DRAINAGE LETTER REPORT

for

TENDER CARE VETERINARY CENTER BUILDING ADDITION
LOT 3, BENT GRASS EAST COMMERCIAL FILING NO. 2

Prepared for:

Hammers Construction Inc.
1411 Woolsey Heights
Colorado Springs, CO 80915

August 6, 2018

Prepared by:

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JPS Project No. 071403

Add PCD
File No.
PPR1839

TENDER CARE VETERINARY CENTER – BUILDING ADDITION
LOT 3, BENT GRASS EAST COMMERCIAL FILING NO. 2
DRAINAGE REPORT STATEMENTS

1. 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 for the drainage basin. I accept responsibility for liability caused by negligent acts, errors or omissions on my part in preparing this report:

_____
John P. Schwab Colorado P.E. No. 29891

2. Developer's Statement:

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

By:

_____ _____
Printed Name: Date
Title:

3. El Paso County Statement:

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

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

Conditions:

Trey Lane does not exist. This road is Meridian Park Drive. Please adjust throughout report accordingly.

I. INTRODUCTION

A. Property Location and Description

Owners of Tender Care Veterinary Center (TCVC) are proposing to construct a building addition on the north side of their existing veterinary clinic building on Lot 3, Bent Grass East Commercial Filing No. 2. The project will include expanding the existing 0.69-acre lot to the north and west, enlarging the lot to 0.99 acres. The property is located on the west side of Trey Lane, south of Bent Grass Meadows Drive. The property is zoned Planned Unit Development (PUD).

The property has already been replatted to 0.98 acres.

The existing veterinary clinic site is surrounded by commercial development on the north, east, and west sides, and a subdivision detention pond will adjoin the south boundary of the property. Trey Lane adjoins the east boundary of Lot 3, and Trey Lane extends to a cul-de-sac located immediately southeast of Lot 3. An existing subdivision detention pond is located on Tract A adjacent to the south boundary of Lot 3. Tract B, which is planned for future commercial development, adjoins the north and west boundaries of Lot 3.

The project consists of a proposed 4,171 square foot addition on the north side of the existing 4,203 square-foot veterinary clinic building with, associated parking and site improvements. Access is provided by the existing driveway entrance onto Trey Lane at the east boundary of Lot 3. The expanded parking areas on the south and west sides of the building will be paved with asphalt and concrete.

Mention the proposed secondary access.

B. Scope

In support of the El Paso County Site Development Plan submittal for this project, this report is intended to meet the requirements of a site-specific "Letter Type" drainage report in accordance with El Paso County drainage criteria. This report will provide a summary of site drainage issues impacting the proposed development. The report will analyze impacts from upstream drainage patterns, site-specific developed drainage patterns, and impacts on downstream facilities. This report is based on the guidelines and criteria presented in the City of Colorado Springs and El Paso County "Drainage Criteria Manual."

The parking lot is also being expanded on the east side of the building with a secondary access point created.

C. References

City of Colorado Springs & El Paso County "Drainage Criteria Manual," revised October 12, 1994, Volumes 1 and 2.

Classic Consulting Engineers & Surveyors, LLC, "Final Drainage Report for Bent Grass Commercial Filing No. 2," July, 2014.

JPS Engineering, Inc., "Drainage Letter Report for Tender Care Veterinary Clinic," September 30, 2014.

II. EXISTING / PROPOSED DRAINAGE CONDITIONS

As shown on the enclosed Drainage Plan (Figure D1), the parcel has been delineated as two on-site drainage basins flowing southerly to the detention pond on the south side of Lot 3. The subdivision detention pond outlet structure will convey detained flows easterly to the existing drainage channel along the west side of Meridian Road.

Drainage planning for this lot has been addressed in the "Final Drainage Report for Bent Grass East Commercial Filing No. 2" by Classic Consulting Engineers & Surveyors (CCES) and the "Drainage Letter Report for Tender Care Veterinary Clinic" dated September 20, 2014 by JPS Engineering.

