

# CITY OF ALBUQUERQUE

Planning Department  
Brennon Williams, Interim Director



Mayor Timothy M. Keller

August 5, 2019

David Soule, P.E.  
Rio Grande Engineering  
PO Box 93924  
Albuquerque, NM 87199

RE: **Mountain Townhomes**  
**1406 Mountain Rd NW**  
**Grading Plan Stamp Date: 7/26/19**  
**Drainage Report Stamp Date: 2/26/19**  
**Drainage File: J13D209**

Dear Mr. Soule:

PO Box 1293

Based on the submittal received on 7/29/19, the grading plan and drainage report are approved for Grading, Building, and SO-19 Permit.

Albuquerque

Prior to Certificate of Occupancy (For Information):

NM 87103

1. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Subdivision* is required.
2. The sidewalk culverts must be inspected and approved by storm drain maintenance (Augie Armijo at (505) 857-8607).

www.cabq.gov

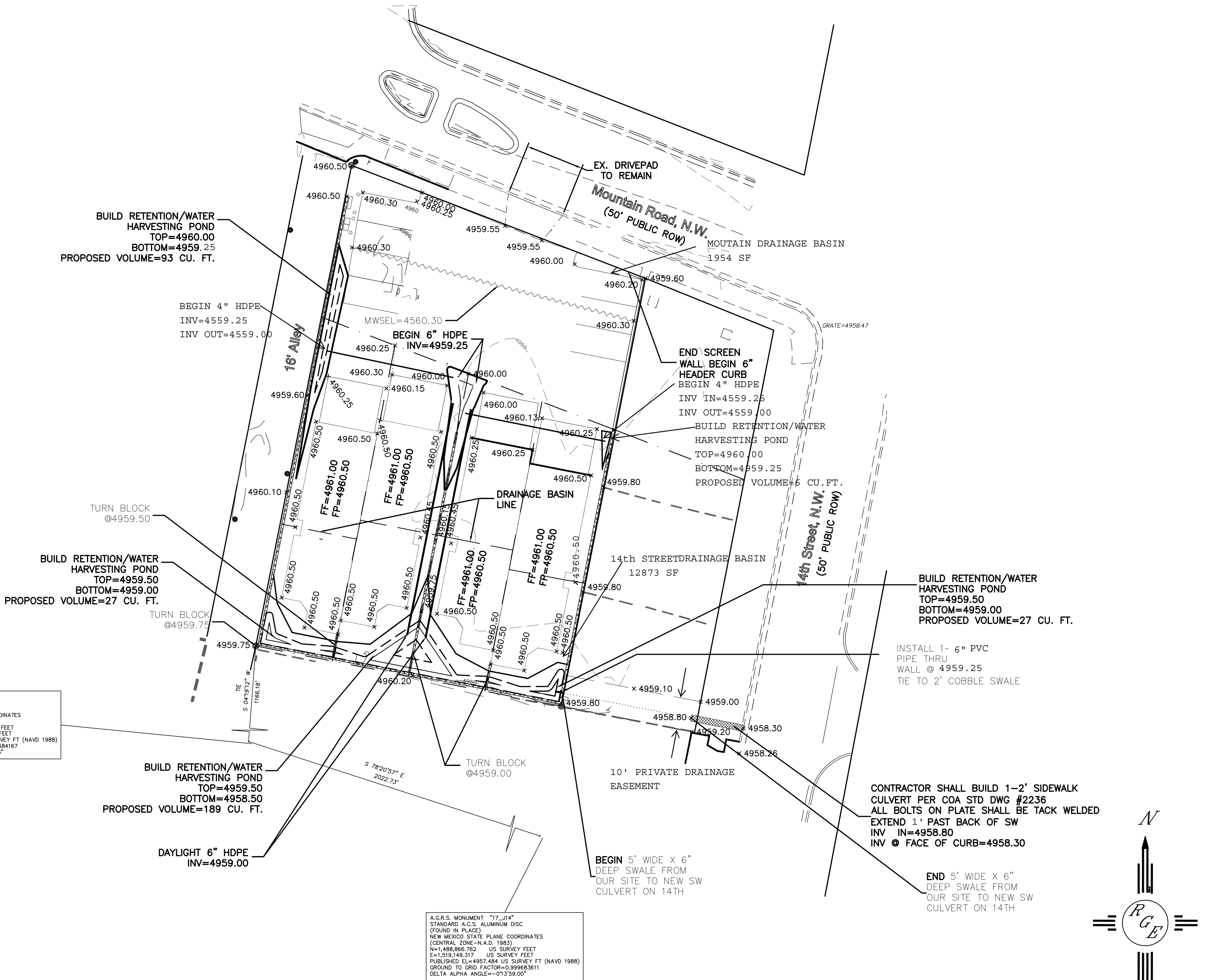
If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

