

3980 Walker Road Site Development Plan Drainage Letter

Subdivision: Walker Reserve (Lot 3)

Prepared For: Valens Capital, LLC

Prepared By: Brett Louk, PE

Date Prepared: March 2024

Revise to final
drainage report. Refer
to Chapter 4 for
guidelines

SMH
CONSULTANTS

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STATEMENT SHEET

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 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.

Brett Louk, P.E. # _____

Date

Developer's Statement:

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

Donna Shell, Title:

Date

Owner: Valens Capital, LLC
Address: 3980 Walker Road
Colorado Springs, CO 80908

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.

Joshua Palmer, P.E.
County Engineer

Date

Conditions:

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1. GENERAL DESCRIPTION

The approximately 28.5-acre property is currently platted and zoned RR5. The site is located in the West Quarter of Section 11, Township 11 South, Range 66 West of the Sixth Principal Meridian in El Paso County, Colorado. Otherwise known as Lot 3, Walker Reserve, County of El Paso, State of Colorado. The site is bordered by Walker Road on the west and south and residential property to the north, south, and east, and open farm ground to the west. The residential property to the east is unplatted. The residential property to the south is platted as Walker Reserve. The open farm ground to the west is unplatted. The residential property to the north is unplatted. The existing site consists of a house, three barns, paved driveways and parking, and asphalt millings driveway. The existing vegetation on the site consists of native vegetation and trees. With this Site Plan, approximately 0.96 acres will be disturbed for a new modular building and asphalt millings parking lot. This letter only addresses the area of the property where the proposed improvements are being constructed and does not address the remainder of the property that is being left untouched.

Include PCD Fil No. and include relevant information from the previous report in the appendix.

2. EXISTING DRAINAGE CONDITIONS

The existing site is located in the West Cherry Creek drainage basin. Runoff from the subject site drains to West Cherry Creek via overland flow. The total site was previously studied as part of the Preliminary/Final Drainage Report for Walker Reserve, completed by Associated Design Professionals, Inc., and approved on July 23, 2019.

Existing Offsite Drainage

There is some offsite drainage, from Spruce Hill to the east, that enters the subject property. This offsite runoff will be directed around the proposed modular building via a swale between the modular building and proposed retaining wall.

Please include and label this drainage swale on the drainage map.

Existing Onsite Drainage

Existing runoff from the area where the proposed modular building, and associated parking, are to be constructed generally flows the northwest/west and into West Cherry Creek via overland flow. This area currently consists of native vegetation and trees.

3. PROPOSED DRAINAGE CONDITIONS

Proposed Offsite Drainage

The existing offsite drainage, from the east, will still be allowed to enter the site. This runoff will be directed around the proposed modular building via a swale located between the modular building and proposed retaining wall.

Proposed Onsite Drainage

Include area and flow in this paragraph

there is no threshold for not providing detention. Per ECM, historical runoff values shall be maintained. Increase in flows will need to be mitigated and/or justification and analysis for not providing detention shall be provided.

The proposed runoff from the proposed modular building continue to follow historical flow patterns and flow to the northwest/west into west Cherry Creek. Due to the increase in impervious area, runoff in this area will increase slightly. However, since the total area of disturbance is less than 1-acre, water quality treatment and detention are not required for the site.

As the runoff from the proposed improvements flows towards West Cherry Creek, it will travel approximately 550-feet through native vegetation before entering the creek. The existing soils on the site are classified as Hydrologic Soils Group B, which have a moderate infiltration rate. Because of the soil characteristics, and flow path to the creek, the increased flows from the proposed improvements will be attenuated via infiltration and longer flow times prior to entering the creek.

How will the flow times be increased?

4. HYDROLOGIC CALCULATIONS

The following tables show the existing and proposed hydrologic calculations for the area on the site where the proposed improvements are to be constructed.

Time of Concentration Calculations													
Sub-Basin Data			Time of Concentration Estimate										Final t_c
Basin	Area (ac)	C5	Initial/Overland Time (t_i)			Travel Time (t_t)						Comp.	
			Length (ft)	Slope	t_i (min)	Length (ft)	Slope	Land Type	C_v	Velocity (ft/sec)	t_t (min)		
EX.	2.08	0.14	300	0.093	14.51	198	0.050	SP	7	1.57	2.11	16.61	16.61
Prop.	2.08	0.34	300	0.093	11.39	198	0.050	PV	20	4.47	0.74	12.12	12.12

Runoff Calculations							
Basin	C5	C100	A	I_5	I_{100}	Q_5	Q_{100}
Exist.	0.14	0.40	2.08	3.37	5.65	0.98	4.70
Prop.	0.34	0.54	2.08	3.84	6.45	2.72	7.24

provide comparison of existing and proposed flows at each of the design points.

Please include a design point and show on the map where the flow leaves the developed area and where the flow leaves the property

This space intentionally

please provide calculation as to how these runoff coefficients were determined. Please be aware that the county has a policy that asphalt millings are 100% impervious.

