



# **STORMWATER MANAGEMENT PLAN FOR CLOVERLEAF SUBDIVISION**

## **Prepared For (Applicant):**

**PT Cloverleaf, LLC**  
1864 Woodmoor Drive, Suite 100  
Monument, CO 80920  
(719) 476-0800  
Contact: Joe Desjardin

## **Prepared By:**

**JR Engineering, LLC**  
5475 Tech Center Drive, Suite 235  
Colorado Springs, Colorado 80919  
(303) 267-6240  
Contact: Mike Bramlett

## **Qualified Stormwater Manager:**

To Be Determined

## **Contractor:**

To Be Determined

**May, 2021**

El Paso County PCD File No.:  
SP-20-2

Add text:  
SF-21-023

JR - Addressed.

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.

<hr/>	<hr/>
Mike Bramlett, P.E.	Date
Registered Professional Engineer	
State of Colorado No. 32314	
For and on behalf of JR Engineering, LLC.	

REVIEW ENGINEER:

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

<hr/>	<hr/>
Review Engineer	Date

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**1. Applicant / Contact Information**

**Owner/Developer:** PT Cloverleaf, LLC  
Attn: Joe Desjardin  
1864 Woodmoor Drive, Suite 100  
Monument, CO 80920  
(719) 476-0800

**Engineer:** JR Engineering, LLC  
5475 Tech Center Drive, Suite 235  
Colorado Springs, CO 80919  
Attn: Mike Bramlett (303) 267-6240  
[mbramlett@jrengineering.com](mailto:mbramlett@jrengineering.com)

**SWMP Administrator:** To Be Determined

**Contractor:** To Be Determined

**2. Site Description and Location**

The site is located in Sections 23 and 24, Township 11 South, Range 67 West of the Sixth Principal Meridian, in the County of El Paso, State of Colorado. The subdivision will replat portions of Tract H of Woodmoor Greens, Tract F of Woodmoor Greens vacation L496-500 and a Portion of Tract B of Woodmoor Placer. Cloverleaf is a 38.78 acre, single family-development and is comprised of 135 lots and associated infrastructure. Cloverleaf will be split into two distinct uses; Lot 1–Lot 132 will be an urban subdivision proposed for RS-6000 zoning; Lots 133, 134 and 135 will be suburban lots consistent with the existing RS-20000 zoning. The site is bounded by Walters Commons Townhomes and Country Ridge Condos to the south, Bowstring Road to the west, Woodmoor Greens and Woodmoor Place subdivision to the north and Cloverleaf Road to the east. The nearest street intersection is located 500 feet northwest of the intersection of Cloverleaf Road and Higby Road. See Appendix A for a vicinity map.

Cloverleaf is currently unoccupied and undeveloped. The existing ground cover is sparse vegetation and open space. The development of the proposed site will include implementation of BMPs, site grading, utility and storm installation, roadway paving, associated residential site development, and removal of temporary BMPs. Refer to the GEC plans in Appendix C for the phasing of BMPs.

Site details:

- a. Estimated area to undergo disturbance: 40.42 acres (Total Area = 38.78 acres)
  - i. Offsite grading is to be expected for this project.
- b. Estimated 100-year runoff coefficients:



JR - Added that it has moderate runoff potential in part c

This section discusses how soil erosion will be mitigated (which is fine), but also include info on how erosive B type soils are: (ex: low, medium, or high), in this paragraph "d" or above in "c". Per checklist item 8.

- i. Historic:  $C = 0.36$
  - ii. Developed:  $C = 0.59$
- c. Soil Type: Site soils include Tomah-Crowfoot loamy sand, 3 to 8 percent slopes. All of the soils are classified as Hydrologic Soils Group B (Soils having a moderately infiltration rate when thoroughly wet. Refer to Appendix B for a soils map.
- d. 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.
- e. Existing vegetation: Native meadow grasses (approximately 70% coverage), determined using a combination of visual field verification and aerial inspection.
- f. 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.
  - 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,

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).

Do so here or in a more appropriate section below.

JR - Added in that waste bins will be inspected and changed regularly



Revise this according to DCM Vol 2 -  
Section 3.2 - General Principles – Basic  
Grading, Erosion and Stormwater Quality  
Requirements and General Prohibitions  
#16 and/or reference this criteria section.

JR - Revised to speci-  
fied criteria (ie  
change 60 days to 30  
days, etc.)

- 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 60 days) should be seeded and mulched with a temporary grass cover once the stockpile is placed (typically within 14 days). 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).
  - g. Spill prevention and pollution controls for dedicated batch plants: Not applicable for this site since there will be no dedicated batch plants.
  - h. 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.
  - i. 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 non-stormwater discharge could be the irrigation of permanent seeding (PS). Irrigation will be kept at a rate so as to not create runoff.
  - j. Existing basin drainage patterns are generally from northeast to southwest by way of sheet flow.
  - k. Receiving water: A roadside ditch along the west side of Cloverleaf Road will enter the existing Type C inlet at the northwest corner of Cloverleaf Road and Higby Road. Also flows from the pond will travel down the proposed street to the west to the existing Leggins Way, and ultimately to the existing 28"x 42" CMP beneath Bowstring Road. Runoff from the site will follow historic drainage patterns, flowing southwest into Teachout Creek, which flows into Monument



Creek, which flows into Fountain Creek.

- 1. There are no streams that cross the project site.

3. **Proposed Sequence of Major Activities**

The project will follow standard construction sequences for construction, i.e., clearing and grubbing, over excavation, overlot 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 (with estimated completion dates) will be as follows:

- 1. Install VTC and other perimeter soil erosion control measures (June 2021).
- 2. Clear and rough grade for improvements (June 2021).
- 3. Install rough cut street control (July 2022).
- 4. Place Seed and Mulch (July 2022).
- 5. Clean up and final stabilization (August 2023).

4. **BMPs for Stormwater Pollution Prevention**

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

a. Erosion and Sediment Controls

i. Structural BMPs:

- 1. Sediment basins (SB) to collect runoff before it enters receiving waters
- 2. Silt fence (SF) along downstream limits of disturbed areas to filter sediment from runoff
- 3. Stabilized staging area (SSA) near site entrance to consolidate construction equipment in a stabilized location
- 4. Construction fence (CF) to identify limits of construction (LOC) where silt fence is not needed
- 5. Vehicle tracking control (VTC) at site entrance to prevent sediment from leaving the site via vehicle tires
- 6. Rough Cut Street Control (RCS) is material placed after a road has been cut and before base has been installed for paving.
- 7. Erosion Control Blanket (ECB) is used on slopes greater than a 3:1 slope.
- 8. Temporary stock pile (TSP) to consolidate materials such as topsoil in a controlled area bounded by silt fence
- 9. Inlet protection (IP) around culvert entrances
- 10. Outlet protection (OP) at culvert outlets

JR - Labeled which tasks correspond with which phase of the BMP's

Checklist item 5 - Clearly define which construction tasks correspond to each phase of BMPs (initial, interim, and final) and/or phase of the project (pre-disturbance, site clearing, grading, etc) so it's clear when each BMP will be installed. See sheet 4 on GEC Plans.

11. Concrete washout area (CWA) to allow a controlled area for concrete trucks to be washed
  12. Temporary Swale (TSW) to convey runoff to sediment basins
  13. Straw Bale Barrier (STB) to be used as check dams in swales to slow and filter sediment from runoff
  14. Sediment Control Logs (SCL) to slow and filter sediment from runoff, to be placed behind sidewalks.
- 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.
  - 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



Per checklist item 22 - discuss 4 ponds.

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.

JR - Added in paragraph about retention ponds

## 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: Sand dropseed, 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.
  - i. The overall project does not solely rely on another entity or control measures for final stabilization.

add: "or permanent water quality or detention"

JR - Fixed

## 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.

JR - Added this text underneath a.i

Add text related to ponds along the lines of:  
The contractor will be responsible for any re-excavation of sediment and debris that collects in the basin depression required to ensure that the basin meets the design grades following construction.  
The storm lines shall also be cleaned and free of sediment once the site becomes stabilized.



Please state in the appropriate section of the SWMP: "The QSM will be sufficiently qualified for the required duties per the ECM Appendix I.5.2.A"

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.

