CITY OF ALBUQUERQUE

Planning Department Brennon Williams, Director



Mayor Timothy M. Keller

December 22, 2020

Ronald Bohannan, P.E. Tierra West, LLC 5571 Midway Park Place NE Albuquerque, NM 87109

RE: Sage Plaza 1125 Snow Vista Blvd SW Conceptual Drainage Report and Conceptual Grading & Drainage Plan Engineer's Stamp Date: 12/08/20 Hydrology File: M09D012

Dear Mr. Bohannan:

- PO Box 1293 Based upon the information provided in your submittal received 12/08/2020, the Conceptual Drainage Report and Conceptual Grading & Drainage Plan are preliminary approved for action by the DRB on Site Plan for Building Permit.
- Albuquerque
 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
 NM 87103
 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 <u>rbrissette@cabq.gov</u>.

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM Senior Engineer, Hydrology Planning Department

Planning I Development & Build	buquerque Department ding Services Division RTATION INFORMATION SHEET (REV 6/2018)
Project Title: Soge Plaza Building Per DRB#:	Work Order#: Y A SNOW Vista Investors EW Albuquerque NM 8712 Contact: Richard Stovenson
Other Contact:	
	E-mail:
TYPE OF DEVELOPMENT: PLAT (# of lots) IS THIS A RESUBMITTAL? Yes Ves Ves DEPARTMENT TRANSPORTATION	
Check all that Apply: TYPE OF SUBMITTAL: ENGINEER/ARCHITECT CERTIFICATION	TYPE OF APPROVAL/ACCEPTANCE SOUGHT: BUILDING PERMIT APPROVAL CERTIFICATE OF OCCUPANCY
PAD CERTIFICATION CONCEPTUAL G & D PLAN GRADING PLAN DRAINAGE REPORT DRAINAGE MASTER PLAN	PRELIMINARY PLAT APPROVAL SITE PLAN FOR SUB'D APPROVAL SITE PLAN FOR BLDG. PERMIT APPROVAL FINAL PLAT APPROVAL
FLOODPLAIN DEVELOPMENT PERMIT APPLIC ELEVATION CERTIFICATE CLOMR/LOMR TRAFFIC CIRCULATION LAYOUT (TCL) TRAFFIC IMPACT STUDY (TIS) STREET LIGHT LAYOUT OTHER (SPECIFY) PRE-DESIGN MEETING?	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: 12.8.2020 by: K	chard Stevenson.

0,000 - 10

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED:

FEE PAID:_____

CONCEPTUAL DRAINAGE REPORT FOR

1125 SNOW VISTA BLVD SW ALBUQUERQUE NM 87121 M09D012

Prepared by:

ERR

Tierra West, LLC 5571 Midway Park Place NE Albuquerque, New Mexico 87109

December 2020

I certify that this report was prepared under my supervision, and I am a registered Professional Engineer in the State of New Mexico in good standing.



Ronald R. Bohannan PE # 7868

	_
City of Albuquerque	
Planning Department	
Development Review Services	
HYDROLOGY SECTION	
PRELIMINARY APPROVED	
DATE: 12/22/20	
BY: Degie C. Bressette	
HydroTrans # M09D012	
THESE PLANS AND/OR REPORT ARE	
CONCEPTUAL ONLY. MORE INFORMATION MAY	
BE NEEDED IN THEM AND SUBMITTED TO	
HYDROLOGY FOR BUILDING PERMIT APPROVAL.	

PAGE LEFT BLANK

TW# 2020073

TABLE OF CONTENTS

Contents

Purpose	.1
Location and Prior Approvals	.1
Flood Plain	.3
Calculations	.5
Subdivision Existing Conditions	.6
Proposed Conditions	.6
Summary	.8

Appendices

Drainage Basin Maps & Hydrology Tables/Calculations	APPENDIX A
2007 Approved Grading and Drainage Plan Eng. Stamp Date 12/26/07	
Photos of existing Drainage Structures	
Proposed Subdivision Plat (draft)	

PAGE LEFT BLANK

Purpose

The purpose of this report is to outline the conceptual drainage plan for the Development Review Board platting action request to subdivide the property at 1125 Snow Vista Blvd SW Albuquerque NM 87121. The existing single parcel is proposed to be subdivided into five lots: 1A, 1B, 1C, 1D and 1E, all of varying size.

This report outlines the proposed flows associated in developing the ± 10.7 acre parcel and describes conceptually the improvements needed to safely handle the developed 100-year, 6-hour event. At the time of development for each individual parcel a developed grading and drainage plan reflecting the planned improvements shall be submitted for review and approval by City of Albuquerque Hydrology.

Location and Prior Approvals

The site is located on the southwest corner of De Vargas Rd. SW and Snow Vista Blvd SW with the parcel address <u>1125 Snow Vista Blvd SW Albuquerque NM 87121</u>. The site Vicinity Map is shown on Exhibit A and the site falls within the Zone Atlas Page M-09-Z.

The City Hydrology File for this site is <u>M09D012</u> which was prepared and approved in 2007.

In 2007 a grading and drainage plan was submitted by Tierra West LLC with engineers stamp date 12/26/07 and approved by the City for a proposed shopping center development. The development did not occur and the site remains undeveloped.

The previously approved drainage plan detailed the intent to collect the developed flows in a new private storm drain and convey runoff to the existing Snow Vista Channel by a new connection to the existing 42-inch RCP storm drain at the corner of Benavides Rd. and 98^{th} St. Drop inlets were proposed within each basin to convey the flows to the new storm drain system. A small portion of the site was proposed to drain into 98^{th} St. contributing 1.19 cfs. The approved developed free discharge was ±41.85 cfs.

