division. The plan and inspection reports may be prepared, signed, and kept electronically, rather than in paper form, if the records are:
 - i. In a format that can be read in a similar manner as a paper record; and
 - ii. Immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be.

2. Stormwater Management Plan Content

The stormwater management plan, at a minimum, must include the following elements.

- a. Qualified Stormwater Manager. The plan must list individual(s) by title and name who are designated as responsible for implementing the stormwater management plan in its entirety and meet the definition of a [Qualified Stormwater Manager](#). This role may be filled by more than one individual.
- b. Other Permits. The plan must list the applicable CDPS permits and low-risk discharge guidance documents associated with the permitted site (including the COR400000 general permit and the certification associated with the site) and the activities occurring on the permitted site (e.g. a CDPS Dewatering Permit). The plan must also list applicable US Army Corps of Engineers Section 404 permits. A copy of this general permit, applicable permit certification, and any applicable low-risk discharge guidance documents must be included in the stormwater management plan for each construction site.
- c. Site Description. The plan must include a site description which includes, at a minimum, the following:
 - i. The nature of the construction activity at the site, including if it is a public emergency related site;
 - ii. The proposed schedule for the sequence for major construction activities and the planned implementation of control measures for each phase. (e.g. clearing, grading, utilities, vertical, etc.);
 - iii. Estimates of the total acreage of the site, and the acreage expected to be disturbed by clearing, excavation, grading, or any other construction activities;
 - iv. A summary of any existing data and sources used in the development of the construction site plans or stormwater management plan that describe the soil types found in the permitted area and the erodibility of the identified soil types;
 - v. A description of the percent cover from native vegetation on the site if the site is undisturbed, or the percent cover from native vegetation in a similar, local undisturbed area or adequate reference area if the site is disturbed. Include the source or methodology for determining the percentage. If a percent cover is not appropriate for the site location (i.e. arid), describe the technique and justification for the identified cover of native vegetation;
 - vi. A description of any allowable non-stormwater discharges at the site, including those being discharged under a separate CDPS permit, discharges under [Part I.A.1.b](#), or a division low risk discharge guidance, and applicable control measures installed;
 - vii. A description of the general flow direction and where or how the discharge leaves the site, including a description of the immediate conveyance or area receiving the discharge and the receiving water(s) of the discharge, if different than the immediate conveyance or area. If the stormwater discharge is to a [municipal separate storm sewer system](#), include the name of the entity owning that system, the location(s) of the stormwater discharge, and the receiving water(s);
 - viii. A description of all stream crossings located within the construction site boundary, if applicable;
 - ix. A description of the alternate temporary stabilization schedule, if applicable ([Part I.B.1.a.iii\(a\)](#)); and

- x. A description of the alternative diversion criteria as approved by the division, if applicable ([Part I.B.1.a.i\(i\)\(3\)](#)).
 - xi. A description of any effluent limitations that the permittees determines are infeasible and why they are infeasible, if applicable ([Part I.B.1.a.i.\(d, e, and g\)](#) and [I.B.1.a.ii.\(d\)](#)).
- d. Site Map. The plan must include a site map which includes, at a minimum, the following:
- i. Construction site boundaries;
 - ii. Flow arrows that depict stormwater flow directions on and off-site;
 - iii. All areas of ground disturbance including areas of borrow and fill;
 - iv. Areas used for storage of soil;
 - v. Locations of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt;
 - vi. Locations of dedicated asphalt, concrete batch plants and masonry mixing stations;
 - vii. Locations of other potential sources of pollution not listed in iii. through vi.
 - viii. Locations of all structural control measures;
 - ix. Locations of all non-structural control measures (e.g. temporary stabilization);
 - x. Locations and names, as listed in [Part I.C.2.c.vii](#), of springs, streams, wetlands, diversions and other state waters within or bordering the site, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, where determined feasible in accordance with [Part I.B.1.a.i\(e\)](#) (e.g. MS4 to unnamed tributary to the South Platte River);
 - xi. Locations of all stream crossings located within the construction site boundary;
 - xii. Locations where alternative temporary stabilization schedules apply; and
- e. Potential Sources of Pollution. The plan must list all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the site.
- i. The plan must include the following pollutant sources as these pollutants relate to every construction site:
 - (a) Disturbed and stored soils;
 - (b) Vehicle tracking of sediments;
 - (c) On-site waste management practices (waste piles, liquid wastes, dumpsters);
 - ii. The plan may include, but is not limited to, the following pollutant sources:
 - (a) Management of contaminated soils (contaminated soils may also occur from onsite spills or leaks), if known to be present, or if contaminated soils are found during construction;
 - (b) Loading and unloading operations;
 - (c) Outdoor storage activities (erodible building materials, fertilizers, chemicals, etc.);
 - (d) Vehicle and equipment maintenance and fueling;
 - (e) Significant dust or particulate generating processes (e.g., saw cutting material, including dust);
 - (f) Routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.;
 - (g) Concrete/masonry truck/equipment washing, including washing of the concrete truck chute and associated fixtures and equipment;
 - (h) Dedicated asphalt, concrete batch plants and masonry mixing stations;
 - (i) Non-industrial waste sources such as worker trash and portable toilets; and

(j) Reclaimed water approved for use in construction dust suppression.

- f. Materials Handling. The plan must describe handling procedures of all control measures implemented at the site to minimize impacts from handling **significant materials** that could contribute pollutants to runoff. These handling procedures can include control measures for pollutants and activities such as, exposed storage of building materials, paints and solvents, landscape materials, fertilizers or chemicals, sanitary waste material, trash and equipment maintenance or fueling procedures.
- g. Spill Prevention and Response Plan. The plan must have a spill prevention and response plan. The plan may incorporate by reference any part of a Spill Prevention Control and Countermeasure (SPCC) plan under section 311 of the Clean Water Act (CWA) or a Spill Prevention Plan required by a separate CDPS permit. The relevant sections of any referenced plans must be available as part of the stormwater management plan consistent with [Part I.C.4](#).
- h. Implementation of Control Measures. The plan must include design specifications that contain information on the implementation of all the control measures in use on the site in accordance with good engineering, hydrologic and pollution control practices; including, as applicable, drawings, dimensions, installation information, materials, implementation processes, control measure-specific inspection expectations, and maintenance requirements.
- i. The plan 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 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. The plan must include all information required of and relevant to any such control measures located outside the permitted area, including location, installation specifications, design specifications and maintenance requirements.
- j. Temporary Stabilization, Final Stabilization and Long Term Stormwater Management.
 - i. The plan must document the constraints necessitating an alternative temporary stabilization schedule, as referenced in [Part I.B.1.a.iii\(a\)](#), provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map.
 - ii. The plan must document all residential lots that utilize the Sale of Residence to Homeowner, as referenced in [Part I.A.3.i](#), the lots that received temporary stabilization and meet all the requirements under Part I.A.3.i, and identify all the lot locations where Part I.A.3.i is applicable on the site map.
 - iii. The plan must describe or locate where all final stabilization methods are used and what methods are used to achieve final stabilization of all disturbed areas at the site (e.g. pavement, vegetative cover, etc), as listed in [Part I.B.1.a.iii\(b\)](#).
 - iv. The plan must describe how the permittee will establish final stabilization through vegetative cover or alternative stabilization method, as referenced in [Part I.B.1.a.iii\(c\)](#), and describe and locate any temporary control measures in place during the process of final stabilization (e.g. seed mix, soil amendments, final stabilization methods, return to cropland, etc.).
 - v. The plan must describe and locate any planned permanent control measures to control pollutants in stormwater discharges that will occur after construction operations are completed, including but not limited to, detention/retention ponds, rain gardens, stormwater vaults, etc.
- k. Inspection Reports. The plan must include documented inspection reports in accordance with [Part I.D.5.c](#).

3. Stormwater Management Plan Review and Revisions

Permittees must keep the stormwater management plan current and maintain a record of changes made that includes the date and identification of the changes. The plan must be amended when the following occurs:

- a. A change in design, construction, operation, or maintenance of the site requiring implementation of new or revised control measures;
- b. The plan proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;
- c. Control measures identified in the plan are no longer necessary and are removed;
- d. Corrective actions are taken onsite that result in a change to the plan; and
- e. The site or areas of the site qualifying for reduced frequency inspections under [Part I.D.4](#).

For stormwater management plan revisions made prior to or following a change(s) onsite, including revisions to sections addressing site conditions and control measures, a 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 measures, and any changes to the control measure(s). The methods for notation may include notations on site maps, a log of changes, redline changes in the, or other measures. The permittee must ensure the site changes are reflected in the plan. The permittee is noncompliant with the permit until the plan revisions have been made.

4. Stormwater Management Plan Availability

A copy of the stormwater management plan must be provided upon request to the division, EPA, and any local agency with authority for approving sediment and erosion plans, grading plans or stormwater management plans within the time frame specified in the request. If the plan is required to be submitted to any of these entities, the submission must include a signed certification in accordance with [Part I.A.3.e](#), certifying that the plan is complete and compliant with all terms and conditions of the permit.

All stormwater management plans required under this permit are considered reports that must be available to the public under Section 308(b) of the CWA and Section 61.5(4) of the CDPS regulations. The permittee must make plans available to members of the public upon request. However, the permittee may claim any portion of a stormwater management plan as confidential in accordance with 40 CFR Part 2.

D. SITE INSPECTIONS

Site inspections must be conducted in accordance with the following requirements. The required inspection schedules are a minimum frequency and do not affect the permittee's responsibility to implement control measures in effective operating condition as prescribed in the stormwater management plan, [Part I.C.2.a.vi](#), as proper maintenance of control measures may require more frequent inspections. Site inspections must start within 7 calendar days of the commencement of construction activities on site.

1. Person Responsible for Conducting Inspections

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(s). The permittee is responsible for ensuring that the inspector meets the definition of a Qualified Stormwater Manager. The inspector may be different than the individual(s) listed in [Part I.C.2.a](#).

2. Inspection Frequency

Permittees must conduct site inspections in accordance with one of the following minimum frequencies, unless the site meets the requirements of [Part I.D.3](#). All inspections must be recorded per [Part I.D.5.c](#).

- a. At least one inspection every 7 calendar days; or
- b. At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Post-storm inspections may be used to fulfill the 14-day routine inspection requirement.
- c. When site conditions make the schedule required in this section impractical, the permittee may petition the division to grant an alternate inspection schedule. The alternative inspection schedule must not be implemented prior to written approval by the division and incorporation into the stormwater management plan.

3. Inspection Frequency for Discharges to Outstanding Waters

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. In order to determine if the immediate receiving water is to an Outstanding Water, the permittee can use this [map of Outstanding Waters](#).

