CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

June 4, 2020

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

RE: Viva Paradise - Phase II
5516 Buglo NW
Grading and Drainage Plan
Engineer's Stamp Date: 05/27/20
Hydrology File: B11D010A

Dear Mr. Briggs:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 05/27/2020, the Grading & Drainage Plan is approved for Building Permit and Grading Permit.

Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter. Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

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

Also as a reminder, please provide a Drainage Covenant for the proposed retention pond per Chapter 17 of the DPM prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A $25 fee will be required.

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: Viva Paradise Phase II Building Permit #: _____ Hydrology File #: B11D010A

DRB#: PR-2019-2333 EPC#: _____ Work Order#: _____

Legal Description: Lots 10A, 11A, 12A, 11B, Unit 1, Paradise Hills Investment Properties

City Address: 5512, 5516, 5520 Buglo NW Albuquerque

Applicant: Don Briggs Engineering LLC Contact: Don Briggs

Address: 5324 Oakledge Ct. NW Albuquerque, NM, 87120

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

Owner: John Lowe Contact: John Lowe

Address: 449 Live Oak Lp. NE Albuquerque, NM 87122

Phone#: 505-6886834 Fax#: _____ E-mail: jlowe14@comcast.net

TYPE OF SUBMITTAL: _____ PLAT (___# OF LOTS) ____ RESIDENCE __X__ 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
____ DRAINAGE REPORT
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

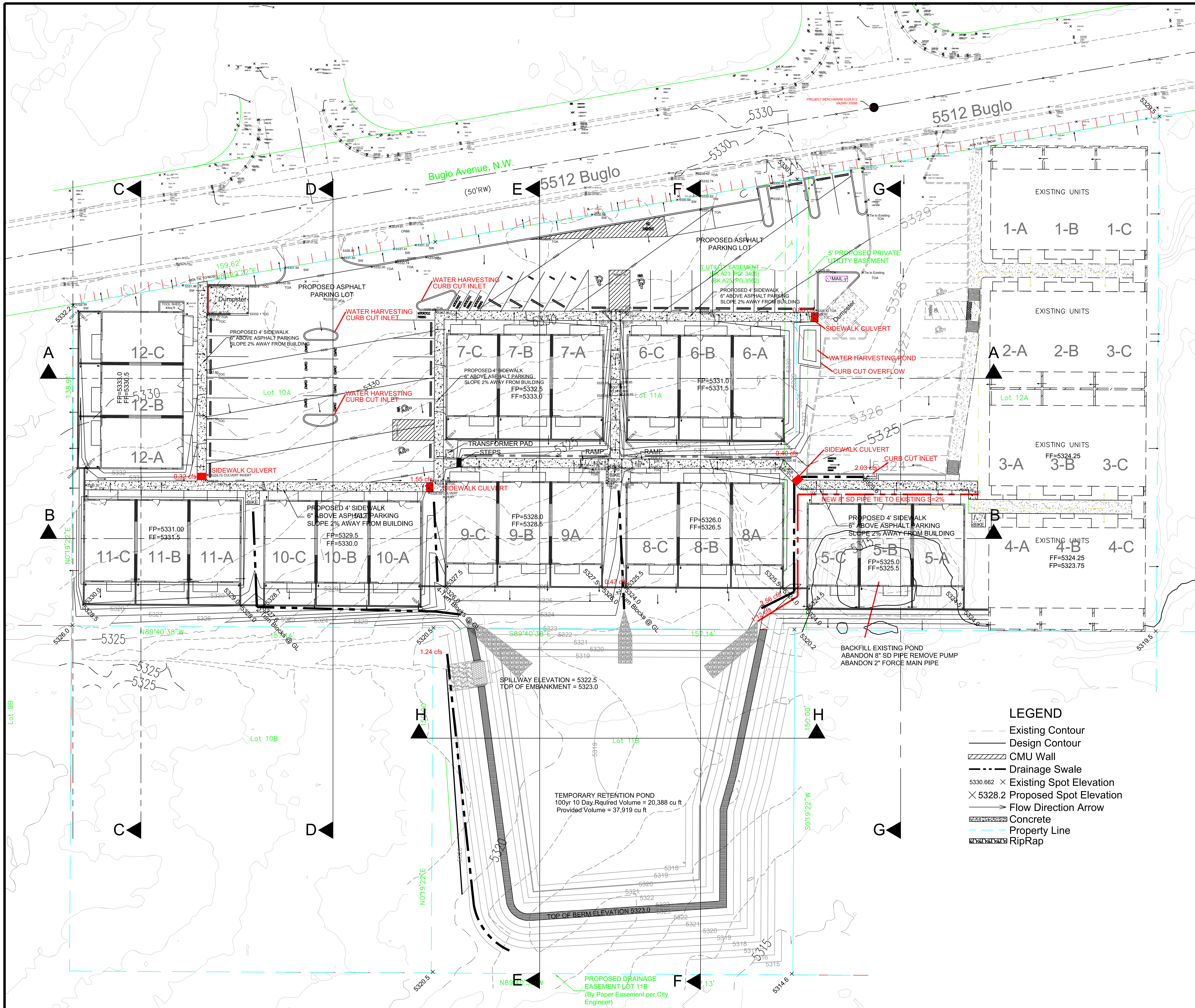
TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