JR - Added in category ii.5

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.
4. 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 storm water quality issues at the site.
5. The Qualified Storm water Manager shall amend the SWMP when there is a change in design, construction, operation or maintenance 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 storm water discharges associated with construction activity or when BMPs are no longer necessary and are removed.

iii. BMP Maintenance / Replacement and Failed BMPs:

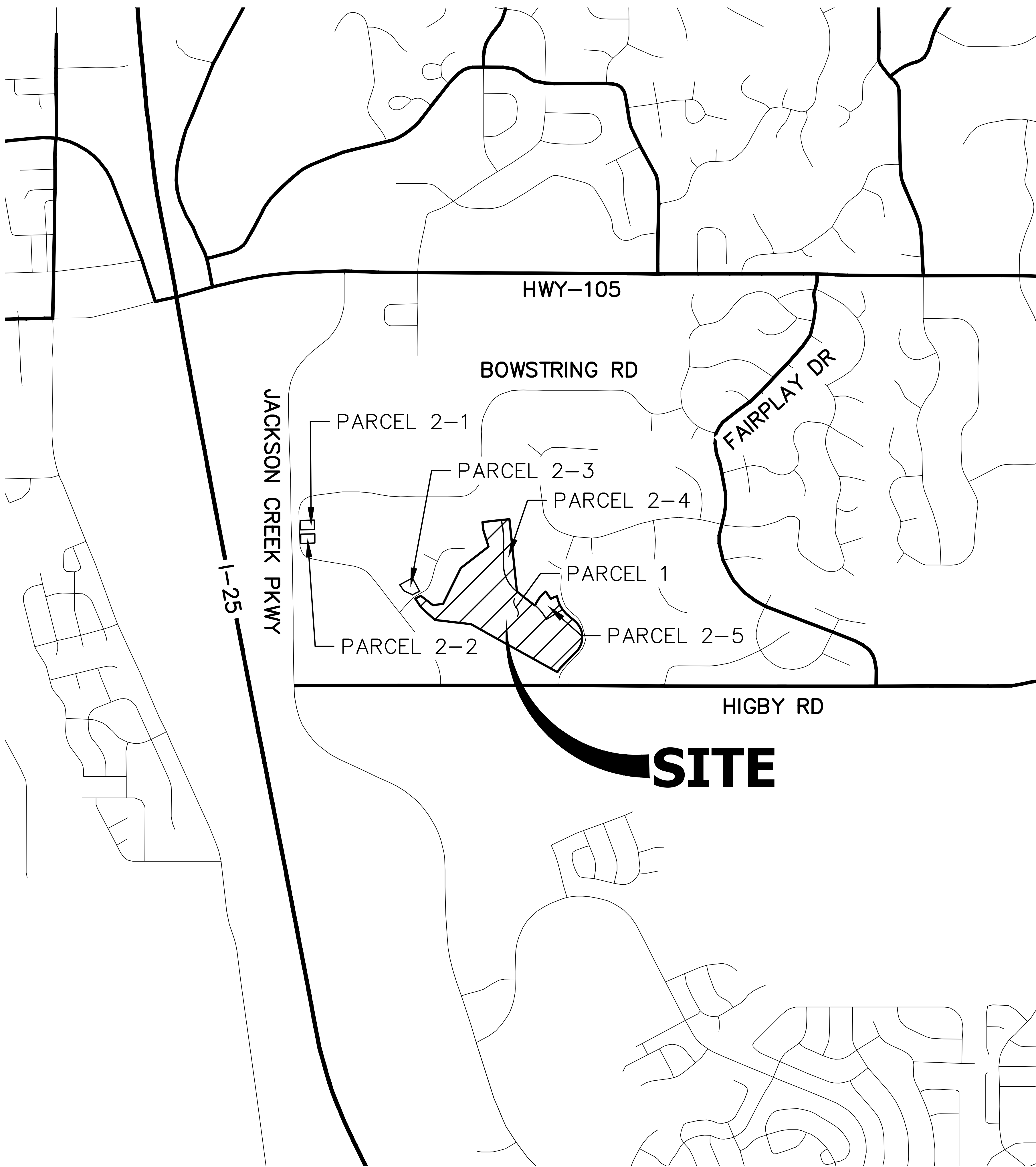
1. The contractor shall remove sediment that has been collected by perimeter controls, such as silt fence and inlet protection, on a regular basis to prevent failure of BMPs, and remove potential of sediment from being discharged from the site in the event of BMP failure.
2. Removed sediment must be 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 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 storm water quality issues at

the site.

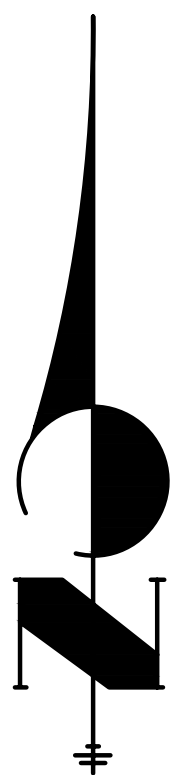
5. The Qualified Storm water Manager shall amend the SWMP when there is a change in design, construction, operation or maintenance of the site which would require the implementation of new or revised BMPs or if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity or when BMPs are no longer necessary and are removed.
  6. 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
    - e. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location
    - f. Location(s) where additional BMPs are needed that were not in place at the time of inspection
    - g. Deviations from the minimum inspection schedule

**APPENDIX A – VICINITY MAP**

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**SITE**



2000 1000 0 2000



ORIGINAL SCALE: 1" = 2000'

VICINITY MAP  
CLOVERLEAF  
JOB NO. 25158.01  
04/23/2020  
SHEET 1 OF 1



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**APPENDIX B – SOILS MAP**

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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

**Water Features**

Streams and Canals

**Transportation**

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

**Background**

Aerial Photography

C

C/D

D

Not rated or not available

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: [Web Soil Survey](#)

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 16, Sep 10, 2018

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

Date(s) aerial images were photographed: Jul 4, 2010—Oct 16, 2017

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
71	Pring coarse sandy loam, 3 to 8 percent slopes	B	0.8	0.2%
92	Tomah-Crowfoot loamy sands, 3 to 8 percent slopes	B	323.0	91.8%
93	Tomah-Crowfoot complex, 8 to 15 percent slopes	B	28.1	8.0%
Totals for Area of Interest			352.0	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**

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**CLOVERLEAF SUBDIVISION**  
A PARCEL OF LAND LOCATED IN THE NE QUARTER OF SECTION 23  
AND THE NW QUARTER OF SECTION 24, TOWNSHIP 11 S,  
RANGE 67 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO  
**GRADING AND EROSION CONTROL PLANS**

[illegible]

## BASIS OF BEARING

THE BASIS OF BEARINGS IS THE WESTERLY LINE OF TRACT, B, WOODMOOR PLACER, BEING MONUMENTED BY A 1-1/4" YELLOW PLASTIC CAP ILLEGIBLE AT BOTH ENDS. SAID LINE BEARING N26°20'35"E AS REFERENCED TO COLORADO STATE PLANE CENTRAL ZONE.

## BENCHMARK

INGS MONUMENT T 294 BEING MONUMENTED BY A 3-1/4" BRASS DISC SET IN A 5"x4" BOULDER, LOCATED 1.8 MILES EAST ALONG HIGBY ROAD FROM ITS INTERSECTION WITH JACKSON CREEK PARKWAY, 40 FEET SOUTH OF THE CENTERLINE ROAD, 6 FEET SOUTH OF A FENCE, AND 6.2 FEET SOUTH OF A WITNESS POST. SAID MONUMENT HAVING A PUBLISHED ELEVATION OF 7247.10 FEET, NAVD88.

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

The map illustrates the study area with topographic contours and parcel boundaries. A thick black arrow points to a parcel labeled "SITE". Other labeled parcels include "PARCEL 2-1", "PARCEL 2-2", "PARCEL 2-3", "PARCEL 2-4", "PARCEL 2-5", and "PARCEL 2-6". Major roads shown are "BOWSTRING RD", "JACKSON CREEK PKWY", "HWY-105", "CAMPAKY DR", and "HIGBY RD". The "SITE" is located near the intersection of Bowstring Rd and Higby Rd, adjacent to Parcel 2-2.