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

Private Drainage Facilities within City Right-of-Way  
Notice to Contractor  
(Special Order 19 ~ "50-19")

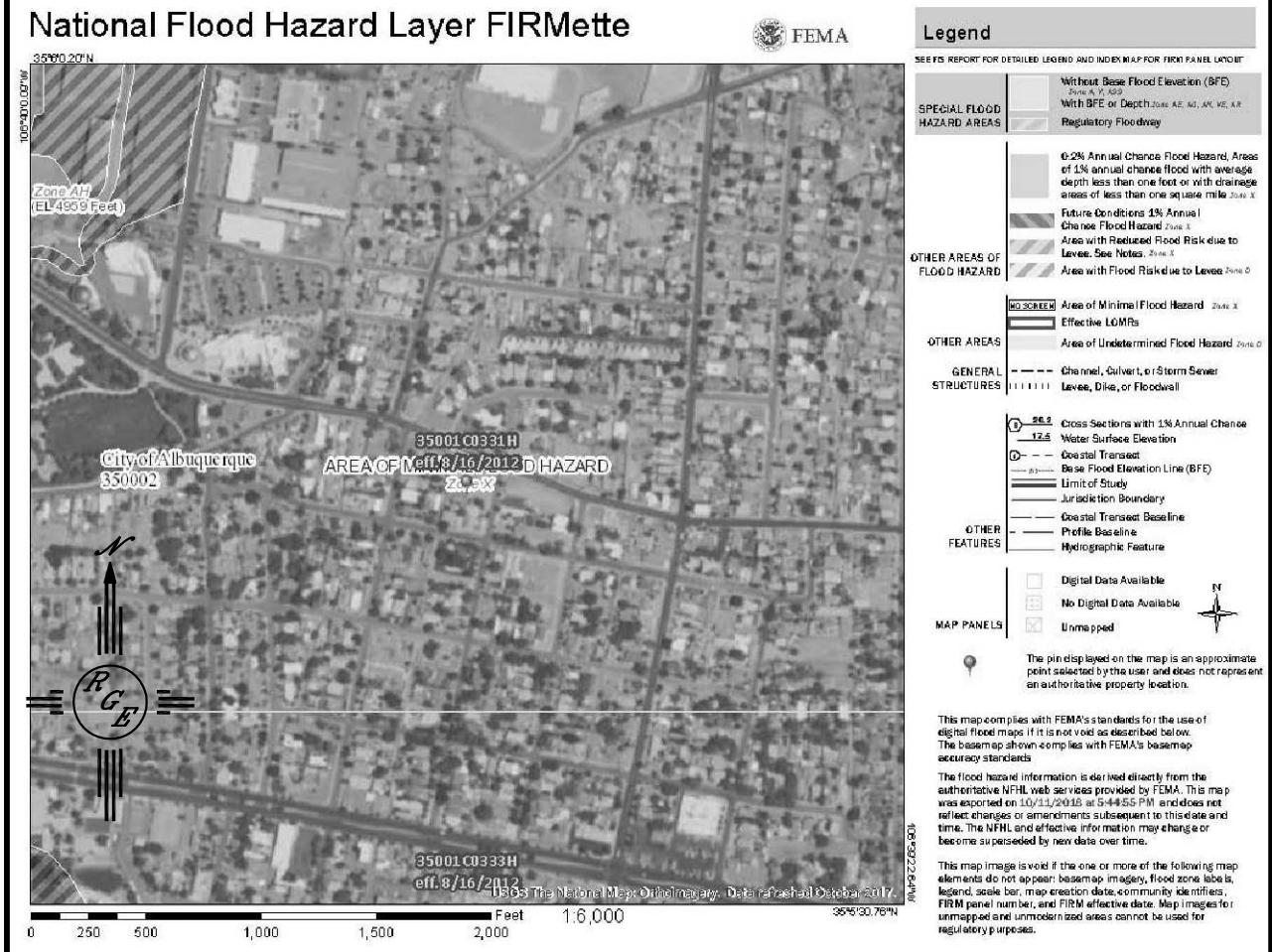
1. An excavation permit will be required before beginning any work within City Right-Of-Way.
2. All work on this project shall be performed in accordance with applicable federal, state and local laws, rules and regulations concerning construction safety and health.
3. Two working days prior to any excavation, the contractor must contact **New Mexico One Call**, dial **"811"** [or (505) 260-1990] for the location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to traffic/street use.
6. Maintenance of the facility shall be the responsibility of the owner of the property being served.
7. Work on arterial streets may be required on a 24-hour basis.
8. Contractor must contact Augie Armijo at (505) 857-8607 and Construction Coordination at 924-3416 to schedule an inspection.