__X__ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY
____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ 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: 5/27/2020 By: Don Briggs

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

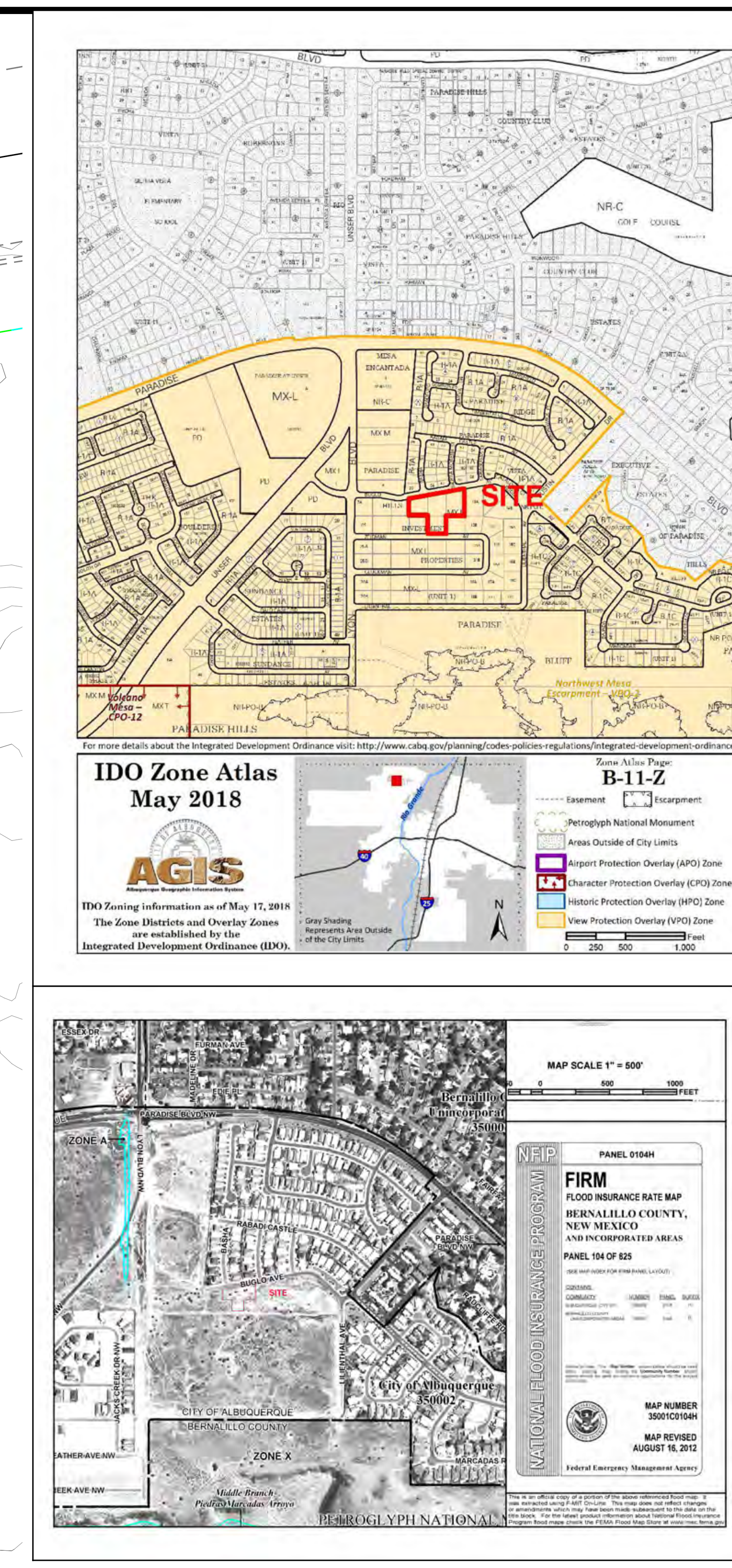


LEGEND

- Existing Contour
- Design Contour
- CMU Wall
- Drainage Swale
- 5330.662 × Existing Spot Elevation
- ×5328.2 Proposed Spot Elevation
- Flow Direction Arrow
- Concrete
- Property Line
- RipRap

SCALE 1" = 20'

0 10 20 40 60



AS BUILT INFORMATION

CONTRACTOR / WORK STAKED BY / INSPECTOR'S ACCEPTANCE BY / FIELD VERIFICATION BY / DRAWINGS CORRECTED BY — DATE

RECORDING INFORMATION

RECORDED BY / NO. — DATE

BENCHMARKS

SURVEY INFORMATION

FIELD NOTES — NO. — BY — DATE

ENGINEER'S SEAL

DONALD R. BRIGGS — 14912 — REGISTERED PROFESSIONAL ENGINEER

REVISIONS

NO.	DATE	REMARKS	BY

DESIGN

DESIGNED BY	DB	DATE 5/26/2020
DRAWN BY	DB	DATE 5/26/2020
CHECKED BY		DATE

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

TITLE:

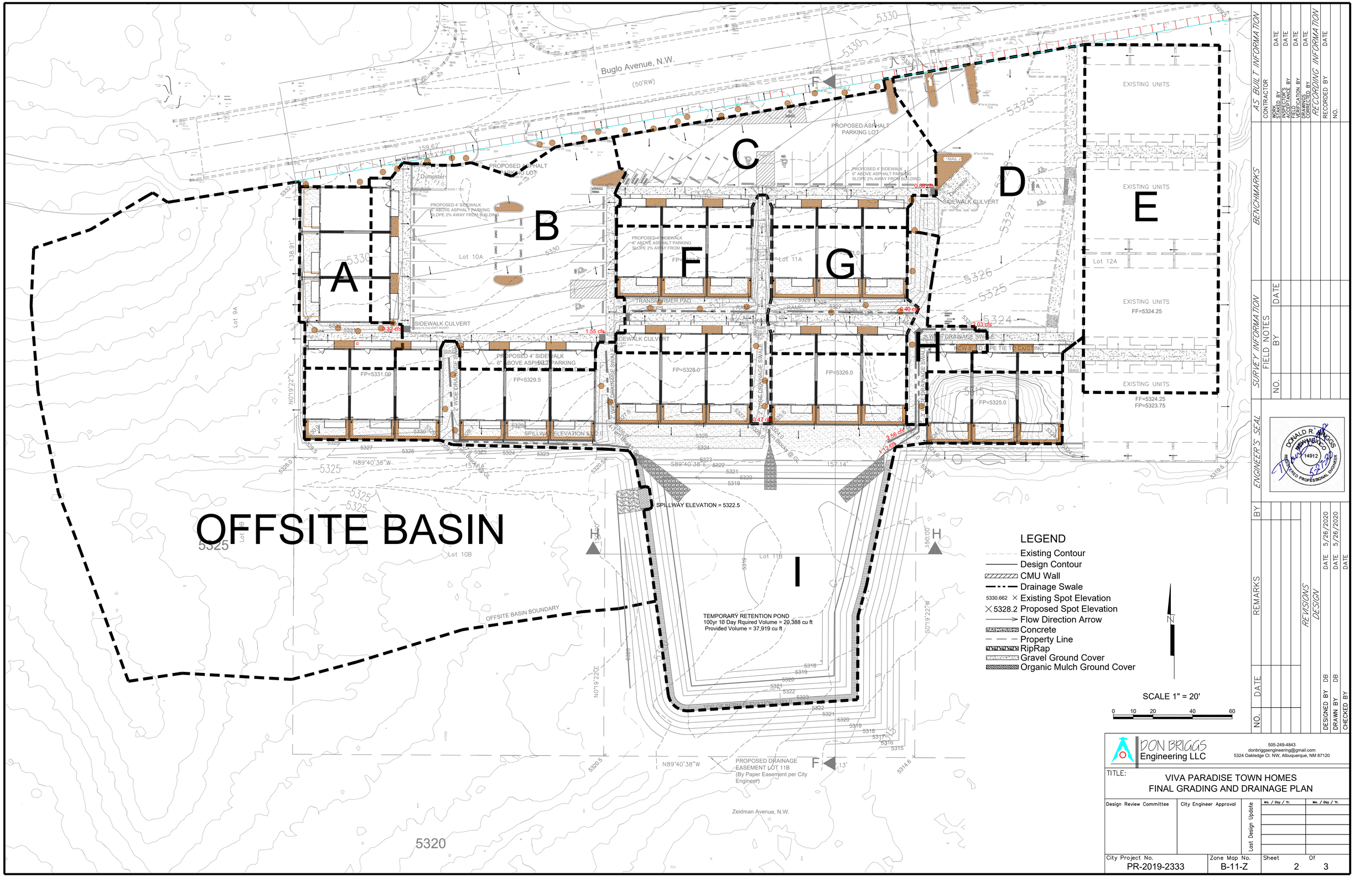
VIVA PARADISE TOWN HOMES
FINAL GRADING AND DRAINAGE PLAN

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

Last Design Update

City Project No.	Zone Map No.	Sheet	Of
PR-2019-2333	B-11-Z	1	3

OFFSITE BASIN



LEGEND

- Existing Contour
- Design Contour
- CMU Wall
- Drainage Swale
- 5330.662 × Existing Spot Elevation
- ×5328.2 Proposed Spot Elevation
- Flow Direction Arrow
- Concrete
- Property Line
- RipRap
- Gravel Ground Cover
- Organic Mulch Ground Cover

SCALE 1" = 20'

0 10 20 40 60

AS BUILT INFORMATION
CONTRACTOR
WORK STARTED BY DATE
INSPECTOR'S NOTES MADE BY DATE
FIELD VERIFICATION BY DATE
MARKINGS CORRECTED BY DATE

RECORDING INFORMATION
RECORDED BY DATE
NO.

BENCHMARKS

SURVEY INFORMATION
FIELD NOTES BY DATE
NO.

