



## **Joyful View Stormwater Management Plan (SWMP) For El Paso County Improvements**

May 2023

HR Green Project No: 2202179

**Prepared For (Applicant):**

OGC RE2, LLC

PO BOX 1385

Colorado Springs, CO 80901

**SWMP Preparer:**

HR Green Development, LLC

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(719)-394-2433

**SWMP Administrator / Qualified Stormwater**

**Manager/Contractor:**

TBD

Added

Add text:

EPC's EDARP File #:  
SF2231

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- B. GEC Plans
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## Applicant Certification

The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans.

\_\_\_\_\_  
Date: \_\_\_\_\_

Engineer of Record and/or Qualified Stormwater Manager

## Review Engineer Certification

The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.

\_\_\_\_\_  
Date: \_\_\_\_\_

Review Engineer

## I. Site Location & Description

Joyful View, referred to as 'the site' herein, is in a portion of section 33, township 13 south, range 63 west of the 6<sup>th</sup> P.M., County of El Paso, Colorado. The site is bound by North Peyton Highway to the west, and undeveloped land to the north, south, and east. Surrounding platted areas include single-family rural homes to the south and east, un-platted land to the west, and undeveloped land to the north. A vicinity map is presented in Appendix A.

The site is approximately 70.18 acres of undeveloped land with existing vegetation consisting of 90% native grasses, determined through field observation. Once developed, the site will include 9 single-family lots. The site will be platted as a single lot. In general, the site slopes east towards Haegler Creek. Onsite elevations range from 6270' - 6238' with slopes ranging 2-4%. Per a NRCS soil survey, the site is made up of Type A Blakeland Loamy sand and Type B Blendon Sandy Loam. The NRCS soil survey is presented in Appendix A.

The site contains a portion of a zone AE 100-year floodplain (FEMA FIRM #08041C0805G). Onsite, existing utilities include overhead electric lines.

Name(s) of ultimate receiving waters; size, type and location of stormwater outfall or storm sewer system discharge: Haegler Creek.

## II. Construction Phasing

The construction activity associated with this CSWMP is the construction of a gravel roadway and drainage swales. The anticipated total disturbance area is 5.26 acres. There are no control measures located outside the construction limits. The proposed sequence of major construction activities and Construction Control Measures for the project as are follows:

1. Install VTC, SSA (Summer 2023)
2. Clear, grub and grade site for improvements. Install inlet/outlet protection and rock check dams per GEC plans. (Summer 2023)
3. Landscaping, restoration and final stabilization. Ensure final stabilization achieved prior to site closure. (Fall 2023)

## III. Self-Inspections

Self-inspections of the Construction Control Measures must be completed by the certified GEC Administrator. The below provides the minimum to satisfy the El Paso County self-inspection requirements. A more frequent self-inspection schedule may be required to ensure Control Measures are operating in compliance with the approved GEC plan.

1. Inspection Schedules:
  - a. The SWMP Administrator shall make a thorough inspection of the Control Measures:
    - i. At least once every fourteen (14) calendar days.
    - ii. Within 24 hours following any precipitation event (i.e. rain, snow, hail etc.) that causes surface erosion.
      - Alternatively, the SWMP Administrator can perform a thorough inspection of the Control Measures once every seven (7) days and forego post-precipitation inspections.

- b. For sites where construction activities have completed and final stabilization measures installed but final stabilization has not yet been achieved, the SWMP Administrator shall make a thorough inspection of the Control Measures:
  - i. At least once every month
  - ii. Within 72 hours following any precipitation event that causes surface erosion
- 2. Inspection Procedures:
  - a. Site Inspection & Observation Items:
    - i. Limits of disturbance perimeter and stormwater discharge points
    - ii. All disturbed areas to ensure necessary Construction Control Measures are in place to control potential stormwater runoff
    - iii. Areas used for material/waste storage
    - iv. Any areas having a signification potential for storm water pollution (i.e site entrances, concrete washout areas etc.)
    - v. All Construction Control Measures identified on the GEC plans.
  - b. Inspection Requirements:
    - i. Determine any locations, or potential locations, where pollutants and stormwater may be exiting the site/entering the receiving waters
    - ii. Evaluate Construction Control measures and determine if they are constructed in accordance with the latest revision of the approved GEC plan and operating effectively
    - iii. Provide recommendations for the need of additional Construction Control measures and the maintenance of existing measures in disrepair to ensure complication with the El Paso County Stormwater Construction Manual.
  - c. Construction Control Measure Maintenance/Replacement:
    - i. The SWMP Administrator shall ensure sediment has been removed from perimeter controls and relocated to an area without the potential for sediment to discharge from the site
    - ii. The SWMP Administrator shall ensure diversion ditches and temporary sediment ponds have not accumulated excess sediment that impedes their functionality.
    - iii. The SWMP Administrator shall ensure that failed Control Measures are repaired/reinstalled within three (3) calendar days, according to the Stormwater Control Measure details, to ensure pollutants and/or sediment do not discharge from the site. GEC details are provided in Appendix B.
  - d. Documentation:
    - i. Update the GEC plan to document the installation/revision of Control Measures
    - ii. Identify Control Measure deficiencies and that noncompliance is resolved within three (3) calendar days.
    - iii. Identify Self-Inspection schedule in most recent inspection form
    - iv. Complete and submit Self-Inspection forms to the El Paso County within five (5) business days of the completed inspection
    - v. Ensure Self-Inspections are available, either physically or electronically, throughout the duration of the project
    - vi. Self-Inspection Repost shall contain at least the following:
      - Inspection Date
      - Name and title of the SWMP Administrator performing inspection

- Location(s) of illicit discharges of stormwater, sediment, or pollutants from the site
- Location(s) of Construction Control Measures in need of maintenance/repair
- Location(s) of Construction Control Measures that failed to operate as designed or proved inadequate
- Location(s) of additional Construction Control Measures not shown on the latest, approved revision of the GEC plan
- Any deviations from the minimum inspection schedule

## IV. Materials Handling

### 1. General Materials Handling Practices:

- Potential pollutants shall be stored and used in a manner consistent with the manufacturer's instructions in a secure location. To the extent practical, material storage areas should be located away from storm drain inlets and should be equipped with covers, roofs or secondary containment as required to prevent stormwater from contacting stored materials. Chemicals that are not compatible shall be stored in segregated areas so that spill materials cannot combine and react.
- Disposal of materials shall be in accordance with the manufacturer's instructions and applicable local, state, and federal regulations.
- Materials no longer required for construction shall be removed from the site.
- Adequate garbage, construction waste, and sanitary waste handling and disposal facilities shall be provided as necessary to keep the site clear of obstruction and Control Measures clear and functional.

Added note for portable toilets

Portable toilets will be located a minimum of 10ft from stormwater inlets and 50ft from state waters. They will be secured at all four corners to prevent overturning and cleaned on a weekly basis. They will be inspected daily for spills.

### 2. Specific Materials Handling Practices:

- All pollutants, including waste materials and demolition debris, that occur onsite during construction shall be handled in a way that does not contaminate stormwater.
- All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored onsite shall be covered and protected from vandalism.
- Maintenance, fueling, and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing operation, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants, shall be conducted under cover during wet weather and on an impervious surface to prevent release of contaminants onto the ground. Materials spilled during maintenance operations shall be cleaned up immediately and properly disposed of.
- Wheel wash water shall be settled and discharged onsite by infiltration.
- Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturer's recommendations for application procedures.
- pH-modifying sources shall be stored in a secure location. The most common materials are bulk cement, cement kiln dust (CKD), fly ash, new concrete, and concrete washout waters. Discuss inspection procedure for checking waste disposal bins for leaks and overflowing capacity. And discuss frequency that they will be emptied (or at what level of capacity would trigger the need to be emptied).

Added discussion for waste disposal bins and frequency to be emptied.

SWMP Checklist Item 13. Discuss inspection procedure for checking waste disposal bins for leaks and overflowing capacity. And discuss frequency that they will be emptied (or at what level of capacity would trigger the need to be emptied).

## V. Spill Prevention & Response Plan

1. The primary objective in responding to a spill is to quickly contain the material and prevent or minimize their mitigation into stormwater runoff and conveyance systems. If the release has impacted onsite stormwater, it is critical to contain the released materials onsite and prevent their release into receiving waters.
2. Spill Response Procedures:
  - a. Notify site superintendent immediately when a spill, or the threat of a spill, is observed. The superintendent shall assess the situation and determine the appropriate response
  - b. If spills represent an imminent threat of escaping onsite facilities and entering the receiving waters, site personnel shall respond immediately to contain the release and notify the superintendent once the situation has stabilized.
  - c. The site superintendent shall be responsible for completing a spill reporting form and for reporting the spill to the appropriate agency.
  - d. Spill response equipment shall be inspected and maintained as necessary to replace any materials used in spill response activities.
3. Spill kits shall be on-hand at all fueling sites. Spill kit locations shall be reported to the SWMP Administrator.
4. Absorbent materials shall be on-hand at all fueling areas for use in containing advertent spills. Containers shall be on-hand at all fueling sites for disposal of used absorbents.
5. Recommended components of spill kits include the following:
  - a. Oil absorbent pads
  - b. Oil absorbent booms
  - c. 55-gallon drums
  - d. 9-mil plastic bags
  - e. Personal protective equipment including gloves and goggles
6. Concrete wash water: unless confined in a pre-defined, bermed containment area, the cleaning of concrete truck delivery chutes is prohibited at the job site.
7. Notification procedures:
  - a. In the event of an accident or spill, the SWMP Administrator shall be notified.
  - b. Depending on the nature of the spill and material involved, the Colorado Department of Public Health and Environment, downstream water users, or other agencies may also need to be notified.
  - c. Any spill of oil which 1) violates water quality standards, 2) produces a "sheen" on a surface water, or 3) causes a sludge or emulsion, or any hazardous substance release, or hazardous waste release which exceeds the reportable quantity, must be reported immediately by telephone to the National Response Center Hotline at (800) 424-8802.

## VI. Potential Sources of Pollution

1. Potential sources of pollution from construction activities include
  - a. Disturbed or stored soils
  - b. Management of contaminated soils
  - c. Vehicle tracking of sediment
  - d. Loading & unloading operations
  - e. Outdoor Storage activities

- f. Vehicle and Equipment Maintenance/Fueling
- g. Dust or Particulate Generating Processes
- h. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents etc.
- i. On-site waste management (waste piles, liquid wastes, dumpsters)
- j. Concrete truck/equipment washing (washing truck chute and associated fixtures)
- k. Dedicated asphalt, concrete batch plants and masonry mixing stations
- l. Non-industrial waste (worker trash and portable toilets)

Added note (not anticipated in the section below)

## VII. Implementation of Control Measures

Stormwater control measures must be installed according to BMP Details & Specification, presented in Appendix C, and the approved Grading and Erosion Control plan this report supports. Within the context of this CSWMP's construction activities the following control measures, at a minimum, are required:

- Vehicle Tracking Control
- Stabilized Staging Area
- Inlet/outlet Protection
- Rock check dams
- Seeding & Mulching

Additional control measures may be required at the discretion of the County Stormwater Inspector.

