

STORMWATER MANAGEMENT PLAN FOR CANYON CREEK DEVELOPMENT,

EL PASO COUNTY, COLORADO

October 2024

Prepared For:

Gregg Cawlfield Villagree Luxury Homes 11550 Parallax Heights Colorado Springs, CO 80908

Prepared By:

JR ENGINEERING 5475 Tech Center Drive Colorado Springs, CO 80906 (719) 570-7474

Job No. 25322.00

PCD File No.: TBD

ENGINEER OF RECORD:

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

Date

Bryan T. Law, P.E. Registered Professional Engineer State of Colorado No. 25043 For and on behalf of JR Engineering, LLC.

TABLE OF CONTENTS

1.	Applicant / Contact Information	1
2.	Site Description and Location	1
3.	Proposed Sequence of Major Activities	3
4.	BMPs for Stormwater Pollution Prevention	4
5.	Final Stabilization and Long-Term Stormwater Management	6
6.	Inspection and Maintenance	7

Appendices

A.	Vicinity	Man
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- B. FEMA and Soils Map
- C. GEC Plans and Details
- D. Inspection Report Template

1. <u>Applicant / Contact Information</u>

Owner/Developer:	Villagree Luxury Homes 11550 Parallax Heights Colorado Springs, CO 80908 Attn: Gregg Cawlfield
Engineer:	JR Engineering, LLC 5475 Tech Center Drive, Suite 235 Colorado Springs, CO 80919 Attn: Bryan Law (303) 267-6254 <u>blaw@jrengineering.com</u>
SWMP Administrator:	To be Determined
Contractor:	To be Determined

2. Site Description and Location

Canyon Creek Ranch (hereby referred to as the "site") is a proposed development with a total area of approximately 25 acres. The site is located in the SW ¼ of Section 14, Township 12 South, Range 66 West of the Sixth Principal Meridian in El Paso County, State of Colorado. The site is bounded by Kettle Creek to the north, Kettle Creek Subdivision to the east and unplatted large-lot single family residential parcels to the west and south. A vicinity map has been presented in Appendix A.

The proposed site will be developed into three large single-family lots and one lot for areas unable to be developed due to existing geographic conditions. A proposed private driveway from Creek View Lane Cul-de-sac on the northeast of the site will provide access to the lots.

The site is approximately 25 acres and is covered in native vegetation, trees, bushes, and grass. There are no existing structures on the site.

Site details:

- a. Total site area: 25 acres Estimated area to undergo disturbance: 1.57 acres
- b. Soil Type: Per a NRCS web soil survey of the area, the site is made up of Hydrologic Group B soils. Type B soils exhibit moderate infiltration rates when thoroughly wet, and consist mainly of moderately deep, moderately well drained to well drained soils. A NCRS survey map is presented in Appendix B.
- c. Soil erosion potential and potential impacts upon discharge:
 - i. Conduct land-disturbing activities in a manner that effectively reduces accelerated soil erosion and reduces sediment movement and deposition off site.

- ii. Schedule construction activities to minimize the total amount of soil exposed at any given time.
- iii. Establish temporary or permanent cover on areas that have been disturbed as soon as practical after grading is completed.
- iv. Design and construct temporary or permanent facilities to limit the flow of water to non-erosive velocities for the conveyance of water around, through or from the disturbed area.
- v. Remove sediment caused by accelerated soil erosion from surface runoff water before it leaves the site.
- vi. Stabilize disturbed areas with permanent vegetative cover and provide permanent storm water quality control measures for the post-construction condition.
- d. Existing vegetation: Native meadow grasses (approximately 95 coverage) per aerial
- e. Location and description of potential pollution sources: Potential sources of pollution include: Onsite waste management, portable toilets, onsite vehicle fueling, and outdoor storage, vehicle tracking pads, dust management, and temporary stock pile. The locations of these sources are shown in the GEC plans in Appendix C or will be determined by the contractor.
 - i. Non-industrial waste sources such as worker trash and portable toilets Clean up litter and debris from the construction site daily and worker trash receptacles will be located by entrance/exit for easy removal/replace access. All portable toilets should be kept a minimum of 50 feet from a storm drain inlet or drainage course and secured to the ground. Toilets will be cleaned regularly and inspected daily for any spills or leaks. Waste disposal bins will be reasonably maintained at regular intervals to check for leaks and overflow capacity, and will be emptied routinely to prevent overflow.
 - ii. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc. oil, grease, coolants, etc. that leak onto the soil or impervious surface should be cleaned up as soon as possible and on-site personnel notified.
 - iii. Vehicle, equipment maintenance, and fueling all designated fueling and maintenance areas shall be located a minimum of 100 feet from any drainage course whenever possible. If the fueling area is located on a pervious surface, the area shall be covered with a non-pervious lining so as to prevent soil contamination by way of infiltration. Any spillage shall be cleaned up immediately.
 - iv. Raw materials, intermediate products, byproducts, process residuals, Finished products, containers, and materials storage areas can be sources of pollutants such as metals, oils and grease, sediment and other contaminants. Where practical, conduct operations indoors. Where impractical, select an appropriate temporary or permanent covering to reduce exposure of materials to rainfall and runoff.
 - v. Vehicle tracking controls (VTC) provide stabilized construction site access where vehicles exit the site onto paved public roads. An effective vehicle tracking control helps remove sediment (mud or dirt) from vehicles, reducing tracking onto the paved surface. With aggregate

vehicle tracking controls, ensure rock and debris from this area do not enter the public right-of-way. Inspect the VTC for degradation and replace aggregate or material used for a stabilized entrance/exit as needed.

- vi. Wind erosion and dust control BMPs help to keep soil particles from entering the air as a result of land disturbing construction activities. Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies.
- vii. Stockpile management should be used when soils or other erodible materials are stored at the construction site. Special attention should be given to stockpiles in close proximity to natural or manmade storm systems. Soils stockpiled for an extended period (typically for more than 30 days) mulched with a temporary grass cover once the stockpile is placed (typically within 21 days). An area that will remain in an interim state for over 60 days must also be seeded. Use of mulch only or a soil binder is acceptable if the stockpile will be in place for a more limited time period (typically 30-60 days). Refer to DCM Vol 2 Section 3.2-General principles Basic Grading, Erosion and Stormwater Quality Requirements and General Prohibitions #16 for more information.
- f. Spill prevention and pollution controls for dedicated batch plants: Not applicable for this site since there will be no dedicated batch plants.
- g. Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances and vehicle tracking controls can help reduce the necessary frequency of street sweeping and vacuuming.
- h. Location and description of anticipated non-stormwater components of discharge: There will be a concrete washout area (CWA) where the cleaning of concrete trucks could produce a non-stormwater discharge. Proper installation and maintenance of the CWA will not allow runoff from this area. Another potential source of nonstormwater discharge could be the irrigation of permanent seeding (PS). Irrigation will be kept at a rate so as to not create runoff.
- i. Existing basin drainage patterns are in the southwest direction.
- j. Receiving water: Runoff from the project will be treated and released through an outlet structure pipe that will direct the water into Fountain Creek.
- k. There are no streams that cross the project site.

3. <u>Proposed Sequence of Major Activities</u>

The project will follow standard construction sequences for construction, i.e., clearing and grubbing, over excavation, over lot grading, utility installation, and street paving. The contractor will be responsible for implementing and maintaining the erosion and sediment control measures described in this document and the accompanying design drawings. The contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these controls and their proposed function at each phase of the project remains with the contractor. The order of major activities will be as follows:

- 1. Install VTC and other perimeter soil erosion control measures. (Spring 2025)
- 2. Clear site and grade within the construction limits. (Spring 2025)
- 3. Install rough cut street control. (Spring 2025)
- 4. Fine grading and install driveway. (Spring 2025)
- 5. Place seed and mulch. (Summer 2025)
- 6. Clean up and final stabilization (Summer 2025)

4. <u>BMPs for Stormwater Pollution Prevention</u>

See GEC plans in Appendix C for BMP locations and detail sheets.

- a. Erosion and Sediment Controls
 - i. Structural BMPs:
 - 1. Silt fence (SF) along downstream limits of disturbed areas to filter sediment from runoff
 - 2. Construction fence (CF) to identify limits of construction (LOC)
 - 3. Vehicle tracking control (VTC) at site entrance to prevent sediment from leaving the site via vehicle tires
 - 4. Inlet protection (IP) around culvert entrances
 - 5. Outlet protection (OP) at culvert outlets
 - 6. Rough Cut Street Control (RCS) is material placed after a road has been cut and before base has been installed for paving
 - ii. Non-structural BMPs:
 - 1. Mulching (MU) to stabilize soils and promote seed growth
 - 2. Permanent seeding (PS) to stabilize disturbed areas
- b. Materials Handling and Spill Prevention
 - i. General Materials Handling Practices:
 - 1. 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 not be located near storm drain inlets and should be equipped with covers, roofs, or secondary containment as required to prevent storm water from contacting stored materials. Chemicals that are not compatible shall be stored in segregated areas so that spilled materials cannot combine and react.
 - 2. Disposal of materials shall be in accordance with the manufacturer's instructions and applicable local, state, and federal regulations.
 - 3. Materials no longer required for construction shall be removed from the site as soon as possible.
 - 4. Adequate garbage, construction waste, and sanitary waste

handling and disposal facilities shall be provided as necessary to keep the site clear of obstruction and BMPs clear and functional. Construction waste will be emptied weekly and the sanitary porta potty will be pumped weekly. Storage bins shall be inspected weekly for damage, and that all defective containers shall be immediately replaced.

- ii. Specific Materials Handling Practices
 - 1. All pollutants, including waste materials and demolition debris, that occur onsite during construction shall be handled in a way that does not contaminate storm water.
 - 2. All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored onsite shall be covered and protected from vandalism.
 - 3. Maintenance, fueling, and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing operations, 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.
 - 4. Wheel wash water shall be settled and discharged onsite by infiltration.
 - 5. 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 storm water runoff. Follow manufacturer's recommendations for application rates and procedures.
 - 6. pH-modifying sources shall be managed to prevent contamination of runoff and storm water collected onsite. The most common sources of pH-modifying materials are bulk cement, cement kiln dust (CKD), fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, and concrete pumping and mixer washout waters.
- iii. Spill Prevention and Response Procedures
 - 1. The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize their migration into storm water runoff and conveyance systems. If the release has impacted onsite storm water, 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 after the situation has stabilized.
- c. The site superintendent, or his/her designee, 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 location(s) shall be reported to the SWMP administrator.
- 4. Absorbent materials shall be on-hand at all fueling areas for use in containing inadvertent 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 (one bale)
 - b. Oil absorbent booms (40 feet)
 - c. 55-gallon drums (2)
 - d. 9-mil plastic bags (10)
 - 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 material involved, the Colorado Department of Public Health and Environment (24-hour spill reporting line: 887-518-5608), 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.

5. Final Stabilization and Long-Term Stormwater Management

- **a.** Permanent seeding will be provided to achieve long-term stabilization of the site.
- **b.** Seed Mix: Pawnee Buttes Seed Inc. "Low Grow native Mix" or approved equal.

