

# **STORMWATER MANAGEMENT PLAN (SWMP)**

**for**

## **SETTLERS RANCH FILING NO. 2C**

**ACCEPTED for FILE**  
**Engineering Review**

*06/18/2019 9:54:28 AM*

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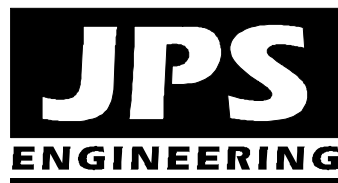
**EPC Planning & Community  
Development Department**

**Prepared for:**

**Hodgen Settlers Ranch, LLC**  
P.O. Box 1488  
Monument, CO 80132

March, 2019

**Prepared by:**



**19 E. Willamette Avenue**  
**Colorado Springs, CO 80903**  
**(719)-477-9429**  
**www.jpsengr.com**

**JPS Project No. 030501**  
**PCD File No.: SF-18-018**



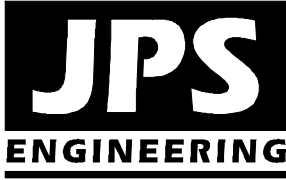
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**STORMWATER MANAGEMENT PLAN (SWMP)**  
**TABLE OF CONTENTS**

	<u>PAGE</u>
1. APPLICANT / CONTACT INFORMATION.....	1
2. SITE DESCRIPTION .....	1
3. SITE MAP.....	2
4. BMP'S FOR STORMWATER POLLUTION PREVENTION .....	2
5. FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT .....	5
6. OTHER CONTROLS.....	5
7. INSPECTION AND MAINTENANCE .....	5

**FIGURES**

Figure A1	Vicinity Map
Sheet C1.02C	Erosion Control Notes & Details
Sheet C1.12C	Site Grading & Erosion Control Plan





**SETTLERS RANCH FILING NO. 2C  
STORMWATER MANAGEMENT PLAN (SWMP)  
PCD File No. SF-18-018**

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**1. Applicant / Contact Information**

**Owner/Developer:** Hodgen Settlers Ranch LLC  
PO Box 1488  
Monument, CO 80132  
Attn: Mark Davis, (719)-338-3116  
markdavis.oaksbury@gmail.com

**Engineer:** JPS Engineering, Inc.  
19 E. Willamette Avenue  
Colorado Springs, CO 80903  
Attn: John P. Schwab, P.E. (719)-477-9429  
john@jpsengr.com

**Contractor:** To Be Determined

**2. Site Description**

- a. Settlers Ranch Filing No. 2C is a proposed rural residential development consisting of 11 single-family lots on a 33.6-acre parcel in northern El Paso County, Colorado. Site development activities will consist of site grading, utilities, and roadway construction.
- b. Proposed sequence of major activities:

<u>Item</u>	<u>Anticipated Date</u>
• Mobilization / implementation of BMP's	April, 2019
• Clearing and grubbing	April, 2019
• Roadway Grading	April, 2019
• Re-Seeding	August, 2019
• Stabilization	August, 2020
- c. Total site area = 33.6 acres; Projected disturbed area = 5 acres (approx.)
- d. Historic runoff coefficient, C = 0.35;  
Developed runoff coefficient, C = 0.40



- e. Existing vegetation on site: evergreen trees and native shrubs and meadow grasses (approx. 70% coverage)
- f. Potential pollution sources: vehicle fueling on-site
- g. Non-stormwater components of discharge: none anticipated
- h. Receiving water: West Cherry Creek tributary drainage channels; surface drainage from this site will continue to follow historic drainage patterns, flowing into the existing downstream drainage channels.
- i. Soil erosion potential and potential impacts upon discharge: On-site soils are comprised primarily of Peyton sandy loam, and classified as Hydrologic Soils Group B (moderate erosion hazard).

