

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

July 27, 2018

Åsa Nilsson-Weber, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. N.E
Albuquerque, NM 87108

RE: **Bosque Antigua
Gabaldon Dr NW
Grading and Drainage Plan
Engineer's Stamp Date 6/26/18
Hydrology File: G11D071**

Dear Ms. Nilsson-Weber:

PO Box 1293

Based on the submittal received on 7/20/18 the above-referenced submittal cannot be approved until the following are corrected:

Prior to Preliminary Plat/ Grading Permit:

Albuquerque

NM 87103

www.cabq.gov

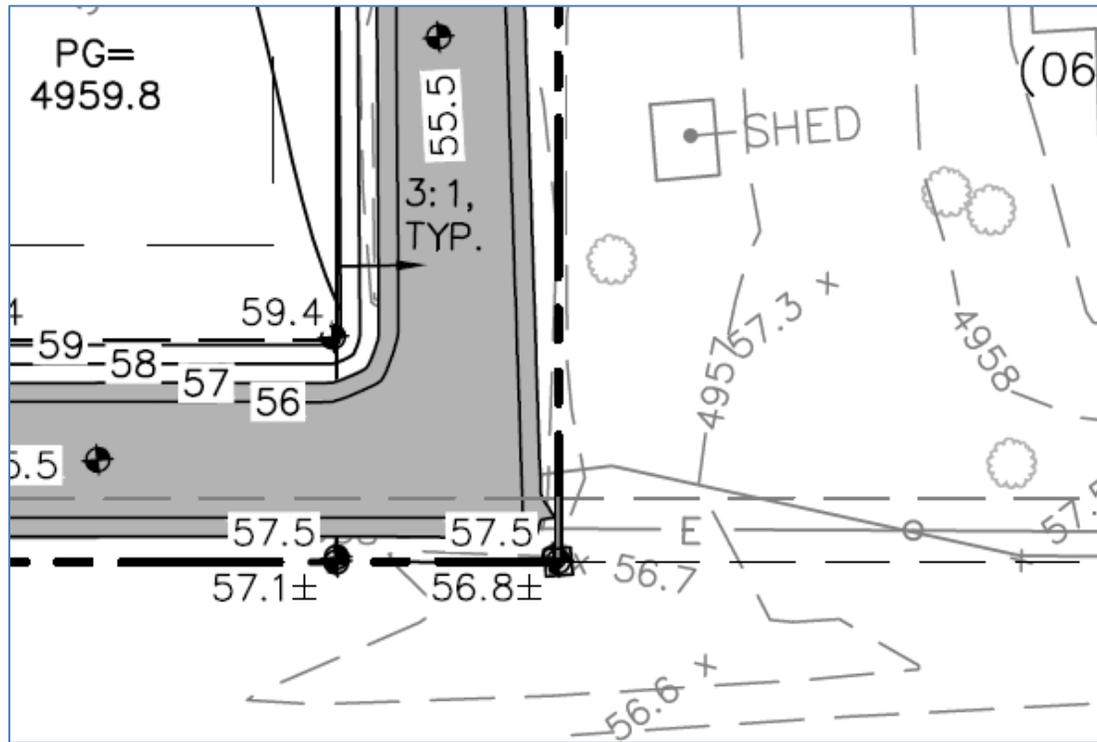
1. Show the frontage improvements required for this project. The existing ditch will need to be cleaned-out and excavated to provide 100-yr, 10-day ponding for the frontage of Gabaldon half-street draining to it. Include supporting calculations.
2. Provide the floor elevations of the two existing residences; ensure they are adequately elevated above the proposed water surface.
3. Will the mature cottonwoods be removed? There are quite a few that would encroach on the proposed ponds if they remain. This would be acceptable, but the grading plan will need to be adapted to account for grading around them and still provide adequate storage volume.
4. The labeling on the ponds is unclear. Annotate the total pond volume and the $V_{100-10day}$ volume; label that the WSEL shown/provided is for the total pond volume.
5. There is a low spot at the southeast corner of the south pond where the water surface will likely spill over into the neighbors to the east and south. Provide a solution for this (i.e: floodwall, berm, or fill-in the hole with their written permission):

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6. Section B-B shows a new garden wall on the property line. Either inset all new walls (and their footers) from the property lines or provide written and signed permission from the neighbor for the encroachment.
7. Please reduce the hatch density of the water surface so the existing contours can be seen (or change the existing contours to something more visible).
8. Include the [Plat Drainage Easement](#) Note on the preliminary plat. Use of this note removes the need to provide a separate covenant for the ponds.
9. This project requires an ESC Plan, submitted to the Stormwater Quality Engineer (Curtis Cherne PE, ccherne@cabq.gov or 924-3420).
10. Please include a copy of the proposed plat with the resubmittal.
11. For Information. Hydrology and Transportation files are available online through the City's GIS Viewer 2.0: <https://www.cabq.gov/gis/advanced-map-viewer>. Turn on the *HydroTrans* layer: *Operational Layers* > *Albuquerque Layers* > *Sites* > *HydroTrans*. Select the desired polygon from the map and click *Link to Project Documents*.

CITY OF ALBUQUERQUE

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Mayor Timothy M. Keller

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Dana Peterson".

