PRELIMINARY AND FINAL

DRAINAGE PLAN AND REPORT

MOUNTAINS TO VIEW SUBDIVISION

EL PASO COUNTY

October 18, 2018

Prepared for

Craig McConnell

MS-18-003

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

Please see checklist attached to the PCD Engineering comment letter for requirements of a final drainage report. DCM Vol. 1 Section 4.

OLIVER E. WATTS, PE-LS
OLIVER E. WATTS, CONSULTING ENGINEER, INC.
CIVIL ENGINEERING AND SURVEYING
614 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907
(719) 593-0173
Fax (719) 265-9660
olliewatts@aol.com
Celebrating over 39 years in business

October 18, 2018

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

Planning and Community Development, not Department of Transportation. Please revise.

ATTN: *Jennifer Powell*

Revise

SUBJECT: Preliminary and Final Drainage Plan and Report
Mountains To View Subdivision

Gentlemen

Transmitted herewith for your review and approval is the drainage plan and report for The Mountains To View Subdivision in El Paso County.

Please contact me if I may provide any further information.

Oliver E. Watts, Consulting Engineer, Inc.

BY:_____
Oliver E. Watts, President

Encl:
Drainage Report 4 pages
Computations, 2 pages
FEMA Panel No. 08041C0600 F
SCS Soils Map and Interpretation Sheets
Backup Information, 4 sheets
Drainage Inflow Map
Drainage Plan, Dwg 18-5236-01

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.

_____

Craig McConnell
16985 Fletcherville Lane
Payton, CO 80831
330-0695

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.

_____ _____

~~Andre P. Brackin~~, P.E., date
County Engineer / ECM Administrator

Conditions:

Jennifer Irvine. P.E.

4. LOCATION AND DESCRIPTION:
The Mountains to View Subdivision is located in the Southeast Quarter of the Northeast Quarter of Section 24, Township 12 South, Range 63 West of the 6th P.M> as shown on the enclosed drainage plan. It is located on the West side of the Ellicott Highway, and will be developed into three residential lots totaling 38.48 acres in an unstudied drainage basin.

5. FLOOD PLAIN STATEMENT:
The most updated FEMA map panel number is 08041C0585G, dated 12/7/2018. Please update accordingly.

This subdivision is within the limits of a Zone A flood plain, according to FEMA map panel number 08041C0600 F, dated March 17, l997, a copy of which is enclosed for reference. It may be seen that the Zone A flood plain is approximate at best, and a draft restudy is available on the RBD web site for review, which is scheduled for adoption September 1, 1018. The flood plain is contained within a no build area as shown on the drainage plan. A more detailed evaluation, such as a preparation of a LOMR is not considered viable at this time.

6. METHOD AND CRITERIA:
The method used for all computations is that specified in the City-County Drainage Criteria Manual, using the rational method for areas of the size of the development. All computations are enclosed for reference and review, along with the backup data of the manual.

The soils in the subdivision have been mapped by the local USDA/SCS office, and a soils map and interpretation sheets are enclosed for reference. All soils in this area are of hydrologic groups "A" and "B" within the development area.

7. DESCRIPTION OF RUNOFF:

Runoff is computed according to the existing topography of the site as shown on the drainage plan. Building sites are assumed to be constructed east of the flood plain and the remainder of the lots will be treated as open space.

A small area will run off into the north boundary of the subdivision as shown on the enclosed drainage inflow map. The existing range land in this area will produce a runoff of 3.9 cfs \ 25.5 cfs (5-year / 100-year runoffs). This will combine with the buildable portion of Lot 1 to develop 4.9 cfs / 28.4 cfs at the west boundary of the Ellicott Highway. Basins B and C will occupy the likely building sites for lots 2 and 3, producing 2.1 cfs / 8.7 cfs and 1.3 cfs / 8.7 cfs, respectfully at the Ellicott Highway. A typical driveway culvert is specified on the drainage plan as an 18-inch CMP, 30 feet long, which will contain the maximum runoff in the highway roadside ditch under minimum headwater conditions. No other drainage structures are necessary for this subdivision.

The remainder of the three lots will drain into the flood plain as shown on the drainage plan; Basin D having 1.3 cfs / 5.6 cfs, Basin E having 1.1 cfs / 7.9 cfs, and Basin F having 1.3 cfs / 8.8 cfs for lots 1 through 3, respectively.

8. COST ESTIMATE:

All facilities are private.

Per Land Development Code Section 8.4.2.B.1.e "base flood elevation data approved by the jurisdictional floodplain authority and 100yr floodplain boundaries shall be shown on the plat." The FEMA 100yr flood plain going through the property is a Zone A floodplain (no base flood elevations are shown). With the subsequent subdivision application the applicant will have to process a LOMR with FEMA to establish the base flood elevation data.