4. Reduced Inspection Frequency

The permittee may perform site inspections at the following reduced frequencies when one of the following conditions exists:

a. Post-Storm Inspections at Temporarily Idle Sites

For permittees choosing an inspection frequency pursuant to [Part I.D.2.b](#) and if no construction activities will occur following a storm event, post-storm event inspections must be conducted prior to re-commencing construction activities, and no later than 72 hours after the end of any precipitation or snowmelt event that causes surface erosion. If the post-storm event inspection qualifies under this section, the inspection delay must be documented in the inspection record per [Part I.D.5.c](#). Routine inspections must still be conducted at least every 14 calendar days.

b. Inspections at Sites Awaiting Final Stabilization

When the site, or portions of a site, are awaiting establishment of a vegetative ground cover and final stabilization, the permittee must conduct a thorough inspection of the construction site and control measures at least once every 30 days. Post-storm event inspections are not required under this schedule. This reduced inspection schedule is allowed if all of the following criteria are met:

- i. All construction activities resulting in ground disturbance are complete;
- ii. All activities required for final stabilization, in accordance with [Part I.B.1.a.iii\(b\) & \(c\)](#) and with the stormwater management plan, have been completed, with the exception of the application of sod or seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and
- iii. The stormwater management plan has been amended to locate those areas to be inspected in accordance with the reduced schedule allowed for in this paragraph.

c. Winter Conditions Inspections Exclusion

Typically, this exclusion applies to elevations or locations where snow melt does not occur in the winter months. Inspections are not required for sites that meet all of the following conditions:

- i. Construction activities are temporarily halted for the winter season (e.g. December - February due to site being inaccessible);
- ii. Snow cover exists over the entire site for an extended period (i.e. high-elevation winter season); and
- iii. Melting conditions posing a risk of surface erosion do not exist.

This inspection exception is applicable only during the period where melting conditions do not exist, and applies to the routine 7-day, 14-day and monthly inspections, as well as the post-storm-event inspections. When this inspection exclusion is implemented, the following information must be documented in accordance with the requirements in [Part I.C.3](#) and [Part I.D.5.c](#):

- (a) Dates when snow cover existed;
- (b) Date when construction activities ceased; and
- (c) Date melting conditions began.

5. Inspection Scope

a. Areas to Be Inspected

When conducting a site inspection the following areas, if applicable, must be inspected for evidence of, or

the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters:

- i. Construction site perimeter;
- ii. All disturbed areas, including areas that are temporarily stabilized;
- iii. Locations of installed control measures;
- iv. Designated haul routes;
- v. Material and waste storage areas exposed to precipitation;
- vi. Locations of pumped stormwater;
- vii. Locations where stormwater has the potential to discharge offsite, including visible erosion and sedimentation; and
- viii. Locations where vehicles exit the site.

b. Inspection Requirements

Inspections must assess the following components:

- i. Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.
 - (a) For pumped stormwater, assessment may include sediment plume, suspended solids, unusual color, decreased clarity, presence of odor or foam, etc.
- 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(s) in accordance with [Part I.B.1.c.](#)

c. Inspection Reports

The permittee must keep a record of all inspections conducted for each permitted site. Inspection reports must identify any incidents of noncompliance with the terms and conditions of this permit. All inspection reports must be signed and dated in accordance with [Part I.D.5.c.xiii and xiv](#) below. Inspection records must be retained in accordance with [Part II.J.](#) At a minimum, the inspection report must include:

- i. The inspection date;
- ii. Name(s) and title(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) and identification of control measures requiring routine maintenance;
- vii. Location(s) 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, ix, above, dates corrective action(s) were completed, including requisite changes to the stormwater management plan, as necessary;
- xi. Description of the minimum inspection frequency (either in accordance with [Part I.D.2](#), [Part I.D.3](#) or [Part I.D.4.](#)) utilized when conducting each inspection;

- xii. Deviations from the minimum inspection schedule as required in [Part I.D.2](#). This would include documentation of division approval for an alternate inspection schedule outlined in [Part I.D.2.c](#);
- xiii. After adequate corrective action(s) have been taken, or where a report does not identify any incidents requiring corrective action, the report must contain 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.”; and
- xiv. Inspection reports must be signed by the individual(s) designated as a [Qualified Stormwater Manager](#), as defined in Part I.E.

E. DEFINITIONS

For the purposes of this permit:

- (1) Bypass the intentional diversion of waste streams from any portion of a treatment facility in accordance with 40 CFR 122.41(m)(1)(i) and Regulation 61.2(12).
- (2) Common Plan of Development or Sale - A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules, but remain related. The division has determined that “contiguous” means construction activities located in close proximity to each other (within ¼ mile). Construction activities are considered to be “related” if they share the same development plan, builder or contractor, equipment, storage areas, etc. “Common plan of development or sale” includes construction activities that are associated with the construction of field wide oil and gas permits for facilities that are related.
- (3) Construction Activity - Ground surface disturbing and associated activities (land disturbance), which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction does not include routine maintenance to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. Activities to conduct repairs that are not part of routine maintenance or for replacement are construction activities and are not routine maintenance. Repaving activities where underlying and/or surrounding soil is exposed as part of the repaving operation are considered construction activities. Construction activity is from initial ground breaking to final stabilization regardless of ownership of the construction activities.
- (4) Construction Site - The location where construction activity is occurring and associated discharges are covered by this permit, including offsite locations for storage, staging, etc. For use in this permit, the terms construction site, site, and facility are used interchangeably.
- (5) Control Measure - Any best management practice or other method used to prevent or reduce the discharge of pollutants to state waters. Control measures include, but are not limited to, best management practices. Control measures can include other methods such as the installation, operation, and maintenance of structural controls and treatment devices.
- (6) Control Measure Requiring Routine Maintenance - Any control measure that is still operating in accordance with its design and the requirements of this permit, but requires preventative maintenance to prevent a breach of the control measure in subsequent storms.
- (7) Dedicated Asphalt, Concrete Batch Plants and Masonry Mixing Stations - Are batch plants or mixing stations located on, or within ¼ mile of, a construction site and that provide materials only to that specific construction site.
- (8) Disturbed area - Any ground disturbance prior to final stabilization.
- (9) Diversion - Discharges of state waters that are temporarily routed through channels or structures (e.g. in-stream, uncontaminated springs, non-pumped groundwater, temporary rerouting of surface waters, fords). For purposes of this permit, these diversions can also be referred to as clean water diversions.

- (10) Final Stabilization - The condition reached when construction activities at the site have been completed, permanent stabilization methods are complete, and temporary control measures are removed. Areas being stabilized with a vegetative cover must have evenly distributed perennial vegetation. The vegetation coverage must be, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.
- (11) Good Engineering, Hydrologic and Pollution Control Practices: are methods, procedures, and practices that:
 - a. Are based on basic scientific fact(s).
 - b. Reflect best industry practices and standards.
 - c. Are appropriate for the conditions and pollutant sources.
 - d. Provide appropriate solutions to meet the associated permit requirements, including practice based effluent limits.
- (12) Inadequate Control Measure - 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.
- (13) Infeasible - Not technologically possible, or not economically practicable and achievable in light of best industry practices.
- (14) Minimize - Reduce or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.
- (15) Municipality - A city, town, county, district, association, or other public body created by, or under, State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under section 208 of CWA (1987).
- (16) Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):
 - a. Owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to state waters;
 - b. Designed or used for collecting or conveying stormwater;
 - c. Are not a combined sewer; and
 - d. Are not part of a Publicly Owned Treatment Works (POTW). See 5 CCR 1002-61.2(62).
- (17) Municipal Stormwater Management Program - A stormwater program operated by a municipality, typically to meet the requirements of the municipality's MS4 discharge certification.
- (18) Native Vegetation - Plant species that are naturally occurring for the particular area (or region) and have adapted to and are well suited for the soil, temperature, nutrients, and precipitation of the particular area (region).
- (19) Operator - The party that has operational control over day-to-day activities at a project site which are necessary to ensure compliance with the permit. This party is authorized to direct individuals at a site to carry out activities required by the permit (i.e. the general contractor).
- (20) Outstanding Waters - Waters designated as outstanding waters pursuant to Regulation 31, Section 31.8(2)(a). The highest level of water quality protection applies to certain waters that constitute an outstanding state or national resource.
- (21) Owner - The party that has overall control of the activities and that has funded the implementation of the construction plans and specifications. This is the party that may have ownership of, a long term lease of, or easements on the property on which the construction activity is occurring (e.g. the developer).

- (22) Permittee(s) - The owner and operator named in the discharge certification issued under this general permit for the construction site specified in the certification.
- (23) Point Source - Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. Point source does not include irrigation return flow. See 5 CCR 102-61.2(75).
- (24) Pollutant - Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste. See 5 CCR 1002-61.2(76).
- (25) Presentation of credentials - A government issued form of identification, if in person; or (ii) providing name, position and purpose of inspection if request to enter is made via telephone, email or other form of electronic communication. A permittee's non-response to a request to enter upon presentation of credentials constitutes a denial to such request, and may result in violation of the permit.
- (26) Process Water - Any water which, during manufacturing or processing, comes into contact with or results from the production of any raw material, intermediate product, finished product, by product or waste product.
- (27) Public Emergency Related Site - A project initiated in response to an unanticipated emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.
- (28) Qualified Stormwater Manager - An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater control measures implemented to meet the requirements of this permit.
- (29) Qualifying Local Program - A municipal program for stormwater discharges associated with small construction activity that was formally approved by the division as a qualifying local program (Regulation 61.8(12)).
- (30) Receiving Water - Any surface state water into which stormwater associated with construction activities discharges. Examples include all water courses, even if they are usually dry, such as borrow ditches, arroyos, and other unnamed waterways.
- (31) Severe Property Damage - Substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).
- (32) Significant Materials - Include, but not limited to, raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the permittee is required to report under section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.
- (33) Small Construction Activity - The discharge of stormwater from construction activities that result in land disturbance of equal to, or greater than, one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan ultimately disturbs equal to, or greater than, one acre and less than five acres.
- (34) Spill - An unintentional release of solid or liquid material which may pollute state waters.
- (35) State Waters - Any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been

completed.

- (36) Steep Slopes - Where a local government, or industry technical manual (e.g. stormwater BMP manual) has defined what is to be considered a “steep slope”, this permit’s definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 3:1 or greater.
- (37) Stormwater - Precipitation runoff, snow melt runoff, and surface runoff and drainage. See 5 CCR 1002-61.2(103).
- (38) Total Maximum Daily Loads (TMDLs) - The sum of the individual wasteload allocations (WLA) for point sources and load allocations (LA) for nonpoint sources and natural background. For the purposes of this permit, a TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant’s sources. A TMDL includes WLAs, LAs, and must include a margin of safety (MOS), and account for seasonal variations. See section 303(d) of the CWA and 40 C.F.R. 130.2 and 130.7.
- (39) Upset - An exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation in accordance with 40 CFR 122.41(n) and Regulation 61.2(114).

F. MONITORING

The division may require sampling and testing, on a case-by-case basis. If the division requires sampling and testing, the division will send a notification to the permittee. Sampling and reporting procedures for any monitoring data collected will be included in the notification.

If monitoring is required, the following applies:

The thirty (30) day average must be determined by the arithmetic mean of all samples collected during a thirty (30) consecutive-day period; and

A grab sample, for monitoring requirements, is a single “dip and take” sample.

G. OIL AND GAS CONSTRUCTION

Stormwater discharges associated with construction activities directly related to oil and gas exploration, production, processing, and treatment operations or transmission facilities are regulated under the Colorado Discharge Permit System Regulations (5 CCR 1002-61), and require coverage under this permit in accordance with that regulation. However, references in this permit to specific authority under the CWA do not apply to stormwater discharges associated with these oil and gas related construction activities, to the extent that the references are limited by the federal Energy Policy Act of 2005.

PART II

Part II contains standard conditions required by federal regulation to be included in all NPDES permits (see 40 C.F.R. 122.41). Part I contains permit specific requirements.