**CAUTION:**  
EXISTING UTILITIES ARE NOT SHOWN.  
IT SHALL BE THE SOLE RESPONSIBILITY  
OF THE CONTRACTOR TO CONDUCT ALL  
NECESSARY FIELD INVESTIGATIONS PRIOR  
TO ANY EXCAVATION TO DETERMINE THE  
ACTUAL LOCATION OF UTILITIES & OTHER  
IMPROVEMENTS.

EROSION CONTROL NOTES:


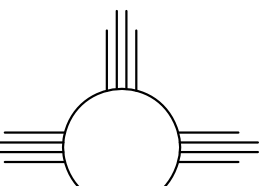
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES 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 ACCEPTANCE OF ANY PROJECT.



**LEGAL DESCRIPTION:**  
Lots B, C, D and E of Block 44, Perea Addition

- NOTES:**
1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
  2. ALL CURB AND GUTTER TO 6" HEADER UNLESS OTHERWISE NOTED.
  3. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.
  4. ANY CURBS OR PAVEMENT NEGATIVELY IMPACTED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.
  5. ALL SITE WORK SHALL CONFORM TO CITY OF ALBUQUERQUE STANDARDS FOR PUBLIC WORKS CONSTRUCTION EDITION 9

LEGEND	
---	EXISTING CONTOUR
---	EXISTING INDEX CONTOUR
---	PROPOSED CONTOUR
---	PROPOSED INDEX CONTOUR
---	SLOPE TIE
---	EXISTING SPOT ELEVATION
---	PROPOSED SPOT ELEVATION
---	BOUNDARY
---	CENTERLINE
---	RIGHT-OF-WAY
---	PROPOSED CURB
---	EXISTING CURB AND GUTTER
---	EXISTING SIDEWALK
---	PROPOSED SCREEN WALL 18" MAX. RETAINAGE

ENGINEER'S SEAL  7/26/19	MOUNTAIN TOWNHOMES  <b>GRADING AND DRAINAGE PLAN</b>   <i>Rio Grande Engineering</i> 1606 CENTRAL AVENUE SE SUITE 201 ALBUQUERQUE, NM 87106 (505) 872-0999	DRAWN BY WCWJ DATE 2-26-19 218151-LAYOUT-10-25-18 SHEET # JOB # 218151
DAVID SOULE P.E. #14522		



# CITY OF ALBUQUERQUE

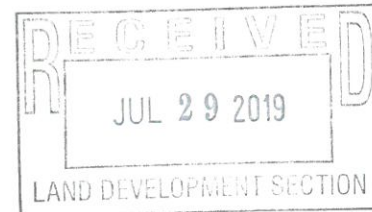
Planning Department  
David Campbell, Director



Mayor Timothy M. Keller

March 7, 2019

David Soule, P.E.  
Rio Grande Engineering  
PO Box 93924  
Albuquerque, NM 87199



RE: **Mountain Townhomes**  
**1406 Mountain Rd NW**  
**Grading Plan Stamp Date: 2/26/19**  
**Drainage Report Stamp Date: 2/26/19**  
**Drainage File: J13D209**

Dear Mr. Soule:

PO Box 1293

Based on the submittal received on 2/27/19, the grading plan and drainage report are approved for Plat.

Albuquerque

Prior to Grading/Building Permit:

NM 87103

1. If an Infrastructure List is required by the DRB, then include the sidewalk culvert on it. Otherwise it can be built by SO-19. Please include the [standard SO-19](#) notes on the grading plan if true. **No infrastructure required. SO-19 notes added**
2. Provide the Bernalillo County recorded drainage easement granted by NMGasCo for discharging across their property. **Enclosed**
3. On the Plat, provide cross-lot drainage easements as necessary across the proposed lots to support your grading plan. On the Plat, provide a drainage easement over the ponds and annotate using the [Plat Drainage Easement Note](#). This note replaces the need for a separate drainage covenant. **Shown on attached Plat**
4. Payment of the Fee in Lieu (Amount = \$531, per Appendix A, *First Flush Calculation*) of onsite management of the SWQV must be made. Include a copy of the paid receipt when resubmitting. **Reciept attached**

www.cabq.gov

Prior to Certificate of Occupancy (For Information):

5. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Subdivision* is required.

# CITY OF ALBUQUERQUE

*Planning Department*  
David Campbell, Director



*Mayor Timothy M. Keller*

6. The sidewalk culverts must be inspected and approved by storm drain maintenance (David Harrison, [dsharrison@cabq.gov](mailto:dsharrison@cabq.gov) or 857-8053).

