

# DRAINAGE LETTER

**5819 PALMER PARK BLVD.**  
PART OF LOT 1, POWERS CENTER, FILING NO. 3

September 27, 2018

Prepared for

John Nelson

Oliver E. Watts, Consulting Engineer, Inc.  
Colorado Springs, Colorado

**OLIVER E. WATTS, PE-LS**  
OLIVER E. WATTS, CONSULTING ENGINEER, INC.  
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**Celebrating over 39 years in business**

September 27, 2018

El Paso County D.O.T.  
2880 International Circle  
Suite 110  
Colorado Springs, CO 80910

ATTN: Elizabeth Nijkamp


SUBJECT: Drainage Letter  
5810 Palmer Park Blvd.

Gentlemen

Transmitted herewith for your review and approval is the drainage letter for 5819 Palmer Park Boulevard, which is part of Lot 1, Powers Center Filing No. 3. It is proposed to construct a Short Stop drive-in restaurant in an existing paved parking lot.

There will be no change in the approved runoff as a result of this subdivision. Please contact our office if we may provide any further information.

Oliver E. Watts, Consulting Engineer, Inc.

BY:   
Oliver E. Watts, President

Encl:  
Drainage Letter 2 pages  
FEMA Flood Panel 08041C0752 F, March 17, 1997  
Computations, 4 pages  
Backup Information, 6 Pages  
Soils Map and Interpretation sheet  
Drainage Plan, Dwg No. 18-5237-02

**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 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.

Oliver E. Watts, Consulting Engineer, Inc.

\_\_\_\_\_  
Oliver E. Watts      Colo. PE-LS No. 9853

**2. OWNERS / DEVELOPER'S STATEMENT:**

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

John Nelson, Architect

By: \_\_\_\_\_  
1626 E. Pikes Peak Ave.  
Colorado Springs, CO 80909

**3. EL PASO COUNTY:**

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

\_\_\_\_\_  
Elizabeth Nijkamp      \_\_\_\_\_  
For the County Engineer      date

Conditions:

Revise to Jennifer Irvine, County Engineer/ECM Administrator

#### **4. LOCATION AND DESCRIPTION:**

5819 Palmer Boulevard is located East of Powers Boulevard between Palmer Park Boulevard and Omaha Boulevard, as shown on the enclosed drainage plan. It is proposed that a Short Stop drive-in restaurant will be placed in a portion of the existing parking lot in Lot 1, Powers Center filing No. 3. The total lot will occupy just less than one-half acre, counting the parking required for the restaurant in the existing parking lot. The restaurant itself will occupy less than 3000 feet of the lot.

#### **5. FLOOD PLAIN STATEMENT:**

This subdivision is not within the limits of a designated flood plain or flood hazard area, as identified on FEMA panel no. 08041C0751 F, and 08041C0752 F, dated March 17, 1997, copies of which are enclosed for reference.

**Provide the reference of the approved report. Is this proposed site still in conformance with the approved report?**

#### **6. DESCRIPTION OF RUNOFF:**

As stated above, this Site was previously platted as Powers Center Filing no. 3. At that time a drainage report was submitted and approved by El Paso County, Colorado. The portion of the parking lot to be occupied by the restaurant is totally asphalt paved at this time. The construction of the drive in could arguably have less impervious cover than that of the existing parking, although for the sake of computations the impervious ratio is assumed to be 80% in keeping with the existing zoning. The entire lot area associated with the construction occupies 0.469 acre on an approximate slope of four percent. The runoff from the entire area is computed to be 2.0 cfs / 3.6 cfs, not including potential inflows from the north.

A sand filter basin is proposed to mitigate the placement of the restaurant, as required by County regulations. Based on the 2951 square foot footprint of the total disturbed area, the required storage is 90 cubic feet. The basin will be placed in an existing parking island in the southwest corner of the site, and is proposed be constructed of vertical masonry walls with the sand filter floor of 32 square feet, as shown in the enclosed computations. A curb outlet will route the runoff into the basin.

There will be no increase in runoff or damage to downstream structures as a result of this construction.