A. DUTY TO COMPLY

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Colorado Water Quality Control Act and is grounds for: 1) enforcement action; 2) permit termination, revocation and reissuance, or modification; or 3) denial of a permit renewal application.
2. Federal Enforcement:
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal (see 40 CFR 122.2) established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Clean Water Act provides that any person who *negligently* violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who *knowingly* violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
 - c. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

B. DUTY TO REAPPLY

If the permittee plans to continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit a permit application at least 180 days before this permit expires as required by Regulations 61.4 and 61.10.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or

reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. DUTY TO MITIGATE

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. PROPER OPERATION AND MAINTENANCE

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit. See 40 C.F.R. §122.41(e).

F. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. Any request for modification, revocation, reissuance, or termination under this permit must comply with all terms and conditions of Regulation 61.8(8). See also 40 C.F.R. § 122.41(f).

G. PROPERTY RIGHTS

In accordance with 40 CFR §122.41(g) and Regulation 61.8(9): The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

1. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.
2. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Clean Water Act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Clean Water Act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations. See 61.8(9)(c).

H. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit in accordance with 40 C.F.R. §122.41(h) and/or Regulation 61.8(3)(q).

I. INSPECTION AND ENTRY

The permittee shall allow the Division and the authorized representative, including U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials as required by law, to conduct inspections in accordance with 40 C.F.R. §122.41(i), Regulation 61.8(3), and Regulation 61.8(4):

1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted in which any records are required to be kept under the terms and conditions of this permit;
2. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any facilities, equipment (including monitoring and control equipment), practices, operations or monitoring method regulated or required in the permit;
3. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or noncompliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division, and;

4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

J. MONITORING AND RECORDS

1. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity. See 40 C.F.R. § 122.41(j)(1).
2. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this permit for such pollutants. See 40 C.F.R. § 122.41(j)(4); 122.44(i)(1)(iv)(A).
3. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or Regional Administrator.
4. Records of monitoring information must include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
5. The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. See Regulation 61.8(4)(b)(iii). All sampling shall be performed by the permittee according to sufficiently sensitive test procedures required by 40 C.F.R. 122.44(i)(1)(iv) or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136.
6. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.
7. Documentation required by this permit, including records of all data used to complete the application for permit coverage to be covered by this permit, stormwater management plans, inspection reports, etc., must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA or the division at any time.

K. SIGNATORY REQUIREMENTS

1. Authorization to Sign: All documents required to be submitted to the Division by the permit must be signed in accordance with 40 CFR §122.22, Regulation 61.4, and the following criteria:
 - a. For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term

environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. The responsible official may be a project manager if the project manager has level of control at a corporation as required in this subpart a.

- b. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
 - c. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes (i) the chief or principal executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. (e.g., Regional Administrator of EPA), and at the city, municipal, state or other government entity it typically will include a program director (e.g. Director of Public Works, Director of Transportation, Director of Parks and Recreation, etc.). For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates.
 - d. By a duly authorized representative in accordance with 40 C.F.R. 122.22(b), only if:
 - i. the authorization is made in writing by a person described in Part II.K.1.a, b, or c above;
 - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,
 - iii. The written authorization is submitted to the Division.
2. Any person(s) signing documents required for submittal to the Division must make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
 3. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both. See 40 C.F.R. §122.41(k)(2).

L. REPORTING REQUIREMENTS

1. **Planned Changes:** The permittee shall give advance notice to the Division, in writing, of any planned physical alterations or additions to the permitted facility in accordance with 40 CFR §122.41(l) and Regulation 61.8(5)(a) and Part II.O. of this permit. Notice is required only when:
 - a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or
 - b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.41(a)(1).
 - c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. See 40 C.F.R. §122.41(l)(1)(iii).

2. **Anticipated Non-Compliance:** The permittee shall give advance notice to the Division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. The timing of notification requirements differs based on the type of non-compliance as described below.
3. **Transfer of Ownership or Control:** The permittee shall notify the Division, in writing, ten (10) calendar days in advance of a proposed transfer of the permit. The notice must include a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them. This permit is not transferable to any person except after notice to the Division. The Division may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. See Regulation 61.8(6); 40 C.F.R. §§ 122.41(l)(iii) and 122.61.
4. **Monitoring reports:** Monitoring results must be reported at the intervals specified in this permit.
 - a. If the permittee monitors any pollutant at the approved monitoring locations listed in Part I more frequently than that required by this permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Division. See 40 CFR 122.41(l)(4).
 - b. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Division in the permit.
5. **Submission of Discharge Monitoring Reports (DMRs):** DMRs shall be submitted electronically through NetDMR system unless the permittee requests and is granted a waiver of the electronic reporting requirement by the Division pursuant to Regulation 61.8(4)(d).
6. **Compliance Schedules:** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on or before the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.
7. **Twenty-four hour reporting:**
 - a. In addition to the reports required elsewhere in this permit, the permittee shall report the following circumstances on the Division's submission form within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall submit to the Division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances:
 - i. Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;
 - ii. Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
 - iii. Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit; or
 - iv. Daily maximum violations for any of the pollutants limited by Part I.A of this permit as specified in Part III of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.
 - b. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - c. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combine sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. See 40 CFR 122.41(l)(6)(i).

- i. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the permittee to the Division.
8. Other non-compliance: A permittee must report all instances of noncompliance at the time monitoring reports are due. These reports may be submitted annually in accordance with Regulation 61.8(4)(p) and/or 61.8(5)(f), but may be submitted at a more frequent interval.

M. BYPASS

1. Definitions:
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility in accordance with 40 CFR §122.41(m)(1)(i) and/or Regulation 61.2(12).
 - b. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR §122.41(m)(1)(ii).
2. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of 40 CFR 122.41(m)(3) and (m)(4). See 40 CFR §122.41(m)(2).
3. Notice of bypass:
 - a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, the permittee shall submit prior notice, if possible, at least ten (10) days before the date of the bypass. See 40 CFR §122.41(m)(3)(i) and/or Regulation 61.9(5)(c).
 - b. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Part II.L.7. See also 40 CFR §122.41(m)(3)(ii).
4. Prohibition of Bypass: Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:
 - a. the bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - c. Proper notices were submitted to the Division.
 - i. The Division may approve an anticipated bypass, after considering its adverse effects, if the Division determines that it will meet the three conditions listed.

N. UPSET

1. Definition: "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation. See 40 CFR §122.41(n) and Regulation 61.2(113).
2. Effect of an upset: An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of section 3 are met. A determination made during administrative review of claims that noncompliance was caused by upset is final administrative action subject to judicial review in accordance with Regulation 61.8(3)(j).

***special note:** this provision is consistent with the definition of "Upset" as codified in Regulation 61.2(113). However, the Colorado regulatory definition of upset is less stringent than the federal code of regulations, which restricts the use of an upset defense to noncompliance with technology-based permit effluent limitations only.*

3. Conditions necessary for demonstration of an Upset: A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:
 - a. an upset occurred and the permittee can identify the cause(s) of the upset;
 - b. the permitted facility was at the time being properly maintained; and
 - c. the permittee submitted notice of the upset as required in Part II.L.7 (24-hour notice); and
 - d. The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. See also 40 C.F.R. 122.41(n)(3)(i)-(iv).

***special note:** this provision is consistent with the definition of “Conditions necessary for demonstration of upset” as codified in Regulation 61.8(3)(j)(ii). However, the Colorado regulatory definition of upset is less stringent than the federal code of regulations, which restricts the use of an upset defense to demonstrate that a facility was properly operated and maintained. Colorado’s regulatory definition of “Conditions necessary for demonstration of upset” is less stringent than the requirements of the federal Clean Water Act.*
4. In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.
5. Burden of Proof: In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Q. REOPENER CLAUSE

Procedures for modification or revocation. Permit modification or revocation of this permit or coverage under this permit will be conducted according to Regulation 61.8(8). This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations (and compliance schedule, if necessary), or other appropriate requirements if one of the following events occurs, including but not limited to:

1. Water Quality Standards: The water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
2. Wasteload Allocation: A wasteload allocation is developed and approved by the State of Colorado and/or EPA for incorporation in this permit.
3. Discharger-specific variance: A variance is adopted by the Water Quality Control Commission.

P. OTHER INFORMATION

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Division or U.S. EPA, the Discharger shall promptly submit such facts or information. See 40 C.F.R. § 122.41(l)(8).

Q. SEVERABILITY

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

R. NOTIFICATION REQUIREMENTS

1. Notification to Parties: All notification requirements, excluding application information submitted using the CEOS portal or twenty-four hour reporting via the submission form, shall be directed as follows:
 - a. Oral Notifications, during normal business hours shall be to:

CDPHE-Emergency Reporting Line: 1-877-518-5608; or

Water Quality Protection Section - Compliance Program
Water Quality Control Division

Telephone: (303) 692-3500

After hours notifications should be made to the CDPHE-Emergency Reporting Line: 1-877-518-5608.

- b. Written notification shall be to:
- Water Quality Protection Section - Compliance Program
 - Water Quality Control Division
 - Colorado Department of Public Health and Environment
 - WQCD-WQP-B2
 - 4300 Cherry Creek Drive South
 - Denver, CO 80246-1530

5. RESPONSIBILITIES

Reduction, Loss, or Failure of Treatment Facility: The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

T. OIL AND HAZARDOUS SUBSTANCES LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

U. EMERGENCY POWERS

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the Division.

V. CONFIDENTIALITY

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, Colorado Open Records Act (CORA) request, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Water Quality Control Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this section shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

W. FEES

The permittee is required to submit payment of an annual fee as set forth in the 2016 amendments to the Water Quality Control Act. Section 25-8-502 (1.1) (b), and the Regulation 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S.1973 as amended.

X. DURATION OF PERMIT

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Regulation 61.

Y. SECTION 307 TOXICS

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established

by regulation pursuant to Section 307 of the Clean Water Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

Appendix D: Self-Inspection Form

CONSTRUCTION STORMWATER SITE INSPECTION REPORT

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" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table>	YES	NO	☐	☐
YES	NO						
☐	☐						

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.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table>	YES	NO	☐	☐
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

[illegible]

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.

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

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

[illegible]

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) <i>This category would primarily result from the discharge of pollutants in violation of the permit</i>			
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) <i>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.</i>			

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

I'd prefer you remove all of Appendix I. These pages are duplicated elsewhere in your docs uploaded to EDARP so just make this SWMP unnecessarily long.

