

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

December 16, 2020

Don Briggs, P.E.
Don Briggs Engineering, LLC
5324 Oakledge Ct. NW
Albuquerque, NM 87120

RE: 8500 Glendale Ave. NE
Revised Grading and Drainage Plan (For Pool Permit)
Engineer's Stamp Date: 12/04/20
Hydrology File: B20D067

Dear Mr. Briggs:

Based upon the information provided in your submittal received 12/04/20, the Revised Grading and Drainage Plan for (For Pool Permit) is approved for Grading Permit and Building Permit (Pool Permit).

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

Project Title: _____ **Building Permit #:** _____ **Hydrology File #:** _____

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: _____

City Address: _____

Applicant: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Owner: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

TYPE OF SUBMITTAL: _____ PLAT (____# OF LOTS) _____ RESIDENCE _____ DRB SITE _____ ADMIN SITE

IS THIS A RESUBMITTAL?: _____ Yes _____ No

DEPARTMENT: _____ TRAFFIC/ TRANSPORTATION _____ HYDROLOGY/ DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

- _____ ENGINEER/ARCHITECT CERTIFICATION
- _____ PAD CERTIFICATION
- _____ CONCEPTUAL G & D PLAN
- _____ GRADING PLAN
- _____ DRAINAGE MASTER PLAN
- _____ DRAINAGE REPORT
- _____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
- _____ ELEVATION CERTIFICATE
- _____ CLOMR/LOMR
- _____ TRAFFIC CIRCULATION LAYOUT (TCL)
- _____ TRAFFIC IMPACT STUDY (TIS)
- _____ OTHER (SPECIFY) _____
- _____ PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- _____ BUILDING PERMIT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY
- _____ PRELIMINARY PLAT APPROVAL
- _____ SITE PLAN FOR SUB'D APPROVAL
- _____ SITE PLAN FOR BLDG. PERMIT APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ SIA/ RELEASE OF FINANCIAL GUARANTEE
- _____ FOUNDATION PERMIT APPROVAL
- _____ GRADING PERMIT APPROVAL
- _____ SO-19 APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ GRADING/ PAD CERTIFICATION
- _____ WORK ORDER APPROVAL
- _____ CLOMR/LOMR
- _____ FLOODPLAIN DEVELOPMENT PERMIT
- _____ OTHER (SPECIFY) _____

