

Dakota Springs Engineering

31 N. Tejon St., Suite 500
Colorado Springs, CO 80903
Phone: 719-377-0244

PPR-18-053

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.

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]

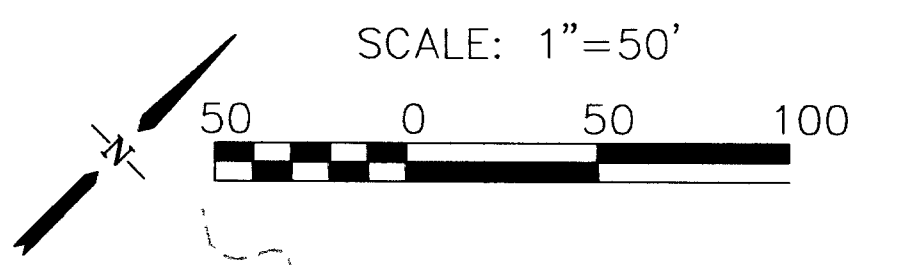
El Paso County:

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.

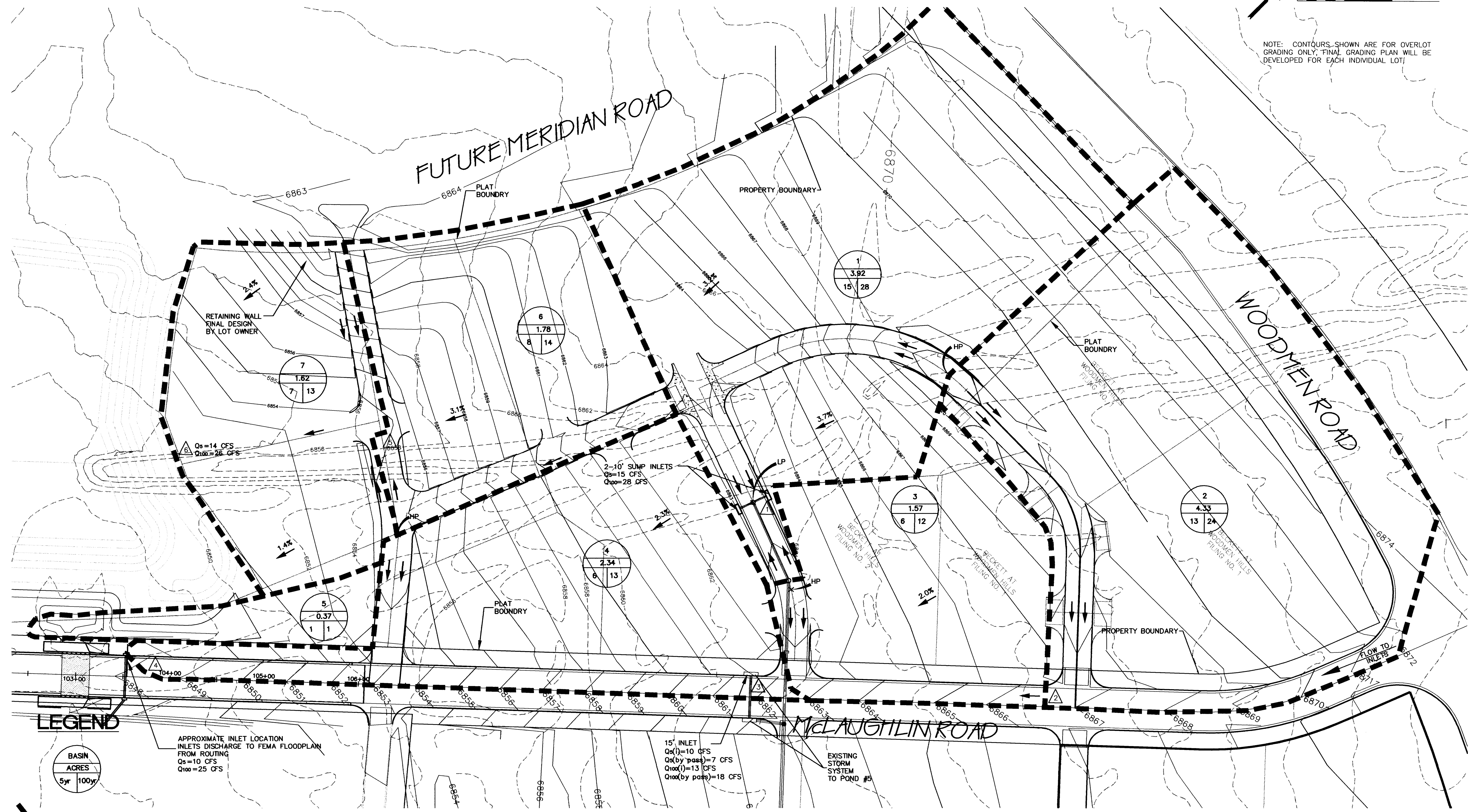
Jennifer Irvine, P.E.Date
County Engineer / ECM Administrator