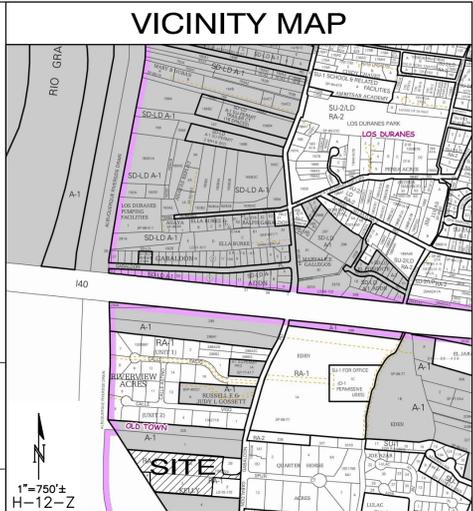
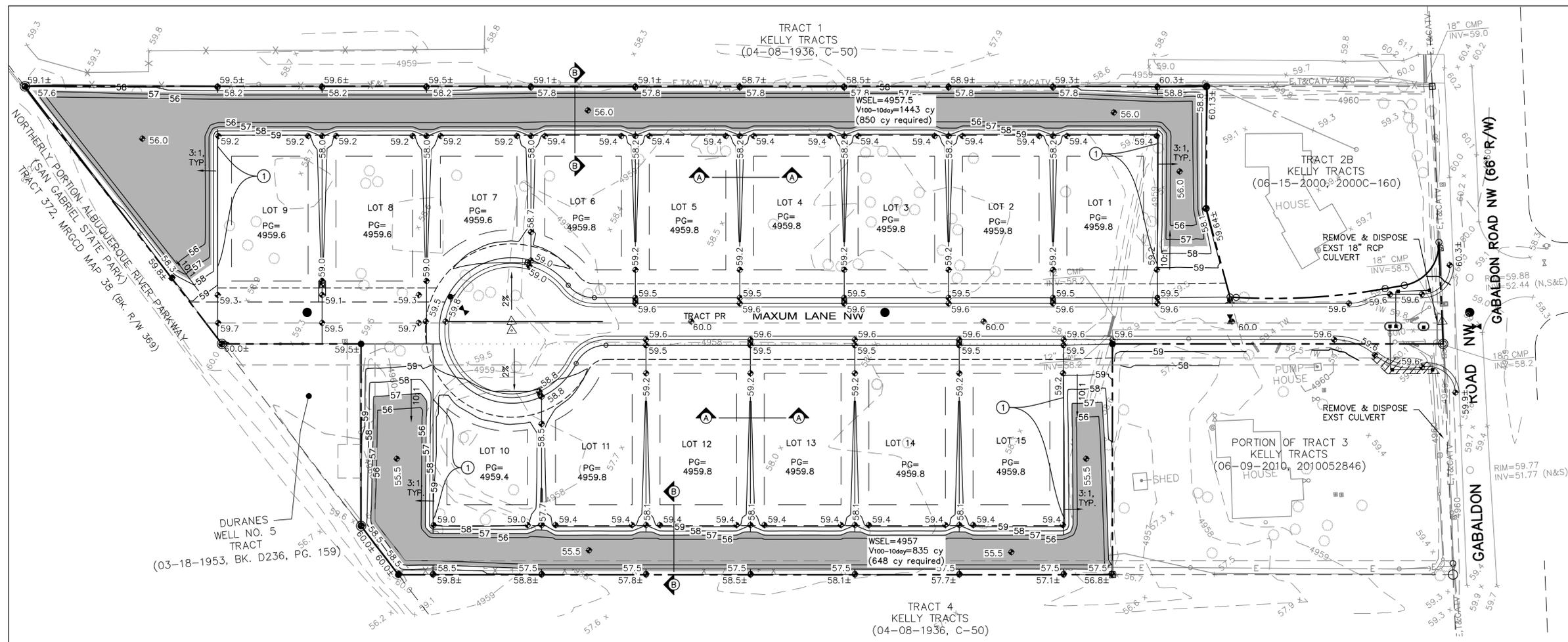
Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

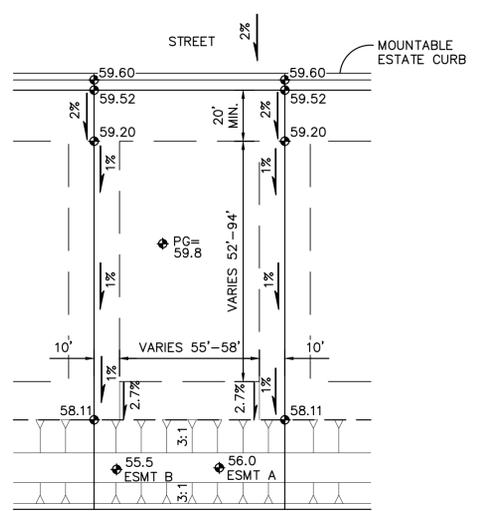
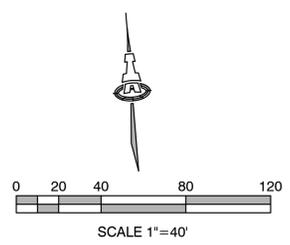
Albuquerque