## 2. Site Map (see Construction Drawings – Sheet C1.12C)

## 3. BMP's for Stormwater Pollution Prevention (See Sheet C1.12C):

<u>Phase</u>	<u>BMP</u>
Clearing and Grubbing necessary for perimeter controls	VTC's
Initiation of perimeter controls	Silt Fence
Remaining clearing and grubbing	
Road grading	Straw Bales
Stabilization	Seeding
Removal of erosion control measures	

### a. Erosion and Sediment Controls

#### 1) Structural Practices:

- Silt fence at toe of slope along downstream limits of disturbed areas
- Straw bales along drainage swales
- Inlet protection at culvert inlets

#### 2) Non-Structural Practices:

- Preserve existing vegetation beyond limits of work
- Temporary seeding of areas to remain disturbed for significant periods of time
- Permanent seeding/mulching upon completion of rough grading

### b. Materials Handling and Spill Prevention

- General Materials Handling Practices:
  - Potential pollutants shall be stored and used in a manner consistent with the manufacturer's instructions in a secure location. To the extent practical, material storage areas should 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 and segregated areas so that spilled materials cannot combine and react.



- Disposal of materials shall be in accordance with the manufacturer's instructions and applicable local, state, and federal regulations.
- Materials no longer required for construction shall be removed from the site as soon as possible.
- 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.
- Specific Materials Handling Practices:
  - All pollutants, including waste materials and demolition debris, that occur on-site during construction shall be handled in a way that does not contaminate storm water.
  - All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored on site shall be covered and contained and protected from vandalism.
  - Maintenance 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 maintenance operations shall be cleaned up immediately and properly disposed of.
  - Wheel wash water shall be settled and discharged on site by infiltration. Wheel wash water shall not be discharged to the storm water system.
  - 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.
  - pH-modifying sources shall be managed to prevent contamination of runoff and storm water collected on site. 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, an concrete pumping an mixer washout waters.
- Equipment maintenance and fueling: Contractor shall implement appropriate spill prevention and response procedures
- Spill Prevention and Response Procedures:
  - 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 on-site storm water, it is critical to contain the released materials on site and prevent their release into receiving waters.

- Spill Response Procedures:
  - 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.
  - If spills represent an imminent threat of escaping on-site facilities and entering the receiving waters, site personnel shall respond immediately to contain the release and notify the superintendent after the situation has stabilized.
  - The site superintendent, or his designee, shall be responsible for completing a spill reporting form and for reporting the spill to the appropriate agency.
  - Spill response equipment shall be inspected and maintained as necessary to replace any materials used in spill response activities.
- Spill kits shall be on-hand at all fueling sites. Spill kit location(s) shall be reported to the SWMP Administrator.
- 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.
- Recommended components of spill kits include the following:
  - Oil absorbent pads (one bale)
  - Oil absorbent booms (40 feet)
  - 55-gallon drums (2)
  - 9-mil plastic bags (10)
  - Personal protective equipment including gloves and goggles
- Concrete Batch Plants: There are no dedicated concrete batch plants planned for this site.
- 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. The discharge of water containing waste cement to the storm drainage system is prohibited.
- Notification Procedures:
  - In the event of an accident or spill, the SWMP Administrator shall be notified as a minimum.
  - Depending on the nature of the spill material involved, the Colorado Department of Public Health and Environment (24-hour spill reporting line: 877-518-5608), downstream water users, or other agencies may also need to be notified.
  - 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.

#### **4. Final Stabilization and Long-term Stormwater Management**

- Permanent seeding will be provided to achieve long-term stabilization of the site.
- Seed Mix: “Foothills Mix” or approved equal:
- 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:
  - Dryland: 20-25 lbs/acre
  - Irrigated: 40 lbs/acre
- Soil Stabilization Practices:
  - 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 mulch and mulch tackifier.
- Soil Conditioning and Fertilizer Requirements:
  - Soil conditioner, organic amendment shall be applied to all seeded areas at 3 CY / 1000 SF.
  - 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.
- 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 plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.

#### **5. Other Controls**

- Contractor shall dispose of all waste materials at a permitted off-site disposal site.
- Vehicle tracking pads will be installed at all access points to limit off-site soil tracking.

#### **6. Inspection and Maintenance**

- a. Inspection Schedules:
  - Contractor shall inspect BMPs bi-weekly as a minimum, and immediately (within 24 hours) after any precipitation or snowmelt event that causes surface erosion (i.e. that results in stormwater running across the ground), to ensure that BMPs are maintained in effective operating condition.