Item No.	Description	Quantity	Unit Cost	Cost
1	18" CMP	90 LF	$ 40.00	$ 3600.00
	Subtotal Construction Cost			$ 3600.00
	Engineering		10%	360.00
	Total Estimated Cost			$ 3960.00

9. FEES:

Fees will be assessed based on the estimated impervious acreage within the subdivision. As shown on the drainage plan, this will consist of a gravel driveway, building area, and parking area, for an estimated 10,380 square feet per lot. The total fees for subdivision would be as follows;

0.715 Acre @ $ 10,441.00 per acre = $ 7,465.32

There is no fee associated with the Upper Bracket Creek drainage basin. Please remove.

MAJOR BASIN	SUB BASIN	AREA		BASIN		Tc MIN	I		SOIL GRP	DEV. TYPE	C		FLOW		RETURN PERIOD	
		PLANIM READ	ACRES	LENGTH	HEIGHT								qp	qp		
BRCKETT	O1	COGO	16.1	100	4	11.5									5	100
CREEK		3.6%		+700	V=0.94	+12.										
						24	2.7	4.4	A/B	PASTURE	0.09	0.36	3.9	25.5	5	100
	+A	COGO	6.74	+760	V=0.67	+19				5 AC.	0.15	0.38				
	TOTAL		23.4			42	2.0	3.4	A/B	MIX	0.105	0.356	4.9	28.4	5	100
	B	COGO	5.74	100	2.5	13										
			0.92%	+650	V=0.67	+16										
						29	2.4	4.0	A/B	5 AC.	0.15	0.38	2.1	8.7	5	100
	C	COGO	3.00	100	1	17										
			4.75%	+400	V=1.5	+4										
						21	2.9	4.9	A/B	5 AC/	0.15	0.38	1.3	5.6	5	100
	D	COGO	3.06			MIN	5.2	9.0	A/B	PASTURE	0.09	0.36	1.4	9.9	5	100
	E	COGO	2.44			MIN	5.2	9.0	A/B	PASTURE	0.09	0.36	1.1	7.9	5	100
	F	COGO	2.72			MIN	5.2	9.0	A/B	PASTURE	0.09	0.36	1.3	8.8	5	100

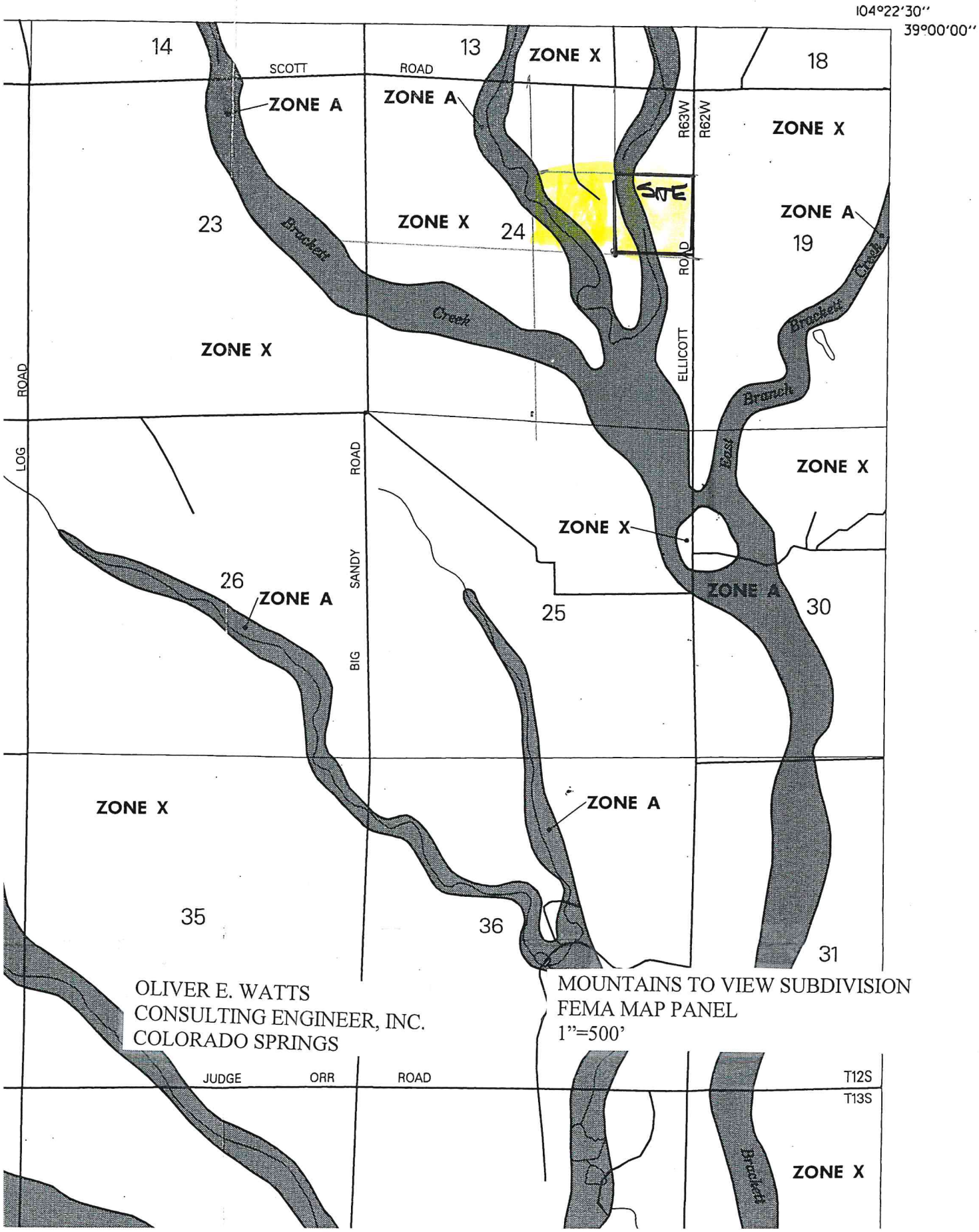
HYDROLOGICAL COMPUTATION – BASIC DATA
PROJ: MOUNTAINS TO VIEW SUB. BY: O.E. WATTS
RATIONAL METHOD DATE: 10/18/18