NM 87103

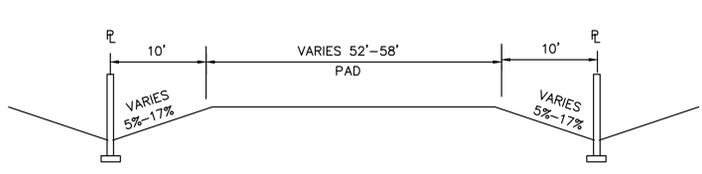
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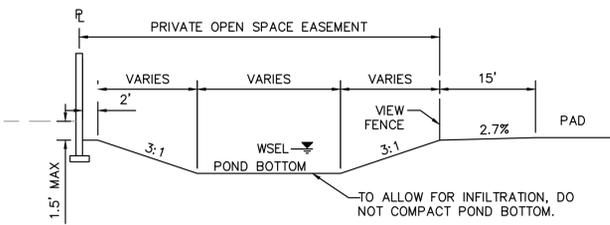
PROJECT DATA	
LEGAL DESCRIPTION:	TRACT 2A AND A PORTION OF TRACT 3, KELLY TRACTS
SITE AREA:	5.4812 ACRES
FLOOD ZONE:	SHADED ZONE X. FIRM MAPS 35001C03271 DATED 11/4/16 AND AND 35001C0331H, DATED 8/16/12
ENGINEER:	ASA NILSSON-WEBER ISAACSON & ARFMAN, P.A. 128 MONROE ST NE, ALBU. NM 87108 PHONE: (505) 268-8828
SURVEYOR:	TIMOTHY ALDRICH ALDRICH LAND SURVEYING P.O. BOX 30701, ALBU., N.M. 87190 PHONE: (505) 884-1990
BENCHMARK:	AGRS Aluminum Cap stamped "20-J11 1989" N.M. State Plane Coordinates (Central Zone) N=1491770.982, E=1506437.513, G-G=0.999680825, DA=-00'15"27.22" Elevation, in feet (NAVD88) = 5094.032



TYPICAL LOT DETAIL
NTS



SECTION A-A
NTS



SECTION B-B
NTS

GENERAL NOTES

- THE CONTRACTOR SHALL ABIDE BY ALL STATE, LOCAL, AND FEDERAL LAWS, CODES, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA AND ADA REQUIREMENTS.
- ALL SITE PREPARATION, GRADING OPERATIONS, FOUNDATION CONSTRUCTION, AND PAVEMENT INSTALLATION WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT, WHICH WILL BE PROVIDED BY THE OWNER OR ARCHITECT. ALL OTHER WORK SHALL, UNLESS OTHERWISE NOTED IN THE PLANS, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- NO WORK SHALL BE PERFORMED WITHOUT THE APPROPRIATE PERMITS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION, OR PRIOR TO OCCUPANCY, AS APPROPRIATE. IF PERMITS ARE DELAYED OR ISSUED WITH CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHITECT IMMEDIATELY.
- COORDINATE WORK WITH SITE PLAN, UTILITY PLAN, DEMOLITION PLAN, AND LANDSCAPE PLAN.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING OBSTRUCTIONS, AND CONDITION OF ALL EXISTING INFRASTRUCTURE PRIOR TO CONSTRUCTION. REPORT ALL DISCREPANCIES TO THE ENGINEER AND VERIFY THE ENGINEER'S INTENT BEFORE PROCEEDING.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SAFETY.
- THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS ON SITE AT ALL TIMES. THE CONTRACTOR SHALL NOT SCALE DRAWINGS. ONLY WRITTEN DIMENSIONS OR KEYED NOTES SHALL BE USED.
- CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT STRUCTURES RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS. EQUIPMENT SHALL ONLY OBSTRUCT DESIGNATED TRAFFIC LANES IF APPROPRIATE BARRICADING PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL IN THE RIGHT-OF-WAY.
- THE CONTRACTOR SHALL PROVIDE A CONSTRUCTION TRAFFIC CONTROL AND SIGNING PLAN THAT CONFORMS TO THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN BARRICADING PERMITS FROM THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION WORK ON OR ADJACENT TO EXISTING STREETS.
- THE CONTRACTOR SHALL MAINTAIN ALL BARRICADING AND CONSTRUCTION SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.
- EXISTING UTILITY LINES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND MAY BE INCOMPLETE OR OBSOLETE. SUCH LINES MAY OR MAY NOT EXIST WHERE SHOWN OR NOT SHOWN. CONTRACTOR SHALL CONTACT NM-811 FOR UTILITY LINE SPOTS FIVE WORKING DAYS PRIOR TO CONDUCTING SITE FIELD WORK. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF NECESSARY DRY UTILITY ADJUSTMENTS.
- ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
- VIBRATORY COMPACTION SHALL NOT BE USED OVER IN-PLACE UTILITIES.
- SOIL TESTING AND INSPECTION SERVICES DURING SITE OPERATIONS ARE REQUIRED. CONTRACTOR SHALL ALLOW TESTING LABS TO INSPECT AND APPROVE COMPACTED SUBGRADES, BACKFILL, AND FILL LAYERS BEFORE FURTHER CONSTRUCTION WORK IS DONE. SHOULD COMPACTION TESTS INDICATE INADEQUATE DENSITY, CONTRACTOR SHALL PROVIDE ADDITIONAL COMPACTION AND TESTING AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR SHALL LOCATE AND PRESERVE ALL BOUNDARY CORNERS AND REPLACE ANY LOST OR DISTURBED CORNERS AT CONTRACTOR'S SOLE EXPENSE. PROPERTY CORNERS SHALL ONLY BE RESET BY A REGISTERED LAND SURVEYOR.
- CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING. TO FACILITATE ACCURACY IN CONSTRUCTION STAKING, UPON WRITTEN REQUEST FROM THE CONTRACTOR, A FILE CONTAINING THE ELECTRONIC DATA COMPRISING THE SITE CIVIL DRAWINGS WILL BE FORWARDED TO THE LICENSED LAND SURVEYOR TO PERFORM CONSTRUCTION STAKING. ALL SITE CONSTRUCTION LAYOUT MUST BE PERFORMED BY A LICENSED SURVEYOR USING ELECTRONIC DATA PROVIDED IN AUTOCAD *.DWG (CURRENT VERSION) BY ISAACSON & ARFMAN, P.A. CONTACT PROJECT CIVIL ENGINEER, ASA NILSSON-WEBER, PE AT (505)-268-1688.
- ADJUST ANY RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES. UTILITIES IN PAVED AREAS SHALL BE HS-25 TRAFFIC RATED.
- CONTRACTOR SHALL COMPLY WITH LOCAL REGULATIONS FOR RESEEDING OF DISTURBED AREAS.