- c. Seeding Application Rate: Drill seed 0.25" to 0.5" into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25" to 0.5" into the soil. Apply seed at the following rates:
 - i. Dryland: 20-25 lbs/acre
 - ii. Irrigated: 40 lbs/acre
- d. Soil stabilization Practices:
 - i. Mulching Application: Apply 1-1/2 tons of certified weed free hay per acre mechanically crimped into the soil in combination with an organic mulch tackifier. On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of much and mulch tackifier.
- e. Soil Conditioning and Fertilization Requirements:
 - i. Soil conditioner, organic amendment shall be applied to all seeded areas at 3 CY / 1000 SF.
 - ii. Fertilizer shall consist of 90% fungal biomass (mycelium) and 10% potassium-magnesia with a grade of 6-1-3 or approved equal. Fertilizer shall be applied as recommended by seed supplier.
- **f.** Final stabilization is reached when all soil-disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plan density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.
- **g.** Two extended detention basins will be added to detain stormwater following storm events which will serve as flood-control as well as facilitate pollutant removal.
- **h.** This project does not rely on control measures owned or operated by another entity.

6. Inspection and Maintenance

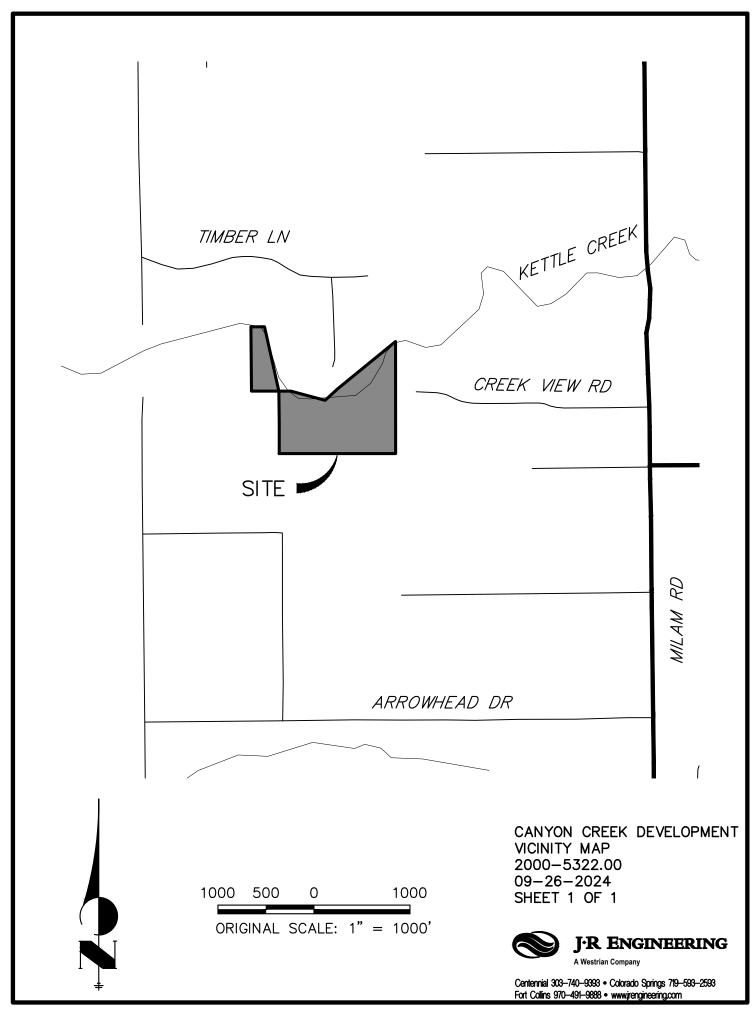
- **a.** Inspection Schedules:
 - i. The contractor shall inspect BMPs once every 14 days at a minimum, and immediately (within 24 hours) after any precipitation or snowmelt event that causes surface erosion (i.e. that results in storm water running across the ground), to ensure that BMPs are maintained in effective operating condition.
- b. Inspection Procedures:
 - i. Site Inspection / Observation Items:
 - 1. Construction site perimeter and discharge points
 - 2. All disturbed areas
 - 3. Areas used for material / waste storage that are exposed to precipitation
 - 4. Other areas having a significant potential for storm water pollution, such as demolition areas or concrete washout areas, or locations where vehicles enter or leave the site
 - 5. Erosion and sediment control measures identified in the SWMP
 - 6. Any other structural BMPs that may require maintenance, such

as secondary containment around fuel tanks, or the conditions of spill response kits.

- ii. Inspection Requirements:
 - 1. Determine if there is any evidence of, or potential for, pollutants entering the receiving waters.
 - 2. Review BMPs to determine if they still meet design and operational criteria in the SWMP, and if they continue to adequately control pollutants at the site.
 - 3. Upgrade and/or revise any BMPs not operating in accordance with the SWMP and update the SWMP to reflect any revisions.
- iii. BMP Maintenance / Replacement and Failed BMPs:
 - 1. The contractor shall remove sediment that has been collected by perimeter controls, such as silt fence and inlet protection, on a regular basis to prevent failure of BMPs, and remove potential of sediment from being discharged from the site in the event of BMP failure.
 - 2. Removed sediment must be moved to an appropriate location where it will not become an additional pollutant source, and should never be placed in ditches or streams.
 - 3. The contractor shall update the GEC as required with any new BMPs added during the construction period.
 - 4. The contractor shall address BMPs that have failed or have the potential to fail without maintenance or modifications, as soon as possible, immediately in most cases, to prevent discharge of pollutants.
- iv. Record Keeping and Documenting Inspections:
 - 1. The contractor shall maintain records of all inspection reports, including signed inspection logs, at the project site.
 - 2. The permittee shall document inspection results and maintain a record of the results for a period of 3 years following expiration or inactivation of permit coverage.
 - 3. Site inspection records shall include the following:
 - a. Inspection date
 - b. Name and title of personnel making the inspection
 - c. Location of discharges of sediment or other pollutants from the site
 - d. Location(s) of BMPs in need of maintenance
 - i. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location
 - e. Location(s) where additional BMPs are needed that were not in place at the time of inspection
 - f. Deviations from the minimum inspection schedule
 - 4. 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 implantation 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 long necessary and are removed.

APPENDIX A – VICINITY MAP



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APPENDIX B – FEMA AND SOILS MAP

NOTES TO USERS

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

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

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or loodplain 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 a http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services

NOAA, N/NGS12 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 ind may appear outside of the floodplain.

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

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

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

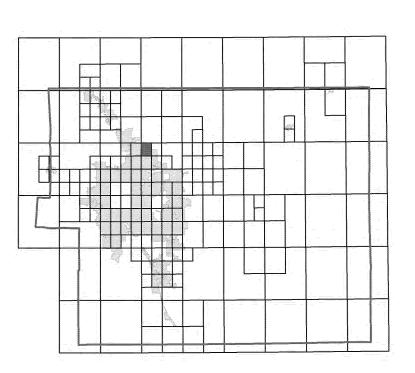
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Flooding Source

El Paso County Vertical Datum Offset Table **Vertical Datum**

REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION

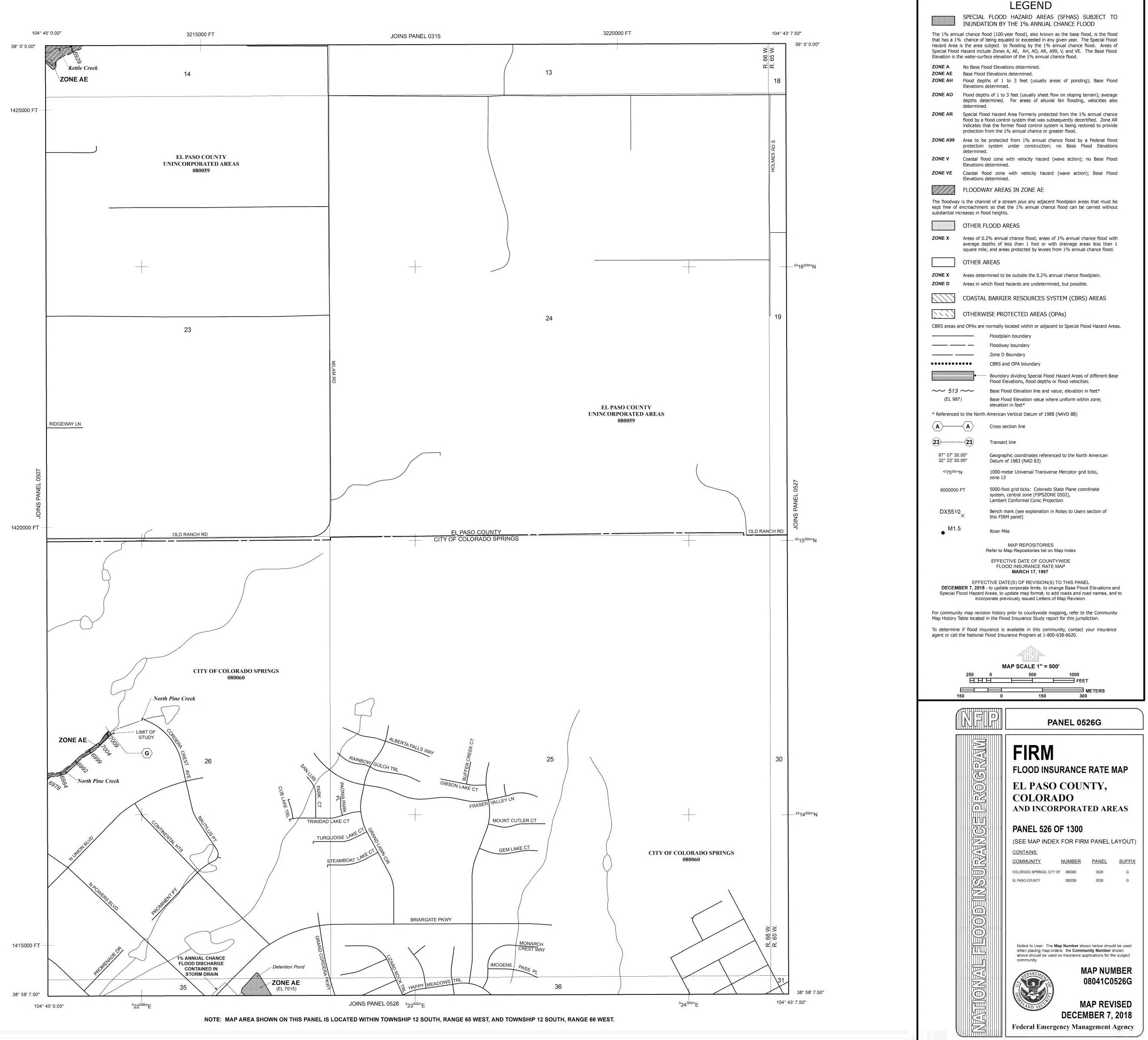
Panel Location Map



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.