## VIII. Final Stabilization & Long-Term Stormwater Management Plan

Discuss use of Runoff Reduction to achieve WQ treatment

1. Temporary seeding and mulching will be installed to provide interim stabilization prior to final landscaping installation. See approved landscaping plans for final stabilization details. Final stabilization is met when 70% of pre disturbance levels, no **Added discussion in paragraph below.** are stabilized. Final stabilization must be achieved prior to removal of temporary measures. Anticipated date of final stabilization is Fall 2023; however, this is subject to change. Long term stormwater management will be provided in the onsite, private full spectrum detention pond. See below for seeding and mulching details:
  - a. Prior to seeding, fill any eroded rills and gullies with topsoil.
  - b. Ensure all areas are seeded and mulched per the City Stormwater Construction Manual.
  - c. Continue monthly self-inspections of final stabilization methods and the stormwater management system to ensure proper function. If repairs are needed, reseed and re-mulch as needed.
  - d. Control noxious weeds in a manner acceptable to the GEC inspector.
  - e. Seed Mix: See Appendix C for approved seed mixes.
  - f. Seeding Requirements:
    - i. Drill seed whenever possible, seed depth must be 1/3 to 1/2 inch when drill-seeding. Cross drilling should be used whenever possible with the seed divided between the two operations. The second drilling should be perpendicular to the first.
    - ii. When drill seeding is not possible or on slopes greater than 3:1, hydro-seeding with tackifier may be substituted at the discretion of the GEC inspector. Hydro-seeding must be lightly raked into soil. Seeding rates are presented in Appendix C.
    - iii. All seeded areas must be mulched.
  - g. Mulching Requirements:

- i. Mulching shall be completed as soon as practical after seeding but no more than fourteen (14) days after planting. Erosion control blanket can be used in place of the below mulching methods.
- ii. Hay or straw mulch:
  1. Only certified weed-free and certified-seed free mulch may be used. Must be applied at 2 tons/acre and adequately secured.
  2. Crimping shall not be used on slopes greater than 3:1, tackifier must be used in place.
- iii. Hydraulic mulching:
  1. Allowable on steep slopes or areas with limited access
  2. If hydro-seeding is used, mulching must be applied secondly.
  3. Wood cellulose fibers mixed with water must be applied at a rate of 2,000-2,500 lbs/acre, and tackifier applied at a rate of 100 lbs/acre.

## IX. Inspection and Record Keeping

1. The project is subject to inspections by the Colorado Division of Public Health and Environment (CDPHE), the Environmental Protection Agency (EPA), and El Paso County at any time. Inspection of the stormwater management system shall be performed, by the SWMP Administrator, at least every 14 calendar days and after the occurrence of precipitation or snow melt event that may cause noticeable erosion or run-off. Time span greater than 14 calendar days is a violation of the CDPS permit.
2. SWMP Location:  
On-Site
3. SWMP ADMINISTRATOR: The individual(s), position, or title responsible for developing, implementing, maintaining, and revising the SWMP is to be determined upon award of the project. The individual(s) will be sufficiently qualified for the required duties per the El Paso County ECM Appendix I.5. The individual listed as the Erosion Control Supervisor shall fill out the information below and place in the on-site copy before beginning installation of the BMPs for this site and notify the County of the appropriate contact information.

SWMP Administrator Name: to be determined

## X. References

Engineering Criteria Manual (ECM), County of EL PASO, COLORADO

The City of Colorado Springs/El Paso County Drainage Criteria Manual

City of Colorado Springs – Stormwater Construction Manual, December 2020

## APPENDIX A – FEMA MAP & NRCS SOIL SURVEY

SWMP Checklist Item 12. Note that this project does not anticipate utilizing onsite batch plants in the SWMP text.

SWMP Checklist Item 13. Discuss inspection procedure for checking waste disposal bins for leaks and overflowing capacity. And discuss frequency that they will be emptied (or at what level of capacity would trigger the need to be emptied).

SWMP Checklist Item 14. Discuss Location and description of any anticipated allowable non-stormwater discharge. If N/A, add a note stating no non-stormwater components of discharge, such as springs, landscape irrigation return flows, construction dewatering, or other discharges will be encountered during the project.

SWMP Checklist Item 16. Please add a note about any stream crossings or add a statement that no streams cross the project area.

SWMP Checklist Item 21. Add text stating that the SWMP should be viewed as a “living document” that is continuously being reviewed and modified as a part of the overall process of evaluating and managing SW quality issues at the site. The QSM shall amend the SWMP when there is a change in design, construction, O&M of the site which would require the implementation of new or revised BMPs or if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in SW discharges associated with construction activity or when BMPs are no longer necessary and are removed.

SWMP Checklist Item 25. Add a note that inspection logs will be signed by the QSM. And discuss record keeping procedures.

SWMP Checklist Item 26. Add a note stating that this project does not rely on control measures owned or operated by another entity.

Added note.

Added.

Statement is included in the "Site location & description" section of the report

Statement is included in the "Site location & description" section of the report

Added note in the self inspections section of the report.

Added.

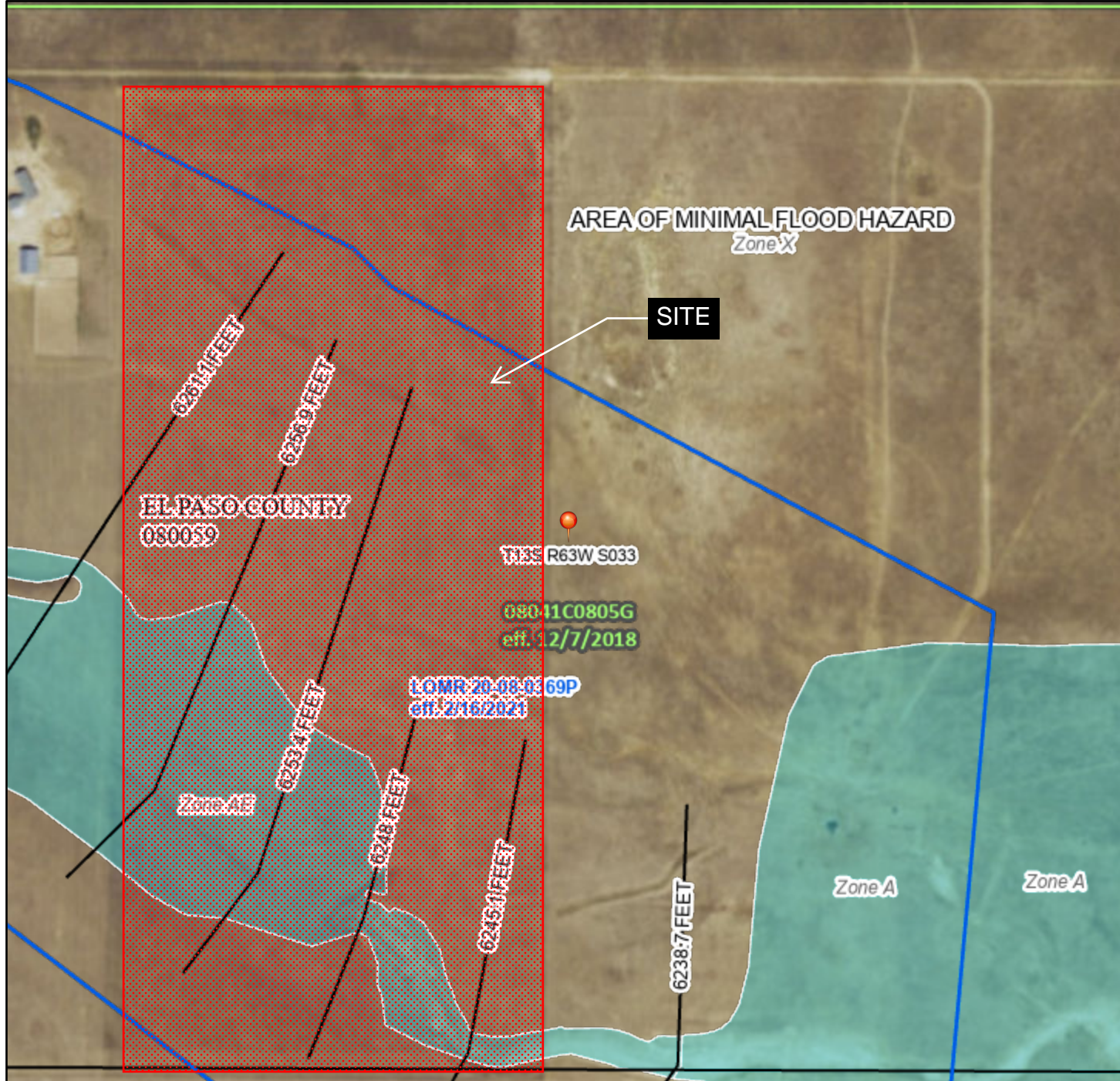
added note.



# National Flood Hazard Layer FIRMMette



104°27'37"W 38°52'30"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## 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 Cross Sections with 1% Annual Chance Water Surface Elevation
		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 4/27/2023 at 1:38 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 unmapped areas cannot be used for regulatory purposes.



**NOTES TO USERS**

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

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

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

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

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

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

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

NGS Information Services  
NOAA, NIMS12  
National Geodetic Survey  
SSMC-3, #9202  
1315 East-West Highway  
Silver Spring, MD 20910-3282

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

**Base Map** information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

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

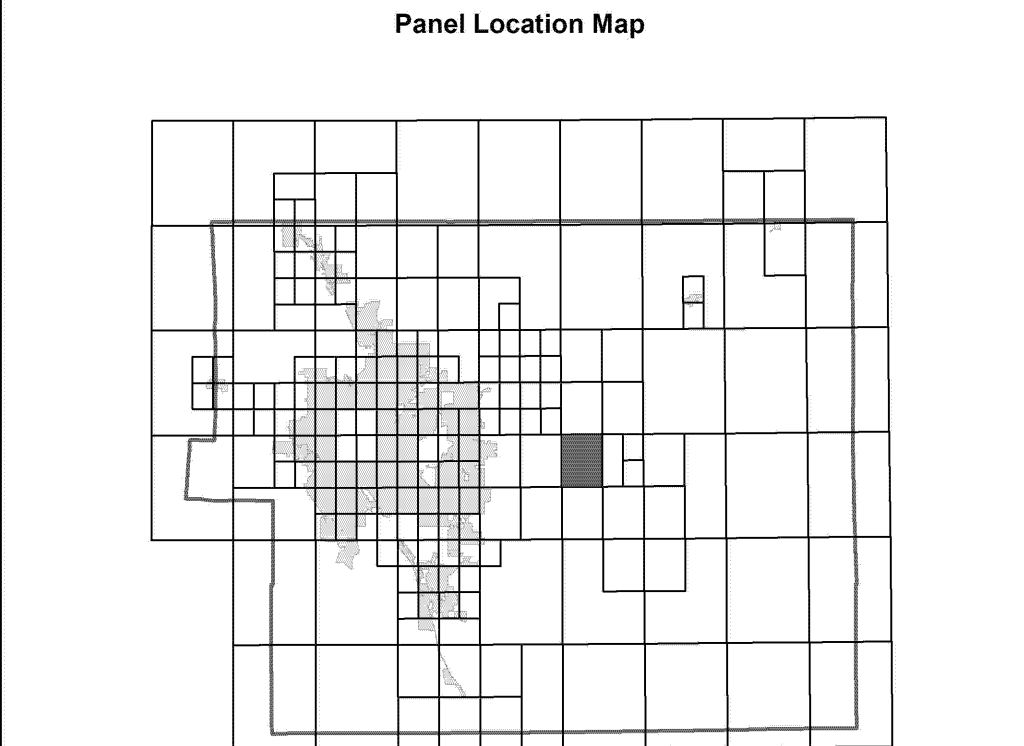
**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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