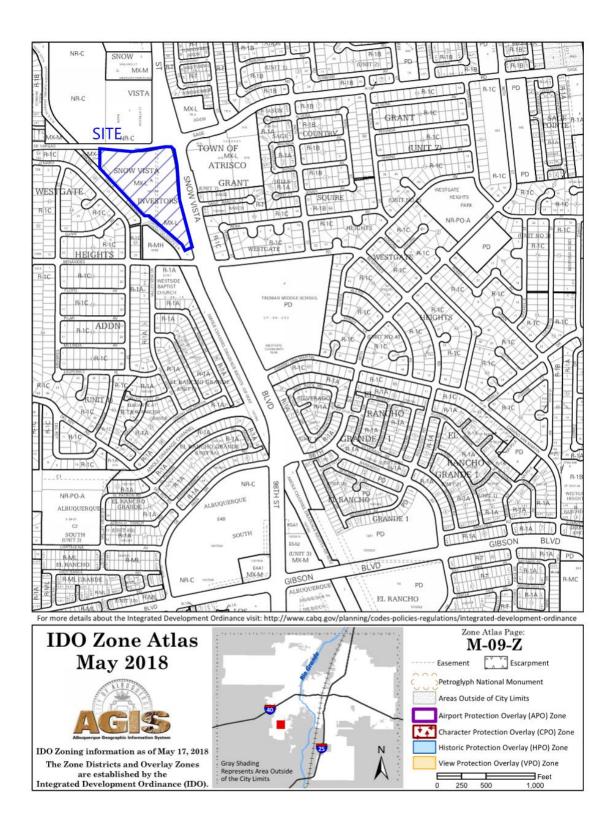


Exhibit A – Vicinity Map

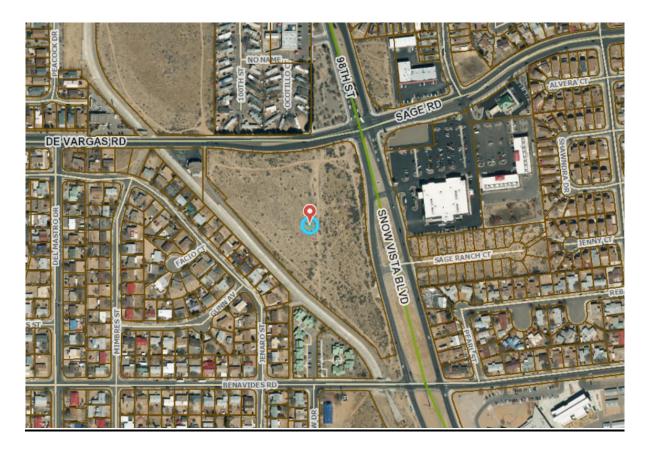


Exhibit B – Site Aerial Image

Flood Plain

The floodplain information is published for the site by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Bernalillo County, New Mexico and Incorporated Areas. The subject site is detailed on Community Panel Number 35001C0336H dated August 6, 2012 and is shown in Exhibit C.

The subject site is located within Flood Zone X, which is which is defined as, "Areas determined to be outside the 0.2% annual chance floodplain". The site does not lie within a Flood Hazard Area as shown on the FEMA map requiring no further flood-proofing or other flood mitigation.

According to the Soil Conservation Service Soil Survey of Bernalillo County the site contains mostly Pajarito loamy fine sand. This soil has slow runoff and the hazard of soil blowing is severe.

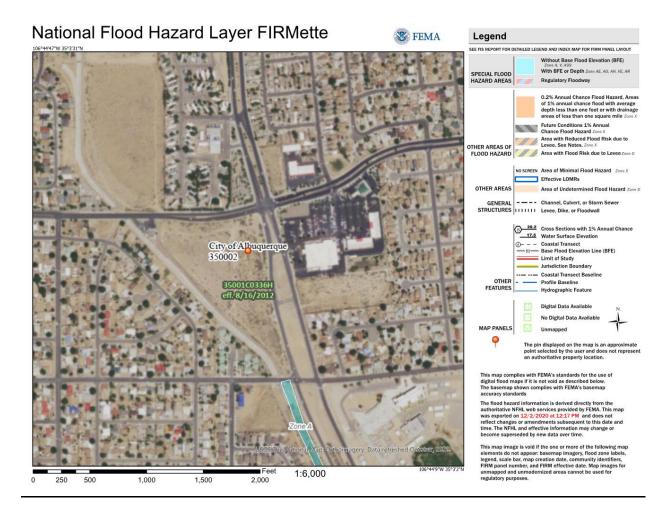


Exhibit C – FIRM Map

Calculations

The drainage calculations are based on the City of Albuquerque Development Process Manual Volume I – Design Criteria, 2020 Revision (DPM) standards. In a developed condition the site is under free discharge with a stormdrain connection to the existing 42-inch RCP at the south east corner of the site near Benavides Rd. and 98th St. The site is divided into five basins for each respective lot and analyzed for a developed condition.

Per the COA DPM the site is located within Precipitation Zone 1, west of the Rio Grande, as specified in Chapter 6, Section 6-2(A)(1) of the DPM. The principal design storm is the 100-year, 6 hour event.

The appropriate land treatments A through D, as defined in the DPM Section 6-2(A)(2), were applied to the various pervious and impervious areas for the proposed site.

Excess precipitation is the depth of runoff remaining after the initial volume of rainfall retained on the surface and infiltration has been subtracted from the design storm hydrograph. The DPM defines the excess precipitation for the 100-year, 6 hour event in Section 6-2(A)(4) Table 6.2.13 for Zone 1 with the corresponding land treatments.

A weighted excess precipitation rate is used to calculate the volume runoff as defined in the DPM equation 6.1. The calculation requires the sum of excess precipitation multiplied by the corresponding treatment areas divided by the total area, multiplied by the weighted excess precipitation of the watershed area.

To determine the peak discharge for the development the corresponding treatment areas are multiplied by the peak rate for each treatment and summed to compute the total flow. The peak rates for the treatment areas are defined in the DPM Table 6.2.14 for the 100-year event.

On site storage volume to retain the "stormwater quality volume" from the 90^{th} percentile storm for the impervious areas discussed in Section 6-12 is required and shall be detailed at time of detailed site plan submittal to Hydrology. The impervious area is multiplied by 0.42-inches (for new development) and based on the 85% impervious assumption for the developed condition, this results in a total of ±14,000 cf volume required to be retained on site to meet the stormwater quality volume requirements set out in the DPM.

Subdivision Existing Conditions

The site is currently undeveloped and has an existing flow rate of ± 16.6 cfs. The site has an average slope of 1.8 percent from northwest to southeast. The existing drainage sheet flows towards the southeast corner of the site and drains into an existing 42" concrete pipe at the corner of Benavides Rd. and 98th St.

No offsite flows enter the site. The site is bordered by Sage Road, 98th Street and the Snow Vista Channel which cuts off offsite flows from the site.