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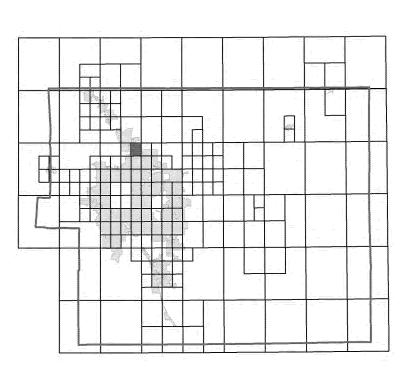
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El Paso County Vertical Datum Offset Table Vertical Datum Offset (ft)

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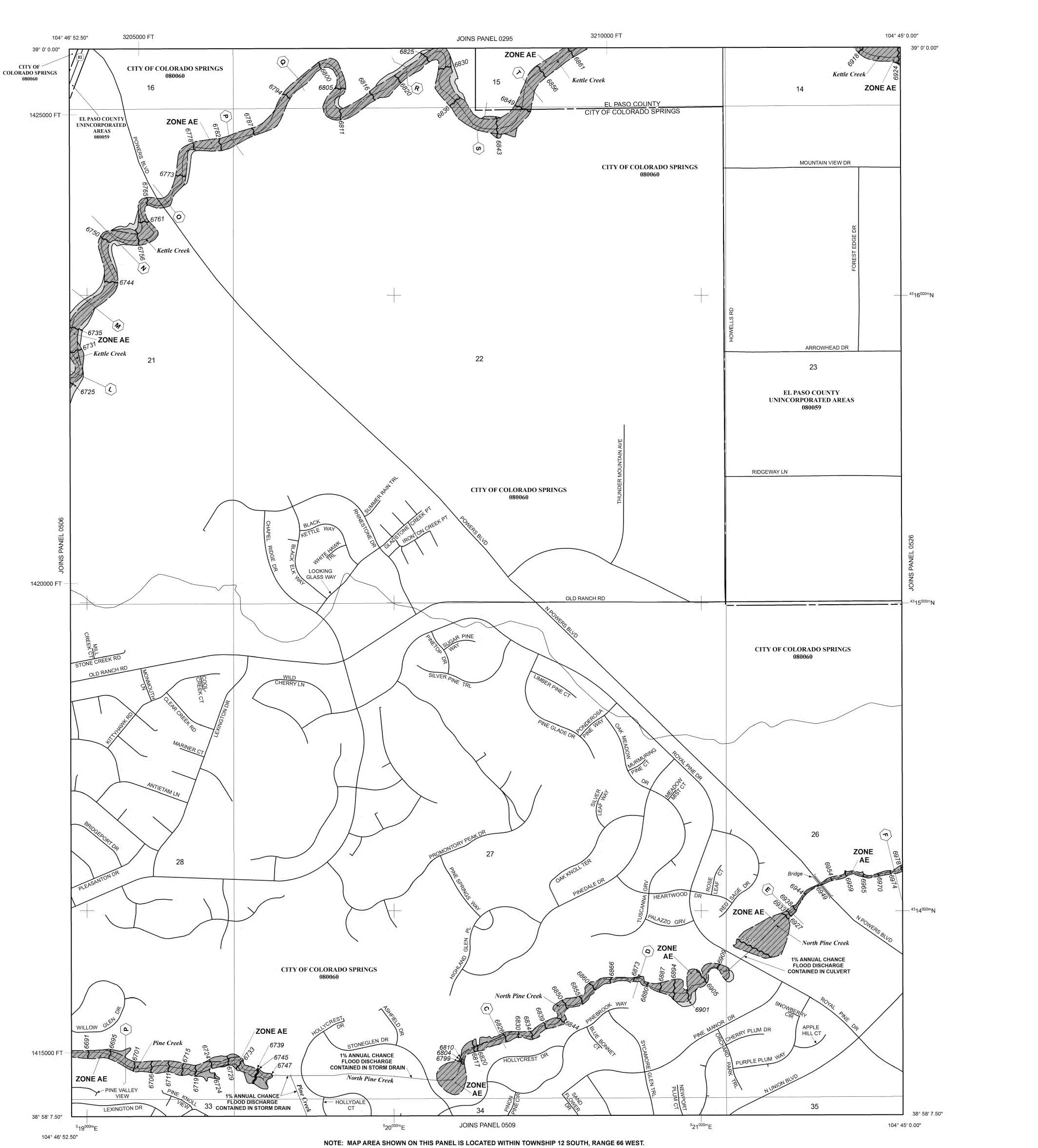
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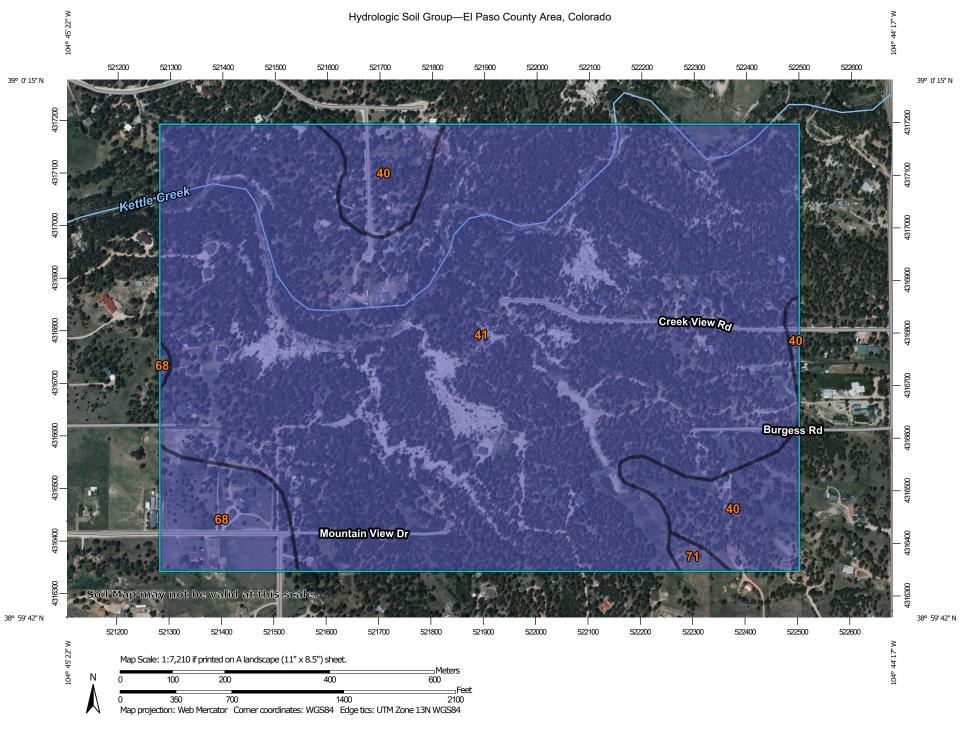
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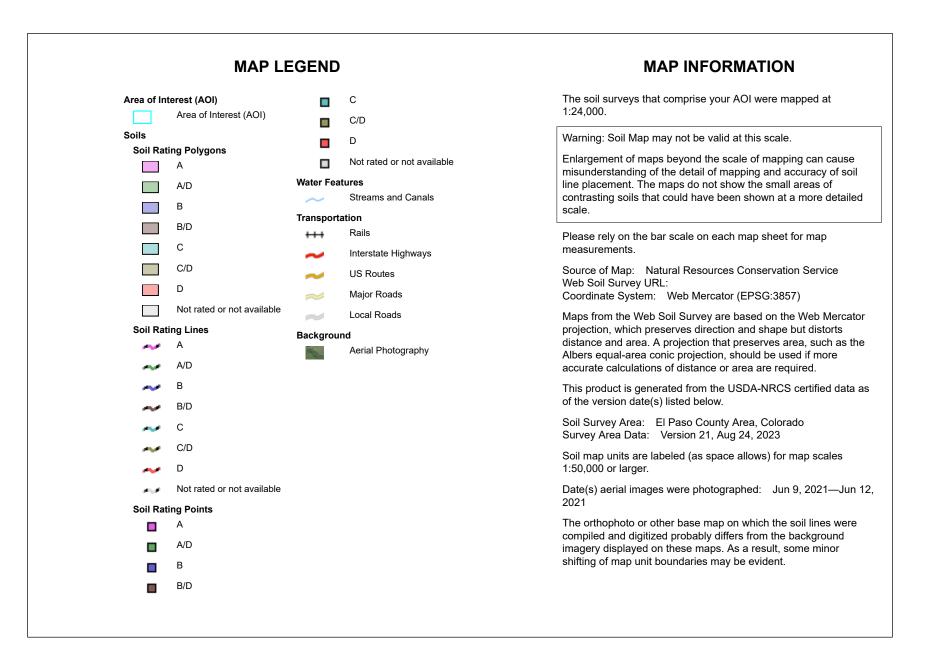
Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



		LEGEND
		OOD HAZARD AREAS (SFHAS) SUBJECT TO BY THE 1% ANNUAL CHANCE FLOOD
that has a 1%	6 chance of being	00-year flood), also known as the base flood, is the flood equaled or exceeded in any given year. The Special Flood
Hazard Area Special Flood	is the area subject Hazard include Zo	t to flooding by the 1% annual chance flood. Areas of nes A, AE, AH, AO, AR, A99, V, and VE. The Base Flood
Elevation is the ZONE A		evation of the 1% annual chance flood. evations determined.
ZONE AE ZONE AH	Flood depths of	tions determined. 1 to 3 feet (usually areas of ponding); Base Flood
ZONE AO	Elevations detern	nined. 1 to 3 feet (usually sheet flow on sloping terrain); average
	depths determin determined.	ed. For areas of alluvial fan flooding, velocities also
ZONE AR	flood by a flood of	zard Area Formerly protected from the 1% annual chance control system that was subsequently decertified. Zone AR
	protection from t	e former flood control system is being restored to provide he 1% annual chance or greater flood.
ZONE A99		ected from 1% annual chance flood by a Federal flood em under construction; no Base Flood Elevations
ZONE V		one with velocity hazard (wave action); no Base Flood nined.
ZONE VE		one with velocity hazard (wave action); Base Flood
////		REAS IN ZONE AE
	is the channel of	a stream plus any adjacent floodplain areas that must be
	encroachment so creases in flood he	that the 1% annual chance flood can be carried without ights.
	OTHER FLOO	D AREAS
ZONE X	average depths	nnual chance flood; areas of 1% annual chance flood with of less than 1 foot or with drainage areas less than 1
	n an to han shoring shake Shi shi shi shi shi sha	areas protected by levees from 1% annual chance flood.
	OTHER AREA	
ZONE X ZONE D		d to be outside the 0.2% annual chance floodplain. ood hazards are undetermined, but possible.
		RRIER RESOURCES SYSTEM (CBRS) AREAS
		PROTECTED AREAS (OPAs)
CBRS areas a		PROTECTED AREAS (OPAS) ally located within or adjacent to Special Flood Hazard Areas.
		odplain boundary
		odway boundary e D Boundary
		S and OPA boundary
		ndary dividing Special Flood Hazard Areas of different Base d Elevations, flood depths or flood velocities.
~~ 513	∼ Bas	e Flood Elevation line and value; elevation in feet*
(EL 987		e Flood Elevation value where uniform within zone; ration in feet*
* Referenced		ican Vertical Datum of 1988 (NAVD 88)
		ss section line
23	23 Trai	nsect line
97° 07' 30 32° 22' 30		graphic coordinates referenced to the North American um of 1983 (NAD 83)
⁴² 75 ^{000m}	N 100	0-meter Universal Transverse Mercator grid ticks,
6000000		e 13 0-foot grid ticks: Colorado State Plane coordinate
	syst	em, central zone (FIPSZONE 0502), abert Conformal Conic Projection
DX5510) Ben X this	ch mark (see explanation in Notes to Users section of FIRM panel)
M1.5		r Mile
	Kive	
		MAP REPOSITORIES to Map Repositories list on Map Index
		FECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP MARCH 17, 1997
- 		DATE(S) OF REVISION(S) TO THIS PANEL
	3ER 7, 2018 - to up lood Hazard Areas	odate corporate limits, to change Base Flood Elevations and , to update map format, to add roads and road names, and to e previously issued Letters of Map Revision.
For commun		
Map History 7	able located in the	tory prior to countywide mapping, refer to the Community Flood Insurance Study report for this jurisdiction.
		e is available in this community, contact your insurance Insurance Program at 1-800-638-6620.
		MAP SCALE 1" = 500'
	250 0 日日日	500 1000
- 		
	50 to 100	0 150 300
ſ		DANEL ACAZO
		PANEL 0507G
		FIRM
		FLOOD INSURANCE RATE MAP
	X	EL PASO COUNTY,
		COLORADO
		AND INCORPORATED AREAS
		PANEL 507 OF 1300
		(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
		<u>CONTAINS:</u>
		COMMUNITY NUMBER PANEL SUFFIX
		COLORADO SPRINGS, CITY OF 080060 0507 G EL PASO COUNTY 080059 0507 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
		08041C0507G
		MAP REVISED
		DECEMBER 7, 2018
		Federal Emergency Management Agency
		·ب ا