KEYED NOTES

- TURN EVERY OTHER BLOCK TO PROVIDE OPENINGS FOR DRAINAGE INTO OPEN SPACE PONDING AREA.

LEGEND

- - - - - EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING TREE
- - - - - PROPOSED CONTOUR
- 59.20 PROPOSED SPOT ELEVATION

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.isaacson.com

2273 CG-101.dwg Jul 20, 2018

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**BOSQUE ANTIGUA
SUBDIVISION**

GRADING & DRAINAGE PLAN

Date:	07/20/18	No.:	Revision:	Date:		Job No.:	2273
Drawn By:	JTS						CG-101
Ckd By:	ANW						SH. OF

JULY 20, 2018

DRAINAGE REPORT

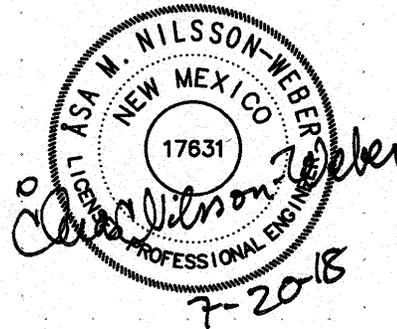
FOR

BOSQUE ANTIGUA

A 15-DWELLING UNIT
SINGLE-DETACHED RESIDENTIAL
PRIVATE COMMONS DEVELOPMENT

ALBUQUERQUE, NEW MEXICO

BY



ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

Thomas O. Isaacson, PE & LS

Fred C. Arfman, PE

Åsa Nilsson-Weber, PE

I&A Project No. 2273

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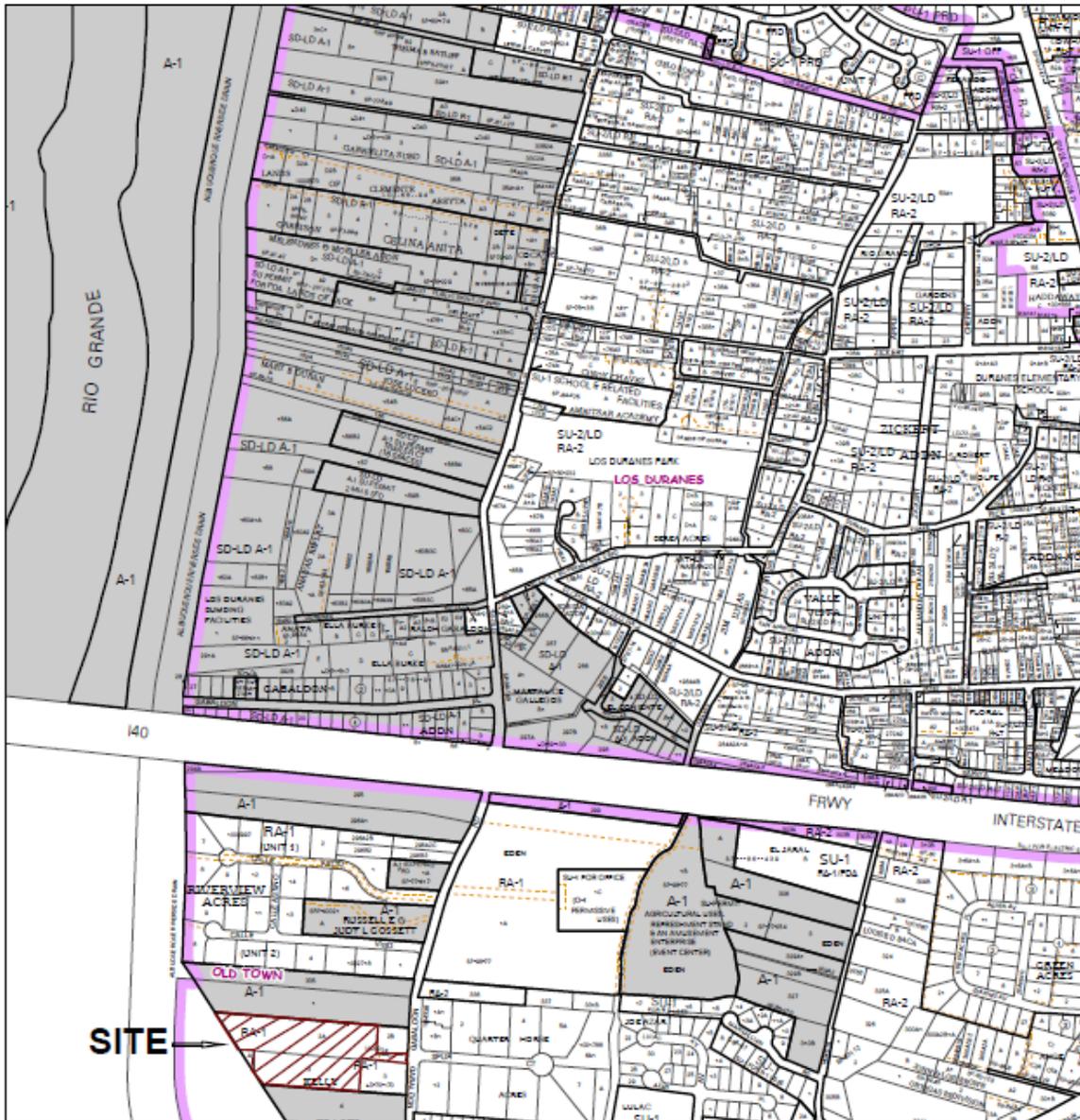
V. SUMMARY & CONCLUSIONS

