

CITY OF ALBUQUERQUE

Planning Department
Suzanne Lubar, Director



Mayor Richard J. Berry

April 5, 2016

Charles Thompson, P.E.
7540 Deerfield Rd. NW
Albuquerque, New Mexico 87120

RE: **7824 Urraca St NW**
Lot 3 Block 6 Unit 19 Volcano Cliffs Subdivision
Grading and Drainage Plan
Engineers Stamp Date 4/1/16 (D10D003F23)

Dear Mr. Thompson,

Based upon the information provided in your submittal received 4/4/16, this plan is approved for Grading Permit and Building Permit. A separate wall permit must be obtained for this site. If retaining more than 16" the wall must be designed by a Professional Engineer.

Please inform the Architect/Owner or contractor to attach a copy of this approved plan dated 4/1/16 to the construction sets in the permitting process prior to sign-off by Hydrology, otherwise the permitting process will be delayed until this plan is provided.

Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, please contact me at 924-3986 or Rudy Rael at 924-3977.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Hydrology
Planning Department

RR/AC
C: File

**Grading and Drainage Submittal -- Lot 3, Block 6, Unit 19 Volcano Cliffs
Subdivision; 7824 Urraca NW**

Purpose:

This Grading and Drainage Plan is submitted for construction of the building pad for Lot 3, Block 6, Unit 19 Volcano Cliffs Subdivision. Street Address is 7824 Urraca NW on Zone Atlas Map D-10 and its location is indicated on Sheet 2. The project is within SAD 228. This plan is prepared and submitted to establish grading for the single elevation dwelling and it includes site grading, first floor elevation and offsite runoff calculations.

Water Quality Features:

The proposed project complies with section 14-5-2-6(H) of the City of Albuquerque Drainage Ordinance. 0.44-inches of the first flush runoff less initial abstraction is accommodated in onsite ponding as shown on the plan. Required ponding = 195 CF; Provided ponding = 396 CF.

Existing conditions:

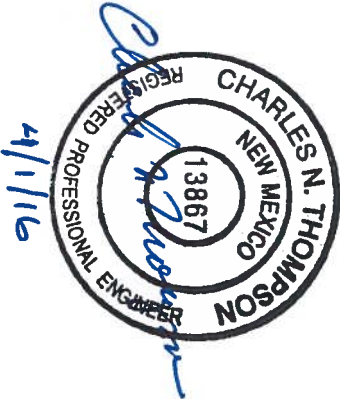
The existing 0.2680 acre lot is undeveloped. The lot historically drained to the Open Space that lies to the east of the lot. There is no significant flow to the lot from offsite. The site is situated within the SAD 228 Drainage Master Plan. Under the SAD 228 DMP the site is to drain to the street (Urraca St. NW) with limited drainage to the rear of the lot.

Sheet 2 indicates the location of the site on FEMA flood hazard mapping. The site lies in Zone X. Sheet 3 indicates the site location relative to offsite drainage infrastructure.

Proposed conditions:

The proposed grading plan is consistent with the SAD 228 DMP. The lot will drain primarily to Urraca Street NW right-of-way and ultimately report to Pond 6 of the SAD 228 system. Runoff calculations are included as Sheet 4. The Grading and Drainage Plan is attached as Sheet 5. Proposed land treatments consist of Land Treatment D for impervious areas that include rooftop and concrete paving and Land Treatment C for landscaped areas and gravel walkways. No Land Treatment A or B areas are claimed. Total runoff for the 100-year, 6hour storm event meets the SAD 228 DMP allowable.

Prepared by Charles N. Thompson, PE
7540 Deerfield Rd. NW, Albuquerque, NM 87120
e-mail: 505xcheck@gmail.com

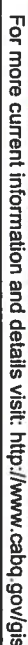




Map amended through: 9/2/2014



For more current information and details visit: <http://www.cabq.gov/gis>



D-10-Z

Selected Symbols

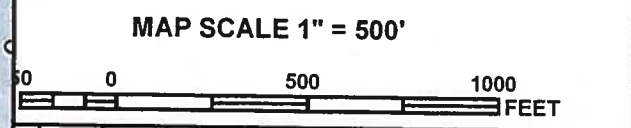
PLANS Escarpment

2 Mile Airport Zone

Airport Noise Contour

— Wall Overlay zone

h Mon

[illegible]

PANEL 0112G

FIRM

**FLOOD INSURANCE RATE MAP
BERNALILLO COUNTY
NEW MEXICO
AND INCORPORATED AREAS**

PANEL 112 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS.