USDA Natural Resources Conservation Service





Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
40	Kettle gravelly loamy sand, 3 to 8 percent slopes	В	21.9	8.5%
41	Kettle gravelly loamy sand, 8 to 40 percent slopes	В	222.0	86.1%
68	Peyton-Pring complex, 3 to 8 percent slopes	В	12.7	4.9%
71	Pring coarse sandy loam, 3 to 8 percent slopes	В	1.2	0.5%
Totals for Area of Inter	rest	L	257.7	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher **APPENDIX C – GEC PLANS AND DETAILS**

CANYON CREEK DEVELOPMENT LOCATED IN SECTION 14, TOWNSHIP 12 SOUTH, RANGE 66 WEST, OF THE 6th P.M.,

GRADING AND EROSION CONTROL STANDARD 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 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 LOOSENED 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, ARTICLÉ 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. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ROCKY MOUNTAIN GROUP. (DATED 07/21/2023) AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- 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

COUNTY OF EL PASO, STATE OF COLORADO

GRADING AND EROSION CONTROL PLANS

OCTOBER 2024



ORIGINAL SCALE: 1" = 1000'

BASIS OF BEARINGS

THE WEST LINE OF THE SOUTHEAST 1/4 OF SECTION 2, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE 6TH P.M. BEING MONUMENTED BY A 3-1/4" ALUMINUM CAP STAMPED "LS 9132" AT THE SOUTH $\frac{1}{4}$ CORNER AND A 2-1/2" ALUMINUM CAP STAMPED "LS 9132" AT THE CENTER $\frac{1}{4}$ CORNER, SAID LINE BEARING NO0°11'44"W AS SHOWN ON THE PLAT OF CATHEDRAL PINES SUBDIVISION FILING NO. 1 RECORDED UNDER RECEPTION NO. 205001738 IN THE RECORDERS OF THE EL PASO COUNTY CLERK AND RECORDER.

BENCHMARKS

. SITE VERTICAL DATUM NGVD88 FROM PLANS BY LEIGH-WHITEHEAD ELEVATION 7436.65 NO. 4 REBAR 23' NORTH AND 20' EAST OF THE SOUTHEAST CORNER OF SECTION 2, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY COLORADO, SAID SECTION CORNER BEING A 3-1/4" ALUMINUM SURVEYORS CAP STAMPED "PLS 9132" BEING APPROPRIATELY MARKED

2. 1" IRON PIPE AT SOUTHEAST CORNER OF SITE BEING 367'+/- NORTH OF THE INTERSECTION OF PEREGRINE WAY AND WINSLOW DRIVE AND 30' WESTERLY OF THE CENTERLINE OF WINSLOW DRIVE ELEVATION = 7347.65

3. THE NORTHWEST CORNER OF AN AREA INLET BEING EASTERLY OF WINSLOW DRIVE AND BEING 900' + / - NORTH OF THE INTERSECTION OFPEREGRINE WAY AND WINSLOW DRIVE ELEVATION = 7347.47

AGENCIES

OWNER/DEVELOPER: VILLAGREE LUXURY

CIVIL ENGINEER:

COUNTY ENGINEERING: EL PASO COUNTY PL

TRAFFIC ENGINEERING: EL PASO COUNTY DE

STANDARD NOTES FOR EL **CONSTRUCTION PLANS**

- 1. ALL DRAINAGE AND ROADWAY CONSTRUCTION AND SPECIFICATIONS OF THE CITY OF COLORAE DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND ENGINEERING CRITERIA MANUAL
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION OF ALL EXISTING UTILITIES, WHET OR NOT, BEFORE BEGINNING CONSTRUCTION. LO SHALL BE VERIFIED BY THE CONTRACTOR PRIOF TO CONTACT THE UTILITY NOTIFICATION CENTER
- 3. CONTRACTOR SHALL KEEP A COPY OF THESE GRADING AND EROSION CONTROL PLAN, THE S PLAN (SWMP), THE SOIL AND GEOTECHNICAL R DESIGN AND CONSTRUCTION STANDARDS AND SITE AT ALL TIMES, INCLUDING THE FOLLOWING
- 3.1. EL PASO COUNTY ENGINEERING CRITERIA M/ 3.2. CITY OF COLORADO SPRINGS/ EL PASO COL MANUAL, VOLUMES 1 AND 2 COLORADO DEPARTMENT OF TRANSPORTATI 3.3.
- SPECIFICATIONS AND BRIDGE CONSTRUCTION 3.4. CDOT M&S STANDARDS
- 4. NOTWITHSTANDING ANYTHING DEPICTED IN THES GRAPHIC REPRESENTATION. ALL DESIGN AND C ROADS, STORM DRAINAGE AND EROSION CONTR STANDARDS AND REQUIREMENTS OF THE MOST RELEVANT ADOPTED EL PASO COUNTY STANDAR DEVELOPMENT CODE, THE EINGEERI9NG CRITERIA MANUAL, AND THE DRAINAGE CRITERIA DEVIATIONS FROM REGULATIONS AND STANDARI APPROVED, IN WRITING. ANY MODIFICATIONS NEW AFTER-THE-FACT WILL BE ENTIRELY THE DEVEN RECTIFY.
- 5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY EXISTING CONDITIONS, BOTH ONSITE AND OFFSI PLANS. ANY MODIFICATIONS NECESSARY DUE T CHANGED CONDITIONS WILL BE ENTIRELY THE D TO RECTIFY.
- 6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTR PASO COUNTY PLANNING AND COMMUNITY DEVE TO STARTING CONSTRUCTION.
- 7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO U REQUIREMENTS OF ALL JURISDICTIONAL AGENCIE PERMITS. INCLUDING BUT NOT LIMITED TO EL PA STORMWATER QUALITY CONTROL PERMIT (ESQCF FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY 401 AND/OR 404 PERMITS, AND COUNTY AND PFRMITS.
- 8. CONTRACTOR SHALL NOT DEVIATE FROM THE P OBTAINING WRITTEN APPROVAL FROM THE DESIG CONTRACTOR SHALL NOTIFY THE DESIGN ENGINI DISCOVERY OF ANY ERRORS OR INCONSISTENCIE
- 9. CONTRACTOR SHALL COORDINATE GEOTECHNICA STANDARDS. PAVEMENT DESIGN SHALL BE APPI PCD PRIOR TO PLACEMENT OF CURB AND GUTT
- 10. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT CONSTRUCTION ACCESS POINTS.
- 11. SIGHT VISIBILITY TRIANGLES ARE IDENTIFIED IN PROVIDED AT ALL INTERSECTIONS. OBSTRUCTION ABOVE FLOWLINE ARE NOT ALLOWED IN SIGHT
- 12. SIGNING AND STRIPING SHALL COMPLY WITH EL OF PUBLIC WORKS AND MUTCD CRITERIA.
- 13. CONTRACTOR SHALL OBTAIN ANY PERMITS REQU DEPARTMENT OF PUBLIC WORKS, INCLUDING WO RIGHT-OF-WAY AND SPECIAL TRANSPORT PERM
- 14. THE LIMITS OF CONSTRUCTION SHALL REMAIN UNLESS OTHERWISE NOTED. THE OWENER/DEVEL PERMISSION AND EASEMENTS, WHERE REQUIRED OWNER(S) PRIOR TO ANY OFF-SITE DISTURBAN CONSTRUCTION.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE WAY ONLY. THE CONTRACTOR LOCATION OF ALL EXISTING U WORK. THE CONTRACTOR SHAL ANY AND ALL DAMAGES WHIC FAILURE TO EXACTLY LOCATE ABOVE GROUND AND UNDERGROUND UTILITIES.

