CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Interim Director

Mayor Timothy M. Keller

January 14, 2022

Mark H. Burak, P.E.
1512 Sagebrush Trail SE
Albuquerque, NM 87123

RE: Paradise Subdivision
Grading and Drainage Plan
Engineer's Stamp Date: 11/17/21
Hydrology File: B11D014

Dear Mr. Burak:

Based upon the information provided in your submittal received 11/24/2021, the Grading & Drainage Plan **is not** approved for Grading Permit and for action by the DRB on Preliminary Plat. The following comments need to be addressed for approval of the above referenced project:

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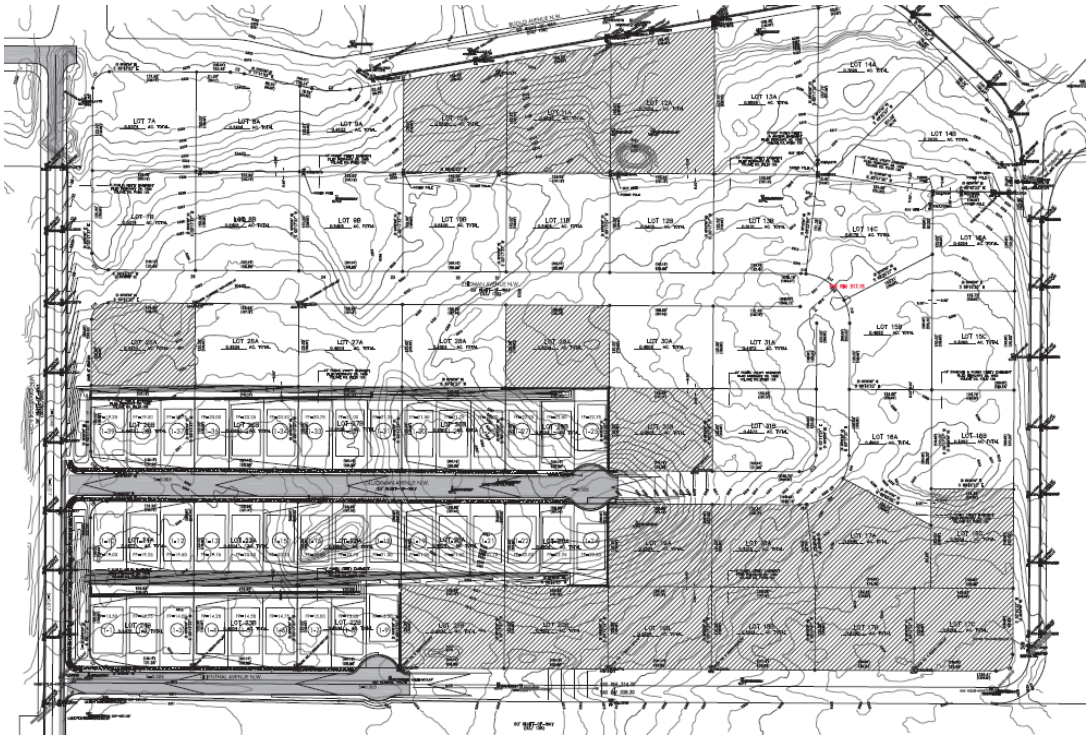
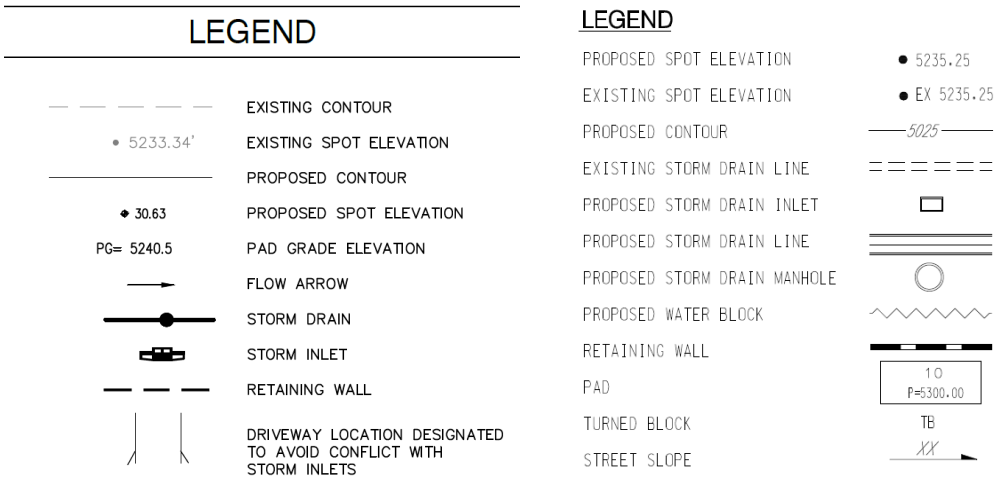
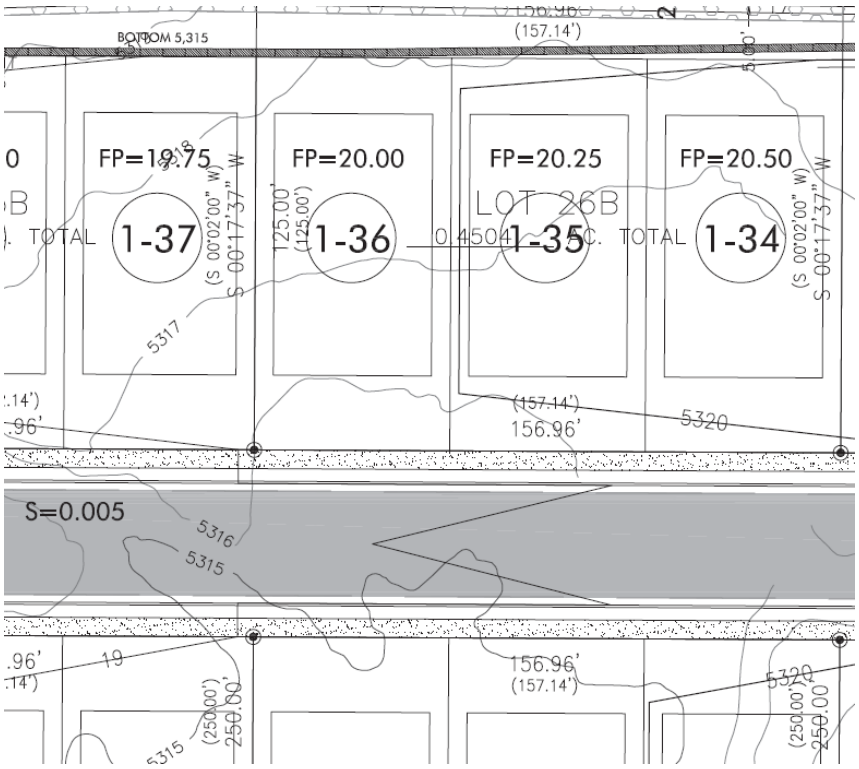
1. It is unclear what is being constructed and what is existing. The line work for the existing is the same line weight as proposed. Also, what is the hatching on some of the lots? Please clean this up.



2. Please provide for a Legend. Here are some examples.



3. Your Grading Plan is missing typical grades that are needed in order to review and approve this project.



Also, here are two subdivision grading plans.

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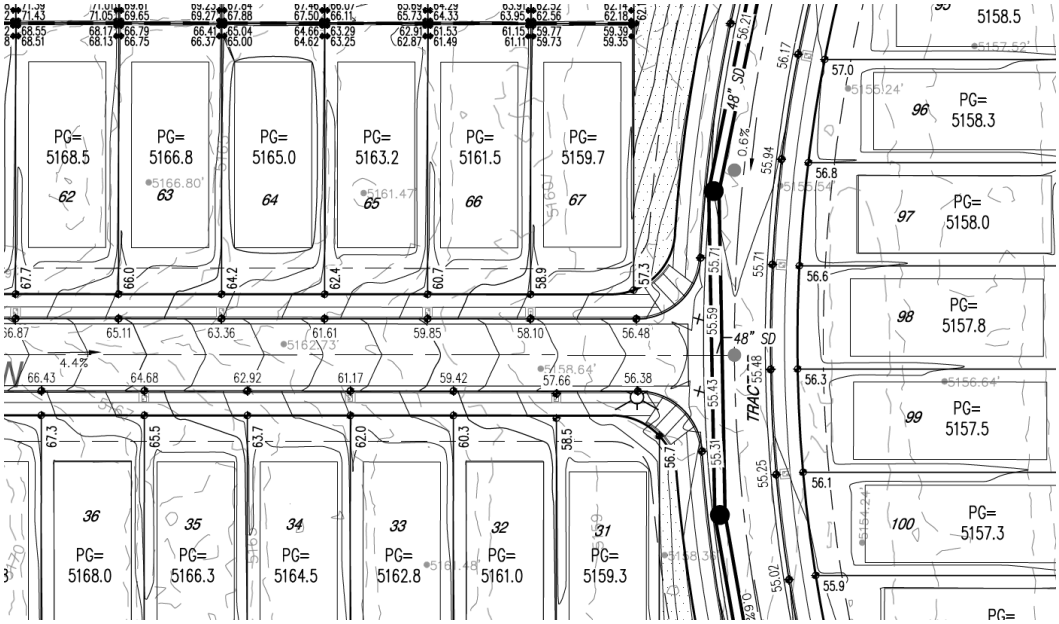