**VICINITY MAP**  
SCALE: 1" = 2000'

## SHEET INDEX

1	-	COVER SHEET
2	-	LEGEND & NOTES
3	-	TYPICAL SECTIONS
4-6	-	GRADING AND EROSION CONTROL PLANS
7-11	-	DETAILS

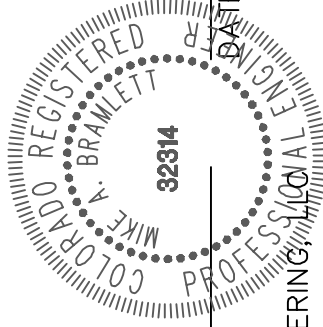
## OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JOE DESJARDIN  
PT CLOVERLEAF, LLC  
1864 WOODMOOR DRIVE, SUITE 100  
COLORADO SPRINGS, CO 80920


## ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.



MIKE A. BRAMLETT, P.E.  
COLORADO P.E. 32314

1864 WOODMOOR DRIVE, SUITE 100  
COLORADO SPRINGS, CO 80920

CLOVERLEAF SUBDIVISION	COVER SHEET	FILE NO. SP-20-002	GEC PLANS	SHEET 1 OF 11		JOB NO. 25158.01	
				H-SCALE	1"=2000'	No.	REVISION
				V-SCALE	N/A		
				DATE	05/14/21		
	DESIGNED BY	RPD					
	DRAWN BY	RPD					
	CHECKED BY						
<div><div><b>J-R ENGINEERING</b> A Western Company</div><div>Central 303-740-9383 • Colorado Springs 719-593-2593 Fort Collins 970-491-9888 • <a href="http://www.jrengineering.com">www.jrengineering.com</a></div></div>							
PT CLOVERLEAF, LLC 1864 WOODMOOR DR, STE 100 COLORADO SPRINGS, CO 80902 ATTN: JOE DESJARDIN 719-476-0800 PREPARED FOR				UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.			





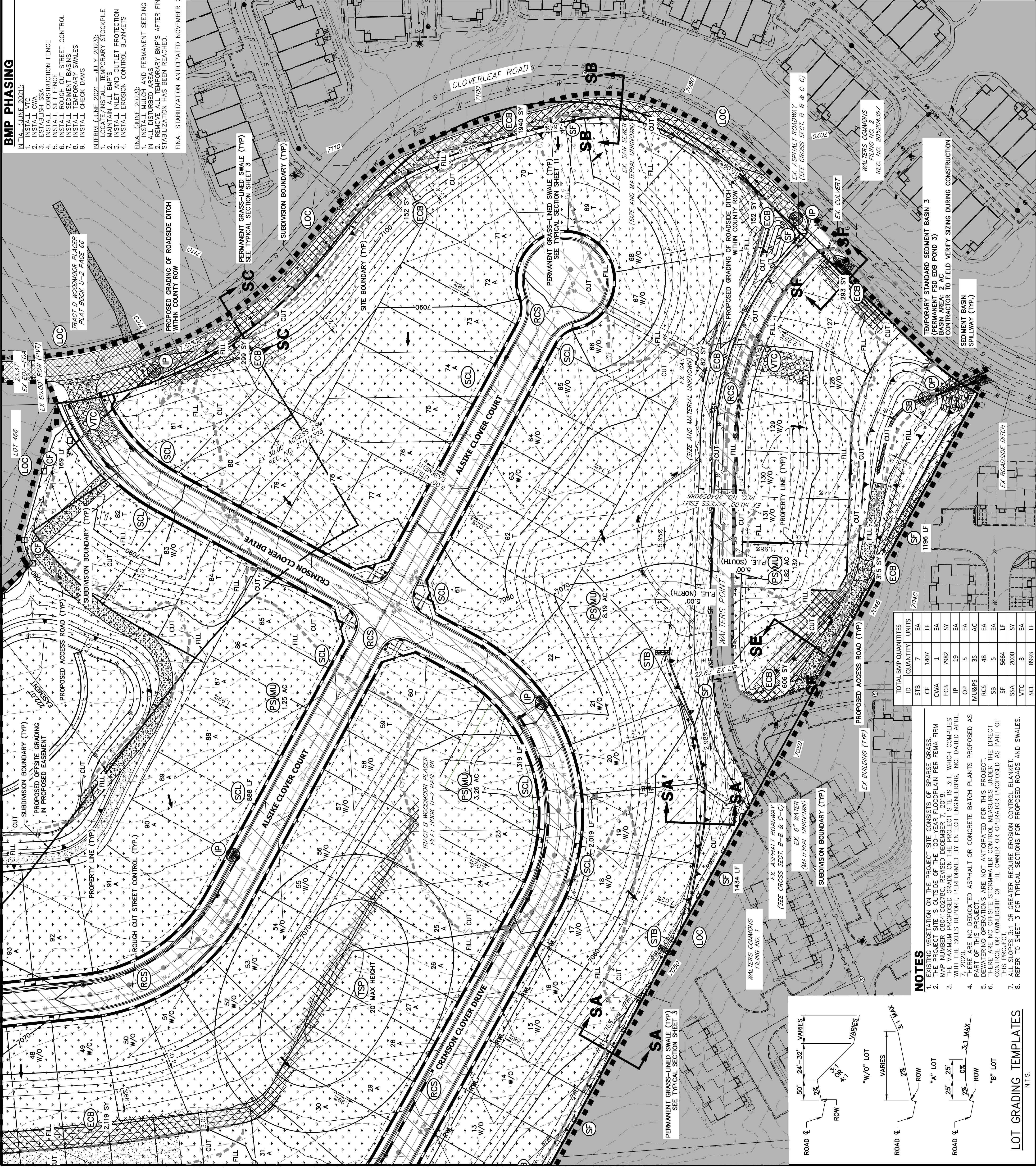








SEE SHEET 6



SEE SHEET 4

**BMP PHASING**

- INITIAL (JUNE 2023):
1. INSTALL VTC
  2. INSTALL CWA
  3. ESTABLISH SLOPE
  4. INSTALL SILT FENCE
  5. INSTALL ROUGH CUT STREET CONTROL
  6. INSTALL SEDIMENT BASINS
  7. INSTALL TEMPORARY SWALES
  8. INSTALL CHECK DAMS
- INTERIM (JUNE 2021 - JULY 2023):
1. LOCATE/INSTALL TEMPORARY STOCKPILE
  2. MAINTAIN ALL BMP'S OUTLET PROTECTION
  3. MAINTAIN ALL BMP'S OUTLET PROTECTION
  4. INSTALL EROSION CONTROL BLANKETS
- FINAL (JUNE 2023):
1. INSURE/RELOCATE AND PERMANENT SEEDING
  2. REMOVE ALL TEMPORARY BMP'S AFTER FINAL STABILIZATION HAS BEEN REACHED.
- FINAL STABILIZATION ANTICIPATED NOVEMBER 2022.

**LEGEND**

- STRAW BALE BARRIER
- CONSTRUCTION FENCE
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- LIMITS OF CONSTRUCTION/DISTURBANCE
- OUTLET PROTECTION
- PERMANENT SEEDING & MULCHING
- SEDIMENT BASIN
- SILT FENCE
- STABILIZED STAGING AREA
- TEMPORARY STOCK PILE
- TEMPORARY SWALE
- VEHICLE TRACKING CONTROL
- EROSION CONTROL BLANKET
- ROUGH CUT STREET CONTROL
- SEDIMENT CONTROL LOG (WATTLE)
- SB
- CF
- CWA
- IP
- LOC
- OP
- PS MU
- SB
- SF
- SSA
- TSP
- TSW
- VTC
- ECB
- RCS
- SCL

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN ON THIS PLAN. THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.



Know what's below.  
Call before you dig.