The subject property, Lot 3, was identified as part of Basins L and M1 in the subdivision drainage report, and drainage from this lot has been planned to sheet flow in a southerly direction into the subdivision detention pond located on Tract A. The subdivision drainage report by CCES identified developed peak flows of Q_5 = 18 cfs and Q_{100} = 35 cfs for Basin L, and describes drainage from this future commercial area as flowing to Detention Pond #2 located at the south boundary of the subdivision. The CCES report identified peak flows of Q_5 = 6 cfs and Q_{100} = 11 cfs for Basin M-1, and describes flow from this basin as draining into Trey Lane.

As noted in the subdivision drainage report by CCES, on-site soils are comprised of Columbine gravelly sandy loam. These soils are classified as hydrologic soils group A.

The existing site topography slopes downward to the south with a grade of approximately 1-4 percent. For consistency with the subdivision drainage report, the west side of Lot 3 has been identified as Basin L-3 and the east side of Lot 3 has been identified as Basin M1-3. The subdivision drainage report has accounted for acceptance of fully developed flow from Lot 3 in the design of the subdivision detention pond identified as "Pond 2."

Surface runoff from the developed site will continue to follow historic drainage patterns towards the south property boundary. The proposed building pad will be graded with protective slopes to provide positive drainage away from the face of the building. A high point will be graded on the north side of the new building, and drainage swales will be constructed along the north face of the building to convey developed flows around the sides of the building. Curb and gutter will be installed along the outer perimeter of the new parking areas to convey surface drainage to the proposed Detention Pond 2 immediately south of this lot.

While a protective drainage swale will be constructed to divert flow from the north side of the TCVC building and drain around the building to the detention pond on the south side of the property, the enclosed Drainage Plan includes a note stating that future development of the adjacent commercial area in Tract B to the north shall route developed flows around Lot 3 into the detention pond.

Developed peak flows at Design Point #L-3 are calculated as Q_5 = 3.2 cfs and Q_{100} = 6.2 cfs, and developed peak flows at Design Point #M1-3 are calculated as Q_5 = 0.9 cfs and Q_{100} = 1.8 cfs. Stormwater quality mitigation and detention will be provided by routing developed flows through the subdivision detention pond south of the property.

The subdivision drainage report assumed full commercial development of this site, and the proposed site development plan is entirely consistent with the approved subdivision drainage plan.

Hydrologic calculations for the parcel are detailed in the attached spreadsheet (Appendix A), and peak flows are identified on Figure D1. The contractor will need to implement standard best management practices for erosion control during construction.

III. FLOODPLAIN IMPACTS

This site is located beyond the limits of any FEMA 100-year floodplain boundaries as shown in the FEMA floodplain map for this area, FIRM Panel No. 08041C0575F, dated March 17, 1997.

IV. DRAINAGE BASIN FEES

This site is located within the Falcon Drainage Basin. No public drainage improvements are required for development of this site. Required drainage fees have been paid during the subdivision platting process, so there are no applicable drainage fees required with the Site Development Plan.

V. SUMMARY

The developed drainage patterns associated with the proposed Tender Care Veterinary Center building addition will remain consistent with historic conditions and the overall drainage plan for this commercial subdivision. Developed flows from the site will continue to follow historic drainage patterns, flowing to the subdivision detention pond adjacent to the south boundary of this site.

The existing subdivision detention pond will mitigate developed drainage impacts and meet the County's stormwater quality requirements for this site. Proper maintenance of the subdivision detention pond, in conjunction with proper erosion control practices, will ensure that this developed site has no significant adverse impact on downstream or surrounding areas.