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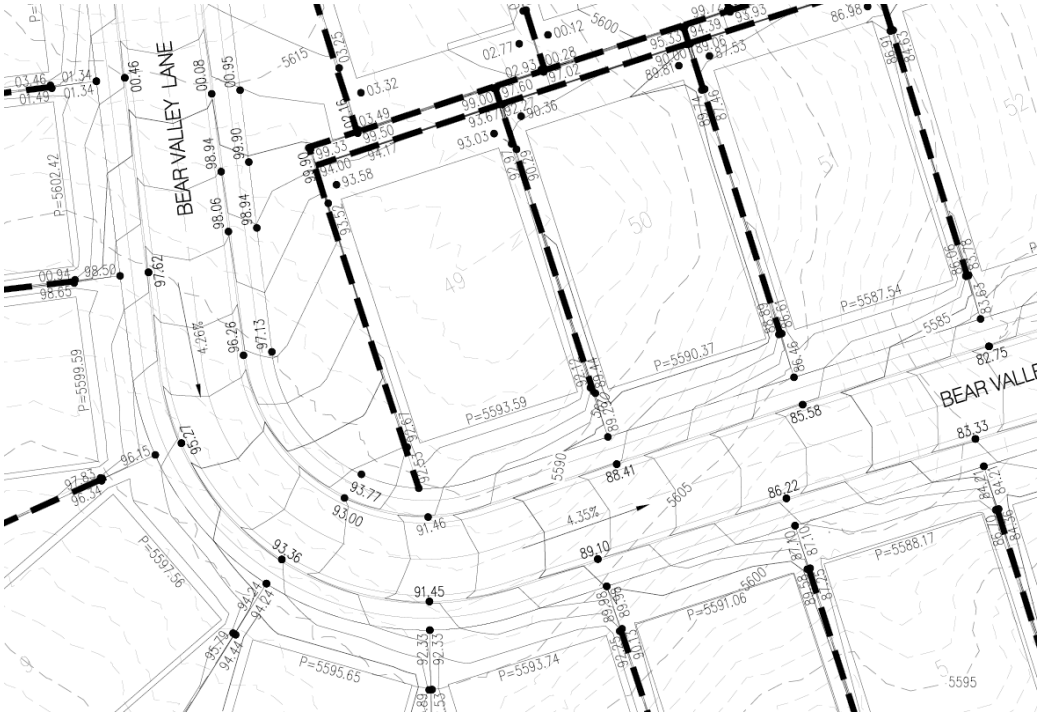
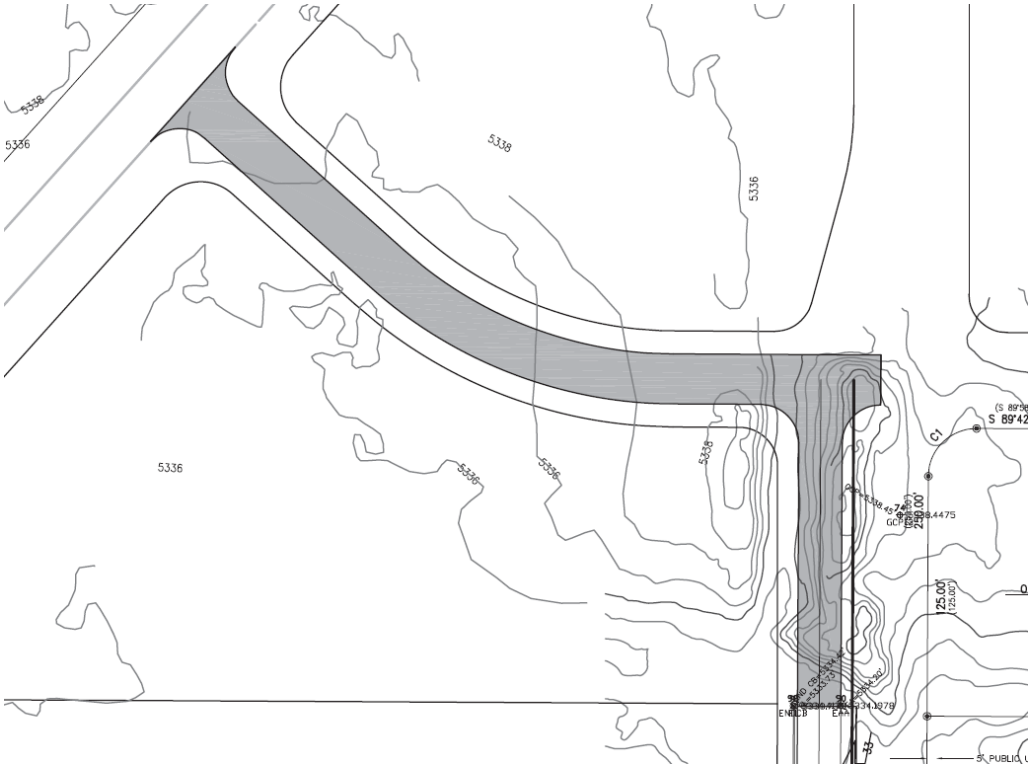


4. Please provide grades for all off-site work. The off-site work will need to be accounted for in the Drainage Plan.



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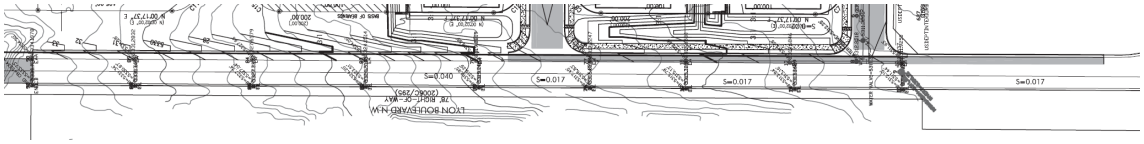
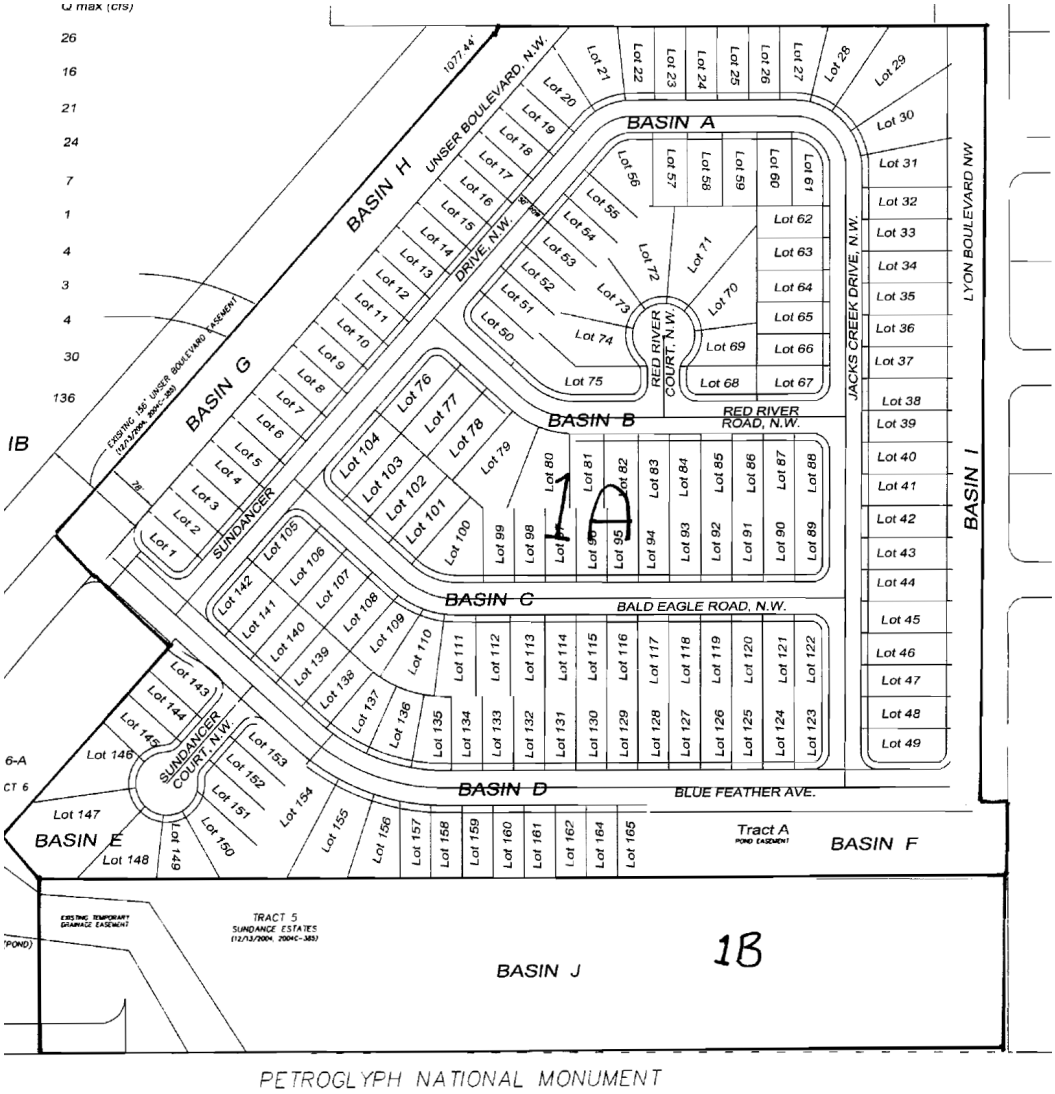
Typically, the existing subdivision only paves have the street and this project will pave the other half, along with curb & gutter, and sidewalk.



5. For Subdivisions and especially for this one, please provide a Drainage Repot. Within this report, I will need Drainage Basin for the project and the off-site drainage. I will also need street capacity calculation for all public R.O.W. being constructed.

6. All drainage from the public R.O.W. and single family lots will have to drain into a public retention pond (100 year – 10 day volume) on a HOA owned tract. This pond will also need to provided for a maintenance ramp, gate, and an Agreement & Covenant will also need to be filled for the pond. This retention pond cannot be placed on the single-family lots. There is a current drainage basin on Blue Feather & Lyon. However, this retention pond was only sized for the following drainage basin.