50 25 0 50  
ORIGINAL SCALE: 1" = 50'

**OWNER/DEVELOPER STATEMENT**

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JOE DESJARDIN  
PT. CLOVERLEAF, LLC  
1864 WOODMOOR DRIVE, SUITE 100  
COLORADO SPRINGS, CO 80920

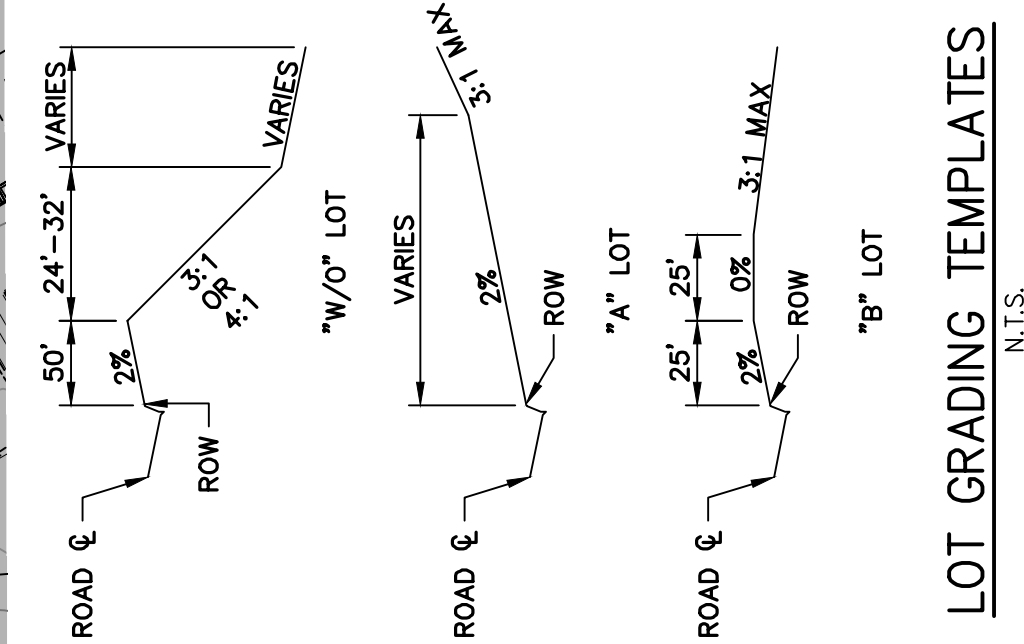
**ENGINEER'S STATEMENT**

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.

MIKE A. BRAMLETT, P.E.  
COLORADO P.E. 32314  
FOR AND ON BEHALF OF JR ENGINEERING, INC.

**NOTES**

1. THE VEGETATION ON THE PROJECT SITE CONSISTS OF SPARSE GRASS.
2. THE PROJECT SITE IS IN THE 100% FLOOD HAZARD ZONE PER FEMA FIRM MAP NUMBER 88041C0278C, REVISED DECEMBER 7, 2018.
3. THE MAXIMUM PROPOSED GRADE ON THE PROJECT SITE IS 3.1, WHICH COMPLIES WITH THE SOILS REPORT, PERFORMED BY ENTECH ENGINEERING, INC. DATED APRIL 2020.
4. THERE ARE NO DEDICATED ASPHALT OR CONCRETE BATCH PLANTS PROPOSED AS PART OF THIS PROJECT.
5. DOWATERING OPERATIONS ARE NOT ANTICIPATED FOR THIS PROJECT.
6. THERE ARE NO OFFSITE STORMWATER CONTROL MEASURES UNDER THE DIRECT CONTROL OR OWNERSHIP OF THE OWNER OR OPERATOR PROPOSED AS PART OF THIS PROJECT.
7. ALL SLOPES 3:1 OR GREATER REQUIRE EROSION CONTROL BLANKET.
8. REFER TO SHEET 3 FOR TYPICAL SECTIONS FOR PROPOSED ROADS AND SWALES.



**LOT GRADING TEMPLATES**

N.T.S.

TOTAL BMP QUANTITIES		
ID	QUANTITY	UNITS
STB	7	EA
CF	1407	LF
CWA	1	EA
ECB	7982	SY
IP	19	EA
OP	5	EA
MUB&PS	35	EA
RCS	48	EA
SB	5	EA
SF	5664	LF
SSA	2000	SY
VTC	3	EA
SCL	8993	LF

PREPARED FOR

PT. CLOVERLEAF, LLC  
1864 WOODMOOR DR., STE. 100  
COLORADO SPRINGS, CO 80920  
ATTN: JOE DESJARDIN  
719-476-0800  
JDESJARDIN@PROTERRACO.COM

J-R ENGINEERING

A Western Company  
Fort Collins 970-491-9888 • www.jrengineering.com  
Colorado 303-740-9393 • Colorado Springs 719-593-2593

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING DESIGNER FOR THE PURPOSES OF OBTAINING A PERMIT, THESE DRAWINGS ARE NOT TO BE USED FOR ANY OTHER PURPOSES.

APPROVED BY THE AGENCIES, OR ENGINEERING DESIGNER FOR THE PURPOSES OF OBTAINING A PERMIT, THESE DRAWINGS ARE NOT TO BE USED FOR ANY OTHER PURPOSES.

No.	REVISION	BY	DATE

H-SCALE	1"=50'
V-SCALE	N/A
DATE	05/14/21
DESIGNED BY	RPD
DRAWN BY	RPD
CHECKED BY	RPD

GRADING AND EROSION CONTROL PLANS

GEC PLANS

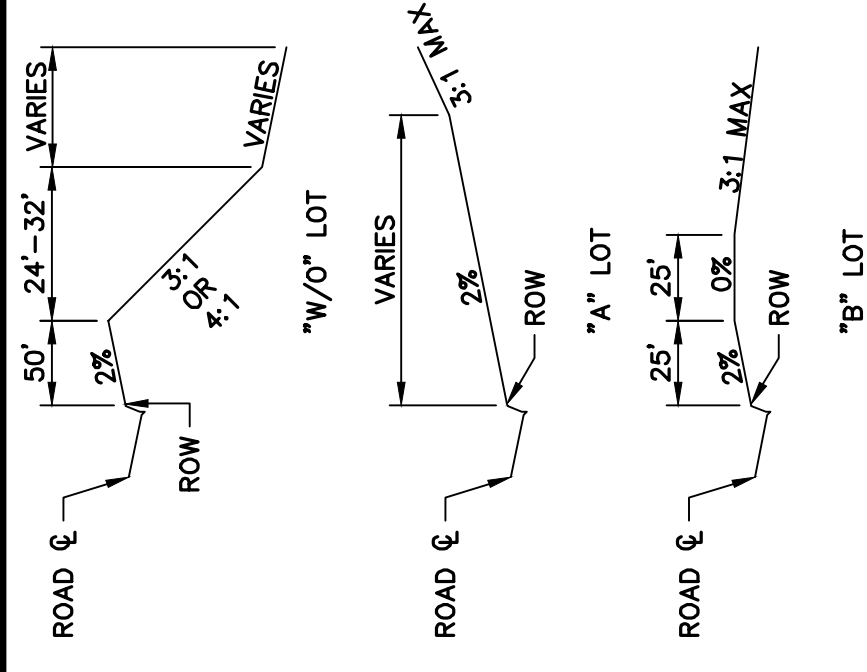
CLOVERLEAF SUBDIVISION

GRADING AND EROSION CONTROL PLANS

SHEET 5 OF 11

JOB NO. 25158.01





LOT GRADING TEMPLATES

N.T.S.