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
ALBUQUERQUE, CITY OF	350002	0112	G
BERNALILLO COUNTY UNINCORPORATED AREAS	350001	0112	G

Notice to User: The Map Number shown below should be used when placing map orders the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
35001C0112G

MAP REVISED
SEPTEMBER 26, 2008

Federal Emergency Management Agency

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

Grading and Drainage Plan

Sheet 2 of 5

7824 URRACA ST. NW

LOT 3, BLOCK 6, UNIT 19

VOLCANO CLIFFS SUBDIVISION

Sheet 3 of 5



WCEA # 0840010400
DECEMBER 2011

Runoff Calculations
Small Watershed Procedure
Albuquerque DPM Chapter 22.2

Albuquerque DPM Chapter 22.2															100-year recurrence, 6-hour			10-year recurrence, 6-hour			
Area (Subbasin)	Total	LT A		% A	LT B	%	LT C		%	LT D		%	Ck. Total Acres	Weighted			Weighted				
		SF	ACRES				SF	ACRES		SF	ACRES			SF	ACRES	Excess (in)	Volume (ac-ft)	Peak Flow (cfs)	Excess (ac-ft)	Volume (ac-ft)	Peak Flow (cfs)
Existing conditions*	11674	0.268	11557	0.265	99%	0	0	0%	0	0	0%	117	0.003	1%	100%	0.455	0.010	0.35	0.079	0.021	0.07
Proposed Conditions																					
North portion of lot	3543.8	0.0814	0	0	0%	0	0	0%	1800	0.041	51%	1744	0.040	49%	100%	1.472	0.010	0.29	0.011	0.001	0.18
South portion of lot	3441.3	0.079	0	0	0%	0	0	0%	1868	0.043	54%	1574	0.036	46%	100%	1.438	0.009	0.28	0.011	0.001	0.17
Front (West) portion of lot	3563.9	0.0818	0	0	0%	0	0	0%	1716	0.039	48%	1848	0.042	52%	100%	1.498	0.010	0.30	0.011	0.001	0.18
Rear(East) portion of lot	1125.0	0.0258	0	0	0%	0	0	0%	1125	0.026	100%	0	0.000	0%	100%	0.990	0.002	0.07	0.000	0.000	0.04
Subtotal			0			0			6508			5166					0.032	0.95	0.033	0.003	0.57
Proposed Totals	11674	0.268																			
Allowable (SAD 228)	11674	0.268	0	0	0%	1167	0.027	10%	4670	0.107	40%	5837	0.134	50%	100%	1.448	0.032	0.95	0.051	0.014	0.57

Area check: 11674

Albuquerque DPM Zone 1		
100-year recurrence interval, 6-hour duration	Runoff Excess (inches)	Peak Flow (cfs/Ac)
	En	Qn
LT A	0.44	1.29
LT B	0.67	2.03
LT C	0.99	2.87
LT D	1.97	4.37
10-year recurrence interval, 6-hour duration	Runoff Excess (inches)	Peak Flow (cfs/Ac)
LT A	0.08	0.24
LT B	0.22	0.76
LT C	0.44	1.49
LT D	1.24	2.89
2-year recurrence interval, 6-hour duration	Runoff Excess (inches)	Peak Flow (cfs/Ac)
LT A	0	0
LT B	0.01	0.03
LT C	0.12	0.47
LT D	0.72	1.69

Basis of Calculations

An = Area in each Land Treatment (acres)
En (inches), Excess and Peak flow /acre, and Qn (cfs/acre) from DPM Chapter 22.2

Area-Weighted Excess Precipitation, E (inches) = (Ea x Aa + Eb x Ab + Ec x Ac+ Ed x Ad)

Peak Discharge, Q (cfs) = Qa x Aa + Qb x Ab + Qc x Ac + Qd x Ad

Volume, (acre-feet) = Weighted Excess Precipitation x (Aa + Ab + Ac + Ad)/12

Management of 90th percentile storm event runoff (First Flush Chapter -- Drainage Ordinance Chapter 14-5-2-6(H)) accomodated by detention/retention in onsite pond. Infiltration and evaporation will take place but they were not applied in the calculation.

Initial Abstraction:
LT A = 0.65", LT B = 0.50", LT C = 0.35", LT D = 0.10"