The Proposed drainage needs to be directed as shown into proposed inlets & pipe into a retention pond on an HOA Tracts as shown. The blue drainage arrows are areas that may

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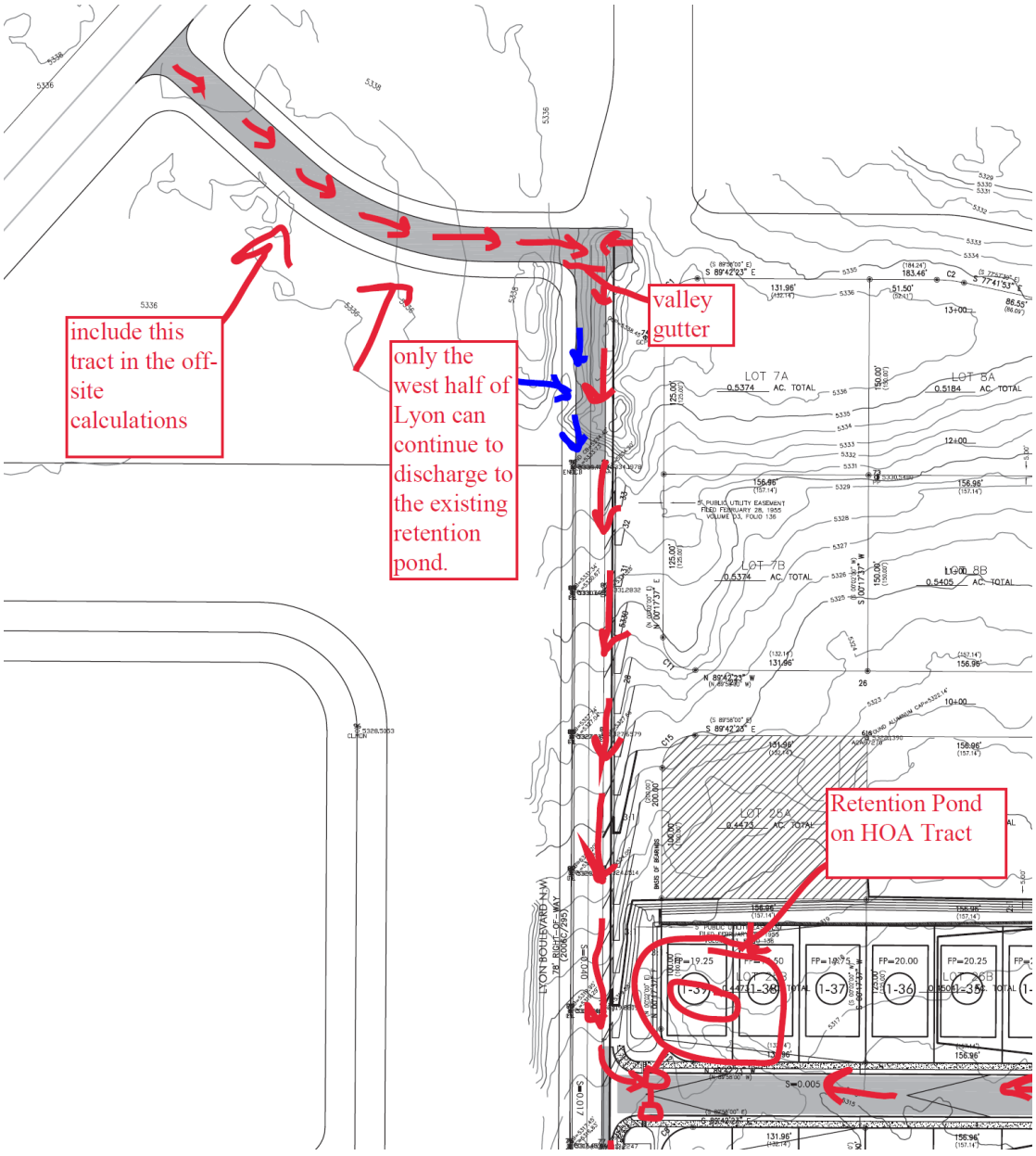
discharge into the existing retention pond if the current HOA that owns and maintains it agrees to accept the minimal increase in drainage.



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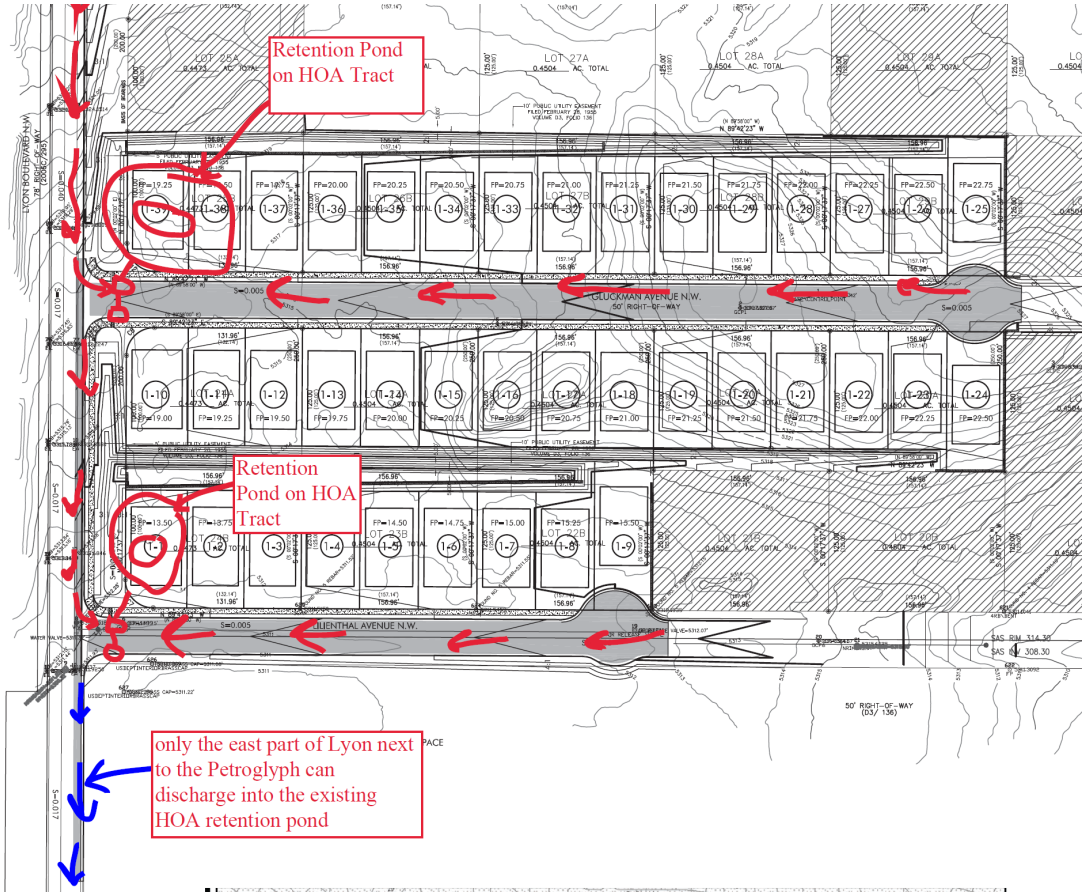

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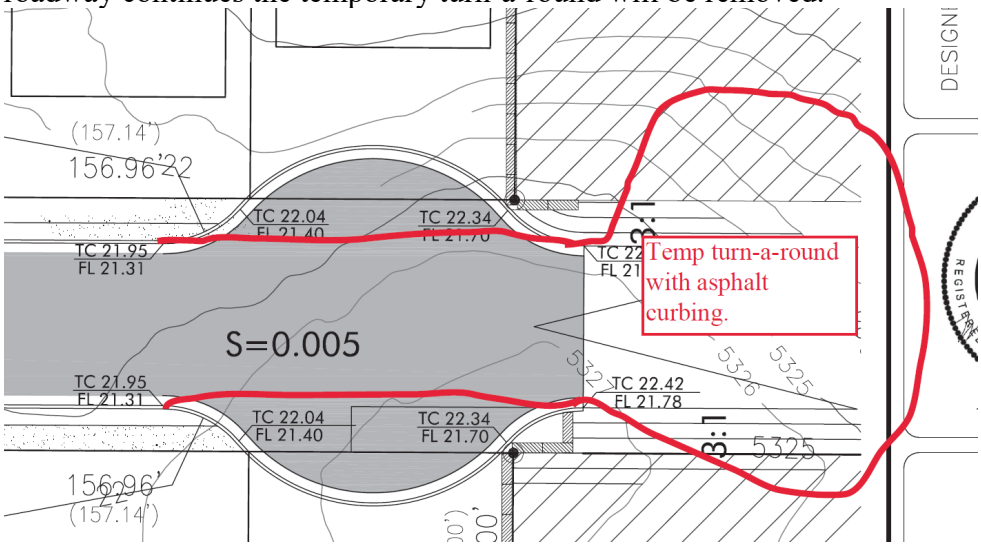
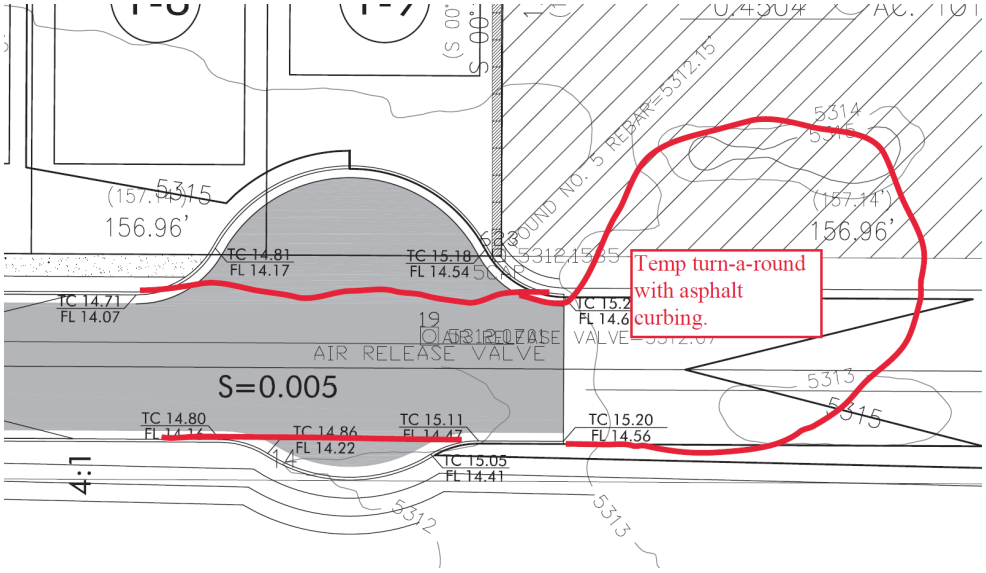
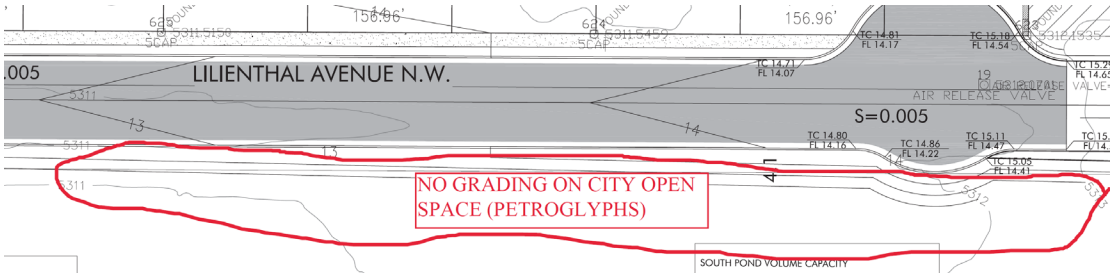
7. It appears that both temporary cul-de-sacs are not designed to City standards. Please verify.

8. Also, the temporary turn-a-rounds are placed as shown so that once the subdivision's roadway continues the temporary turn-a-round will be removed.