Appendix E: General Site Information

El Paso County Checklist

NOAA Atlas 14 Precipitation

FEMA FIRM Panels

NRCS Soil Report and Map



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EL PASO COUNTY STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number: _____

		Applicant	EPC
Part I. Stormwater Management Plan			
In the "Applicant" column specify the page number for each item.			
1	List the following individuals by title and name and provide contact information for each on the Cover or Title page: Property Owner, Operator/Contractor, SWMP Preparer, and Qualified Stormwater Manager.	x	
2	Provide a Table of Contents.	x	
Site Description			
3	Describe the site location, including nearest street/crossroads.	x	
4	Describe the nature of the construction activity at the site, including if the activity is related to a public emergency, if applicable.	x	
5	<u>Provide a proposed schedule of major construction activities (e.g. clearing and grubbing, grading, utilities, paving, vertical construction, final stabilization, etc.) and the planned implementation of control measures (e.g. silt fence, vehicle tracking control, temporary sediment basin, inlet protection, seeding & mulching, etc.) associated with each major construction activity.</u> Include the anticipated starting and completion dates for each major construction activity, including the anticipated date in which final stabilization will be achieved. See Mile High Flood District's Construction Phasing/Sequencing detail (Table CP-1 in detail SM-1) for guidance.	x	
6	<u>State the total acreage of the site and the acreage anticipated to be disturbed</u> by clearing, excavation, grading, and any other construction activities.	x	
7	<u>Provide a summary of any existing data and sources</u> used in the development of the construction site plans or SWMP <u>which describe the soil types</u> located in the site area <u>and include the erodibility</u> of those soil types.	x	
8	<u>Describe the current percent cover from native vegetation on the site.</u> If the site is currently disturbed or developed, provide the percent cover from native vegetation in a similar, local undisturbed area or adequate reference area. Include the method for determining the percent cover in the description.	x	
9	<u>Describe any anticipated allowable non-stormwater discharges</u> at the site, including those being discharged under CDPS General Permit COR400000 Part I.A.1.b (discharges from uncontaminated springs; discharges of concrete and masonry washout water to the ground; discharges of landscape irrigation return flow; discharges from diversions of state waters within the permitted site), a separate CDPS Permit (e.g. a CDPS Dewatering General Permit), or a Water Quality Control Division low risk discharge guidance document (e.g. uncontaminated groundwater to land), and the applicable control measures installed.	x	
10	<u>Describe the general flow direction and where or how stormwater discharges leave the site.</u> Description must identify the immediate conveyance or area receiving the discharge and the name(s) of the state water(s) receiving the discharge, if different from the immediate conveyance or area. If the discharge is to a municipal separate storm sewer system (MS4), include the name of the entity owning the MS4, the location(s) of the discharge, and the receiving state water(s).	x	
11	Describe all streams located within the construction site boundary.	x	



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EL PASO COUNTY STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number: _____

		Applicant	EPC
Potential Pollution Sources and Control Measures			
12	<u>Describe all potential sources of pollution.</u> At a minimum, the SWMP must identify the following pollutant sources which relate to every construction site: • Disturbed and stored soils • Vehicle tracking of sediment • On-site waste management practices Additional potential sources of pollution may include but is not limited to: management of contaminated soils; loading and unloading operations; outdoor storage activities; vehicle and equipment maintenance and fueling; significant dust or particulate generating processes; routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, etc.; concrete or masonry truck/equipment washing and washout waste; dedicated asphalt batch plants, concrete batch plants, and masonry mixing stations; non-industrial waste sources such as worker trash and portable toilets; and reclaimed water approved for use in construction dust suppression.	x	
13	<u>Describe the materials handling procedures</u> (i.e. control measures) implemented to minimize impacts from handling significant materials. Handling procedures may include but are not limited to control measures for pollutants and activities such as exposed storage of building materials, paints and solvents, landscape materials, fertilizers or chemicals, sanitary waste material, trash, and equipment maintenance or fueling procedures.	x	
14	<u>Provide a Spill Prevention and Response Plan</u> which includes procedures for preventing, responding to, and reporting spills and leaks that may occur on the construction site.	x	
15	<u>Describe all structural control measures</u> (e.g. silt fence, erosion control logs, inlet protection, vehicle tracking pads, etc.) anticipated to be used on site.	x	
16	<u>Describe all non-structural control measures</u> (e.g. seeding, mulching, protection of existing vegetation, street sweeping, waste management, etc.) anticipated to be used on site.	x	
17	If any permanent or construction control measures located outside of the permit area which are owned or operated by another entity (i.e. control measures that are not under the direct control of the permittee) will be utilized by the permittee for compliance with the ESQCP, a documented <u>Use Agreement</u> between the permittee and the owner or operator of the control measure must be included in the SWMP. The SWMP must include all information required of and relevant to any off-site control measures including location, installation and design specifications, and maintenance requirements and responsibility of the control measure(s).	N/A	
18	<u>Provide a GEC Plan.</u> Reference El Paso County Grading and Erosion Control (GEC) Plan Checklist. Although the GEC Plan is reviewed as a separate document, it is a part of the SWMP and should be attached as an appendix to the SWMP narrative document prior to the start of construction.	X	



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EL PASO COUNTY STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number: _____

		Applicant	EPC
Final Stabilization and Long-Term Stormwater Management			
19	Describe all final stabilization methods (e.g. permanent pavement or concrete, vegetative cover, hardscape, etc.) which will be used to achieve final stabilization of any disturbed areas throughout the site. Describe and locate any temporary control measures to be utilized to prevent erosion while awaiting final stabilization.	x	
20	Specific to vegetative cover: <u>describe how the permittee will establish final stabilization through vegetative cover</u> (e.g. seed mix and application method, soil preparation and amendments, soil stabilization methods, etc.); a reference to specifications and/or the site's Landscape Plan may fulfill this requirement, if applicable. Include a statement that in areas where final stabilization will be achieved using vegetative cover, vegetative must be evenly distributed perennial vegetation and coverage will be, at a minimum, equal to 70% of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.	x	
21	Description and location of all <u>permanent control measures</u> (e.g. extended detention basins, rain gardens, sand filter basins, runoff reduction etc.) that will be used to control pollutants in stormwater discharges after construction is complete.	x	
Inspections and Recordkeeping			
22	Describe the procedures that will be used to <u>amend or update the SWMP</u> and to maintain the record of changes. SWMP amendments or updates must include a notation in the SWMP identifying the date and description of the change. Methods for notation may include notations on the site map (i.e. GEC Plan), a log of changes, redline changes in the SWMP, or other measures.	x	
23	Describe the Permit Holder's <u>self-inspection procedures</u> , including the inspection frequency, that will be used to ensure control measures are in effective operational condition, determine if new or modified control measures are needed, and identify all areas of non-compliance with the Stormwater Permit.	x	
24	Describe the <u>recordkeeping procedures</u> to include the Qualified Stormwater Manager's signature on self-inspection reports and the location of SWMP records on-site. A copy of the SWMP (to include the current site map [i.e. GEC Plan] and self-inspection reports) may be kept electronically if the SWMP is immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be.	x	
Appendices Cover Sheets			
A	GEC Plan (see Item 18 above)	X	
B	Erosion and Stormwater Quality Control (ESQCP) Stormwater Permit Form (ESQCP) (signed)	X	
C	CDPS General Permit COR400000 Certification and copy of the General Permit (if applicable)	X	
D	Other CDPS Permit Certifications (if applicable)	N/A	
E	CDPHE Low-Risk Discharge Guidance Documents (if applicable)	N/A	
F	US Army Corps of Engineers Section 404 Permit (if applicable)	N/A	
G	Use Agreement (see Item 17 above) (if applicable)	N/A	
F	Self-Inspection Form	X	



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EL PASO COUNTY
STORMWATER MANAGEMENT PLAN CHECKLIST

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Part II. Applicant Comments
(as needed)



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please remove this old one.

Optional: add in the 2025 version of this checklist

EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

		Applicant	EPC
1. GRADING AND EROSION CONTROL PLAN (complete form using Y, N, N/A in the "Applicant" column)			
a	Vicinity map	X	
b	Adjacent city/town/jurisdictional boundaries, subdivision names, and property parcel numbers labeled	X	
c	North arrow and acceptable scale (1"=20' to 1"=100')	X	
d	Legend for all symbols used in the plan	X	
e	Existing and proposed property lines. Proposed subdivision boundary for subdivision projects	x	
f	All existing structures	X	
g	All existing utilities	X	
h	Construction site boundaries	X	
i	Existing vegetation (notes are acceptable in cases where there is no notable vegetation, only grasses/weeds, or site has already been stripped)	X	
j	FEMA 100-yr floodplain	N/A	
k	Existing and proposed water courses including springs, streams, wetlands, detention ponds, stormwater quality structures, roadside ditches, irrigation ditches and other water surfaces. Show maintenance of pre-existing vegetation within 50 feet of a receiving water	N/A	
l	Existing and proposed contours 2 feet or less (except for hillside)	X	
m	Limits of disturbance delineating all anticipated areas of soil disturbance	X	
n	Identify and protect areas outside of the construction site boundary with existing fencing, construction fencing or other methods as appropriate	N/A	
o	Off-site grading clearly shown and called out	N/A	
p	Areas of cut and fill identified	N/A	
q	Conclusions from soils/geotechnical report and geologic hazards report incorporated in grading design (slopes, embankments, materials, mitigation, etc.)	N/A	
r	Proposed slopes steeper than 3:1 with top and toe of slope delineated. Erosion control blanketing or other protective covering required	X	
s	Stormwater flow direction arrows		
t	Location of any dedicated asphalt / concrete batch plants	N/A	
u	Areas used for staging, storage of building materials, soils (stockpiles) or wastes. The use of construction office trailers requires PCD permitting	X	
v	All proposed temporary construction control measures, structural and non-structural. Temporary construction control measures shall be identified by phase of implementation to include "initial," "interim," and "final" or shown on separate phased maps identifying each phase	X	
w	Vehicle tracking provided at all construction entrances/exits. Construction fencing, barricades, and/or signage provided at access points not to be used for construction	X	
x	Temporary sediment ponds provided for disturbed drainage areas greater than 1 acre	X	



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

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		Applicant	EPC
y	Dewatering operations to include locations of diversion, pump and discharge(s) as anticipated at time of design	N/A	
z	All proposed temporary construction control measure details. Custom or other jurisdiction's details used must meet or exceed EPC standards	X	
aa	Any off-site stormwater control measure proposed for use by the project and not under the direct control or ownership of the Owner or Operator	N/A	
bb	Existing and proposed permanent storm water management facilities, including areas proposed for stormwater infiltration or subsurface detention	X	
cc	Existing and proposed easements (permanent and construction) including required off-site easements	X	
dd	Retaining walls shall not to be located in County ROW unless approved via license agreement. A building permit from Regional Building Department is required for walls greater than or equal to 4 feet in height, series of walls, or walls supporting a surcharge and must be design by P.E.	N/A	
ee	Plan certified by a Colorado Registered P.E., with EPC standard signature blocks for Engineer, Owner and EPC	X	
ff	Engineer's Statement (for standalone GEC Plan): This Grading and Erosion Control Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this plan. _____ Engineer of Record Signature Date	X	
gg	Engineer's Statement (for GEC Plan within Construction Drawing set): These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications. _____ Engineer of Record Signature Date	X	
hh	Owner's Statement (for standalone GEC Plan): I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan. _____ Owner Signature Date	X	
ii	Owner's Statement (for GEC Plan within Construction Drawing set): I, the owner/developer have read and will comply with the requirements of the grading and erosion control plan and all of the requirements specified in these detailed plans and specifications. _____ Owner Signature Date	X	



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		Applicant	EPC
jj	El Paso County: County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/ or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/ or accuracy of this document. Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended. In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion. _____ County Engineer/ECM Administrator Date	X	
2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS			
a	Soils report / geotechnical investigation as appropriate for grading/utilities/drainage/road construction.	N/A	
b	Use Agreement/easement between the Owner or Operator and other third party for use of all off-site grading or stormwater control measures, used by the owner or operator but not under their direct control or ownership.	N/A	
c	Floodplain Development Permit	N/A	
d	USACE 404/wetlands permit/mitigation plan	N/A	
e	FEMA CLOMR	N/A	
f	State Engineer's permit/Notice Of Intent to Construct	N/A	
g	Stormwater Management Plan (SWMP)	X	
h	Financial Assurance Estimate (FAE) (signed)	N/A	
i	Erosion and Stormwater Quality Control Permit (ESQCP) (signed)	N/A	
j	Pre-Development Site Grading Acknowledgement & Right of Access Form (signed)	N/A	
k	Conditions of Approval met?	N/A	