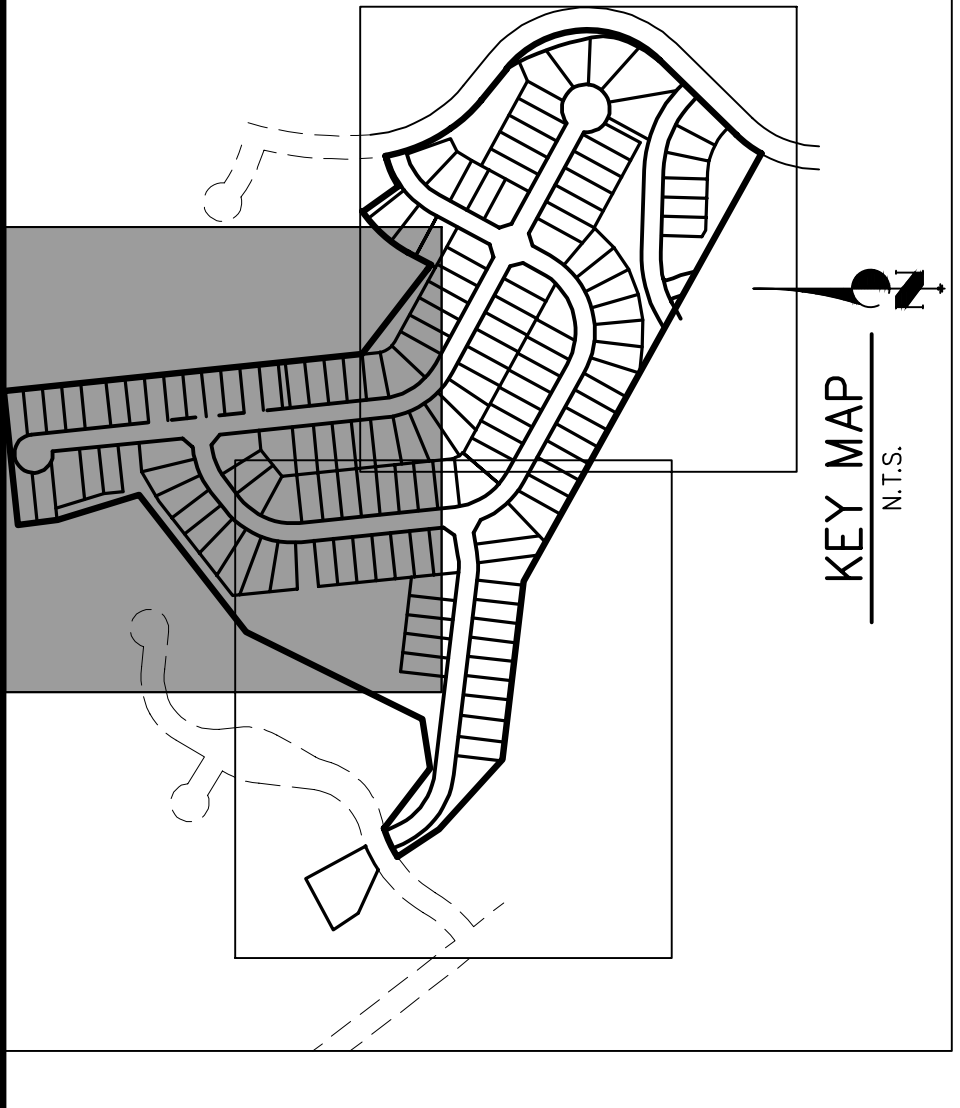
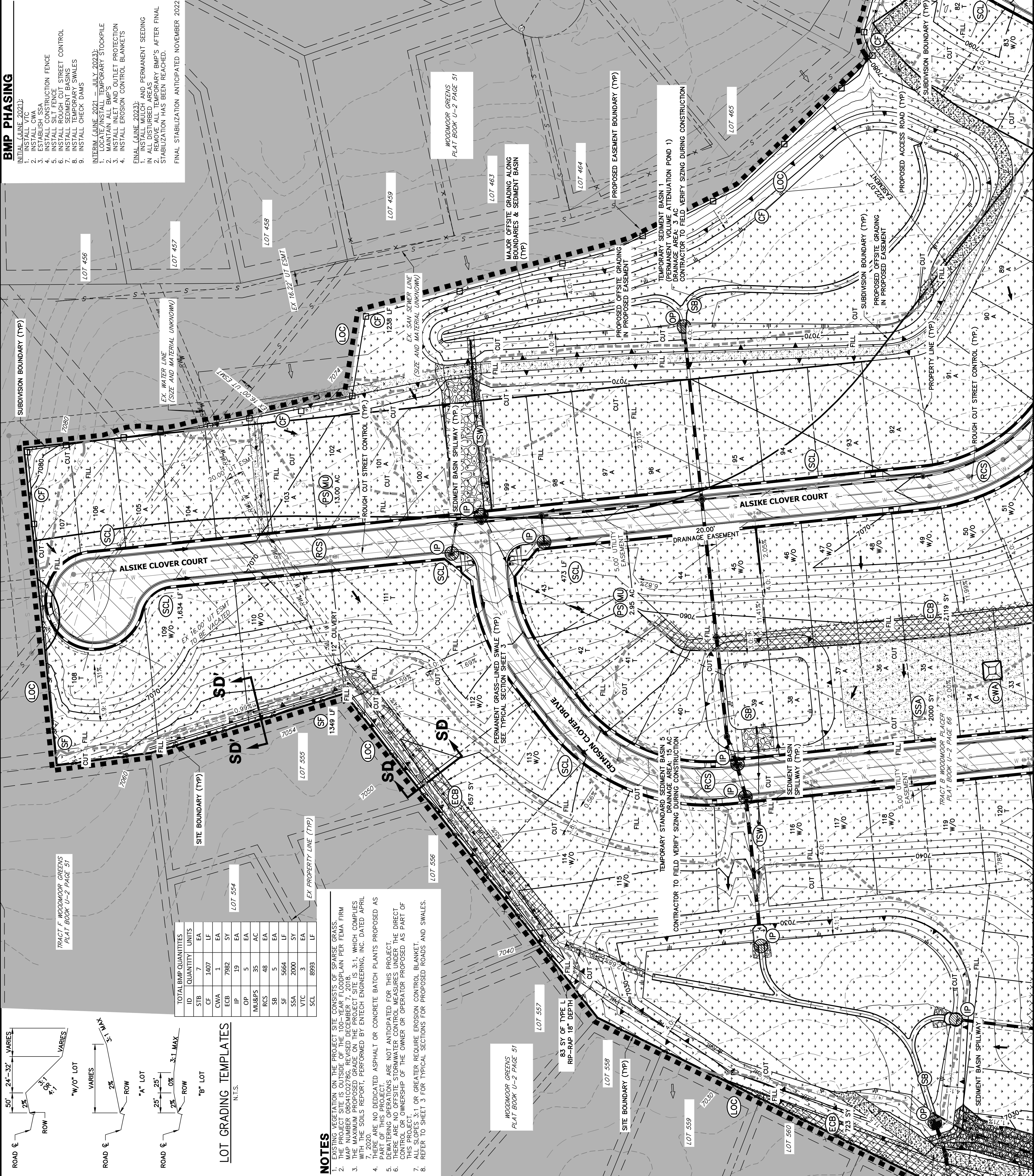
NOTES

- 1. EXISTING VEGETATION ON THE PROJECT SITE CONSISTS OF SPARSE GRASS.
- 2. THE PROJECT SITE IS OUTSIDE OF THE 100-YEAR FLOODPLAIN PER FEMA FIRM MAP NUMBER 08041002786G, REVISED DECEMBER 7, 2018.
- 3. THE DESIGNER HAS CONDUCTED VISUAL INSPECTIONS OF THE PROJECT SITE WITH THE SOILS REPORT, PERFORMED BY ENTECH ENGINEERING, INC. DATED APRIL 7, 2020.
- 4. THERE ARE NO DEDICATED ASPHALT OR CONCRETE BATCH PLANTS PROPOSED AS PART OF THIS PROJECT.
- 5. ALL SLOPES 3:1 OR GREATER REQUIRE EROSION CONTROL BLANKET.
- 6. THERE ARE NO OFFSITE STORMWATER CONTROL MEASURES UNDER THE DIRECT CONTROL OR OWNERSHIP OF THE OWNER OR OPERATOR PROPOSED AS PART OF THIS PROJECT.
- 7. ALL SLOPES 3:1 OR GREATER REQUIRE EROSION CONTROL BLANKET.
- 8. REFER TO SHEET 3 FOR TYPICAL SECTIONS FOR PROPOSED ROADS AND SWALES.