#### **7. FEES:**

This Site has been previously platted and there is no increase in the amount of impervious cover; therefore fees are not due.

**Include the evaluation of the 4-step process in the drainage letter per ECM section I.7.2**

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Federal Emergency Management Agency



MAP NUMBER  
08041C0751 F  
EFFECTIVE DATE:  
MARCH 17, 1997

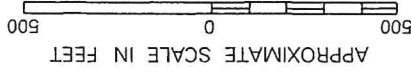
1"=500'  
FEMA MAP PANEL  
6819 PALMER PARK BLVD.

CONTAINS:  
COMMUNITY NUMBER PANEL SUFFIX  
EL PASO COUNTY, CITY OF 060090 0751 F  
UNINCORPORATED AREAS 060050 0751 F

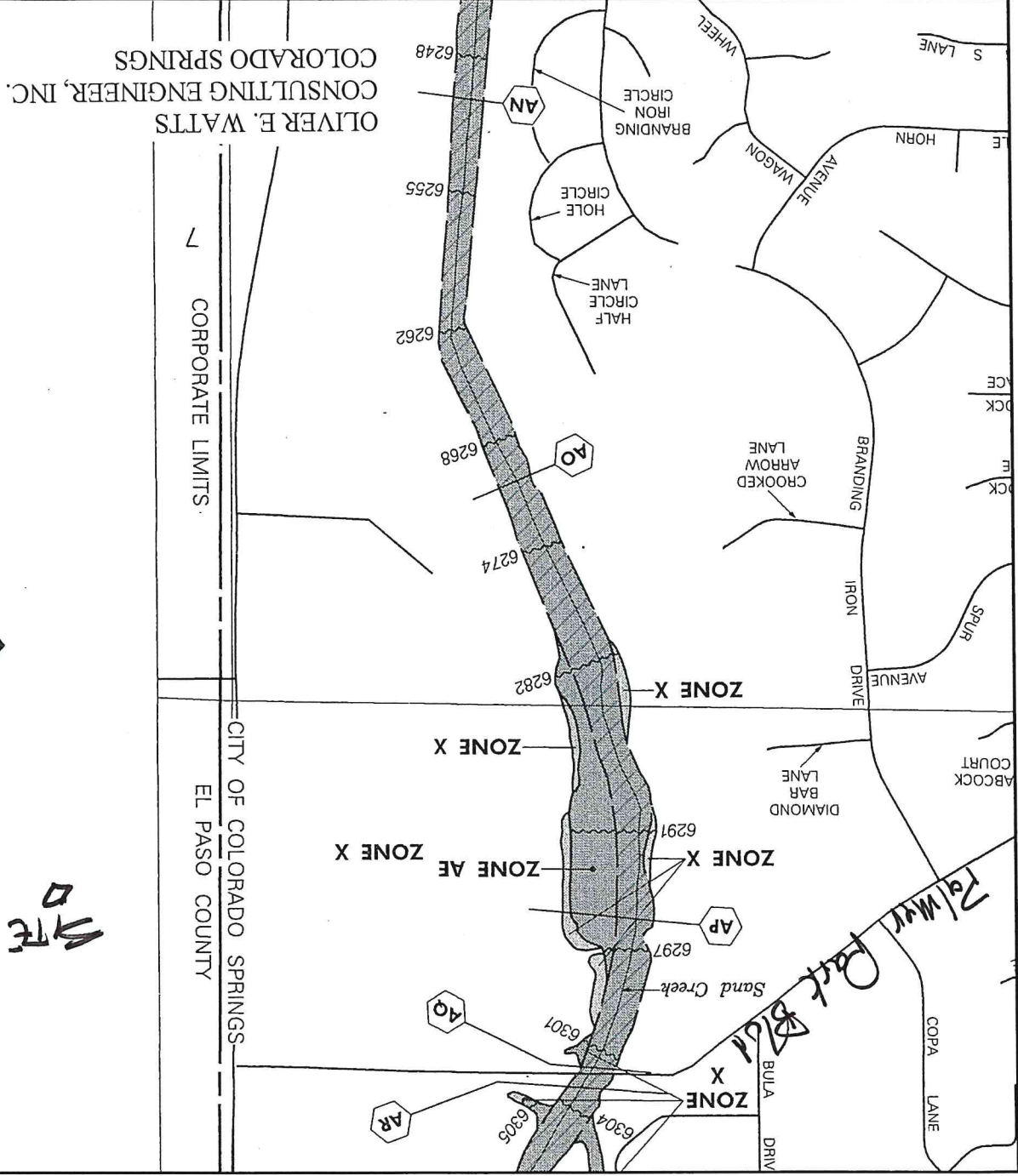
PANEL 751 OF 1300  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