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

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

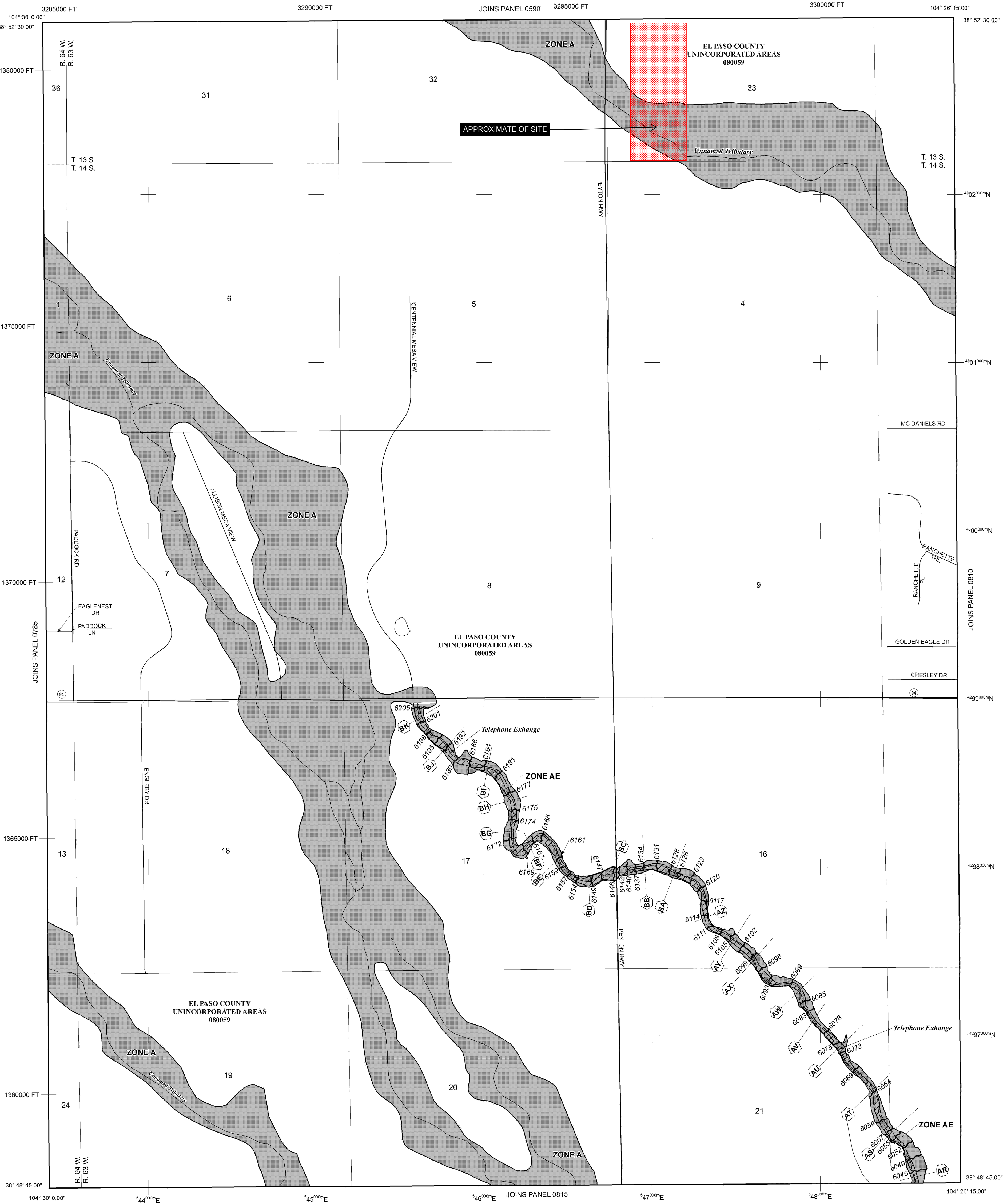
El Paso County Vertical Datum Offset Table	
Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	



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.



**LEGEND**

**SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, 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)

**Cross section line**

**Transect line**

**Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)**

**1000-meter Universal Transverse Mercator grid ticks, zone 13**

**5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection**

**Bench mark (see explanation in Notes to Users section of this FIRM panel)**

**River Mile**

**MAP REPOSITORIES**

Refer to Map Repositories list on Map Index

**EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**

**MARCH 17, 1997**

**EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**

**DECEMBER 7, 2018** - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

**MAP SCALE 1" = 1000'**

**500 0 1000 2000 FEET**

**300 0 300 600 METERS**

**NFIP**

**PANEL 0805G**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**EL PASO COUNTY, COLORADO AND INCORPORATED AREAS**

**PANEL 805 OF 1300**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0805	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.

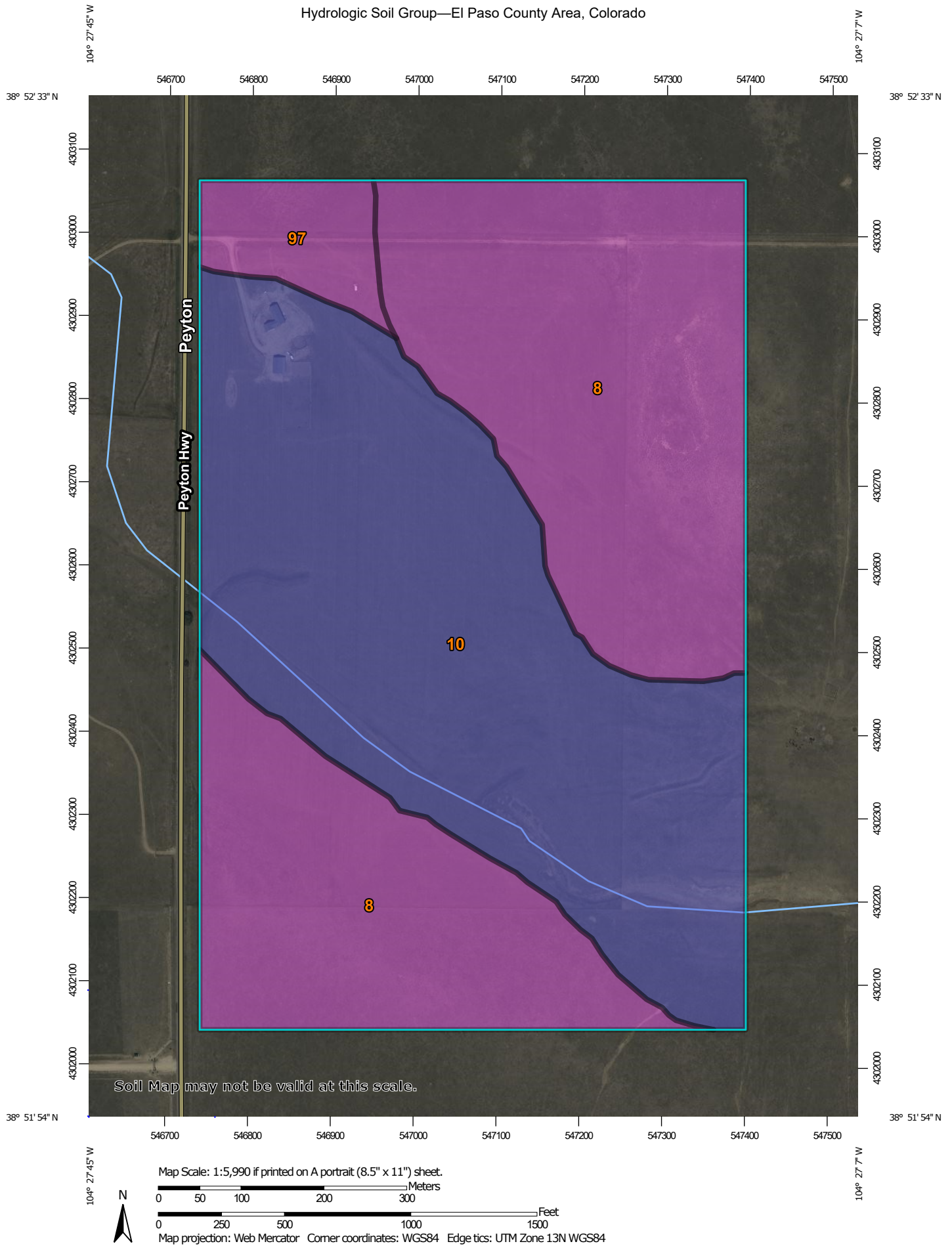
**MAP NUMBER 08041C0805G**

**MAP REVISED DECEMBER 7, 2018**

**Federal Emergency Management Agency**



# Hydrologic Soil Group—El Paso County Area, Colorado



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

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

#### Soil Rating Lines

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

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado  
 Survey Area Data: Version 20, Sep 2, 2022

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

Date(s) aerial images were photographed: Sep 11, 2018—Oct 20, 2018

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

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	A	83.1	49.7%
10	Blendon sandy loam, 0 to 3 percent slopes	B	76.9	46.0%
97	Truckton sandy loam, 3 to 9 percent slopes	A	7.1	4.2%
<b>Totals for Area of Interest</b>			<b>167.1</b>	<b>100.0%</b>

## Description

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

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

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

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

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

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

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





Jones Rd

Jones Rd

YEGUADA BETO  
DOMÍNGUEZ

Chufo's Drywall

N Peyton Hwy

Peyton Hwy

SITE

## APPENDIX B – GEC PLANS

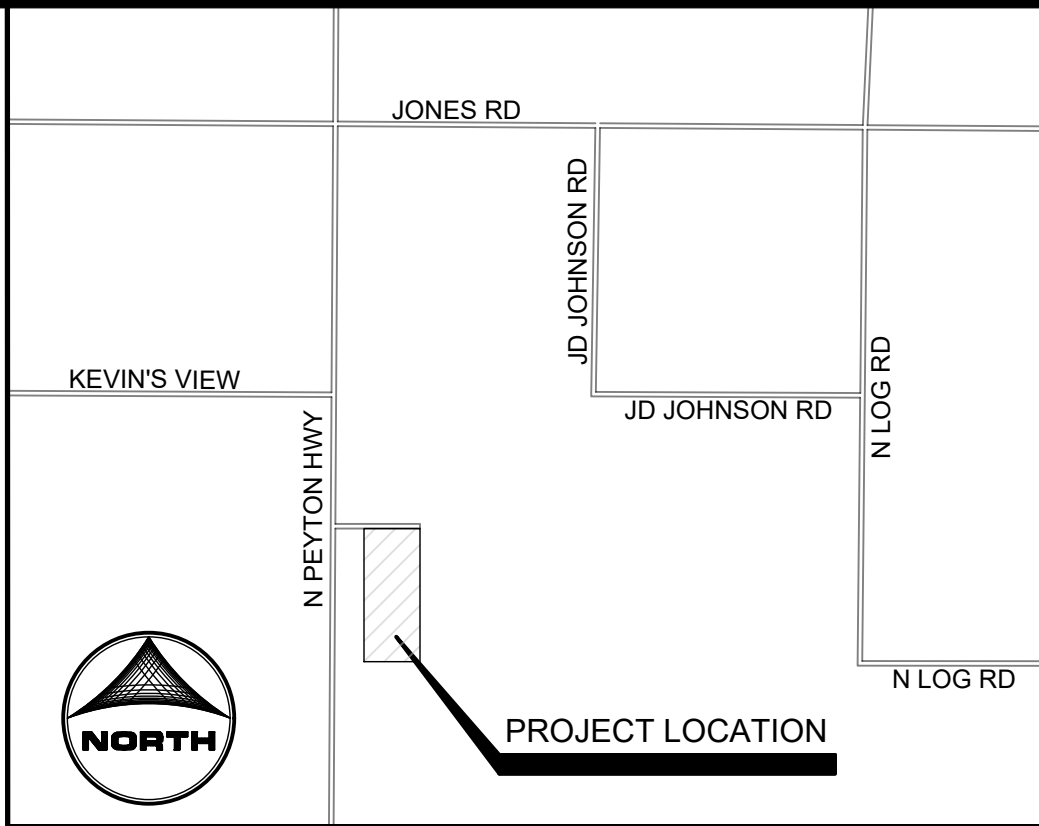
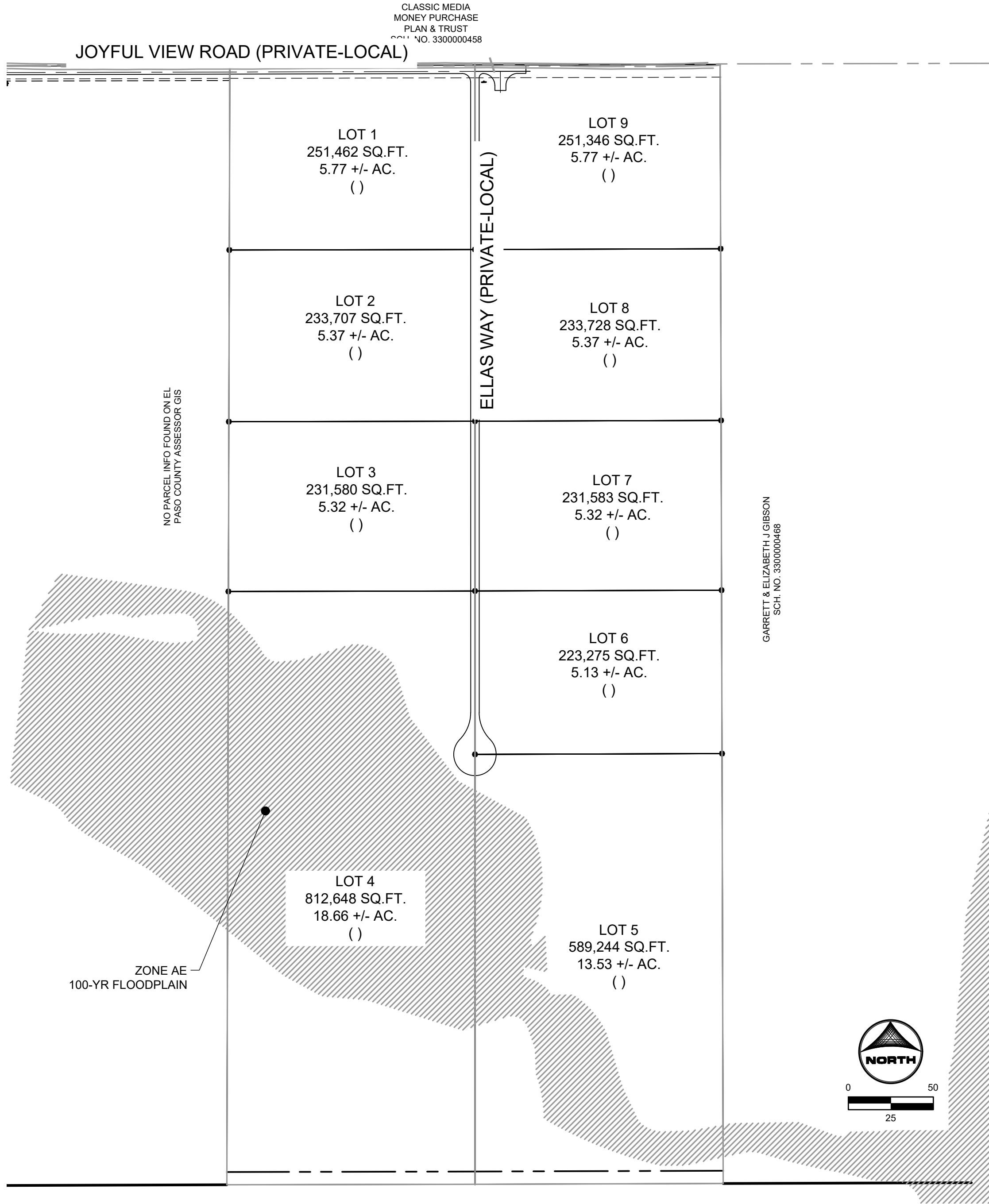