oth P.M.,				LINTI SUCH TIME AS	THESE DRAWINGS ARE APPROVED BY THE	APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING	APPROVES THEIR USE ONLY FOR THE PURPOSES	DESIGNATED BY WRITTEN AUTHORIZATION.	
EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE	FIRE DISTRICT: GAS DEPARTMENT: ELECTRIC DEPARTMENT: COMMUNICATIONS:	BLACK FOREST FIRE PROTE 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80 CHIEF BRYAN JACK (719) BLACK HILLS ENERGY 7080 ALEGRE STREET FOUNTAIN, CO 80817 (719) 393–6625 MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495–2283 U.S. WEST COMMUNICATION (LOCATORS) (800) 922–19	0908 495–4300 S	PREPARED FOR	VILLAGREE LUXUR	COLORADO SPRALLAX HEIGHTS	CULUNADO JENNOS, UO 003 GREGG CAWLFIELD		
COLORADO SPRINGS, CO 80922 JOSHUA PALMER, P.E. (719) 520–6460 TES FOR EL PASO COUNTY NUMAY CONSTRUCTION SHALL MEET THE STANDARDS THE CITY OF COLORADO SPRINGS/EL PASO COUNTY NUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY NUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ANUAL. RESPONSIBLE FOR THE NOTIFICATION AND FIELD KISTING UTILITIES, WHETHER SHOWN ON THE PLANS NING CONSTRUCTION. LOCATION OF EXISTING UTILITIES THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 Y NOTIFICATION CENTER OF COLORADO (UNCC). EP A COPY OF THESE APPROVED PLANS, THE CONTROL PLAN, THE STORMWATER MANAGEMENT AND GEOTECHNICAL REPORT, AND THE APPROPRIATE TION STANDARDS AND SPECIFICATIONS AT THE JOB LUDING THE FOLLOWING:	- 1 2 3 4 5	SHEET INDEX : COVER SHEET 2 : LEGEND 3 : GRADING AND EROSION 4 : WALL PROFILES 5-7 : DETAILS TOTAL SHEETS: 7	N CONTROL PLAN		I'R ENGINEERING	- 5		Centennial 303-/40-9393 • Colorado Springs /19-593-2593 Fort Collins 970-491-9888 • www.irengineering.com	
NGINEERING CRITERIA MANUAL (ECM) SPRINGS/ EL PASO COUNTY DRAINAGE CRITERIA AND 2 ENT OF TRANSPORTATION (CDOT) STANDARD BRIDGE CONSTRUCTION RDS HING DEPICTED IN THESE PLANS IN WORDS OR DN, ALL DESIGN AND CONSTRUCTION RELATED TO E AND EROSION CONTROL SHALL CONFORM TO THE REMENTS OF THE MOST RECENT VERSIONS OF THE PASO COUNTY STANDARDS, INCLUDING THE LAND E EINGEERI9NG CRITERIA MANUAL, THE DRAINAGE THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY		Kn	ow what's below. Call before you dig.	BY DATE					
ATIONS AND STANDARDS MUST BE REQUESTED, AND ANY MODIFICATIONS NECESSARY TO MEET CRITERIA BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO EER'S RESPONSIBILITY TO ACCURATELY SHOW OTH ONSITE AND OFFSITE, ON THE CONSTRUCTION DNS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR ILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY HEDULE A PRE-CONSTRUCTION MEETING WITH EL G AND COMMUNITY DEVELOPMENT INSPECTIONS, PRIOR STION. S RESPONSIBILITY TO UNDERSTAND THE JURISDICTIONAL AGENCIES TO OBTAIN ALL REQUIRED T NOT LIMITED TO EL PASO COUNTY EROSION AND CONTROL PERMIT (ESQCP), REGIONAL BUILDING NT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED ITS, AND COUNTY AND STATE FUGITIVE DUST	COUNTY PLAN REVIEW I COUNTY DESIGN CRITER AND ADEQUACY OF THE BE CONFIRMED AT THE THIS DOCUMENT ASSUM ACCURACY OF THIS DOO FILED IN ACCORDANCE DEVELOPMENT CODE, DF ENGINEERING CRITERIA I IN ACCORDANCE WITH E BE VALID FOR CONSTRU SIGNED BY THE EL PAS STARTED WITHIN THOSE FOR APPROVAL, INCLUD	E DESIGN, DIMENSIONS, AND/ JOB SITE. THE COUNTY THE ES NO RESPONSIBILITY FOR CUMENT. WITH THE REQUIREMENTS OF RAINAGE CRITERIA MANUAL, MANUAL AS AMENDED.	RAL CONFORMANCE WITH PONSIBLE FOR THE ACCURACY OR ELEVATIONS WHICH SHALL ROUGH THE APPROVAL OF COMPLETENESS AND/OR THE EL PASO COUNTY LAND VOLUMES 1 AND 2, AND INSTRUCTION DOCUMENTS WILL YEARS FROM THE DATE DNSTRUCTION HAS NOT NEED TO BE RESUBMITTED	o. REVISION					
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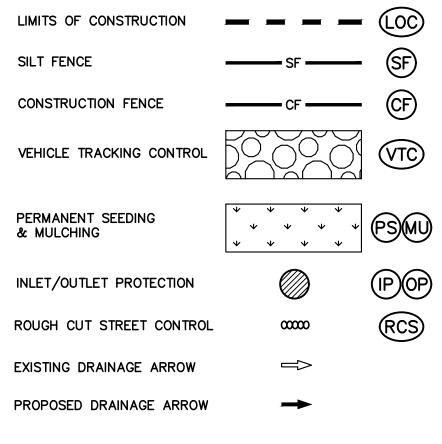
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ABBREVIATIONS			E AS S ARE FHE EVIEWING NGINEERING R USE PURPOSES WRITTEN
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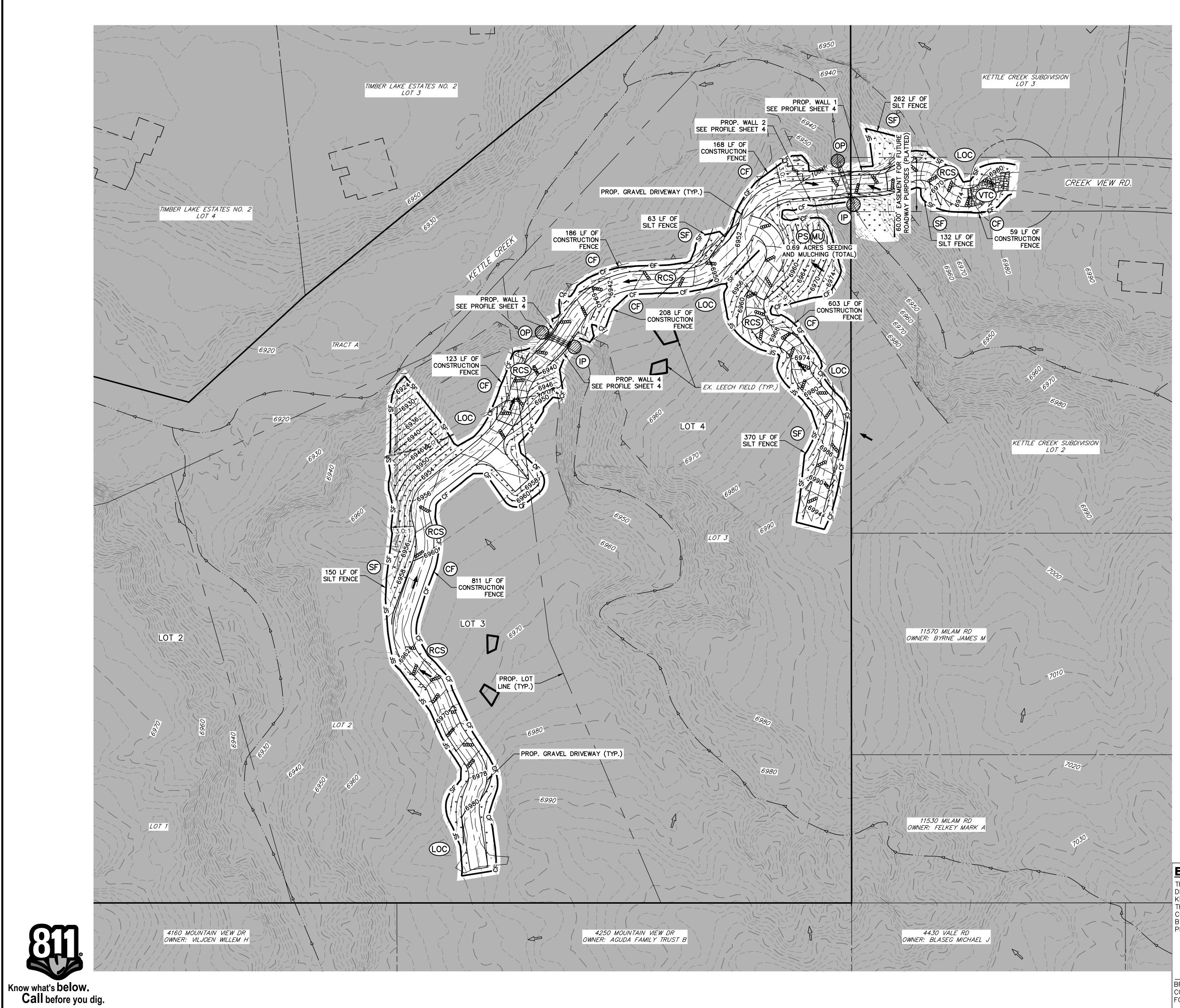


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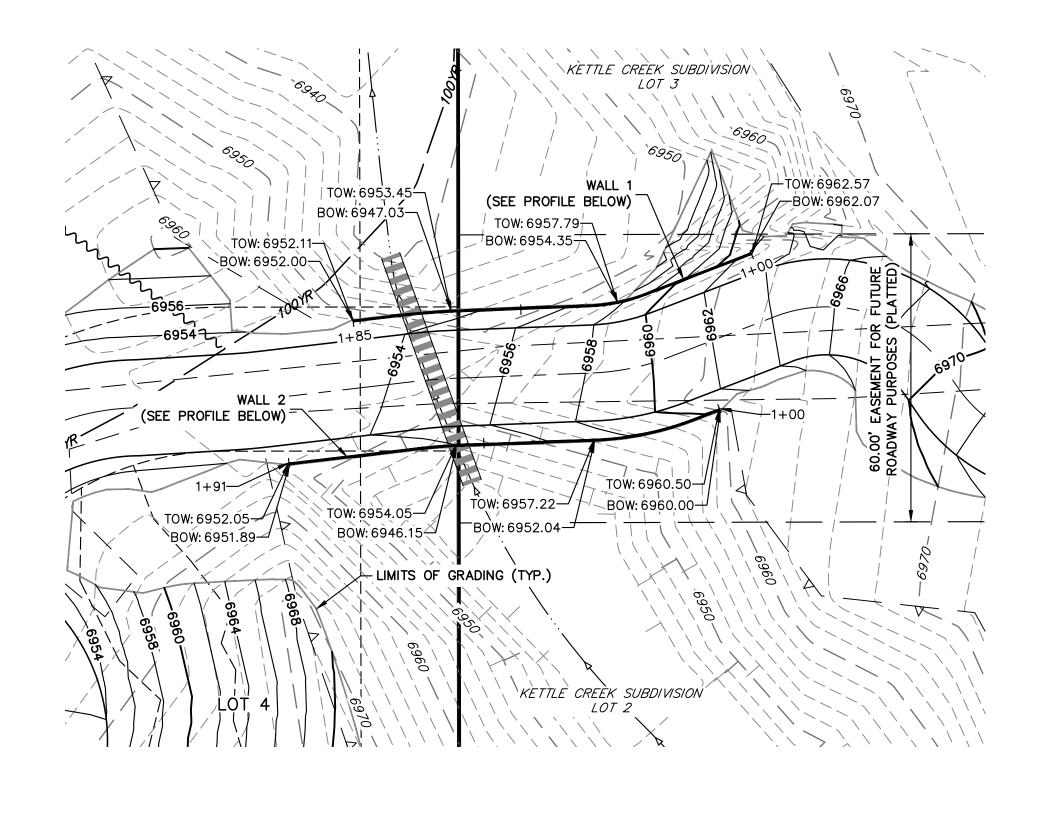
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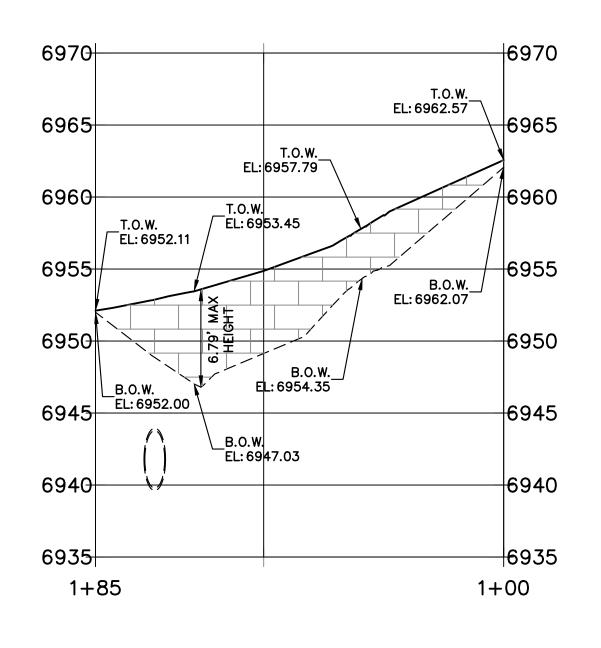