**FIRM**  
FLOOD INSURANCE RATE MAP  
EL PASO COUNTY,  
COLORADO AND  
INCORPORATED AREAS

NATIONAL FLOOD INSURANCE PROGRAM



*Site*



OLIVER E. WATTS  
CONSULTING ENGINEER, INC.  
COLORADO SPRINGS

CORPORATE LIMITS

CITY OF COLORADO SPRINGS  
EL PASO COUNTY

EL PASO COUNTY  
UNINCORPORATED AREAS  
080059

APPROXIMATE SCALE IN FEET  
500 0 500



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND

INCORPORATED AREAS

PANEL 752 OF 1300

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:  
COMMUNITY NUMBER PANEL SUFFIX

UNINCORPORATED AREAS 080059 0752 F

EL PASO COUNTY, COLORADO 080059 0752 F

UNINCORPORATED AREAS 080059 0752 F

6819 PALMER PARK BLVD.  
FEMA MAP PANEL  
1"=500'

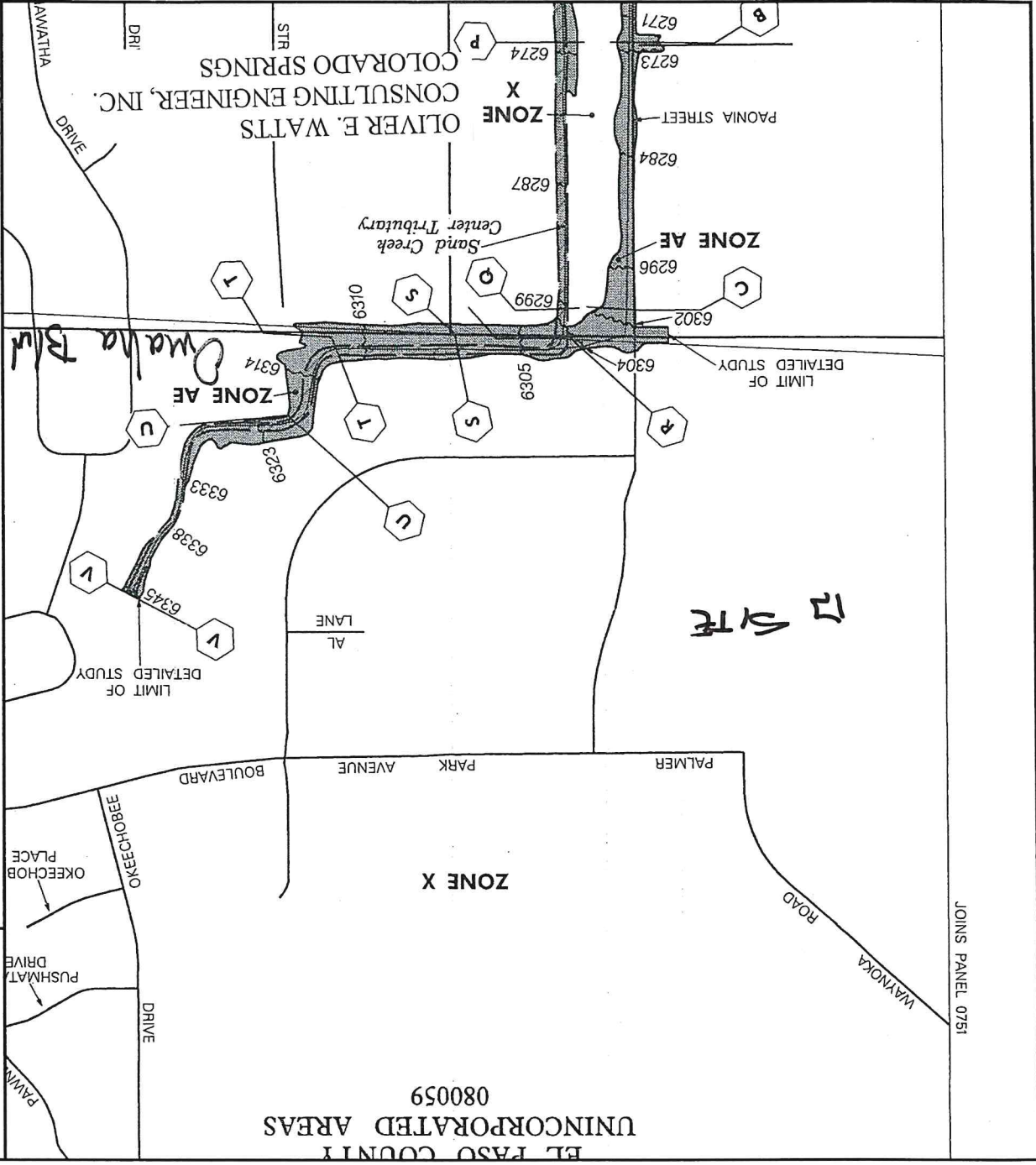
MAP NUMBER  
08041C0752 F

EFFECTIVE DATE:  
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Federal Emergency Management Agency

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## Design Procedure Form: Sand Filter (SF)

UD-BMP (Version 3.06, November 2016)

Sheet 1 of 2

3/4

**Designer:** O.E. Watts  
**Company:** OEW Cons. Engr. Inc  
**Date:** September 27, 2018  
**Project:** 5819 Palmer Park  
**Location:** \_\_\_\_\_

<p>1. Basin Storage Volume</p> <p>A) Effective Imperviousness of Tributary Area, <math>I_a</math> (100% if all paved and roofed areas upstream of sand filter)</p> <p>B) Tributary Area's Imperviousness Ratio (<math>i = I_a/100</math>)</p> <p>C) Water Quality Capture Volume (WQCV) Based on 12-hour Drain Time <math>WQCV = 0.8 * (0.91 * i^2 - 1.19 * i^2 + 0.78 * i)</math></p> <p>D) Contributing Watershed Area (including sand filter area)</p> <p>E) Water Quality Capture Volume (WQCV) Design Volume <math>V_{wqcv} = WQCV / 12 * Area</math></p> <p>F) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm</p> <p>G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume</p> <p>H) User