

**DRAINAGE LETTER FOR
ENT CREDIT UNION, LOT 1, BLOCK 1,
CLAREMONT RANCH FILING NO. 9B
COLORADO SPRINGS, CO 80915**

Prepared for:

ENT Credit Union

Prepared by:

Galloway & Company, Inc.
6162 S Willow Drive
Suite 320
Greenwood Village, CO 80111
Phone: (303) 770-8884
Fax: (303) 770-3636

Date:

March 5th, 2018
Revision: May 9th, 2018

Design Engineer's Statement:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

Jennifer Romano, PE
Licensed Professional Engineer
State of Colorado No. 44401



Date

Developer's Statement:

I, the developer have read and will comply with all of the requirements specified in this drainage report and plan.

Jeff Wilkins
Ent Credit Union
7250 Campus Drive
Colorado Springs, CO 80920

Date

6/28/2018

EL PASO COUNTY:

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 & 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

Jennifer Irvine, P.E.
County Engineer/ECM Administrator



Date

March 5th, 2018
Revision: May 9th, 2018

Len Kendall
Development Services Department
El Paso County
2880 International Circle, Suite 110
Colorado Springs, CO 80910

Re: Drainage Conformance Letter for Lot 1, Block 1 – Claremont Ranch West Filing No. 9B

Dear Mr. Kendall,

This drainage conformance letter has been prepared for Lot 1 of Claremont Ranch West Filing No. 9B project site located in Section 4, Township 14 South, Range 65 West of the 6th Principal Meridian, County of El Paso, State of Colorado. The purpose of this letter is to show that the proposed drainage for the site conforms to the current City of Colorado Springs *Drainage Criteria Manual Volume 2* and the *Final Drainage Report for SEC of Marksheffel Rd. & Constitution Ave.* prepared by Galloway & Company, Inc. dated September 14, 2015. A composite runoff coefficient calculation was performed for the subject site and these calculations are attached herein.

The building is proposed to be located in Lot 1 of the subdivision, a 1.00-acre site. The project site is located in Basin D-1, D-2, D-3, and OS-2 of the *Final Drainage Report*. Runoff from this lot was designed to be captured by a future storm sewer system which is to connect to the existing storm system which outfalls to the existing southwest pond as identified in the *Final Drainage Report*. The existing 5- and 100-year weighted runoff coefficients for the combined basins within Lot 1 based on the existing *Final Drainage Report* are 0.65 and 0.77, respectively (see Appendix B for calculation).

The proposed grading for the site is consistent with the intended grading and drainage pattern proposed in the above mentioned *Final Drainage Report*.

The proposed drainage plan for the site consists of eight drainage basins (totaling 43,707 SF). The combined runoff coefficient for basins A-1, A-2, A-3, A-4, A-5, OS-1 and OS-3 is estimated to be 0.55 and 0.70 in the 5- and 100- year storms (see Appendix B for calculation), respectively. Runoff from basins A-1, A-2, A-3, A-4, A-5 and OS-2 will be collected into multiple catch basins and a curb inlet on-site which will connect to the existing storm sewer system and be routed to the southwest pond. Runoff from basin OS-1 will be directed southwest and follow the existing pattern for which Basin OS-2 in the existing *Final Drainage Report* Design depicts. Drainage from Basin OS-3 will follow the existing routing of the existing drainage basin D-3 outlined in the existing *Final Drainage Report*. The offsite structure gathering drainage from basins A-2 and OS-2, is a temporary structure and it will be the responsibility of the future developer of Lot 2A to direct this flow to southwest pond. These runoff coefficients are below the planned values and thus the runoff will be less than originally planned. The overall imperviousness of the site after final stabilization has been calculated to be 59%. These

findings indicate that this project will have no negative impacts on the existing drainage infrastructure.

I affirm that the proposed drainage design of Lot 1, Claremont Ranch West Filing No. 9B is in substantial conformance with the approved *Final Drainage Report for SEC of Marksheffel Rd. & Constitution Ave.* prepared by Galloway & Company, Inc. dated September 14, 2015.

Step 1: Runoff Reduction Practices

Due to site size of 1.00 acre the opportunity for implementation of grass buffers or swales was not practical. This site is compliant with the approved Final Drainage Report for SEC of Marksheffel Rd. & Constitution Ave. Every attempt was made to reduce impervious areas while also complying with the parking requirements set forth by El Paso County.

Step 2: Stabilize Drainageways

This step is not applicable. There are no drainageways located on this site.