DATE SUBMITTED: _____ **By:** _____

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____



December 4, 2020

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

RE File: B20D067, 8500 Glendale Ave. NE

Dear Ms. Brissette,

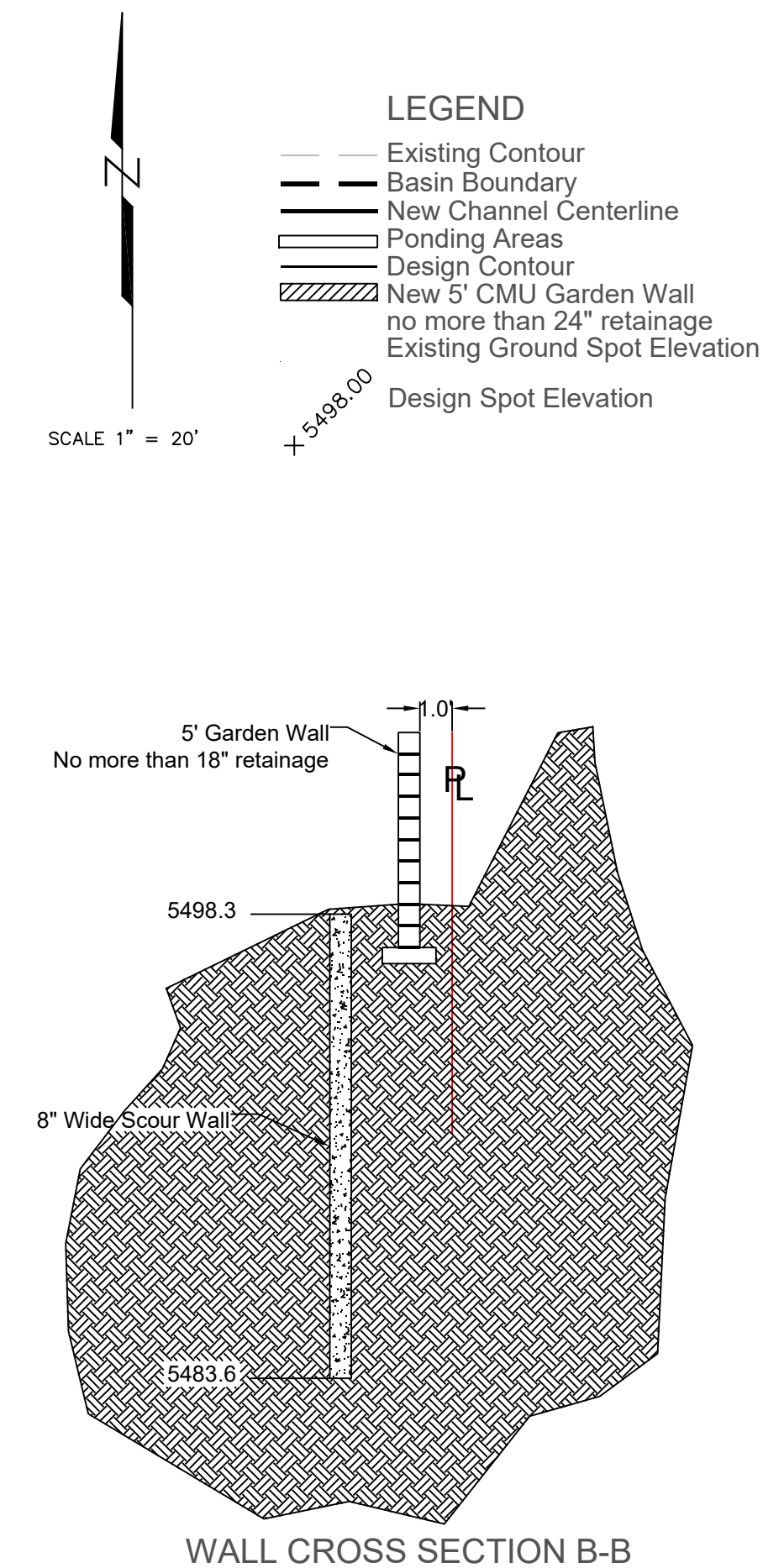
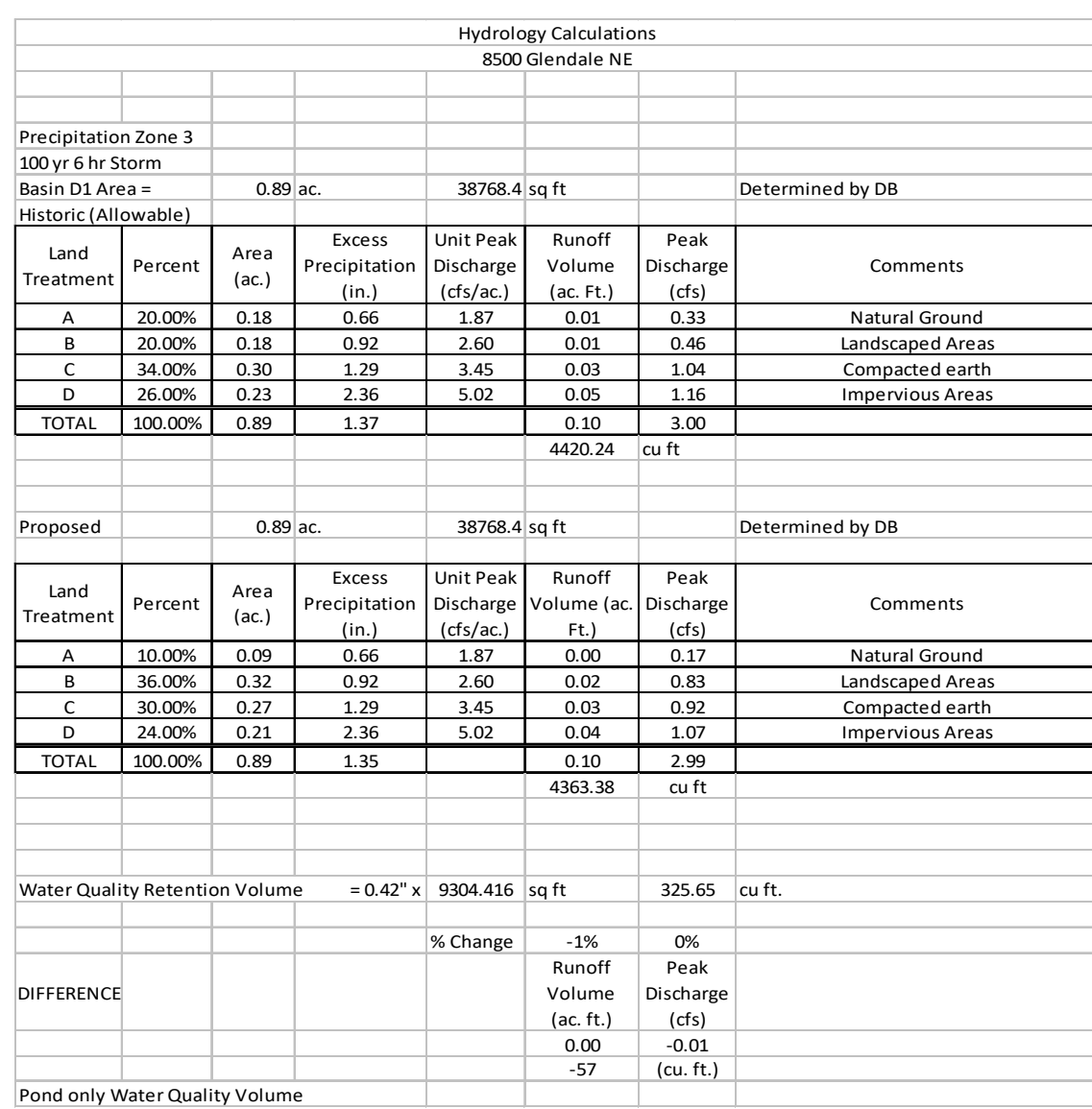
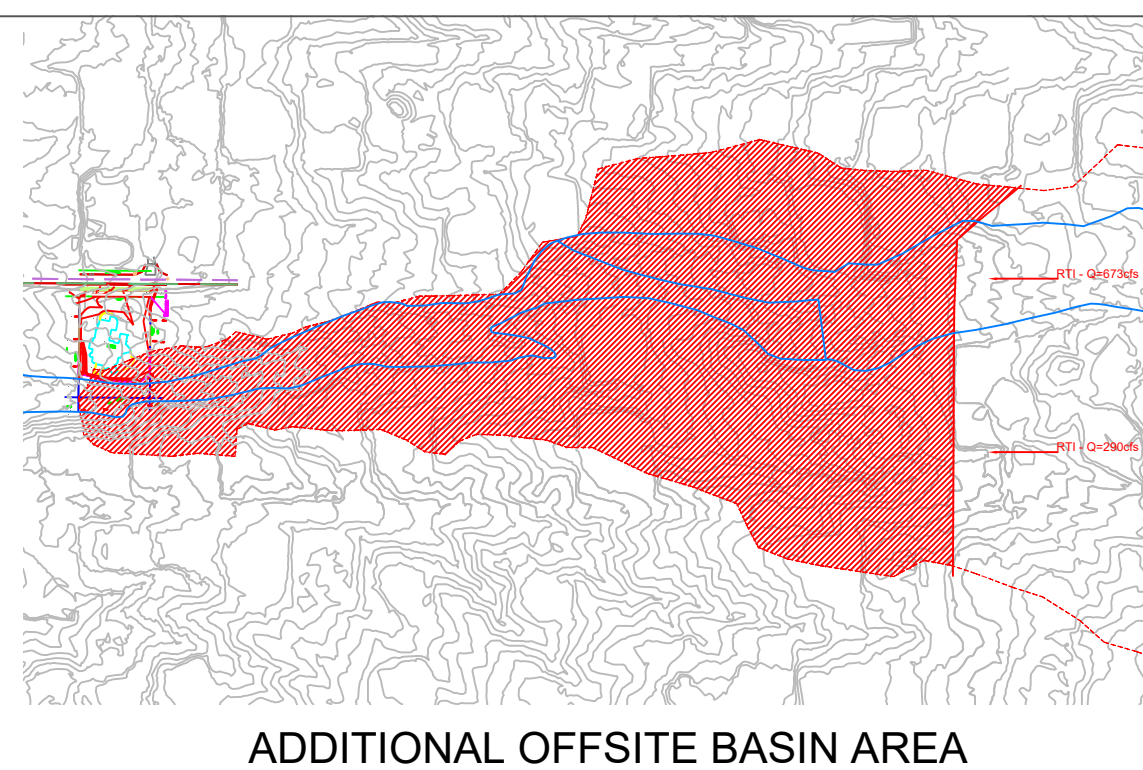
Attached is a revised plan based on your comments of November 3, 2020. I have addressed the comments as follows:

1. Please show the pool with concrete apron around the pool with grades of the corners of the pool. *This has been added to the plan.*
2. Please provide dimensions to all structures. *Dimensions have been added to the plan.*
3. I am concerned with the closeness of the pool with both the proposed garden wall and scour wall along the arroyo. Please provide a letter from either a geotechnical or structural engineer with supporting calculations stating that the pool does not pose any structural concerns with either the garden wall or scour wall. *Owner will provide this information.*
4. Please provide an updated engineer's stamp with the next submittal. *Provided.*

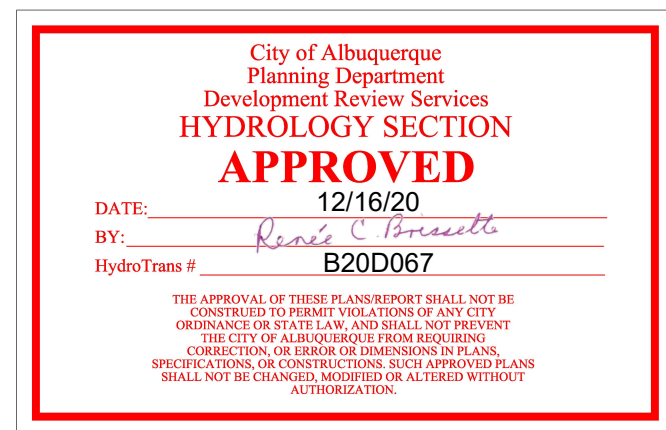
Please let me know if you have any questions on the submittal.

Sincerely

Don Briggs PE CFM
Don Briggs Engineering LLC
505-249-4843



Hydrology Calculations							
Additional Office Watershed Assessment Full Development							
Precipitation Zone 3							
100 yr 6 hr Storm							
Office Area		24.6124 ac.		1072117.1 sq ft		Determined by DB	
Historic (Allowable)							
Land Treatment	Percent	Area (ac.)	Excess Precipitation (in.)	Unit Peak Discharge (cfs/ac.)	Runoff Volume (ac. Ft.)	Peak Discharge (cfs)	Comments
A	20.00%	4.92	0.66	1.87	0.27	9.21	Natural Ground
B	20.00%	4.92	0.92	2.60	0.38	12.80	Landscaped Areas
C	34.00%	8.37	1.29	3.45	0.90	28.87	Compacted earth
D	26.00%	6.40	2.36	5.02	1.26	32.12	Impervious Areas
TOTAL		100.00%	24.61	1.37		83.00	
RTI Flows at Ventura (Camino Arroyo)							
					290		
					673		
Total					1046.00		



DRAINAGE NARRATIVE

This grading & drainage plan was prepared to support a building permit application for a new residence located at 8500 Glendale NE (Lot 5, Block 17, Tract 1, Unit 3, NAA) in North Albuquerque Acres. The plan was prepared using allowable discharge rates based on land treatment percentages of A=20%, B=20%, C=34%, and D=26% and the hydrology methodology presented in Chapter 22.2 of the City of Albuquerque's Development Process Manual (abbreviated method).

The site is a 0.89 acre parcel located in Precipitation Zone 3. The site is impacted by the Camino Arroyo with an estimated flow rate of 1046cfs (RTI Flows @ Ventura + additional developed basin flow) at the property. The property is partially located in FEMA Flood Zone AO (Depth 2') as shown on panel 35001C0133H. Sewer and water service is available from ABCWUA.

Stormwater impacts and mitigation requirements are determined by comparing runoff from the proposed developed conditions to the NAA allowable conditions (see Site Hydrology on this plan). Mitigation measures are designed to reduce developed runoff to at or below the NAA allowable.

This analysis indicates that the site developed runoff will not exceed the allowable runoff in a 100yr. 6hr. rainfall event so ponding is not required.

The offsite Camino Arroyo flow is passed through the property in its natural channel location. A hydraulic analysis of the Camino Arroyo was performed using the US Army's HEC RAS software to determine the Hydraulic Grade Line, Energy Grade Line and flow velocity. The results of the analysis indicated the developed lot will have a minimum 2' freeboard above the water surface and a 1' freeboard above the Energy Grade Line at the South East corner. A Drainage Easement that encompasses the Energy Grade Line is proposed. The HEC RAS analysis is presented on Sheet 2 of 2.