APPENDIX A

DRAINAGE CALCULATIONS & FIGURES

Table 6-6. Runoff Coefficients for Rational Method
(Source: UDFCD 2001)

Land Use or Surface Characteristics	Percent Impervious	Runoff Coefficients											
		2-year		5-year		10-year		25-year		50-year		100-year	
		HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D
Business													
Commercial Areas	95	0.79	0.80	0.81	0.82	0.83	0.84	0.85	0.87	0.87	0.88	0.88	0.89
Neighborhood Areas	70	0.45	0.49	0.49	0.53	0.53	0.57	0.58	0.62	0.60	0.65	0.62	0.68
Residential													
1/8 Acre or less	65	0.41	0.45	0.45	0.49	0.49	0.54	0.54	0.59	0.57	0.62	0.59	0.65
1/4 Acre	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
1/3 Acre	30	0.18	0.22	0.25	0.30	0.32	0.38	0.39	0.47	0.43	0.52	0.47	0.57
1/2 Acre	25	0.15	0.20	0.22	0.28	0.30	0.36	0.37	0.46	0.41	0.51	0.46	0.56
1 Acre	20	0.12	0.17	0.20	0.26	0.27	0.34	0.35	0.44	0.40	0.50	0.44	0.55
Industrial													
Light Areas	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Heavy Areas	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Parks and Cemeteries	7	0.05	0.09	0.12	0.19	0.20	0.29	0.30	0.40	0.34	0.46	0.39	0.52
Playgrounds	13	0.07	0.13	0.16	0.23	0.24	0.31	0.32	0.42	0.37	0.48	0.41	0.54
Railroad Yard Areas	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
Undeveloped Areas													
Historic Flow Analysis--Greenbelts, Agriculture	2	0.03	0.05	0.09	0.16	0.17	0.26	0.26	0.38	0.31	0.45	0.36	0.51
Pasture/Meadow	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Forest	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Exposed Rock	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Offsite Flow Analysis (when landuse is undefined)	45	0.26	0.31	0.32	0.37	0.38	0.44	0.44	0.51	0.48	0.55	0.51	0.59
Streets													
Paved	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Gravel	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Drive and Walks	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Roofs	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Lawns	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50

3.2 Time of Concentration

One of the basic assumptions underlying the Rational Method is that runoff is a function of the average rainfall rate during the time required for water to flow from the hydraulically most remote part of the drainage area under consideration to the design point. However, in practice, the time of concentration can be an empirical value that results in reasonable and acceptable peak flow calculations.

For urban areas, the time of concentration (t_c) consists of an initial time or overland flow time (t_i) plus the travel time (t_t) in the storm sewer, paved gutter, roadside drainage ditch, or drainage channel. For non-urban areas, the time of concentration consists of an overland flow time (t_i) plus the time of travel in a concentrated form, such as a swale or drainageway. The travel portion (t_t) of the time of concentration can be estimated from the hydraulic properties of the storm sewer, gutter, swale, ditch, or drainageway. Initial time, on the other hand, will vary with surface slope, depression storage, surface cover, antecedent rainfall, and infiltration capacity of the soil, as well as distance of surface flow. The time of concentration is represented by Equation 6-7 for both urban and non-urban areas.

$$t_c = t_i + t_t \quad \text{(Eq. 6-7)}$$

Where:

t_c = time of concentration (min)

t_i = overland (initial) flow time (min)

t_t = travel time in the ditch, channel, gutter, storm sewer, etc. (min)

3.2.1 Overland (Initial) Flow Time

The overland flow time, t_i, may be calculated using Equation 6-8.

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L}}{S^{0.33}} \quad \text{(Eq. 6-8)}$$

Where:

t_i = overland (initial) flow time (min)
C_5 = runoff coefficient for 5-year frequency (see Table 6-6)
L = length of overland flow (300 ft maximum for non-urban land uses, 100 ft maximum for urban land uses)
S = average basin slope (ft/ft)

Note that in some urban watersheds, the overland flow time may be very small because flows quickly concentrate and channelize.

