

**FALSON FIELD
STORMWATER MANAGEMENT PLAN
EL PASO COUNTY, COLORADO**

PROJECT NO. 01-23-03

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Introduction

This Stormwater Management Plan is being submitted on behalf of Falcon Field, LLC for a tract of land known as:

A PARCEL OF LAND SITUATED IN SECTION 7, TOWNSHIP 13 SOUTH, AND RANGE 64 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING A PORTION OF THAT TRACT OF LAND DESCRIBED UNDER RECEPTION NO. 202131510 OF THE RECORDS OF SAID COUNTY, SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

(BEARINGS REFERED TO HEREIN ARE BASED ON THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 7, SAID LINE BEING MONUMENTED AT HE WEST END BY A 3" ALUMINUM CAP STAMPED WITH COLORADO REGISTERED LAND SURVEYOR NO. 17664, AND MONUMENTED AT THE EAST END BY A 2" ALUMINUM CAP STAMPED WITH COLORADO REGISTERED LAND SURVEYOR NO. 17665, SAID LINE IS ASSUMED TO BEAR N89°08'49"W)

BEGINNING AT THE NORTHWEST CORNER OF "ARROWHEAD ESTATES FILING NO.1" AS DESCRIBED IN PLAT BOOK Y-3, PAGE 39 OF THE RECORDS OF SAID COUNTY; SAID CORNER ALSO BEING THE NORTHWEST CORNER OF LOT 13, OF SAID "ARROWHEAD ESTATES FILING NO.1";

THE FOLLOWING (3) THREE COURSES ARE ON THE WESTERLY AND NORTHERLY LINES OF SAID "ARROWHEAD ESTATES FILING NO.1";

- 1) THENCE S00°46'12"W A DISTANCE OF 1,185.42 FEET;
- 2) THENCE S86°00'46"W A DISTANCE OF 327.52 FEET;
- 3) THENCE S00°25'05"W A DISTANCE OF 68.17 FEET TO THE NORTHERLY LINE OF THAT TRACT OF LAND DESCRIBED UNDER RECEPTION NO. 202090702 OF SAID RECORDS;

THENCE N89°59'43"W A DISTANCE OF 430.45 FEET ON SAID NORTHERLY LINE TO THE SOUTHWESTERLY CORNER OF "VERBURG SUBDIVISION WAIVER", A TRACT OF LAND DESCRIBED UNDER RECEPTION NO. 201000639 OF SAID RECORDS;

THENCE N00°14'15"E A DISTANCE OF 1,475.39 FEET ON THE EASTERLY LINE OF SAID "VERBURG SUBDIVISION WAIVER" TO THE SOUTHEASTERLY RIGHT OF WAY LINE OF U.S. HIGHWAY NO. 24 AS DESCRIBED IN BOOK 840 PAGE 258 OF SAID RECORDS;

THE FOLLOWING THREE COURSES ARE ON SAID SOUTHEASTERLY RIGHT OF WAY LINE;

- 1) THENCE N50°05'41"E A DISTANCE OF 125.34 FEET TO A POINT OF CURVE TO THE LEFT;
- 2) THENCE ON THE ARC OF SAID CURVE, HAVING A RADIUS OF 5,800.00 FEET, A DELTA ANGLE OF 03°40'20", AN ARC LENGTH OF 371.73 FEET, WHOSE LONG CHORD BEARS N48°15'41"E A DISTANCE OF 371.67 FEET;
- 3) THENCE N46°25'11"E A DISTANCE OF 760.04 FEET TO THE INTERSECTION OF SAID SOUTHEASTERLY RIGHT OF WAY LINE WITH THE WESTERLY RIGHT OF WAY LINE OF RIO ROAD, A 60 FOOT WIDE RIGHT OF WAY SHOWN ON "FALCON RANCH ESTATES SUBDIVISION" AS RECORDED IN PLAT BOOK T-2 AT PAGE 47 OF SAID RECORDS;

THE FOLLOWING (2) TWO COURSES ARE ON SAID WESTERLY RIGHT OF WAY LINE AND THE SOUTHERLY RIGHT OF WAY OF RIO ROAD;

- 1) THENCE S22°22'28"E A DISTANCE OF 219.81 FEET;
- 2) THENCE S89°10'21"E A DISTANCE OF 1,071.23 FEET TO THE NORTHWEST CORNER OF LOT 14, OF SAID "FALCON RANCH ESTATES SUBDIVISION";

THENCE S00°10'51"E A DISTANCE OF 705.04 FEET ON THE WESTERLY LINES OF SAID LOT 14 AND 13 OF SAID "FALCON RANCH ESTATES SUBDIVISION" TO THE MOST NORTHERLY NORTHWEST CORNER OF SAID "ARROWHEAD ESTATES FILING NO.1", SAID CORNER ALSO BEING THE MOST NORTHERLY NORTHWEST CORNER OF LOT 10 OF SAID "ARROWHEAD ESTATES FILING NO.1";

THE FOLLOWING (2) TWO COURSES ARE ON THE WESTERLY AND NORTHERLY LINES OF SAID "ARROWHEAD ESTATES FILING NO.1"

- 1) THENCE S00°10'51"E A DISTANCE OF 151.74 FEET;
- 2) THENCE N88°55'44"W A DISTANCE OF 1,314.29 FEET TO THE POINT OF BEGINNING.