APPENDICES

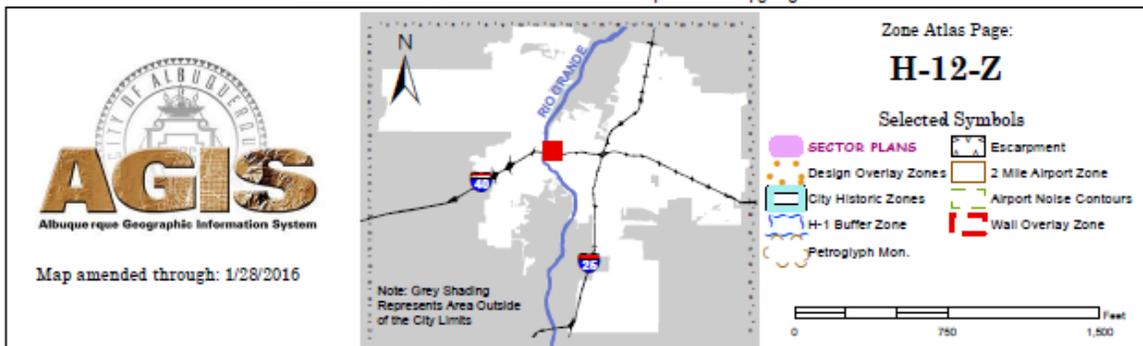
**APPENDIX A: Basin Area and Land Treatment Table
Drainage Basin Map
Drainage Calculations
Pond Volume Exhibit**

POCKET

Grading Plan



For more current information and details visit: <http://www.cabq.gov/gis>



VICINITY MAP H-12-Z

National Flood Hazard Layer FIRMette



Legend

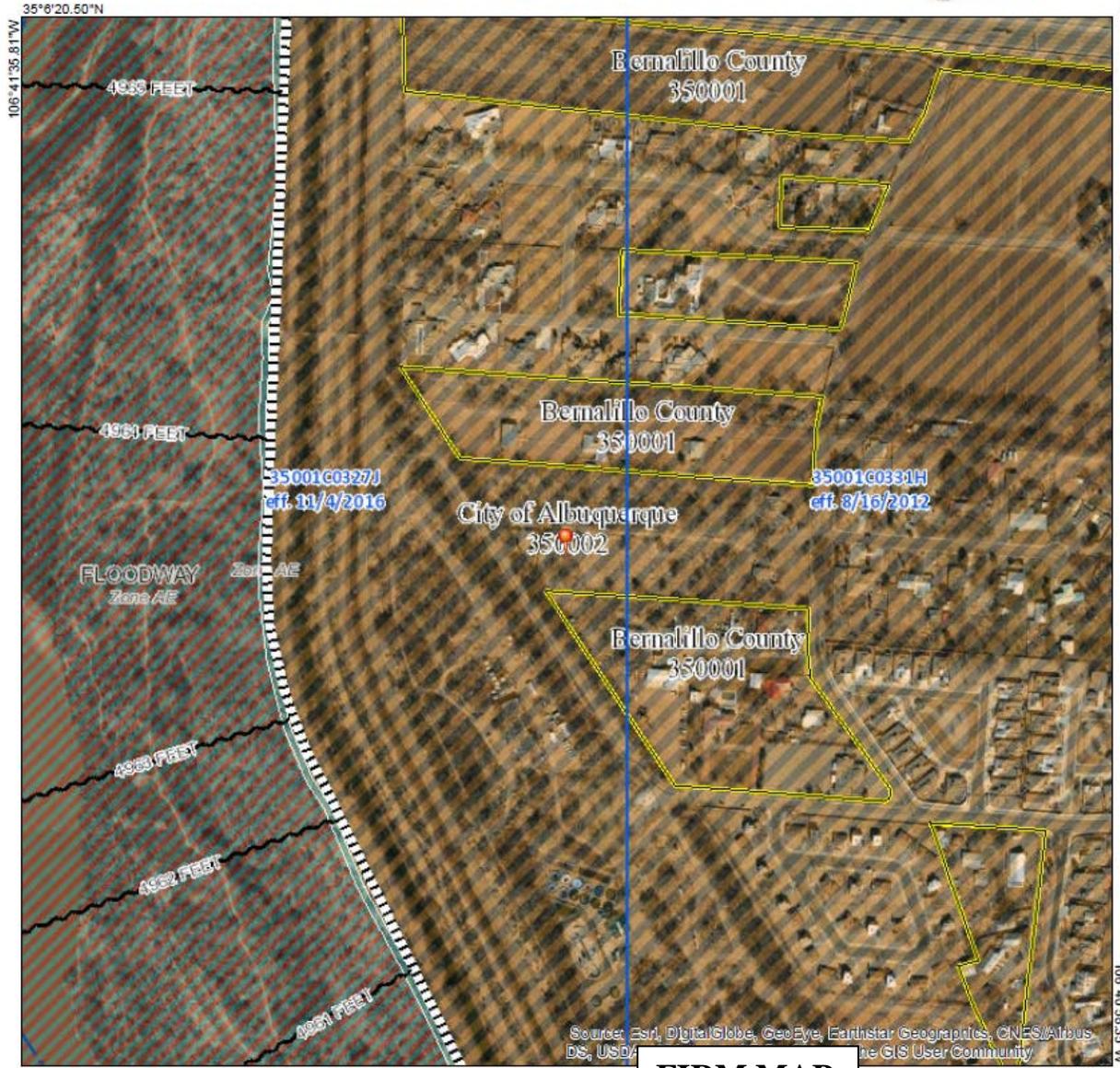
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth
		Regulatory Floodway Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes, Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
OTHER FEATURES		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/12/2018 at 6:45:20 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, AeroGRID, IGN, the GIS User Community