OLIVER E. WATTS, CONSULTING ENGINEER, INC.
614 ELKTON DRIVE COLORADO SPRINGS, CO 80907

STREET AND STORM SEWER CALCULATIONS

STREET	LOCATION	DISTANCE	ELEVATION & SLOPE	TOTAL RUNOFF	STREET FLOW / CAPACITY	PIPE FLOW	TYPE PIPE, CATCH BASIN & SLOPE %
ELLICOTT HWY	D/W		2%	4.9		4.9	18" CMP X 30' hi=0.12' MIN

STREET AND STORM SEWER CALCULATIONS **PROJECT: MOUNTAINS TO VIEW SUB. BY: O.E. WATTS** **DATE:** 10/18/18	**OLIVER E. WATTS, CONSULTING ENGINEER, INC.** 614 ELKTON DRIVE COLORADO SPRINGS, CO 80907	Page: 2 Of Pages: 2



OLIVER E. WATTS
CONSULTING ENGINEER, INC.
COLORADO SPRINGS

MOUNTAINS TO VIEW SUBDIVISION
FEMA MAP PANEL
1"=500'

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 600 OF 1300

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY, UNINCORPORATED AREAS	080059	0600	F

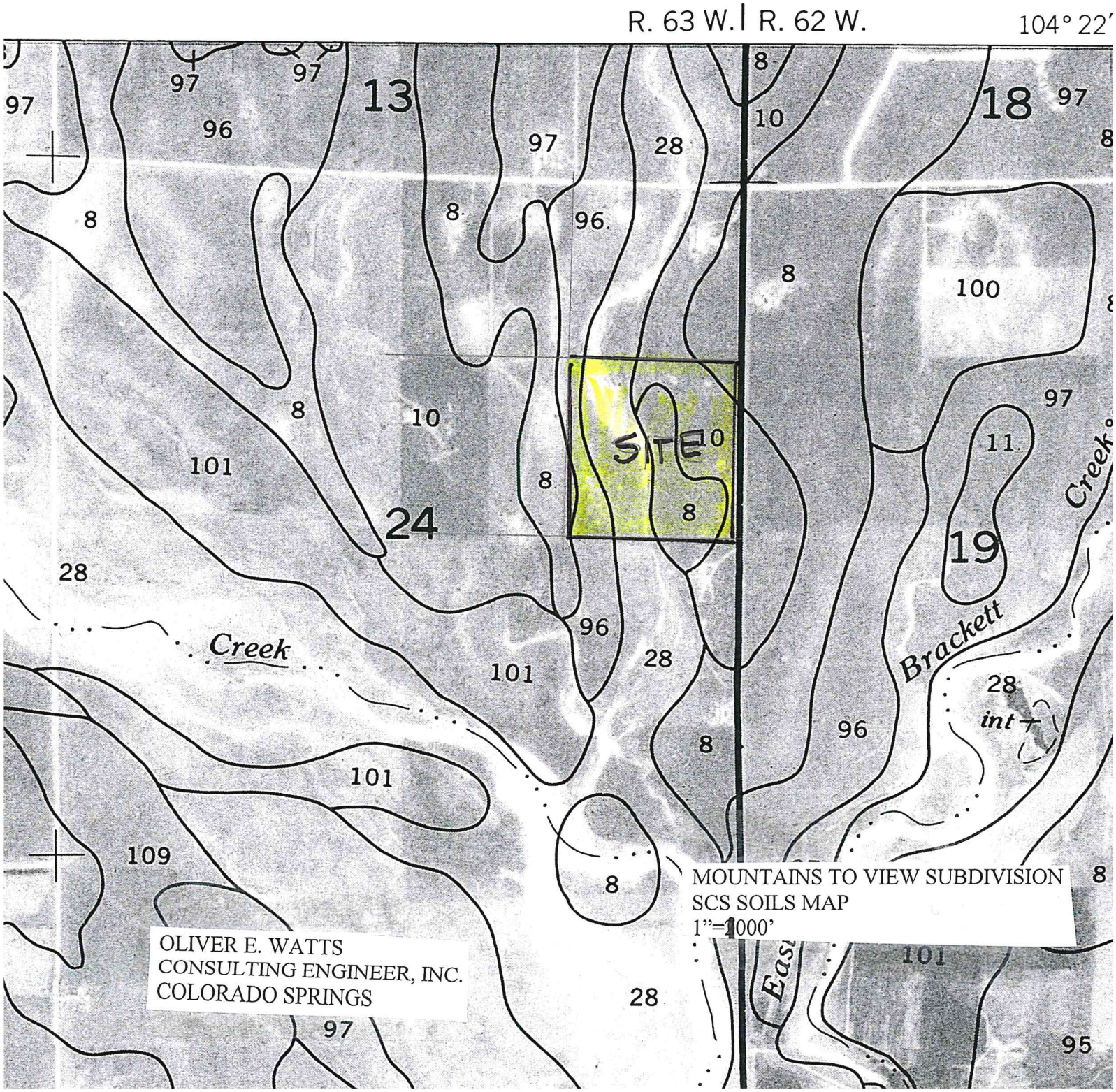
Provide an updated map.