If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

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

PO Box 1293

Albuquerque

NM 87103

[www.cabq.gov](http://www.cabq.gov)





# TREASURY DIVISION DAILY DEPOSIT

Transmittals for:  
PROJECTS Only

City of Albuquerque Treasury  
J-24 Deposit

Date: 3/12/2019 Office: ANNEX  
Station ID: Cashier: E39083  
Batch: 10131 Trans: 25  
Fund: 305 Activity ID: 7547210  
Account: 461615 Project ID: 24\_MS4  
Dept ID: Bus. Unit: PCDMD  
Alloc Amt: \$531.00  
Trans Amt: \$531.00  
Check Tendered: \$531.00

## Payment In-Lieu for Storm Water Quality Volume Requirement

CASH COUNT	AMOUNT	ACCOUNT NUMBER	FUND NUMBER	BUSINESS UNIT	PROJECT ID	ACTIVITY ID	AMOUNT
TOTAL CHECKS	\$ 531.00	461615	305	PCDMD	24_MS4	7547210	\$ 531.00
TOTAL AMOUNT						TOTAL DEPOSIT	\$531.00

Hydrology#: J13D209 Name: Mountain Townhomes, 3063sf imp.  
Payment In-Lieu For Storm Water Quality  
Volume Requirement

Address/Legal Description: 1406 Mountain NW  
Lots A, B, C, D, E, Block 44, Perea Add'n

DEPARTMENT NAME: Planning Department/Development Review Services, Hydrology

PREPARED BY Dana Peterson PHONE 924-3695

BUSINESS DATE 3/7/19

DUAL VERIFICATION OF DEPOSIT   
EMPLOYEE SIGNATURE

AND BY  
EMPLOYEE SIGNATURE

REMITTER:

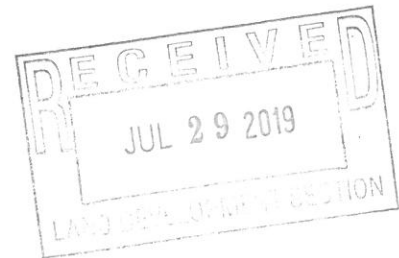
AMOUNT:

BANK:

CHECK #: DATE ON CHECK:

The Payment-in-Lieu can be paid at the Plaza del Sol Treasury, 600 2<sup>nd</sup> St. NW. **Bring two copies of this invoice to the Treasury** and provide a copy of the receipt to Hydrology, Suite 201, 600 2<sup>nd</sup> St. NW, or e-mail with the Hydrology submittal to [PLNDRS@cabq.gov](mailto:PLNDRS@cabq.gov).

\*\*\*\* DUPLICATE \*\*\*\*



Date: 3/12/2019  
Office: ANNEX Cashier: E39083  
Batch: 10131 Tran #: 25

=====

Journal 24 (Misc)  
12:25 PM Receipt #00556260  
Account#:  
J-24 Deposit

Date: 3/12/2019 Office: ANNEX  
Station ID Cashier: E39083  
Batch: 10131 Trans: 25  
Fund: 305 Activity ID7547210  
Account: 461615 Project ID24\_MS4  
Dept ID: Bus.Unit: PCMD  
Alloc Amt: \$531.00  
Trans Amt: \$531.00

Payment Total: \$531.00

=====

Transaction Total: \$531.00  
Check Tendered : \$531.00

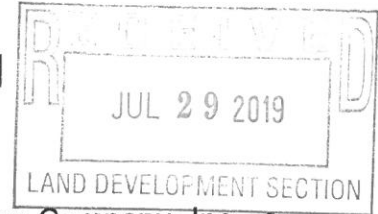
=====

Checks presented:

LIRMAKAYE LABOYTT		191
704 BLUE CYPRESS NE ALBUQUERQUE, NM 87113		
DATE 7/12/19		
PAY TO City of Albuquerque		\$ 531.00
Five hundred thirty one dollars		
BANK OF ALBUQUERQUE		
www.bankofalbuquerque.com		
AT 1406 Main St		

Thank you for your payment.  
Have a nice day!

\*\*\*\* DUPLICATE \*\*\*\*



### DRAINAGE EASEMENT

Grant of Permanent Drainage Easement, by New Mexico Gas Company, Inc., a Delaware corporation ("Grantor"), whose address is 7120 Wyoming Blvd, NE, Suite 20, Albuquerque, NM 87109, for the benefit of Lots B-1, C-1, D-1 and E-1, Block 44, of the Perea Addition ("Grantee"), situate in Section 18, Township 10 North, Range 3 East, N.M.P.M., City of Albuquerque, Bernalillo County, New Mexico.