Due to the proximity of the home to the Camino Arroyo a scour analysis is required. Scour calculations were performed using the equations presented in AMAFCA's Sediment and Erosion Design Guide. The Erosion Setback is calculated at 98' and the parallel scour depth at 4.5' ($3.5' + 1'$ Safety Factor) and 10.2' ($9.2' + 1'$) for the perpendicular scour depth. As the home will be located within the Erosion Setback a scour wall is required for this development. The scour wall design is presented on this plan.

Construction of public infrastructure is required with this development. This infrastructure is shown on Sheet 3 of 3 and will be completed through the Development Review Board process.

GENERAL NOTES

Contractor is responsible for utility spots and controlling sediment deposition and erosion during construction.

A concrete washout bin must be provided as per Bernalillo County MS4 Permit requirements.

All disturbed area due to construction must be reseeded or landscaped following construction.

Figure 1: IDO Zone Atlas Map of the City of Albuquerque

The figure consists of three panels illustrating the IDO Zone Atlas Map of the City of Albuquerque.

Panel 1 (Top): A detailed map of the city grid showing street names (e.g., TRINITY, ALBUQUERQUE, TRINITY, ALBUQUERQUE, TRINITY, ALBUQUERQUE) and a red square labeled "SITE" in the central-eastern part of the map.

Panel 2 (Bottom Left): A map titled "IDO Zone Atlas Map of the City of Albuquerque" showing the city's extent and major roads. The map includes a legend for "Zone X" and "Zone Y" and a scale bar indicating distances in miles (0 to 100).

Panel 3 (Bottom Right): A map titled "Map of the City of Albuquerque" showing the city's extent and major roads. The map includes a legend for "Zone X" and "Zone Y" and a scale bar indicating distances in miles (0 to 100).

SCOUR CALCULATIONS (SEDG)				
CROSS SECTION 204.95				
Q100 =		1033 cfs		
SLOPE		0.01587 ft/ft		
THALWEG ELEVATION		5450.8 ft		
HGL DEPTH = D100		2.28 ft		
HGL ELEVATION		5453.08 ft		
EGL ELEVATION		5493.84 ft		
AREA =		147.73 sq ft		
VELOCITY =		6.99 fps		
VELOCITY HEAD =		0.76 ft		
FROUDE#		1.01		
LATERAL EROSION (Erosion Setback)				
Qd = 0.2 (Q100)	206.6 cfs	(Dominant Discharge)		
ESB= (0.92+4.6*log(Qd/Qd)*0.4 =		98 ft	(EQ 3.81b)	
VERTICAL EROSION (Scour Depth)				
PARALLEL				
Vs = H*(V*(73+(14*3.14159*Fr^2)/D100 =		3.45 ft	(EQ 3.89)	
SAFETY FACTOR		1.00 ft		
REQUIRED SCOUR DEPTH		4.45 ft		
PERPENDICULAR				
(Theta = 90)				
Vs = -((73+(14*3.14159*Fr^2)/COS(theta) + (4*Fr^3)/SIN(theta))/D100		9.15 ft	(EQ 3.90)	
REQUIRED SCOUR DEPTH ELEVATION =		5486.35		
TOP OF SCOUR WALL = EGL + 1' =		5494.84		
SCOUR WALL ROCK SIZING				
MINIMUM d50=		0.59 ft	(Denver Urban Drainage Design Manual)	
N for Riprap		0.039	V(S)=17.658 2:1 SS Max.	
Riprap Layer Thickness		1.2 ft	N=0.0395 (d50=1.6)	
			2(d50)	
SCOUR WALL CALCULATIONS				
Scour Depth				
4.5				
X Section	Thalweg	8m SW	EGL	Top SW
129.16	5485.5	5484.0	5491.42	5492.42
158.02	5489.3	5484.8	5482.29	5493.29
181.29	5489.9	5485.4	5493.15	5494.15
204.95	5490.8	5486.3	5493.86	5494.86
230.01	5491.4	5486.9	5494.76	5495.76
255.92	5492.8	5488.3	5496.01	5497.01
277.76	5493.5	5489.0	5496.97	5497.97


DON BRIGGS
Engineering LLC

TITLE: 8500 Glendale
Grading & Drainage Plan

Design Review Committee	City Engineer Approval	Last Design Update	Mo. / Day / Yr.	Mo. / Day / Yr.
City Project No. B20D067		Zone Map No.	Sheet 1	Of 3