Drainage Letter

for:

RCH VALLEY

875 Valley Street,
Colorado Springs, Colorado

Prepared for:

HHI Corporation
875 Valley Street
Colorado Springs, CO 80915
Phone (323) 926-0054

Prepared by:

HCF Engineering
8184 South Highland Drive,
Suite C-7, Sandy Utah, 84093
Phone (385) 707-3140

Dated:
August 22nd, 2024

HCF

CERTIFICATION STATEMENTS

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 established criteria established by the city/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.

8/22/24

Daniel Hales — Date
Registered Professional Engineer
State of Colorado No. 62176

Developer's Statement:

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

HHI Corporation

Business Name

By: ~~Greg S. Crosby~~ Digitally signed by Greg S. Crosby DN: C=US, E=greg@hhicorp.com, O=HHI Corporation, OU=Vice President, CN=Greg S. Crosby Date: 2024.07.19 16:43:55-06'00'

Title: _____

Address: 875 Valley Street
Colorado Springs, CO 80915

EL PASO COUNTY ONLY:

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.

Gilbert LaForce, P.E. Digitally signed by Gilbert LaForce, P.E. Reason: Authorized signatory as County Engineer designee Date: 2024.09.18 15:15:33-06'00' — 9/18/2024

County Engineer/ECM Administrator — Date

Conditions:

I. GENERAL LOCATION AND DRAINAGE DESIGN DESCRIPTION

A. Purpose

The purpose of this letter is to convey the drainage plan for the property site in accordance with the Drainage Criteria Manual County of El Paso, Colorado section 4.5.

B. Property Description

The proposed project site is located in Section 7, Township 14 South, Range 65 West of the 6th Principal Meridian, County of El Paso, State of Colorado. This site was previously named Lot 2, Kay Tee Subdivision Filing No. 2A. The site can be further described as being bounded by Valley Street to the west and neighboring commercial business on all other sides. The site has been developed with a two-story building that occupies the center of the property and is surrounded by an asphalt parking lot.

C. Existing Drainage Characteristics

The 2.3-acre site currently routes all water by curb and gutter directly to Valley Street and on to the south with no onsite water containment. The total area contains an estimated 0.7 acres of impervious area and 1.7 acres of natural area. Water flows from the east side of the property with an initial steep grade that quickly flattens and continues to drain to the southwest corner of the property.

D. Proposed Drainage Characteristics

The proposed site will maintain the same general use as the existing site. Additional parking lot area will be added to the site and raise the impervious area from 0.7 acres to 1 acre. The drainage plan for this site will be significantly improved by adding three natural landscape pervious receiving areas for onsite water runoff and the appropriate water routing for the new parking lot areas. No new private storm drain lines are being routed from the building to the street.

A 100-YR and 5-YR drainage analysis was done using the rational method. The analysis included differentiating C values associated with the different land types present on the site. The analysis appropriately sizes the three natural landscape pervious receiving areas. See Appendix A for the proposed drainage plan and Appendix B for the rational method calculations.