MAP NUMBER
08041C0600 F

EFFECTIVE DATE:
MARCH 17, 1997

Federal Emergency Management Agency

SHEET NO. 11
EL PASO COUNTY AREA, COLORADO
(HAEGLER RANCH QUADRANGLE)



MOUNTAINS TO VIEW SUBDIVISION
SCS SOILS MAP
1"=1000'

OLIVER E. WATTS
CONSULTING ENGINEER, INC.
COLORADO SPRINGS

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			Bedrock		Potential frost action
		Frequency	Duration	Months	Depth	Hardness	
					In		
Beth: Pring part	B	None	---	---	>60	---	Moderate.
Dicott: 3	A	Frequent	Brief	Mar-Jun	>60	---	Low.
Duvaquentic Haplaquolls: 9	B/D	Frequent	Brief	Mar-Jul	>60	---	High.
Fort Collins: 0, 31	B	None to rare	---	---	>60	---	Moderate.
Fortwingate: 32: Fortwingate part	C	None	---	---	20-40	Hard	Low.
Rock outcrop part	D	---	---	---	---	---	---
Gldt: 3	C	None	---	---	>60	---	Moderate.
Gilderness: 34, 35, 36	C	None	---	---	>60	---	Moderate.
Harre: 37	B	None	---	---	>60	---	Moderate.
38: Jarre part	B	None	---	---	>60	---	Moderate.
Tecolote part	B	None	---	---	>60	---	Moderate.
Keith: 39	B	None	---	---	>60	---	High.
Kettle: 40, 41	B	None	---	---	>60	---	Moderate.
142: Kettle part	B	None	---	---	>60	---	Moderate.
Rock outcrop part	D	---	---	---	---	---	---
Kim: 43	B	None	---	---	>60	---	Moderate.
Kutch: 44, 45	C	None	---	---	20-40	Rippable	Moderate.
Kutler: 146: Kutler part	C	None	---	---	20-40	Rippable	Low.
Broadmoor part	C	None	---	---	20-40	Rippable	Low.
Rock outcrop part	D	---	---	---	---	---	---
Limon: 47	C	Occasional	Brief	May-Sep	>60	---	Moderate.
Louviers: 48	D	None	---	---	10-20	Rippable	Moderate.
49	D	None	---	---	10-20	Rippable	Low.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			Bedrock		Potential frost action
		Frequency	Duration	Months	Depth	Hardness	
					In		
Tomah:							
[1]92, [1]93:							
Tomah part-----	B	None----------	---	---	>60	---	Moderate.
Crowfoot part--	B	None----------	---	---	>60	---	Moderate.
Travessilla:							
[1]94:							
Travessilla part----------	D	None----------	---	---	6-20	Hard	Low.
Rock outcrop part----------	D	---	---	---	---	---	---
Truckton:							
95, 96, 97-------	B	None----------	---	---	>60	---	Moderate.
[1]98:							
Truckton part--	B	None----------	---	---	>60	---	Moderate.
Blakeland part-	A	None----------	---	---	>60	---	Low.
[1]99, [1]100:							
Truckton part--	B	None----------	---	---	>60	---	Moderate.
Bresser part---	B	None----------	---	---	>60	---	Low.
Ustic Torrifluvents:							
101----------	B	Occasional----	Very brief----	Mar-Aug	>60	---	Moderate.
Valent:							
102, 103---------	A	None----------	---	---	>60	---	Low.
Vona:							
104, 105---------	B	None----------	---	---	>60	---	Moderate.
Wigton:							
106----------	A	None----------	---	---	>60	---	Low.
Wiley:							
107, 108---------	B	None----------	---	---	>60	---	Low.
Yoder:							
109, 110---------	B	None----------	---	---	>60	---	Low.