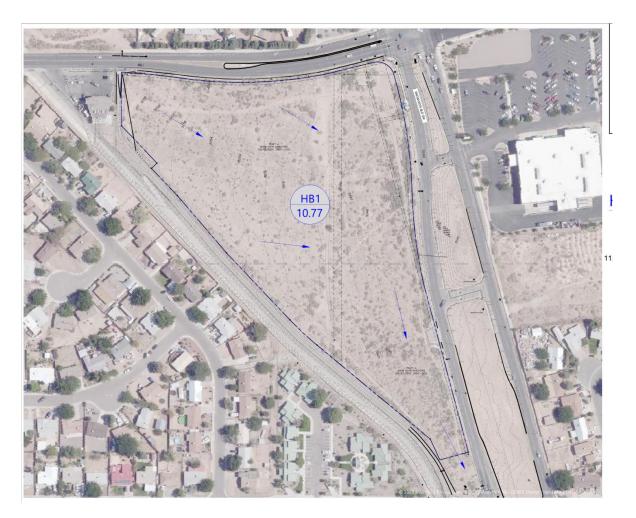


Exhibit D – Existing Drainage Basin Map

Proposed Conditions

The site is too low to drain to the Snow Vista Channel located directly west of the site. Also in 2007 it was confirmed during investigations with AMAFCA and the City of Albuquerque that the Snow Vista Channel adjacent to the site does not have adequate freeboard. The existing 42-

inch RCP pipe is located at the northwest corner of Benavides Rd. and 98th St. and has capacity to handle the developed flows generated for the developed condition. The RCP pipe crosses Benavides Rd. and connects to the Snow Vista Channel south of Benavides Rd., where the channel has adequate freeboard and capacity (per 2007 Drainage Report). There are no storm drains connecting to the existing pipe, which was installed for the purpose of managing the developed runoff of this subdivision.

Under a developed condition at 85% impervious, 15% landscaped, the site will discharge \pm 42.4 cfs through the storm drain to the Snow Vista Channel. The developed totals are in line with the previously approved drainage report dated 12/26/2007. The total volume discharged from the site will be slightly reduced when compared to the 2007 total due to the water quality ponding required onsite for the first flush retention.



Exhibit E – Drainage Basin Map

At the time of development for each lot a detailed grading and drainage plan shall be prepared and submitted for approval by the City. Any specific drainage easements identified at that time can be documented via a paper easement/s, if required. The proposed plat details a blanket cross lot drainage easement across all lots to allow the runoff to enter to the existing stormdrain in the south east corner of the site.

Summary

This conceptual drainage report presents the drainage calculations for the subdivision of the property. The existing drainage sheet flows towards the southeast corner of the site and drains into an existing 42-inch concrete pipe at the corner of Benavides Rd. and 98th St. At the time of development for each lot a detailed grading and drainage plan, including the design of a first flush water quality retention pond/s, shall be prepared and submitted for approval by the City with the overall developed flows connecting to the existing 42-inch concrete pipe.

8

APPENDIX A - Drainage Basin Maps & Hydrology Tables/Calculations



DPM Weighted E Method Precipitation Zone 1 1125 Snow Vista Blvd SW Albuquerque NM 87121 Rev 0 Date 12/3/2020

Based on current COA DPM Standards

Existing Conditions

	Basin Descriptions									100-Year							
Basin	Description	Condition	Area	Area	Area	Treatr	ment A	Treat	ment B	Treatr	ment C	Treatr	nent D	Weighted E	Flow	Volum	e (ac-ft)
ID			(sf)	(acres)	(sq miles)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	(in)	cfs	6 HR	24 HR
H1	Undeveloped	Historic	469,220.97	10.77	0.01683	100%	10.772	0%	0.000	0%	0.000	0%	0.000	0.550	16.59	0.494	0.494
Total			469,221	10.77	0.01683		10.772		0.000		0.000		0.000		16.59	0.494	0.494

Proposed Conditions

	Basin Descriptions											100-Year					
Basin	Description	Condition	Area	Area	Area	Treat	nent A	Treat	ment B	Treat	ment C	Treatr	nent D	Weighted E	Flow	Volum	e (ac-ft)
ID			(sf)	(acres)	(sq miles)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	(in)	cfs	6 HR	24 HR
1A	Vacant Tract	Undeveloped	87,561.51	2.01	0.00314	0%	0.000	0%	0.000	15%	0.302	85%	1.709	2.047	7.90	0.343	0.388
1B	Vacant Tract	Undeveloped	142,641.57	3.27	0.00512	0%	0.000	0%	0.000	15%	0.491	85%	2.783	2.047	12.88	0.558	0.633
1C	Vacant Tract	Undeveloped	103,237.20	2.37	0.00370	0%	0.000	0%	0.000	15%	0.356	85%	2.015	2.047	9.32	0.404	0.458
1D	Vacant Tract	Undeveloped	58,370.40	1.34	0.00209	0%	0.000	0%	0.000	15%	0.201	85%	1.139	2.047	5.27	0.229	0.259
1E	Vacant Tract	Undeveloped	77,410.29	1.78	0.00278	0%	0.000	0%	0.000	15%	0.267	85%	1.511	2.047	6.99	0.303	0.343
Total			469,221	10.77	0.01683		0.000		0.000		1.616		9.156		42.36	1.84	2.081

Equations: Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area) Volume₃₆₀ = Weighted D * Total Area Volume₁₄₄₀ = V₃₆₀ + A_D * (P₁₄₄₀ - P₃₆₀) / 12 in/ft Flow = Qa*Aa + Qb*Ab + Qc*Ac + Qd*Ad

COA DPM

Excess Pre	Excess Precipitation, E								
Zone 1	100-Year								
Ea	0.55								
Eb	0.73								
Ec	0.95								
Ed	2.24								

-								
Peak Discharge (cfs/acre)								
Zone 1	100-Year							
Qa	1.54							
Qb	2.16							
Qc	2.87							
Qd	4.12							

Existing 42" Pipe Capacity

(RCP at the Corner of Benavides Rd. and 98th St)

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
Existing 42"	42	0.88	9.62	0.875	94.63	42.36	4.40