9. There will be **no grading** on City of Albuquerque Open Space (Petroglyphs).



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

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 6/2018)

Project Title: Paradise Subdivision Building Permit #: _____ Hydrology File #: _____
DRB#: PR-2020-004443 EPC#: _____ Work Order#: _____
Legal Description: Lots 20A-24A, 22B-24B, 25B-29B, Paradise Hills Investment Properties, Unit 1
City Address: Lyon / Lilienthal / Gluckman

Applicant Burak Consulting Contact: Mark Burak, PE
Address: 1512 Sagebrush Tr SE, 87123
Phone#: (505) 235-2256 Fax#: _____ E-mail: mburak@comcast.net

Other Contact: Desert Fox, LLC Contact: Mohamad Tahat
Address: Felix Rabadi
Phone#: (575) 650-0380 (505) 440-6443 Fax#: _____ E-mail: _____

TYPE OF DEVELOPMENT : 39 PLAT (# of lots) _____ RESIDENCE _____ DRB SITE ___ ADMIN SITE

IS THIS A RESUBMITTAL? _____ Yes X No

DEPARTMENT _____ TRANSPORTATION X HYDROLOGY/DRAINAGE

Check all that Apply:

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

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:
____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

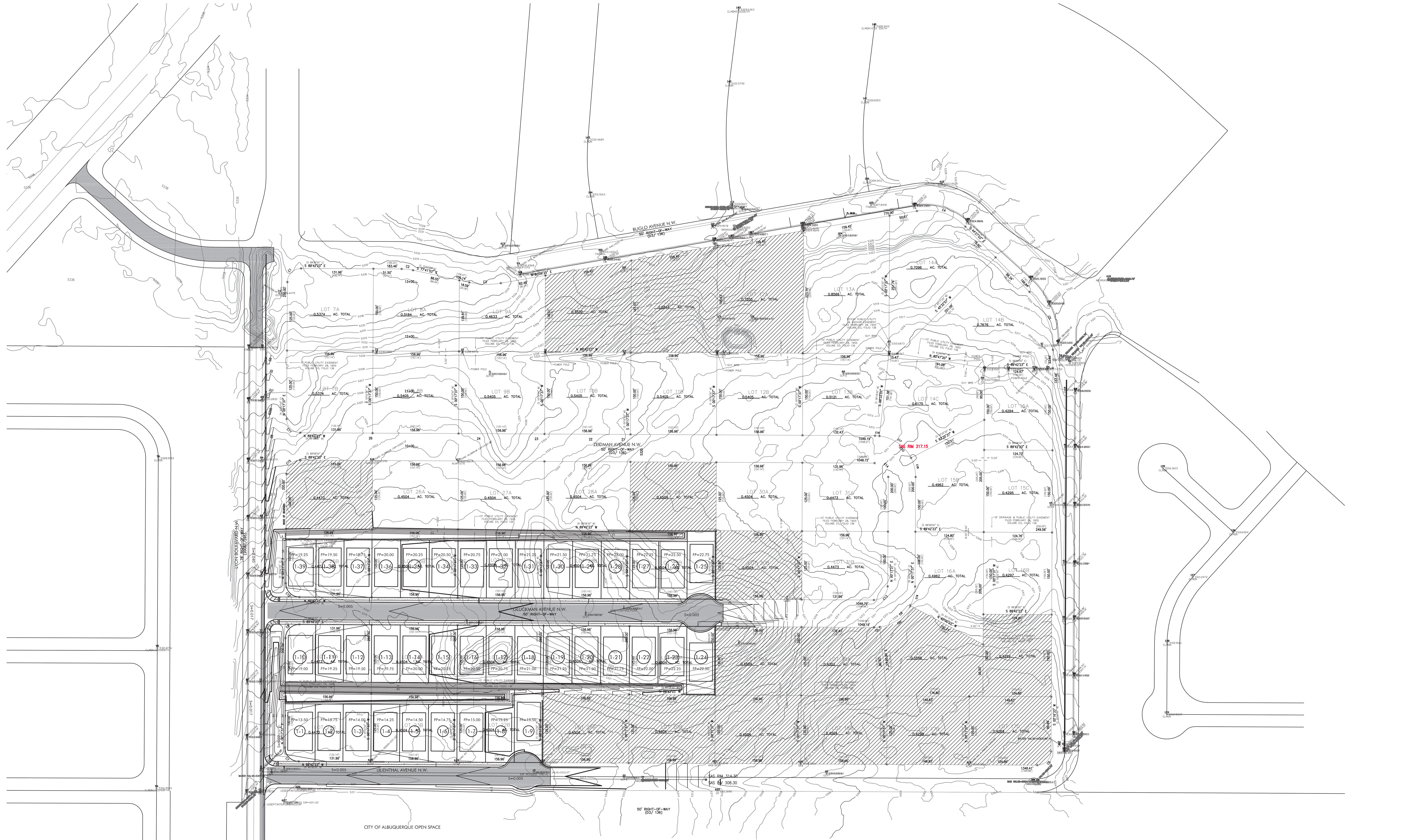
X PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL

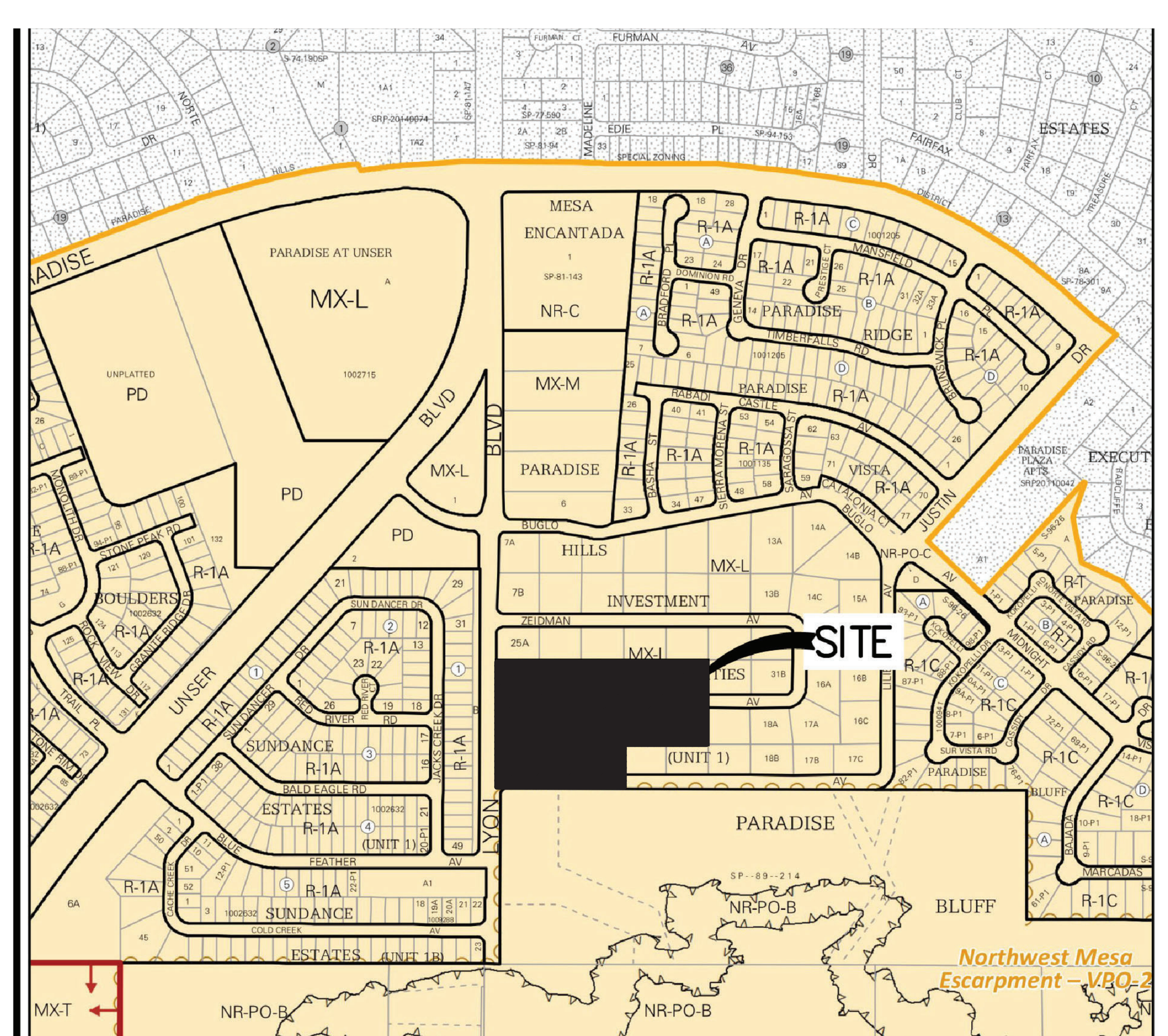
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: November 17, 2021 By: Mark Burak

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

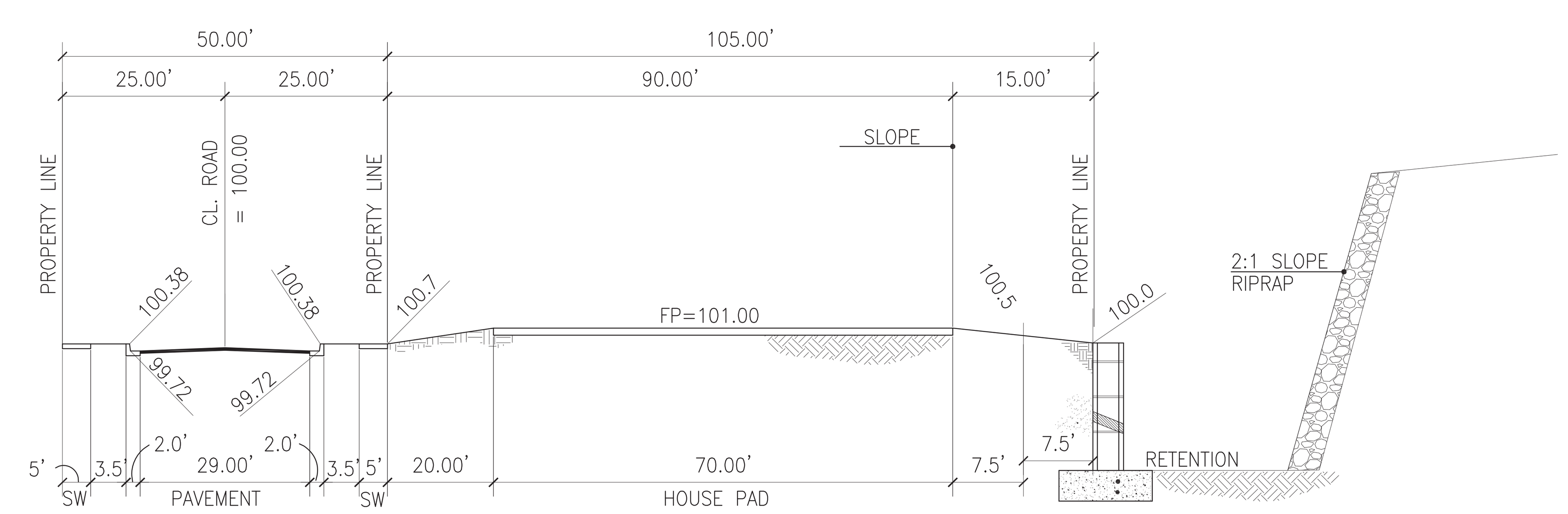




VICINITY MAP
FROM ZONE ATLAS PAGE B–11–Z
N.T.S.