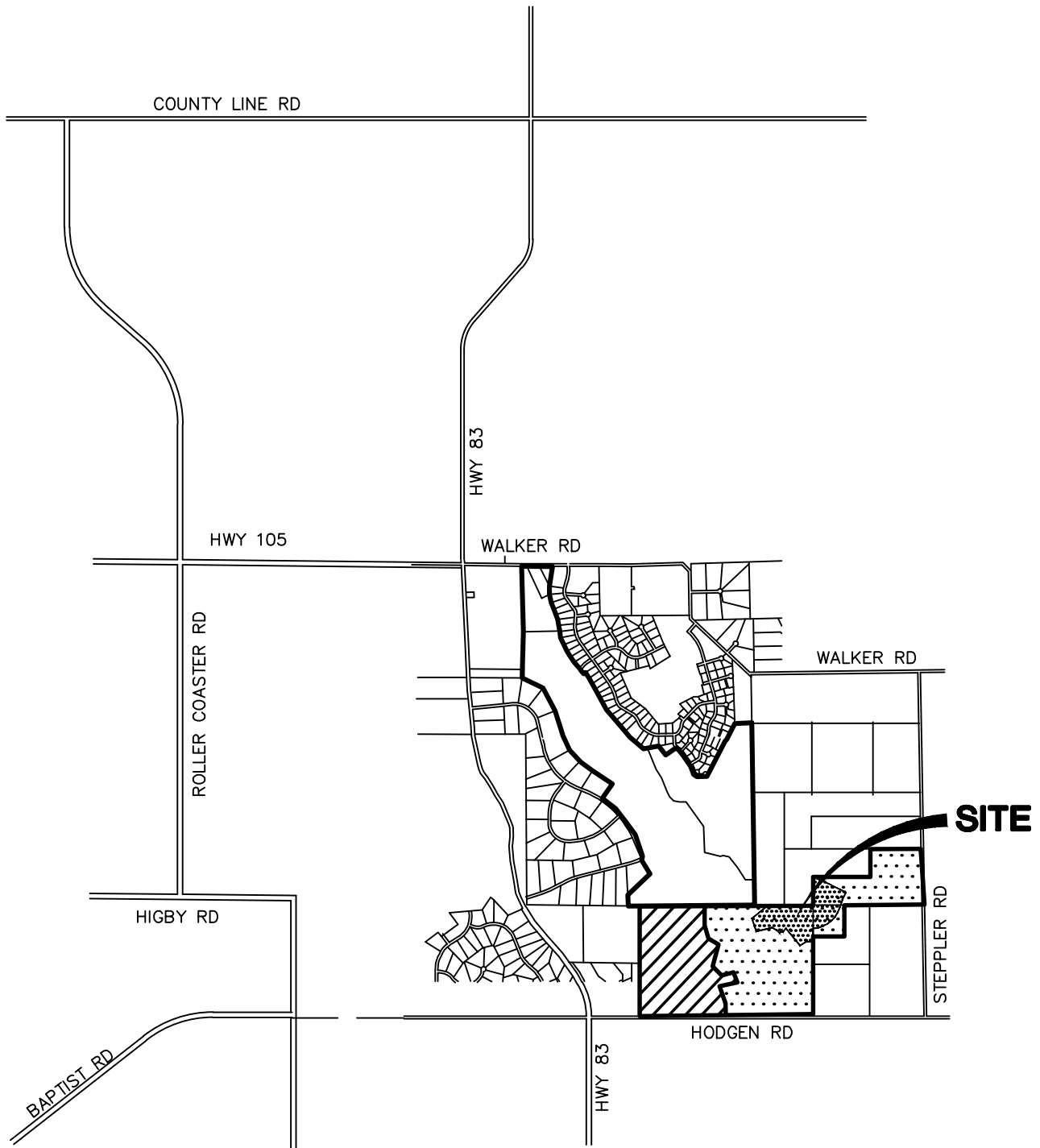


- b. Inspection Procedures:
- 1) Site Inspection / Observation Items:
    - Construction site perimeter and discharge points (including discharges into a storm sewer system)
    - All disturbed areas
    - Areas used for material / waste storage that are exposed to precipitation
    - Other areas having a significant potential for stormwater pollution, such as demolition areas or concrete washout locations, or locations where vehicles enter or leave the site
    - Erosion and sediment control measures identified in the SWMP
    - Any other structural BMPs that may require maintenance, such as secondary containment around fuel tanks, or the condition of spill response kits.
  - 2) Inspection Requirements:
    - Determine if there is any evidence of, or potential for, pollutants entering the drainage system.
    - 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.
    - Upgrade and/or revise any BMPs not operating in accordance with the SWMP, and update the SWMP to reflect any revisions.
- c. BMP Maintenance / Replacement and Failed BMPs:
- 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.
  - 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.
  - Contractor shall update Erosion Control Plans as required with any new BMPs added during the construction period.
  - 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.
- d. Record Keeping and Documenting Inspections:
- Contractor shall maintain records of all inspection reports, including signed inspection logs, at the project site.
  - 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.

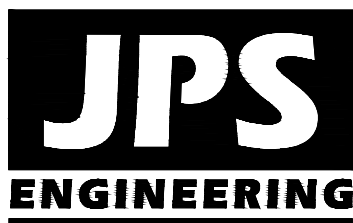


- Site inspection records shall include the following:
  - Inspection date
  - Name and title of personnel making the inspection
  - Location of discharges of sediment or other pollutants from the site
  - Location(s) of BMPs that need to be maintained
  - Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location
  - Location(s) where additional BMPs are needed that were not in place at the time of inspection
  - Deviations from the minimum inspection schedule