[1]This map unit is made up of two or more dominant kinds of soil. See map unit description for the composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

[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	Hydrologic group	Flooding			Bedrock		Potential frost action
		Frequency	Duration	Months	Depth	Hardness	
					In		
Alamosa: 1	C	Frequent	Brief	May-Jun	>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.
[1]9: 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.
[1]18: Chaseville part	A	None	---	---	>60	---	Low.
Midway part	D	None	---	---	10-20	Rippable	Moderate.
Columbine: 19	A	None to rare	---	---	>60	---	Low.
Connerton: [1]20: 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.
[1]24: Cushman part	C	None	---	---	20-40	Rippable	Moderate.
Kutch part	C	None	---	---	20-40	Rippable	Moderate.
Elbeth: 25, 26	B	None	---	---	>60	---	Moderate.
[1]27: Elbeth part	B	None	---	---	>60	---	Moderate.

See footnote at end of table.

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.

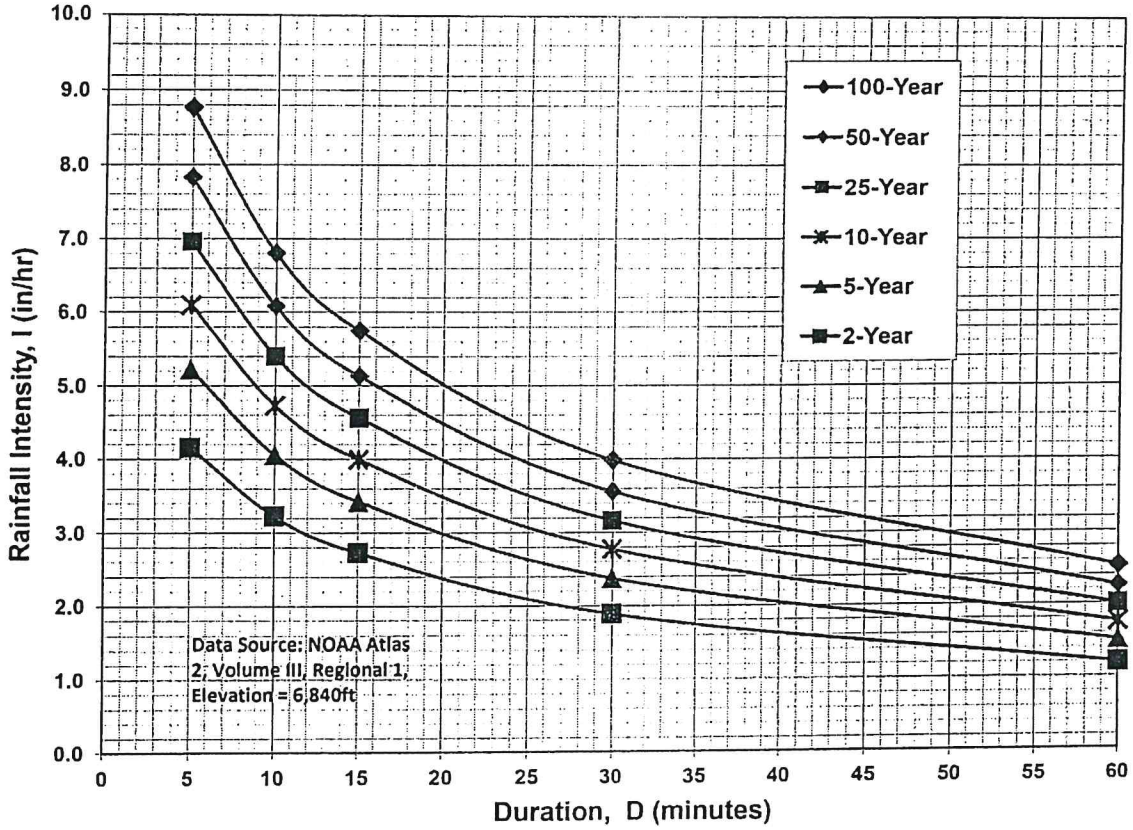
3.2.4 Minimum Time of Concentration