ENGINEER'S SEAL
DONALD R. BRIGGS NEW MEXICO 14912 REGISTERED PROFESSIONAL ENGINEER
5/21/20

REVISIONS

NO.	REMARKS	BY	DATE
	DESIGNED	DB	5/26/2020
	DRAWN	DB	5/26/2020
	CHECKED	BY	DATE

DON BRIGGS Engineering LLC
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VIVA PARADISE TOWN HOMES
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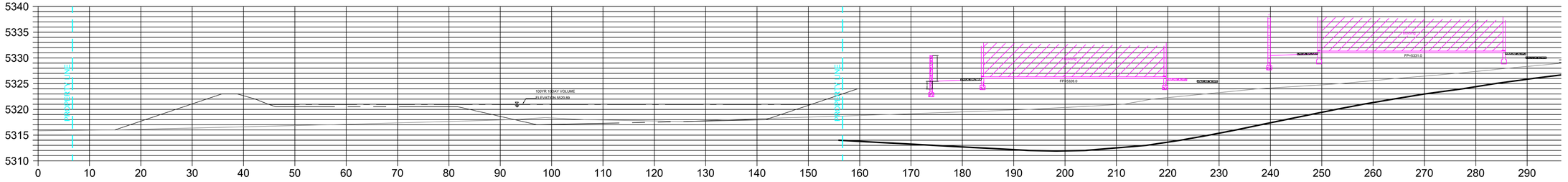
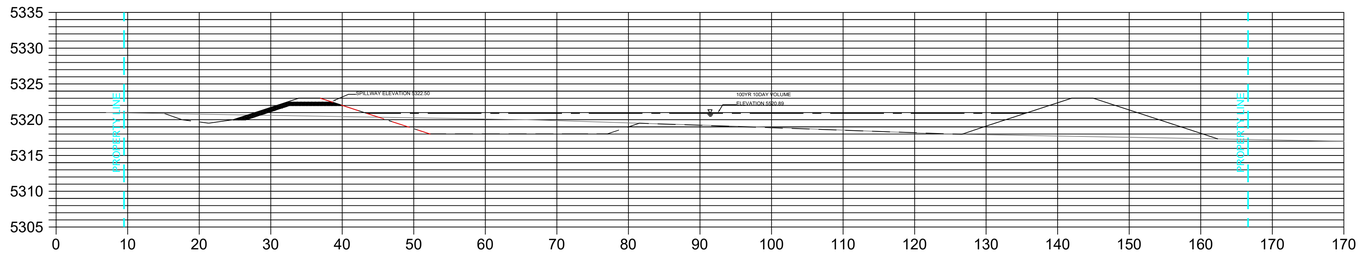
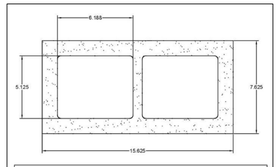
City Project No.	Zone Map No.	Sheet	Of
PR-2019-2333	B-11-Z	2	3



POND CROSS SECTION F-F



POND CROSS SECTION H-H



Standard 8" CMU Turn Block Discharge Calculations

Orifice Discharge Rate $Q = C_d A_o \sqrt{2gH}$

1 - 8" Turned Block

Area	5.125 x 6.188"	0.22	sq. ft.
Coeffecient		0.45	
Grav. Const		32.20	ft./sec^2
Head		1.00	ft. (Depth 16")
Q/opening		0.80	cfs
Total Q		1.59	cfs

DRAINAGE NARRATIVE

This grading & drainage plan was prepared to support a rough grading and building permit application for Phase II of an existing town home development located at 5512 Buglo Ave. NW. This project is required to retain the 100 year 10 day runoff volume in a temporary retention pond as downstream infrastructure has not been constructed. This plan was prepared using the hydrology methodology presented in Chapter 22.2 of the City of Albuquerque's Development Process Manual (abbreviated method).

The site is a 2.52 acre parcel located in Precipitation Zone 1 and Floodzone X (Unshaded). It slopes from the north west to the south east at about 8.5%. The site is minimally impacted by cross lot runoff from the adjacent properties to the west. Buglo Ave. is constructed with curb, gutter.