Conditions:

Signature sheet
required.



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



LEGEND

- BASIN ACRES
5yr 100yr
- RETAINING WALL
- DESIGN POINT

APPROXIMATE INLET LOCATION INLETS DISCHARGE TO FEMA FLOODPLAIN FROM ROUTING
Q_s=10 CFS
Q₁₀₀=25 CFS

15" INLET
Q_s(I)=10 CFS
Q_s(by pass)=7 CFS
Q₁₀₀(I)=13 CFS
Q₁₀₀(by pass)=18 CFS

REVISIONS:

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
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| | | |
| | | |
| | | |

ENGINEER: DESIGNED BY: DC DATE: 2-1-01
 DRAWN BY: DC DATE: 2-1-01
 CHECKED BY: CKC DATE: 2-1-01

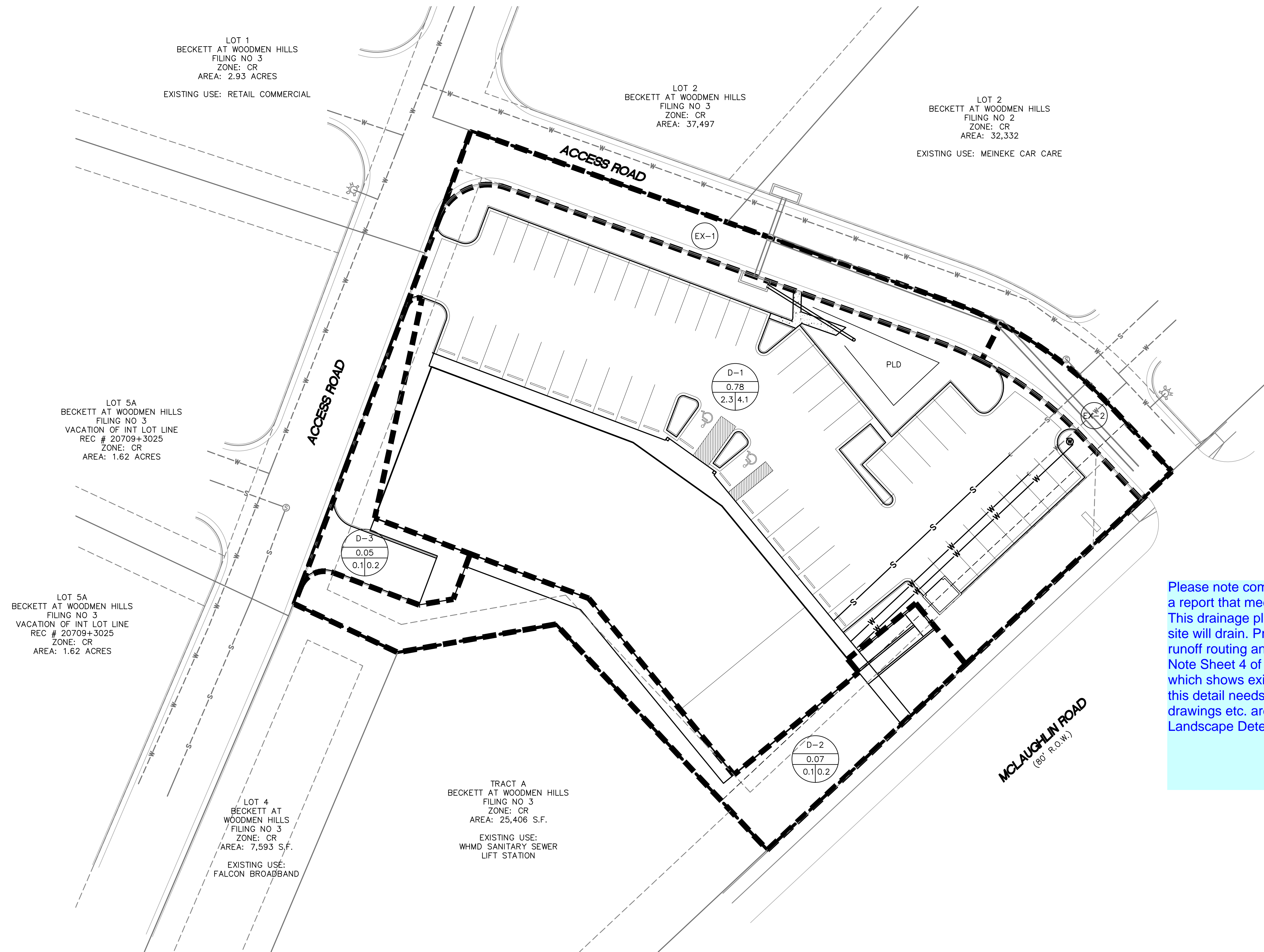
48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
 1-800-922-1987
 CITY OF COLORADO SPRINGS DEPT. OF UTILITIES
 GAS, ELECTRIC, WATER AND WASTEWATER

