

Included Project Number  
on Cover Sheet

PPR-18-053

## *Dakota Springs Engineering*

31 N. Tejon St., Suite 500

Colorado : Restructured letter to more  
Ph closely follow guidelines of  
DCM vol. 1 and 2

February 13, 2019

El Paso County  
2880 International Cir.  
Colorado Springs, CO 80910

**RE: Lot 3, Beckett at Woodmen Hills, Filing No. 3  
El Paso County, CO  
Drainage Letter**

Please look at version one  
submittal redline comments.  
Same comments apply.  
Please provide a drainage  
report that complies with  
Criteria.

Falcon Properties, LLC is proposing a new retail building within Beckett at Woodmen Hills, Filing No. 3. The scope of the project will be to construct a new 11,042 sq. ft. retail building, parking, drive, and landscape areas on a pad-ready site.

This project will be on Lot 3, Beckett at Woodmen Hills, Filing No. 3, which is 1.073 acres. Of the 1.073 acres, 0.107 acres were previously developed per the guidelines of the *Final Drainage Report for Beckett at Woodmen Hills Filing No. 3*. The site is bound by Lot 4 and Tract A, Beckett at Woodmen Hills, Filing No. 3, an Access Drive (30.0 foot private R.O.W.), on the north and west, and McLaughlin Road (80' R.O.W.) on the east. Lot 3 is a vacant, pad-ready site with utilities stubbed to the site. The site currently slopes in a generally north to south direction at approximately 1.0% to 3.0%.

The project area lies within Basins 1, 3, and 4, as defined by the *Final Drainage Report for Beckett at Woodmen Hills Filing No. 3*, prepared by URS, May 2003 (El Paso County Job No. VR-03-005). Basin 4 is 2.34 acres and is assumed to be 100% impervious per said report. A copy of the drainage map from the *Final Drainage Report for Beckett at Woodmen Hills Filing No. 3* has been provided in Appendix A.

The proposed development on Lot 3 will consist of roughly 5 onsite basins as depicted by the drainage plan in Appendix B:

- Basin EX-1 is the portion of the existing access road within the property that is part of Basin 1 from Beckett at Woodmen Hills Filing No. 3 Drainage Report. No changes or construction are to be performed within this basin and it continues to flow as described in said Drainage Report. As this basin has no proposed construction within its boundary, it can be assumed that flows within this basin met the requirements dictated by the URS report at time of construction.
- Basin EX-2 is the portion of the existing access road within the property that is part of Basin 3 from Beckett at Woodmen Hills Filing No. 3 Drainage Report. No changes or construction are to be performed within this basin and it continues to flow as described in said Drainage Report. As this basin has no proposed construction within its boundary, it can be assumed that flows within this basin met the requirements dictated by the URS report at time of construction.
- Basin D-1 (0.78 acres, 81% impervious) consists of parking, drive, roof area for the proposed retail store and landscape areas that will drain to a proposed PLD pond that drains to an existing inlet on the northerly access road. Said inlet is conveyed via storm sewer to the existing Detention Pond 5 as described in the URS drainage report.  $Q_5=2.3$ ,  $Q_{100}=4.1$
- Basin D-2 (0.07 acres, 10% impervious) consists of landscape areas and will continue to drain to an existing inlet in the southeast corner of said Basin 4. Said inlet discharges directly into

the FEMA floodplain (design point 4 from Beckett at Woodmen Hills Filing No. 3 Drainage Report).  $Q_5=0.1$ ,  $Q_{100}=0.2$

- Basin D-3 (0.05 acres, 47% impervious) consists of landscape areas and the loading bay and will continue to drain to an existing inlet in the southeast corner of said Basin 4. Said inlet discharges directly into the FEMA floodplain (design point 4 from Beckett at Woodmen Hills Filing No. 3 Drainage Report).  $Q_5=0.1$ ,  $Q_{100}=0.2$
- The project site is in Basin 4 of the Beckett at Woodmen Hills Filing No. 3 Final Drainage Report; this Basin has calculated design flows of  $Q_5=6.0$  cfs and  $Q_{100}=13$  cfs. Our site is calculated to be approximately 42% of Basin 4 therefore projected runoff would be approximately  $Q_5=2.5$  cfs and  $Q_{100}=5.5$  cfs. Our calculated flows for the site are  $Q_5=2.5$  cfs and  $Q_{100}=4.5$  cfs resulting in storm flows equal to or below anticipated.