Grantor grants to the Grantee a non-exclusive, perpetual drainage easement ("Easement"), said Easement being more particularly described on Exhibit "A," for the construction, installation, maintenance, repair, modification, replacement and operation of a private drainage facility ("Facility"), together with the right to remove trees, shrubs, undergrowth and any other obstacles within the Easement if the Grantee determines they interfere with the appropriate use of this Easement. The maintenance of the Facility shall be the responsibility of the Grantee and shall be in accordance with the approved Drainage Report and Plans. Grantee agrees that all installation, maintenance, repair, modification, replacement, operation and any other activities within the Easement will be coordinated with Grantor so as to minimize any disruption to Grantor's property.

In no event shall Grantee's use of the Easement interfere with the Grantor's use of the Grantor's property. Grantee shall not enter into Grantor's property other than as explicitly authorized by this grant of Easement, and in no event shall Grantee enter upon or perform any work upon any of Grantor's improvements on Grantor's property. Grantor shall coordinate with Grantee prior to constructing any improvements or encroachment ("Improvements") within the easement, and Grantee shall have the right to object to any Improvements which would unreasonably interfere with Grantee's use of the Easement.

To the fullest extent permitted by applicable law. Grantee shall indemnify, defend and hold harmless Grantor, Grantor's affiliates and their respective directors, officers, employees, representatives, and agents from and against any and all damages, losses, claims, obligations, demands, assessments, penalties, liabilities, costs, and expenses (including attorney fees and expenses), arising out of or resulting from Grantee or Grantee's members, officers, employees, representatives, and agents use of the Easement, including but not limited to the existence of the Facility thereon. Grantee shall not cause or permit to be caused by any of its employees or agents any hazardous substances, pollutants or contaminants, as defined by applicable law, to be dumped, spilled, released, stored or deposited on, over or beneath the Easement or any other property owned by Grantor.

Grantor covenants and warrants that Grantor is the owner in fee simple of the real property comprising the Easement, and that Grantor has a good lawful right to convey the Easement.

The grant and other provisions of this Easement constitute covenants running



with the Easement for the benefit of the Grantee and its successors and assigns until terminated.

GRANTOR

New Mexico Gas Company, Inc.

By: Tom Bullard  
Tom Bullard

Date: 3/5/19

[corporate acknowledgment]

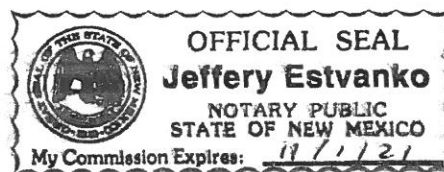
STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF BERNALILLO )

This instrument was acknowledged before me on this 5<sup>TH</sup> day of MARCH, by Tom Bullard, Vice President of Engineering, Gas Management & Technical Services of New Mexico Gas Company, Inc., a Delaware corporation, on behalf of said company.