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

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

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

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

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

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

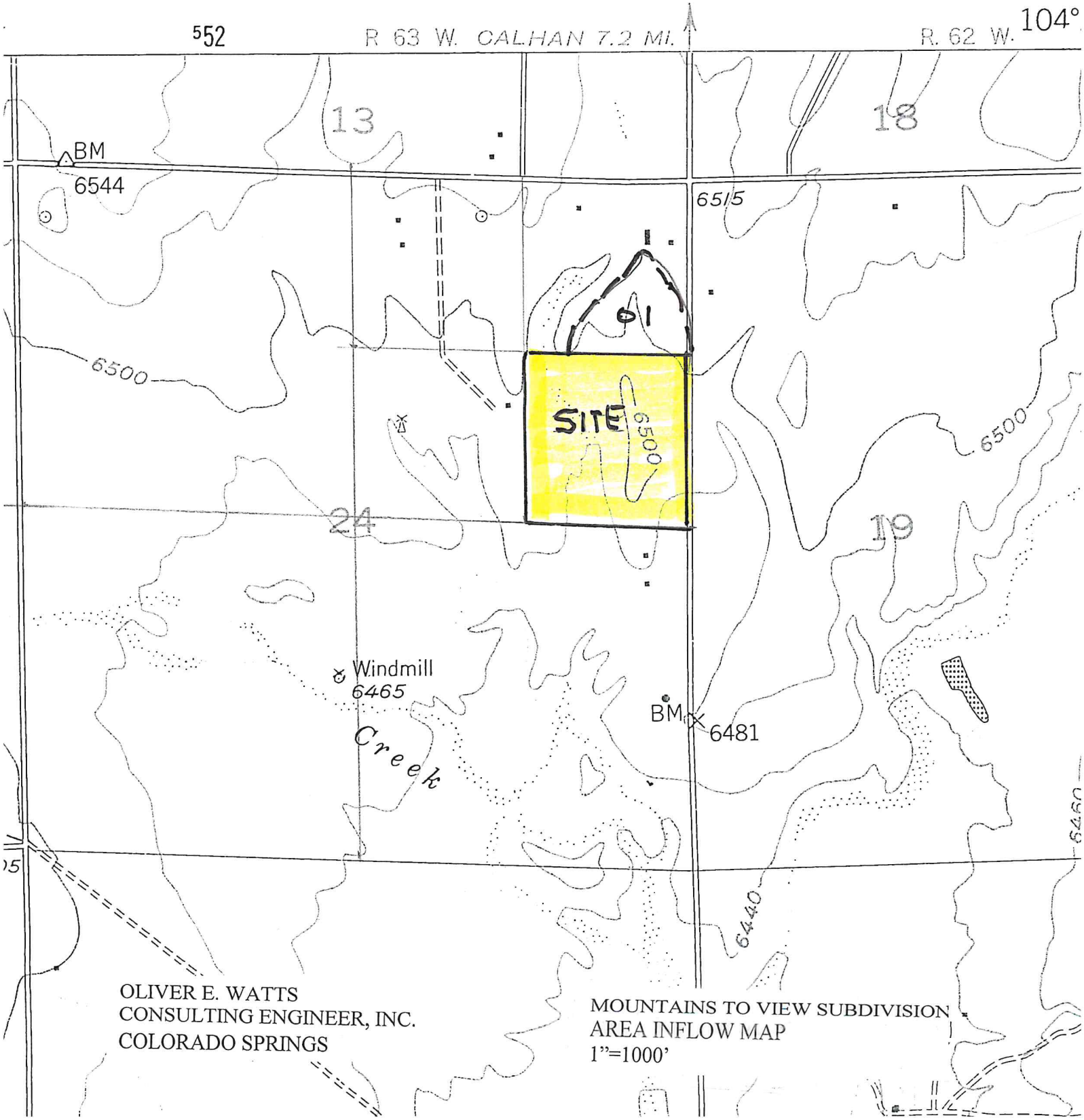
$I_{2} = -1.19 \ln(D) + 6.035$

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

HAEGLER RANCH QUADRANGLE

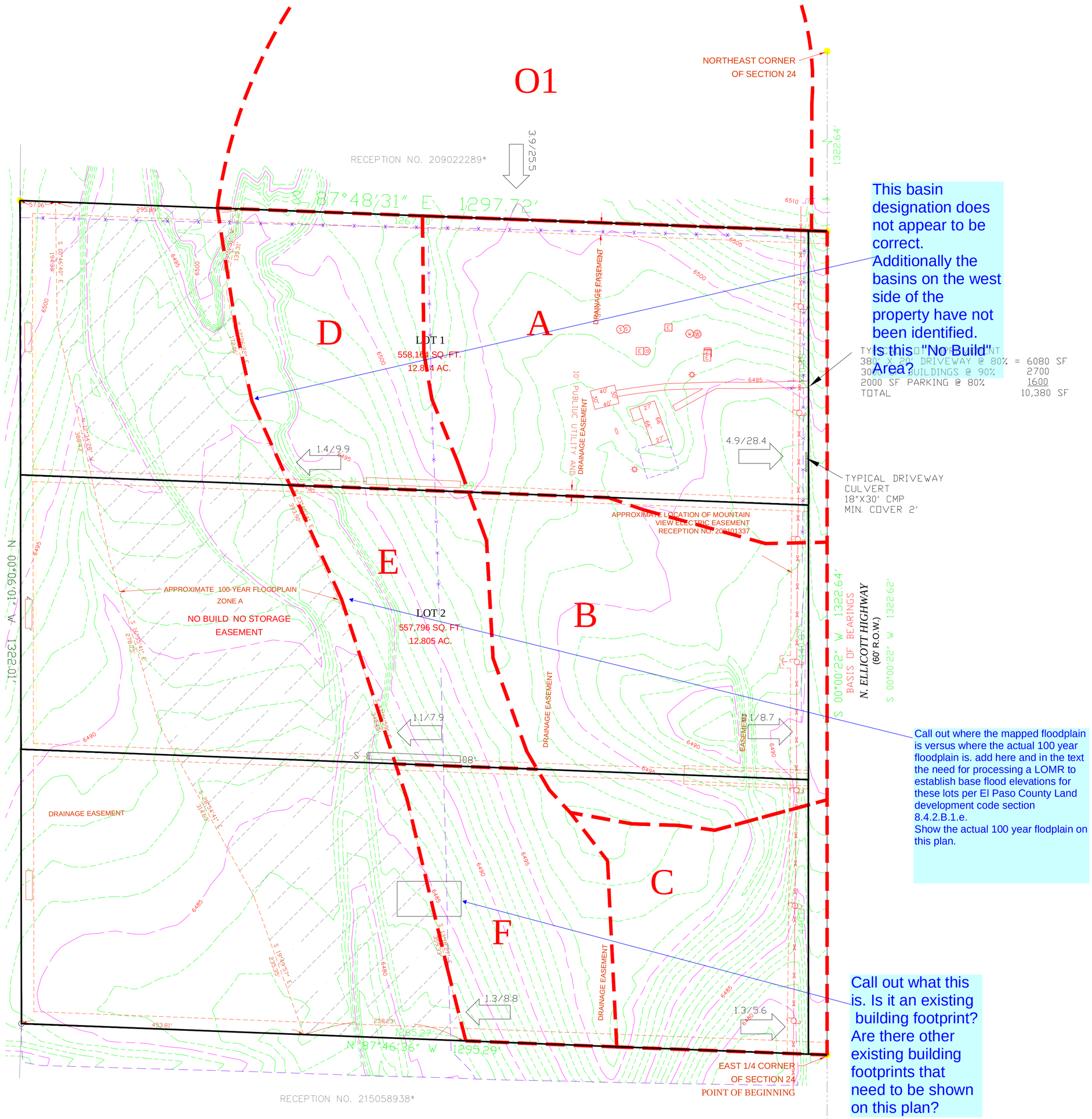
COLORADO-EL PASO CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)



OLIVER E. WATTS
CONSULTING ENGINEER, INC.
COLORADO SPRINGS

MOUNTAINS TO VIEW SUBDIVISION
AREA INFLOW MAP
1"=1000'



This basin designation does not appear to be correct. Additionally the basins on the west side of the property have not been identified. Is this "No Build" Area?

Call out where the mapped floodplain is versus where the actual 100 year floodplain is. add here and in the text the need for processing a LOMR to establish base flood elevations for these lots per El Paso County Land development code section 8.4.2.B.1.e.
