STORMWATER MANAGEMENT PLAN Falcon Landing EL PASO COUNTY, COLORADO

September 21, 2018

PREPARED FOR:

Falcon Properties, LLC 9230 Gingerhill Ct. Colorado Springs, Co. 80920 PREPARED BY:

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PROJECT NO. 05-18-01

PPR-18-053

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Introduction

This Stormwater Management Plan is being submitted on behalf of Falcon Properties, LLC for:

LOT 3 BECKETT AT WOODMEN HILLS FILING 3, COUNTY OF EL PASO, STATE OF COLORADO

The purpose of this Stormwater Management Plan (SWMP) is to identify possible pollutant sources that may contribute pollutants to stormwater, and identify Best Management Practices (BMPs) that will reduce or eliminate any possible water quality impacts.

General Location and Description

The site lies in Section 7 of Township 13 South, Range 64 West. The proposed plat is south of Woodmen Rd, north of Flower Rd, east of N. Meridian Rd. on McLaughlin Rd. The site is currently zoned CR and planned for commercial development.

Other development in the area includes various commercial developments and a residential development known as Courtyards at Woodmen Hills South, Filing 2.

The proposed site encompasses 1.07 acres. The topography of the site and surrounding area is typical of a high desert; short prairie grass and weeds with generally flat slopes. The area generally drains to the north. This development is in the Falcon Basin.

Description of Construction

Construction will consist of site grading, utility installation, and parking lot paving. The majority of the site, but less than 1 acre, will be disturbed. Erosion control will be provided prior to construction.

Phasing

All of the site will be graded at one time due to the need to balance the site. There will be no phased construction. Once the site is graded utility construction will begin from existing stubs on the northeast corner. Parking lot paving will follow moving from west to east.

Description of Drainage Conveyance

- not based on grading plan.

All of the site drains to the north. Storm flow will be collected and conveyed to an existing Type R inlet along the north access road. This existing inlet conveys storm water to an existing Detention Pond constructed for this site and other development in the area. This pond detains flows and then discharges to the middle tributary of the Falcon Basin.

- describe location

Steps for Construction

		Estimated Start	Estimated End
٠	Clearing and grubbing	Jan 1, 2019	Feb 1, 2019
٠	Rough grading for lots and roads	Jan 15, 2019	Feb 15, 2019
•	Utility Installation	Feb 1, 2019	Apr 15, 2010
•	Final grading, curb and gutter and paving	May 1, 2019	Jun 30, 2019
٠	Final Stabilization		Aug 1, 2019

Estimates of Excavation

The proposed site encompasses 1.07 acres. Approximately 0.99 acres of the site will be graded during construction activities. Approximately 1,000 yards of soil will be excavated and placed all within the site boundary.

Soil Properties

The site is comprised of several different soil types. From the Soil Survey of El Paso County, the site falls into the following soil type:

1. "19" Columbine gravelly sandy loam, 0 to 3 percent slopes

The Columbine soil is classified at Hydrological Group A. Note: "#" indicates Soil Conservation Survey soil classification number.

Estimated Runoff Coefficients	
Average Prior to Construction	C5=0.08 and C100=0.35
Average After Construction	C5=0.49 and C100=0.60

Potential for soil erosion during construction is minimal as the site is generally flat. The erosion control plan includes measures to reduce this potential. The connection to the existing Type R is the primary drainage structure for the site; the primary point of connection to the inlet is the outfall structure of the PLD proposed on the northern portion of the site. The inlet drains directly to an existing storm system servicing the surrounding commercial properties.

Vegetation

The topography of the site and surrounding area is typical of a high desert; short prairie grass and weeds. The estimated vegetative coverage is about 65%. There are no mature trees on site. The surrounding land use is predominantly commercial development. The site is currently vacant.

Pollutants

During construction, the largest possible source of non-stormwater pollution will be during equipment refueling operations. The contractor shall be responsible for any spill cleanup while refueling, in accordance with applicable local, county and state regulations. The contractor will also be responsible for cleanup of any off-site vehicle tracking on paved roads. Tracking control will be provided at the entrance to the site. No other source of pollution such as vehicle washing, chemical storage or waste disposal is anticipated. No batch plants will be onsite.