5. SITE MAP



REFERENCES

El Paso County Assessor (2020). *El Paso County Assessor's Real Property Search*. Retrieved from <https://www.elpasoco.com/search-el-paso-county/>

El Paso County Clerk and Recorder (2001-2020). *El Paso County Clerk and Recorder Web Access*. Retrieved from publicrecordsearch.elpasoco.com/

El Paso County (2018). *Drainage Criteria Manual, Volumes 1 & 2*. [Drainage Criteria Manual | El Paso County, CO | Municode Library](#)

El Paso County (2020). *Engineering Criteria Manual*. [Engineering Criteria Manual | El Paso County, CO | Municode Library](#)

El Paso County (2023). *Land Development Code*. [Land Development Code | El Paso County, CO | Municode Library](#)

APPENDIX

3980 WALKER ROAD

DRAINAGE LETTER
EL PASO COUNTY, COLORADO

DRAINAGE MAP

LEGEND

--- DRAINAGE BOUNDARY

Please include in legend and differentiate the colors
- Contours (Proposed and existing)
- Paved areas and types (asphalt and millings)
- Impervious areas
- Flow arrows/flow paths

Show where the flow leaves the parcel

Include as design point

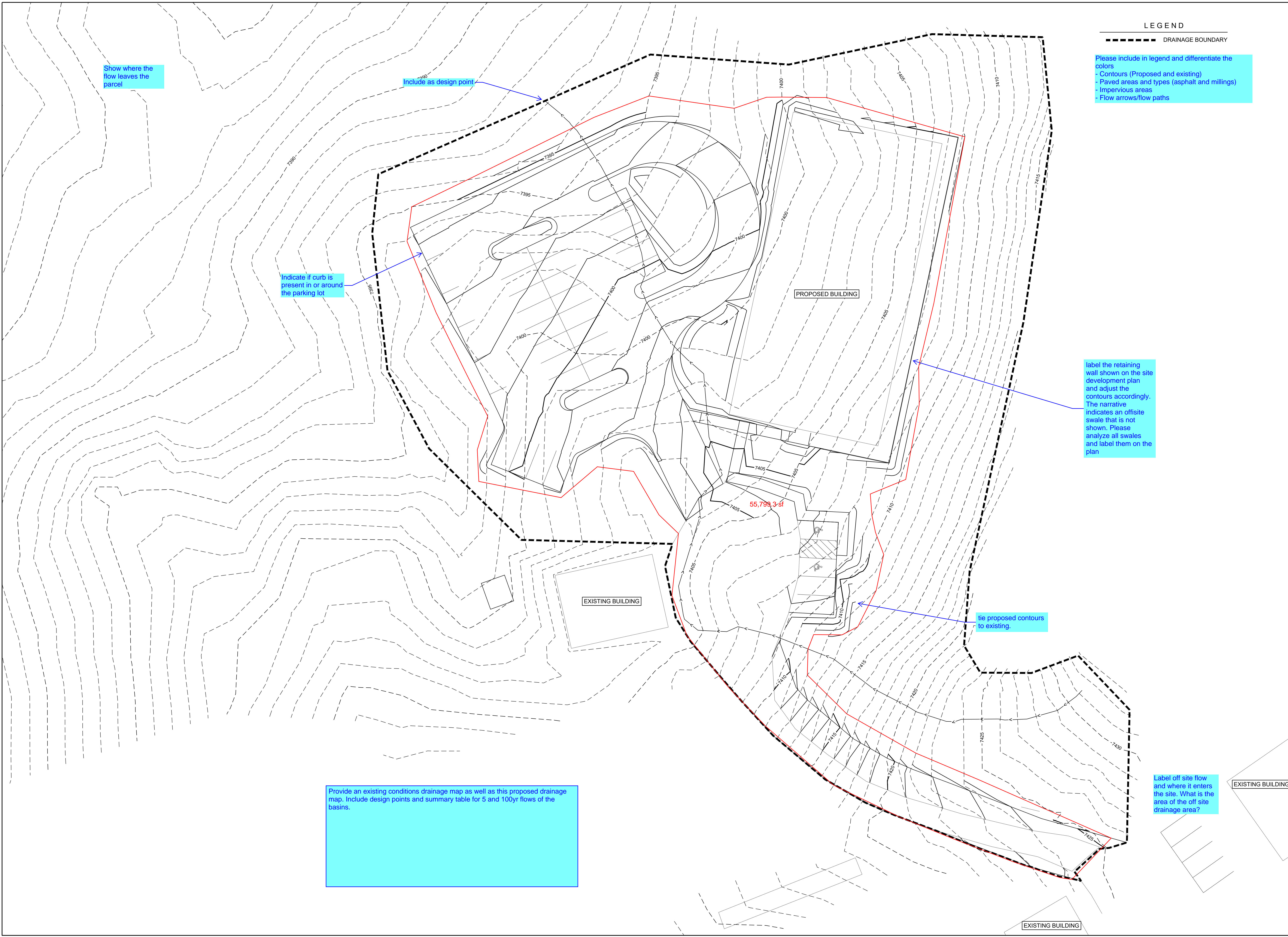
Indicate if curb is present in or around the parking lot

label the retaining wall shown on the site development plan and adjust the contours accordingly. The narrative indicates an offsite swale that is not shown. Please analyze all swales and label them on the plan

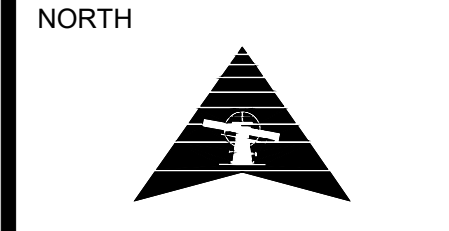
tie proposed contours to existing.

Label off site flow and where it enters the site. What is the area of the off site drainage area?

Provide an existing conditions drainage map as well as this proposed drainage map. Include design points and summary table for 5 and 100yr flows of the basins.



REVISION DATE	REVISION DESCRIPTION (DESCRIPTION)
00/00/00	



SCALE: 1" = 20'

PROJECT #: 2310-0398
CHECKED BY: BML
DRAWN BY: EDM

DATE: 3/22/2024

SHEET # **1**

TOTAL SHEETS 1