Show the actual 100 year flodplain on this plan.

Call out what this is. Is it an existing building footprint? Are there other existing building footprints that need to be shown on this plan?

LEGEND:

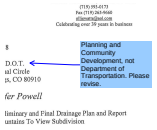
10.5/20.4	RUNOFF IN CFS 5-YEAR/100-YEAR
A	LIMIT OF DRAINAGE BASIN AND DESIGNATION
	PROPOSED STORM SEWER AS LABELED
B	LIMIT OF SOILS TYPE AND GROUP ALL SOILS ARE TYPE "A" AND "B"

Please see checklist for additional requirements

DRAWN BY: O.E. WATTS	APPROVED BY:	REVISIONS	OLIVER E. WATTS CONSULTING ENGINEER COLORADO SPRINGS	PROJECT MOUNTAINS TO VIEW ESTATES SE1/4, NE1/4, SEC. 24, T.12S., R.63W. 6TH P.M. EL PASO COUNTY	SHT. NAME DRAINAGE PLAN	SHT. NO. 1 OF 1
DATE: 10-17-18	PROJ. NO.					
DWG. NO.: 18-5236-02	DWG.					
BASE PLAN BY: CRAIG MCCONNELL						

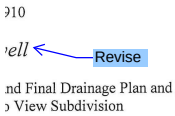
Markup Summary

dsdgrimm (5)



Subject: Engineer
Page Label: 2
Lock: Locked
Author: dsdgrimm
Date: 12/31/2018 2:06:45 PM
Color:

Planning and Community Development, not Department of Transportation. Please revise.