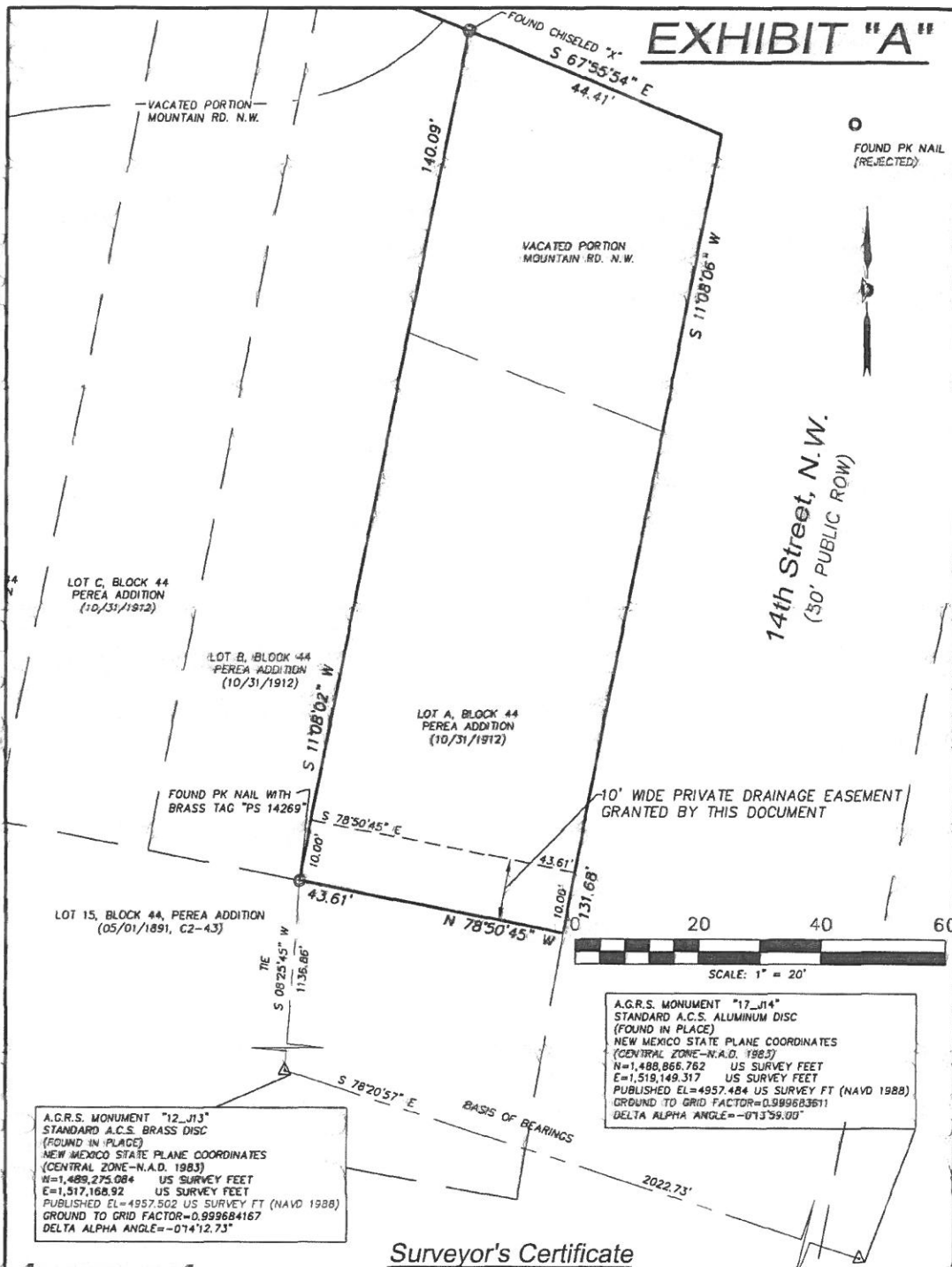
Jeffery Estvanko  
Notary Public

My Commission Expires:

November 1, 2021



# EXHIBIT "A"



A.G.R.S. MONUMENT "12\_J13"  
STANDARD A.C.S. BRASS DISC  
(FOUND IN PLACE)  
NEW MEXICO STATE PLANE COORDINATES  
(CENTRAL ZONE-N.A.D. 1983)  
N=1,489,275.084 US SURVEY FEET  
E=1,517,168.92 US SURVEY FEET  
PUBLISHED EL=4957.502 US SURVEY FT (NAVD 1988)  
GROUND TO GRID FACTOR=0.999684167  
DELTA ALPHA ANGLE=-074°12.73'

A.G.R.S. MONUMENT "17\_J14"  
STANDARD A.C.S. ALUMINUM DISC  
(FOUND IN PLACE)  
NEW MEXICO STATE PLANE COORDINATES  
(CENTRAL ZONE-N.A.D. 1983)  
N=1,488,866.762 US SURVEY FEET  
E=1,519,149.317 US SURVEY FEET  
PUBLISHED EL=4957.484 US SURVEY FT (NAVD 1988)  
GROUND TO GRID FACTOR=0.999683611  
DELTA ALPHA ANGLE=-073°39.00'

## Legend

N 90°00'00" E MEASURED BEARING AND DISTANCES

○ FOUND AND USED MONUMENT AS DESIGNATED

△ FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED

## Surveyor's Certificate

I, LARRY W. MEDRANO, A REGISTERED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF NEW MEXICO, HEREBY CERTIFY THAT THIS EXHIBIT (UN-CLASSIFIED SURVEYING SURVEY) WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MEETING THE MINIMUM REQUIREMENTS FOR THIS CLASSIFICATION OF SURVEY AS PER THE MINIMUM STANDARDS FOR LAND SURVEYING IN NEW MEXICO AS ADOPTED BY THE N.M. BOARD OF LICENSURE FOR ENGINEERS AND SURVEYORS, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

LARRY W. MEDRANO  
N.M.P.S. No. 11993  
DIGITAL SIGNATURE IS INVALID WITHOUT DIGITAL CERTIFICATION  
WET SIGNATURE IS INVALID IF NOT IN BLUE INK  
WITH BLUE STAMP OR EMBOSSED STAMP

DATE

PRECISION SURVEYS, INC.