Storm water is routed through the development using landscaped swales, sidewalk culverts and an existing area drain associated with the Phase I development. The existing Phase I storm water pond will be backfilled and the storm water from the area drain rerouted to the new pond with an extension to the 8" area drain pipe. Storm water from a small offsite basin is routed around the development with a small swale.

Total disturbance is expected to impact a little over 2 acres of the 2.52 ac site. A SWPPP will be prepared for this project.

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 City of Albuquerque MS4 Permit requirements.

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

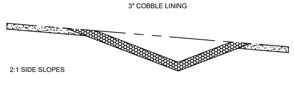
STAGE - DISCHARGE TABLE
MANNING EQUATION FOR TRAPAZOIDAL CHANNEL

VIVA PARADISE TOWN HOMES
SWALE DESIGN

Q100=	VARIES	
ELEV=	0.00	Thalweg Elevation (ft)
N=	0.031	Mannings N
d50	0.250	Rip Rap (ft)
S=	0.07000	Channel Slope (ft/ft)
SS=	2	Average Side Slopes (SS:1)
W=	0.0	Bottom Width (ft)

A = W*D + SS*D^2
WP = 2*(D^2 + SS^2)^1/2 + W
EG= V^2/2(g) g=32.2
d50= V(S)^.17/5.88 2:1 SS Max. Denver Urban Drainage
N for Riprap N=0.0395(D50^1/6) = 0.031 Design Manual

D	WS Elev	EG Elev	d50	Q	A	V	WP	1.49/N	(A/WP)^2/3	(S)^1/2
0.10	0.10	0.10	0.00	0.01	0.02	0.37	4.00	48.06	0.02922	0.26458
0.20	0.20	0.21	0.01	0.07	0.08	0.93	4.02	48.06	0.07344	0.26458
0.30	0.30	0.34	0.03	0.29	0.18	1.60	4.04	48.06	0.12558	0.26458
0.40	0.40	0.48	0.06	0.75	0.32	2.33	4.08	48.06	0.18325	0.26458
0.50	0.50	0.65	0.11	1.56	0.50	3.12	4.12	48.06	0.24500	0.26458
0.60	0.60	0.84	0.18	2.84	0.72	3.94	4.18	48.06	0.30977	0.26458
0.70	0.70	1.06	0.27	4.70	0.98	4.79	4.24	48.06	0.37675	0.26458
0.80	0.80	1.30	0.38	7.25	1.28	5.66	4.31	48.06	0.44526	0.26458
0.90	0.90	1.57	0.50	10.60	1.62	6.55	4.39	48.06	0.51476	0.26458
1.00	1.00	1.86	0.65	14.87	2.00	7.44	4.47	48.06	0.58480	0.26458
1.10	1.10	2.18	0.81	20.16	2.42	8.33	4.57	48.06	0.65500	0.26458
1.20	1.20	2.52	1.00	26.55	2.88	9.22	4.66	48.06	0.72506	0.26458
1.30	1.30	2.89	1.20	34.16	3.38	10.11	4.77	48.06	0.79473	0.26458
1.40	1.40	3.27	1.41	43.06	3.92	10.98	4.88	48.06	0.86382	0.26458
1.50	1.50	3.68	1.65	53.34	4.50	11.85	5.00	48.06	0.93217	0.26458
1.60	1.60	4.11	1.89	65.09	5.12	12.71	5.12	48.06	0.99967	0.26458
1.70	1.70	4.55	2.15	78.37	5.78	13.56	5.25	48.06	1.06625	0.26458
1.80	1.80	5.02	2.43	93.27	6.48	14.39	5.38	48.06	1.13184	0.26458
1.90	1.90	5.49	2.71	109.85	7.22	15.21	5.52	48.06	1.19640	0.26458
2.00	2.00	5.99	3.01	128.18	8.00	16.02	5.66	48.06	1.25992	0.26458