Input of Water Quality Capture Volume (WQCV) Design Volume (Only if a different WQCV Design Volume is desired)</p>	<p> <math>I_a =</math> <u>80.0</u> %  <math>i =</math> <u>0.800</u>                  WQCV = <u>0.26</u> watershed inches                  Area = <u>2,951</u> sq ft  <math>V_{wqcv} =</math> <u>65</u> cu ft  <math>d_6 =</math> <u>0.60</u> in  <math>V_{wqcv\ OTHER} =</math> <u>90</u> cu ft  <math>V_{wqcv\ USER} =</math> _____ cu ft             </p>
<p>2. Basin Geometry</p> <p>A) WQCV Depth</p> <p>B) Sand Filter Side Slopes (Horizontal distance per unit vertical, 4:1 or flatter preferred). Use "0" if sand filter has vertical walls.</p> <p>C) Minimum Filter Area (Flat Surface Area)</p> <p>D) Actual Filter Area</p> <p>E) Volume Provided</p>	<p> <math>D_{wqcv} =</math> <u>1.0</u> ft  <math>Z =</math> <u>0.00</u> ft / ft  <math>A_{Min} =</math> <u>30</u> sq ft  <math>A_{Actual} =</math> <u>32.07</u> sq ft  <math>V_f =</math> _____ cu ft             </p>
<p>3. Filter Material</p>	<p>                 Choose One  <input checked="" type="radio"/> 18" CDOT Class B or C Filter Material  <input type="radio"/> Other (Explain): _____             </p>
<p>4. Underdrain System</p> <p>A) Are underdrains provided?</p> <p>B) Underdrain system orifice diameter for 12 hour drain time</p> <p>i) Distance From Lowest Elevation of the Storage Volume to the Center of the Orifice</p> <p>ii) Volume to Drain in 12 Hours</p> <p>iii) Orifice Diameter, 3/8" Minimum</p>	<p>                 Choose One  <input type="radio"/> YES  <input checked="" type="radio"/> NO             </p> <p> <math>y =</math> <u>N/A</u> ft  <math>Vol_{12} =</math> <u>N/A</u> cu ft  <math>D_o =</math> <u>N/A</u> in             </p>