OFFICE LOCATION  
1000 San Mateo Pkwy, Suite 100  
Albuquerque, NM 87113  
(505) 243-1111  
FAX: (505) 243-1112

COORDINATE AND DIMENSION INFORMATION			PLSS INFORMATION			PROJECT INFORMATION	
STATE PLANE ZONE	GRID	TYPE	LAND GRANT	TOWN OF ALBUQUERQUE GRANT		DRAWN BY:	DATE OF SURVEY
NM-C	GRID	STANDARD				MT	08/27/2016
HORIZONTAL DATUM	VERTICAL DATUM	NOTATION	SECTION	TOWNSHIP	RANGE	METHOD	CHECKED BY:
NAD83	NAVD88	0° 00' 00.00"	16	10 NORTH	3 EAST	NMNM	LN
SPHERICAL USED: ALBUQUERQUE GEODETIC REFERENCE SYSTEM			BASE POINT			PSI JOB NO.	
COMBINED SCALE FACTOR			N = 0			18-1098EX	
GRID TO GROUND: 1.00031928			E = 0			SHEET NUMBER	
GROUND TO GRID: 0.9996807			CITY			2 OF 2	
			COUNTY				
			STATE				
			ALBUQUERQUE				
			BERNALILLO				
			NM				







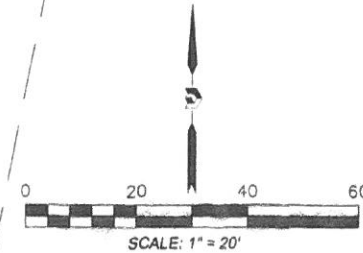
## Easement Notes:

① DRAINAGE FACILITIES AND/OR DETENTION AREAS MAINTAINED BY LOT OWNER AREAS DESIGNATED ON THE ACCOMPANYING PLAT AS "DRAINAGE EASEMENTS" ["DETENTION AREAS"] ARE HEREBY DEDICATED BY THE OWNER AS A PERPETUAL EASEMENT FOR THE COMMON USE AND BENEFIT OF THE VARIOUS LOTS WITHIN THE SUBDIVISIONS FOR THE PURPOSE OF PERMITTING THE CONVEYANCE OF STORM WATER RUNOFF AND THE CONSTRUCTING\* AND MAINTAINING OF DRAINAGE FACILITIES [STORM WATER DETENTION FACILITIES] IN ACCORDANCE WITH STANDARDS PRESCRIBED BY THE CITY OF ALBUQUERQUE\*\* NO FENCE, WALL, PLANTING, BUILDING OR OTHER OBSTRUCTION MAY BE PLACED OR MAINTAINED IN EASEMENT AREA WITHOUT APPROVAL OF THE CITY ENGINEER OF THE CITY OF ALBUQUERQUE. THERE ALSO SHALL BE NO ALTERATION OF THE GRADES OR CONTOURS IN SAID EASEMENT AREA WITHOUT THE APPROVAL OF THE CITY ENGINEER. IT SHALL BE THE DUTY OF THE LOT OWNERS OF THIS SUBDIVISION TO MAINTAIN SAID DRAINAGE EASEMENT [DETENTION AREA] AND FACILITIES AT THEIR COST IN ACCORDANCE WITH STANDARDS PRESCRIBED BY THE CITY OF ALBUQUERQUE. THE CITY SHALL HAVE THE RIGHT TO ENTER PERIODICALLY TO INSPECT THE FACILITIES. IN THE EVENT SAID LOT OWNERS FAIL TO ADEQUATELY AND PROPERLY MAINTAIN DRAINAGE EASEMENT [DETENTION AREA] AND FACILITIES, AT ANY TIME FOLLOWING FIFTEEN (15) DAYS WRITTEN NOTICE TO SAID LOT OWNERS, THE CITY MAY ENTER UPON SAID AREA, PERFORM SAID MAINTENANCE, AND THE COST OF PERFORMING SAID MAINTENANCE SHALL BE PAID BY APPLICABLE LOT OWNERS PROPORTIONATELY ON THE BASIS OF LOT OWNERSHIP. IN THE EVENT LOT OWNERS FAIL TO PAY THE COST OF MAINTENANCE WITHIN THIRTY (30) DAYS AFTER DEMAND FOR PAYMENT MADE BY THE CITY, THE CITY MAY FILE A LIEN AGAINST ALL LOTS IN THE SUBDIVISION FOR WHICH PROPORTIONATE PAYMENT HAS NOT BEEN MADE. THE OBLIGATIONS IMPOSED HEREIN SHALL BE BINDING UPON THE OWNER, HIS HEIRS, AND ASSIGNS AND SHALL RUN WITH ALL LOTS WITHIN THIS SUBDIVISION.

THE GRANTOR AGREES TO DEFEND, INDEMNIFY, AND HOLD HARMLESS, THE CITY, ITS OFFICIALS, AGENTS AND EMPLOYEES FROM AND AGAINST ANY AND ALL CLAIMS, ACTIONS, SUITS, OR PROCEEDINGS OF ANY KIND BROUGHT AGAINST SAID PARTIES FOR OR ON ACCOUNT OF ANY MATTER ARISING FROM THE DRAINAGE FACILITY PROVIDED FOR HEREIN OR THE GRANTOR'S FAILURE TO CONSTRUCT, MAINTAIN, OR MODIFY SAID DRAINAGE FACILITY.