EL PASO COUNTY STANDARD GRADING AND EROSION CONTROL PLAN NOTES:

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 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 (SWMP) 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 AFFECT 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 OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
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 ONSITE 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 ONSITE 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 6, 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  
WOOD - PERMITS  
4300 CHERRY CREEK DRIVE SOUTH  
DENVER, CO 80246-1530  
ATTN: PERMITS UNIT

JOYFUL VIEW SUBDIVISION

INITIAL, INTERIM, AND FINAL GRADING AND EROSION CONTROL PLAN



VICINITY MAP (NOT TO SCALE)

LEGAL DESCRIPTION:

TRACTS 2 AND 3 OF THE GRAND VIEW SUBDIVISION EPC PARCEL NO. 330000466 AND 330000467

BENCHMARK

THE SOUTH LINE OF SECTION 33, TOWNSHIP 13 SOUTH, RANGE 65 WEST, MONUMENTED AS SHOWN AND ASSUMED TO BEAR NORTH 89 DEGREES 29 MINUTES 18 SECONDS WEST, 583.72 FEET.

BASIS OF BEARING

1/2"X24" REBAR W/PLS38374 CAP SET

DESIGN ENGINEER'S STATEMENT

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.

COLLEEN MONAHAN, CO P.E. NO. 0056067 DATE

OWNER/DEVELOPER'S STATEMENT:

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.

KEVIN O'NEIL DATE  
OGC RE2, LLC

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 DIRECTORS DISCRETION.

JOSHUA PALMER P.E. DATE  
COUNTY ENGINEER

PCD FILING NO. SF2231

DRAWN BY: AXB JOB DATE: 5/26/2023  
APPROVED: CPM JOB NUMBER: 2202179  
CAD DATE: 5/26/2023  
CAD FILE: J:\2022\2202179\CAD\DWG\GEC\GEC\_Cover

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
0" 1"  
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION



HR GREEN - COLORADO SPRINGS  
1975 RESEARCH PARKWAY SUITE 230  
COLORADO SPRINGS, CO 80920  
PHONE: 719.384.2440  
FAX: 713.965.0044

JOYFUL VIEW SUBDIVISION  
OGC RE2, LLC.  
EL PASO COUNTY, CO

GRADING & EROSION CONROL PLAN  
COVER

SHEET  
CV

1



## LEGEND

**EXISTING**

MATCH LINE  
PHASE LINE  
SECTION LINE  
PROPERTY BOUNDARY  
PROPERTY LINE  
EASEMENT LINE  
RIGHT OF WAY  
CENTERLINE  
CHAIN LINK FENCE  
WOODEN FENCE  
ROD IRON FENCE  
GUARDRAIL  
CABLE TV  
U.G. ELECTRIC  
OVERHEAD ELECTRIC  
FIBER OPTIC  
GAS MAIN  
SANITARY SEWER  
UNDERDRAIN  
STORM DRAIN  
TELEPHONE  
WATER MAIN  
SWALE  
TRAIL  
CURB & GUTTER  
DRAINAGE BASIN  
INDEX CONTOUR  
INTER. CONTOUR  
100-YR FLOODPLAIN  
FLOODWAY

PROPOSED GRAVEL  
ROADWAY

EDGE OF WETLANDS

*DRAINAGE*

*EXISTING*

*DRAINAGE BASIN*    

BASIN TAGDESIGN POINT

Page 10 of 10

PROPOSED



1








*STORM SEWER*

MANHOLE  
STORM INLET  
FLARED END SECTION  
RIPRAP





















**SANITARY SEWER**

CLEAN OUT  
MANHOLE  
PLUG

*WATER*

<b>FIRE HYDRANT</b>	
<b>FIRE DEPT. CONNECTION</b>	
<b>GATE VALVE</b>	
<b>MANHOLE</b>	
<b>METER</b>	
<b>TEE</b>	
<b>REDUCER</b>	

## DRY UTILITIES

ELECTRIC METER	
ELECTRIC PEDESTAL	
ELECTRICAL CABINET	
ELECTRIC VAULT	
FIBER OPTIC PULL BOX	
FIBER OPTIC MANHOLE	
FIBER OPTIC PEDESTAL	
FIBER OPTIC SIGN	
FIBER OPTIC VAULT	
GAS METER	
GAS SIGN	
GAS VAULT	
TELEPHONE CABINET	
TELEPHONE MANHOLE	
TELEPHONE SIGNAL/MAST	
TELEPHONE SIGN	
TELEPHONE PEDESTAL	
TRANSFORMER	
LIGHT POLE	
FIBER OPTIC VAULT	

PROPOSED


*MISCELLANEOUS*

SIGN  
BOLLARD  
ACCESSIBLE PARKING

## ABBREVIATIONS

-	DEFLECTION ANGLE
Ø, DIA -	DIAMETER
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABC	ASPHALT BASE COURSE
ABD	ABANDONED
AC	ACRE
ADA	THE AMERICANS WITH DISABILITIES ACT
ASPH	ASPHALT
ASS'Y	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BFE	BASE FLOOD ELEVATION
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCH MARK
BNDY	BOUNDARY
BOP	BOTTOM OF POND
BW	BOTTOM OF WALL
C&G	CURB AND GUTTER
CA	COARSE AGGREGATE
CATV	CABLE TELEVISION
CB	CHORD BEARING/CATCH BASIN
CFS	CUBIC FEET PER SECOND
CIP	CAST IRON PIPE
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
COMP	COMPOSITE
CONC	CONCRETE
CONST	CONSTRUCT OR CONSTRUCTION
CSP	CORRUGATED STEEL PIPE
CSU	COLORADO SPRINGS UTILITIES
CT	COURT
CTR	CENTER
CU	COPPER
CY	CUBIC YARD
DBL	DOUBLE
DEG	DEGREE
DET	DETAIL
DEPT	DEPARTMENT
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DOT	DEPARTMENT OF TRANSPORTATION
DWG	DRAWING
E	EAST/EASTING
EL	ELEVATION
ELEC	ELECTRIC
EOG	EDGE OF GUTTER
EOP	EDGE OF PAVEMENT
ESMT	EASEMENT
EW	ENDWALL
EX	EXISTING
FD	FRENCH DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FLANGE ELEVATION
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FWHA	FEDERAL HIGHWAY ADMINISTRATION
FL	FLOW LINE

FOC	FIBER OPTICS CABLE
FT	FOOT OR FEET
GB	GRADE BREAK
GAL	GALLON
HOPE	HIGH DENSITY POLYETHYLENE
HC RAMP	HINDICAP RAMP
HW	HEADWALL
INV	INVERT
KM	KILOMETER
L	LENGTH
LF	LINEAR FEET
M	METER
MIN	MINIMUM
MISC	MISCELLANEOUS
MAINT	MAINTENANCE
MAX	MAXIMUM
MH	MANHOLE
MP	MIDPOINT
N	NORTH/NORTHING
NO	NUMBER
OC	ON CENTER
OH	OVERHEAD
PB	PUBLIC
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	POINT OF CURB RETURN
PI	POINT OF INTERSECTION
PIE	PUBLIC IMPROVEMENT ESMT
PT	POINT OF TANGENCY
PRC	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PRV	PRESSURE REDUCING VALVE
PVT	PRIVATE
PUADE	PUBLIC UTILITY AND ACCESS ESMT
PVC	POLYVINYL CHLORIDE
R	RADIUS
REC	RECEPTION
RCBC	REINFORCED CONCRETE BOX CULVERT
S	SOUTH
SHT	SHEET
SQ	SQUARE
SW	SPILLWAY
TBC	TOP BACK OF CURB
TC	TRICKLE CHANNEL
TOP	TOP OF POND
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
VERT	VERTICAL
W	WEST
WW	WASTEWATER
WWF	WELDED WIRE FABRIC
W/	WITH
W/O	WITHOUT
YD	YARD

DRAWN BY: AXB JOB DATE: 5/26/2023 BAR IS ONE INCH ON  
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JOYFUL VIEW SUBDIVISION  
OGC RE2, LLC.  
EL PASO COUNTY, CO

