CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

May 9, 2019

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

RE: 8500 Glendale Ave. NE
Grading and Drainage Plan
Engineer's Stamp Date: 04/25/19
Hydrology File: B20D067

Dear Mr. Briggs:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 04/25/2019, the Grading & Drainage Plan **is not** approved for Building Permit, Grading Permit, and for action by the DRB on Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

1. This site is a DRB Site and should have been assessed an initial fee of $610. A fee of $75 was paid so the remainder fee will need to be paid upon resubmittal (see the last comment for a total.

2. Please use the drafting standards outlined in the DPM. Plans need to be black & white with appropriate line weights for existing and proposed items. Color plans are very hard to read.

3. Please also ensure that all linetypes are either labeled or in the Legend.

4. At the northwest corner of the property, there is proposed grating on the adjacent property. A written approval from the adjacent property owner is required prior to Building Permit approval.

5. Per DPM Ch. 22.5.B, grading and construction of retaining walls at or near the property line must demonstrate that the adjacent property is not damaged or its use constrained. Any such encroachment by the wall or grading must be accompanied by written permission of both landowners. Wall footer cannot extend over the property line.

6. Please provide a cross section of the retaining wall. This section should include the distance of the proposed block wall to the property line, the proposed grades on both sides of the wall, and the wall footer. Wall footer cannot extend over the property line.

7. Please provide the top of wall elevation, the proposed grades on both sides of the proposed retaining wall at all important places along the proposed block wall.

8. It seems that storm water quality ponding is being provided. Please note that for single family residence, storm water quality ponding is not required.

9. Please label the R.O.W. (Glendale Ave.).

10. Please label the existing edge of pavement within the R.O.W.

11. Please clarify what is being proposed within the R.O.W. There are multiple lines without any labels. Per the IDO § 6-4(Q), the property owner of the property is responsible for building the adjacent half of Glendale Ave to include curb & gutter, sidewalk, and 84" storm sewer per the North Albuquerque Acer Master Drainage Plan. The plan will have to go to the DRB for approval of the Infrastructure List which will have to financially guaranteed.

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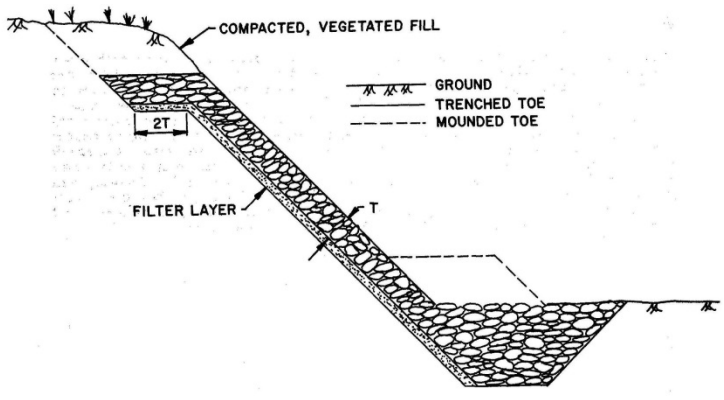
12. Please provide a detail section of the scour wall along the East property lines. This section should include the distance of the proposed wall to the property line and should match the depth requirements from the calculations of 9.15 ft scour depth. This scour wall needs to extend to the southern edge of the riprap.

13. Please remove the scour wall along the West property line. This is not needed since the arroyo cannot expand at more than a 3:1 angle.

14. The western edge of the riprap needs to be thickened to prevent erosion. Please add a note.

15. Please provide section of the riprap with all required dimensions. See image below. Also please call out the riprap type per City of Albuquerque Specification Section 109 (Riprap Stone). Please use the thickness of 1.2 ft as stated in your calculations.



16. Please provide a profile of the riprap along the channel with the average slope, top elevation, bottom elevation, and toe elevation of the channel.