Step 3: Provide Water Quality Capture Volume (WQCV)

Runoff from this site will be collected via existing storm sewer and routed to an existing water quality pond located just southeast of the site.

Step 4: Consider Need for Industrial and Commercial BMPs

This site is 1.00 acre and a water quality pond is not being proposed so therefore per Appendix I Section 7.1.B this site does not fall under the definition of "new development or significant redevelopment" so this step is not applicable.

Water Quality and detention (EURV) is being provided in an existing pond located on Lot 1 Block 1 Claremont Ranch filing No. 9.

Drainage Fee Note:

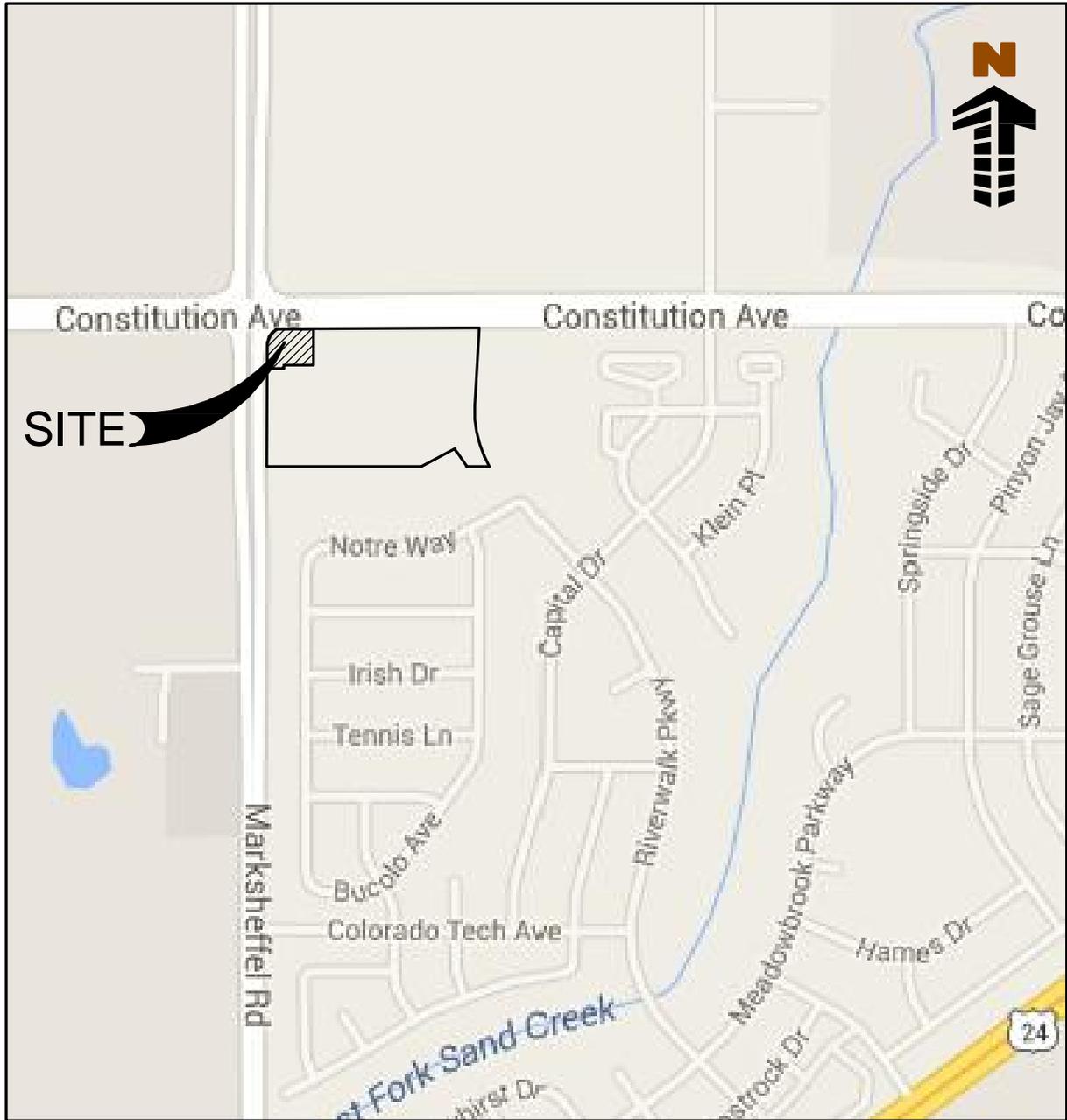
Typically, drainage fees are paid with the final plat with no additional fees due with site plan applications. The drainage fees for this project have been paid under the submission of the original plat for the development of which the project is located within.