NTS

VICINITY MAP B-11



SECTION

STREET FLOWS			
Manning's Equation for flow capacity in a street section.			
Lilienthal - North Side of Roadway Capacity (full section 12-cfs			
Input variables:		*Output Parameters:*	
Depth of flow	0.40 ft	**Capacity at d**	12.5 cfs
Width (back of curb)	33.0 ft	**@ top of curb**	25.0 cfs
Crown height	0.32 ft	**@ back of walk**	37.0 cfs
Street slope	0.50 %	**Velocity at d**	2.0 fps
Sidewalk width	5.0 ft	**Hydraulic Jump**	0.46 ft
Curb height	6.00 in	Gutter width	1.5 ft
Median width	0.0 ft	Gutter depression	1.5 in
Rt back of walk	100.0 %	Asphalt lip	0 in
Lt back of walk	100.0 %	Manning's n	0.017
Note: To maintain two 12-ft dry lanes, depth cannot exceed		0.185	feet
Note: Input 100% slope at back of walk for vertical walls.			BURAK

STREET FLOWS			
Manning's Equation for flow capacity in a street section.			
Gluckman - capacity (full section 11.5-cfs)			
Input variables:		*Output Parameters:*	
Depth of flow	0.39 ft	**Capacity at d**	11.4 cfs
Width (back of curb)	33.0 ft	**@ top of curb**	25.0 cfs
Crown height	0.32 ft	**@ back of walk**	37.0 cfs
Street slope	0.50 %	**Velocity at d**	2.0 fps
Sidewalk width	5.0 ft	**Hydraulic Jump**	0.45 ft
Curb height	6.00 in	Gutter width	1.5 ft
Median width	0.0 ft	Gutter depression	1.5 in
Rt back of walk	100.0 %	Asphalt lip	0 in
Lt back of walk	100.0 %	Manning's n	0.017
Note: To maintain two 12-ft dry lanes, depth cannot exceed		0.185	feet
Note: Input 100% slope at back of walk for vertical walls.			BURAK

Site Location - As shown by the Vicinity Map (Zone Atlas Map B-11), the proposed residential project site is located on thirteen 0.45-acre parcels located south of Paradise Boulevard and east of Unser Boulevard on Albuquerque's west side. At present, the site is undeveloped. Single family homes, Sundance Estates, are adjacent to the southwest on Lyon Boulevard. The Piedras Marcadas Canyon city open space, Petroglyph National Monument, is adjacent to the south of the site. The two existing platted roadways, Gluckman Avenue and Lilienthal Avenue are currently unimproved with a 50-foot right-of-way. Lyon Boulevard, adjacent to the east is partially paved with curb and gutter on the west side of the roadway.

This project is proposing to split each of the 13 existing individual parcels into three new separate 52'x105' parcels for a total of 39 new lots. A 20-foot wide drainage easement extends behind the rear of each parcel for volumetric retention. Access to the site will be from Unser Boulevard and Blue Feather Avenue to Lyons Boulevard.

Legal Description.. Lots 20A-24A, Lots 22B-24B & Lots 25B-29B
Paradise Hills Investment Properties, Unit 1
Town of Alameda Grant, Bernalillo County, New Mexico

Benchmark - Basis of elevation is ACS Station "13-B11" Elevation 5,294.1620 NAVD 1988.

Flood Zone - As shown by Panels 35001-C0104H of the National Flood Insurance Program Flood Insurance Rate Maps (FIRM) for the City of Albuquerque, New Mexico, dated 08/16/2012, none of this site lies within a designated flood hazard zone.

Existing Conditions - Currently, the project site slopes south and east toward the Piedras Marcadas Canyon at about one to two percent and drains from west to east across the undeveloped site in a sheet flow manner towards the canyon. No significant offsite runoff impacts the proposed project site.

Basalt outcropping is exposed on the ground surface throughout the site. A blow sand layer lies above the basalt with very sparse vegetation. At some point in the past, the roadways have been partially graded and no evidence of scour or erosion is evident within the graded tracks.

An eleven foot deep sanitary sewer manhole is located on Lyon Boulevard south of Lilienthal Avenue. This sewer system was installed for Sundance Estates and discharges into an adjacent lift station. The 2,400 linear foot force main extends to the east and north along Lilienthal Avenue to discharge into an existing gravity manhole at Buglo Avenue and Justin Drive.

Proposed Grading - The Grading and Drainage Plan shows 1) existing and proposed grades indicated by spot elevations and contours; 2) the limit of existing and proposed improvements.

The existing sanitary sewer manhole on Lyon Boulevard dictated the grading for the project to be able to drain the proposed gravity sewer serving all proposed 39 lots. The roadways are sloped at one-half percent from east to west to alleviate any potential downstream impact. Finish pads are set at one foot above the roadway to allow for positive drainage toward the street. All runoff is to be collected within the roadways and directed toward Lyon Boulevard where it is intercepted into small swales that discharge into the two retention areas to be located behind the rear of the proposed parcels. These retention basins will provide adequate volumetric storage and water quality ponding for the fully developed 100-year event.

The northern ponding area is to have a capacity of almost 21,000 cubic feet. The ten day volume calculated for the ponding area is 18,615 cubic feet. Any excess runoff generated will overtop the western swale and will discharge back into the roadway and run south down Lyon Boulevard. Lyon Boulevard is constructed to discharge into an existing retention basin located to the south of Blue Feather Avenue. The properties to the north of the ponding area are about eleven feet higher than the bottom of the retention pond. The cut/fill slope from the northern properties to the pond bottom is to be graded at a 2:1 slope and lined with riprap to minimize the potential for scour. The bottom of the ponding area is 20-feet. To fit the desired volume within the pond, a four foot high retaining wall will be required along the southern edge of the ponding area. The maximum ponding depth is 3.5-feet. Please see the cross section on Sheet C3.

The southern retention basin is to be constructed in a similar manner as the northern basin. The properties north of the ponding area are twelve feet higher than the bottom of the pond. The cut/fill slope into the pond is 2:1 and lined with riprap. Due to the extra height, the bottom width is only 18-feet. Another four foot retaining wall will extend the length of the southern boundary of the ponding area and the maximum depth is 4.5-feet.

To allow the rear yard runoff to pass through the garden wall, a single turned block will be required. Turn blocks are proposed for drainage spaced every 20-feet.

All roads will be 32-feet face-to-face with standard curb, gutter, and five foot sidewalk. Since the new roadways are longer than 150 linear feet, 90-foot diameter turn-arounds are shown.

Hydrologic Methods - The drainage basin map shows nineteen separate sub-basins (A-S) impacting the project area to assess peak flow rates at various points around the project site culminating at the retention basins. The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The process outlined in the DPM, Chapter 6 was used to quantify the peak flow rates and volumes. As shown by these calculations, the fully developed improvements will result in a slight increase in runoff generated by the site. When incorporating the proposed ponding, the downstream impact is reduced when comparing to existing and/or historical conditions.

The proposed improvements will increase the existing peak runoff due to the higher percentage of impervious area proposed by the development. By controlling the calculated runoff within the retention areas, scour and erosion is expected to be reduced to a minimum amount. A spreadsheet for Precipitation Zone 1 is included on this plan. This spreadsheet outlines the peak runoff and volume generated for each sub-basin for existing and proposed fully developed conditions. Percentage of each land treatment is shown to illustrate the addition of impervious area related to the proposed construction.

90% Compensatory Volume Management – The first flush has been mitigated based on the impervious areas listed on the attached spreadsheet. This equates to the total impervious area of the site multiplied by 0.615-inches or about 3,000 cubic feet for the northern retention pond and 5,000 cubic feet for the southern ponding areas. This storage has been provided on the plan by the retention basins as shown.

MARK	DATE	BY	REVISION

DESIGNED BY: M.H.B.
DRAWN BY: T.D.S.
CHECKED BY:

MARK H. BURAK
STATE OF NEW MEXICO
NO. 10987
REGISTERED PROFESSIONAL ENGINEER
11/17/2021

Civil Engineering
BURAK Consulting
Development and Design Services
Mark H. Burak, P.E.
1512 Sagebrush Trail SE
Albuquerque, New Mexico, 87123
(505) 235-2256
mburak@comcast.net