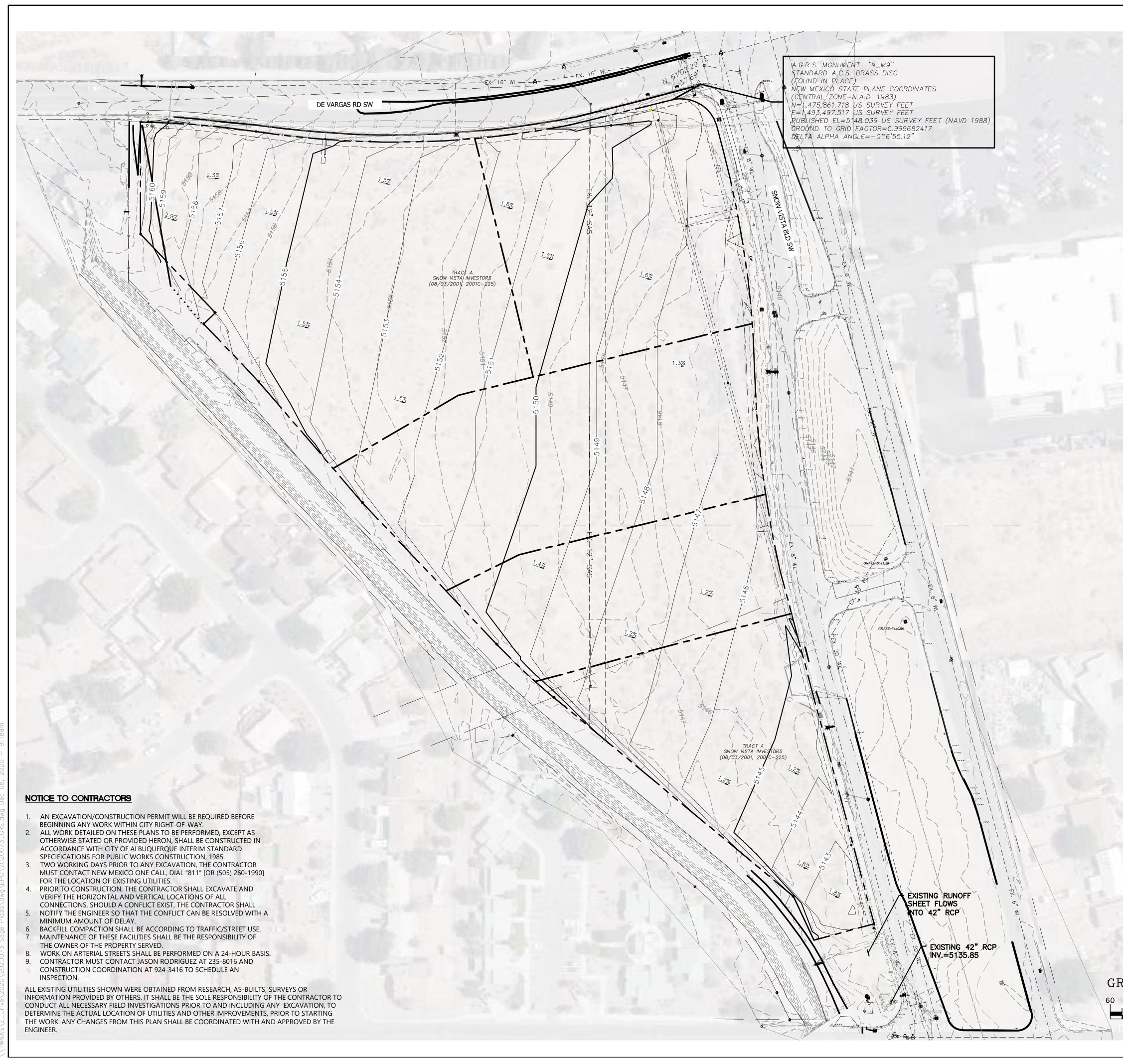
Manning's Equation: Q = 1.49/n * A * R^(2/3) * S^(1/2)