17. Please provide the digital copy of the HEC-RAS file for our record and review.

18. For the Proposed Drainage Easement shown, please removed the easement line along the western property line. The easement can stop at the property line. The easement along the eastern property line needs to be along the west side of the scour wall to the ESB line and then to the property line.

19. Please provide Floodplain Permit prior to Hydrology approval. This Permit can be obtained at the Hydrology Section's webpage.

20. Please provide a draft Elevation Certificate prior to Hydrology approval for Building Permit.

21. A formal Elevation Certificate will need to be submitted to Hydrology prior to approval in support of Permanent Release of Occupancy.

22. As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Curtis Cherne, PE, ccherne@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

23. Also as a reminder, please provide the drainage easement along the 100 year floodplain line granted to the City prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A $25 fee will be required. The Permanent Easement form can be obtained at the Hydrology Section's webpage. This must be recorded prior to submitting the Agreement and Covenant recording.

    https://www.cabq.gov/planning/development-review-services/hydrology-section

24. Please provide the Agreement and Covenant to the City prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A $25 fee will be required.

25. Standard review fee of **$300** for a DRB Site plus the remainder of the initial fee **$535** ($610-75). So a total of **$835** will be required at the time of resubmittal.

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

Sincerely,

Renée C. Brissette

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: 8500 Glendale Building Permit #: _____ Hydrology File #: B20D067

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

Legal Description: Lot 5, Block 17, Tract 1, Unit 3, NAA

City Address: 8500 Glendale NE, Albuquerque, NM

Applicant: Don Briggs Engineering Contact: Don Briggs

Address: 5324 Oakledge Ct. NW Albuquerque, NM 87120

Phone#: 505-249-4843 Fax#: _____ E-mail: donbriggsengineering@gmail.com

Owner: John Jones Contact: John Jones

Address: 5901 WYOMING BLVD NE SUITE J303, Albuquerque, NM 87122

Phone#: 505-480-4537 Fax#: _____ E-mail: rtmf91@gmail.com

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

IS THIS A RESUBMITTAL?: X Yes _____ No

DEPARTMENT: ____ TRAFFIC/ TRANSPORTATION X HYDROLOGY/ DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

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

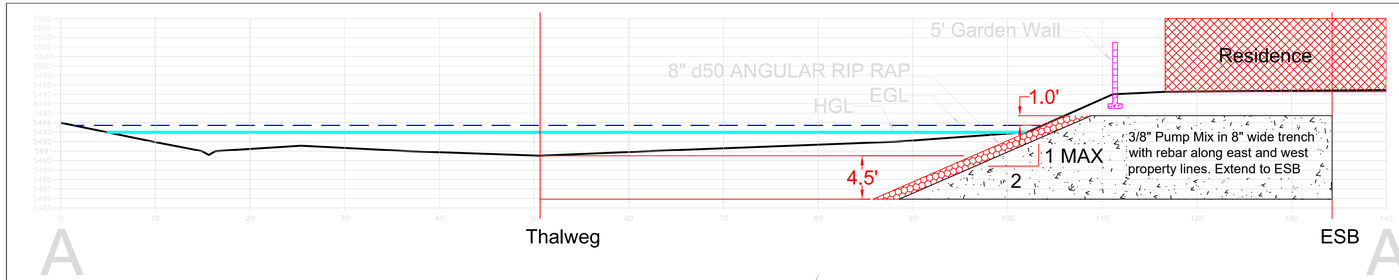
TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

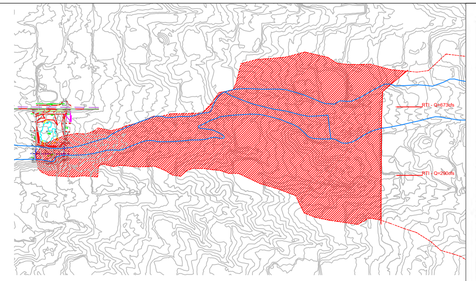
- X BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY
- ____ PRELIMINARY PLAT APPROVAL
- ____ SITE PLAN FOR SUB'D APPROVAL
- X SITE PLAN FOR BLDG. PERMIT APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ SIA/ RELEASE OF FINANCIAL GUARANTEE
- ____ FOUNDATION PERMIT APPROVAL
- X GRADING PERMIT APPROVAL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