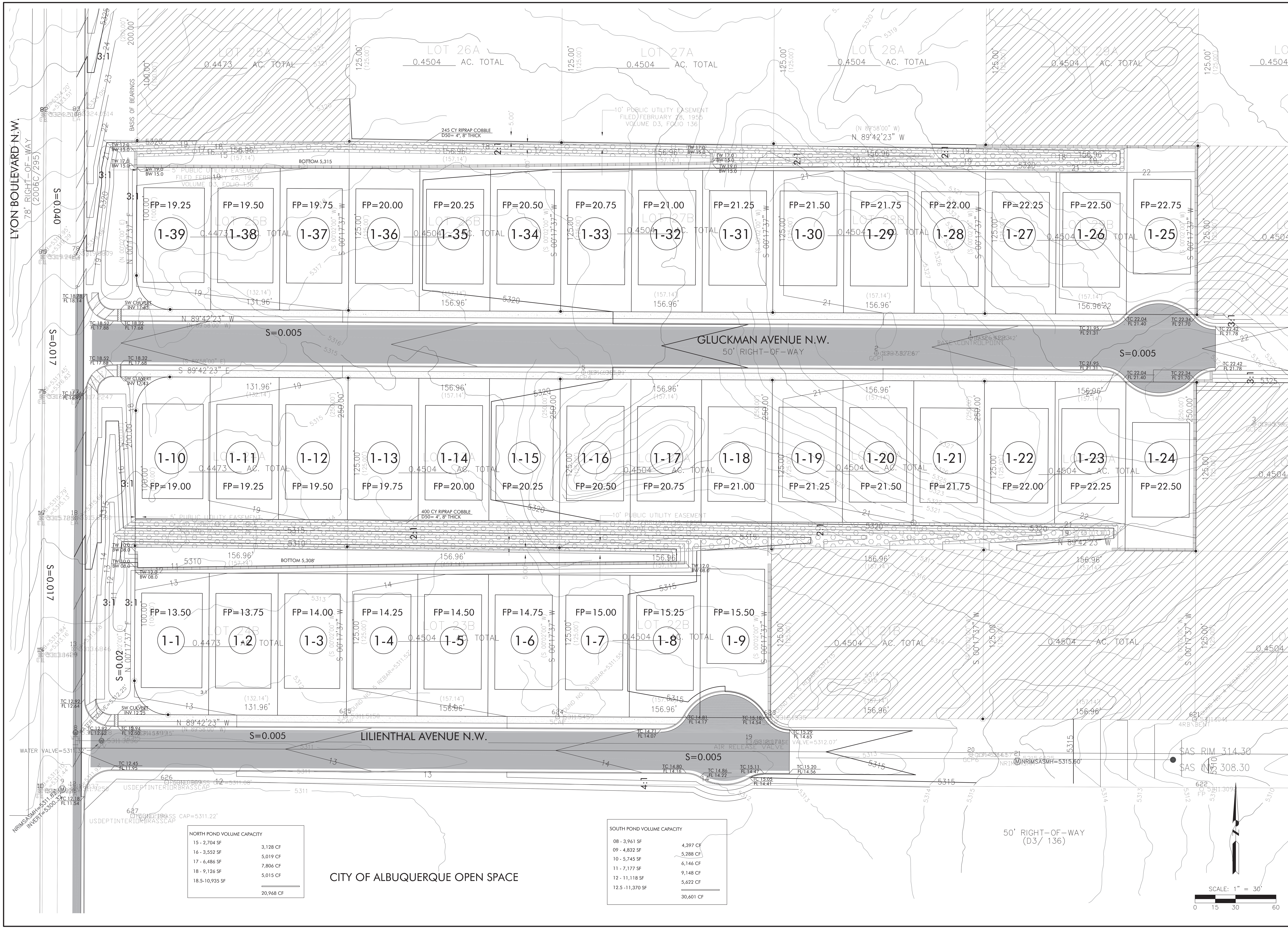
PARADISE SUBDIVISION

GRADING & DRAINAGE PLAN

COVER

DRAWING NUMBER

C1



NORTH POND VOLUME CAPACITY

15 - 2,704 SF	3,128 CF
16 - 3,552 SF	5,019 CF
17 - 6,486 SF	7,806 CF
18 - 9,126 SF	5,015 CF
18.5-10,935 SF	
	20,968 CF

SOUTH POND VOLUME CAPACITY

08 - 3,961 SF	4,397 CF
09 - 4,832 SF	5,288 CF
10 - 5,745 SF	6,146 CF
11 - 7,177 SF	9,148 CF
12 - 11,118 SF	5,622 CF
12.5 -11,370 SF	
	30,601 CF

MARK	DATE	BY	REVISION

DESIGNED BY: M.H.B.

DRAWN BY: T.D.S.

CHECKED BY:

MARK H. BURAK STATE OF NEW MEXICO NO. 10987 REGISTERED PROFESSIONAL ENGINEER

11/17/2021

Mark H. Burak, P.E.
1512 Sagebrush Trail SE
Albuquerque, New Mexico, 87123
(505) 235-2256
mburak@comcast.net