DEPTH AND WIDTH BASED ON FLOW
SEE DESIGN TABLE AND PLAN

DRAINAGE SWALE DETAIL

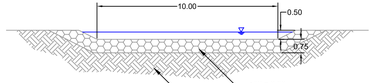
STAGE - DISCHARGE TABLE
MANNING EQUATION FOR TRAPAZOIDAL CHANNEL

VIVA PARADISE TOWN HOMES
TEMPORARY POND SPILLWAY DESIGN

Q100=	8.26	
ELEV=	0.00	Thalweg Elevation (ft)
N=	0.035	Mannings N
d50	0.500	Rip Rap (ft)
S=	0.01000	Channel Slope (ft/ft)
SS=	2	Average Side Slopes (SS:1)
W=	10.0	Bottom Width (ft)

A = W*D + SS*D^2
WP = 2*(D^2 + SS^2)^1/2 + W
EG= V^2/2(g) g=32.2
d50= V(S)^.17/5.88 2:1 SS Max. Denver Urban Drainage
N for Riprap N=0.0395(D50^1/6) = 0.035 Design Manual

D	WS Elev	EG Elev	d50	Q	A	V	WP	1.49/N	(A/WP)^2/3	(S)^1/2
0.10	0.10	0.11	0.00	0.76	1.02	0.74	14.00	42.57	0.17440	0.10000
0.20	0.20	0.22	0.01	2.48	2.08	1.19	14.02	42.57	0.28025	0.10000
0.30	0.30	0.34	0.02	5.03	3.18	1.58	14.04	42.57	0.37149	0.10000
0.40	0.40	0.46	0.02	8.37	4.32	1.94	14.08	42.57	0.45492	0.10000
0.50	0.50	0.58	0.03	12.49	5.50	2.27	14.12	42.57	0.53328	0.10000
0.60	0.60	0.70	0.04	17.39	6.72	2.59	14.18	42.57	0.60796	0.10000
0.70	0.70	0.83	0.05	23.09	7.98	2.89	14.24	42.57	0.67978	0.10000
0.80	0.80	0.96	0.06	29.60	9.28	3.19	14.31	42.57	0.74928	0.10000
0.90	0.90	1.09	0.07	36.93	10.62	3.48	14.39	42.57	0.81680	0.10000
1.00	1.00	1.22	0.09	45.09	12.00	3.76	14.47	42.57	0.88260	0.10000
1.10	1.10	1.35	0.10	54.10	13.42	4.03	14.57	42.57	0.94688	0.10000
1.20	1.20	1.49	0.11	63.96	14.88	4.30	14.66	42.57	1.00976	0.10000
1.30	1.30	1.62	0.13	74.71	16.38	4.56	14.77	42.57	1.07137	0.10000
1.40	1.40	1.76	0.14	86.34	17.92	4.82	14.88	42.57	1.13181	0.10000
1.50	1.50	1.90	0.16	98.88	19.50	5.07	15.00	42.57	1.19114	0.10000
1.60	1.60	2.04	0.17	112.34	21.12	5.32	15.12	42.57	1.24943	0.10000
1.70	1.70	2.18	0.19	126.73	22.78	5.56	15.25	42.57	1.30675	0.10000
1.80	1.80	2.32	0.20	142.06	24.48	5.80	15.38	42.57	1.36315	0.10000
1.90	1.90	2.47	0.22	158.35	26.22	6.04	15.52	42.57	1.41866	0.10000
2.00	2.00	2.61	0.24	175.62	28.00	6.27	15.66	42.57	1.47334	0.10000



SPILLWAY DESIGN DETAIL

Hydrology Calculations (Full Retention)
VIVA PARADISE TOWNHOMES

ZONE 1 DMP VALUES

LAND TREATMENTS		LT-A	LT-B	LT-C	LT-D
UNIT PEAK DISCHARGE	(cfs/ac)	1.29	2.03	2.87	4.37
EXCESS PRECIPITATION	(in)	0.44	0.67	0.99	1.97