II. CONCLUSIONS

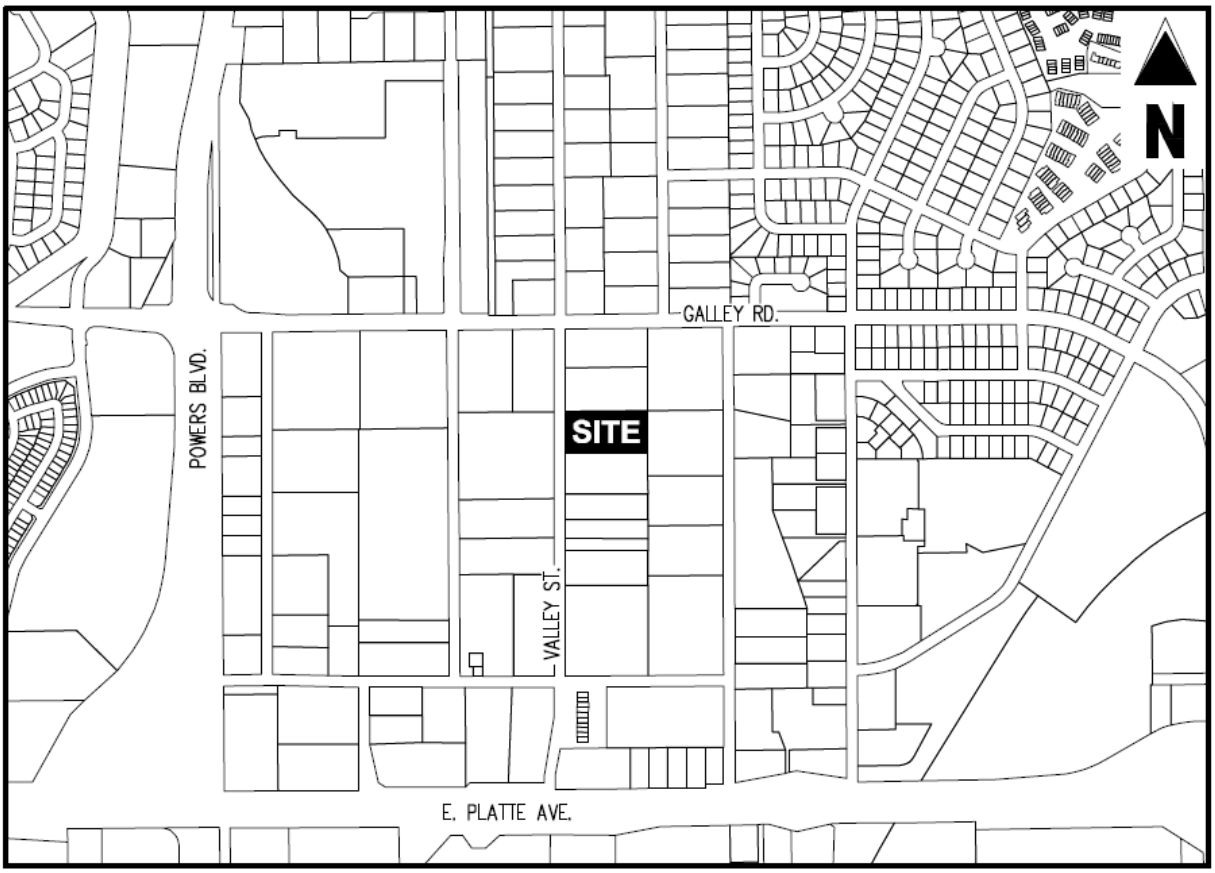
The proposed drainage plan for the site has no negative drainage effects within the property or the adjacent or downstream properties. The methodologies and drainage criteria used in the overall drainage design meet the current county DCM requirements.

FIGURES

1) VICINITY MAP FIGURE
2) PROPOSED DRAINAGE PLAN

VICINITY MAP

1" = 1000'



SANITARY MH
RIM: 6245.76
N INV (12"PVC): 6232.75
S INV (12"PVC): 6232.72

INLET W/ MH
RIM: 6244.45
E INV (36"RCP): 6238.39
NW INV (36"RCP): 6238.30

INLET W/ MH
RIM: 6244.47
E INV (36"RCP): 6238.82
W INV (36"RCP): 6238.67

CURB OPENING PER DETAIL: S0-3-25

RECEIVING PERVIOUS AREA

20' DRAINAGE EASEMENT

20' DRAINAGE EASEMENT

NEW FENCE ALONG PROPERTY LINES (TYP.)

EX. STORM DRAIN

30.01' ADDITIONAL PARKING

CURB OPENING

EX. SINGLE PHASE TRANSFORMER PROTECT IN PLACE

EPC TYPE "A" CURB

VALLEY STREET
60' PUBLIC RIGHT OF WAY
PLAT BOOK 0-2 PAGE

R10'

25' TYP.

10'

BOLLARD (TYP)

48" MANHOLE

EX. GAS

RELOCATE EQUIPMENT

6.42'

EXISTING ACCESS

31.0'

EX. DOWNSPOUT (TYP)

50.00' SETBACK

6' SIDEWALK (TYP)

12" RCP

875 VALLEY ST.
2 STORY OFFICE BUILDING
FINISHED FLOOR = 6243.84

9.0'

21.58'

18.00'

APPROX. LOCATION OF EX. SS LAT

LOT 2
KAY TEE SUBDIVISION NO. 2A
2.29 ACRES
(99,587 SQ. FT.)

BASIN BOUNDARY

30.0'

LIGHT

RECEIVING PERVIOUS AREA

CURB OPENING PER DETAIL: S0-3-25

EX. EDGE OF ASPHALT

EX. GREASE TRAPS

9'

4" SS LAT

DEMOLISH EX. CURB & GUTTER

83.1'

25'

EXISTING ACCESS

24.99'

40.00'

10.00' TYP

18.00'

25' TYP.