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

		Applicant	EPC
3. STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS			
1	Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands.	X	
2	Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing.	X	
3	A separate Stormwater Management Plan (SMWP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on-site at all times during construction and shall be kept up to date with work progress and changes in the field.	X	
4	Once the ESQCP is approved and a "Notice to Proceed" has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff.	X	
5	Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance.	X	
6	All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan.	X	
7	Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days.	X	
8	Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure.	X	
9	All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that effect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation.	X	



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

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		Applicant	EPC
10	Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of a waters of the state unless shown to be infeasible and specifically requested and approved.	X	
11	Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measure(s).	X	
12	Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off-site.	X	
13	Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or facilities. Concrete washouts shall not be located in an area where shallow groundwater may be present, or within 50 feet of a surface water body, creek or stream.	X	
14	During dewatering operations, uncontaminated groundwater may be discharged on-site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place.	X	
15	Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1.	X	
16	Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.	X	
17	Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.	X	
18	Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately.	X	
19	The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate in roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development.	X	
20	The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.	X	
21	No chemical(s) having the potential to be released in stormwater are to be stored or used on-site unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required.	X	
22	Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills on-site and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.	X	



3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

		Applicant	EPC
23	No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures.	X	
24	Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply.	X	
25	All construction traffic must enter/exit the site only at approved construction access points.	X	
26	Prior to construction the permittee shall verify the location of existing utilities.	X	
27	A water source shall be available on-site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind.	X	
28	The soils report for this site has been prepared by [Company Name, Date of Report] and shall be considered a part of these plans.	X	
29	At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact: Colorado Department of Public Health and Environment Water Quality Control Division WQCD – Permits 4300 Cherry Creek Drive South Denver, CO 80246-1530 Attn: Permits Unit	X	
4. APPLICANT COMMENTS			
a			
b			
c			



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

Applicant	EPC
-----------	-----

5. CHECKLIST REVIEW CERTIFICATIONS

a	Engineer of Record: The Grading and Erosion Control Plan was prepared under my direction and supervision and is complete and correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. _____ Engineer of Record Signature Date	X	
b	Review Engineer: The Grading and Erosion Control Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request. _____ Review Engineer Date		



NOAA Atlas 14, Volume 8, Version 2
Location name: Peyton, Colorado, USA*
Latitude: 38.9528°, Longitude: -104.573°
Elevation: 6866 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.238 (0.191-0.300)	0.291 (0.233-0.366)	0.381 (0.304-0.481)	0.460 (0.365-0.583)	0.577 (0.445-0.762)	0.672 (0.505-0.898)	0.772 (0.560-1.06)	0.878 (0.611-1.23)	1.03 (0.686-1.48)	1.14 (0.742-1.66)
10-min	0.349 (0.280-0.439)	0.426 (0.341-0.536)	0.558 (0.445-0.704)	0.674 (0.535-0.854)	0.845 (0.651-1.12)	0.984 (0.739-1.32)	1.13 (0.820-1.55)	1.28 (0.894-1.80)	1.50 (1.00-2.16)	1.67 (1.09-2.44)
15-min	0.426 (0.341-0.535)	0.519 (0.415-0.653)	0.680 (0.543-0.858)	0.822 (0.652-1.04)	1.03 (0.794-1.36)	1.20 (0.901-1.60)	1.38 (1.00-1.88)	1.57 (1.09-2.20)	1.83 (1.22-2.64)	2.04 (1.33-2.97)
30-min	0.610 (0.489-0.767)	0.743 (0.595-0.935)	0.973 (0.776-1.23)	1.18 (0.932-1.49)	1.47 (1.13-1.94)	1.71 (1.28-2.28)	1.96 (1.42-2.68)	2.23 (1.55-3.13)	2.60 (1.74-3.75)	2.90 (1.88-4.22)
60-min	0.783 (0.627-0.984)	0.940 (0.752-1.18)	1.22 (0.973-1.54)	1.47 (1.17-1.87)	1.86 (1.44-2.47)	2.18 (1.64-2.92)	2.52 (1.83-3.46)	2.89 (2.02-4.08)	3.42 (2.29-4.94)	3.85 (2.50-5.60)
2-hr	0.955 (0.772-1.19)	1.14 (0.916-1.42)	1.47 (1.18-1.83)	1.77 (1.42-2.23)	2.24 (1.76-2.97)	2.65 (2.01-3.53)	3.08 (2.26-4.21)	3.56 (2.50-4.99)	4.24 (2.87-6.10)	4.80 (3.14-6.93)
3-hr	1.05 (0.850-1.30)	1.23 (0.998-1.53)	1.58 (1.28-1.97)	1.91 (1.53-2.39)	2.43 (1.92-3.22)	2.89 (2.21-3.85)	3.39 (2.50-4.62)	3.94 (2.79-5.51)	4.74 (3.22-6.80)	5.40 (3.55-7.78)
6-hr	1.21 (0.991-1.49)	1.41 (1.15-1.74)	1.79 (1.46-2.21)	2.17 (1.76-2.69)	2.78 (2.21-3.66)	3.31 (2.56-4.40)	3.90 (2.92-5.30)	4.57 (3.27-6.36)	5.54 (3.81-7.91)	6.35 (4.21-9.08)
12-hr	1.39 (1.15-1.70)	1.62 (1.34-1.98)	2.06 (1.69-2.53)	2.49 (2.03-3.06)	3.17 (2.55-4.14)	3.77 (2.94-4.96)	4.43 (3.33-5.96)	5.16 (3.72-7.13)	6.23 (4.32-8.83)	7.12 (4.77-10.1)
24-hr	1.60 (1.33-1.94)	1.88 (1.56-2.27)	2.39 (1.98-2.90)	2.87 (2.36-3.50)	3.62 (2.92-4.66)	4.26 (3.34-5.54)	4.96 (3.76-6.61)	5.73 (4.16-7.84)	6.84 (4.77-9.61)	7.75 (5.24-10.9)
2-day	1.85 (1.55-2.22)	2.18 (1.82-2.62)	2.77 (2.31-3.33)	3.31 (2.74-4.00)	4.12 (3.34-5.24)	4.81 (3.79-6.18)	5.54 (4.22-7.30)	6.34 (4.63-8.58)	7.48 (5.25-10.4)	8.40 (5.72-11.8)
3-day	2.03 (1.71-2.42)	2.39 (2.01-2.86)	3.03 (2.54-3.63)	3.60 (3.00-4.34)	4.47 (3.63-5.64)	5.19 (4.11-6.63)	5.97 (4.56-7.82)	6.80 (4.99-9.16)	7.98 (5.63-11.0)	8.93 (6.12-12.5)
4-day	2.18 (1.84-2.60)	2.56 (2.16-3.05)	3.23 (2.71-3.85)	3.83 (3.20-4.59)	4.73 (3.86-5.95)	5.48 (4.36-6.98)	6.28 (4.82-8.20)	7.15 (5.26-9.59)	8.37 (5.93-11.6)	9.35 (6.43-13.0)
7-day	2.59 (2.20-3.06)	2.99 (2.54-3.53)	3.70 (3.13-4.38)	4.34 (3.65-5.17)	5.30 (4.35-6.61)	6.10 (4.88-7.70)	6.95 (5.37-9.01)	7.87 (5.84-10.5)	9.17 (6.54-12.6)	10.2 (7.08-14.2)
10-day	2.94 (2.51-3.46)	3.38 (2.88-3.97)	4.14 (3.52-4.89)	4.83 (4.08-5.72)	5.84 (4.81-7.25)	6.69 (5.37-8.40)	7.58 (5.88-9.78)	8.54 (6.36-11.3)	9.89 (7.09-13.5)	11.0 (7.64-15.2)
20-day	3.91 (3.37-4.56)	4.52 (3.88-5.27)	5.53 (4.73-6.46)	6.39 (5.44-7.51)	7.62 (6.30-9.31)	8.61 (6.94-10.7)	9.62 (7.50-12.2)	10.7 (7.99-14.0)	12.1 (8.73-16.3)	13.2 (9.29-18.1)
30-day	4.70 (4.07-5.46)	5.44 (4.70-6.32)	6.65 (5.72-7.74)	7.66 (6.56-8.96)	9.05 (7.49-10.9)	10.1 (8.20-12.4)	11.2 (8.78-14.2)	12.3 (9.26-16.0)	13.8 (9.98-18.5)	14.9 (10.5-20.4)
45-day	5.69 (4.95-6.57)	6.58 (5.71-7.59)	8.00 (6.92-9.26)	9.15 (7.87-10.6)	10.7 (8.88-12.8)	11.9 (9.65-14.5)	13.0 (10.2-16.3)	14.2 (10.7-18.3)	15.6 (11.4-20.8)	16.7 (11.9-22.8)
60-day	6.53 (5.69-7.50)	7.51 (6.54-8.64)	9.08 (7.88-10.5)	10.3 (8.92-12.0)	12.0 (9.97-14.3)	13.2 (10.8-16.0)	14.4 (11.3-18.0)	15.6 (11.8-20.0)	17.0 (12.4-22.6)	18.1 (12.9-24.5)

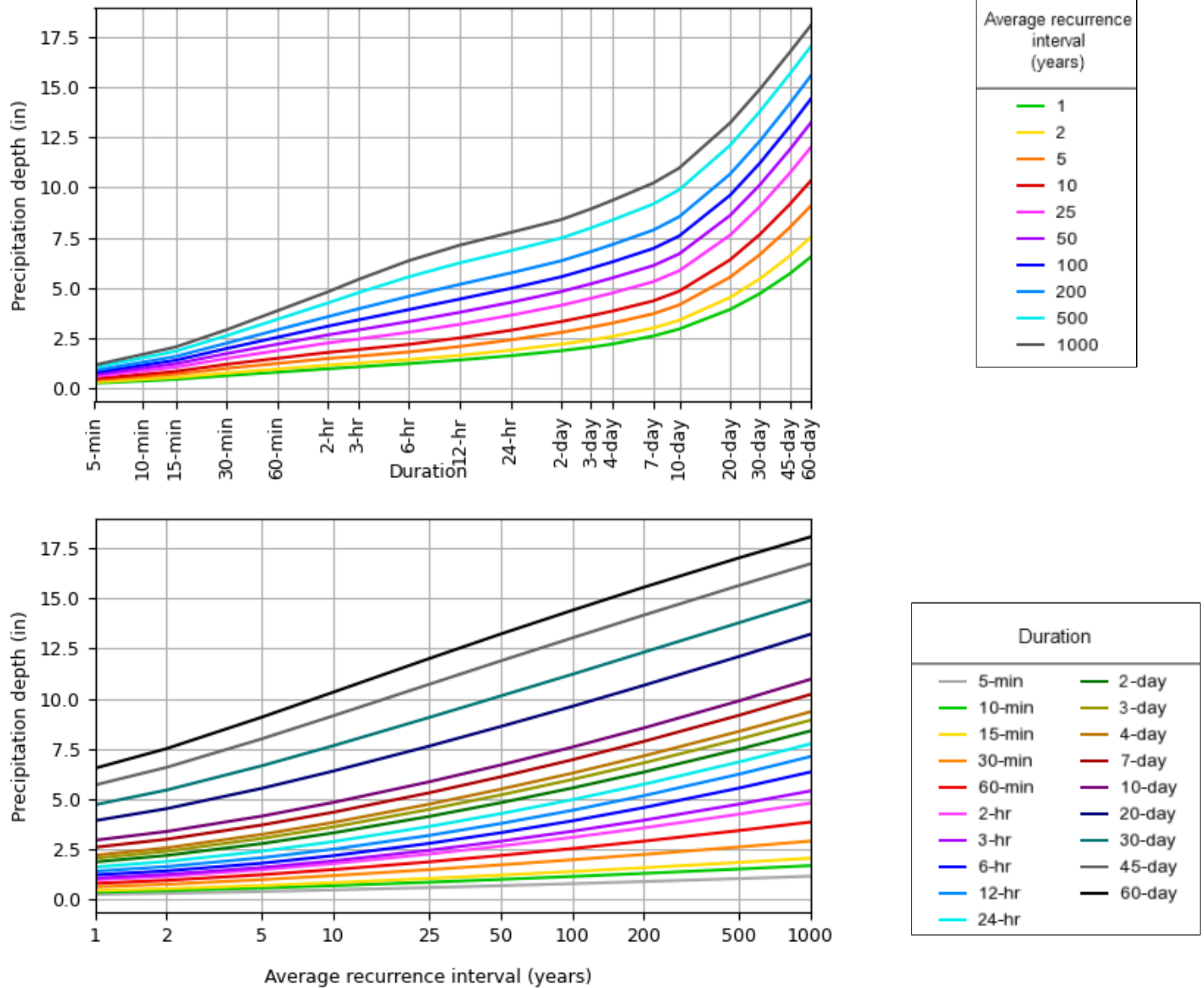
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
 Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.
 Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves

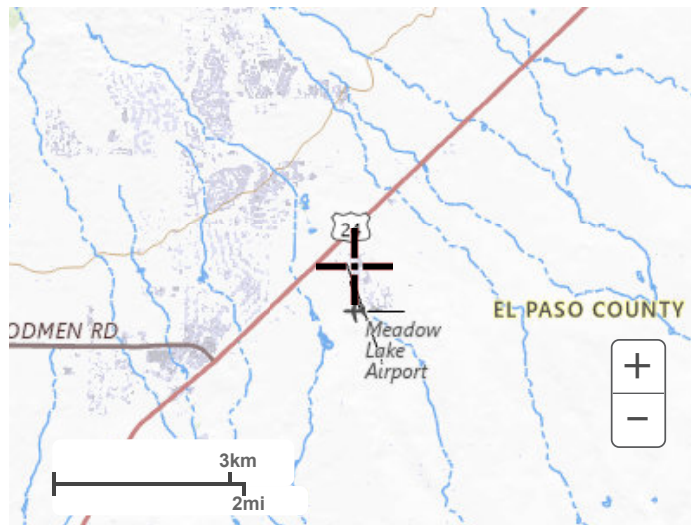
Latitude: 38.9528°, Longitude: -104.5730°



NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Thu May 7 15:21:12 2026

[Back to Top](#)**Maps & aerials****Small scale terrain**



Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

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[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

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

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

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

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

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

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

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

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

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

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

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

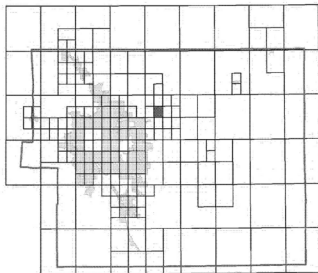
Contact **FEMA Map Service Center (MSC)** via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-356-9620 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	

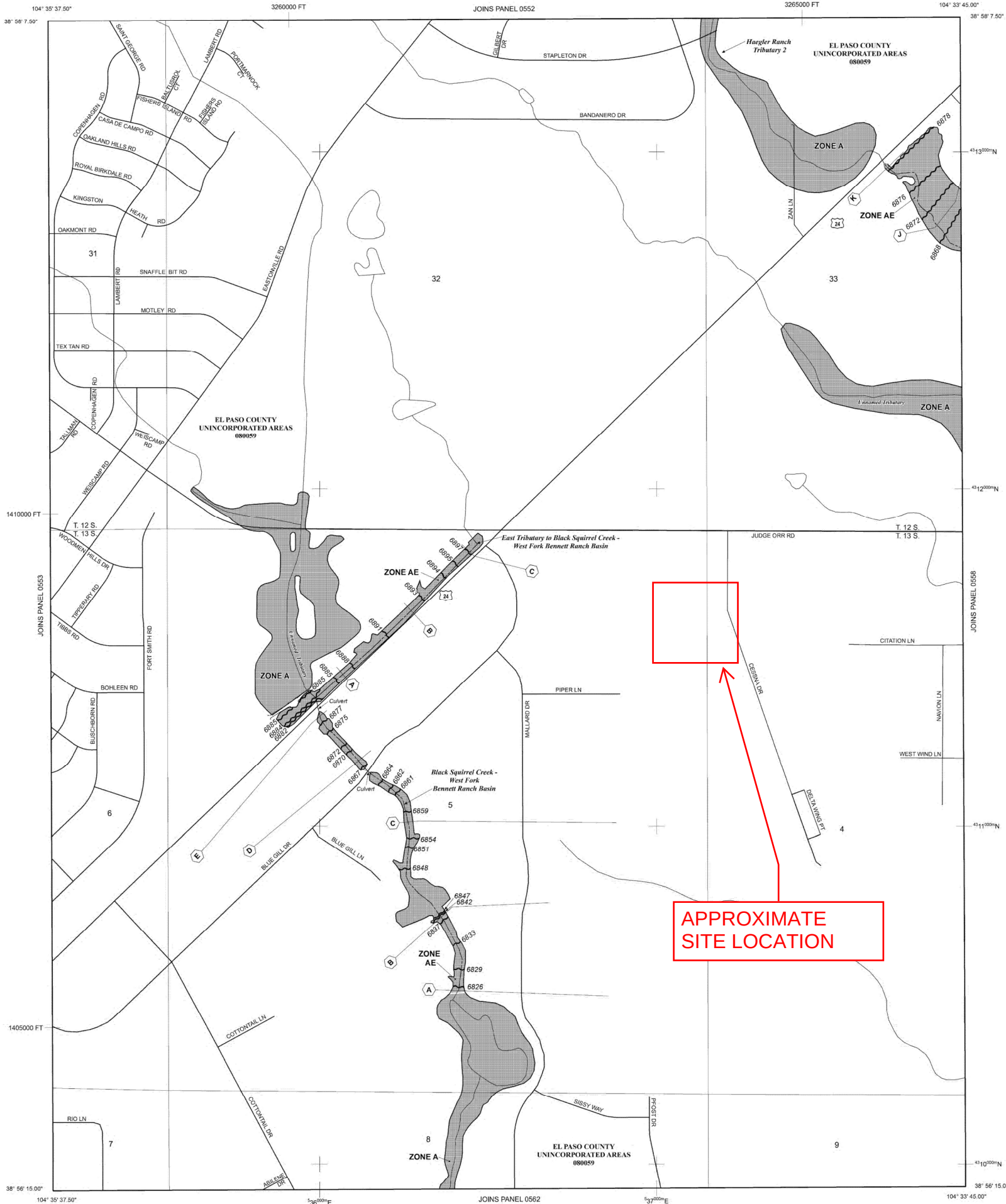
Panel Location Map



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 64 WEST, AND TOWNSHIP 13 SOUTH, RANGE 64 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, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently 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)

- A** Cross section line
- 23** Transect line
- 97° 07' 30.00" 32° 22' 30.00" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4750000N 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 6000000 FT 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
- DX5510** Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5** River Mile

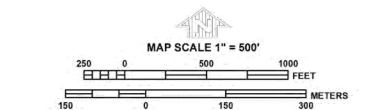
MAP REPOSITORIES
Refer to Map Repositories list on Map Index

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.



PANEL 0554G

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 554 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	08059	0554	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
08041C0554G

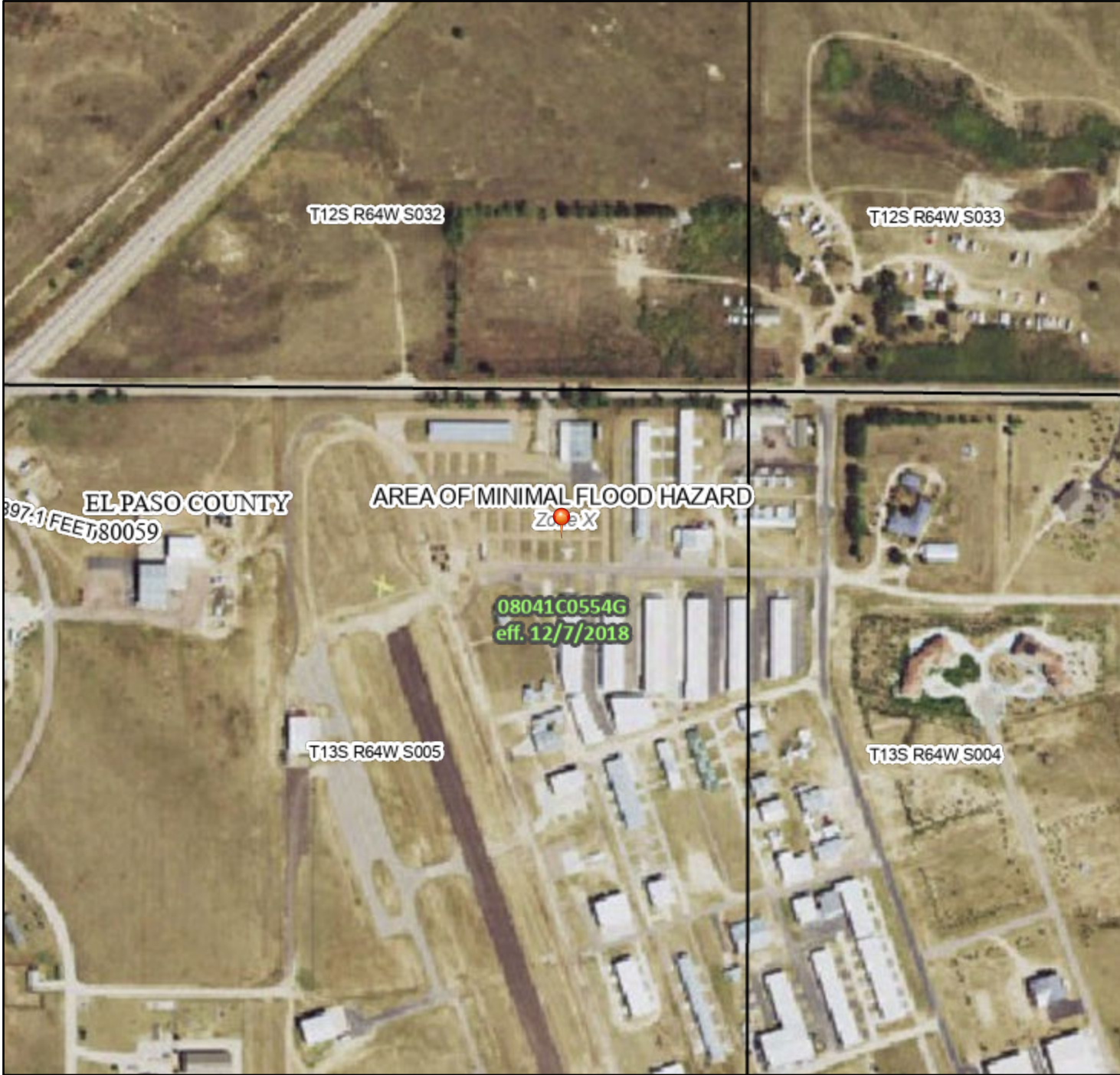
MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

National Flood Hazard Layer FIRMMette



104°34'42"W 38°57'28"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
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



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 5/5/2026 at 9:33 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.