**VICINITY MAP**



**SETTLERS RANCH  
FILING NO. 2C**

**FIGURE A1**  
JPS PROJ NO. 030501

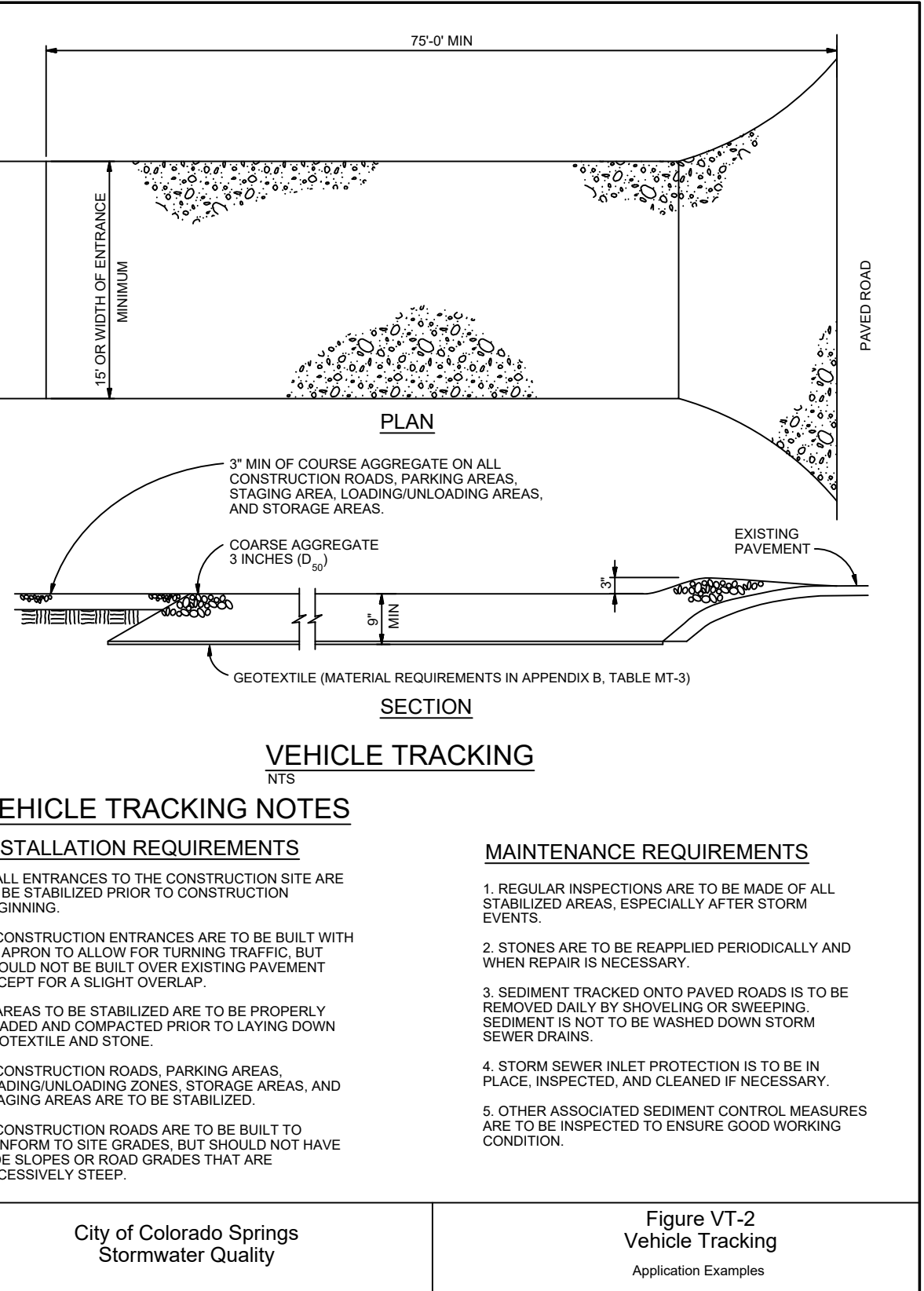
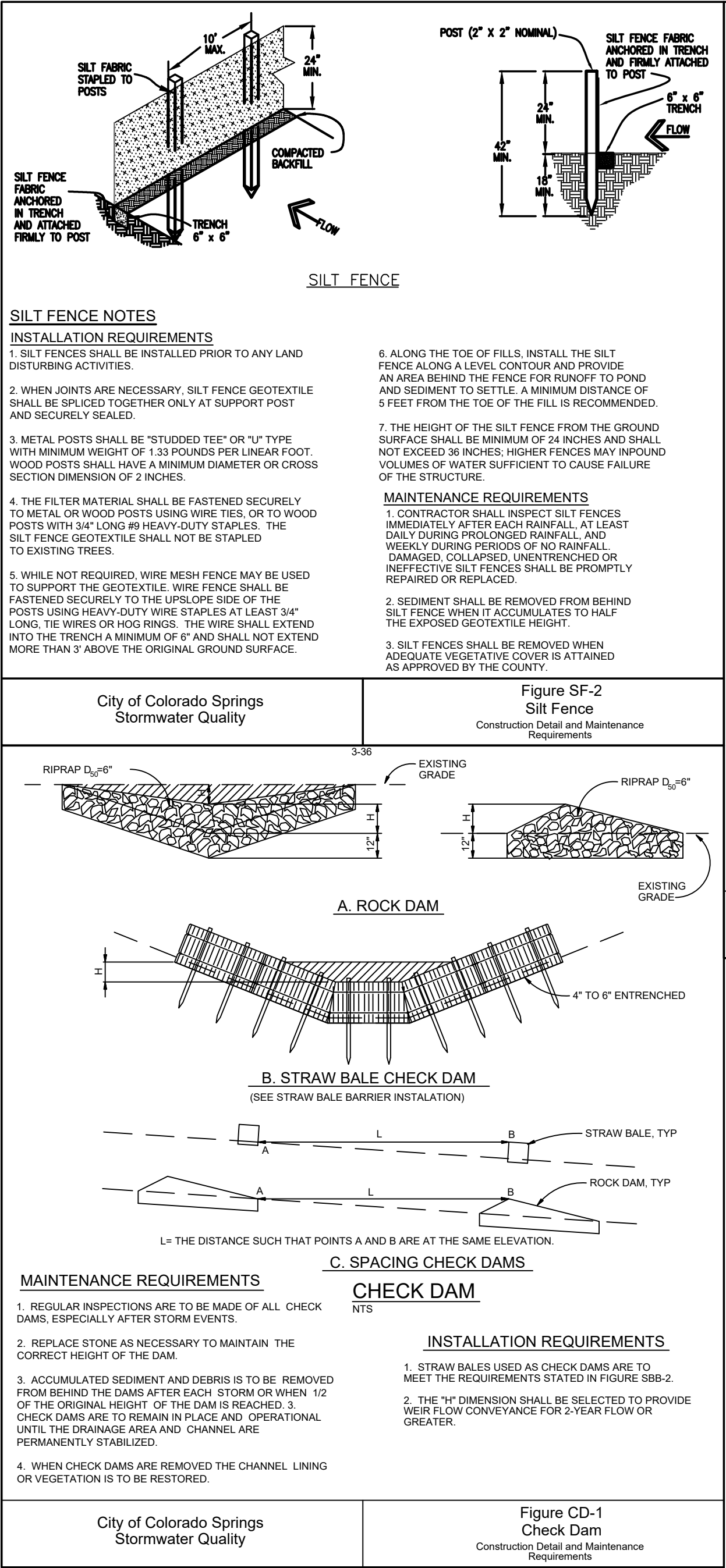