URS
 8415 EXPLORER DRIVE, SUITE 110 PHONE: (719) 531-0001
 COLORADO SPRINGS, COLORADO FAX: (719) 531-0007

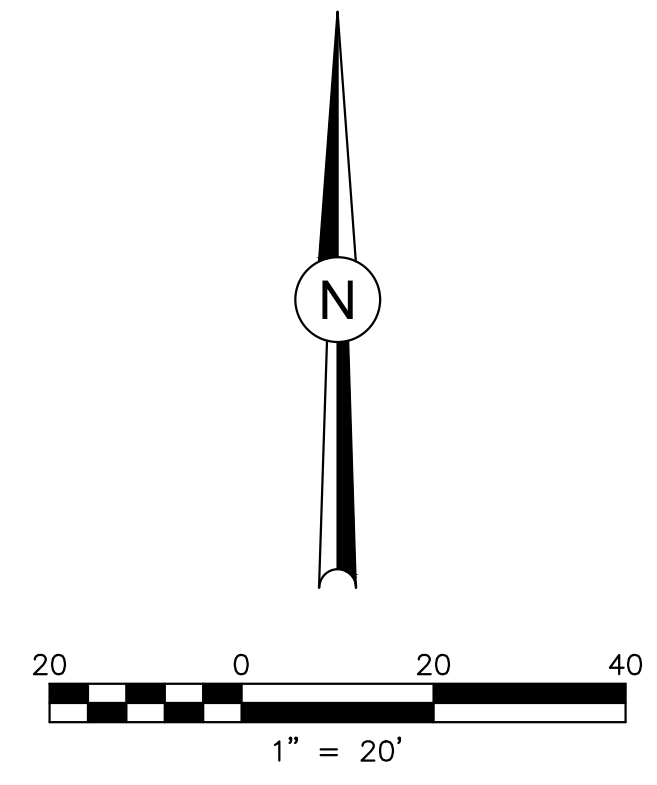
PROJECT **BECKETT AT WOODMEN HILLS**
 SHEET TITLE **GRADING AND DRAINAGE PLAN**
 FROM _____ TO _____
 JOB NO. **6742451** SHEET **1** OF **1**

FILENAME: C:\PROJECTS\6742451\6742451.dwg DATE: 02/01/2001 10:44:42 PM DWT

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.