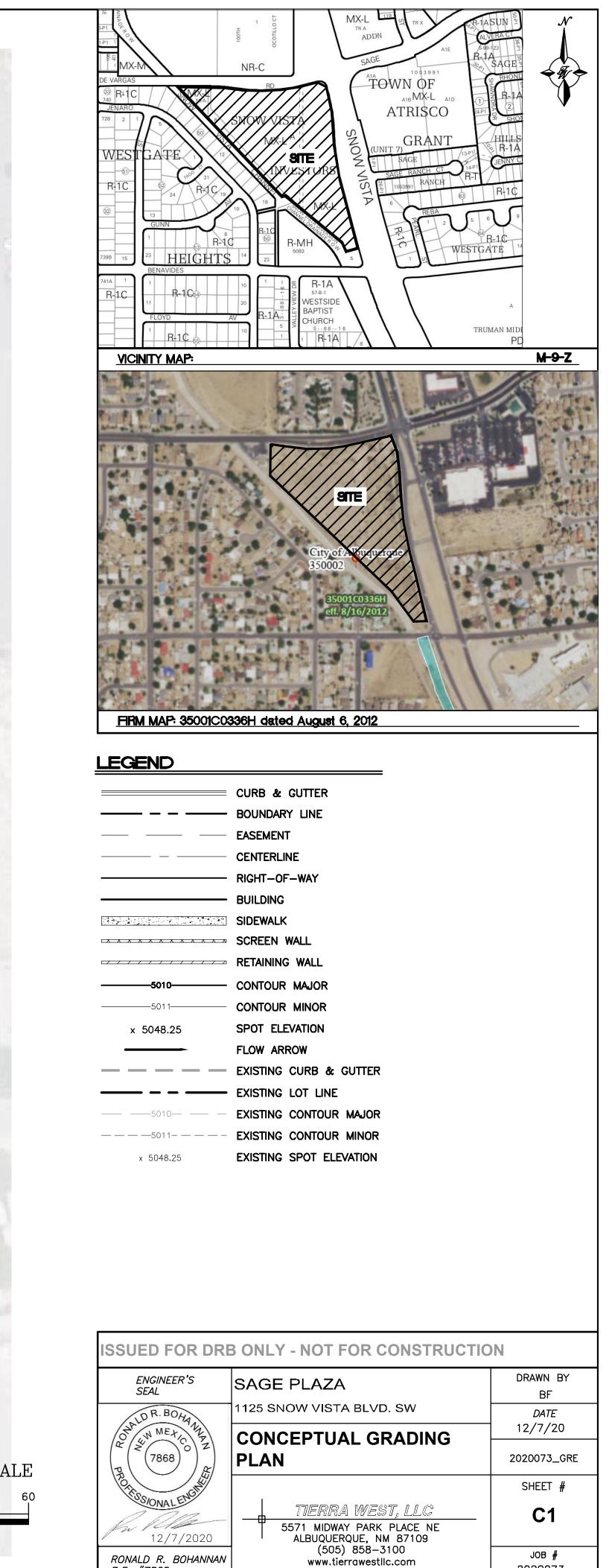
A = Area

R = D/4

S = Slope

n = 0.013





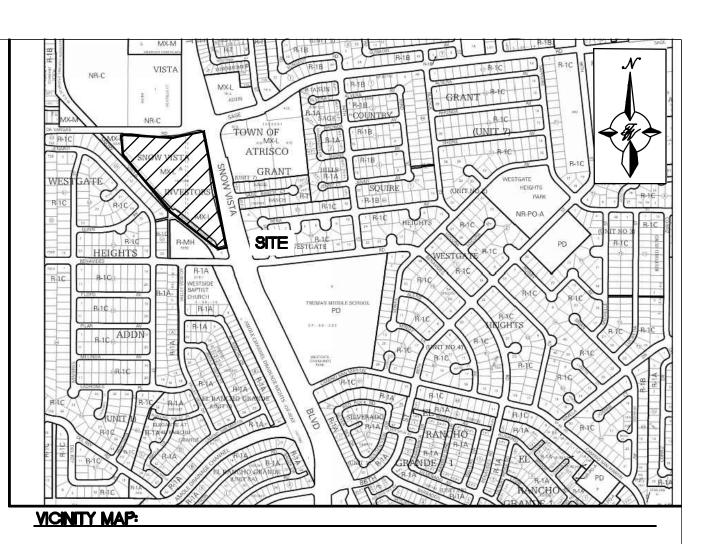
2020073

GRAPHIC SCALE

DSSCALE: 1"=60'

P.E. #7868





HISTORIC DRAINAGE BASIN MAP

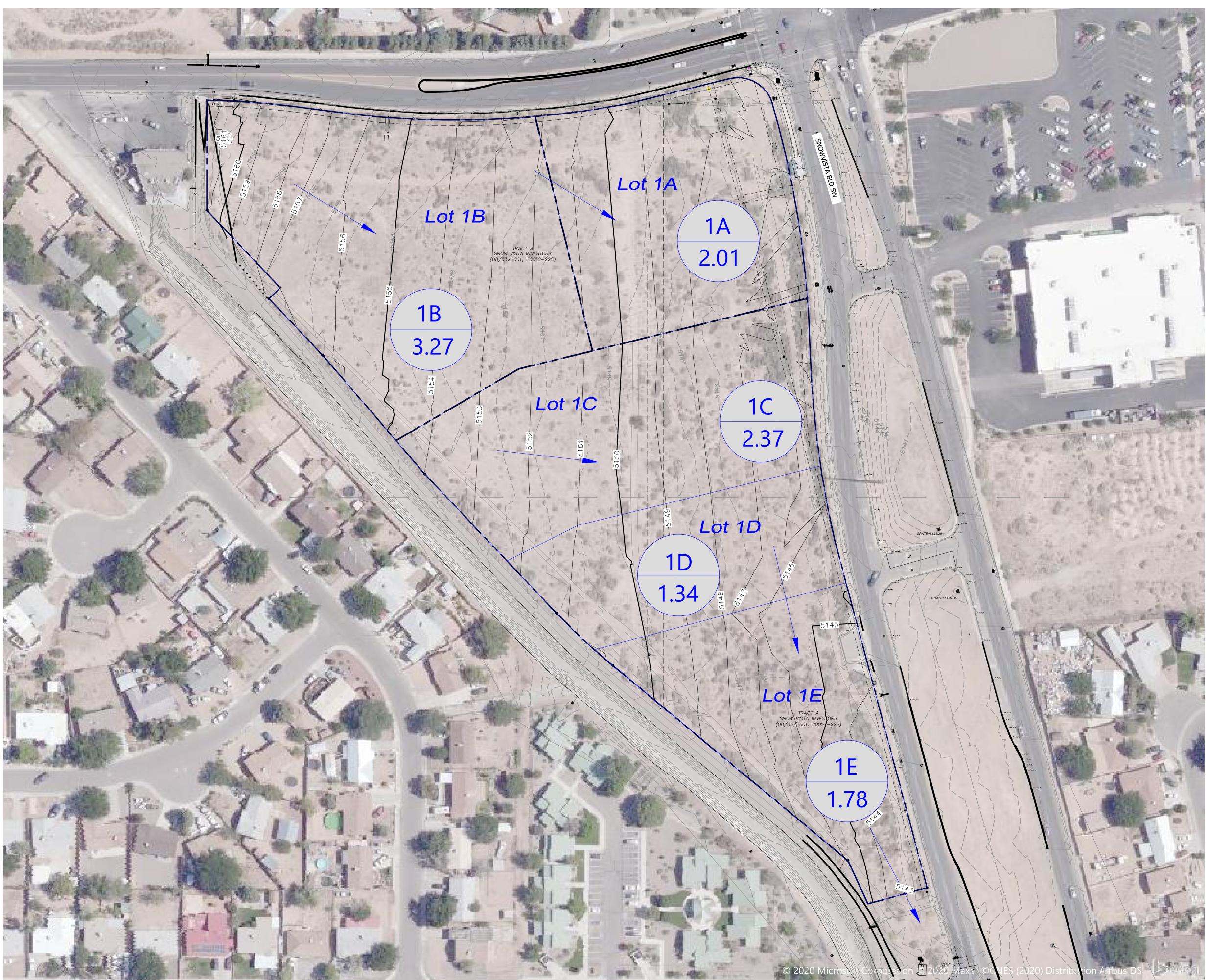
1125 Snow Vista Blvd SW Albuquerque NM 87121