Standard Notes for El Paso County Grading and Erosion Control Plans

Revised 7/07/10

- Construction may not commence until a Construction Permit is obtained from Development Services and a Preconstruction Conference is held with Planning and Community Development Inspectors.
- 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.
- 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 to regulations and standards must be requested, and approved, in writing.
- 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. During construction the SWMP is the responsibility of the designated Stormwater Manager, shall be located on site at all times and shall be kept up to date with work progress and changes in the field.
- Once the ESQCP has been issued, the contractor may install the initial stage erosion and sediment control BMPs as indicated on the 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 PCD inspections staff.
- Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 21 calendar days after final grading, or final earth disturbance, has been completed. Disturbed areas and stockpiles which are not at final grade but will remain dormant for longer than 30 days shall also be mulched within 21 days after interim grading. An area that is going to remain in an interim state for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMPs shall be maintained until permanent soil erosion control measures are implemented and established.
- Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to standards and specification prescribed in the DCM Volume II and the Engineering Criteria Manual (ECM) appendix I.
- All persons engaged in earth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMPs in conformance with the erosion control technical standards of the Drainage Criteria Manual (DCM) Volume II and in accordance with the Stormwater Management Plan (SWMP).
- All temporary erosion control facilities including BMPs and all permanent facilities intended to control erosion of any earth disturbance operations, shall be installed as defined in the approved plans, the SWMP and the DCM Volume II and maintained throughout the duration of the earth disturbance operation.
- Any earth disturbance shall be conducted in such a manner so as to effectively reduce 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.
- Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be designed to limit the discharge to a non-erosive velocity.
- Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to runoff to State Waters, including any surface or subsurface storm drainage system or facilities.
- Erosion control blanketing is to be used on slopes steeper than 3:1.
- Building, construction, excavation, or other 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. BMP's may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
- Vehicle tracking of soils and construction debris off-site shall be minimized. Materials tracked offsite shall be cleaned up and properly disposed of immediately.
- 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.
- The owner, site developer, contractor, and/or their authorized agents shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, and sand that may accumulate in the storm sewer or other drainage conveyance system and stormwater appurtenances as a result of site development.
- 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.
- No chemicals are to be used by the contractor, which have the potential to be released in stormwater unless permission for the use of a specific chemical is granted in writing by the ECM Administrator. In granting the use of such chemicals, special conditions and monitoring may be required.
- Bulk storage structures for petroleum products and other chemicals shall have adequate protection so as to contain all spills and prevent any spilled material from entering State Waters, including any surface or subsurface storm drainage system or facilities.
- No person shall cause the impediment of stormwater flow in the flow line of the curb and gutter or in the ditchline.
- Individuals 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 included in the DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and laws, rules, or regulations of other Federal, State, or County agencies, the more restrictive laws, rules, or regulations shall apply.
- All construction traffic must enter/exit the site at approved construction access points.
- Prior to actual construction the permittee shall verify the location of existing utilities.
- A water source shall be available on site during earthwork operations and utilized as required to minimize dust from earthwork equipment and wind.
- The soils report for this site prepared by Himmelreich & Assoc., dated 1/24/05 shall be considered a part of these plans.
- At least ten days prior to the anticipated start of construction, for projects that will disturb 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

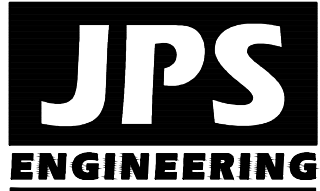


SEEDING MIX:		AMOUNT IN PLS	
GRASS	VARIETY	LBS. PER ACRE	
CRESTED WHEAT GRASS	EPHRAIM OR HYCREST	4.0 LBS.	
PERENIAL RYE	LINN	2.0 LBS.	
WESTERN WHEATGRASS	SARTON	3.0 LBS.	
SMOOTH BROME GRASS	LINCOLN OR MANCHAR	5.0 LBS.	
SIDEOATS GRAMA	EPHRAIM	2.5 LBS.	
TOTAL:		16.5 LBS.	
SEEDING & FERTILIZER APPLICATION:		DRILL SEED OR HYDRO-SEED PER CDOT SPEC. SECTION 212.	
MULCHING APPLICATION:		CONFORM TO CDOT SPEC-SECTION 213.	