BURAK Consulting — Civil Engineering — Development and Design Services

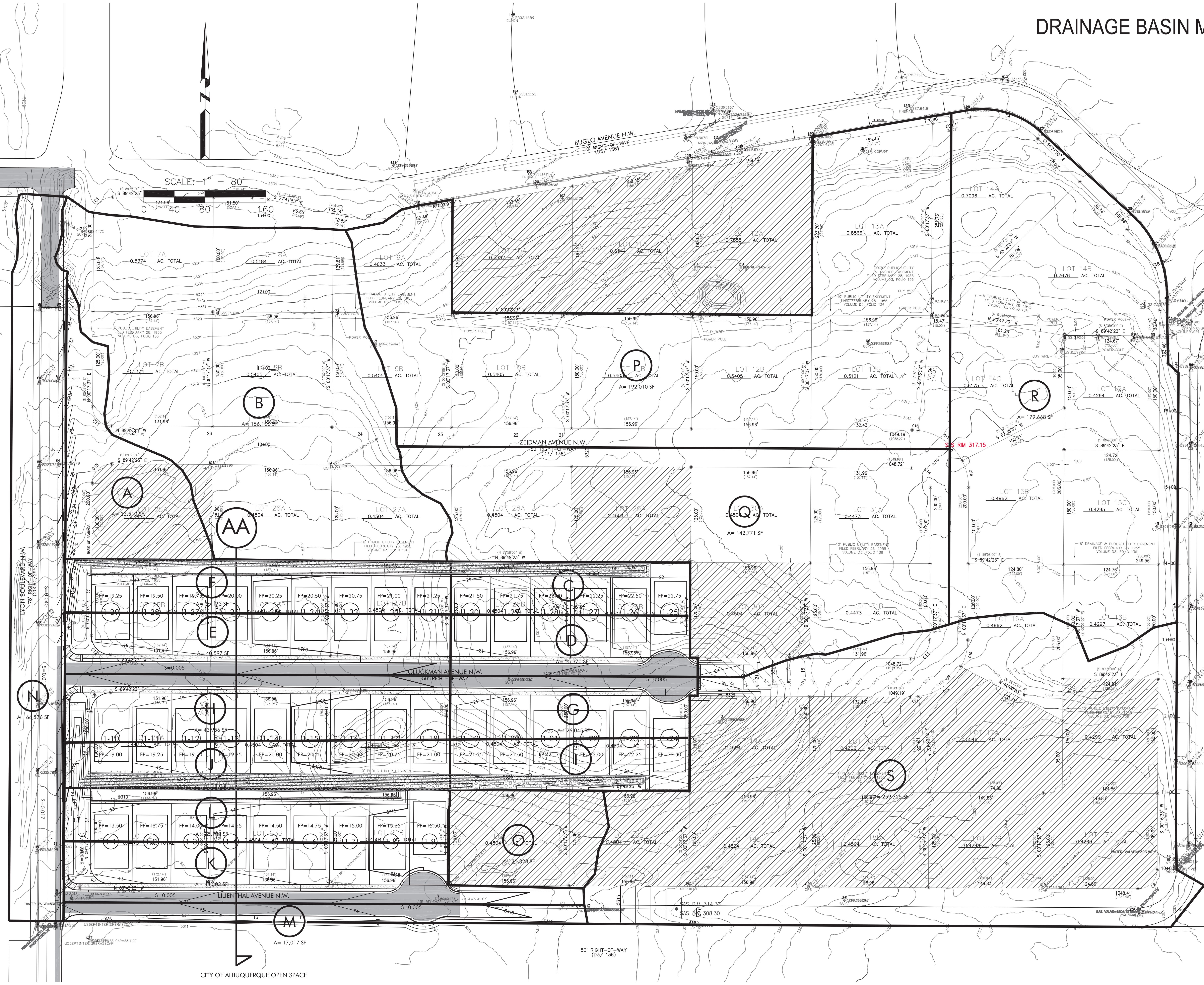
PARADISE SUBDIVISION

GRADING PLAN

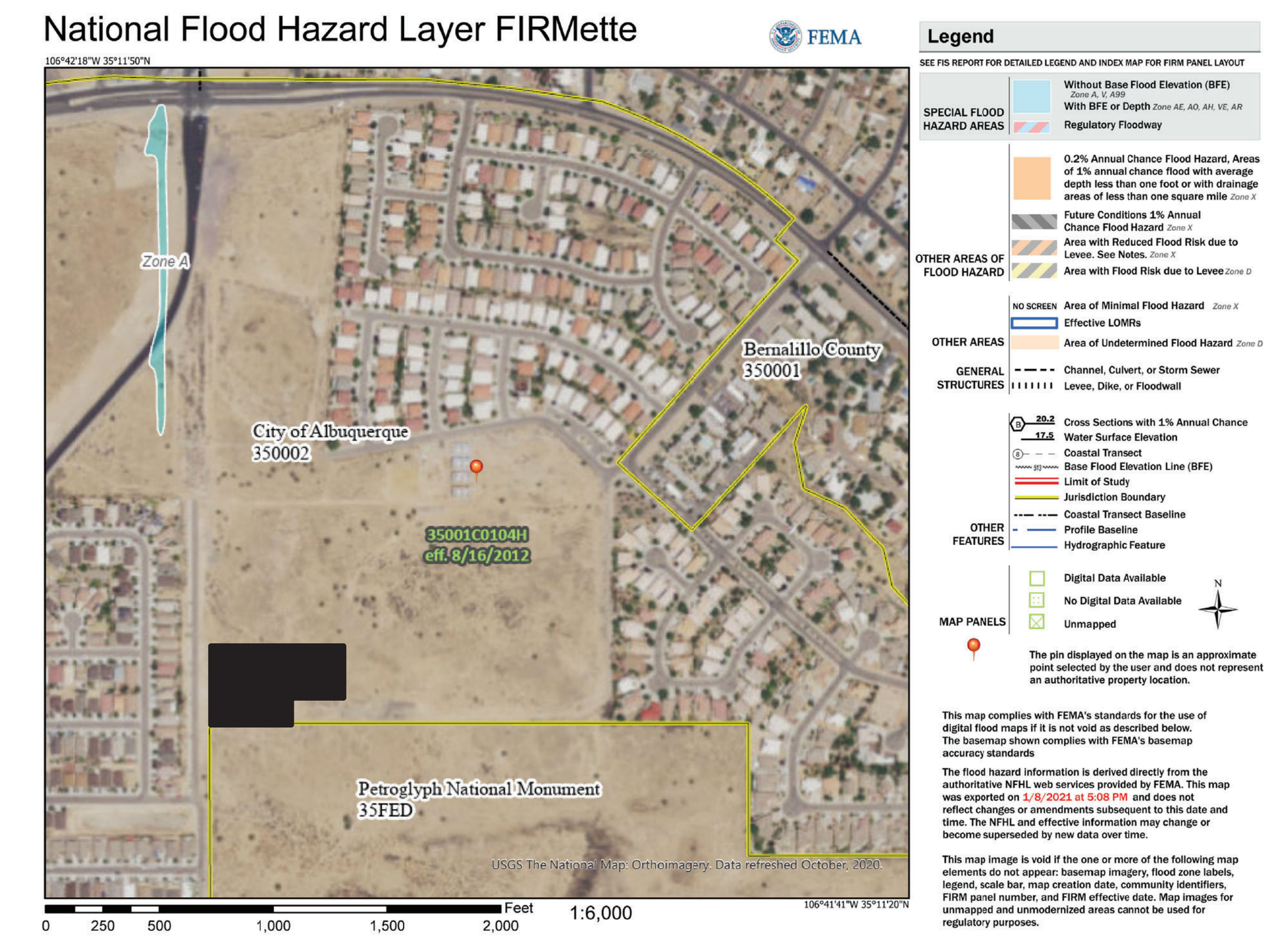
DRAWING NUMBER

C2

DRAINAGE BASIN MAP



National Flood Hazard Layer FIRMette



FEMA MAP

HYDROLOGIC CALCULATIONS

Hydrologic Calculations - COA DPM Chapter 6 (100-Year, 6-Hour Storm						Paradise Subdivision - Phase 1					November 2021
Burak Consulting											
Precipitation	(DPM Ch6 Table 6.2	P60	P360	P1440	P4days	P10days					
Zone 1		1.69	2.17	2.49	3.12	3.9					
Excess Precipitation	(DPM Ch6 Table 6.7) 0.55 inches-A	0.73 inches-B	0.95 inches-C	2.24 inches-D							
Peak Discharge	(DPM Ch6 Table 6.8) 1.54 cfs/ac-A	2.16 cfs/ac-B	2.87 cfs/ac-C	4.12 cfs/ac-D							

Precipitation	(DPM Ch6 Table 6.2	P60	P360	P1440	P4days	P10days
Zone 1		1.69	2.17	2.49	3.12	3.9
Excess Precipitation	(DPM Ch6 Table 6.7) 0.55 inches-A	0.73 inches-B	0.95 inches-C	2.24 inches-D		
Peak Discharge	(DPM Ch6 Table 6.8) 1.54 cfs/ac-A	2.16 cfs/ac-B	2.87 cfs/ac-C	4.12 cfs/ac-D		

Drainage Areas	Land Treatments - Existing Conditions A	Percent A	B	Percent B	C	Percent C	D	Percent D	Area (sf)
Basin A	0.77	100%	0.00	0%	0.00	0%	0.00	0%	33,510
Basin B	3.58	100%	0.00	0%	0.00	0%	0.00	0%	156,100
Basin C	0.50	100%	0.00	0%	0.00	0%	0.00	0%	21,736
Basin D	0.58	100%	0.00	0%	0.00	0%	0.00	0%	25,370
Basin E	0.93	100%	0.00	0%	0.00	0%	0.00	0%	40,597
Basin F	0.81	100%	0.00	0%	0.00	0%	0.00	0%	35,173
Basin G	0.60	100%	0.00	0%	0.00	0%	0.00	0%	26,045
Basin H	1.01	100%	0.00	0%	0.00	0%	0.00	0%	43,956
Basin I	0.49	100%	0.00	0%	0.00	0%	0.00	0%	21,295
Basin J	0.73	100%	0.00	0%	0.00	0%	0.00	0%	31,711
Basin K	1.02	100%	0.00	0%	0.00	0%	0.00	0%	44,303
Basin L	0.81	100%	0.00	0%	0.00	0%	0.00	0%	35,188
Basin M	0.20	50%	0.00	0%	0.20	50%	0.00	0%	17,017
Basin N	0.31	20%	0.00	0%	0.76	50%	0.46	30%	66,576
Basin O	0.58	100%	0.00	0%	0.00	0%	0.00	0%	25,328
Basin P	4.41	100%	0.00	0%	0.00	0%	0.00	0%	192,010
Basin Q	3.28	100%	0.00	0%	0.00	0%	0.00	0%	142,771
Basin R	4.12	100%	0.00	0%	0.00	0%	0.00	0%	179,668
Basin S	5.96	100%	0.00	0%	0.00	0%	0.00	0%	259,725

Land Treatments - Fully Developed Conditions A	Percent A	B	Percent B	C	Percent C	D	Percent D	Area (sf)	Drainage Areas
0.73	95%	0.00	0%	0.04	5%	0.00	0%	33,510	Basin A
3.58	100%	0.00	0%	0.00	0%	0.00	0%	156,100	Basin B
0.00	0%	0.15	30%	0.15	30%	0.20	40%	21,736	Basin C
0.00	0%	0.20	35%	0.00	0%	0.38	65%	25,370	Basin D
0.00	0%	0.19	20%	0.23	25%	0.51	55%	40,597	Basin E
0.00	0%	0.20	25%	0.32	40%	0.28	35%	35,173	Basin F
0.00	0%	0.21	35%	0.00	0%	0.39	65%	26,045	Basin G
0.00	0%	0.20	20%	0.25	25%	0.56	55%	43,956	Basin H
0.00	0%	0.15	30%	0.15	30%	0.20	40%	21,295	Basin I
0.00	0%	0.18	25%	0.29	40%	0.25	35%	31,711	Basin J
0.00	0%	0.20	20%	0.25	25%	0.56	55%	44,303	Basin K
0.00	0%	0.20	25%	0.32	40%	0.28	35%	35,188	Basin L
0.00	0%	0.00	0%	0.08	20%	0.31	80%	17,017	Basin M
0.00	0%	0.00	0%	0.76	50%	0.76	50%	66,576	Basin N
0.58	100%	0.00	0%	0.00	0%	0.00	0%	25,328	Basin O
4.41	100%	0.00	0%	0.00	0%	0.00	0%	192,010	Basin P
3.28	100%	0.00	0%	0.00	0%	0.00	0%	142,771	Basin Q
4.12	100%	0.00	0%	0.00	0%	0.00	0%	179,668	Basin R
5.96	100%	0.00	0%	0.00	0%	0.00	0%	259,725	Basin S

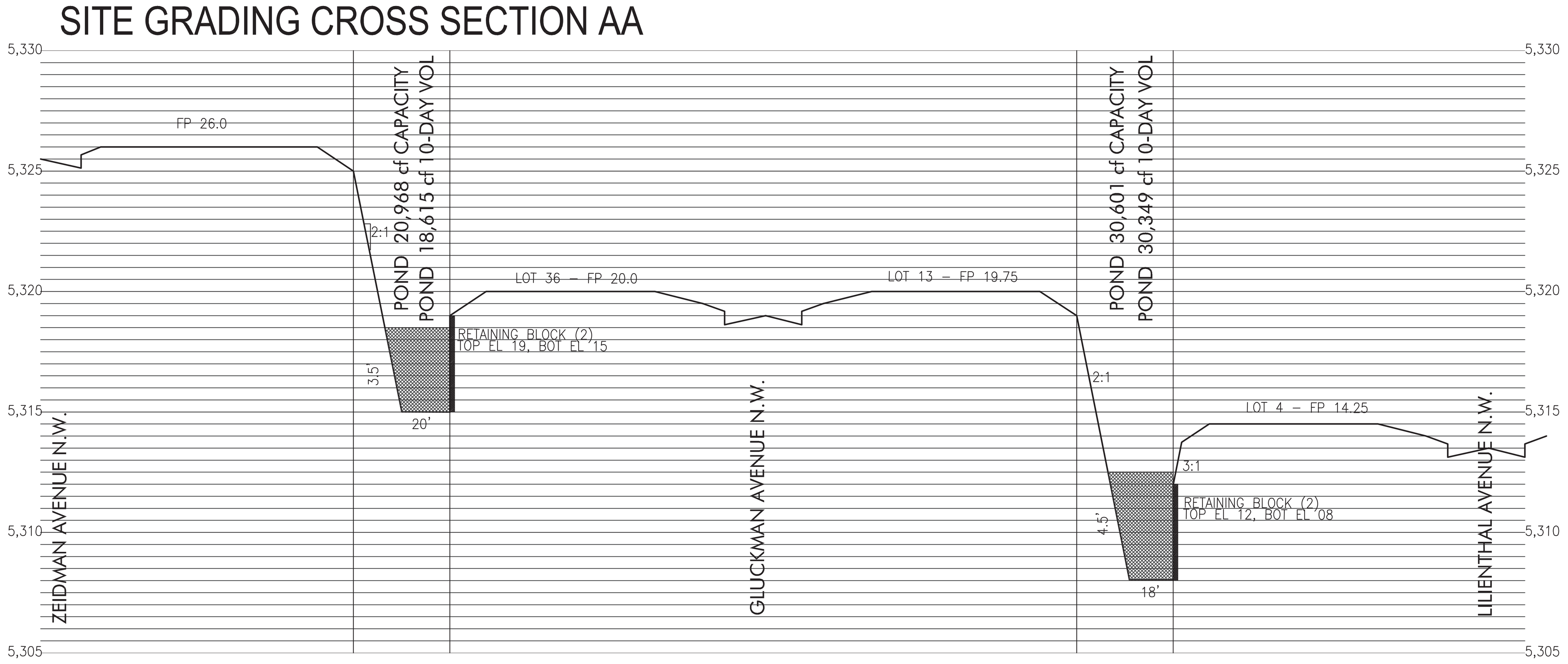
Discharge	Peak Flow Rate - Existing Conditions A	B	C	D	100 yr Q (cfs)	Peak Flow Rate - Developed Conditions A	B	C	D		100 yr Q (cfs)	Discharge
Basin A	1.18	0.00	0.00	0.00	1.2	1.13	0.00	0.11	0.00		1.2	Basin A
Basin B	5.52	0.00	0.00	0.00	5.5	5.52	0.00	0.00	0.00		5.5	Basin B
Basin C	0.77	0.00	0.00	0.00	0.8	0.00	0.32	0.43	0.82		1.6	Basin C
Basin D	0.90	0.00	0.00	0.00	0.9	0.00	0.44	0.00	1.56		2.0	Basin D
Basin E	1.44	0.00	0.00	0.00	1.4	0.00	0.40	0.67	2.11		3.2	Basin E
Basin F	1.24	0.00	0.00	0.00	1.2	0.00	0.44	0.93	1.16		2.5	Basin F
					11.0					Gluckman Northern Ponding Area ------	16.0	
Basin G	0.92	0.00	0.00	0.00	0.9	0.00	0.45	0.00	1.60		2.1	Basin G
Basin H	1.55	0.00	0.00	0.00	1.6	0.00	0.44	0.72	2.29		3.4	Basin H
Basin I	0.75	0.00	0.00	0.00	0.8	0.00	0.32	0.42	0.81		1.5	Basin I
Basin J	1.12	0.00	0.00	0.00	1.1	0.00	0.39	0.84	1.05		2.3	Basin J
Basin K	1.57	0.00	0.00	0.00	1.6	0.00	0.44	0.73	2.30		3.5	Basin K
Basin L	1.24	0.00	0.00	0.00	1.2	0.00	0.44	0.93	1.16		2.5	Basin L
					7.2					Gluckman Southern Ponding Area------	15.3	
Basin M	0.30	0.00	0.56	0.00	0.9	0.00	0.00	0.22	1.29		1.5	Basin M
Basin N	0.47	0.00	2.19	1.89	4.6	0.00	0.00	2.19	3.15		5.3	Basin N
					5.4					South on Lyons -----	6.9	
Basin O	0.90	0.00	0.00	0.00	0.9	0.90	0.00	0.00	0.00		0.9	Basin O
Basin P	6.79	0.00	0.00	0.00	6.8	6.79	0.00	0.00	0.00		6.8	Basin P
Basin Q	5.05	0.00	0.00	0.00	5.0	5.05	0.00	0.00	0.00		5.0	Basin Q
Basin R	6.35	0.00	0.00	0.00	6.4	6.35	0.00	0.00	0.00		6.4	Basin R
Basin S	9.18	0.00	0.00	0.00	9.2	9.18	0.00	0.00	0.00		9.2	Basin S