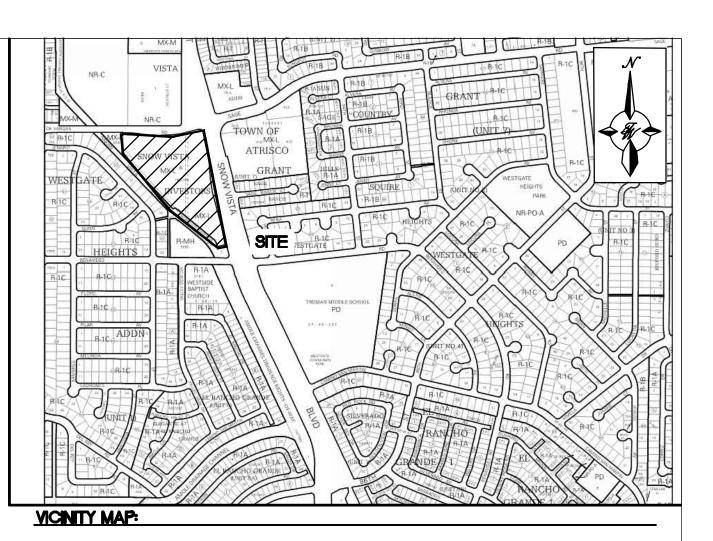






GRAPHIC SCALE SCALE: 1"=60'



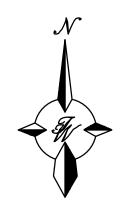


DEVELOPED DRAINAGE BASIN MAP

1125 Snow Vista Blvd SW Albuquerque NM 87121

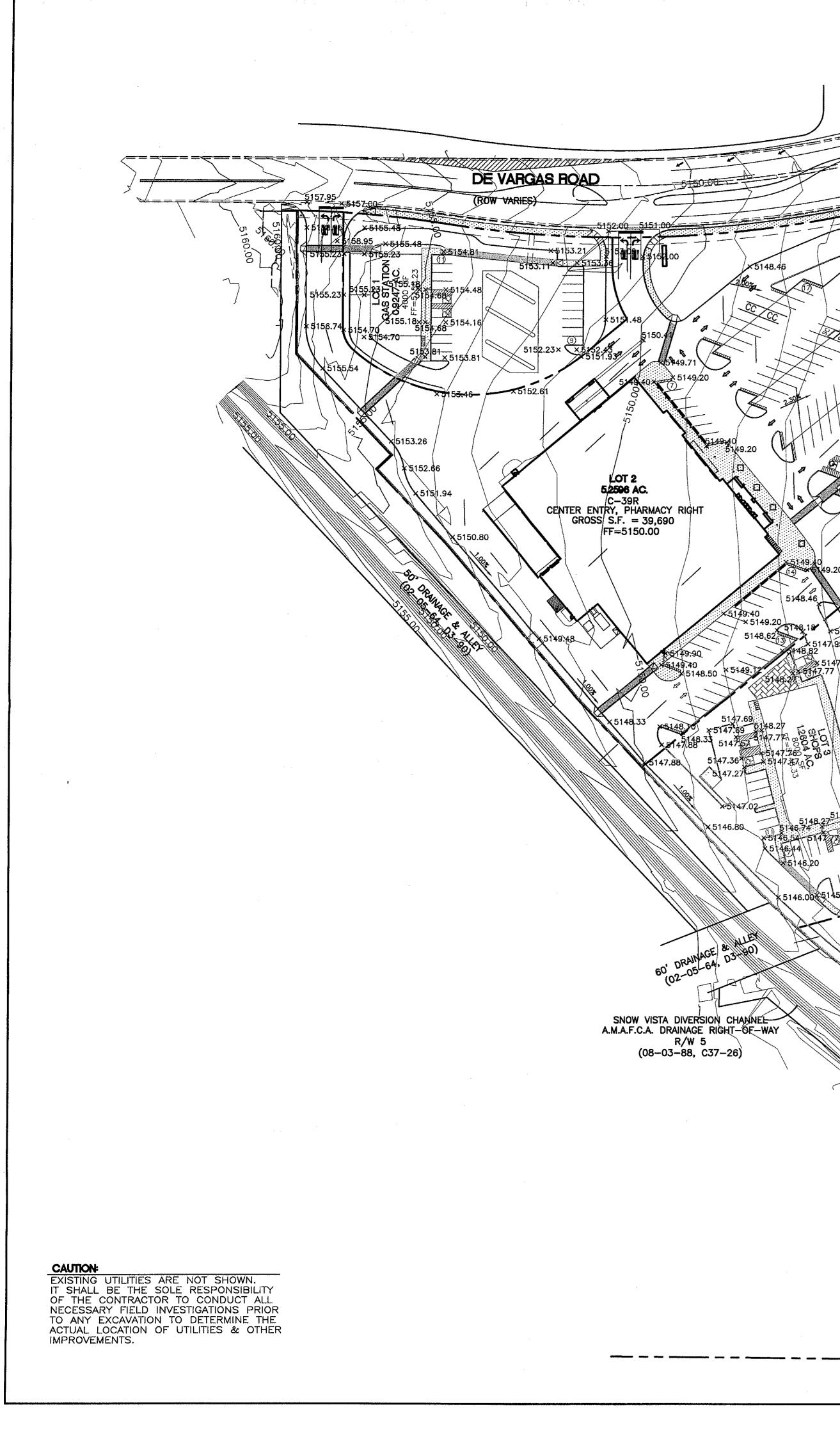
LEGEND





GRAPHIC SCALE SCALE: 1"=60'

APPENDIX B - 2007 Approved Grading and Drainage Plan Eng. Stamp Date 12/26/07



V

£5146.89

×5147.98

5147.60

5147.29

5147.62

\$5143.9

44,960 SF × 5144.75

5145.19

143.59 01

5146.57

3.50%

5148,88

5146.54 151172

EASEMENT A

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.

3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.