DATE SUBMITTED: 4/25/2019 By: Don Briggs

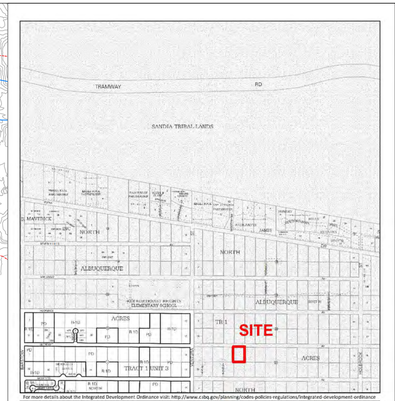
COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

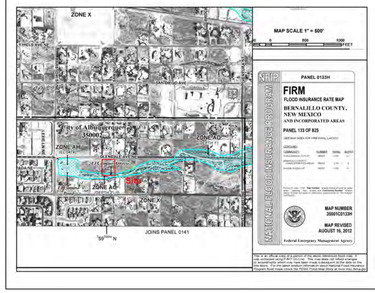
FEE PAID: _____

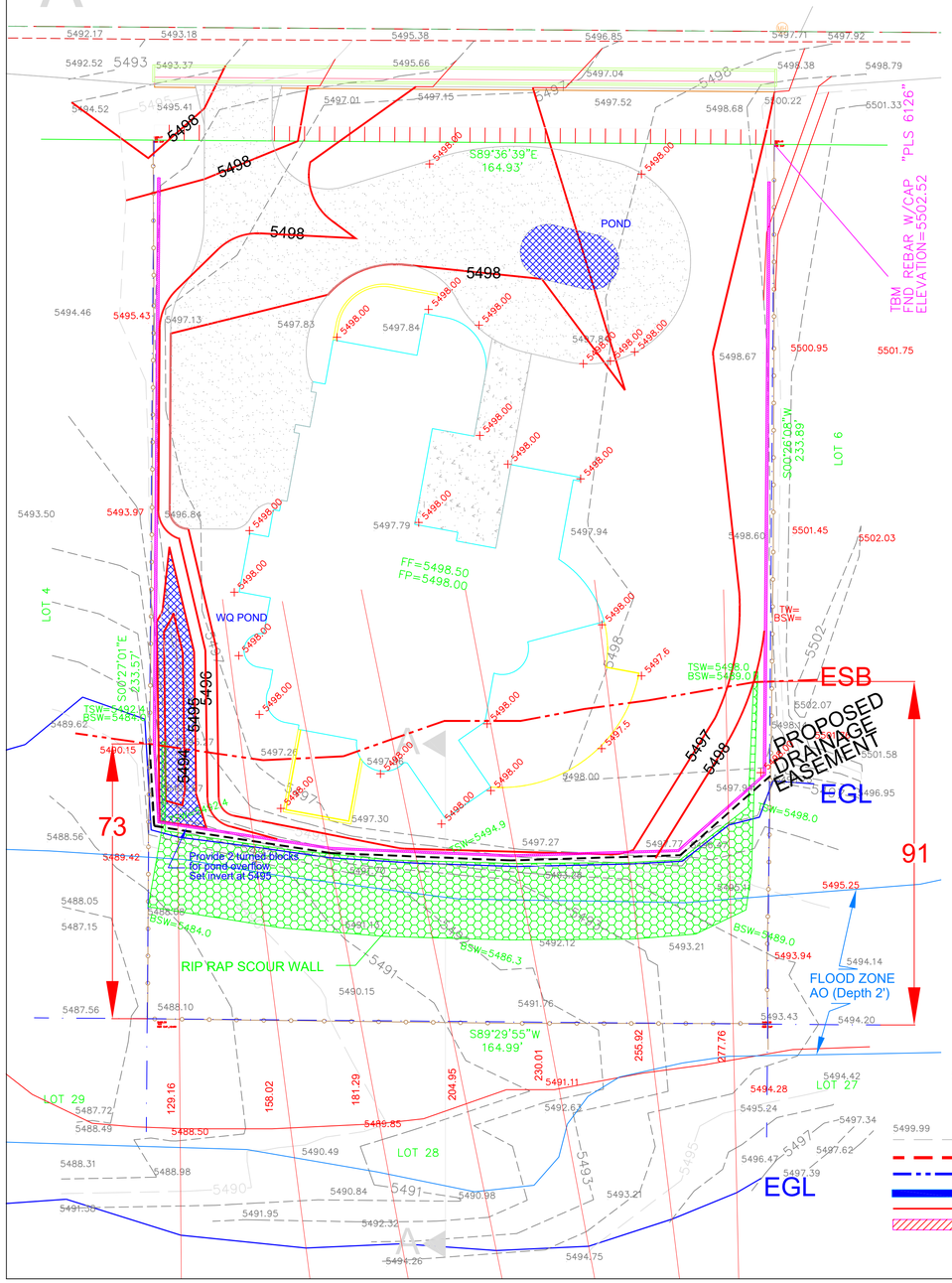




ADDITIONAL OFFSITE BASIN AREA







SCALE 1" = 20'

LEGEND

- Existing Contour
- Basin Boundary
- New Channel Centerline
- Ponding Areas
- Design Contour
- New 5' CMU Garden Wall no more than 24" retainage

Hydrology Calculations
8500 Glendale NE

Precipitation Zone 3
100 yr 6 hr Storm
Basin D1 Area = 0.89 ac. 38768.4 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%	0.18	0.66	1.87	0.01	0.33	Natural Ground
B	20.00%	0.18	0.92	2.60	0.01	0.46	Landscaped Areas
C	34.00%	0.30	1.29	3.45	0.03	1.04	Compacted earth
D	26.00%	0.23	2.36	5.02	0.05	1.16	Impervious Areas
TOTAL	100.00%	0.89	1.37		0.10	3.00	
					4420.24	cu ft	

Proposed 0.89 ac. 38768.4 sq ft Determined by DB