Douglas County

Elbert County

Elbert County

Lincoln County

Pueblo County

Drainage Basins

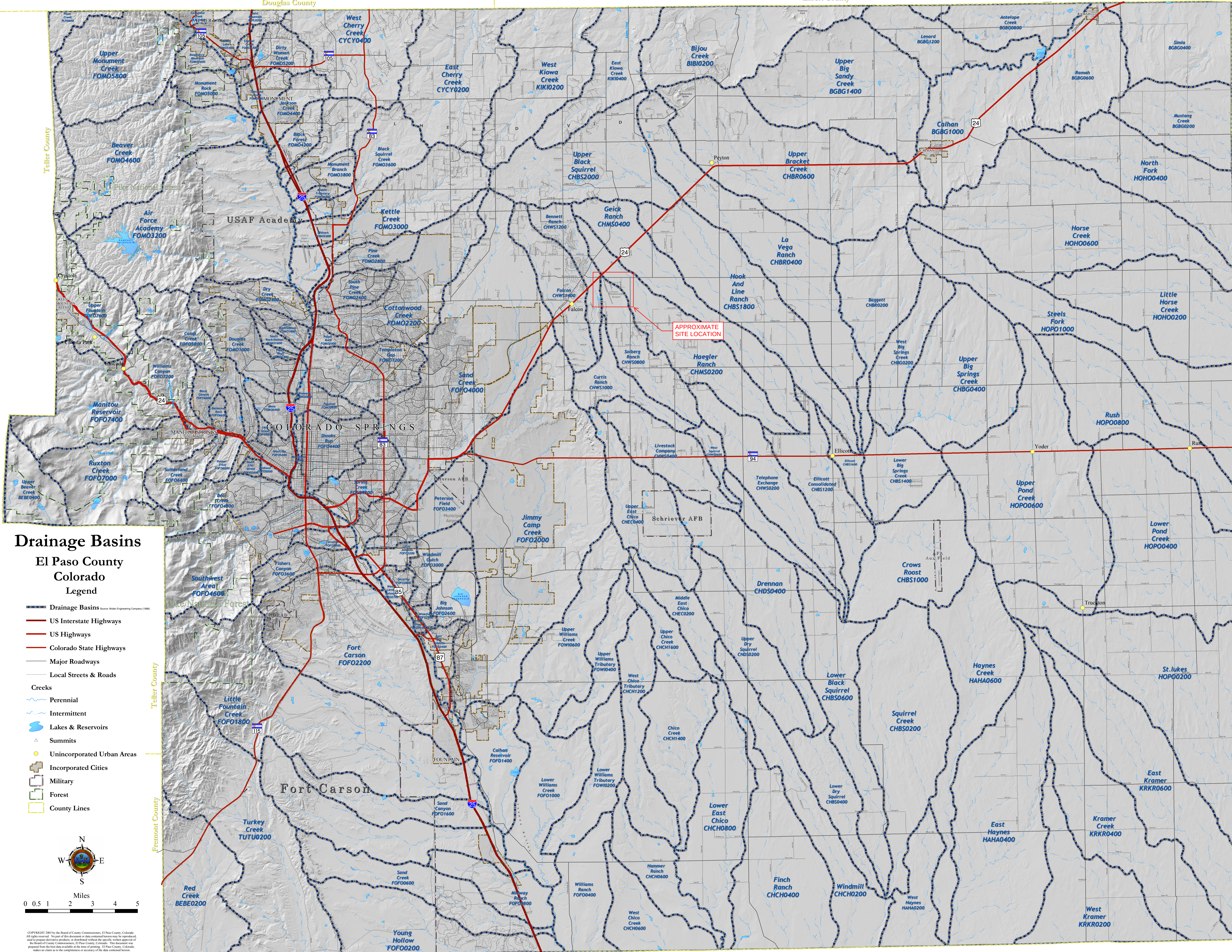
El Paso County Colorado Legend

- Drainage Basins (Source: Muter Engineering Company 1988)
- US Interstate Highways
- US Highways
- Colorado State Highways
- Major Roadways
- Local Streets & Roads
- Creeks
 - Perennial
 - Intermittent
- Lakes & Reservoirs
- Summits
- Unincorporated Urban Areas
- Incorporated Cities
- Military
- Forest
- County Lines



0 0.5 1 2 3 4 5
Miles

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U.S. Fish and Wildlife Service

National Wetlands Inventory

MEADOW LAKE AIRPORT WETLANDS



May 7, 2026

Wetlands

- | | | |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland | Lake |
| Estuarine and Marine Wetland | Freshwater Forested/Shrub Wetland | Other |
| | Freshwater Pond | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



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



May 5, 2026

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

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



Custom Soil Resource Report

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
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	38.6	100.0%
Totals for Area of Interest		38.6	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.

Custom Soil Resource Report

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

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

Custom Soil Resource Report

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

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

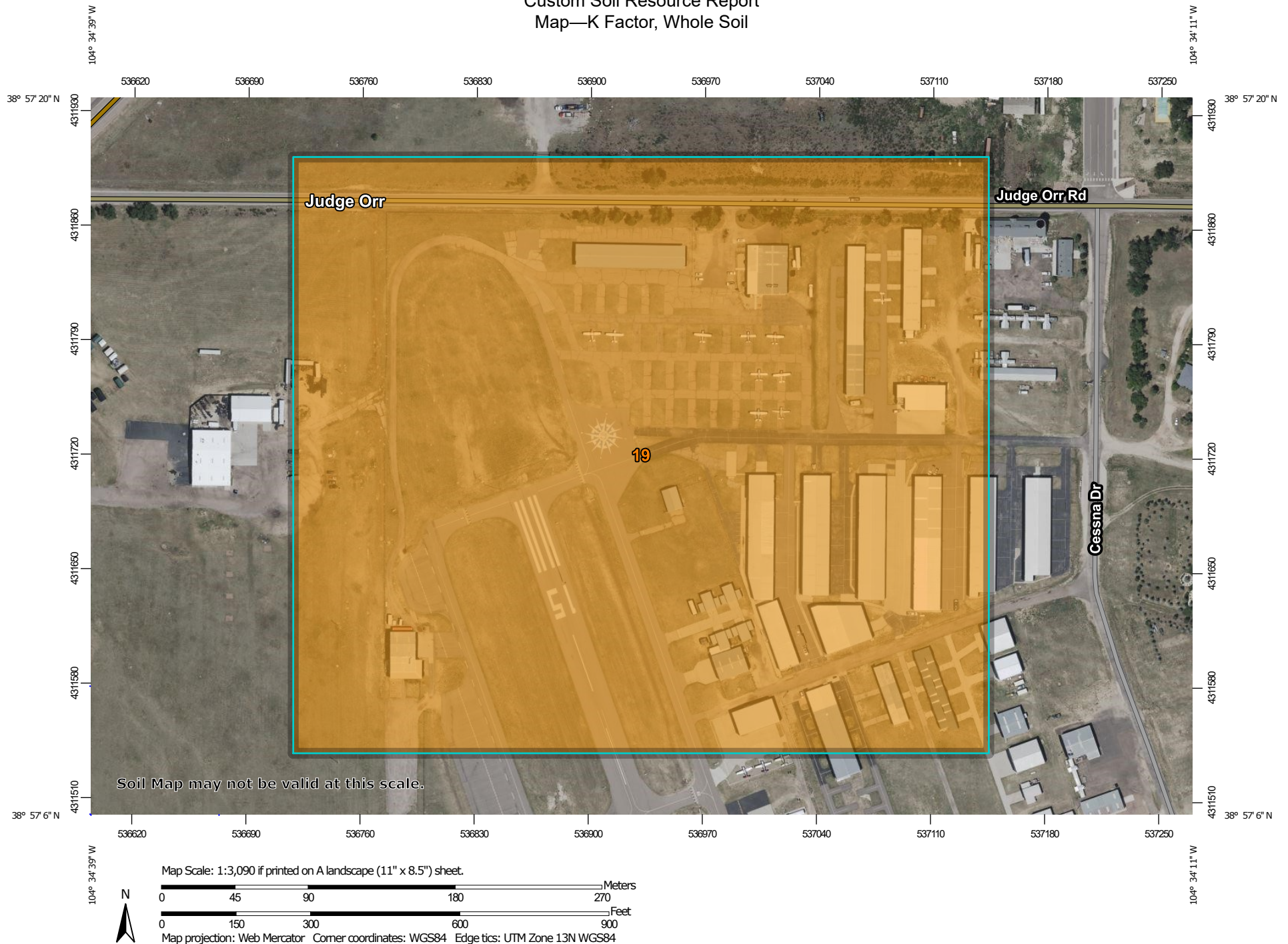
K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Custom Soil Resource Report Map—K Factor, Whole Soil



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

	.02
	.05
	.10
	.15
	.17
	.20
	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Soil Rating Lines

	.02
	.05
	.10
	.15
	.17
	.20

	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Soil Rating Points

	.02
	.05
	.10
	.15
	.17
	.20
	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Water Features

	Streams and Canals
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads
	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.

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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)

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Table—K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	.10	38.6	100.0%
Totals for Area of Interest			38.6	100.0%