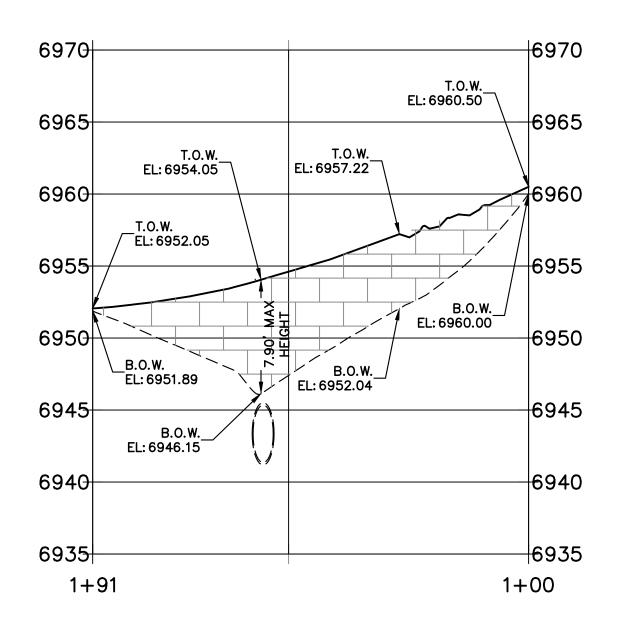
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PROPOSED DRAINAGE ARROW	DATE					
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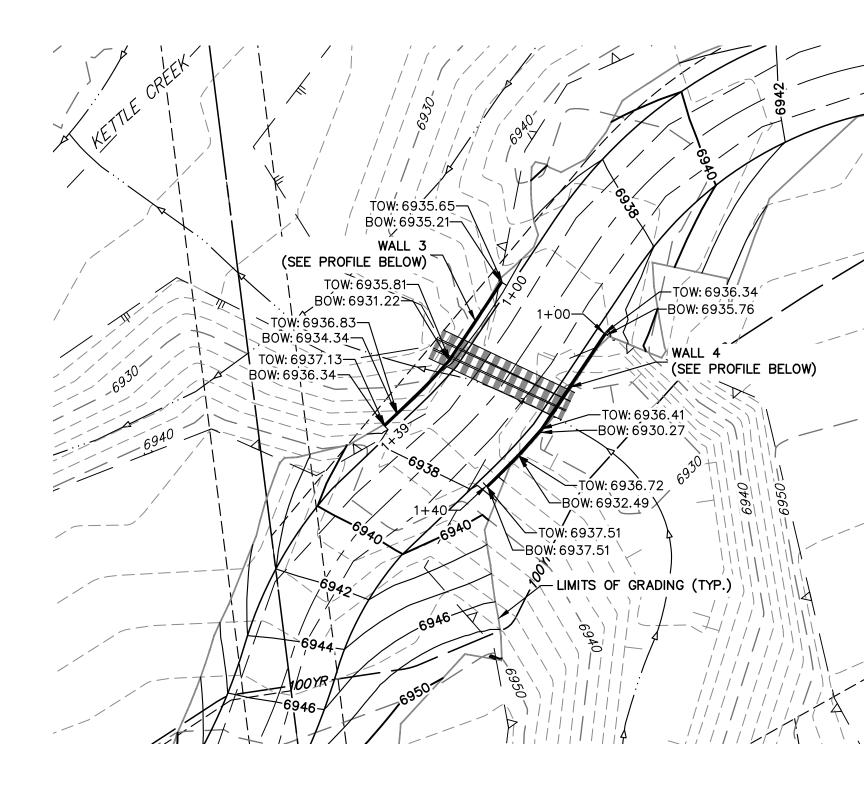
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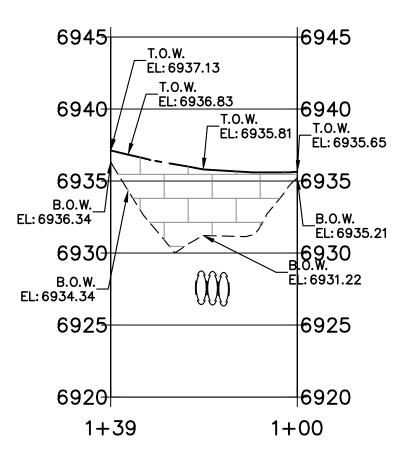