Land Treatment	Percent	Area (ac.)	Excess Precipitation (in.)	Unit Peak Discharge (cfs/ac.)	Runoff Volume (ac. Ft.)	Peak Discharge (cfs)	Comments
A	10.00%	0.09	0.66	1.87	0.00	0.17	Natural Ground
B	36.00%	0.32	0.92	2.60	0.02	0.83	Landscaped Areas
C	30.00%	0.27	1.29	3.45	0.03	0.92	Compacted earth
D	24.00%	0.21	2.36	5.02	0.04	1.07	Impervious Areas
TOTAL	100.00%	0.89	1.35		0.10	2.99	
					4363.38	cu ft	

Water Quality Retention Volume = 0.42" x 9304.416 sq ft 325.65 cu ft.

% Change -1% 0%

	Runoff Volume (ac. ft.)	Peak Discharge (cfs)
DIFFERENCE	0.00	-0.01
	-57	(cu. ft.)

Pond only Water Quality Volume

SCOUR CALCULATIONS (SEDG)
CROSS SECTION 204.95

Q100 =	1033 cfs	
SLOPE	0.01587 ft/ft	
THALWEG ELEVATION	5490.8 ft	
HGL DEPTH = D100	2.28 ft	
HGL ELEVATION	5493.08 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 = Hv+(.73+(.14*3.14159*Fr^2)D100 = 3.45 ft (EQ 3.89)
SAFETY FACTOR 1.00 ft
REQUIRED SCOUR DEPTH 4.45 ft