EX. FENCE

SEE SHEET C-DT1

SANITARY MH
RIM: 6240.21
N INV (12"PVC): 6229.13
S INV (12"PVC): 6229.07

70.7'

EPC TYPE "A" CURB

EPC TYPE "A" CURB

EDGE OF ASPHALT

RECEIVING PERVIOUS AREA

CURB OPENING PER DETAIL: S0-3-25

825 VALLEY ST.

LOT 3
KAY TEE SUBDIVISION NO. 2A
OWNER: HARD WAY ENTERPRISES INC.

224.34'(R)
BEARINGS)

PCD FILE # COM246

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- EXISTING STORM DRAIN
- FINAL GRADE
- PROPOSED GAS LINE
- PROPOSED STORM DRAIN LINE
- SLOPE ARROW
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING UNDERGROUND POWER
- EXISTING FIBER OPTIC LINE
- EXISTING FENCE
- WATER VALVE
- SD CLEANOUT
- SD GRATE
- LIGHT

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 20 ft.

8184 SOUTH HIGHLAND DRIVE
SUITE C-7
SANDY, UT 84093
385-557-1500

HCF

COLORADO LICENSED
JOSEPH DANIEL HAN
62176
PROFESSIONAL ENGINEER

PROJECT NAME:
RCH VALLEY
875 VALLEY STREET

DRAINAGE PLAN

CLIENT NAME:
HHI CORPORATION

DRAWING TITLE:

PLOT DATE:
AUGUST 22, 2024

DRAWN BY / REVIEWED BY:
SM/JDH

REVISIONS:

PRINTED FOR:
FOR USE

SHEET :
C-3

PROJECT # 07263

APPENDIX B

HYDRAULIC CALCULATIONS:
1) RATIONAL CALCULATIONS – PROPOSED CONDITIONS

Project	RCH Valley (875 Valley Street)
Calculated By:	Sierra Stewart Hanson
Checked By:	Daniel Hales
Date:	7/19/2024
Revision	0

100- Year Rational Drainage Analysis (Q = CIA)

Existing Conditions			
Site Data			
Total Area	2.3	acres	
Impervious Area	0.7	acres	
Natural Area	1.6	acres	
Intensity	1.7	in/hr	
Interval	2	hr	
Return Period	100	year	
C Impervious	0.95		29%
C Natural	0.55		71%
C Composite	0.7		
Calculated Values			
Q Composite	2.6	cfs	
Total Volume	18,721	ft^3	

Proposed Conditions			
Site Data			
Total Area	2.3	acres	
Impervious Area	1.0	acres	
Natural Area	1.3	acres	
Intensity	1.7	in/hr	
Interval	2	hr	
Return Period	100	year	
C Impervious	0.95		43%
C Natural	0.55		57%
C Composite	0.7		
Calculated Values			
Q Composite	2.8	cfs	
Total Volume	20,307	ft^3	

Existing to Proposed Comparison		
ΔQ	0.2	cfs
ΔVolume	1,585	ft^3

Required Retention			
North	745	ft^3	47%
Middle	95	ft^3	6%
South	745	ft^3	47%

5-Year Rational Drainage Analysis (Q = CIA)

Existing Conditions		
Site Data		
Total Area	2.3	acres
Impervious Area	0.7	acres
Natural Area	1.6	acres
Intensity	0.79	in/hr
Interval	2	hr
Return Period	5	years
C Impervious	0.9	
C Natural	0.3	
C Composite	0.5	
Calculated Values		
Q Composite	0.9	cfs
Total Volume	6,182	ft^3

Proposed Conditions		
Site Data		
Total Area	2.3	acres
Impervious Area	1.0	acres
Natural Area	1.3	acres
Intensity	0.79	in/hr
Interval	2	hr
Return Period	5	years
C Impervious	0.9	
C Natural	0.3	
C Composite	0.6	
Calculated Values		
Q Composite	1.0	cfs
Total Volume	7,287	ft^3

Existing to Proposed Comparison		
ΔQ	0.2	cfs
ΔVolume	1,105	ft^3

Required Retention			
North	718	ft^3	65%
Middle	55	ft^3	5%
South	332	ft^3	30%

Intensity is based on NOAA Atlas 14
C values taken from:
- DRAINAGE CRITERIA MANUAL VOLUME 1 OF EL PASO COUNTY
SECTION II HYDROLOGY
Table 5-1 Parks and Cemeteries (natural), Paved areas (Impervious) HSG A/B Soil