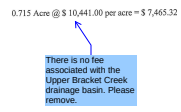


Subject: Engineer
Page Label: 2
Lock: Locked
Author: dsdgrimm
Date: 12/31/2018 2:06:46 PM
Color:

Revise

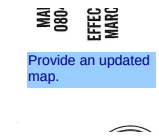
Subject: Engineer
Page Label: 4
Lock: Locked
Author: dsdgrimm
Date: 12/31/2018 2:06:47 PM
Color:

The most updated FEMA map panel number is 08041C0585G, dated 12/7/2018. Please update accordingly.



Subject: Engineer
Page Label: 5
Lock: Locked
Author: dsdgrimm
Date: 12/31/2018 2:06:48 PM
Color:

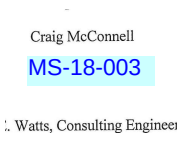
There is no fee associated with the Upper Bracket Creek drainage basin. Please remove.



Subject: Engineer
Page Label: 9
Lock: Locked
Author: dsdgrimm
Date: 12/31/2018 2:06:49 PM
Color:

Provide an updated map.

Steve Kuehster (14)

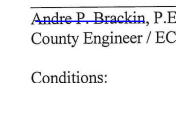


Subject: text box
Page Label: 1
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:06:50 PM
Color:

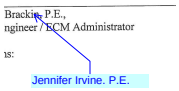
MS-18-003

Subject: text box
Page Label: 1
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:06:51 PM
Color:

Please see checklist attached to the PCD Engineering comment letter for requirements of a final drainage report. DCM Vol. 1 Section 4.

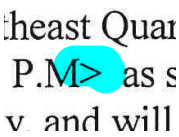


Subject: Pen
Page Label: 3
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:06:56 PM
Color:

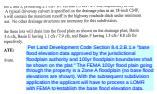


Subject: arrow & box
Page Label: 3
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:06:57 PM
Color:

Jennifer Irvine. P.E.

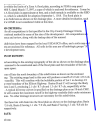


Subject: Highlight
Page Label: 4
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:06:58 PM
Color:



Subject: text box
Page Label: 4
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:06:59 PM
Color:

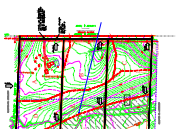
Per Land Development Code Section 8.4.2.B.1.e "base flood elevation data approved by the jurisdictional floodplain authority and 100yr floodplain boundaries shall be shown on the plat." The FEMA 100yr flood plain going through the property is a Zone A floodplain (no base flood elevations are shown). With the subsequent subdivision application the applicant will have to process a LOMR with FEMA to establish the base flood elevation data.



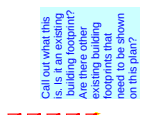
Subject: Arrow
Page Label: 4
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:00 PM
Color:

Subject: text box
Page Label: 19
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:01 PM
Color:

Call out where the mapped floodplain is versus where the actual 100 year floodplain is. add here and in the text the need for processing a LOMR to establish base flood elevations for these lots per El Paso County Land development code section 8.4.2.B.1.e.
Show the actual 100 year flodplain on this plan.

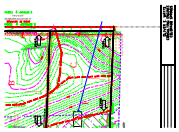


Subject: Arrow
Page Label: 19
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:03 PM
Color:

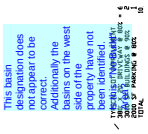


Subject: text box
Page Label: 19
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:04 PM
Color:

Call out what this is. Is it an existing building footprint? Are there other existing building footprints that need to be shown on this plan?

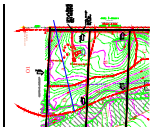


Subject: Arrow
Page Label: 19
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:05 PM
Color:



Subject: text box
Page Label: 19
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:05 PM
Color:

This basin designation does not appear to be correct. Additionally the basins on the west side of the property have not been identified.
Is this "No Build" Area?



Subject: Arrow
Page Label: 19
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:06 PM
Color:

Subject: text box
Page Label: 19
Lock: Locked
Author: Steve Kuehster
Date: 12/31/2018 2:07:07 PM
Color:

Please see checklist for additional requirements