PERPINDICULAR (Ø = 90)
Vs = ((.73+(.14*3.14159*Fr^2)COS(Ø) +(4*Fr^0.33)SIN(Ø))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 (Denver Urban Drainage Design Manual)
MINIMUM d50= 0.59 ft V(S)^.175.88 2:1 SS Max.
N for Riprap 0.036 N=0.0395(D50^1/6)
Riprap Layer Thickness 1.2 ft 2(d50)

SCOUR WALL CALCULATIONS

Scour Depth 4.5

X Section	Thalweg	Btm SW	EGL	Top SW
129.16	5488.5	5484.0	5491.42	5492.42
158.02	5489.3	5484.8	5492.29	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

Hydrology Calculations
Additional Offsite Watershed Assuming Full Development

Precipitation Zone 3
100 yr 6 hr Storm
Offsite Basin 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		2.81	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. However, a small water quality retention pond based on the 90th percentile rainfall event is required so a small retention/detention pond has been provided.

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). As the home will be located within the Erosion Setback a scour wall is required for this development.

Due to existing development on both sides of the arroyo it is assumed the arroyo is confined and the perpendicular scour depth was not used in the scour wall design. In addition, the proposed Rip Rap scour wall will more closely match the Manning's N value of the natural channel which will reduce the expected scour along the wall from what the calculated value is. The scour wall design is presented on this plan.

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.

AS BUILT INFORMATION
CONTRACTOR
WORK STARTED BY — DATE
INSPECTORS ACCEPTANCE BY — DATE
VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
RECORDING INFORMATION
RECORDED BY — DATE
NO.