Proposed development on Lot 3 complies with the drainage concept outlined in the URS report. Proposed development on Lot 3 will total approximately 74% impervious, which is significantly less than the 100% impervious assumed in the URS report. As such, the proposed development is in conformance with El Paso County drainage criteria.

Sincerely,

Charles Cothorn, PE  
For and on behalf of  
Dakota Springs Engineering, LLC

Attachments (3):

- Appendix A - Selected Drainage Map from Beckett at Woodmen Hills Filing No. 3 Drainage Report
- Appendix B - Drainage Plan
- Appendix C - Calculations

Identify in the report where 5 and 100 year detention is provided for, is this facility constructed and accepts flow from this project.

Statement added regarding  
Regional Detention Pond #5.

## Appendix A

### Selected Drainage Map from Beckett at Woodmen Hills Filing No. 3 Drainage Report

#### Drainage Reports

##### 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.

\_\_\_\_\_  
[Name, P.E. # \_\_\_\_\_] Date \_\_\_\_\_

##### Owner/Developer's Statement:

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

\_\_\_\_\_  
[Name, Title] Date \_\_\_\_\_  
[Business Name]  
[Address]

##### El Paso County:

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

\_\_\_\_\_  
Jennifer Irvine, P.E. Date \_\_\_\_\_  
County Engineer / ECM Administrator

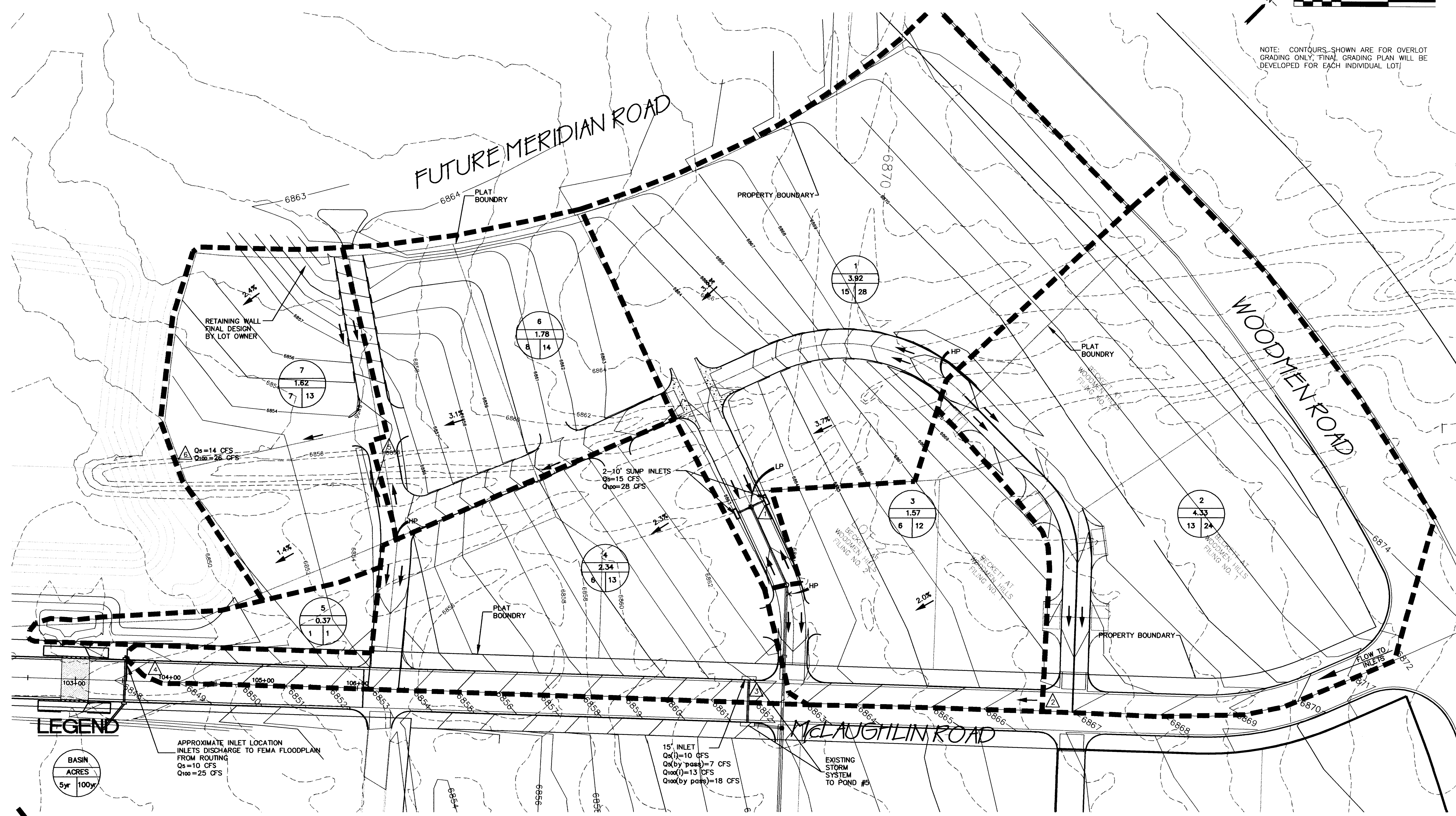
Conditions:

Signature sheet  
required.

Included signature sheet  
immediately following cover sheet



NOTE: CONTOURS SHOWN ARE FOR OVERLOT GRADING ONLY. FINAL GRADING PLAN WILL BE DEVELOPED FOR EACH INDIVIDUAL LOT.



**LEGEND**

- BASIN BOUNDARY
- RETAINING WALL
- DESIGN POINT

**BASIN ACRES**

Basin	5yr	100yr
1	3.92	15
2	4.33	13
3	1.57	6
4	2.34	8
5	0.37	1
6	1.78	8
7	1.62	7

**APPROXIMATE INLET LOCATION INLETS DISCHARGE TO FEMA FLOODPLAIN FROM ROUTING**

Basin	Qs	Q100
1	10 CFS	25 CFS
2	14 CFS	26 CFS
3	15 CFS	28 CFS
4	10 CFS	18 CFS
5	7 CFS	13 CFS
6	15 CFS	28 CFS
7	14 CFS	26 CFS

REVISIONS:			ENGINEER:	
NO.	DESCRIPTION	DATE	DESIGNED BY:	DATE:
			DC	2-1-01
			DRAWN BY:	DATE:
			DC	2-1-01
			CHECKED BY:	DATE:
			CKC	2-1-01

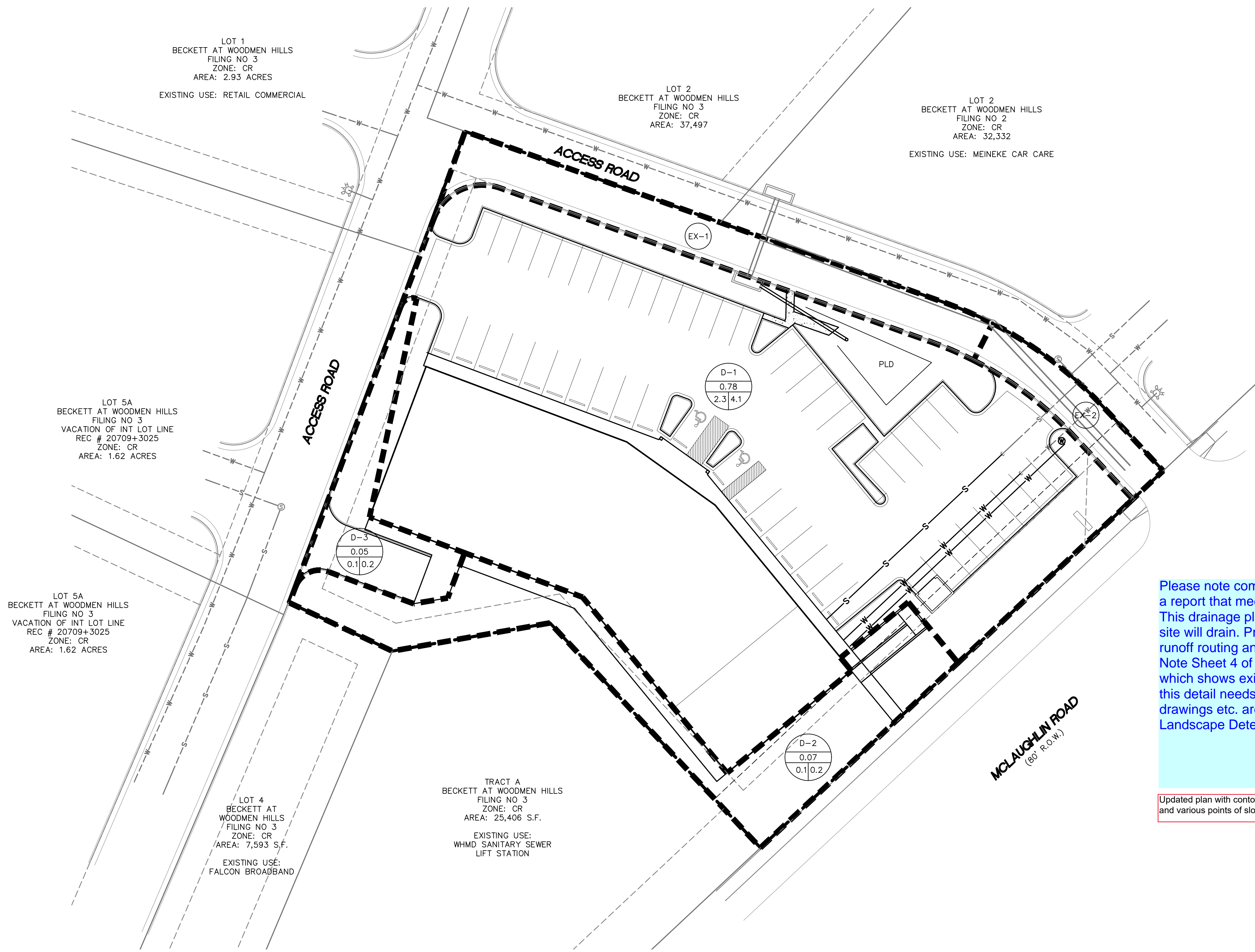
48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS 1-800-922-1987 CITY OF COLORADO SPRINGS DEPT. OF UTILITIES GAS, ELECTRIC, WATER AND WASTEWATER	<b>URS</b> 8415 EXPLORER DRIVE, SUITE 110 COLORADO SPRINGS, COLORADO PHONE: (719) 531-0001 FAX: (719) 531-0007
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PROJECT <b>BECKETT AT WOODMEN HILLS</b>	
SHEET TITLE <b>GRADING AND DRAINAGE PLAN</b>	
FROM	TO
JOB NO. <b>6742451</b>	SHEET <b>1</b> OF <b>1</b>