See attached documents for additional drainage information:

- Appendix A: Vicinity Map
- Appendix B: Drainage Coefficient Calculations
- Appendix C: Drainage Map

APPENDIX A

(VICINITY MAP)



VICINITY MAP

APPENDIX B

(RUNOFF COEFFICIENT CALCULATIONS)

LOCATION: Marksheffel Rd. and Constitution Ave
Colorado Springs, El Paso County

Date: May 4, 2018
Engineer: Sid Biddle
Project Engineer: Jenny Romano

*PERCENT IMPERVIOUS VALUES	
LANDSCAPE	0
PAVING	100
ROOFING	90
COMMERCIAL	95

* RUNOFF COEFFICIENTS USED				
	2-Year	5-Year	10-year	100-Year
LANDSCAPE	0.02	0.08	0.15	0.35
PAVING	0.89	0.90	0.92	0.96
ROOFING	0.71	0.73	0.75	0.81
COMMERCIAL	0.79	0.81	0.83	0.88

* Table 6-6 in CO Springs, Drainage Criteria
Manual Revised May 2014

Existing Composite Runoff Coefficients and Percent Imperviousness for Developed Drainage Basins

BASIN DESIG.	OVERALL AREA (sf)	LANDSCAPE AREA (sf)	PAVED AREA (sf)	ROOF AREA (sf)	COMMERCIAL AREA (sf)	2-YEAR COEFF.	5-YEAR COEFF.	10-YEAR COEFF.	100-YEAR COEFF.	PERCENT IMPERVIOUS
D-1	34,012	0	0	0	34,012	0.79	0.81	0.83	0.88	95%
D-2	397		0	0	397	0.79	0.81	0.83	0.88	95%
D-3	920	920	0	0	0	0.02	0.08	0.15	0.35	0%
TOTAL D	35,329	920	0	0	34,409					93%
OS-2	8,378	8,378	0	0	0	0.02	0.08	0.15	0.35	0%
TOTAL LOT2B	43,707	9,298	0	0	34,409					75%

Proposed

Composite 0.65 0.77

PROJECT: Lot 1, Claremont Ranch Filing No. 9B
LOCATION: Marksheffel Rd. and Constitution Ave
Colorado Springs, El Paso County

Project No.: ECU000007.20
Date: May 4, 2018
Engineer: Sid Biddle
Project Engineer: Jenny Romano

*PERCENT IMPERVIOUS VALUES	
LANDSCAPE	0
PAVING	100
ROOFING	90
COMMERCIAL	95

* RUNOFF COEFFICIENTS USED				
	2-Year	5-Year	10-year	100-Year
LANDSCAPE	0.02	0.08	0.15	0.35
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Composite Runoff Coefficients and Percent Imperviousness for Developed Drainage Basins

BASIN DESIG.	OVERALL AREA (sf)	LANDSCAPE AREA (sf)	PAVED AREA (sf)	ROOF AREA (sf)	COMMERCIAL AREA (sf)	2-YEAR COEFF.	5-YEAR COEFF.	10-YEAR COEFF.	100-YEAR COEFF.	PERCENT IMPERVIOUS
A-1	11,773	4,323	7,182	268	0	0.57	0.60	0.63	0.73	63%
A-2	8,007	854	7,153	0	0	0.80	0.81	0.84	0.89	89%
A-3	3,113	0	0	3,113	0	0.71	0.73	0.75	0.81	90%
A-4	2,212	0	0	2,212	0	0.71	0.73	0.75	0.81	90%
A-5	7,125	1,153	5,972	0	0	0.75	0.77	0.80	0.86	84%
TOTAL A	32,230	6,330	20,307	5,593	0					79%
OS-1	11,071	11,071	0	0	0	0.02	0.08	0.15	0.35	0%
OS-2	8,158	2,043	6,115	0	0	0.67	0.69	0.73	0.81	75%
OS-3	406	295	524	0	0	1.16	1.22	1.30	1.49	129%
TOTAL OS	19,635	13,409	6,639	0	0					34%
TOTAL LOT 2B	43,707	17,696	20,831	5,593	0					59%

Proposed

Composite 0.55 0.70

APPENDIX C

(PROPOSED DRAINAGE MAP)