BENCHMARKS

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

DONALD R. BRIGGS — NEW MEXICO — 14912 — REGISTERED PROFESSIONAL ENGINEER

REMARKS

NO.	DATE	REVISIONS / DESIGN	BY
		DESIGNED BY	DB
		DRAWN BY	DB
		CHECKED BY	

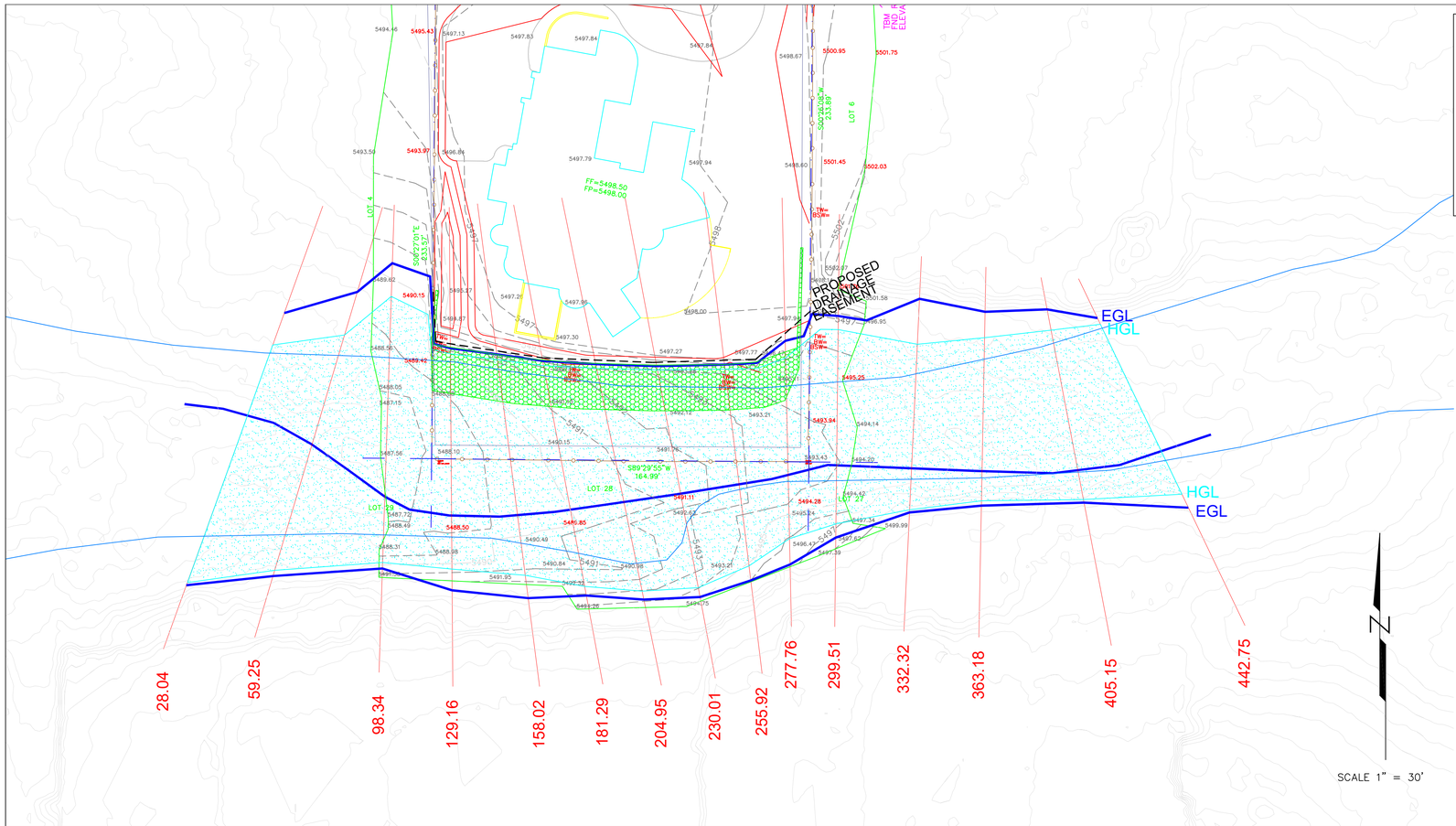
DATE 4/25/2019
DATE 4/25/2019
DATE

DON BRIGGS Engineering LLC
505-249-4843
donbriggsengineering@gmail.com
5324 Oakledge Ct. NW, Albuquerque, NM 87120

TITLE:
8500 Glendale Grading & Drainage Plan

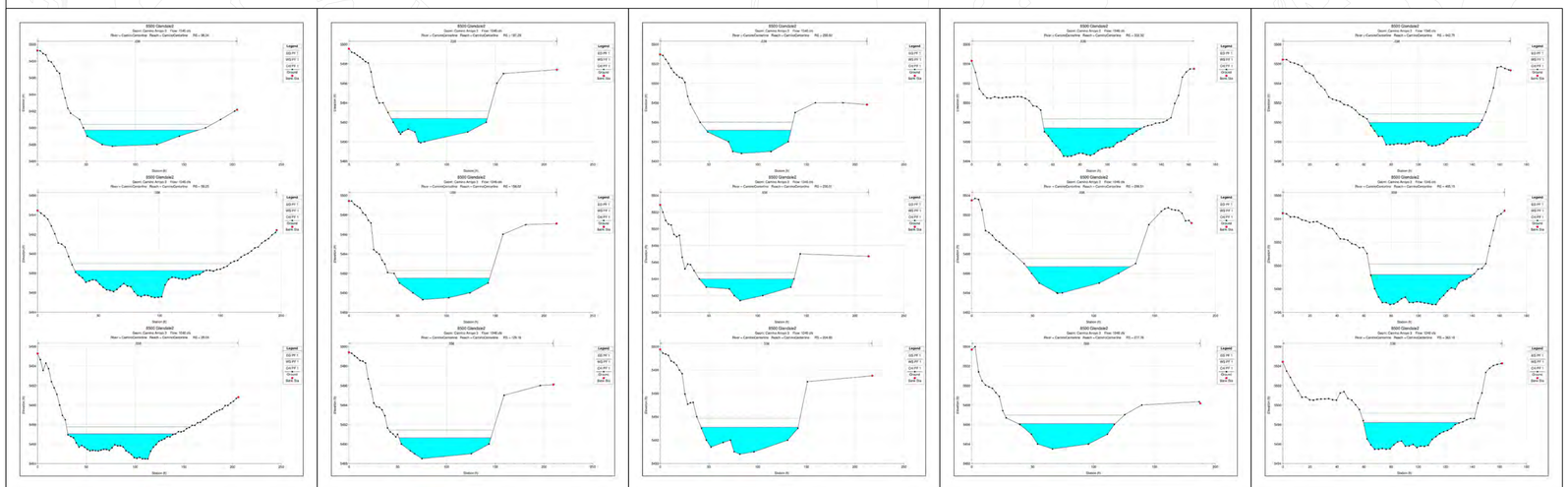
Design Review Committee	City Engineer Approval	Last Design Update	Mo. / Day / Yr.	Mo. / Day / Yr.