LOT 1
BECKETT AT WOODMEN HILLS
FILING NO 3
ZONE: CR
AREA: 2.93 ACRES
EXISTING USE: RETAIL COMMERCIAL

LOT 2
BECKETT AT WOODMEN HILLS
FILING NO 3
ZONE: CR
AREA: 37,497

LOT 2
BECKETT AT WOODMEN HILLS
FILING NO 2
ZONE: CR
AREA: 32,332
EXISTING USE: MEINEKE CAR CARE

LOT 5A
BECKETT AT WOODMEN HILLS
FILING NO 3
VACATION OF INT LOT LINE
REC # 20709+3025
ZONE: CR
AREA: 1.62 ACRES

LOT 5A
BECKETT AT WOODMEN HILLS
FILING NO 3
VACATION OF INT LOT LINE
REC # 20709+3025
ZONE: CR
AREA: 1.62 ACRES

LOT 4
BECKETT AT WOODMEN HILLS
FILING NO 3
ZONE: CR
AREA: 7,593 S.F.
EXISTING USE:
FALCON BROADBAND

TRACT A
BECKETT AT WOODMEN HILLS
FILING NO 3
ZONE: CR
AREA: 25,406 S.F.
EXISTING USE:
WHMD SANITARY SEWER
LIFT STATION

31 N. TEJON, SUITE 500
WOODMEN HILLS, COLORADO SPRINGS, CO 80903
P: (719) 227-7388
F: (719) 227-7392

DSE *Dakota Springs Engineering*

48 HOURS BEFORE YOU DIG,
CALL UTILITY LOCATORS
1-800-922-1987
FOR COLORADO UTILITIES
CITY OF: GAS, ELECTRIC, WATER AND WASTEWATER

JCAD
CONSULTING INC.
J-CADCONSULTING.COM
719-377-0002

| | |
|----------------------------|------------------------|
| DESIGNED BY: JJM | DATE: 1/8/19 |
| DRAWN BY: JJM | DATE: 1/8/19 |
| CHECKED BY: | DATE: |

| |
|----------------------|
| SCALE: 1"=20' |
| HORIZ: |
| VERT: |
| STATION: |
| FROM: |
| TO: |

FALCON LANDING

PROPOSED BASIN MAP

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
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| | | |
| | | |
| | | |

PROJECT NUMBER:
01-13

SHEET **1** OF **1**

Appendix C

Calculations

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

| BASIN | TOTAL FLOWS | | AREA | | WEIGHTED | | OVERLAND | | | CHANNEL | | | Tc | | INTENSITY | | COMMENTS | | |
|-----------------|------------------|--------------------|--------------------|----------------------|---------------|------|----------|------|--------|----------------|---------------|-------------|----------------|--------------|-------------------|-------------|----------|----------------------|-----------------|
| | Q(5) (c.f.s.) | Q(100) (c.f.s.) | CA(equiv.) 5 YR | CA(equiv.) 100 YR | TOTAL (Ac) | C(5) | C(100) | C(5) | C(100) | Length (ft) | Slope (ft) | Tc (min) | Length (ft) | Slope (%) | Velocity (fps) | Tc (min) | | Tc TOTAL (min) | I(5) (in/hr) |
| Proposed | | | | | | | | | | | | | | | | | | | |
| D-1 | 2.3 | 4.1 | 0.63 | 0.63 | 0.78 | 0.81 | 0.81 | 0.35 | 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 | 0.02 | 0.07 | 0.35 | 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 | 0.02 | 0.05 | 0.47 | 0.47 | 0.35 | 0.47 | 59 | 33.3% | 3.4 | 43 | 0.5% | 1.9 | 0.4 | 5.0 | 5.2 | 9.1 |