TOTAL BMP QUANTITIES		UNITS	
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RCS	48	EA	
SB	5	EA	
SF	5664	LF	
SSA	2000	SY	
VTC	3	EA	
SCL	8993	LF	

BMP PHASING

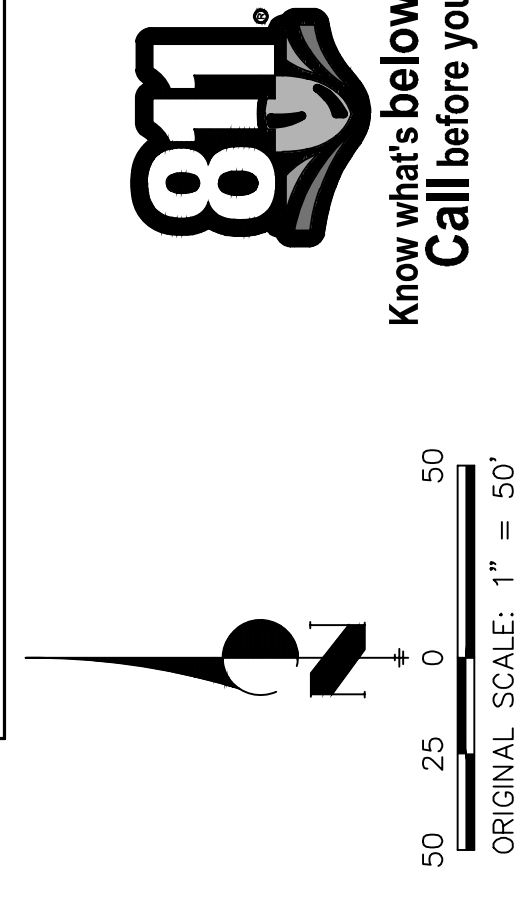
- INITIAL (JUNE 2021):
1. INSTALL VTC
  2. INSTALL CWA
  3. ESTABLISH SCL
  4. INSTALL CONSTRUCTION FENCE
  5. INSTALL SILT FENCE
  6. INSTALL ROUGH CUT STREET CONTROL
  7. INSTALL SEDIMENT BASINS
  8. INSTALL TEMPORARY SWALES
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- INTERIM (JUNE 2021 - JULY 2023):
1. LOCATE/INSTALL TEMPORARY STOCKPILE
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  3. INSTALL BMP'S OUTLET PROTECTION
  4. INSTALL EROSION CONTROL BLANKETS
- FINAL (JUNE 2023):
1. INSTALL MULCH AND PERMANENT SEEDING
  2. REMOVE ALL TEMPORARY BMP'S AFTER FINAL STABILIZATION HAS BEEN REACHED.
- FINAL STABILIZATION ANTICIPATED NOVEMBER 2022.



LEGEND

- STRAW BALE BARRIER
- CONSTRUCTION FENCE
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- LIMITS OF CONSTRUCTION/DISTURBANCE
- OUTLET PROTECTION
- PERMANENT SEEDING & MULCHING
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OWNER/DEVELOPER STATEMENT

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JOE DESJARDIN  
PT. CLOVERLEAF, LLC  
1864 WOODMOOR DRIVE, SUITE 100  
COLORADO SPRINGS, CO 80920

DATE

ENGINEER'S STATEMENT  
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MADE IN COLORADO  
REGISTERED PROFESSIONAL ENGINEER  
82314  
DATE