3.2.2 Travel Time

For catchments with overland and channelized flow, the time of concentration needs to be considered in combination with the travel time, t_t, which is calculated using the hydraulic properties of the swale, ditch, or channel. For preliminary work, the overland travel time, t_t, can be estimated with the help of Figure 6-25 or Equation 6-9 (Guo 1999).

$$V = C_v S_w^{0.5} \quad \text{(Eq. 6-9)}$$

Where:

V = velocity (ft/s)

C_v = conveyance coefficient (from Table 6-7)

S_w = watercourse slope (ft/ft)

Table 6-7. Conveyance Coefficient, C_v

Type of Land Surface	C_v
Heavy meadow	2.5
Tillage/field	5
Riprap (not buried)*	6.5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

* For buried riprap, select C_v value based on type of vegetative cover.

The travel time is calculated by dividing the flow distance (in feet) by the velocity calculated using Equation 6-9 and converting units to minutes.

The time of concentration (t_c) is then the sum of the overland flow time (t_i) and the travel time (t_t) per Equation 6-7.

3.2.3 First Design Point Time of Concentration in Urban Catchments

Using this procedure, the time of concentration at the first design point (typically the first inlet in the system) in an urbanized catchment should not exceed the time of concentration calculated using Equation 6-10. The first design point is defined as the point where runoff first enters the storm sewer system.

$$t_c = \frac{L}{180} + 10 \qquad \text{(Eq. 6-10)}$$

Where:

t_c = maximum time of concentration at the first design point in an urban watershed (min)

L = waterway length (ft)

Equation 6-10 was developed using the rainfall-runoff data collected in the Denver region and, in essence, represents regional "calibration" of the Rational Method. Normally, Equation 6-10 will result in a lesser time of concentration at the first design point and will govern in an urbanized watershed. For subsequent design points, the time of concentration is calculated by accumulating the travel times in downstream drainageway reaches.