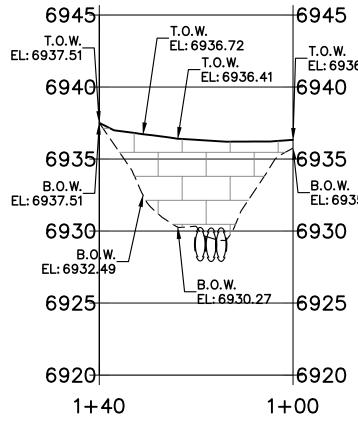


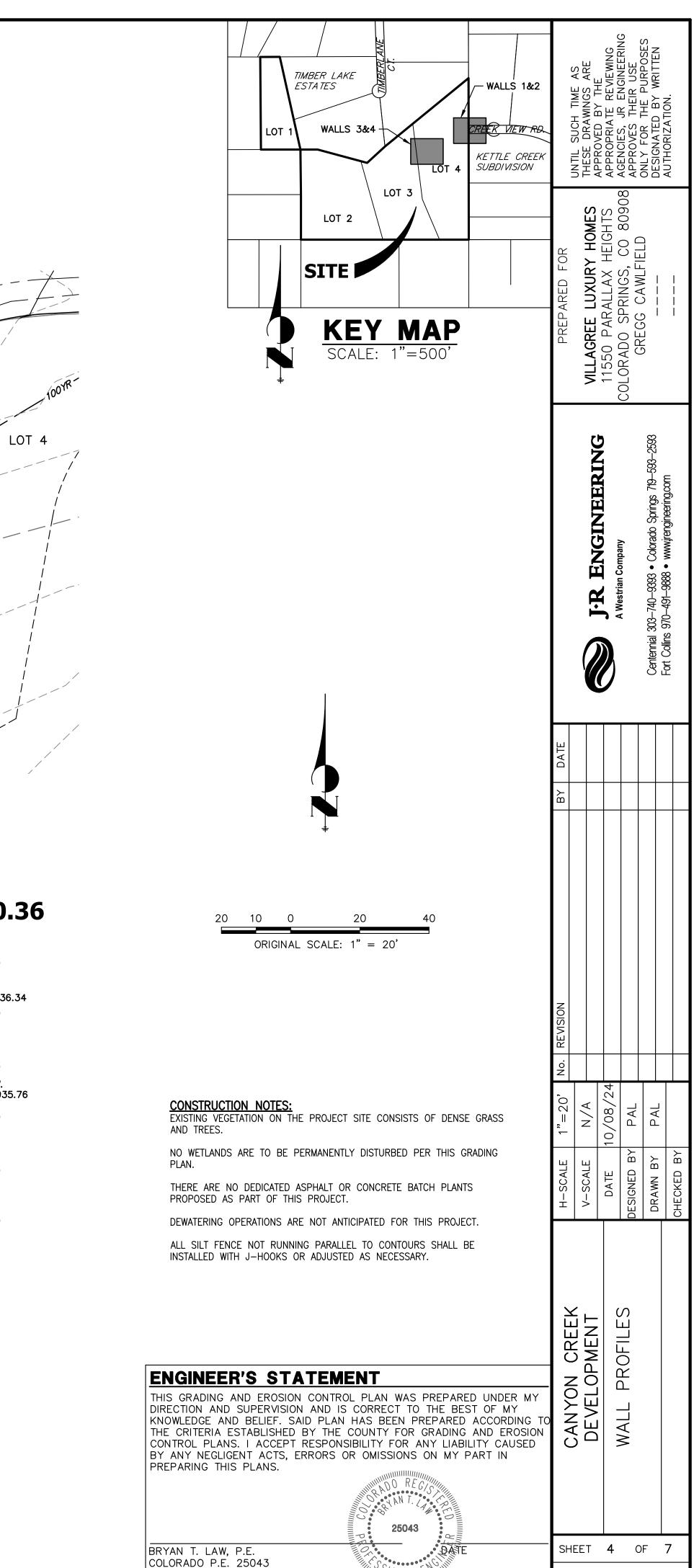




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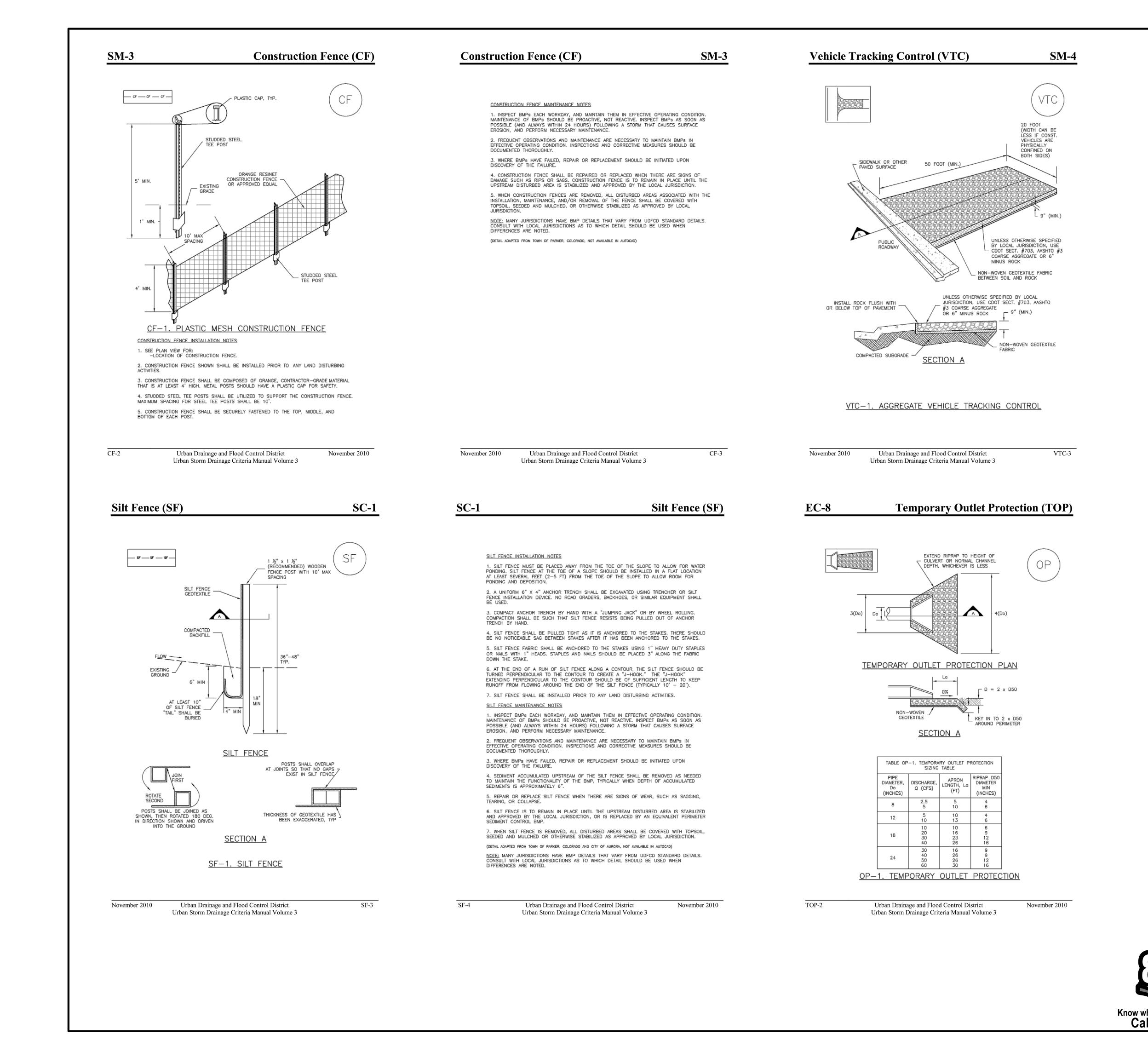
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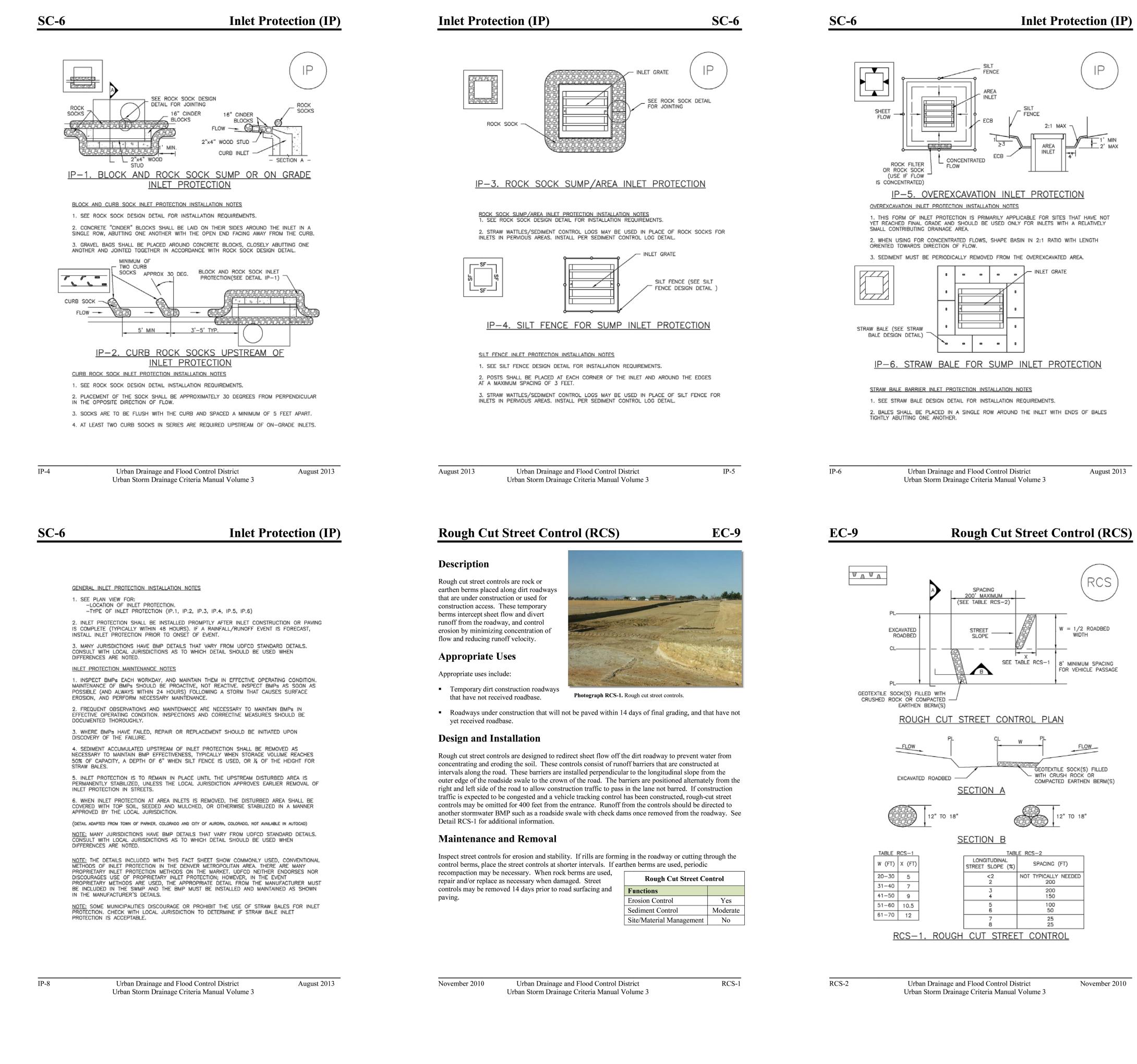
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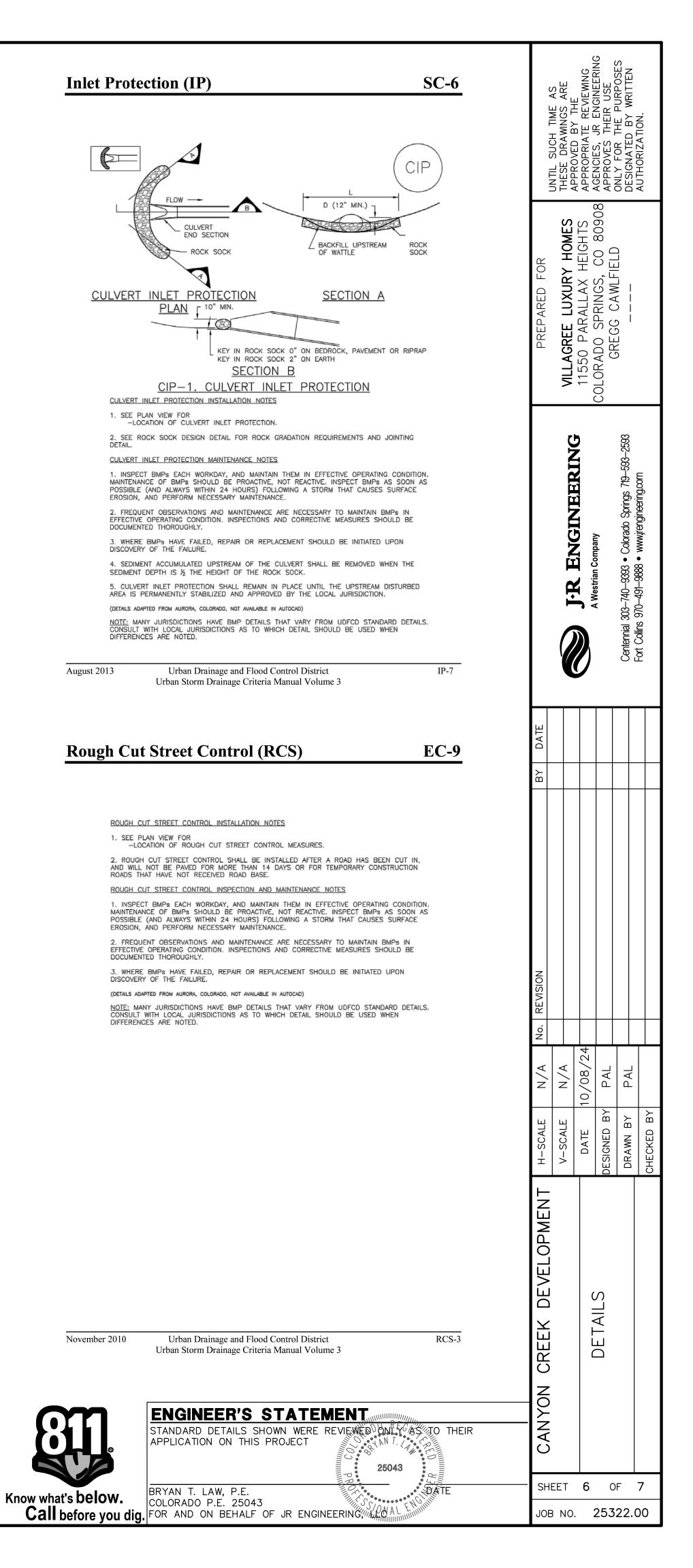
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<u>SM-4</u>	STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES 1. SEE PLAN VIEW FOR -LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S). -TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).	UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENCINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES
	 CONSTRUCTION MAT OR TRMJ. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK. STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. 	PREPARED FOR GREE LUXURY HOMES O PARALLAX HEIGHTS DO SPRINGS, CO 80908 SREGG CAWLFIELD
	MAINTENANCE OF BMPS SHOULD ÉE 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 UDFCD 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 AWAILABLE IN AUTOCAD)	J-R ENGINEERING A Westrian Company COLORAD
VTC-6	Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3 EC-8	DATE
	 IEMPORARY OUTLET PROTECTION INSTALLATION NOTES SEE PLAN VIEW FOR LOCATION OF OUTLET PROTECTION. DIMENSIONS OF OUTLET PROTECTION. 2. DETAIL IS INTENDED FOR PIPES WITH SLOPE ≤ 10%. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES. 3. TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS. IEMPORARY OUTLET PROTECTION INSPECTION AND 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. NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AND EVALUATED OF VOLUME 3, NOT AVAILABLE IN AUTOCAD) 	No. REVISION 24 24 24
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IJ	ENGINEER'S STATEMENT STANDARD DETAILS SHOWN WERE REVIEWED ON 56AS TO THEIR APPLICATION ON THIS PROJECT 25043	NOXNAD CANYON SHEET 5 OF
at's bel	DW. BRYAN T. LAW, P.E. COLORADO P.E. 25043 Jou dig. FOR AND ON BEHALF OF JR ENGINEERING, MARKED ALLERING, MARKED	



Rough out Street control					
Functions					
Erosion Control	Yes				
Sediment Control	Moderate				
Site/Material Management	No				



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

Description

Temporary seeding can be used to stabilize disturbed areas that will be inactive for an extended period. Permanent seeding should be used to stabilize areas at final grade that will not be otherwise stabilized. Effective seeding includes preparing a seedbed, selecting an appropriate seed mixture, using proper planting techniques, and protecting the seeded area with mulch, geotextiles, or other appropriate measures.