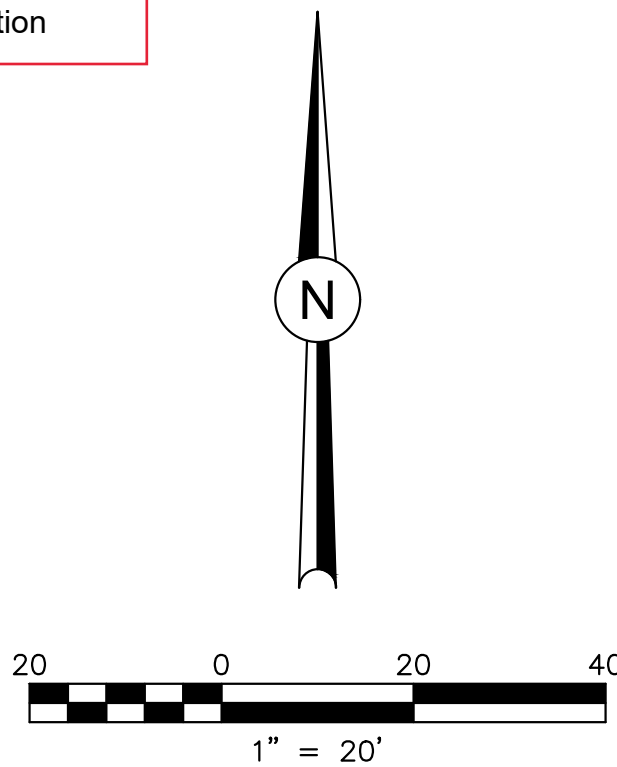
\\SPRINGS\GIS\PROJECTS\6742451\6742451.dwg 06/06/2003 09:44:42 PM HDT  
FILENAME: 6742451.DWG DATE:

**Appendix B**  
**Drainage Plan**





Please note comment version one review. Provide a report that meets criteria. This drainage plan/map needs to indicate how the site will drain. Provide contours. Indicate storm runoff routing and rates, etc. Note Sheet 4 of 6 of the site development plan, which shows existing and final contours. a plan of this detail needs to be provided. Calculations drawings etc. are needed to support the Porous Landscape Detention facility.



<b>DSE</b> <i>Dakota Springs Engineering</i>		31 N. TEJON, SUITE 500 COLORADO SPRINGS, CO 80903 P: (719) 227-7388 F: (719) 227-7392	
<b>J&amp;C</b> <i>Engineering</i>		48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS <b>1-800-922-1987</b> CITY OF COLORADO SPRINGS UTILITIES GAS, ELECTRIC, WATER AND WASTEWATER	
DESIGNED BY: <b>JJM</b> DATE: <b>1/8/19</b>			
DRAWN BY: <b>JJM</b> DATE: <b>1/8/19</b>			
CHECKED BY: _____ DATE: _____			
SCALE: <b>1"=20'</b>		STATION: FROM: _____ TO: _____	
<b>FALCON LANDING</b>		<b>PROPOSED BASIN MAP</b>	
REVISIONS:	DATE		
NO. DESCRIPTION			
PROJECT NUMBER: <b>01-13</b>			
SHEET <b>1</b> OF <b>1</b>			

## **Appendix C**

### **Calculations**

**Falcon Landing**  
**(RATIONAL METHOD Q=CIA)**

BASIN	TOTAL FLOWS			AREA TOTAL (Ac)	WEIGHTED			OVERLAND			CHANNEL				Tc TOTAL (min)	INTENSITY		COMMENTS
	Q(5) (c.f.s.)	Q(100) (c.f.s.)	CA(equiv.) 5 YR 100 YR		C(5)	C(100)	C(5)	Length (ft)	Slope (ft)	Tc (min)	Length (ft)	Slope (%)	Velocity (fps)	Tc (min)				
																	I(5) (in/hr)	
Proposed																		
D-1	2.3	4.1	0.63	0.78	0.81	0.81	0.35	117	2.0%	12.1	19	18.8%	1.9	0.2	12.2	3.7	6.5	
D-2	0.1	0.2	0.02	0.07	0.35	0.35	0.35	37	21.0%	3.1	0	0.0%	1.9	0.0	5.0	5.2	9.1	
D-3	0.1	0.2	0.02	0.05	0.47	0.47	0.35	59	33.3%	3.4	43	0.5%	1.9	0.4	5.0	5.2	9.1	