FIRM MAP

0 250 500 1,000 1,500 2,000 Feet

35°5'51.06\"/>

I. PROJECT INFORMATION

PROPOSED LEGAL DESCRIPTION:

Bosque Antigua

EXISTING LEGAL DESCRIPTION:

Tract 2A and a Portion of Tract 3, Kelly Tracts

ENGINEER:

Isaacson & Arfman, P.A.
128 Monroe Street NE
Albuquerque, NM 87108
(505) 268-8828
Attn: Åsa Nilsson-Weber

SURVEYOR:

Aldrich Land Surveying
(505) 884-1990
Attn: Timothy Aldrich., NMPLS No. 7719

DEVELOPER:

Las Ventanas, NM, Inc.
Attn: Scott Ashcraft

NUMBER OF PROPOSED DWELLING UNITS: 15

TOTAL AREA: 5.4812 Ac.

FLOOD PLAIN: This property lies within shaded flood Zone X which is defined as areas of 0.2% annual chance; area of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and area with reduced flood risk due to levee as determined by FEMA and shown on flood insurance rate map no. 35001C03271, date 11/4/2016 and map no. 35001C0331H, date 8/16/12.

II. INTRODUCTION

This site is comprised of two vacant lots located west of Gabaldon Rd. NW and south of I-40 and is bound on the west by the Bio Park (San Gabriel State Park), on the east by two private residences and on the north and south by private residences, and at the southwest corner by a Water Authority well site. The site is zoned R-A and will be re-developed as a cluster development with 15 detached residential homes with two open space area easements that will be utilized for drainage ponds .

III. EXISTING CONDITIONS

The site is undeveloped. The site is flat and drainage ponds on the property. Gabaldon Rd. is a rural-type road with no curb and gutter or sidewalks. There is a roadside ditch at the east end of the property and an existing 18-inch culvert under the existing drive to the two existing residences and a secondary culvert south of the existing drive. The residence northeast of the site utilizes water in this ditch for irrigation. South of the entrance, the ditch terminates.

IV. PROPOSED CONDITIONS

The site will be developed as a gated residential cluster development. The two existing residences will be included in the gated community. Open space easements A and B will be granted as open space (private commons areas) that will be used for ponding the 100-year, 10-day volumes. Maxum Ln. (Tract PR) will be crowned and slope to the north and to the south directing the flows to the open space easements retention ponds. The road will have mountable estate curb and no sidewalks. There will be a view fence along the open space easements in the back yards to allow drainage to pass to the ponds. The elevation of the road was set to approximately existing grade to maintain cover over an existing 16-inch waterline in the road that will remain.

Gabaldon Rd. will remain as a rural-type road with no curb and gutter or sidewalks. The existing culverts under the existing drive and to the south will be removed.

The grading & drainage plan is included in the back pocket of this report.

LAND TREATMENTS & BASIN AREAS

Land treatment percent D was calculated for the developed area based on the building pad, driveway and roadway areas, and the remaining area was split between land treatments B and C. See Appendix A for land treatment calculations and basin area table.

HYDROLOGY

Appendix A includes a Drainage Basin Exhibit and the 100-year, 10-day volume calculations using the equations from the Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993.

PONDING IN OPEN SPACE EASEMENTS A & B

The pond in easement A has a capacity of 1443 cy at a water surface elevation of 4957, which exceeds the required 10-day storm volume of 850 cy, and the pond in easement B has a capacity of 835 cy at a water surface elevation of 4957.5, which exceeds the required volume of 648 cy. The ponding capacity was calculated using AutoCAD Civil 3D by creating a composite comparison surface with the proposed ground surface and a top-of-pond surface at the water surface elevation (see Appendix A for an exhibit). A drainage covenant shall be filed for the two ponds.

FIRST FLUSH REQUIREMENTS

The first flush requirement will be met by directing flows to the pond areas in Tracts A-C.

V. SUMMARY & CONCLUSIONS

The site will be developed with 15 detached residential homes and a private, gated road. Open space easements A & B will be designated as a private commons area with private ponding areas for flows from the subdivision.

Based on this report, it is recommended that the following improvements be constructed:

- Paved street with crown and mountable estate curb.
- Retention ponds in easements A & B.
- A drainage covenant shall be recorded for the ponding areas in easements A & B.