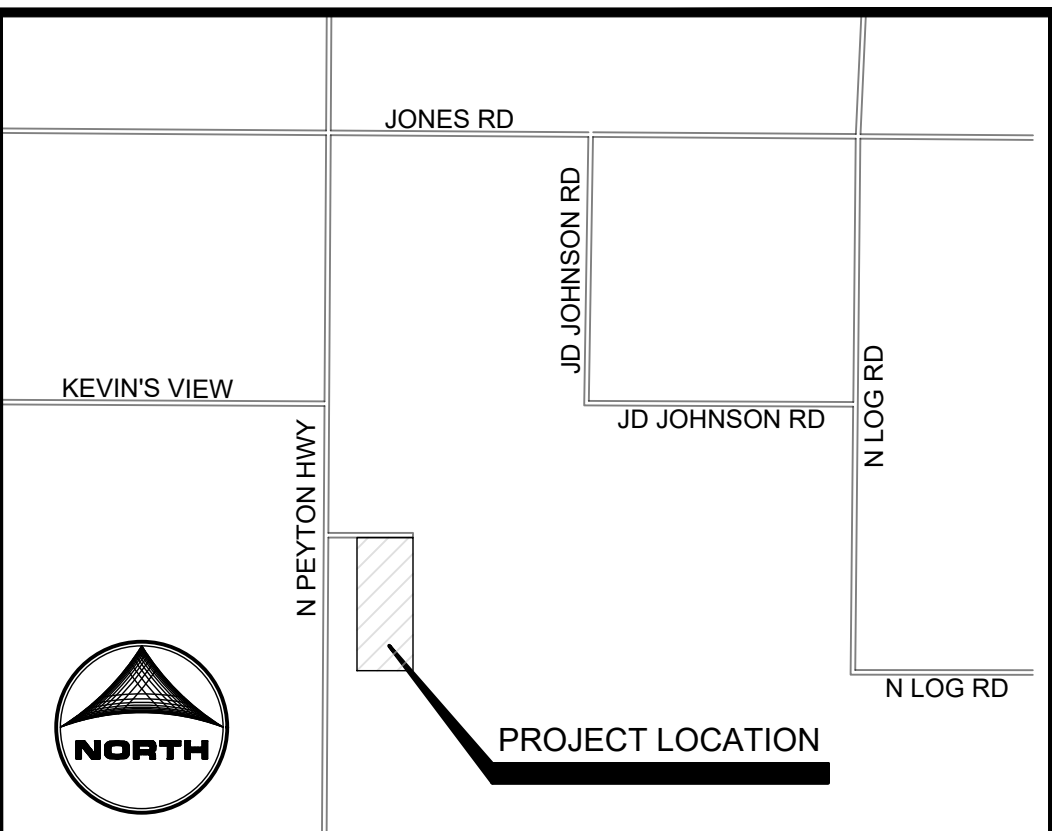
## GRADING & EROSION CONROL PLAN

### LEGEND

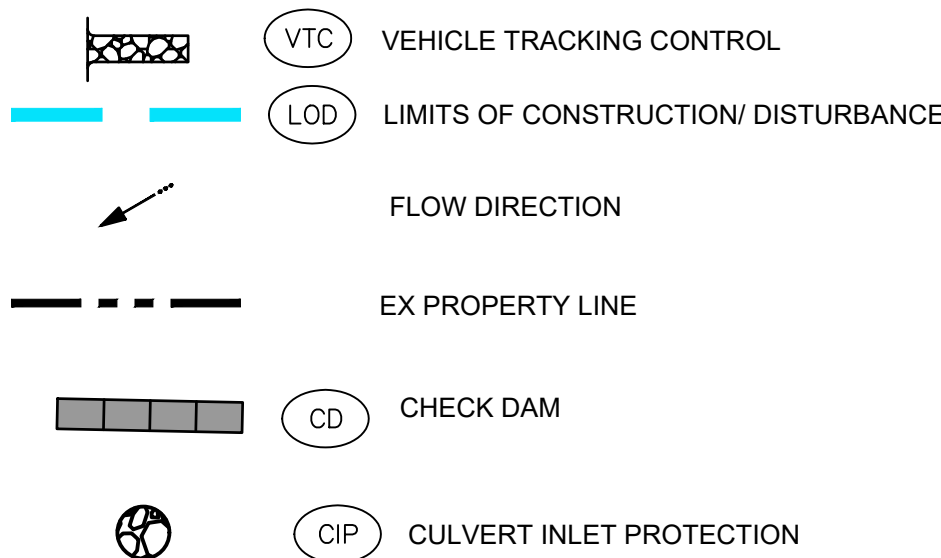
SHEET  
LE

2



VICINITY MAP  
(NOT TO SCALE)

## GEC LEGEND



### GRADING & EROSION CONTROL PLAN NOTES:

1. SEE SHEET 4 FOR EL PASO COUNTY GRADING AND EROSION CONTROL DETAILS.
2. ALL STORMWATER MANAGEMENT MEASURES SHOWN ON THIS PLAN MUST BE INSTALLED AND MAINTAINED PER THE EL PASO COUNTY STORMWATER CONSTRUCTION MANUAL, LATEST REVISIONS.
3. ALL WINN LIMITS OF DISTURBANCE SHALL BE CLEARED, GRUBBED AND STOCKPILED PRIOR TO IMPORT OF ANY FILL.
4. ALL GREATER THAN 3:1 SLOPES MUST BE RECEIVE SLOPE TRACKING TREATMENT AND EROSION CONTROL BLANKET.
5. STOCKPILES REQUIRED DURING ONSITE CONSTRUCTION ACTIVITIES WILL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. STOCKPILING OF MATERIAL MUST NOT OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLAN.
6. NON-STRUCTURAL CONTROLS (I.E. STREET SWEEPING) WILL BE AT THE DISCRETION OF THE PROJECT'S CERTIFIED GEC ADMINISTRATOR THROUGHOUT THE DURATION OF LAND DISTURBING ACTIVITIES.
7. THERE ARE NO ANTICIPATED ASPHALT AND/OR CONCRETE BATCH PLANTS, OR MASONRY MIX STATIONS ASSOCIATED WITH THIS PROJECT. IF THE CONTRACTOR REQUIRES A ASPHALT/CONCRETE BATCH PLANTS OR MASONRY MIX STATIONS, THESE PLANS WILL BE AMENDED AS REQUIRED.
8. THERE ARE NO EXISTING PRESERVATION EASEMENTS LOCATED ON THIS SITE.
9. ONSITE EXISTING VEGETATION IS NATIVE GRASSES AND WEEDS. THERE IS NO NOTABLE VEGETATION OTHERWISE.

PROJECT INFO:

CUT VOLUME: 1350.68 CUBIC YARDS  
FILL VOLUME: 2255.14 CUBIC YARDS  
NET 904.46 (FILL) CUBIC YARDS:

NO.	DATE	BY	REVISION DESCRIPTION



HR GREEN - COLORADO SPRINGS  
1975 RESEARCH PARKWAY SUITE 230  
COLORADO SPRINGS, CO 80920  
PHONE: 719.394.2440  
FAX: 713.965.0044