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

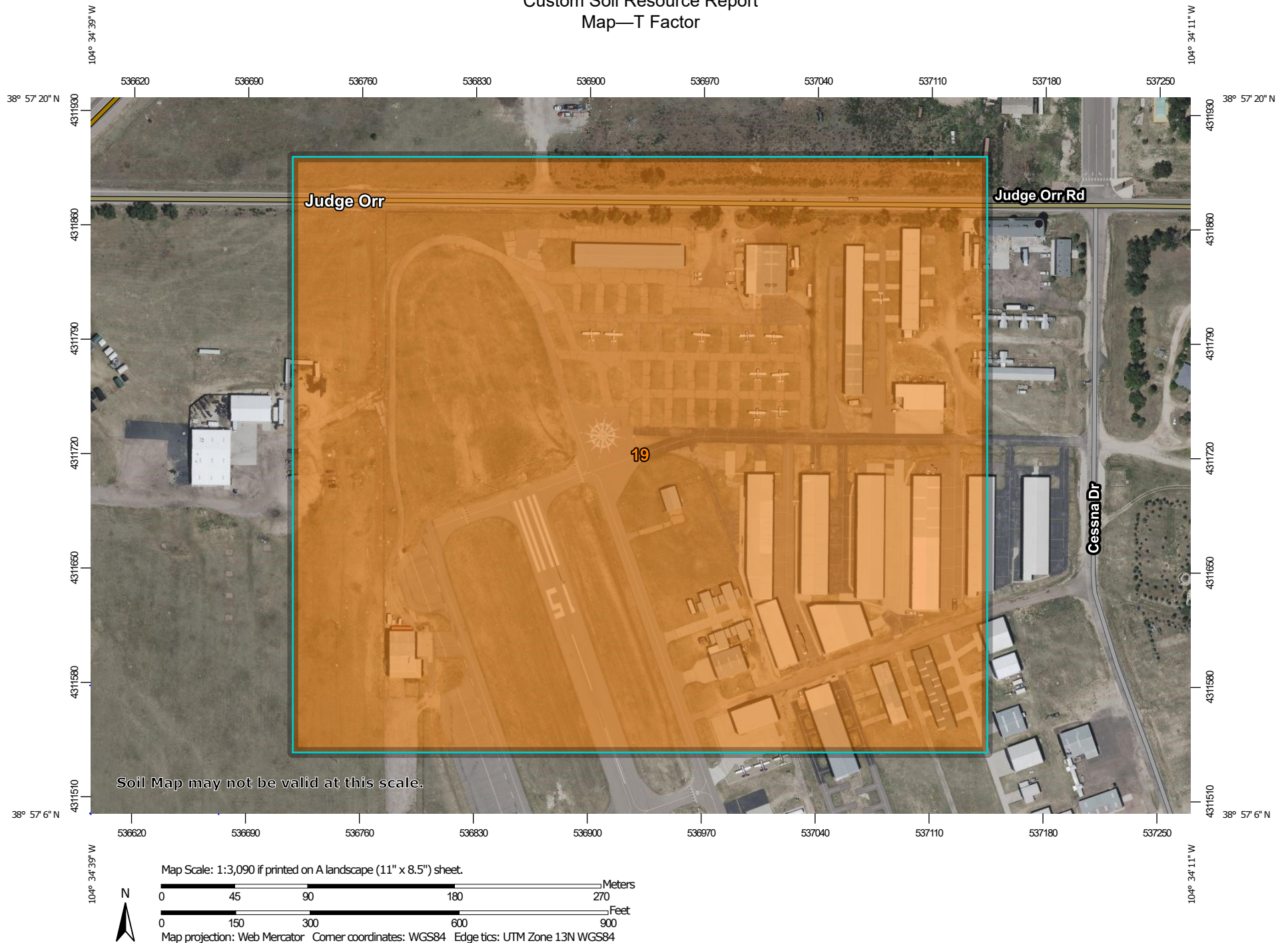
Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

T Factor

The T factor is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Custom Soil Resource Report Map—T Factor



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 1
 2
 3
 4
 5
 Not rated or not available

Soil Rating Lines

 1
 2
 3
 4
 5
 Not rated or not available

Soil Rating Points

 1
 2
 3
 4
 5
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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Table—T Factor

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	2	38.6	100.0%
Totals for Area of Interest			38.6	100.0%

Rating Options—T Factor

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

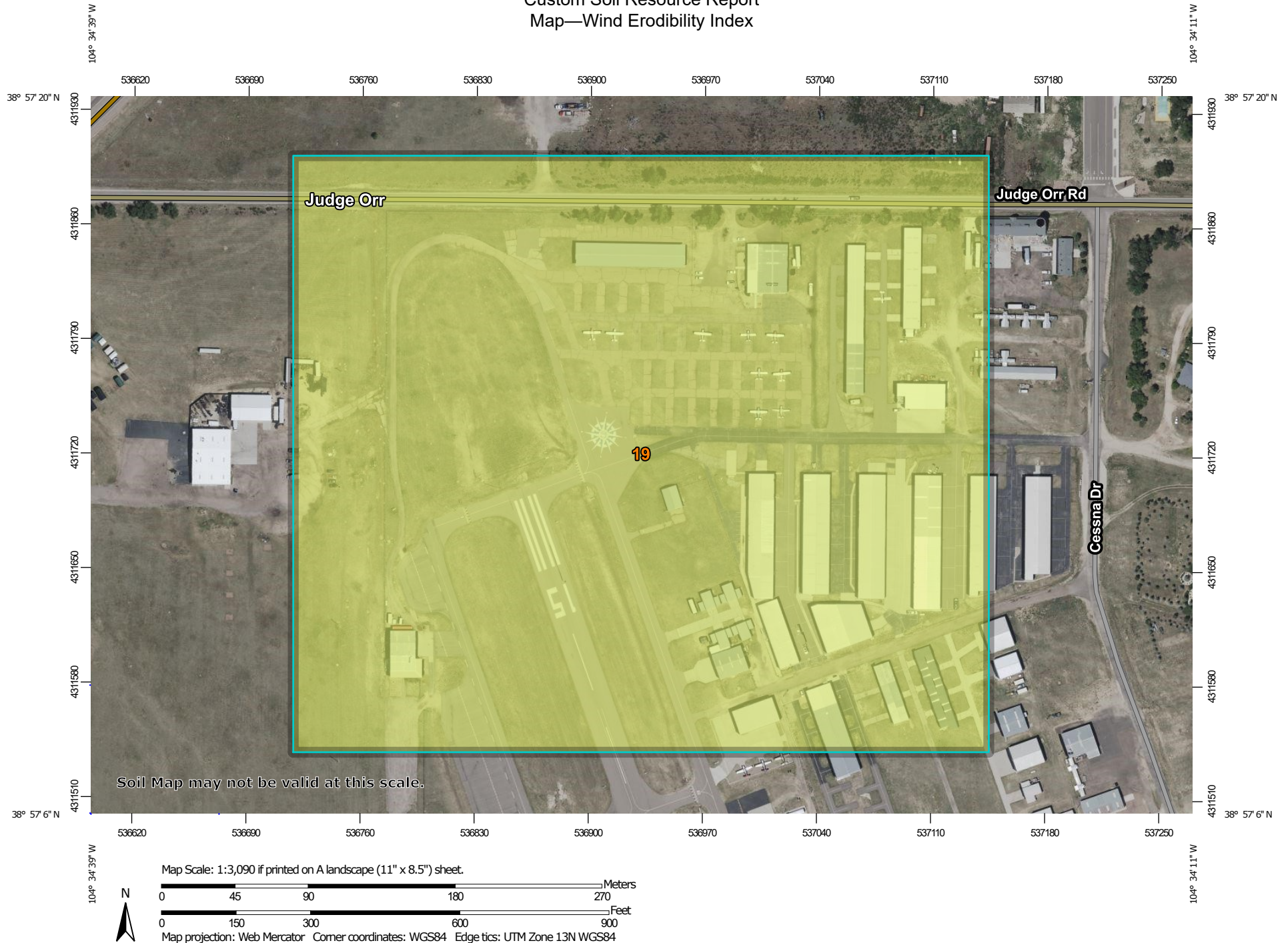
Tie-break Rule: Lower

Interpret Nulls as Zero: No

Wind Erodibility Index

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Custom Soil Resource Report
Map—Wind Erodibility Index



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

	0
	38
	48
	56
	86
	134
	160
	180
	220
	250
	310
	Not rated or not available

Soil Rating Lines

	0
	38
	48
	56
	86
	134
	160
	180
	220

 250

 310

 Not rated or not available

Soil Rating Points

	0
	38
	48
	56
	86
	134
	160
	180
	220
	250
	310
	Not rated or not available

Water Features

 Streams and Canals

Transportation

	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads

Background

 Aerial Photography

MAP INFORMATION

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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.

Table—Wind Erodibility Index

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	86	38.6	100.0%
Totals for Area of Interest			38.6	100.0%

Rating Options—Wind Erodibility Index

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

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

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

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

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

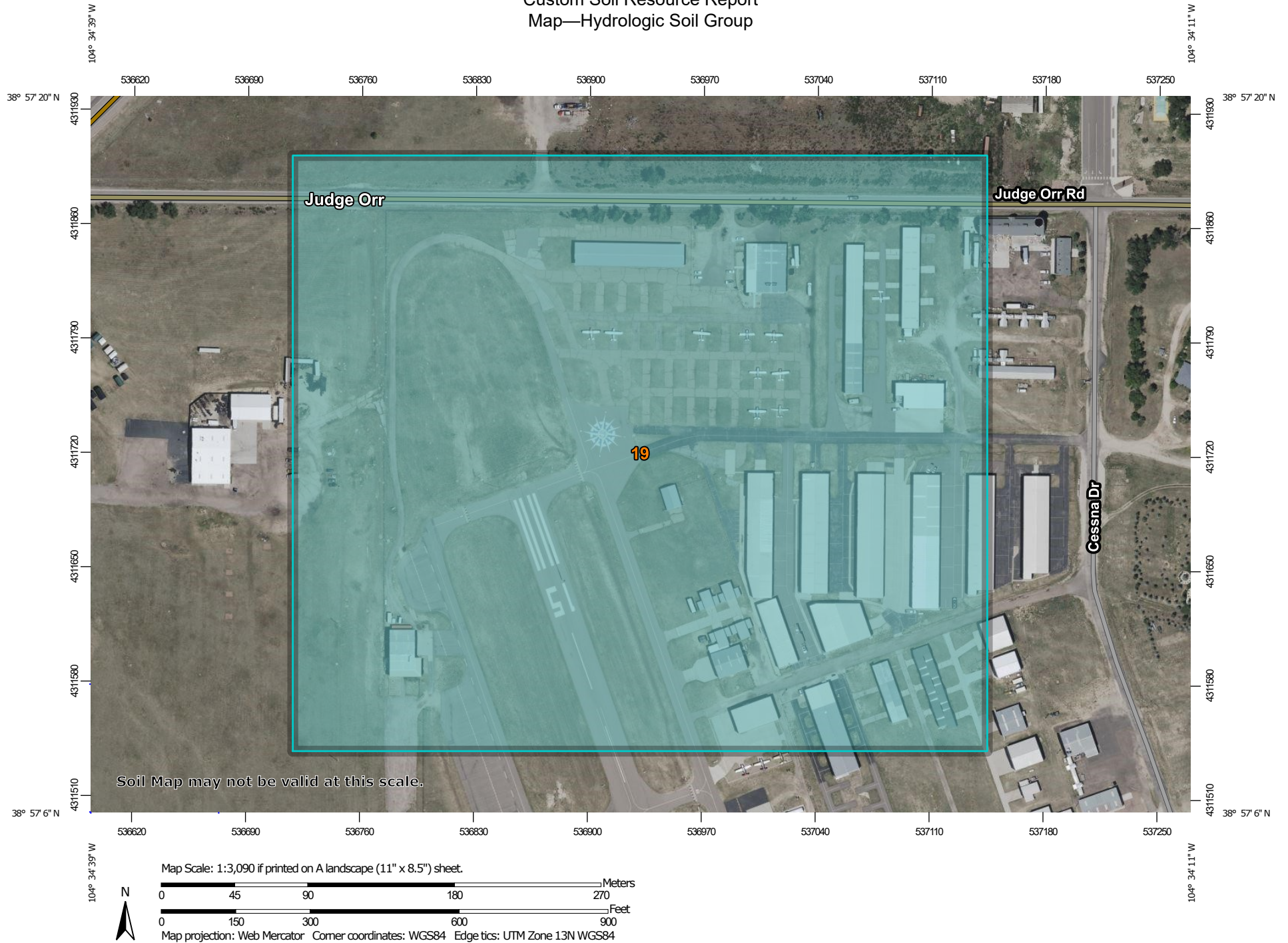
Custom Soil Resource Report

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

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

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

Custom Soil Resource Report Map—Hydrologic Soil Group



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	A	38.6	100.0%
Totals for Area of Interest			38.6	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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