APPENDIX A

**Basin Area and Land Treatment Table
Drainage Basin Exhibit
Drainage Calculations
Pond Volume Calcs Exhibit**

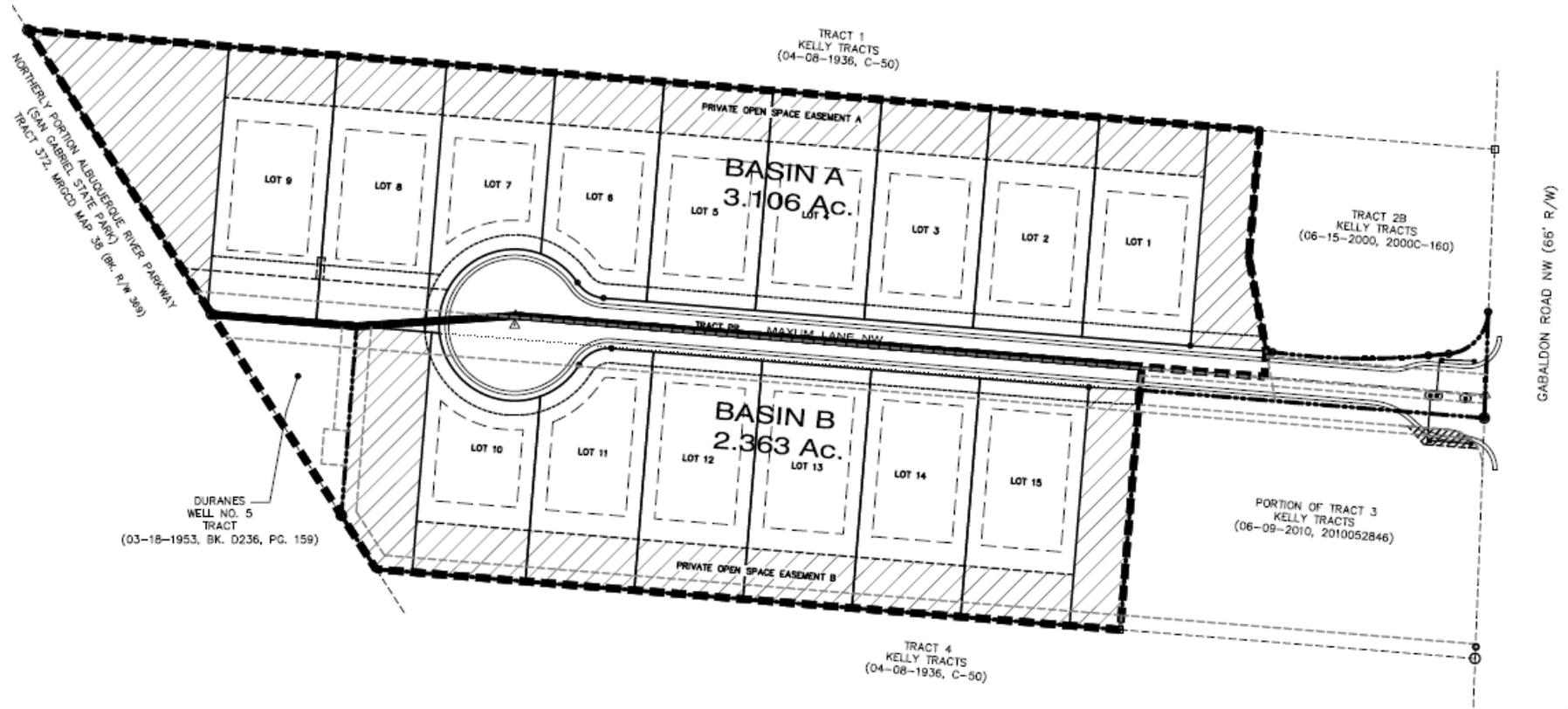
BOSQUE ANTIGUA

**BASIN AREA AND LAND TREATMENT TABLE--
PROPOSED CONDITIONS**

BASIN	AREA		LAND TREATMENT (%)				Required V100-10 day	Required V100-10 day
	SF	AC.	A	B	C	D	CF	CY
A	135,299	3.106	0	28	33	39	22,959	850
B	102,911	2.363	0	28	33	39	17,496	648
TOTAL	238,210	5.469					40,455	1,498

<u>IMPERVIOUS AREA CALCULATION</u>						
BASIN	TOT. AREA	ROAD	PAD	DRIVEWAY	TOTAL IMP	%D
A	135,299	9,315	39,363	3,600	52,278	39%
B	102,911	28,486	9,119	2,400	40,005	39%

DRAINAGE BASIN EXHIBIT



2273 DPM Calculations - 100 yr 6 hr WITH FIRST FLUSH.xlsx

Job Name:	Bosque Antigua
Client:	Las Ventanas NM
Date Prepared:	6/26/2018
Date Modified:	0
Precipitation Zone:	2

For Zone 2

EA =	0.53	QpA =	1.56
EB =	0.78	QpB =	2.28
EC =	1.13	QpC =	3.14
ED =	2.12	QpD =	4.70

BASIN NO.	A	DESCRIPTION
Area of basin flows =	135299 SF	= 3.1 Ac.
The following calculations are based on Treatment areas as shown in table to the right		
Sub-basin Weighted Excess Precipitation (see formula above)		LAND TREATMENT
Weighted E =	1.42 in.	A = 0%
Sub-basin Volume of Runoff (see formula above)		B = 28%
V ₃₆₀ =	15989 CF	C = 33%
Sub-basin Peak Discharge Rate: (see formula above)		D = 39%
Q _p =	10.9 cfs	FIRST FLUSH VOL.
		1495 CF

BASIN NO.	B	DESCRIPTION
Area of basin flows =	102911 SF	= 2.4 Ac.
The following calculations are based on Treatment areas as shown in table to the right		
Sub-basin Weighted Excess Precipitation (see formula above)		LAND TREATMENT
Weighted E =	1.42 in.	A = 0%
Sub-basin Volume of Runoff (see formula above)		B = 28%
V ₃₆₀ =	12162 CF	C = 33%
Sub-basin Peak Discharge Rate: (see formula above)		D = 39%
Q _p =	8.3 cfs	FIRST FLUSH VOL.
		1137 CF

Pond in Easement A

Note: For ponds which hold water for longer than 6 hours, longer duration storms are required to establish runoff volumes. Since the additional precipitation is assumed to occur over a long period, the additional volume is based on the runoff from the impervious areas only.