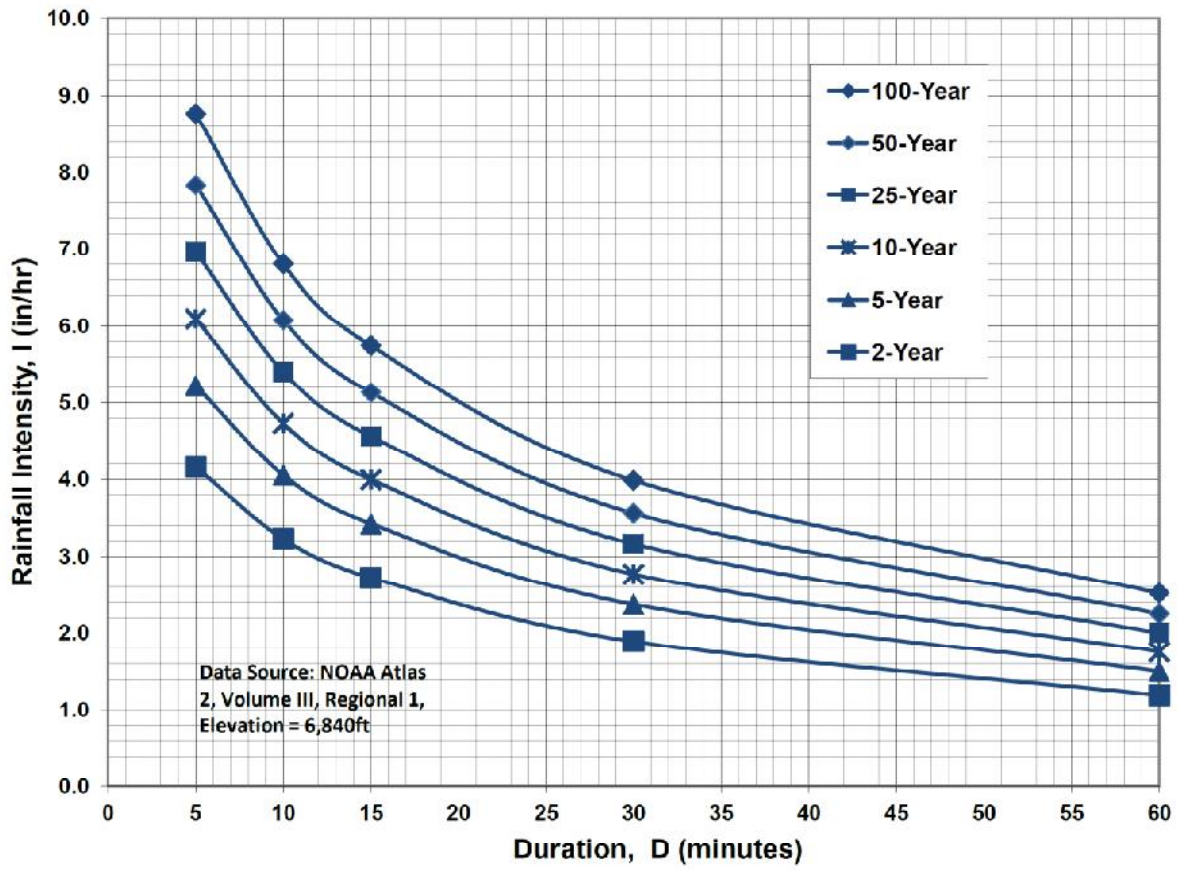
3.2.4 Minimum Time of Concentration

If the calculations result in a t_c of less than 10 minutes for undeveloped conditions, it is recommended that a minimum value of 10 minutes be used. The minimum t_c for urbanized areas is 5 minutes.

3.2.5 Post-Development Time of Concentration

As Equation 6-8 indicates, the time of concentration is a function of the 5-year runoff coefficient for a drainage basin. Typically, higher levels of imperviousness (higher 5-year runoff coefficients) correspond to shorter times of concentration, and lower levels of imperviousness correspond to longer times of

Figure 6-5. Colorado Springs Rainfall Intensity Duration Frequency



IDF Equations

$I_{100} = -2.52 \ln(D) + 12.735$

$I_{50} = -2.25 \ln(D) + 11.375$

$I_{25} = -2.00 \ln(D) + 10.111$

$I_{10} = -1.75 \ln(D) + 8.847$

$I_{5} = -1.50 \ln(D) + 7.583$

$I_{2} = -1.19 \ln(D) + 6.035$

Note: Values calculated by equations may not precisely duplicate values read from figure.