It does not appear that sufficient volume has been provided based on the size of the sand filter basin. Revise the sand filter basin accordingly and indicate the volume provided.

Design Procedure Form: Sand Filter (SF)

Sheet 2 of 2

Designer: O.E. Watts  
Company: OEW Cons. Engr. Inc  
Date: September 27, 2018  
Project: 5819 Palmer Park  
Location:

4/4

5. Impermeable Geomembrane Liner and Geotextile Separator Fabric

A) Is an impermeable liner provided due to proximity of structures or groundwater contamination?

Choose One  
 YES  NO

6-7. Inlet / Outlet Works

A) Describe the type of energy dissipation at inlet points and means of conveying flows in excess of the WCCV through the outlet

Notes:

**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	0.87	0.87	0.87	0.87	0.88	0.88	0.89	0.89
Neighborhood Areas	70	0.45	0.49	0.49	0.53	0.53	0.57	0.58	0.62	0.62	0.62	0.62	0.62	0.62	0.65	0.65	0.68	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	0.59	0.59	0.59	0.59	0.59	0.62	0.62	0.59	0.65
1/4 Acre	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.46	0.54	0.54	0.50	0.58
1/3 Acre	30	0.18	0.22	0.25	0.30	0.32	0.38	0.39	0.39	0.47	0.43	0.47	0.43	0.43	0.52	0.47	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	0.41	0.51	0.46	0.46	0.56	0.56
1 Acre	20	0.12	0.17	0.20	0.26	0.27	0.34	0.35	0.44	0.40	0.44	0.40	0.40	0.50	0.44	0.44	0.55	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	0.68	0.70	0.68	0.72	0.70	0.74	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	0.80	0.82	0.82	0.81	0.81	0.83	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	0.34	0.40	0.34	0.46	0.39	0.52	0.52
Playgrounds	13	0.07	0.13	0.16	0.23	0.24	0.31	0.32	0.42	0.37	0.48	0.37	0.42	0.37	0.48	0.41	0.54	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	0.46	0.50	0.46	0.54	0.50	0.58	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	0.31	0.38	0.31	0.45	0.36	0.51	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	0.30	0.37	0.30	0.44	0.35	0.50	0.50
Forest	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.30	0.37	0.30	0.44	0.35	0.50	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	0.95	0.95	0.95	0.96	0.96	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	0.48	0.51	0.48	0.55	0.51	0.59	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	0.95	0.95	0.95	0.96	0.96	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	0.68	0.70	0.68	0.72	0.70	0.74	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	0.95	0.95	0.95	0.96	0.96	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	0.80	0.82	0.80	0.82	0.81	0.83	0.83
Lawns	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.30	0.37	0.30	0.44	0.35	0.50	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 ( $t_f$ ) 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 ( $t_f$ ) 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.

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

Where:

- $t_c$  = time of concentration (min)
- $t_i$  = overland (initial) flow time (min)
- $t_r$  = 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,  $t_r$ , which is calculated using the hydraulic properties of the swale, ditch, or channel. For preliminary work, the overland travel time,  $t_r$ , 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 ( $t_t$ ) and the travel time ( $t_l$ ) 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.

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

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.