V ₃₆₀ (from previous calculation)	15989
Area Treatment D (SF)	52278
Zone	2

For 10 Day Storms:

$$V_{10\text{day}} = V_{360} + A_D * (P_{10\text{day}} - P_{360}) * 43560 \text{ SF/AC}$$

V ₃₆₀	=	15989
A _D (SF)	=	52278
Zone	=	2
P _{10day}	=	3.95
P ₃₆₀	=	2.35

V ₃₆₀	=	15989
+ imp. area	=	6970

Total Pond Volume (V _{10 day})	=	22959
------------------------------------------	---	-------

Pond in Easement B

Note: For ponds which hold water for longer than 6 hours, longer duration storms are required to establish runoff volumes. Since the additional precipitation is assumed to occur over a long period, the additional volume is based on the runoff from the impervious areas only.

V ₃₆₀ (from previous calculation)	12162
Area Treatment D (SF)	40005
Zone	2

For 10 Day Storms:

$$V_{10\text{day}} = V_{360} + A_D * (P_{10\text{day}} - P_{360}) * 43560 \text{ SF/AC}$$

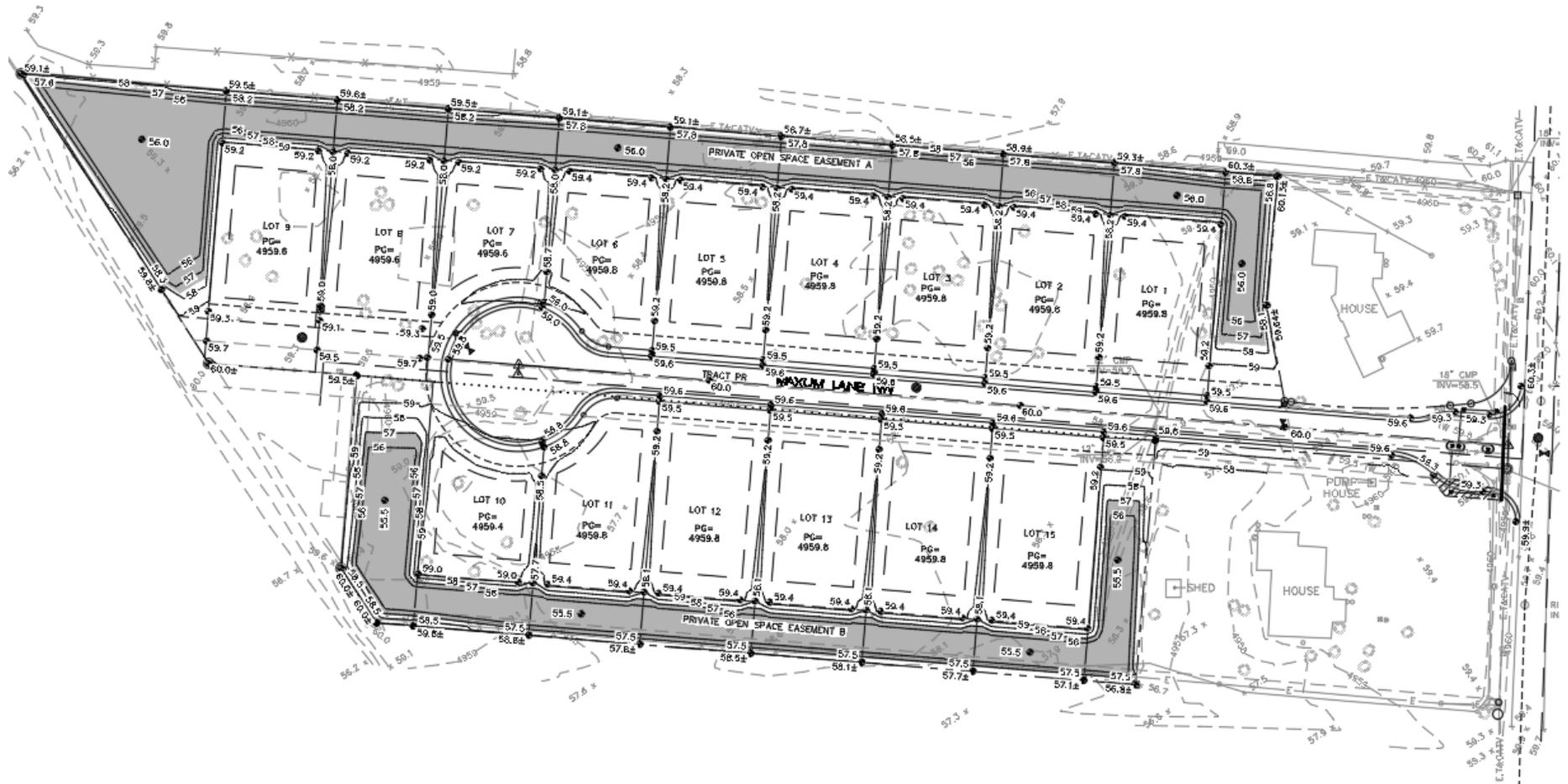
V ₃₆₀	=	12162
A _D (SF)	=	40005
Zone	=	2
P _{10day}	=	3.95
P ₃₆₀	=	2.35

V ₃₆₀	=	12162
+ imp. area	=	5334

Total Pond Volume (V _{10 day})	=	17496
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AUTOCAD CIVIL 3D POND VOLUME CALCS EXHIBIT

NORTH POND VOLUME WSEL AT 57.5 1443.92 Cu. Yd.



SOUTH POND VOLUME WSEL AT 57.0 835.22 Cu. Yd.