JOB NAME: *BENT GRASS EAST COMMERCIAL FIL. 2*
JOB NUMBER: *2177.53*
DATE: *07/01/14*
CALCULATED BY: *MAW*

FINAL DRAINAGE REPORT ~ BASIN RUNOFF COEFFICIENT SUMMARY

BASIN	TOTAL AREA (AC)	IMPERVIOUS AREA / STREETS			LANDSCAPE/UNDEVELOPED AREAS			WEIGHTED		WEIGHTED CA	
		AREA (AC)	C(5)	C(100)	AREA (AC)	C(5)	C(100)	C(5)	C(100)	CA(5)	CA(100)
OS-1	24.20	0.00	0.27	0.37	24.20	0.25	0.35	0.25	0.35	**6.05**	**8.47**
OS-2	1.60	1.50	0.90	0.95	0.10	0.25	0.35	0.86	0.91	**1.38**	**1.46**
OS-3	1.70	1.40	0.90	0.95	0.30	0.25	0.35	0.79	0.84	**1.34**	**1.44**
H3	1.54	1.54	0.55	0.65	0.00	0.25	0.35	0.55	0.65	**0.85**	**1.00**
H4	0.42	0.42	0.55	0.65	0.00	0.25	0.35	0.55	0.65	**0.23**	**0.27**
I1	3.00	3.00	0.55	0.65	0.00	0.25	0.35	0.55	0.65	**1.65**	**1.95**
I2	1.70	1.70	0.55	0.65	0.00	0.25	0.35	0.55	0.65	**0.94**	**1.11**
J	1.64	1.64	0.40	0.55	0.00	0.25	0.35	0.40	0.55	**0.66**	**0.90**
K	1.00	1.00	0.40	0.55	0.00	0.25	0.35	0.40	0.55	**0.40**	**0.55**
L	5.90	5.20	0.85	0.90	0.70	0.25	0.35	0.78	0.83	**4.60**	**4.93**
M1	1.56	1.56	0.85	0.90	0.00	0.25	0.35	0.85	0.90	**1.33**	**1.40**
M2	0.44	0.44	0.85	0.90	0.00	0.25	0.35	0.85	0.90	**0.37**	**0.40**
N	1.32	1.32	0.85	0.90	0.00	0.25	0.35	0.85	0.90	**1.12**	**1.19**
O	0.58	0.00	0.85	0.90	0.58	0.25	0.35	0.25	0.35	**0.15**	**0.20**

It appears that Basin L-3 has higher weighted C values than what is shown in the final drainage report. Please provide a narrative in the letter discussing this.

TENDER CARE VETERINARY CENTER - BUILDING ADDITION
RATIONAL METHOD

DEVELOPED FLOWS

					Overland Flow			Channel flow										
BASIN	DESIGN POINT	AREA (AC)	C 5-YEAR[2]	C 100-YEAR[2]	LENGTH (FT)	SLOPE (FT/FT)	Tco[3] (MIN)	CHANNEL LENGTH (FT)	CONVEYANCE COEFFICIENT C	SLOPE (FT/FT)	SCS[4] VELOCITY (FT/S)	Tt[5] (MIN)	TOTAL Tc[6] (MIN)	TOTAL Tc[6] (MIN)	INTENSITY[7] 5-YR (IN/HR)	INTENSITY[7] 100-YR (IN/HR)	PEAK FLOW Q5[1] (CFS)	PEAK FLOW Q100[1] (CFS)
L-3	L-3	0.77	0.810	0.880	10	0.01	1.7	290	20.00	0.01	2.00	2.4	4.1	5.0	5.10	9.09	3.18	6.16
M1-3	M1-3	0.22	0.810	0.880	10	0.01	1.7	180	20.00	0.01	2.00	1.5	3.2	5.0	5.10	9.09	0.91	1.76

1) RATIONAL METHOD: Q (FLOW, CFS) = C (RUNOFF COEFFICIENT) * I (INTENSITY, IN/HR) * A (TRIBUTARY AREA, AC)
2) WEIGHTED AVERAGE C VALUES FOR COMBINED BASINS
3) OVERLAND FLOW Tco = (0.395*(1.1-RUNOFF COEFFICIENT)*(OVERLAND FLOW LENGTH^(0.5)/(SLOPE^(0.333))
4) SCS VELOCITY = C * (SLOPE(FT/FT)^0.5)
C = 2.5 FOR HEAVY MEADOW
C = 5 FOR TILLAGE/FIELD
C = 7 FOR SHORT PASTURE AND LAWNS
C = 10 FOR NEARLY BARE GROUND
C = 15 FOR GRASSED WATERWAY
C = 20 FOR PAVED AREAS AND SHALLOW PAVED SWALES

5) CHANNEL TRAVEL TIME = L/V (WHEN CHANNEL VELOCITY IS KNOWN)
6) Tc = Tco + Tt
*** IF TOTAL TIME OF CONCENTRATION IS LESS THAN 5 MINUTES, THEN 5 MINUTES IS USED
7) INTENSITY BASED ON I-D-F CURVE IN EL PASO COUNTY DRAINAGE CRITERIA MANUAL, REVISED BY CITY OF COLORADO SPRINGS 1/1/03
I = (A * P) / B + Td)^C
5-YEAR VALUES: A = 26.65; P1 = 1.5 IN (1-HOUR DEPTH); B = 10.0; C = 0.76
100-YEAR VALUES: A = 26.65; P = 2.67 IN (1-HOUR DEPTH); B = 10.0; C = 0.76

