

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director



Mayor Timothy M. Keller

September 8, 2020

Ron Hensley, P.E.
THE Group
300 Branding Iron Rd. SE
Rio Rancho, NM 87124

**RE: Glendale Subdivision
8321 Glendale Ave. NE
Grading and Drainage Plan
Engineer's Stamp Date: 08/25/20
Hydrology File: B20D068**

Dear Mr. Hensley:

PO Box 1293

Based upon the information provided in your resubmittal received 08/26/2020, the Grading and Drainage Plan is approved for action by the DRB for Preliminary Plat.

Albuquerque

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

NM 87103

Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

www.cabq.gov

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



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

Project Title: GLENDALE SUBDIVISION **Building Permit #:** _____ **Hydrology File #:** B20D068
DRB#: 2020-003661 **EPC#:** _____ **Work Order#:** _____
Legal Description: LOT 31. BLOCK 3, UNIT 2, TRACT 2 NORTH ALBUQUERQUE ACRES
City Address: 8321 GLENDALE AV NE

Applicant: THE Group **Contact:** Ron Hensley
Address: 300 Branding Iron Rd. SE, Rio Rancho, NM 87124
Phone#: 505-410-1622 **Fax#:** _____ **E-mail:** ron@thegroup.cc

Owner: CLEARBROOK LLC **Contact:** Scott Henry
Address: 8801 Jefferson NE Bldg. A, ALBUQUERQUE, NM 87113
Phone#: 505-858-1800 **Fax#:** _____ **E-mail:** scotth@stillbrooke.com

TYPE OF SUBMITTAL: ☒ PLAT (2 # 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) WALL CALCULATIONS
- ☐ 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: 8/25/20 **By:** THE Group / Ron Hensley

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____



The **H**ENSLEY **E**NGINEERING **G**ROUP

August 25, 2020

Hydrology Development
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: 8321 Glendale Ave. N.E. – Grading and Drainage Plan

We are requesting a review of the attached revised plan and wall calculations in support of the Preliminary Plat of Glendale subdivision. The site is located at 8321 Glendale Ave. N.E. and described as “LOT 31. BLOCK 3, UNIT 2, TRACT 2 NORTH ALBUQUERQUE ACRES”, and the submittal covers the impact of the development.

Please contact me at 410-1622 or via email if you have any questions or comments.

Sincerely,

Ron E. Hensley P.E.
ron@thegroup.cc

Use menu item Settings > Printing & Title Block
to set these five lines of information
for your program.

Project Name/Number : glendale wall

Title 8321:Glendale

Dsgnr: REH

Description....

WEST WALL

Page : 1
Date: 25 AUG 2020

This Wall in File: f:\stillbrooke\glendale\glendale walls.rpx

RetainPro (c) 1987-2019, Build 11.20.03.31

License : KW-06062143

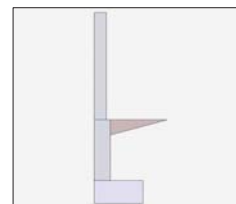
License To : THE Group

Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Criteria

Retained Height	=	2.67 ft
Wall height above soil	=	4.67 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	0.00 in
Water height over heel	=	0.0 ft



Load Factors

Building Code	IBC 2015,ACI
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.000
Seismic, E	1.000

Soil Data and Lateral Earth Pressure

Allow Soil Bearing	=	1,500.0 psf	Soil Density, Heel	=	110.00 pcf
Coulomb Soil Pressure calculation			Soil Density, Toe	=	110.00 pcf
Soil Friction Angle	=	30.0 deg	Footing Soil Friction	=	0.400
Active Pressure:			Soil height to ignore		
Ka*Gamma (horiz)	=	28.3 psf/ft	for passive pressure	=	12.00 in
Passive Pressure:Kp*Gar	=	528.8 psf/ft			

Surcharge Loads

Surcharge Over Heel	=	0.0 psf	Surcharge Over Toe	=	0.0 psf
Used To Resist Sliding & Overturning			Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs	Axial Load Eccentricity	=	0.0 in
Axial Live Load	=	0.0 lbs			

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)