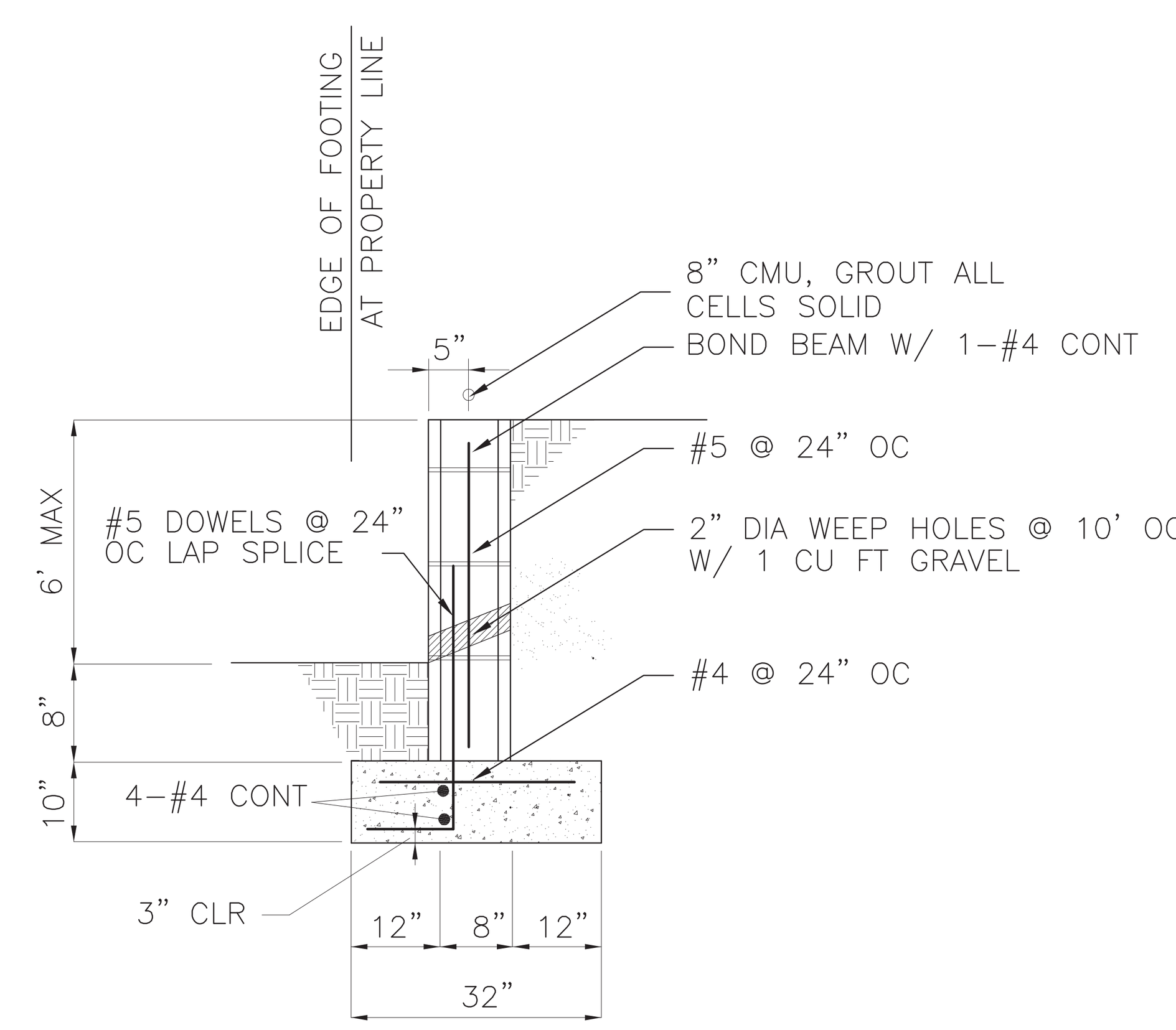
Volume	Runoff Volume - Existing Conditions Six Hour Storm Event				100 yr V (cu-ft)	Runoff Volume - Developed Conditions Six Hour Storm Event					100 yr V (cu-ft)	Volume
Basin A	1,536	0	0	0	1,536	1,459	0	133	0		1,592	Basin A
Basin B	7,155	0	0	0	7,155	7,155	0	0	0		7,155	Basin B
Basin C	996	0	0	0	996	0	397	516	1,623		2,536	Basin C
Basin D	1,163	0	0	0	1,163	0	540	0	3,078		3,618	Basin D
Basin E	1,861	0	0	0	1,861	0	494	803	4,168		5,465	Basin E
Basin F	1,612	0	0	0	1,612	0	535	1,114	2,298		3,947	Basin F
					14,322					Gluckman Northern Ponding Area ------	24,313	
Basin G	1,194	0	0	0	1,194	0	555	0	3,160		3,715	Basin G
Basin H	2,015	0	0	0	2,015	0	535	870	4,513		5,918	Basin H
Basin I	976	0	0	0	976	0	389	506	1,590		2,484	Basin I
Basin J	1,453	0	0	0	1,453	0	482	1,004	2,072		3,558	Basin J
Basin K	2,031	0	0	0	2,031	0	539	877	4,548		5,964	Basin K
Basin L	1,613	0	0	0	1,613	0	535	1,114	2,299		3,948	Basin L
					9,281					Gluckman Southern Ponding Area------	25,588	
Basin M	390	0	674	0	1,064	0	0	269	2,541		2,811	Basin M
Basin N	610	0	2,635	3,728	6,974	0	0	2,635	6,214		8,849	Basin N
					8,037					South on Lyons -----	11,660	
Basin O	1,161	0	0	0	1,161	1,161	0	0	0		1,161	Basin O
Basin P	8,800	0	0	0	8,800	8,800	0	0	0		8,800	Basin P
Basin Q	6,544	0	0	0	6,544	6,544	0	0	0		6,544	Basin Q
Basin R	8,235	0	0	0	8,235	8,235	0	0	0		8,235	Basin R
					23,579					Localized Depression, No Outlet-----	23,579	
Basin S	11,904	0	0	0	11,904	11,904	0	0	0		11,904	Basin S
					123,504	Cubic Feet					183,343	Cubic Feet

Volume	Runoff Volume - Existing Conditions Ten Day Storm Event	Ponding Volume - Ten Day Storm Event	Existing	Developed	Delta	100 yr / 10 day V (cu-ft)
Basin A		Basin A	1,536	1,592	56	1,536
Basin B		Basin B	7,155	7,155	0	7,155
Basin C		Basin C	996	3,789	2,793	996
Basin D		Basin D	1,163	5,996	4,833	1,163
Basin E		Basin E	1,861	8,684	6,824	1,861
Basin F		Basin F	1,612	5,721	4,109	1,612
					18,615	14,322
Basin G		Basin G	1,194	6,155	4,962	1,194
Basin H		Basin H	2,015	9,403	7,388	2,015
Basin I		Basin I	976	3,712	2,736	976
Basin J		Basin J	1,453	5,158	3,705	1,453
Basin K		Basin K	2,031	9,477	7,447	2,031
Basin L		Basin L	1,613	5,724	4,111	1,613
					30,349	9,281
Basin M						1,064
Basin N						9,853
Basin O						1,161
Basin P						8,800
Basin Q						6,544
Basin R						8,235
						23,579
Basin S						11,904
						36,313

Runoff Volume - Developed Conditions Ten Day Storm Event	Ponding Volume - Six Hour Storm Event	Existing	Developed	Delta	90th Percentile Compensatory Volume (cu.ft.)	100 yr / 10 day V (cu-ft)	Volume
	Basin A	1,536	1,592	56	0	1,592	Basin A
	Basin B	7,155	7,155	0	0	7,155	Basin B
	Basin C	996	2,536	1,540	446	3,789	Basin C
	Basin D	1,163	3,618	2,456	845	5,996	Basin D
	Basin E	1,861	5,465	3,605	1,144	8,684	Basin E
	Basin F	1,612	3,947	2,335	631	5,721	Basin F
				9,990	3,066	32,937	
	Basin G	1,194	3,715	2,521	868	6,155	Basin G
	Basin H	2,015	5,918	3,903	1,239	9,403	Basin H
	Basin I	976	2,484	1,508	437	3,712	Basin I
	Basin J	1,453	3,558	2,105	569	5,158	Basin J
	Basin K	2,031	5,964	3,934	1,249	9,477	Basin K
	Basin L	1,613	3,948	2,336	631	5,724	Basin L
				16,306	4,992	39,630	
						4,773	Basin M
						13,648	Basin N
						1,161	Basin O
						8,800	Basin P
						6,544	Basin Q
						8,235	Basin R
						23,579	
						11,904	Basin S
Cubic Feet						99,781	Cubic Feet

SITE GRADING CROSS SECTION AA





RETAINING WALL DETAIL

MARK	DATE	BY	REVISION

DESIGNED BY: M.H.B.

DRAWN BY: T.D.S.

CHECKED BY:

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STATE OF NEW MEXICO
NO. 10987
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PARADISE SUBDIVISION

DRAINAGE CALCULATIONS

DRAWING NUMBER

C3