After construction any pollutants will be captured in the proposed PLD onsite and will be dealt with as part of regular site maintenance.

Discharge

There are no anticipated non-stormwater components of the discharge. The receiving waters for this discharge are the Middle Tributary Falcon Basin and ultimately the Arkansas River.

Grading and Erosion Control Plan

A map is provided with this SWMP application that details the site, limits of construction and erosion control measures. This map will be used by the contractor to track installation, maintenance and removal of BMP's during construction; including any field changes that are required during construction.

Best Management Practices

Structural BMP's

Silt fences will be installed prior to any grading occurring on the site. The silt fence will be installed in the areas shown on the provided map. Vehicle tracking control will be provided at the entrance to the site from the access road to the north. As construction moves forward and storm sewer is installed inlet protection will be installed to help control sediment leaving the site.

Non structural BMP's

Non-structure practices to control erosion and sedimentation will include reseeding of ground cover in disturbed areas according to the erosion control plan. Seeding of bank slopes and mulching along steep embankments will be performed as required. Seeding of disturbed areas will be mitigated until growth has reached 70% of pre-disturbed levels: .7 x .65 = 46%

Material Handling and Spill Prevention

The most probable source of non-stormwater pollution is refueling and daily maintenance operations. If mobile fuel trucks are used to service equipment, absorbent materials and containers for the storage of used absorbent material will be close by. If a fuel tank is left on site, berms will be built around the tank to capture any spilled fuel. Again, absorbent materials and their containers will be on hand.

Final Stabilization and Long Term Storm Water Management

The silt fence installed on site will not be removed until the site is stabilized and the entire site is established with vegetation growth of 70% of pre-disturbed levels: $.7 \times .65 = 46\%$.

Other Controls

There are several best management practices that can be employed to prevent or mitigate the source of pollutants and contamination of stormwater runoff. Some of these are:

- All refuse dumpsters and receptacles shall be equipped with functional lids to prevent rain and snow from entering.
- Storage containers, drums and bags shall be stored away from direct traffic routes to prevent accidental spills.
- Empty drums shall be covered to prevent collection of precipitation.
- Containers shall be stored on pallets or other dunnage to prevent corrosion of containers, which can result when containers come in contact with moisture on the ground.
- Regularly scheduled removal of construction trash and debris.

The contractor is certainly not limited to these good housekeeping measures and may implement further controls as prudence and good judgement deem necessary.

Inspection and Maintenance

A thorough inspection of the storm water management system shall be performed every 14 days as well as after any rain or snowmelt event that causes surface erosion:

- Erosion of channels and side slopes shall be repaired.
- Silt fences shall be cleaned whenever sediment has reached a depth of 6" at the fence and broken wooden parts or torn fabric shall be repaired or replaced.
- Any accumulated trash or debris shall be removed from the site.

An Inspection and Maintenance Log follows this Storm Water Management Plan.

SWMP Revisions

Revisions to the SWMP will occur from time to time as construction proceeds. The contractor will be responsible for revisions to the plan to include the following:

- 1. Changes to the plan will be tracked by marking changes on the plan with date and note of the responsible party requesting/requiring the change.
- 2. Dates and responsible party for addition or removal of BMP's will be noted on the plan.
- 3. If there are any changes the contractor deems to be a significant modification of the approved GEC plan he must contact the owner prior to proceeding.
- 4. The SWMP will be kept on site and up to date at all times.