SEDIMENT CONTROL MAINTENANCE PROGRAM:		FREQUENCY
PERIODIC SITE INSPECTIONS		BI-WEEKLY <sup>1</sup>
RE-VEGETATION OF EXPOSED SOILS	WITHIN 21 DAYS OF GRADING,	
SEDIMENT REMOVAL FROM BMP'S		MONTHLY <sup>2</sup>
REMOVAL OF BMP'S	AFTER STABILIZATION ACHIEVED	
AND AFTER ANY PRECIPITATION OR SNOW MELT EVENT THAT CAUSES SURFACE EROSION.		
ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED WHEN THE SEDIMENT LEVEL REACHES ONE HALF THE HEIGHT OF THE BMP OR AT ANY TIME THAT SEDIMENT OR DEBRIS ADVERSELY IMPACTS THE FUNCTION OF THE BMP.		
ESTIMATED TIME SCHEDULE:		
INSTALL BMP'S		APRIL, 2019
ROADWAY GRADING		APRIL, 2019
SEEDING & MULCHING		AUGUST, 2019
STABILIZATION		AUGUST, 2020

NOTE:  
NOTWITHSTANDING ANY DETAILS, NOTES OR PLANS SHOWN ON THESE DRAWINGS, ALL EROSION CONTROL DESIGNS AND INSTALLATIONS SHALL CONFORM TO EL PASO COUNTY STANDARDS AND POLICIES UNLESS OTHERWISE APPROVED IN WRITING.

SETTLERS RANCH - FILING NO. 2C



19 E. Willamette Ave.  
Colorado Springs, CO  
80903

PH: 719-477-9429  
FAX: 719-471-0766  
www.jpsengr.com



CALL UTILITY NOTIFICATION  
CENTER OF COLORADO  
1-800-922-1987  
CALL OR VISIT US IN ADVANCE  
BEFORE YOU DIG, GRADE, OR EXCAVATE  
FOR THE MARKING OF UNDERGROUND  
MEMBER UTILITIES.