THE ABOVE TRACT OF LAND CONTAINS 2,511,970 SQUARE FEET OR 57.667 ACRES, MORE OR LESS.

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 the eastern portion of Section 7, Township 13 South, Range 64 West. The proposed site is south of the intersection of US 24 and Woodmen Road. The site is currently zoned RR-5.

Other development in the area includes residential and commercial development to the north in Woodmen Hills. Large lot development to the west, south and east and a church to the south.

The proposed site encompasses 57.7 acres. The topography of the site and surrounding area is typical of a high desert; short prairie grass and weeds with slopes generally ranging from 3% to 9%. The area generally drains to the south and west. This development is in the Falcon Drainage Basin which is tributary to Black Squirrel Creek.

The Eastern Tributary of the Falcon Basin bisects the property. This tributary is a FEMA regulated floodplain. Recommendations for channel improvements have been outlined in the Falcon Basin Drainage Basin Planning Study as approved by El Paso County. These improvements will be implemented in conjunction with processing a CLOMR and subsequent LOMR with FEMA.

(Item 16 EPC SWMP Checklist)

Description of Construction

Construction will consist of site grading, utility installation, and road paving. The majority of the site will be disturbed. Erosion control will be provided prior to construction.

Phasing

Phasing of construction will most likely consist of grading west of the channel as Phase I and Phase II will consist of channel improvements and grading of the site east of the channel. Phasing is dependent on several items including:

1. CLOMR approval for channel improvements-currently in process.
2. CDOT requirements concerning access to US 24 including potential closure of Rio Lane east of Woodmen Road.
3. Transfer of property for construction of Commercial Facilities.

It is possible that Phase I and II will proceed simultaneously depending on the above factors.

The site will be graded initially as part of the Early Grading Permit issued by El Paso County with the Falcon Field Preliminary Plan approval including installation of utilities to serve the property.

Work on the property will continue with Falcon Field Final Plat approval including utility construction to serve each lot with road construction and paving to follow.

Description of Drainage Conveyance

The site drains generally to the south and southeast eventually to the channel. All stormwater flow will be directed to storm water facilities prior to being allowed to discharge to the channel or offsite. A portion of the property along the east boundary and the southwest boundary discharges off-site prior to being conveyed to the channel south of the property. Storm sewer facilities will be installed throughout the site and streets. Storm flow will be collected and conveyed to one of 4 stormwater Water Quality and Detention Facilities being constructed for Falcon Field.

Steps for Construction

	<u>Estimated Start</u>	<u>Estimated End</u>
• Clearing and grubbing	Sept 1, 2021	Nov 1, 2021
• Rough grading for lots and roads	October 1, 2021	Feb 1, 2022
• Utility Installation	Dec 1, 2021	June 30, 2022
• Final grading, curb and gutter and paving	March 1, 2022	Oct 30, 2022
• Final Stabilization		May 1, 2023

Estimates of Excavation

The proposed site encompasses 57.7 acres. Approximately the entire site will be graded during construction activities. Approximately 190,000 yards of soil will be excavated and placed all within the site boundary.

Soil Properties

The site is composed soil type. From the NRCS report in Appendix A, the site falls into the following soil type:

- 8 – Blakeland sandy loam (1-9%) – Type A Soil
- 19 – Columbine gravelly sandy loam (0-3%) – Type A Soil

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.

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.

These soils have a high rate of water transmission.	Estimated Runoff Coefficients
Average Prior to Construction	C5=0.08 and C100=0.35
Average After Construction	C5=0.45 and C100=0.59

Potential for soil erosion during construction is moderate and focused primarily on the steep slopes. The erosion control plan includes measures to reduce this potential. Four sedimentation basins are located at the site boundaries to reduce or eliminate soil leaving the site.

Vegetation

The topography of the site and surrounding area is typical of a high desert; short prairie grass and weeds with slopes generally ranging from 3% to 9%. The estimated vegetative coverage is about 70%. There are no mature trees on site. The surrounding land use is predominantly commercial development or large lot residential 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 either of the two water quality ponds built on site; specifically, in the fore bay and will be dealt with as part of regular maintenance by the Gardens at North Carefree Metropolitan District.

Discharge

There are no anticipated non-stormwater components of the discharge. The receiving waters for this discharge is Black Squirrel Creek 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 entrances to the site at Fallow Land and Running Deer Way. As construction moves forward and storm sewer is installed inlet protection will be installed to help control sediment leaving the site.

Two Sedimentation Basins will be installed on either side of the Running Deer Way intersection until the storm sewer system is installed and the site transitions to inlet protection. The drainage report and Grading and Erosion Control plan provides details for the construction of these basins.

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: $.7 \times .8 = 56\%$

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: $.7 \times .8 = 56\%$.

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.
- Sedimentation basin shall be cleaned when sediment has reached a depth of 6-inches.
- Inspections will include the existing storm system and the channel where the system discharges. Any sediment leaving the site and being left in the channel bottom, will be removed

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.

Site Map and Erosion Control Plan

General Permit Application