2.51 ac SITE CONDITIONS

BASIN	AREA	LT-A	LT-B	LT-C	LT-D	DISCHARGE	VOLUME
	(sq ft)	(sq ft)	(sq ft)	(sq ft)	(sq ft)	(cfs)	(cu ft)
EXISTING	109771	76820.72	0.00	13496.48	19454.00	5.12	7124
100YR 10DAY							2756
TOTAL						5.12	9880
DEVELOPED	109771	19426.59	16955.05	13450.21	59939.36	8.26	12609
100YR 10DAY							8491
TOTAL						8.26	21100

DEVELOPED BASINS

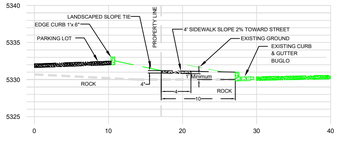
BASIN	AREA	LT-A	LT-B	LT-C	LT-D	DISCHARGE	VOLUME
	(sq ft)	(sq ft)	(sq ft)	(sq ft)	(sq ft)	(cfs)	(cu ft)
A	3570	0.00	165.75	763.82	2640.52	0.32	506
B	12590	0.00	599.25	0.00	11990.70	1.23	2002
C	8851	0.00	220.89	0.00	8629.93	0.88	1429
D	12116	0.00	335.41	1315.51	10464.76	1.15	1845
E	11950	0.00	0.00	2286.99	9662.52	1.12	1775
F	5422	0.00	251.94	1700.51	3469.13	0.47	724
G	4460	0.00	251.94	1011.75	3196.31	0.40	622
H	1659	0.00	40.50	1129.36	489.25	0.13	176
I	29728	0.00	15089.37	5242.26	9396.26	1.99	2818
TOTAL	90345	0	16955	13450	59939	7.69	11896
Percentages		0%	19%	15%	66%		
Additional 100yr 10day volume							8491
Required Ponding							20388
Water Quality Volume =		0.34"/(12"/ft) *		9396			266

BASIN	AREA	LT-A	LT-B	LT-C	LT-D	DISCHARGE	VOLUME
	(sq ft)	(sq ft)	(sq ft)	(sq ft)	(sq ft)	(cfs)	(cu ft)
OFFSITE BASIN	42016	42015.65	0	0	0	1.24	1541

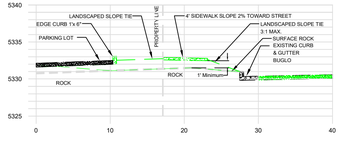
FULL RETENTION POND VOLUME 3:1 SIDE SLOPES BERMED Revised

ELEVATION	AREA	AVE AREA	DEPTH	CUM DEPTH	VOLUME	CUM VOLUME
5318.00	653.14					
		4125.82	1.00	1.00	4125.82	4125.82
5319.00	7598.50					
		8151.32	1.00	2.00	8151.32	12277.14
5320.00	8704.15					
		9279.26	1.00	3.00	9279.26	21556.40
5321.00	9854.37					
		10470.54	1.00	4.00	10470.54	32026.94
5322.00	11086.71					
		11784.40	1.00	5.00	11784.40	43811.34
5323.00	12482.09					

Required Volume = 20388 cu ft
Required Volume Elevation = 5320.89 ft
Berm Elevation = 5323.00 ft
Spillway Elevation = 5322.50 ft
Spillway Volume = 37919 cu ft



STANDARD SIDEWALK INSTALLATION



MODIFIED SIDEWALK INSTALLATION

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY DATE
INSPECTORS
AS-BUILTED BY DATE
FIELD
INFORMATION 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
5/27/20

REVISIONS
DESIGN
NO. BY DATE
REMARKS
DESIGNED BY DB DATE 5/26/2020
DRAWN BY DB DATE 5/26/2020
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DON BRIGGS Engineering LLC
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City Project No. PR-2019-2333
Zone Map No. B-11-Z
Sheet 3 Of 3