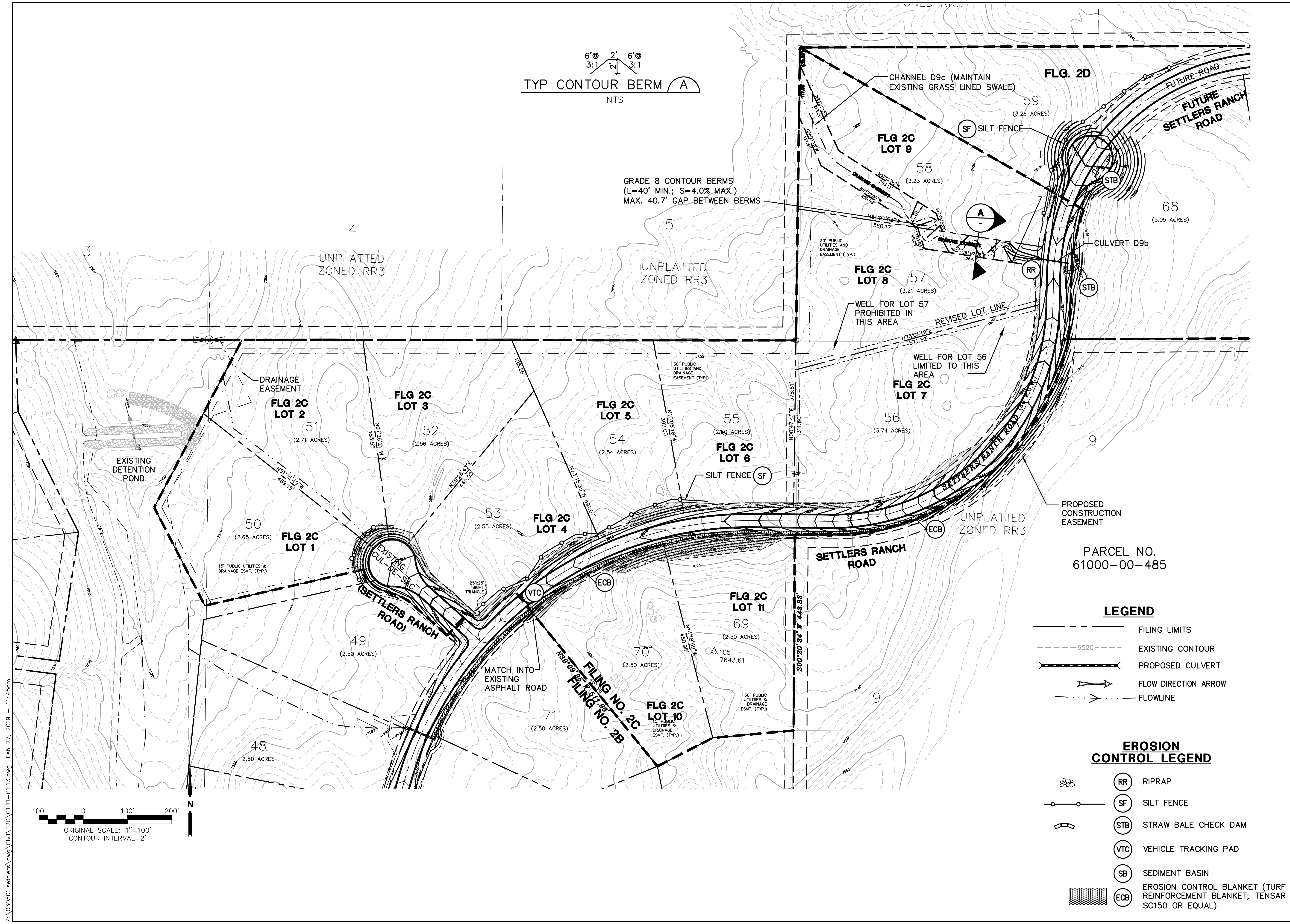
No.	REVISION	BY	DATE	EPC COMMENTS
A		JPS	7/19/13	PH 2B PLAT SUBMITTAL
A		JPS	6/22/15	COUNTY COMMENTS
A		JPS	9/30/15	FLG-2C PLAT SUBMITTAL
A		JPS	5/07/18	COUNTY COMMENTS
A		JPS	2/19/19	COUNTY COMMENTS

EROSION CONTROL  
NOTES & DETAILS

HORZ. SCALE:	NTS	DRAWN:	RMD
VERT. SCALE:	N/A	DESIGNED:	JPS
SURVEYED:	RAMPART	CHECKED:	JPS
CREATED:	4/05/18	LAST MODIFIED:	2/27/19
PROJECT NO:	030501	MODIFIED BY:	BJJ

SHEET: C1.02C





SETTLERS RANCH - FILING NO. 2C

19 E. Willamette Ave.  
Colorado Springs, CO 80903  
PH: 719-477-9429  
FAX: 719-471-0766  
www.jpsegr.com

CALL UTILITY NOTIFICATION  
CENTER OF COLORADO  
1-800-922-1987  
CALL 24 HOURS BEFORE YOU DIG, GRADE, OR EXCAVATE  
FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

No.	REVISION	DATE	BY
1	COUNTY COMMENTS	9/30/15	JPS
2	COUNTY COMMENTS	11/21/15	JPS
3	COUNTY COMMENTS	2/09/16	JPS
4	FLG-2C PLAT SUBMITTAL	6/21/18	JPS
5	COUNTY COMMENTS	2/27/19	JPS

GRADING & EROSION  
CONTROL PLAN (CENTER)

HORZ. SCALE: 1"=100'  
VERT. SCALE: N/A  
SURVEYED: RAMPART  
CREATED: 4/05/18  
PROJECT NO: 030501  
SHEET: C1.12C

DRAWN: MJP  
DESIGNED: JPS  
CHECKED: JPS  
LAST MODIFIED: 2/27/19  
MODIFIED BY: BJJ