Wind on Exposed Stem

Wind on Exposed Stem (Service Level)	=	0.0 psf
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Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs	Footing Type	Line Load
Footing Width	=	0.00 ft	Base Above/Below Soil	
Eccentricity	=	0.00 in	at Back of Wall	= -1.5 ft
Wall to Ftg CL Dist	=	4.00 ft	Poisson's Ratio	= 0.300

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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Wall Design Summary

Stability Ratios

Overturning	=	3.96 OK
Sliding	=	2.20 OK

Soil Bearing

Total Bearing Load	=	1,049 lbs
...resultant ecc.	=	4.10 in
Soil Pressure @ Toe	=	1,062 psf OK
Soil Pressure @ Heel	=	0 psf OK
Allowable	=	1,500 psf
Soil Pressure Less Than Allowable		
ACI Factored @ Toe	=	1,486 psf
ACI Factored @ Heel	=	0 psf
Footing Shear @ Toe	=	0.0 psi OK
Footing Shear @ Heel	=	5.9 psi OK
Allowable	=	82.2 psi

Sliding

Resisting Forces

<u>Vertical Forces</u>	<u>Force</u>
Soil Over Heel (above water table, if any)	391.6 lbs
Soil Over Heel (below water table, if any)	0.0
Water Over Heel	0.0
Buoyant Force	0.0
Sloped Soil Over Heel	0.0
Surcharge Over Heel	0.0
Adjacent Footing Load	0.0
Axial Dead Load on Stem	0.0
Axial Live Load on Stem *	Omit
Soil Over Toe	0.0
Surcharge Over Toe	0.0
Stem Weight(s)	357.0
Earth @ Stem Transitions	0.0
Footing Weight	300.0
Key Weight	0.0
Vert. Component **	0.0

Sliding Forces

<u>Lateral Forces</u>	<u>Force</u>
Heel Active Pressure (above water table, if any)	190.6 lbs
Heel Active Pressure (below water table, if any)	0.0
Hydrostatic Force	0.0
* Heel Active Pressure	190.6
Surcharge over Heel	0.0
Adjacent Footing	0.0
Surcharge Over Toe	0.0
Load @ Stem Above Soil	0.0
Added Lateral Load	0.0
Seismic Load	0.0
Seismic-Self-weight	0.0
Lateral on Key	0.0
Totals =	190.6 lbs

*Includes water table effect

Total Vertical Loads

1,048.6 lbs

* Axial live load NOT included in total displayed , or used for overturning
or sliding resistance, but is included for soil pressure calculations.

Sliding Calcs

Lateral Sliding Force	=	190.6 lbs
less 100% Passive Force	=	- 0.0 lbs
less 100% Friction Force	=	- 419.4 lbs
Added Force Req'd	=	0.0 lbs OK
....for 1.5 Stability	=	0.0 lbs OK

Vertical component of active lateral soil pressure IS NOT considered in
the calculation of soil bearing pressures.

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License To : THE Group

Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Overturning

Resisting Moments

<u>Resisting Moments</u>	<u>Force</u>	<u>Distance</u>	<u>Moment</u>
Soil Over Heel (above water table, if any)	391.6 lbs	1.33 ft	522.1ft-#
Soil Over Heel (below water table, if any)	0.0		
Water Table	0.0		
Soil Over Heel	391.6	1.33	522.1
Sloped Soil Over Heel	0.0		
Surcharge Over Heel	0.0		
Adjacent Footing Load	0.0		
Axial Dead Load on Stem	0.0		
Axial Live Load on Stem *	0.0		
Soil Over Toe	0.0		
Surcharge Over Toe	0.0		
Stem Weight(s)	357.0	0.28	101.5
Earth @ Stem Transitions	0.0		
Footing Weight	300.0	1.00	300.0
Key Weight	0.0	0.50	
Vert. Component	0.0		
Total Vertical Loads	1,048.6 lbs		

Resisting Moment

923.6 ft-#

Eccentricity

-4.1 in

* Axial live load NOT included in total displayed, or used for overturning or sliding resistance, but is included for soil pressure calculations.