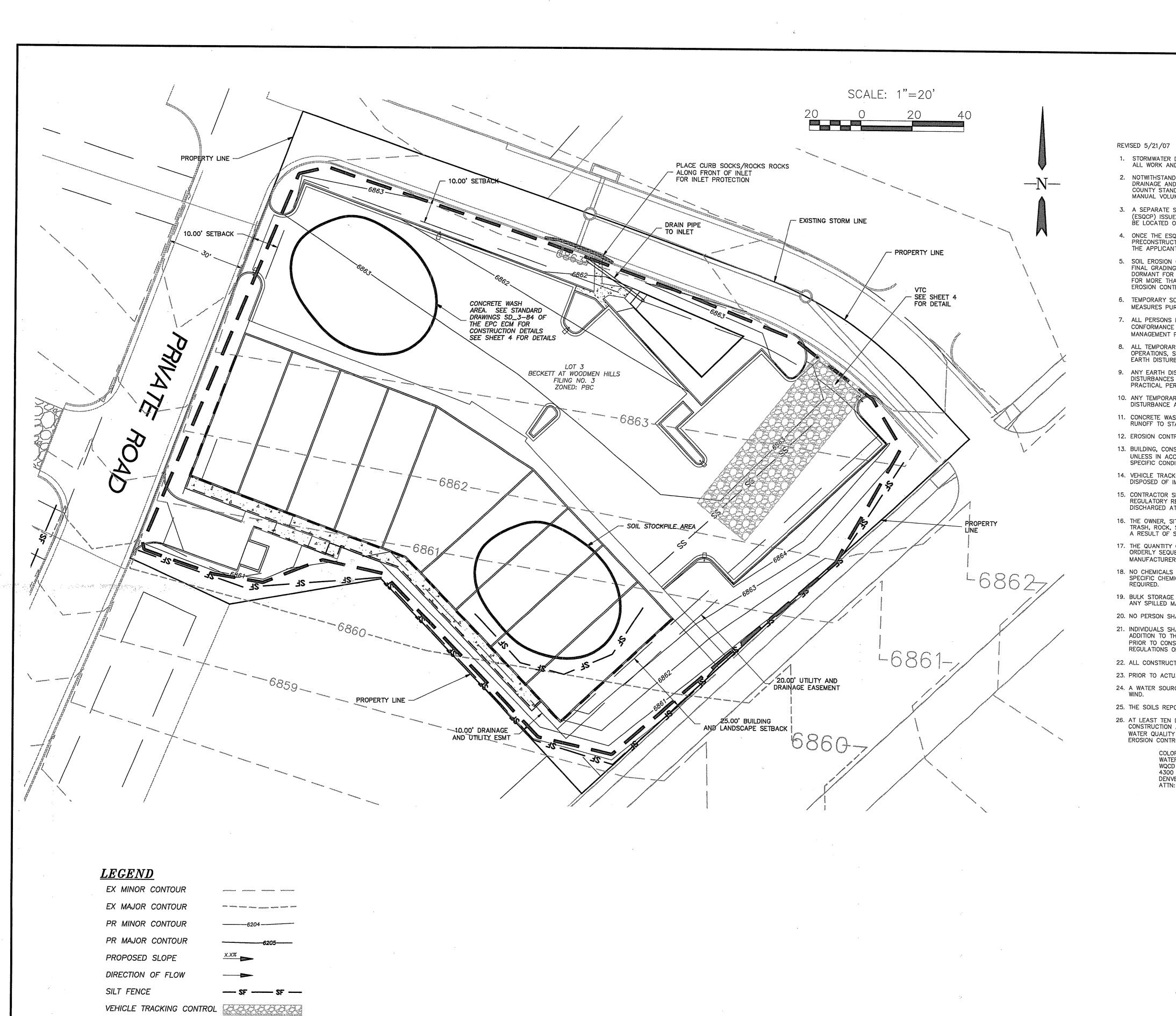
Inspection and Maintenance Log

STORMWATER MANAGEMENT PLAN Falcon Landing INSPECTION AND MAINTENANCE LOG

(Record inspections, items found maintenance and corrective actions taken. Also record any training received by Contractor personnel with regard to erosion control, materials handling and any inspections by outside agencies)

DATE	ITEM	SIGNATURE OF PERSON MAKING ENTRY

Site Map and Erosion Control Plan



GRADING LIMITS

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REVISIONS:			
NO.	DESCRIPTION	DATE	

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

Revise to comply with current GEC (27) notes

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF SITE WATERS, INCLUDING WETLANDS.

2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.

3. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. 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.

4. 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 DSD INSPECTIONS STAFF. Change reference to DSD to PCD throughout 5. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AR CASHALL 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.

6. 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).

8. 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, THESWAP 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

10. 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.

11. 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. 12. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.

13. 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.

14. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

15. 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.

16. 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 DESULT OF SITE DEVELOPMENT

17. 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

18. 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

19. 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. 20. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.

21. 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.

22. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS. 23. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

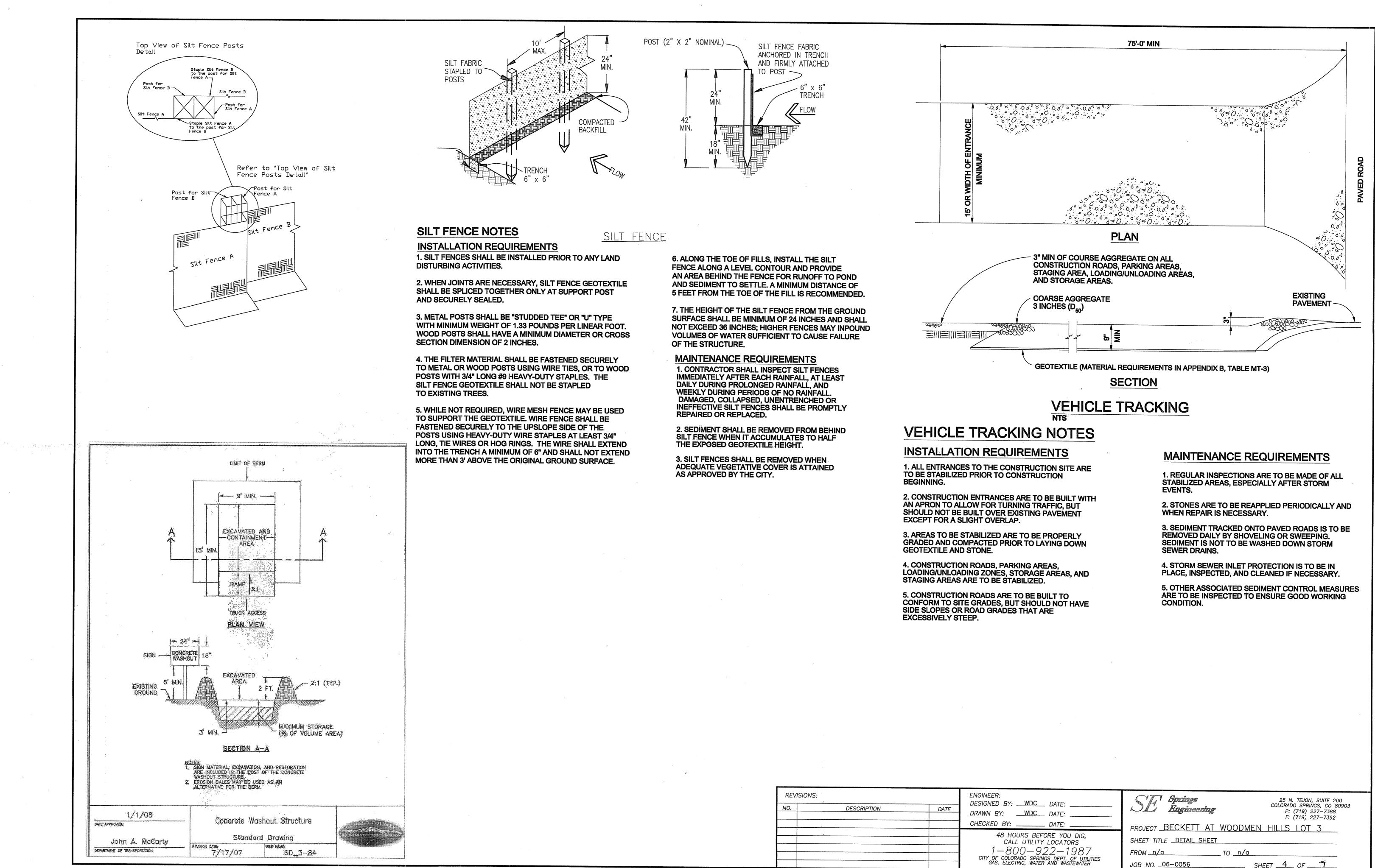
24. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND

25. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING AND SHALL BE CONSIDERED A PART OF THESE PLANS.

26. 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

ENGINEER: DESIGNED BY: <u>WDC</u> DATE: DRAWN BY: <u>WDC</u> DATE:	Springs 25 N. TEJON, SUITE 200 Springs Colorado springs, co 80903 Engincering P: (719) 227-7388 F: (719) 227-7392
CHECKED BY: DATE:	PROJECT BECKETT AT WOODMEN HILLS LOT 3
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General Permit Application

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