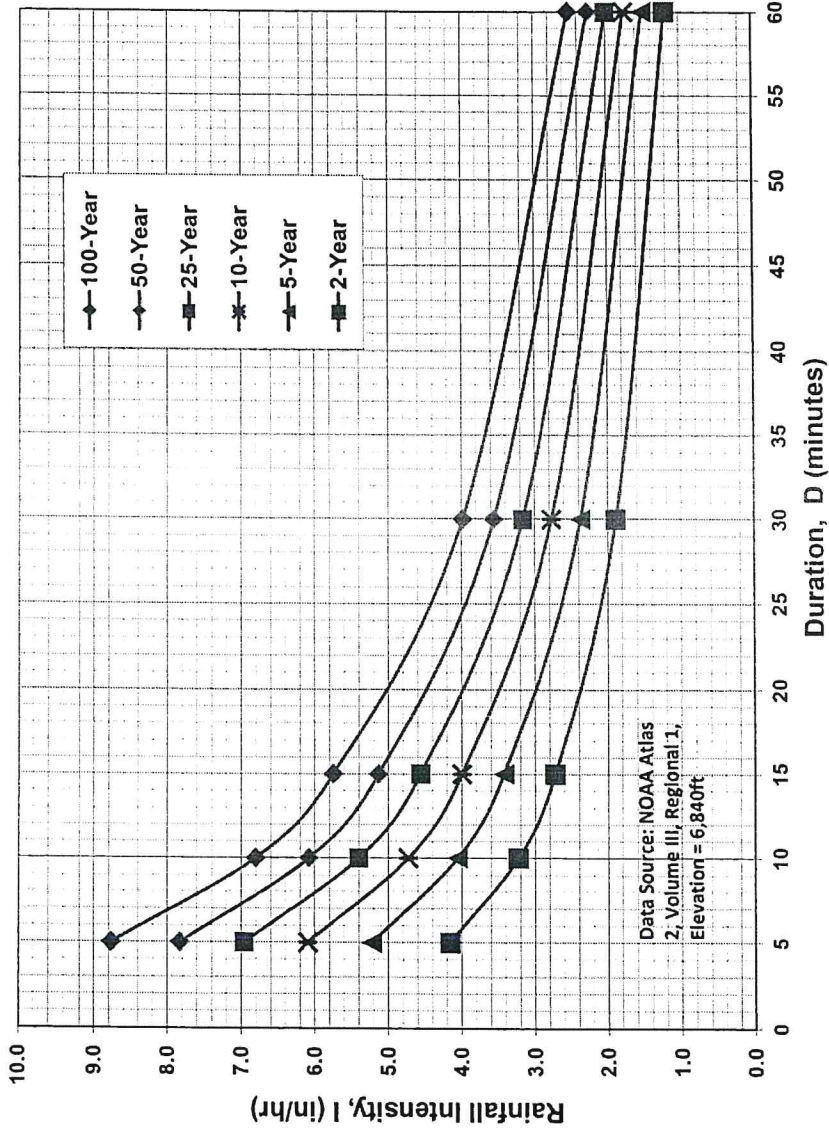
### 3.2.4 Minimum Time of Concentration

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**

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

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

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

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

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

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

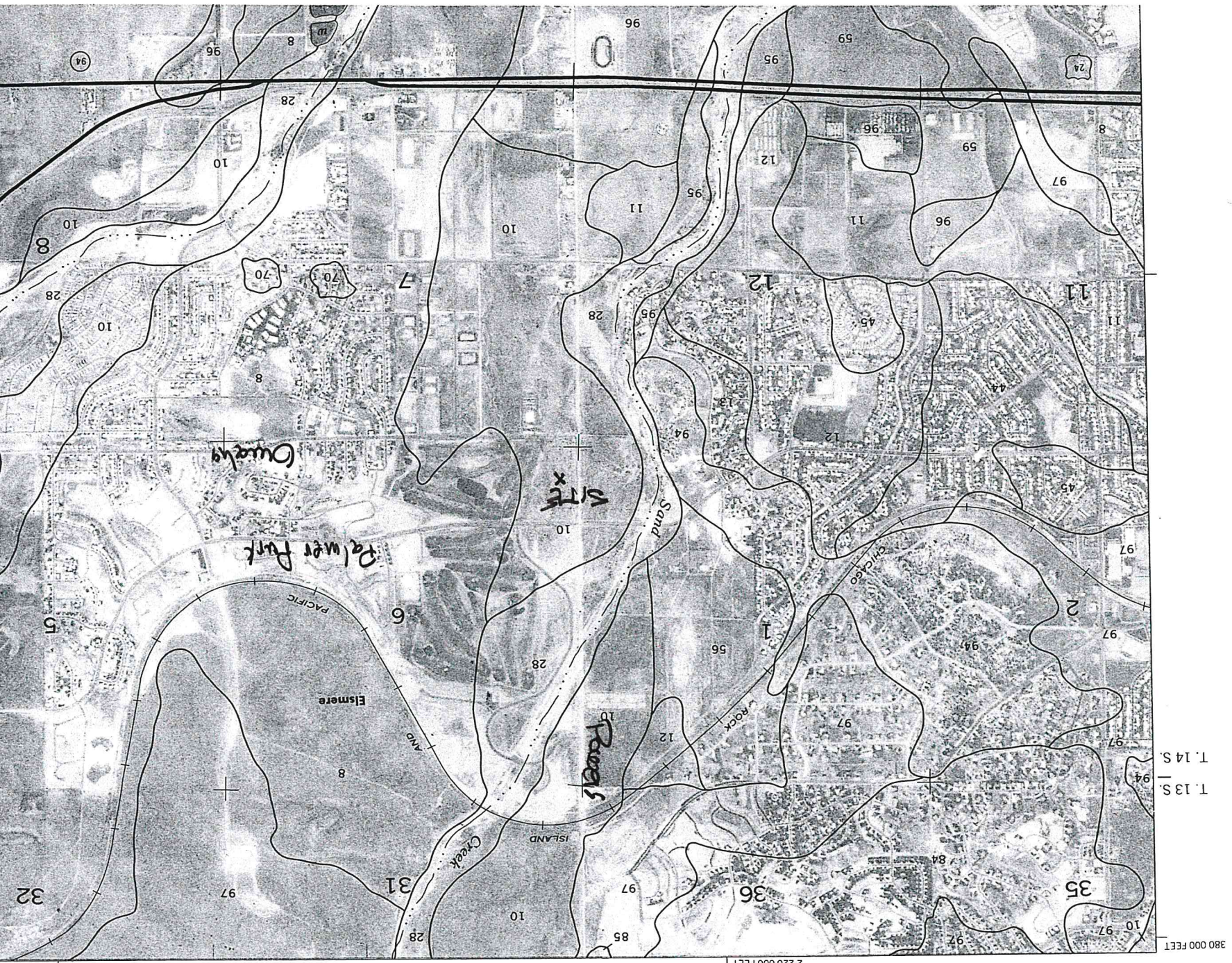
Note: Values calculated by equations may not precisely duplicate values read from figure.



U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

OLIVER E. WATTS  
CONSULTING ENGINEER, INC.  
COLORADO SPRINGS

6819 PALMER PARK BLVD  
SCS SOILS MAP  
1"=2000'



380 000 FEET | T. 13 S. | R. 66 W. | R. 65 W. | (Joins



EL PASO COUNTY AREA, COLORADO  
TABLE 16. --SOIL AND WATER FEATURES

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[Absence of an entry indicates the feature is not a concern. See "flooding" in Glossary for definition of terms as "rare," "brief," and "very brief." The symbol > means greater than]