JOYFUL VIEW SUBDIVISION  
OGC RE2, LLC.  
EL PASO COUNTY, CO

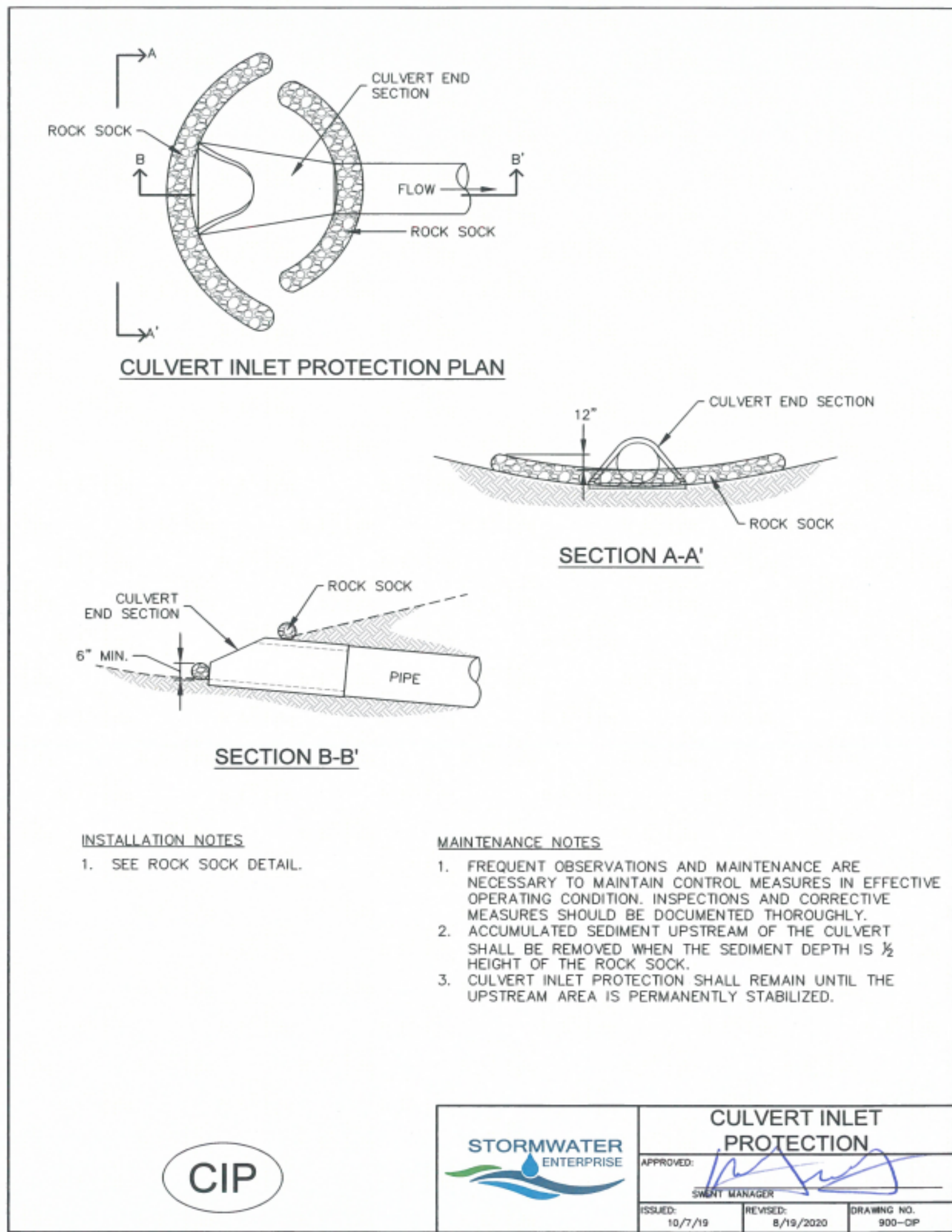
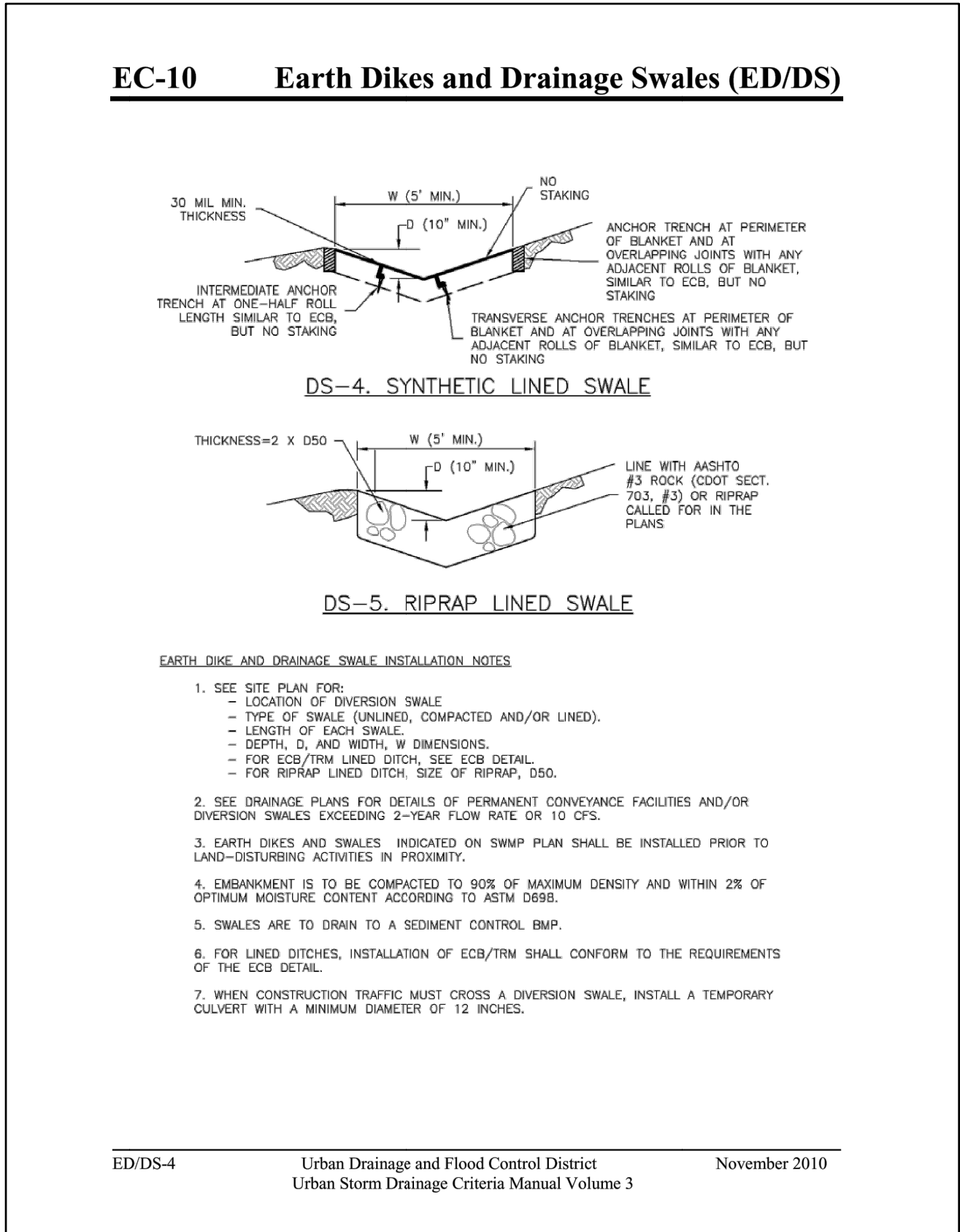
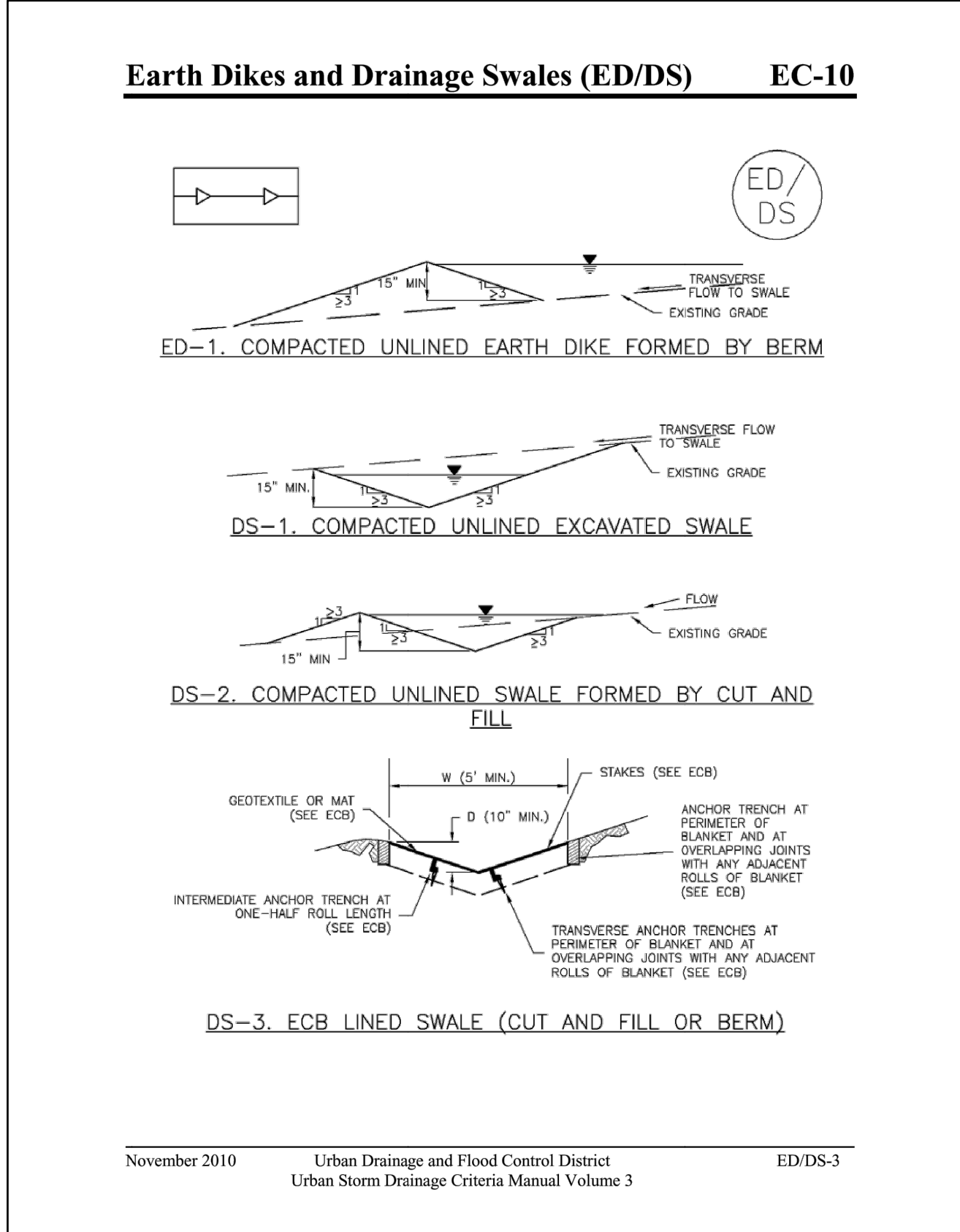
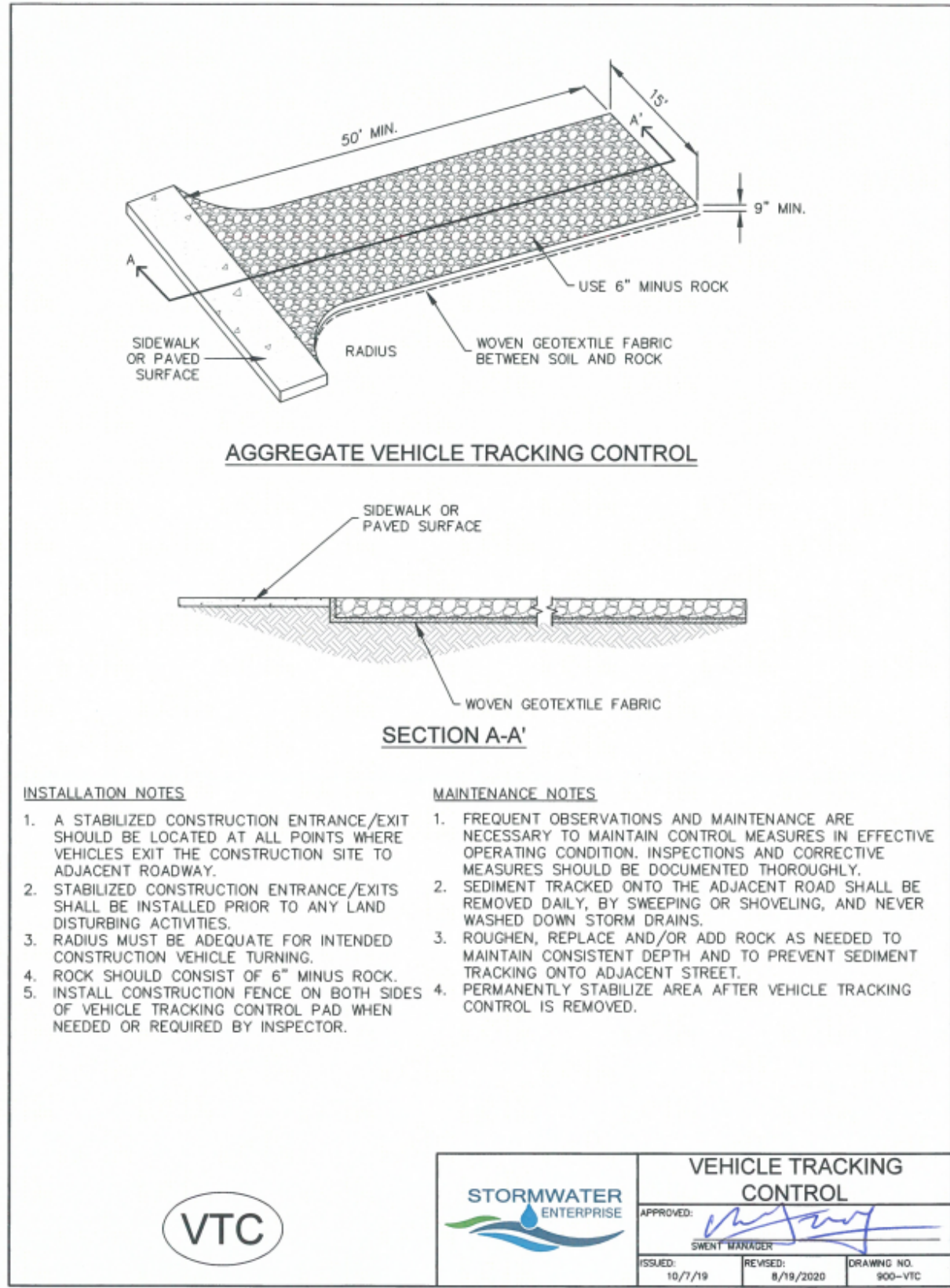
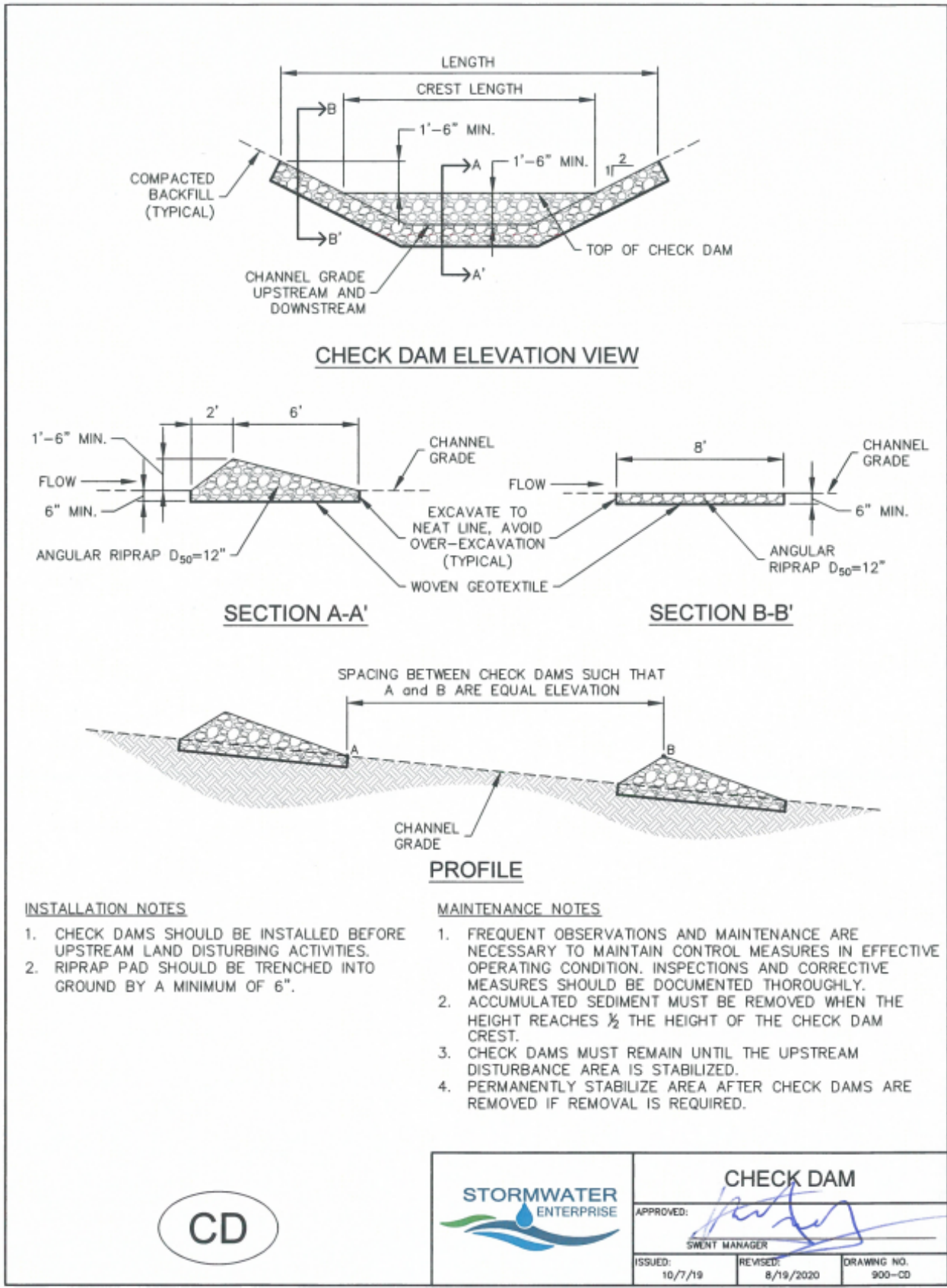
GRADING & EROSION CONROL PLAN

GRADING & EROSION CONTROL PLAN

SHEET  
GEC

3







## **APPENDIX C – BMP DETAILS & SPECIFICATIONS**

# CHECK DAM

## CD



## 1.0 DESCRIPTION

- Check dams are small temporary rock dams constructed across a swale or drainage ditch.