≠5135.85

(ROIN

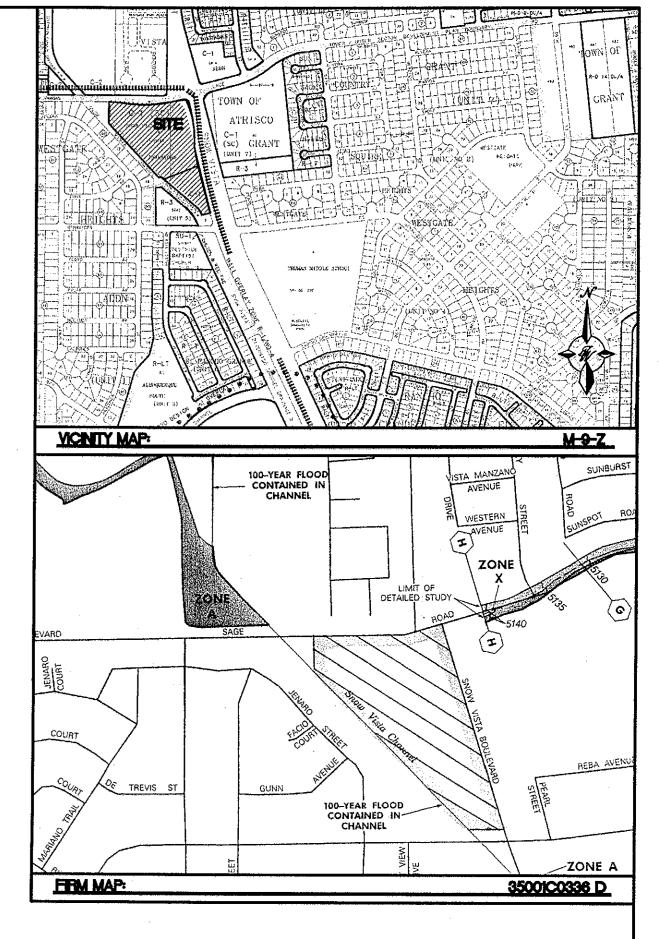
5143.00

×5142.56

SILLES)

_ ____

>____



LEGAL DESCRIPTION:

TRACT A, SNOW VISTA INVESTORS

NOTES

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

	LEGEND	·	
<i>*</i>	•	EXISTING STORM SEWER MAI	T
	EX		
		PROPOSED STORM SEWER M	ANHOLE
		PROPOSED SNGL. "A" INLET	
		PROPOSED SNGL. "D" INLET	
	-	PROPOSED DBL. "D" INLET	
	2	4" RCP PROPOSED STORM SEWER L	NE
· · · · · · · · · · · · · · · · · · ·	xx		
		====== EXISTING CURB & GUTTER	
		PROPOSED CURB & GUTTER	
		BOUNDARY LINE	
		PROPOSED PERIMETER WALL	
		PROPOSED RETAINING WALL	
		EXISTING CONTOUR	
		-5010 EXISTING INDEX CONTOUR	
	·····	-5011 PROPOSED CONTOUR	
		5010 PROPOSED INDEX CONTOUR	
		FLOW ARROW	
		SLOPE TIE	
		5048.25 EXISTING SPOT ELEVATION	
	- 5	0048.25 PROPOSED SPOT ELEVATION	
10	·	CENTERLINE	
\mathcal{N}			
		RIGHT-OF-WAY	
	Rough Grai	DING APPROVAL DATE	
	ENGINEER'S SEAL	SAGE PLAZA	DRAWN BY _{WCWJ}
Υ Y	RINY BOA		DATE
		GRADING	12-14-07
GRAPHIC SCALE	Moy REGIST	AND DRAINAGE PLAN	27110-GRE
	A AL		SHEET #
	A MERESSING.	TIERRA WEST, LLC 5571 MIDWAY PARK PL, NE ALBUQUERQUE, NEW MEXICO 87109	3 OF 6
SCALE: 1"=60'	RONALD R. BOHANNAN P.E. #7868	(505)858–3100	JOB # 27110

Z:\2007\27110\27110-Project\dwg\EPC\27110-GRE.dwg, 12/14/2007 10:34:46 AM, Oce TDS700

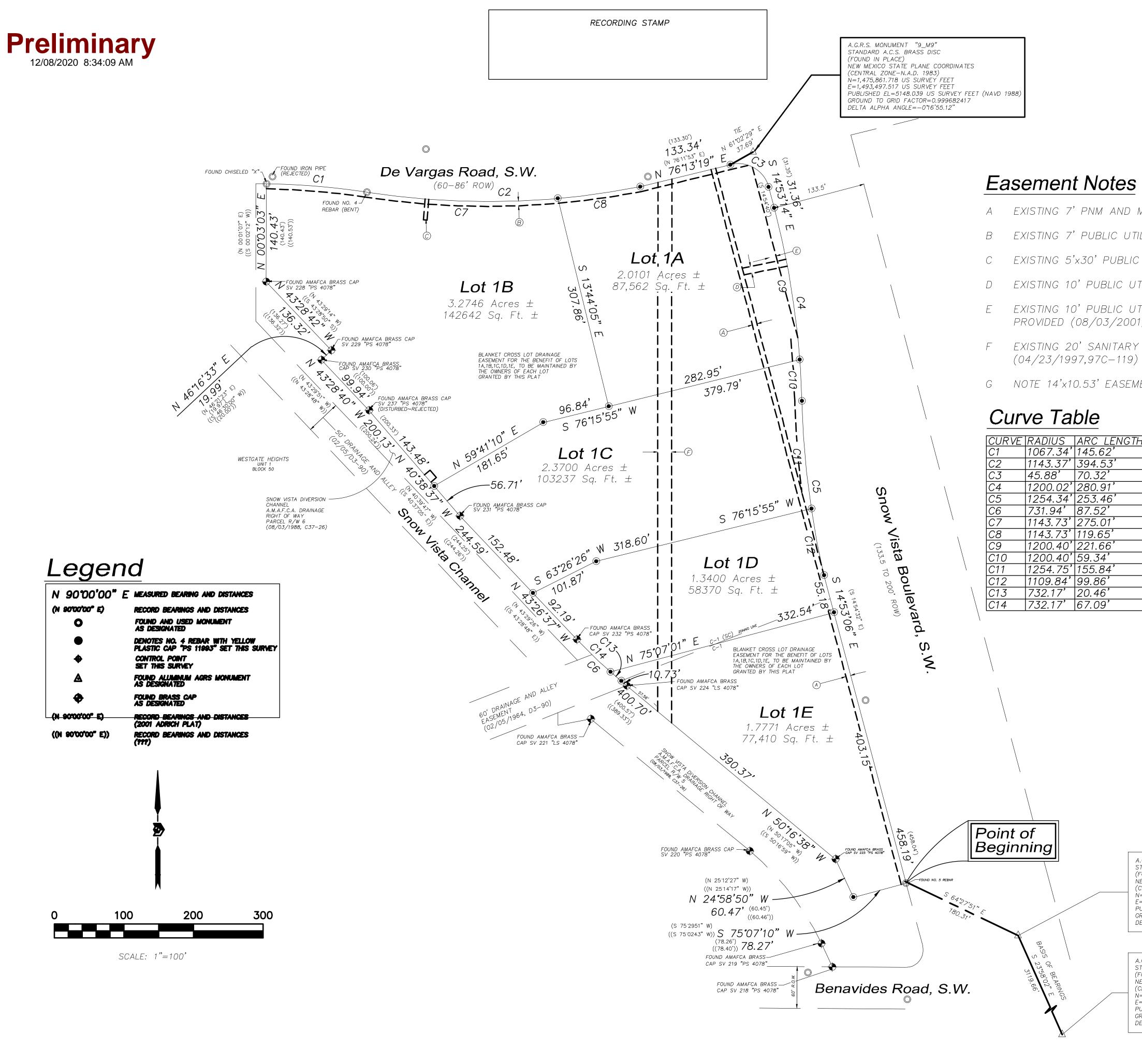
APPENDIX C - Photos of existing Drainage Structures