Overturning

Overturning Moments

<u>Overturning Moments</u>	<u>Force</u>	<u>Distance</u>	<u>Moment</u>
Heel Active Pressure (above water table, if any)	190.6 lbs	1.22 ft	233.2 ft-#
Heel Active Pressure (below water table, if any)	0.0		
Hydrostatic Force	0.0		
Buoyant Force	0.0		
Surcharge over Heel	0.0		
Adjacent Footing	0.0		
Surcharge Over Toe	0.0		
Load @ Stem Above Soil	0.0		
Added Lateral Load	0.0		
Seismic Load	0.0		
Seismic-Self-weight	0.0		
Totals =	190.6 lbs		
Overturning Moment			233.2 ft-#

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Description....

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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Stem Design Summary

		2nd	Bottom
		Stem OK	Stem OK
Design Height Above Ftg	ft =	2.67	0.00
Wall Material Above "Ht"	=	Masonry	Masonry
Design Method	=	LRFD	LRFD
Thickness	=	6.00	8.00
Rebar Size	=	# 4	# 4
Rebar Spacing	=	48.00	48.00
Rebar Placed at	=	Edge	Edge
Design Data			
fb/FB + fa/Fa	=	0.000	0.124
Total Force @ Section			
Service Level	lbs =		
Strength Level	lbs =		161.5
Moment....Actual			
Service Level	ft-# =		
Strength Leve	ft-# =		143.7
Moment.....Allowable	ft-# =	592.7	1,155.2
Shear.....Actual			
Service Level	psi =		
Strength Leve	psi =		10.2
Shear.....Allowable	psi =	69.7	69.7
Anet	in2 =	11.69	15.85
Rebar Depth 'd'	in =	2.75	5.25
Masonry Data			
f'm	psi =	1,500	1,500
Fy	psi =	60,000	60,000
Solid Grouting	=	No	No
Modular Ratio 'n'	=	21.48	21.48
Wall Weight	psf =	45.0	55.0
Equiv. Solid Thick.	in =	3.70	4.60
Masonry Block Type	=	Normal Weight	
Masonry Design Method	=	LRFD	
Concrete Data			
f'c	psi =		
Fy	psi =		

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Page : 5
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Cantilevered Retaining Wall

Code: IBC 2015,ACI 318-14,ACI 530-13

Footing Data

Toe Width	=	0.00 ft	f'c	=	3,000 psi
Heel Width	=	2.00	Fy	=	60,000 psi
Total Footing Width	=	2.00 ft	Footing Concrete Density	=	150.00 pcf
Footing Thickness	=	12.00 in	Min. As %	=	0.0018
Key Width	=	12.00 in	Rebar Cover @ Top	=	2.00 in
Key Depth	=	0.00 in	@ Bottom	=	3.00 in
Key Distance from Toe	=	0.00 ft			

Footing Design Results

		<u>Toe</u>	<u>Heel</u>
Factored Pressure	=	1,486	0 psf
Mu' : Upward	=	0	0 ft-#
Mu' : Downward	=	0	592 ft-#
Mu: Design	=	0	-592 ft-#
Actual 1-Way Shear	=	0.00	5.92 psi
Allow 1-Way Shear	=	0.00	43.82 psi
Toe Reinforcing	=	# 4 @ 48.00 in	
Heel Reinforcing	=	None Spec'd	
Key Reinforcing	=	None Spec'd	

Other Acceptable Sizes & Spacings

Toe: $\phi Mn = \phi'5' \lambda \sqrt{f'c} S_m$

Heel: $\phi Mn = \phi'5' \lambda \sqrt{f'c} S_m$

Key: No key defined

Min footing T&S reinf Area 0.52 in²

Min footing T&S reinf Area per fo 0.26 in² /ft

If one layer of horizontal bars: If two layers of horizontal bars:

#4@ 9.26 in #4@ 18.52 in

#5@ 14.35 in #5@ 28.70 in

#6@ 20.37 in #6@ 40.74 in

Footing Torsion, Tu = 0.00 ft-lbs

Footing Allow. Torsion, ϕTu = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci

Horizontal Defl @ Top of Wall (approximate only) 0.108 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe,
because the wall would then tend to rotate into the retained soil.