MIKE A. BRAMLETT, P.E.  
COLORADO P.E. 32314  
FOR AND ON BEHALF OF JR ENGINEERING, LLC











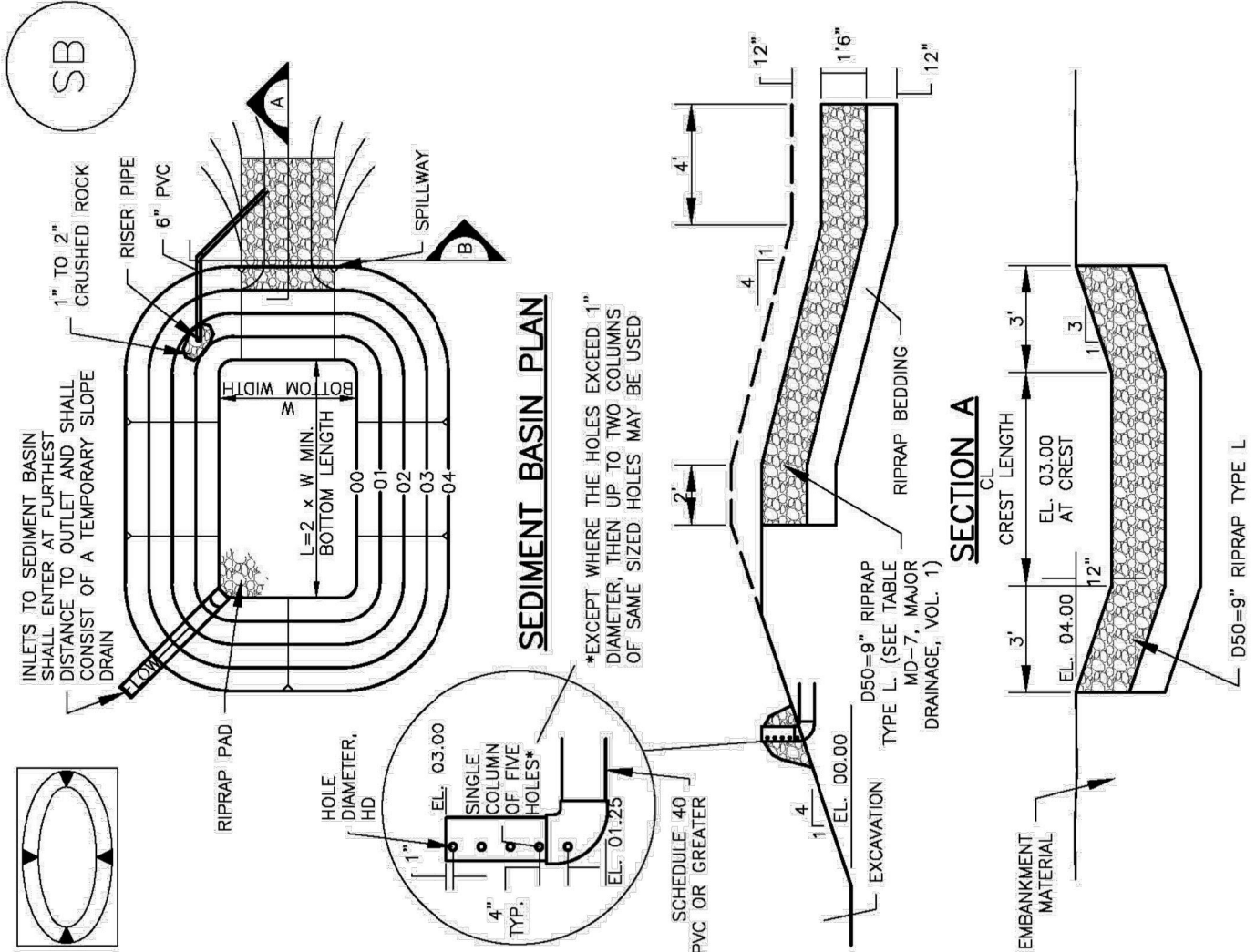


TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN				
Upstream Drainage Area (rounded to nearest acre)	Basin Bottom Width (ft)	Spillway Crest Length (ft)	Hole Diameter (in)	Hole (in)
1	12 1/2	2	1 1/2	1 1/2
2	20	3	2	2
3	28	4	2 1/2	2 1/2
4	36	5	3	3
5	44	6	3 1/2	3 1/2
6	52	7	4	4
7	60	8	4 1/2	4 1/2
8	68	9	5	5
9	76	10	5 1/2	5 1/2
10	84	11	6	6
11	92	12	6 1/2	6 1/2
12	100	13	7	7
13	108	14	7 1/2	7 1/2
14	116	15	8	8
15	124	16	8 1/2	8 1/2
16	132	17	9	9
17	140	18	9 1/2	9 1/2
18	148	19	10	10
19	156	20	10 1/2	10 1/2
20	164	21	11	11
21	172	22	11 1/2	11 1/2
22	180	23	12	12
23	188	24	12 1/2	12 1/2
24	196	25	13	13
25	204	26	13 1/2	13 1/2
26	212	27	14	14
27	220	28	14 1/2	14 1/2
28	228	29	15	15
29	236	30	15 1/2	15 1/2
30	244	31	16	16
31	252	32	16 1/2	16 1/2
32	260	33	17	17
33	268	34	17 1/2	17 1/2
34	276	35	18	18
35	284	36	18 1/2	18 1/2
36	292	37	19	19
37	300	38	19 1/2	19 1/2
38	308	39	20	20
39	316	40	20 1/2	20 1/2
40	324	41	21	21
41	332	42	21 1/2	21 1/2
42	340	43	22	22
43	348	44	22 1/2	22 1/2
44	356	45	23	23
45	364	46	23 1/2	23 1/2
46	372	47	24	24
47	380	48	24 1/2	24 1/2
48	388	49	25	25
49	396	50	25 1/2	25 1/2
50	404	51	26	26
51	412	52	26 1/2	26 1/2
52	420	53	27	27
53	428	54	27 1/2	27 1/2
54	436	55	28	28
55	444	56	28 1/2	28 1/2
56	452	57	29	29
57	460	58	29 1/2	29 1/2
58	468	59	30	30
59	476	60	30 1/2	30 1/2
60	484	61	31	31
61	492	62	31 1/2	31 1/2
62	500	63	32	32
63	508	64	32 1/2	32 1/2
64	516	65	33	33
65	524	66	33 1/2	33 1/2
66	532	67	34	34
67	540	68	34 1/2	34 1/2
68	548	69	35	35
69	556	70	35 1/2	35 1/2
70	564	71	36	36
71	572	72	36 1/2	36 1/2
72	580	73	37	37
73	588	74	37 1/2	37 1/2
74	596	75	38	38
75	604	76	38 1/2	38 1/2
76	612	77	39	39
77	620	78	39 1/2	39 1/2
78	628	79	40	40
79	636	80	40 1/2	40 1/2
80	644	81	41	41
81	652	82	41 1/2	41 1/2
82	660	83	42	42
83	668	84	42 1/2	42 1/2
84	676	85	43	43
85	684	86	43 1/2	43 1/2
86	692	87	44	44
87	700	88	44 1/2	44 1/2
88	708	89	45	45
89	716	90	45 1/2	45 1/2
90	724	91	46	46
91	732	92	46 1/2	46 1/2
92	740	93	47	47
93	748	94	47 1/2	47 1/2
94	756	95	48	48
95	764	96	48 1/2	48 1/2
96	772	97	49	49
97	780	98	49 1/2	49 1/2
98	788	99	50	50
99	796	100	50 1/2	50 1/2
100	804	101	51	51
101	812	102	51 1/2	51 1/2
102	820	103	52	52
103	828	104	52 1/2	52 1/2
104	836	105	53	53
105	844	106	53 1/2	53 1/2
106	852	107	54	54
107	860	108	54 1/2	54 1/2
108	868	109	55	55
109	876	110	55 1/2	55 1/2
110	884	111	56	56
111	892	112	56 1/2	56 1/2
112	900	113	57	57
113	908	114	57 1/2	57 1/2
114	916	115	58	58
115	924	116	58 1/2	58 1/2
116	932	117	59	59
117	940	118	59 1/2	59 1/2
118	948	119	60	60
119	956	120	60 1/2	60 1/2
120	964	121	61	61
121	972	122	61 1/2	61 1/2
122	980	123	62	62
123	988	124	62 1/2	62 1/2
124	996	125	63	63
125	1004	126	63 1/2	63 1/2
126	1012	127	64	64
127	1020	128	64 1/2	64 1/2
128	1028	129	65	65
129	1036	130	65 1/2	65 1/2
130	1044	131	66	66
131	1052	132	66 1/2	66 1/2
132	1060	133	67	67
133	1068	134	67 1/2	67 1/2
134	1076	135	68	68
135	1084	136	68 1/2	68 1/2
136	1092	137	69	69
137	1100	138	69 1/2	69 1/2
138	1108	139	70	70
139	1116	140	70 1/2	70 1/2
140	1124	141	71	71
141	1132	142	71 1/2	71 1/2
142	1140	143	72	72
143	1148	144	72 1/2	72 1/2
144	1156	145	73	73
145	1164	146	73 1/2	73 1/2
146	1172	147	74	74
147	1180	148	74 1/2	74 1/2
148	1188	149	75	75
149	1196	150	75 1/2	75 1/2
150	1204	151	76	76
151	1212	152	76 1/2	76 1/2
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153	1228	154	77 1/2	77 1/2
154	1236	155	78	78
155	1244	156	78 1/2	78 1/2
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157	1260	158	79 1/2	79 1/2
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159	1276	160	80 1/2	80 1/2
160	1284	161	81	81
161	1292	162	81 1/2	81 1/2
162	1300	163	82	82
163	1308	164	82 1/2	82 1/2
164	1316	165	83	83
165	1324	166	83 1/2	83 1/2
166	1332	167	84	84
167	1340	168	84 1/2	84 1/2
168	1348	169	85	85
169	1356	170	85 1/2	85 1/2
170	1364	171	86	86
171	1372	172	86 1/2	86 1/2
172	1380	173	87	87
173	1388	174	87 1/2	87 1/2
174	1396	175	88	88
175	1404	176	88 1/2	88 1/2
176	1412	177	89	89
177	1420	178	89 1/2	89 1/2
178	1428	179	90	90
179	1436	180	90 1/2	90 1/2
180	1444	181	91	91
181	1452	182	91 1/2	91 1/2
182	1460	183	92	92
183	1468	184	92 1/2	92 1/2
184	1476	185	93	93
185	1484	186	93 1/2	93 1/2
186	1492	187	94	94
187	1500	188	94 1/2	94 1/2
188	1508	189	95	95
189	1516	190	95 1/2	95 1/2
190	1524	191	96	96
191	1532	192	96 1/2	96 1/2
192	1540	193	97	97
193	1548	194	97 1/2	97 1/2
194	1556	195	98	98
195	1564	196	98 1/2	98 1/2
196	1572	197	99	99
197	1580	198	99 1/2	99 1/2
198	1588	199	100	100
199	1596	200	100 1/2	100 1/2
200	1604	201	101	101
201	1612	202	101 1/2	101 1/2
202	1620	203	102	102
203	1628	204	102 1/2	102 1/2
204	1636	205	103	103
205	1644	206	103 1/2	103 1/2
206	1652	207	104	104
207	1660	208	104 1/2	104 1/2
208	1668	209	105	105
209	1676	210	105 1/2	105 1/2
210	1684	211	106	106
211	1692	212	106 1/2	106 1/2
212	1700	213	107	107
213	1708	214	107 1/2	107 1/2
214	1716	215	108	108
215	1724	216	108 1/2	108 1/2
216	1732	217	109	109
217	1740	218	109 1/2	109 1/2
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219	1756	220	110 1/2	110 1/2
220	1764	221	111	111
221	1772	222	111 1/2	111 1/2
222	1780	223	112	112
223	1788	224	112 1/2	112 1/2
224	1796	225	113	113
225	1804	226	113 1/2	113 1/2
226	1812	227	114	114
227	1820	228	114 1/2	114 1/2
228	1828	229	115	115
229	1836	230	115 1/2	115 1/2
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231	1852	232	116 1/2	116 1/2
232	1860	233	117	117
233	1868	234	117 1/2	117 1/2
234	1876	235	118	118
235	1884	236	118 1/2	118 1/2
236	1892	237	119	119
237	1900	238	119 1/2	119 1/2
238	1908	239	120	120
239	1916	240	120 1/2	120 1/2
240	1924	241	121	121
241	1932	242	121 1/2	121 1/2
242	1940	243	122	122
243	1948	244	122 1/2	122 1/2
244	1956	245	123	123
245	1964	246	123 1/2	123 1/2
246	1972	247	124	124
247	1980	248	124 1/2	124 1/2
248	1988	249	125	125
249	1996	250	125 1/2	125 1/2
250	2004	251	126	126
251	2012	252	126 1/2	126 1/2
252	2020	253	127	127
253	2028	254	127 1/2	127 1/2
254	2036	255	128	128
255	2044	256	128 1/2	128 1/2
256	2052	257	129	129
257	2060	258	129 1/2	129 1/2
258	2068	259	130	130
259	2076	260	130 1/2	130 1/2
260	2084	261	131	131
261	2092	262	131 1/2	131 1/2
262	2100	263	132	132
263	2108	264	132 1/2	132 1/2
264	2116	265	133	133
265	2124	266	133 1/2	133 1/2
266	2132	267	134	134
267	2140	268	134 1/	