NOTE: FUTURE DEVELOPMENT OF TRACT B SHALL ROUTE DEVELOPED FLOWS AROUND LOT 3 INTO DETENTION POND

TRACT B
FUTURE
COMMERCIAL

LAND FIRST INC
8090 TREY LANE
PARCEL NO: 53010-01-023
ZONE: CS
USE: VACANT

L
5.9
AC

MI
1.56
AC

N 90°00'00" E 252.00'

TREY LANE

PROPOSED
BUILDING ADDITION
4,171 SF

LOT 3
(0.99 AC.)
EXISTING
VET CENTER
FF=6931.5

EXISTING
BUILDING
4,171 SF

PROPOSED
ASPHALT
PARKING
AREA

N 00°00'00" E
171.66'

MI-3
0.22
AC

MI-3

S 00°00'00" E
171.05'

MERIDIAN PARK DRIVE
80'-0" R.O.W.

L-3
0.77
AC

EXISTING
ASPHALT
PARKING AREA

L-3
193.40'
N 90°00'00" W

SF SILT FENCE

EXISTING 2' CURB OPENINGS
W/RIPRAP APRONS

PROPOSED 6'
CROSSPAN

EXISTING 6'
CROSSPAN

EXISTING STORM INLETS
& STORM SEWER

Δ = 63°36'44"
L = 38.86'
R = 35.00'

Δ = 08°40'54"
L = 8.33'
R = 55.00'

LAND FIRST INC
8090 TREY LANE
PARCEL NO: 53010-01-019
ZONE: CS
USE: VACANT

LAND FIRST INC
8090 TREY LANE
PARCEL NO: 53010-01-020
ZONE: CS
USE: VACANT

LAND FIRST INC
8090 TREY LANE
PARCEL NO: 53010-01-022
ZONE: CS
USE: VACANT

EXISTING SUBDIVISION
DETENTION POND #2
(MAX. 100-YR WSL=6926.0)

LEGEND

- FEMA 100-YEAR FLOODWAY
- FEMA 100-YR FLOODPLAIN
- FILING LIMITS
- MAJOR BASIN BOUNDARY
- 6520 EXISTING CONTOUR
- FLOWLINE
- PROPOSED FLOW DIRECTION ARROW
- 1 DESIGN POINT
- A / 0.86 AC BASIN DESIGNATION / BASIN AREA (ACRES)

SUMMARY HYDROLOGY TABLE

DESIGN POINT	Q5 (CFS)	Q100 (CFS)
L-3	3.2	6.2
MI-3	0.9	1.8

N

20' 0 20' 40'

ORIGINAL SCALE: 1"=20' (24"x36" SHEET)
CONTOUR INTERVAL: 2'

TENDER CARE VETERINARY CENTER

DEVELOPED
DRAINAGE PLAN

JPS ENGINEERING
19 E. Willamette Ave.
Colorado Springs, CO
80903
PH: 719-477-9429
FAX: 719-471-0766
www.jpsengr.com

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

No.	REVISION	BY	DATE

HORZ. SCALE: 1"=20'	DRAWN: BJJ
VERT. SCALE: N/A	DESIGNED: JPS
SURVEYED: CLASSIC	CHECKED: JPS
CREATED: 7/31/14	LAST MODIFIED: 8/06/18
PROJECT NO: 071403	MODIFIED BY: BJJ

SHEET: D1

C:\jpsprojects\071403.tcvc\dwg\civil\Bldg-Addition\D1.dwg Aug 06, 2018 - 11:28am