## 2.0 PURPOSE

- Used to slow down the velocity of concentrated flow to limit erosion and to promote sedimentation.
- Placed in areas of concentrated flow, such as a ditch or swale.

## 3.0 IMPLEMENTATION

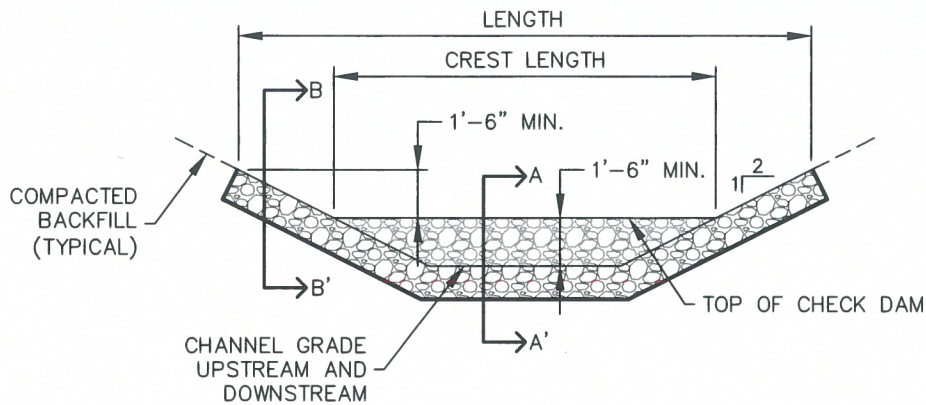
- Place check dams at regular intervals perpendicular to the direction of flow.
- Use check dams on mild or moderately steep slopes.
- Install wide enough check dams to reach from bank to bank of the ditch or swale.
- In general, the maximum spacing between check dams should be such that the toe of the upstream check dam is at the same elevation as the top of the downstream check dam.
- During installation, place rock mechanically or by hand.

## 4.0 TIMING

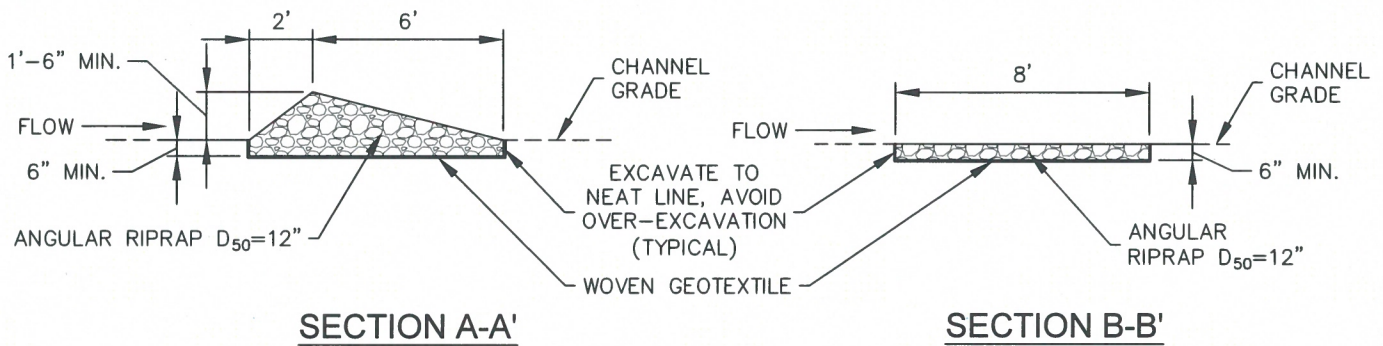
- Install prior to land disturbing activities.
- Remove after surrounding area has been permanently stabilized, or immediately prior to installation of a non-erodible lining. Permanently stabilize bare areas caused by check dams after removal.

## 5.0 MAINTENANCE

- Remove and properly dispose of sediment when it has accumulated to 1/2 of the height of the check dam crest.
- Replace missing rocks causing voids in the check dam.
- Inspect for erosion along the ends of check dams and repair when necessary.

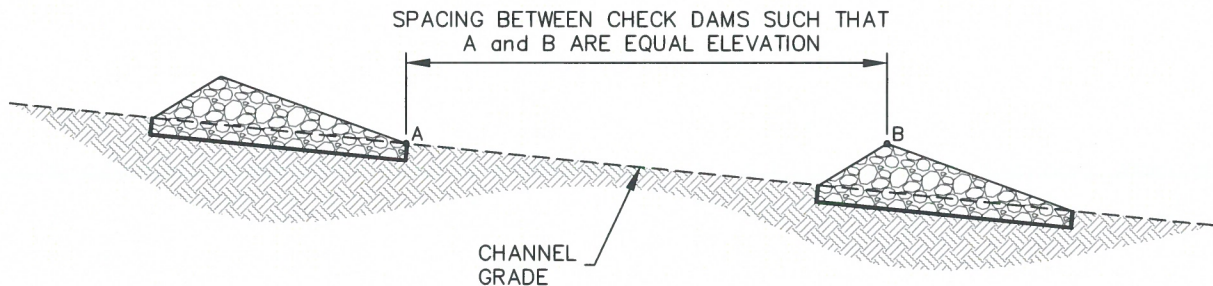


### CHECK DAM ELEVATION VIEW



### SECTION A-A'

### SECTION B-B'



### PROFILE

#### INSTALLATION NOTES

1. CHECK DAMS SHOULD BE INSTALLED BEFORE UPSTREAM LAND DISTURBING ACTIVITIES.
2. RIPRAP PAD SHOULD BE TRENCHED INTO GROUND BY A MINIMUM OF 6".

#### MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES  $\frac{1}{2}$  THE HEIGHT OF THE CHECK DAM CREST.
3. CHECK DAMS MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER CHECK DAMS ARE REMOVED IF REMOVAL IS REQUIRED.



### CHECK DAM

APPROVED:

SWENT MANAGER

ISSUED:  
10/7/19

REVISED:  
8/19/2020

DRAWING NO.  
900-CD



# CULVERT INLET PROTECTION

## CIP





## 1.0 DESCRIPTION

- Culvert inlet protection consists of a permeable sediment barrier installed upstream of a flared end section entrance to a culvert or storm sewer.

## 2.0 PURPOSE

- Used to prevent sediment and debris from entering a culvert or storm drainage system prior to permanent stabilization of the contributing disturbed area.
- Culvert inlet protection slows down runoff velocity to filter runoff and to promote sedimentation prior to entry into a culvert or storm drainage system.

## 3.0 IMPLEMENTATION

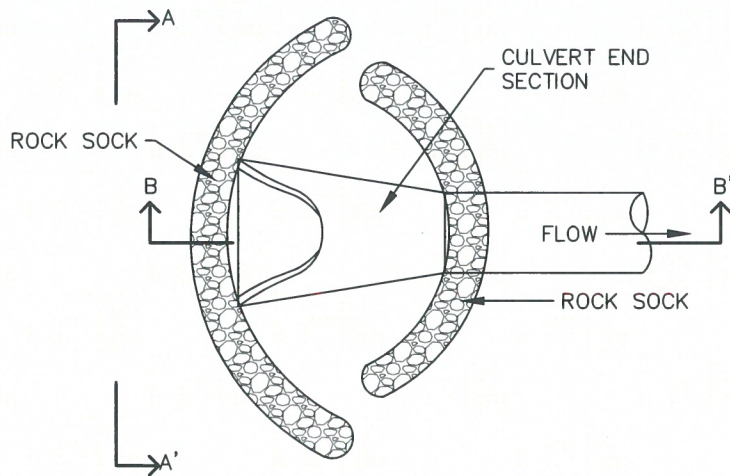
- Install culvert inlet protection at flared end section inlets to culverts and storm sewers that are operable and receiving runoff from disturbed areas during construction.
- Culvert inlet protection is not a stand-alone control measure and should be used in conjunction with other upgradient control measures. Culvert inlet protection with a contributing drainage area including of one acre or more of disturbed area must be part of a treatment train.

## 4.0 TIMING

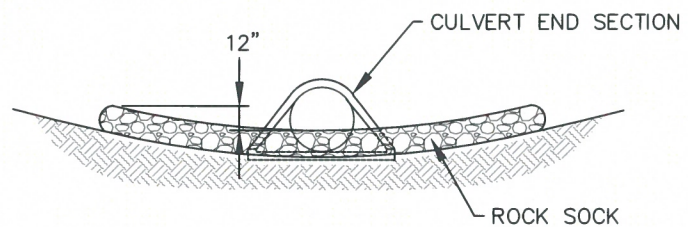
- Install prior to land disturbing activities, or immediately after pipe installation.
- Remove and properly dispose of culvert inlet protection after the contributing drainage area has been permanently stabilized.

## 5.0 MAINTENANCE

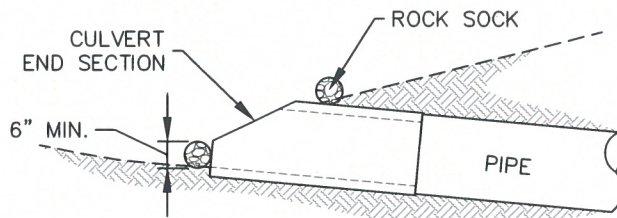
- Remove and properly dispose of sediment when it has accumulated to 1/2 of the height of the rock sock.
- Inspect for displaced rock socks that are no longer protecting the inlet.



**CULVERT INLET PROTECTION PLAN**



**SECTION A-A'**



**SECTION B-B'**

**INSTALLATION NOTES**

1. SEE ROCK SOCK DETAIL.

**MAINTENANCE NOTES**

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS  $\frac{1}{2}$  HEIGHT OF THE ROCK SOCK.
3. CULVERT INLET PROTECTION SHALL REMAIN UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED.



**CULVERT INLET  
PROTECTION**

APPROVED:

SWENT MANAGER

ISSUED:  
10/7/19

REVISED:  
8/19/2020

DRAWING NO.  
900-CIP

# PORTABLE TOILET

## PT



## 1.0 DESCRIPTION

- The portable toilet detail provides requirements for portable toilet use on construction sites.

## 2.0 PURPOSE

- Used to minimize the risk of pollutant migration to State Waters.

## 3.0 IMPLEMENTATION

- Place portable toilet a minimum of 10 feet from the back of curb or on a trailer for road projects or sites that are mostly paved.
- Anchor portable toilet to the ground, at a minimum of two opposing corners (on a diagonal) using U-shaped rebar stakes.