* Runoff in existing condition flows to open space area

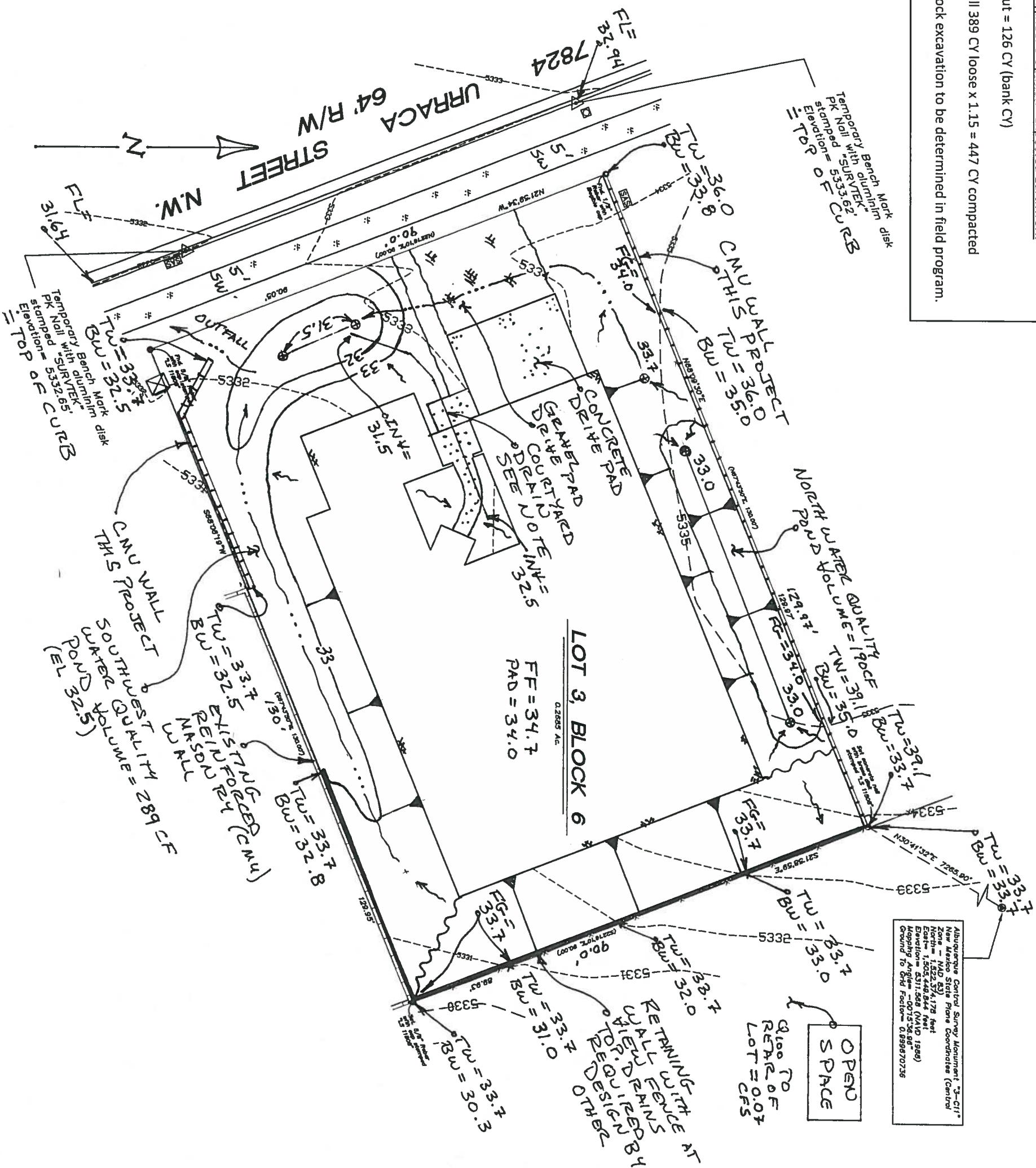


Water Quality First Flush	0.44 inches	LT A	IAa	LT B	IAb	LT C	IAc	LT D	IAd
		(SF)	(in)	(SF)	(in)	(SF)	(in)	(SF)	(in)
		0	0.65	0	0.5	6508	0.35	5166	0.1
First flush Volume (CF)			0		0		48.81		146.4
								Total	195.2 CF

Provided:	North Pond:	190 CF	Southwest Pond:	289 CF
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SHEET 4 OF 5

Engineer's Opinion - Expected Earthwork
Cut = 126 CY (bank CY)
Fill 389 CY loose x 1.15 = 447 CY compacted
Rock excavation to be determined in field program.

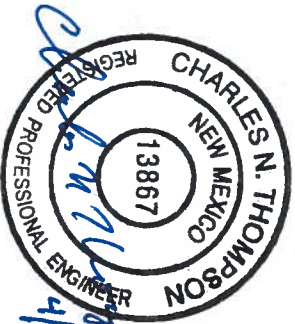


Albuquerque Control Survey Monument "3-C11"
New Mexico State Plane Coordinates (Central
Zone)
North = 1422.524178 feet
East = 1505.448444 feet
Elevation = 5311.568 (NAVD 1989)
Magnetic Angle = -0015'36.88"
Ground to Chd Factor = 0.899870736

LEGEND

- FG = FINISH GRADE
- EG = EXISTING GRADE
- FF = FINISHED FLOOR
- TW = ELEV. @ TOP OF WALL
- BW = ELEV. @ BOTTOM OF WALL
- INVT = PIPE INVERT EL.
- LO = SLOPE (GRADE)
- DASHED = EXISTING CONTOURS ARE
- WAVE = STOT ELEVATION
- WAVE = HIGH POINT (SLOPE BREAK)
- WAVE = FLOW LINE (PROPOSED)
- FL = FLOW LINE ELEV.

Runoff Summary		Percentage in each Land Treatment				Peak Flow
Proposed	LT A	LT B	LT C	LT D	Q ₁₀₀	
North portion of lot	0%	0%	51%	49%	0.29	
South portion of lot	0%	0%	54%	46%	0.28	
Front (West) portion of lot	0%	0%	48%	52%	0.30	
Rear (East) portion of lot	0%	0%	100%	0%	0.07	
Total runoff						0.95
Allowable (SAD 228)	0%	10%	40%	50%		0.95



COURTYARD DRAIN NOTES

- Q₁₀₀ = 0.16 CFS
- USE 6-INCH Ø PIPE
- MIN SLOPE = 0.015 ft/ft
- PROPOSED INVERT FL ELEVATION = 33.5 AT GRADE