City Project No. | Zone Map No. | Sheet 1 Of 2



HEC-RAS Plan: 1046 cfs River: CaminoCenterline Reach: CaminoCenterline Profile: PF 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
CaminoCenterline	28.04	PF 1	1046.00	5484.48	5487.05	5487.05	5487.76	0.019325	6.77	154.45	110.63	1.01
CaminoCenterline	59.25	PF 1	1046.00	5485.50	5488.26	5488.26	5488.97	0.019015	6.73	155.51	110.97	1.00
CaminoCenterline	98.34	PF 1	1046.00	5487.80	5489.73	5489.73	5490.41	0.019307	6.63	157.77	116.88	1.01
CaminoCenterline	129.16	PF 1	1046.00	5488.50	5490.63	5490.63	5491.42	0.018475	7.13	146.75	94.23	1.01
CaminoCenterline	158.02	PF 1	1046.00	5489.30	5491.51	5491.51	5492.29	0.018540	7.11	147.17	95.20	1.01
CaminoCenterline	181.29	PF 1	1046.00	5489.90	5492.38	5492.38	5493.15	0.018666	7.02	148.92	96.37	1.01
CaminoCenterline	204.95	PF 1	1046.00	5490.80	5493.10	5493.10	5493.86	0.018494	6.97	150.07	99.63	1.00
CaminoCenterline	230.01	PF 1	1046.00	5491.40	5493.99	5493.99	5494.76	0.018542	7.05	148.36	97.04	1.01
CaminoCenterline	255.92	PF 1	1046.00	5492.80	5495.18	5495.18	5496.01	0.018241	7.33	142.65	86.78	1.01
CaminoCenterline	277.76	PF 1	1046.00	5493.50	5496.08	5496.08	5496.97	0.017846	7.55	138.51	79.40	1.01
CaminoCenterline	299.51	PF 1	1046.00	5493.95	5496.70	5496.70	5497.54	0.018171	7.38	141.75	85.34	1.01
CaminoCenterline	332.32	PF 1	1046.00	5494.49	5497.41	5497.41	5498.35	0.017646	7.79	134.25	72.56	1.01
CaminoCenterline	363.18	PF 1	1046.00	5495.47	5498.21	5498.21	5499.15	0.017522	7.79	134.23	71.79	1.00
CaminoCenterline	405.15	PF 1	1046.00	5496.67	5499.22	5499.22	5500.14	0.017780	7.68	136.24	75.64	1.01
CaminoCenterline	442.75	PF 1	1046.00	5497.57	5499.97	5499.97	5500.84	0.018055	7.46	140.25	82.47	1.01



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DONALD R. BRIGGS NEW MEXICO 14912 REGISTERED PROFESSIONAL ENGINEER

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TITLE:
8500 Glendale
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Design Review Committee	City Engineer Approval	Last Design Update	Mo. / Day / Yr.	Mo. / Day / Yr.

City Project No. | Zone Map No. | Sheet 2 Of 2