Appropriate Uses

When the soil surface is disturbed and will remain inactive for an extended period (typically determined by local government requirements), proactive

stabilization measures, including planting a temporary seed mix, should be implemented. If the inactive period is short-lived (on the order of two weeks), techniques such as surface roughening may be appropriate. For longer periods of inactivity of up to one year, temporary seeding and mulching can provide effective erosion control. Permanent seeding should be used on finished areas that have not been otherwise stabilized.

Douglas County.

The USDCM Volume 2 *Revegetation* Chapter contains suggested annual grains and native seed mixes to use for temporary seeding. Alternatively, local governments may have their own seed mixes and timelines for seeding. Check jurisdictional requirements for seeding and temporary stabilization.

Design and Installation

Effective seeding requires proper seedbed preparation, selecting an appropriate seed mixture, using appropriate seeding equipment to ensure proper coverage and density, and protecting seeded areas with mulch or fabric until plants are established.

The USDCM Volume 2 Revegetation Chapter contains detailed seed mixes, soil preparation practices, and seeding and mulching recommendations that should be referenced to supplement this Fact Sheet.

Drill seeding is the preferred seeding method. Hydroseeding is not recommended except in areas where steep slopes prevent use of drill seeding equipment, and even in these instances it is preferable to hand seed and mulch. Some jurisdictions do not allow

hydroseeding or hydromulching.	Temporary and Permanent Seeding		
Seedbed Preparation	Functions		
Prior to seeding, ensure that areas to be revegetated have	Erosion Control	Yes	
soil conditions capable of supporting vegetation. Overlot	Sediment Control	No	
grading can result in loss of topsoil and compaction,	Site/Material Management	No	
resulting in poor quality subsoils at the ground surface that			

January 2021 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

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

Table TS/PS-2. Seeding Dates for Annual and Perennial Grasses

	(Numbers in t	Grasses table reference able TS/PS-1)	Perennial Grasses		
Seeding Dates	Warm	Cool	Warm	Cool	
January 1–March 15			√	✓	
March 16–April 30		1,2,3	✓	\checkmark	
May 1–May 15			✓		
May 16–June 30	5				
July 1–July 15	5				
July 16–August 31					
September 1–September 30		6, 7, 8, 9			
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 USDCM Volume 2 Revegetation Chapter and Volume 3 Mulching BMP Fact Sheet (EC-04) 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.

If a temporary annual seed was planted, the area should be reseeded with the desired perennial mix when there will be no further work in the area. To minimize competition between annual and perennial species, the annual mix needs time to mature and die before seeding the perennial mix. To increase success of the perennial mix, it should be seeded during the appropriate seeding dates the second year after the temporary annual mix was seeded. Alternatively, if this timeline is not feasible, the annual mix seed heads should be removed and then the area seeded with the perennial mix.

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.

January 2	202
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Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 TS/PS-5

TS/PS-1

Where topsoil is not available, subsoils should be amended to provide an appropriate plant-growth medium. Organic matter, such as well digested compost, can be added to improve soil characteristics conducive to plant growth. Other treatments can be used to adjust soil pH conditions when needed. Soil testing, which is typically inexpensive, should be completed to determine and optimize the types and amounts of amendments that are required.

If the disturbed ground surface is compacted, rip or rototill the upper 12 inches of the surface prior to placing topsoil. If adding compost to the existing soil surface, rototilling is necessary. Surface roughening will assist in placing a stable topsoil layer on steeper slopes, and allow infiltration and root penetration to greater depth. Topsoil should not be placed when either the salvaged topsoil or receiving ground are frozen or snow covered.

Prior to seeding, the soil surface should be rough and the seedbed should be firm, but neither too loose nor compacted. The upper layer of soil should be in a condition suitable for seeding at the proper depth and conducive to plant growth. Seed-to-soil contact is the key to good germination.

Refer to MHFD's Topsoil Management Guidance for detailed information on topsoil assessment, design, and construction.

Temporary Vegetation

To provide temporary vegetative cover on disturbed areas which will not be paved, built upon, or fully landscaped or worked for an extended period (typically 30 days or more), plant an annual grass appropriate for the time of planting and mulch the planted areas. Temporary grain seed mixes suitable for the Denver metropolitan area are listed in Table TS/PS-1. Native temporary seed mixes are provided in USDCM Volume 2, Chapter 13, Appendix A. These are to be considered only as general recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

Permanent Revegetation

To provide vegetative cover on disturbed areas that have reached final grade, a perennial grass mix should be established. Permanent seeding should be performed promptly (typically within 14 days) after reaching final grade. Each site will have different characteristics and a landscape professional or the local jurisdiction should be contacted to determine the most suitable seed mix for a specific site. In lieu of a specific recommendation, one of the perennial grass mixes appropriate for site conditions and growth season listed in seed mix tables in the USDCM Volume 2 *Revegetation* Chapter can be used. The pure live seed (PLS) rates of application recommended in these tables are considered to be absolute minimum rates for seed applied using proper drill-seeding equipment. These are to be considered only as general

TS/PS-2

Mulching (MU)

Description

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal constraints.

Mulch can be applied either using standard mechanical dry application methods or using hydromulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.

Appropriate Uses

Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeding. Disturbed areas should be properly mulched and tacked, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site not otherwise permanently stabilized.

Standard dry mulching is encouraged in most jurisdictions; however, hydromulching may not be allowed in certain jurisdictions or may not be allowed near waterways.

Do not apply mulch during windy conditions.

Design and Installation

Prior to mulching, surface-roughen areas by rolling with a crimping or punching type roller or by track walking. Track walking should only be used where other methods are impractical because track walking with heavy equipment typically compacts the soil.

A variety of mulches can be used effectively at construction sites. Consider the following:

June 2012

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3



or more.



Photograph TS/PS -1. Equipment used to drill seed. Photo courtesy of

Temporary and Permanent Seeding (TS/PS)

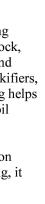
have low nutrient value, little organic matter content, few soil microorganisms, rooting restrictions, and conditions less conducive to infiltration of precipitation. As a result, it is typically necessary to provide stockpiled topsoil, compost, or other soil amendments and rototill them into the soil to a depth of 6 inches

Topsoil should be salvaged during grading operations for use and spread on areas to be revegetated later. Topsoil should be viewed as an important resource to be utilized for vegetation establishment, due to its water-holding capacity, structure, texture, organic matter content, biological activity, and nutrient content. The rooting depth of most native grasses in the semi-arid Denver metropolitan area is 6 to 18 inches. If present, at a minimum of the upper 6 inches of topsoil should be stripped, stockpiled, and ultimately respread across areas that will be revegetated.

> Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

January 2021

EC-4



Photograph MU-1. An area that was recently seeded, mulched, and crimped

Mulch	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

MU-1

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

recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

If desired for wildlife habitat or landscape diversity, shrubs such as rubber rabbitbrush (*Chrysothamnus nauseosus*), fourwing saltbush (*Atriplex canescens*) and skunkbrush sumac (*Rhus trilobata*) could be added to the upland seed mixes at 0.25, 0.5 and 1 pound PLS/acre, respectively. In riparian zones, planting root stock of such species as American plum (Prunus americana), woods rose (Rosa woodsii), plains cottonwood (Populus sargentii), and willow (Salix spp.) may be considered. On non-topsoiled upland sites, a legume such as Ladak alfalfa at 1 pound PLS/acre can be included as a source of nitrogen for perennial grasses.

Timing of seeding is an important aspect of the revegetation process. For upland and riparian areas on the Colorado Front Range, the suitable timing for seeding is from October through May. The most favorable time to plant non-irrigated areas is during the fall, so that seed can take advantage of winter and spring moisture. Seed should not be planted if the soil is frozen, snow covered, or wet.

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-2 for appropriate seeding dates.

January 2021

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

Mulching (MU)

EC-4

• Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an

ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may

- Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above).
- On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.
- Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided.
- Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.)
- Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)
- Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

Maintenance and Removal

have to be weighted to afford proper soil penetration.

After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.

MU-2

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 June 2012

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

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	1/2
5. Millet	Warm	3 - 15	$\frac{1}{2} - \frac{3}{4}$
6. Winter wheat	Cool	20–35	1 - 2
7. Winter barley	Cool	20–35	1 - 2
8. Winter rye	Cool	20–35	1 - 2
9. Triticale	Cool	25–40	1 - 2
 ^a Successful seeding of annu usually produce enough de wind and water erosion for is not disturbed or mowed Hydraulic seeding may be 	ead-plant resi c an additiona closer than 8	due to provide protecti al year. This assumes to inches.	ion from that the cover
steeper than 3:1 or where a seeding is used, hydraulic operation, when practical,	access limitat	ions exist. When hydroud be applied as a sep	caulic parate

the mulch. ^b See Table TS/PS-2 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.

TS/PS-4

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 January 2021

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			I'R ENGINEERING			Centennial 303-740-9393 • Colorado Sorinos 719-593-2593			
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25043

BRYAN T. LAW, P.E. COLORADO P.E. 25043 Call before you dig. FOR AND ON BEHALF OF JR ENGINEERING

APPLICATION ON THIS PROJECT

APPENDIX D – INSPECTION REPORT TEMPLATE

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 q	YES	NO		
(permittee is responsible				

INSPECTION FREQUENCY

Check the box that describes the minimum inspection frequency utilized when conducting each insp	ection
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?	YES NO
If yes, describe below.	

INSPECTION REQUIREMENTS*

 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	
Are there control measures requiring maintenance?			If "YES" document below

Date Observed	Location	Control Measure	Maintenance Required	Date Completed

INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION

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

Are there inadequate control measures requiring corrective action?	NO	YES	
Are there inadequate control measures requiring corrective action?			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

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

REPORTING REQUIREMENTS

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

All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit
a. Endangerment to Health or the Environment
Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a
of the Permit)
This category would primarily result from the discharge of pollutants in violation of the permit
b. Numeric Effluent Limit Violations
 Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit)
o Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit)
 Daily maximum violations (See Part II.L.6.d of the Permit)
Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if
Numeric erriterit minits are very uncommon in certifications under the convocod general permit. This category of honcomphance only appres in

numeric effluent limits are included in a permit certification.

Has there been an incider	it of noncompliance requiring 2	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	