## **APPENDIX D – SWMP REPORT & GEC PLAN CHECKLIST**

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**EL PASO COUNTY PLANNING AND  
COMMUNITY DEVELOPMENT  
DEPARTMENT**

**STORMWATER MANAGEMENT PLAN CHECKLIST**

Revised: July 2019		Applicant	PCD
<b>1. <u>STORMWATER MANAGEMENT PLAN (SWMP)</u></b>			
1	Applicant (owner/designated operator), SWMP Preparer, Qualified Stormwater Manager, and Contractor Information. (On cover/title sheet)	✓	
2	Table of Contents	✓	
3	Site description and location to include: vicinity map with nearest street/crossroads description.	✓	
4	Narrative description of construction activities proposed (e.g., may include clearing and grubbing, temporary stabilization, road grading, utility / storm installation, final grading, final stabilization, and removal of temporary control measures)	✓	
5	Phasing plan – may require separate drawings indicating initial, interim, and final site phases for larger projects. Provide “living maps” that can be revised in the field as conditions dictate.	✓	
6	Proposed sequence for major activities: Provide a construction schedule of anticipated starting and completion dates for each stage of land-disturbing activity depicting conservation measures anticipated, including the expected date on which the final stabilization will be completed.	✓	
7	Estimates of the total site area and area to undergo disturbance; current area of disturbance must be updated on the SWMP as changes occur.	✓	
8	Soil erosion potential and impacts on discharge that includes a summary of the data used to determine soil erosion potential	✓	
9	A description of existing vegetation at the site and percent ground cover and method used to determine ground cover	✓	
10	Location and description of all potential pollution sources including but not limited to: disturbed and stored soils; vehicle tracking; management of contaminated soils; loading and unloading operations; outdoor storage of materials; vehicle and equipment maintenance and fueling; significant dust generating process; routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.; on-site waste management; concrete truck/equipment washing; dedicated asphalt, concrete batch plants and masonry mixing stations; non-industrial waste such as trash and portable toilets	✓	
11	Material handling to include spill prevention and response plan and procedures.	✓	
12	Spill prevention and pollution controls for dedicated batch plants	✓	
13	Other SW pollutant control measures to include waste disposal and off site soil tracking	✓	
14	Location and description of any anticipated allowable non-stormwater discharge (ground water, springs, irrigation, discharge covered by CDPHE Low Risk Guidance, etc.)	✓	
15	Name(s) of ultimate receiving waters; size, type and location of stormwater outfall or storm sewer system discharge	✓	
16	Description of all stream crossings located within the project area or statement that no streams cross the project area	✓	





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**STORMWATER MANAGEMENT PLAN CHECKLIST**

Revised: July 2019		Applicant	PCD
17	SWMP Map to include:	✓	
17a	construction site boundaries	✓	
17b	flow arrows to depict stormwater flow directions	✓	
17c	all areas of disturbance	✓	
17d	areas of cut and fill	✓	
17e	areas used for storage of building materials, soils (stockpiles) or wastes	✓	
17f	location of any dedicated asphalt / concrete batch plants	✓	
17g	location of all structural control measures	✓	
17h	location of all non-structural control measures	✓	
17i	springs, streams, wetlands and other surface waters, including areas that require maintenance of pre-existing vegetation within 50 feet of a receiving water	✓	
18	Narrative description of all structural control measures to be used. Modifications to EPC standard control measures must meet or exceed County-approved details.	✓	
19	Description of all non-structural control measures to be used including seeding, mulching, protection of existing vegetation, site watering, sod placement, etc.	✓	
20	Technical drawing details for all control measure installation and maintenance; custom or other jurisdiction's details used must meet or exceed EPC standards	✓	
21	Procedure describing how the SWMP is to be revised	✓	
22	Description of Final Stabilization and Long-term Stormwater Quality (describe nonstructural and structural measures to control SW pollutants after construction operations have been completed, including detention, water quality control measure etc.)	✓	
23	Specification that final vegetative cover density is to be 70% of pre-disturbed levels	✓	
24	Outline of permit holder inspection procedures to install, maintain, and effectively operate control measures to manage erosion and sediment	✓	
25	Record keeping procedures identified to include signature on inspection logs and location of SWMP records on-site	✓	
26	If this project relies on control measures owned or operated by another entity, a documented agreement must be included in the SWMP that identifies location, installation and design specifications, and maintenance requirements and responsibility of the control measure(s).	✓	
Please note: all items above must be addressed. If not applicable, explain why, simply identifying "not applicable" will not satisfy CDPHE requirement of explanation.			
2. <u>ADDITIONAL REPORTS/PERMITS/DOCUMENTS</u>			
a	Grading and Erosion Control Plan (signed)		
b	Erosion and Stormwater Quality Control Permit (ESQCP) (signed)		
3. <u>Applicant Comments:</u>			





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**EL PASO COUNTY PLANNING AND  
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**STORMWATER MANAGEMENT PLAN CHECKLIST**

Revised: July 2019

		Applicant	PCD
a			
b			
c			
4. Checklist Review Certifications:			
a	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.  _____ Engineer of Record Signature                      Date		
b	Review Engineer: The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.  _____ Review Engineer                                      Date		



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**EL PASO COUNTY PLANNING AND  
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**GRADING AND EROSION CONTROL PLAN CHECKLIST**

Revised: July 2019

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





## GRADING AND EROSION CONTROL PLAN CHECKLIST

	Revised: July 2019	Applicant	PCD
y	Dewatering operations to include locations of diversion, pump and discharge(s) as anticipated at time of design.	✓	
z	All proposed temporary construction control measure details. Custom or other jurisdiction's details used must meet or exceed EPC standards.	✓	
aa	Any offsite stormwater control measure proposed for use by the project and not under the direct control or ownership of the Owner or Operator.	✓	
bb	Existing and proposed permanent storm water management facilities, including areas proposed for stormwater infiltration or subsurface detention.	✓	
cc	Existing and proposed easements (permanent and construction) including required off site easements.	✓	
dd	Retaining walls (not to be located in County ROW unless approved via license agreement). Design by P.E. and building permit from Regional Building Department required for walls greater than or equal to 4 feet in height, series of walls, or walls supporting a surcharge.	✓	
ee	Plan certified by a Colorado Registered P.E., with EPC standard signature blocks for Engineer, Owner and EPC.	✓	
ff	Engineer's Statement (for standalone GEC Plan): This Grading and Erosion Control Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this plan.  _____ Engineer of Record Signature                      Date	✓	
gg	Engineer's Statement (for GEC Plan within Construction Drawing set): These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.  _____ Engineer of Record Signature                      Date	N/A	
hh	Owner's Statement (for standalone GEC Plan): I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan.  _____ Owner Signature                      Date	✓	



## GRADING AND EROSION CONTROL PLAN CHECKLIST

Applicant	PCD
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## 2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS





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## EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

### GRADING AND EROSION CONTROL PLAN CHECKLIST

Revised: July 2019

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





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**GRADING AND EROSION CONTROL PLAN CHECKLIST**

Revised: July 2019

		Applicant	PCD
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.	✓	





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**GRADING AND EROSION CONTROL PLAN CHECKLIST**

Revised: July 2019

		Applicant	PCD
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 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 _____ 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	✓	



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**GRADING AND EROSION CONTROL PLAN CHECKLIST**

Revised: July 2019

		Applicant	PCD
<b>4. Applicant Comments:</b>			
a	ALL ITEMS MARKED "N/A" ARE ITEMS THAT ARE NOT ASSOCIATED WITH THE PROJECT. ALL REQUIRED ITEMS APPLICABLE TO THE PROJECT ARE INCLUDED IN THE GEC PLANS.		
b			
c			
<b>5. Checklist Review Certifications:</b>			
a	Engineer of Record: The Grading and Erosion Control Plan was prepared under my direction and supervision and is complete and correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans.  _____ Engineer of Record Signature                      Date		
b	Review Engineer: The Grading and Erosion Control Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.  _____ Review Engineer                                      Date		