## 4.0 TIMING

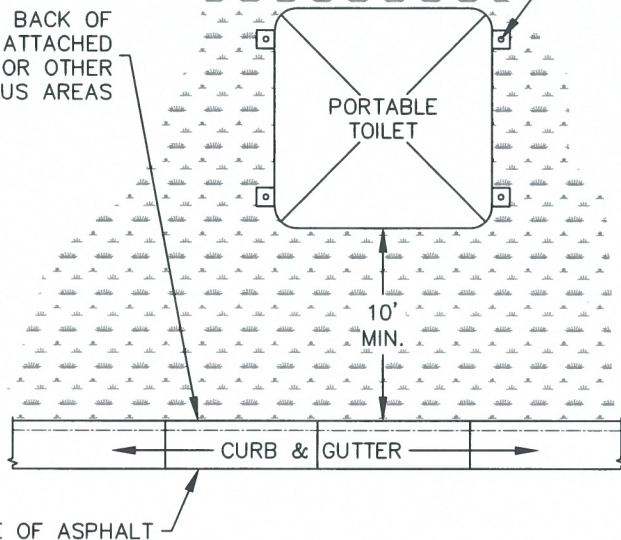
- Install as needed.
- Remove prior to the end of construction. Permanently stabilize any disturbed areas associated with the installation, maintenance, and/or removal of the toilets.

## 5.0 MAINTENANCE

- Portable toilets shall be serviced at the necessary intervals to eliminate the possibility of overflow.



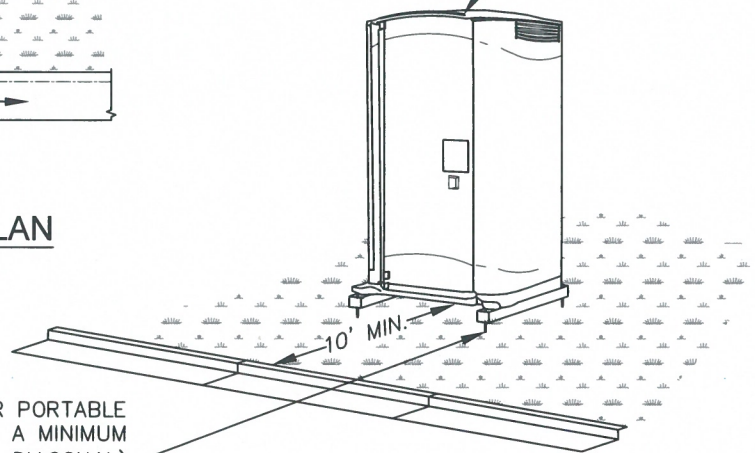
TOP BACK OF CURB, ATTACHED SIDEWALK, OR OTHER IMPERVIOUS AREAS



**PORTABLE TOILET PLAN**

CONTRACTOR SHALL ANCHOR PORTABLE TOILET TO THE GROUND, AT A MINIMUM OF TWO OPPOSING CORNERS (ON A DIAGONAL) USING U-SHAPED REBAR STAKES

PORTABLE TOILET (TYPICAL)



**ISOMETRIC**

CONTRACTOR SHALL ANCHOR PORTABLE TOILET TO THE GROUND, AT A MINIMUM OF TWO OPPOSING CORNERS (ON A DIAGONAL) USING U-SHAPED REBAR STAKES OR OTHER EFFECTIVE ANCHORING

#### INSTALLATION NOTES

1. PORTABLE TOILETS SHALL BE PLACED A MINIMUM OF 10 FEET BEHIND ALL CURBS, SIDEWALKS, AND OTHER IMPERVIOUS AREAS; 50 FEET FROM STORM INLETS, AND 100 FEET FROM WATERWAYS.
2. PORTABLE TOILETS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE PLACED ON MOBILE TRAILERS AND MUST BE ANCHORED OR WEIGHTED DOWN. PORTABLE TOILETS MAY BE INSTALLED IN ACCORDANCE WITH NOTE #1 IN STAGING AREAS/YARDS.
3. PORTABLE TOILETS SHALL BE SECURELY ANCHORED TO THE GROUND USING U-SHAPED REBAR STAKES, OR OTHER EFFECTIVE ANCHORING.
4. ANCHORING SHALL BE POSITIONED ON AT LEAST TWO OPPOSING (DIAGONAL) CORNERS.
5. TOILET CONTAINMENT PANS MAY BE USED IN PLACE OF A TRAILER AT THE GEC INSPECTOR'S DISCRETION. TOILET CONTAINMENT PANS MUST BE ANCHORED IN PLACE AND MUST NOT BE USED WITHIN THE CITY R.O.W.

PT

#### MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. PORTABLE TOILETS SHALL BE SERVICED AT THE NECESSARY INTERVALS TO ELIMINATE THE POSSIBILITY OF OVERFLOW.
3. WHEN THE PORTABLE TOILETS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE TOILETS MUST BE PERMANENTLY STABILIZED.

#### PORTABLE TOILET

APPROVED:

SWENT MANAGER

ISSUED:

2/19/19

REVISED:

8/19/2020

DRAWING NO.

900-PTM

# SEEDING AND MULCHING

## SM



## 1.0 DESCRIPTION

- The preparation of soil, application of much, and application of seed to disturbed areas.

## 2.0 PURPOSE

- Used to control runoff and erosion on disturbed areas by establishing vegetative cover.
- Reduces erosion and sediment loss.
- Provides permanent stabilization in disturbed areas.

## 3.0 IMPLEMENTATION

- All soil testing, soil amendment and fertilizer documentation, and seed load and bag tickets must be added to the CSWMP.
- Properly prepare soil prior to seeding and mulching.
- Apply seed mixes as specified in the City of Colorado Springs Stormwater Construction Manual. Alternative seed mixes are acceptable if included in an approved Landscaping Plan.
- Mulch seeded areas using hay or straw mulch, hydraulic mulching, or install erosion control blanket.

## 4.0 TIMING

- Seed and mulch disturbed areas after final grading.
- Seeding and mulching may also be used as a temporary erosion control measure during construction.

## 5.0 MAINTENANCE

- Repair and reseed bare areas as necessary.
- Restrict vehicle access to seeded areas.



## SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

### SOIL PREPARATION

1. IN AREAS TO BE SEEDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

### SEEDING

1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL-SEEDED WHENEVER POSSIBLE
  - SEED DEPTH MUST BE  $\frac{1}{8}$  TO  $\frac{1}{2}$  INCHES WHEN DRILL-SEEDED IS USED
3. BROADCAST SEEDING OR HYDRO-SEEDED WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
  - SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO-SEEDED
  - BROADCAST SEEDING MUST BE LIGHTLY HAND-RAKED INTO THE SOIL

### MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
  - HAY OR STRAW MULCH
    - ONLY CERTIFIED WEED-FREE AND CERTIFIED SEED-FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
    - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3 TO 4 INCHES.
    - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
  - HYDRAULIC MULCHING
    - HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
    - IF HYDRO-SEEDED IS USED, MULCHING MUST BE APPLIED AS A SEPARATE, SECOND OPERATION.
    - WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
  - EROSION CONTROL BLANKET
    - EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.



### SEEDING & MULCHING

APPROVED:

SWENT MANAGER

ISSUED:

10/7/19

REVISED:

8/19/2020

DRAWING NO.

900-SM



# VEHICLE TRACKING CONTROL

## VTC



## 1.0 DESCRIPTION

- Vehicle tracking control consists of a pad of coarse stone aggregate placed on a geotextile filter fabric.

## 2.0 PURPOSE

- Used to reduce the tracking of sediment onto roadways by construction vehicles.
- As vehicles drive over the VTC device, mud and sediment is removed from the tires.

## 3.0 IMPLEMENTATION

- Locate at construction entrance/exit.
- Organize site to ensure that all vehicles use the vehicle tracking control device.
- Where possible, grade VTC device to drain to construction site rather than to street.
- Proprietary VTC devices may be used if approved as an alternative Construction Control Measure.

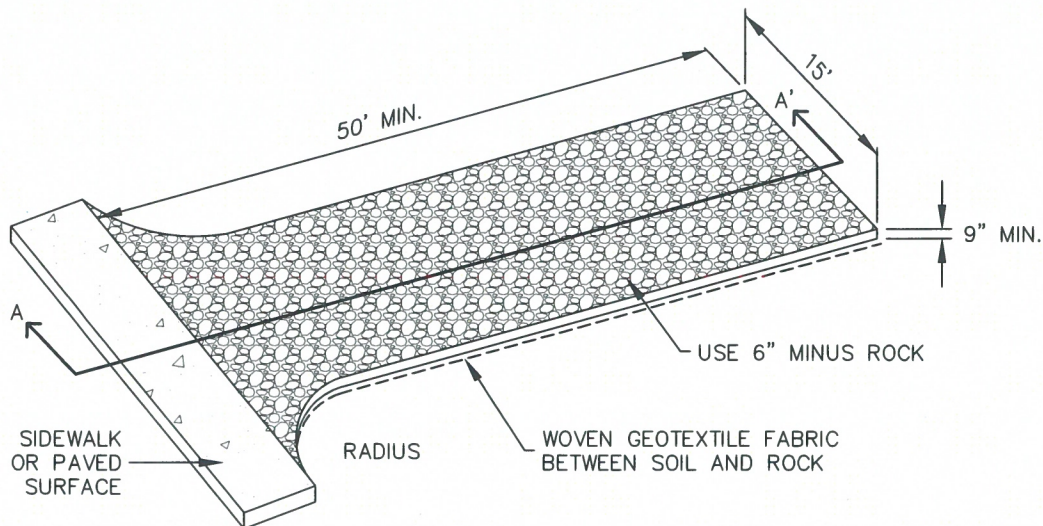
## 4.0 TIMING

- Install prior to land disturbing activities.
- Remove when the potential for sediment migration onto adjacent roadways no longer exists (typically after site has been stabilized). Permanently stabilized area after vehicle tracking control is removed.

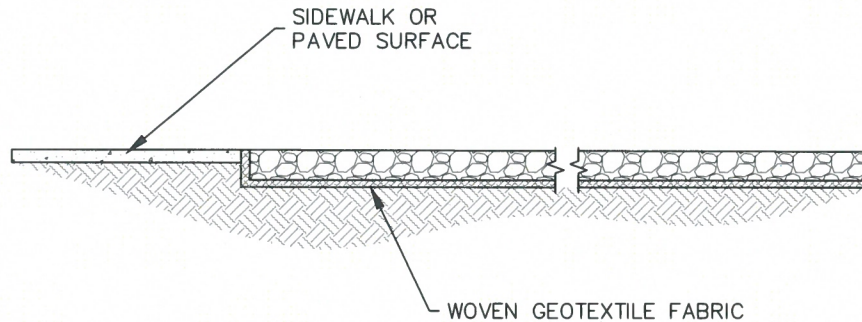
## 5.0 MAINTENANCE

- Roughen, replace, and/or add rock as needed to maintain a consistent depth and to prevent sediment tracking onto adjacent street.
- Sediment tracked onto the adjacent road shall be removed daily, by sweeping or shoveling, and never washed down storm drains.





## AGGREGATE VEHICLE TRACKING CONTROL



SECTION A-A'

### INSTALLATION NOTES

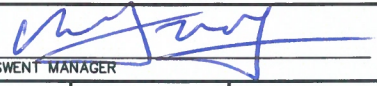
1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHOULD BE LOCATED AT ALL POINTS WHERE VEHICLES EXIT THE CONSTRUCTION SITE TO ADJACENT ROADWAY.
2. STABILIZED CONSTRUCTION ENTRANCE/EXITS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. RADIUS MUST BE ADEQUATE FOR INTENDED CONSTRUCTION VEHICLE TURNING.
4. ROCK SHOULD CONSIST OF 6" MINUS ROCK.
5. INSTALL CONSTRUCTION FENCE ON BOTH SIDES OF VEHICLE TRACKING CONTROL PAD WHEN NEEDED OR REQUIRED BY INSPECTOR.

### MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT TRACKED ONTO THE ADJACENT ROAD SHALL BE REMOVED DAILY, BY SWEEPING OR SHOVELING, AND NEVER WASHED DOWN STORM DRAINS.
3. ROUGHEN, REPLACE AND/OR ADD ROCK AS NEEDED TO MAINTAIN CONSISTENT DEPTH AND TO PREVENT SEDIMENT TRACKING ONTO ADJACENT STREET.
4. PERMANENTLY STABILIZE AREA AFTER VEHICLE TRACKING CONTROL IS REMOVED.



## VEHICLE TRACKING CONTROL

APPROVED: 		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-VTC