Photos of Existing Drainage Structures



APPENDIX D - Proposed Subdivision Plat (draft)





COORDINATE AND DIMENSION INFORMATION	P	PLSS INFORMATION			INDEXING INFORMATION FOR C	COUNTY CLERK			PROJECT INFOR	MATION
		AND GRANT OWN OF ATRISCO			PROPERTY OWNER	ABLE TRUST	PRECIBION	GFFICE LOCATION: 9200 San Mateo Boulevard, NE	CREW/TECH: MT	DATE OF SURVEY 10/30/2020
NAD83 NAVD88 0 CONTROL USED: B/ ALBUQUERQUE GEODETIC REFERENCE SYSTEM B/	0° 00' 00 00" YES	SECTION TOWNSHIP 33 10 NORTH	RANGE 02 EAST	MERIDIAN NMPM	SUBDIVISION NAME SNOW VISTA INVESTORS		Z/SURVEYS, INC.	Albuquerque, NM 87113 505.856.5700 PHONE 505.856.7900 PAX	DRAWN BY: JK	CHECKED BY: LM
COMBINED SCALE FACTOR:DISTANCE ANNOTATION:EGRID TO GROUND: 1.000321233GROUND TO GRID: 0.99967887BEARING ANNOTATION:ELGRIDCRID1.000321233CRIDELGRIDCRIDCRID1.000321233CRIDELGRIDCRIDCRIDCRIDELGRIDCRIDCRIDCRIDEL	E = 0 C ELEVATION TRANSLATION: ELEVATIONS VALID: A E0.00' NO		COUNTY BERNALILLC	STATE NM	UPC 100905510538420307	ADDRESS 1125 SNOW VISTA BOULEVARD, S.W.			PSI JOB NO. 204136	SHEET NUMBER 2 OF 2

Plat of Lots 1A, 1B, 1C, 1D and 1E Snow Vista Investors

Town of Atrisco Grant, Projected Section 33, Township 10 North, Range 2 East, N.M.P.M. Albuquerque, Bernalillo County, New Mexico November 2020

- A EXISTING 7' PNM AND MST&T EASEMENT (01/29/1974, BK. MS. 351-PG.72)
- B EXISTING 7' PUBLIC UTILITY EASEMENT (04/23/1997, 97C-119)
- C EXISTING 5'x30' PUBLIC UTILITY EASEMENT (08/03/2001, 2001C-225)
- D EXISTING 10' PUBLIC UTILITY EASEMENT (08/03/2001, 2001C-225)
 - EXISTING 10' PUBLIC UTILITY EASEMENT-LOCATION SCALED NO DIMENSIONS PROVIDED (08/03/2001, 2001C-225)
 - EXISTING 20' SANITARY SEWER EASEMENT (02/05/1964, D3-90) REVISED
- G NOTE 14'x10.53' EASEMENT ON 2001 PLAT

<u>ĘNGTH</u>	DELTA ANGLE	TANGENT	CHORD BEARING	CHORD LENGTH
	7 ° 49 ' 01"	72.92 '	N 85°13'32" W	145.51 '
3'	19°46'14"	199.25'	N 88°49'28" E	<i>392.58</i> '
	87 ° 48'46"	44.17'	N 59°52'17" W	63.64'
\$	13°24'44"	141.10'	N 08°10'52" W	280.27'
,	11 ° 34'39"	127.16'	S 07°15'49" E	253.03 '
	6 ° 51'02"	43.81'	S 46°48'28" E	87.46'
٢	13°46'36"	138.17'	S 88°10'43" E	274.35 '
,	5 ° 59'38"	59.88'	N 81°56'10" E	119.59'
د .	10 ° 34'48"	111.15'	N 09°35'50" W	221.34'
	2 ° 49'57"	29.68'	N 02°53'28" W	59. <i>34'</i>
,	7 ° 06'58"	78.02 '	S 05°01'59" E	155.74'
	5 ° 09'19"	49.96'	S 11°08'32" E	99.83 '
	1 ° 36'03"	10.23'	S 49°25'58" E	20.46'
	5 ° 15'00"	<i>33.57</i> '	S 46°00'27" E	67.06'

A.G.R.S. MONUMENT "11_M9" STANDARD A.C.S. BRASS DISC
(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE–N.A.D. 1983)
N=1,474,735.261 US SURVEY FEET
E=1,493,878.618
PUBLISHED EL=5139.276 US SURVEY FEET (NAVD 1988)
GROUND TO GRID FACTOR=0.999682709
DELTA ALPHA ANGLE=-0°16'52.37"

A.G.R.S. MONUMENT "TRANS" STANDARD A.C.S. BRASS DISC (FOUND IN PLACE) NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983) N=1,471,885.503 US SURVEY FEET E=1,495,145.466 US SURVEY FEET PUBLISHED EL=5121.089 US SURVEY FEET (NAVD 1988) GROUND TO GRID FACTOR=0.999683154 DELTA ALPHA ANGLE=-0°16'43.33"