Soil name and map symbol	Hydro-logic group	Flooding			Bedrock			Potential frost action
		Frequency	Duration	Months	Depth	Hardness		
Alamosa: 1	C	Frequent	Brief	May-Jun	In >60	---	High.	
Ascalon: 2, 3	B	None	---	---	>60	---	Moderate.	
Badland: 4	D	---	---	---	---	---	---	
Bijou: 5, 6, 7	B	None	---	---	>60	---	Low.	
Blakeland: 8	A	None	---	---	>60	---	Low.	
19: Blakeland part	A	None	---	---	>60	---	Low.	
Fluvaquentic Haplaquolls part	D	Common	Very brief	Mar-Aug	>60	---	High.	
Blendon: 10	B	None	---	---	>60	---	Moderate.	
Bresser: 11, 12, 13	B	None	---	---	>60	---	Low.	
Brussett: 14, 15	B	None	---	---	>60	---	Moderate.	
Chaseville: 16, 17	A	None	---	---	>60	---	Low.	
118: Chaseville part	A	None	---	---	>60	---	Low.	
Midway part	D	None	---	---	10-20	Rippable	Moderate.	
Columbine: 19	A	None to rare	---	---	>60	---	Low.	
Connerton: 120: Connerton part	B	None	---	---	>60	---	High.	
Rock outcrop part	D	---	---	---	---	---	---	
Cruckton: 21	B	None	---	---	>60	---	Moderate.	
Cushman: 22, 23	C	None	---	---	20-40	Rippable	Moderate.	
124: Cushman part	C	None	---	---	20-40	Rippable	Moderate.	
Kutch part	C	None	---	---	20-40	Rippable	Moderate.	
Elbeth: 25, 26	B	None	---	---	>60	---	Moderate.	
127: Elbeth part	B	None	---	---	>60	---	Moderate.	

See footnote at end of table.



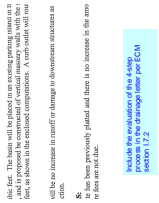
# Markup Summary

Daniel Torres (7)



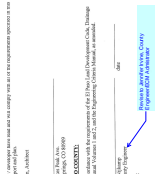
**Subject:** Text Box  
**Page Label:** 1  
**Lock:** Unlocked  
**Author:** Daniel Torres  
**Date:** 11/13/2018 5:50:19 PM  
**Color:** ■

Add PCD File No. PPR1847



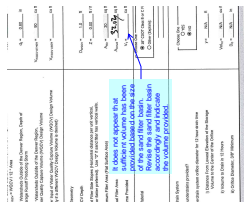
**Subject:** Text Box  
**Page Label:** 4  
**Lock:** Unlocked  
**Author:** Daniel Torres  
**Date:** 11/13/2018 6:17:03 PM  
**Color:** ■

Include the evaluation of the 4-step process in the drainage letter per ECM section 1.7.2



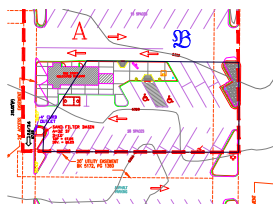
**Subject:** Callout  
**Page Label:** 3  
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**Author:** Daniel Torres  
**Date:** 11/13/2018 6:17:55 PM  
**Color:** ■

Revise to Jennifer Irvine, County Engineer/ECM Administrator

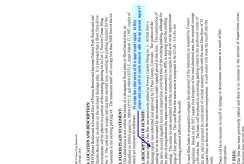


**Subject:** Callout  
**Page Label:** 9  
**Lock:** Unlocked  
**Author:** Daniel Torres  
**Date:** 11/14/2018 2:36:40 PM  
**Color:** ■

It does not appear that sufficient volume has been provided based on the size of the sand filter basin. Revise the sand filter basin accordingly and indicate the volume provided.

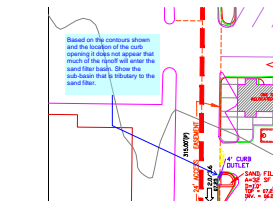


**Subject:** Polygon  
**Page Label:** 18  
**Lock:** Unlocked  
**Author:** Daniel Torres  
**Date:** 11/14/2018 2:41:55 PM  
**Color:** ■



**Subject:** Callout  
**Page Label:** 4  
**Lock:** Unlocked  
**Author:** Daniel Torres  
**Date:** 11/14/2018 3:46:03 PM  
**Color:** ■

Provide the reference of the approved report. Is this proposed site still in conformance with the approved report?



**Subject:** Callout  
**Page Label:** 18  
**Lock:** Unlocked  
**Author:** Daniel Torres  
**Date:** 11/14/2018 3:59:46 PM  
**Color:** ■

Based on the contours shown and the location of the curb opening it does not appear that much of the runoff will enter the sand filter basin. Show the sub-basin that is tributary to the sand filter.