RECORDING STAMP  
DOC# 2019023885  
03/29/2019 11:43 AM Page 2 of 2  
PLAT R \$26.00 B 2019023885 Linda Stever, Bernalillo County

Re-Plat of  
Lots B-1, C-1, D-1 and E-1, Block 44  
**Perea Addition**  
Town of Albuquerque Grant, Projected  
Section 18, Township 10 N., Range 3 E., N.M.P.M.  
Albuquerque, Bernalillo County, New Mexico  
December 2018



Point of Beginning

A.G.S. MONUMENT "12.13"  
STANDARD A.C.S. BRASS DISC  
(FOUND IN PLACE)  
NEW MEXICO STATE PLANE COORDINATES  
(CENTRAL ZONE-N.A.D. 1983)  
N=1,489,275.084 US SURVEY FEET  
E=1,518,148.317 US SURVEY FEET  
PUBLISHED EL=4957.502 US SURVEY FT (NAVD 1988)  
GROUND TO GRID FACTOR=0.99968807739  
DELTA ALPHA ANGLE=-074.72.73"

A SHARED CROSS LOT DRAINAGE EASEMENT GRANTED UPON LOTS B-1, C-1, D-1 AND E-1 FOR THE BENEFIT OF LOTS B-1, C-1, D-1 AND E-1, TO BE MAINTAINED BY THE OWNERS OF EACH LOT GRANTED BY THIS PLAT (SEE EASEMENT NOTE "A")

A.G.S. MONUMENT "17.14"  
STANDARD A.C.S. ALUMINUM DISC  
(FOUND IN PLACE)  
NEW MEXICO STATE PLANE COORDINATES  
(CENTRAL ZONE-N.A.D. 1983)  
N=1,488,866.782 US SURVEY FEET  
E=1,518,148.317 US SURVEY FEET  
PUBLISHED EL=4957.484 US SURVEY FT (NAVD 1988)  
GROUND TO GRID FACTOR=0.99963011  
DELTA ALPHA ANGLE=-073.59.00"

## Legend

N 90°00'00" E MEASURED BEARING AND DISTANCES  
(N 90°00'00" E)  
○ RECORD BEARINGS AND DISTANCES  
○ FOUND AND USED MONUMENT AS DESIGNATED  
○ DENOTES NO. 4 REBAR WITH YELLOW PLASTIC CAP "PS 11985" SET THIS SURVEY  
△ FOUND ALUMINUM A.G.S. MONUMENT AS DESIGNATED

COORDINATE AND DIMENSION INFORMATION				PLSS INFORMATION				INDEXING INFORMATION FOR COUNTY CLERK				PRECISION SURVEYS, INC.				PROJECT INFORMATION			
STATE PLANE ZONE: NM-C		GRID GRID		TYPE: STANDARD		LAND GRANT TOWN OF ALBUQUERQUE GRANT				PROPERTY OWNER MICHAEL P. TAPIA				<div>PRECISION SURVEYS, INC.</div> <div>OFFICE LOCATION: 9200 San Mateo Boulevard, NE Albuquerque, NM 87113 505.856.5700 PHONE 505.856.7900 FAX</div>		CREW/TECH: MC	DATE OF SURVEY: 06/27/2018		
HORIZONTAL DATUM: NAD83		VERTICAL DATUM: NAVD88		ROTATION ANGLE: 0° 00' 00.00"		MATCHES DRAWING UNITS YES		SECTION 18		TOWNSHIP 10 NORTH		RANGE 3 EAST				MERIDIAN NMPM		SUBDIVISION NAME PEREA ADDITION	
CONTROL USE: ALBUQUERQUE GEODETIC REFERENCE SYSTEM				BASE POINT FOR SCALING AND/OR ROTATION: N = 0 E = 0				CITY ALBUQUERQUE		COUNTY BERNALILLO		STATE NM				UPC 101305839331810906		PSI JOB NO. 18-1098P	
COMBINED SCALE FACTOR: GRID TO GROUND: 1.00031928 GROUND TO GRID: 0.99968807739				DISTANCE ANNOTATION GROUND		BEARING ANNOTATION: GRID.		ELEVATION TRANSLATION: ±0.00'		ELEVATIONS VALID: NO.						SHEET NUMBER 2 OF 2			

**PRECISION**  
SURVEYS, INC.

DRAINAGE REPORT

For

**14<sup>TH</sup> AND MOUNTAIN  
TOWNHOMES**

**Albuquerque, New Mexico**

Prepared by

Rio Grande Engineering  
PO Box 93924  
Albuquerque, New Mexico 87194

December 2018



David Soule P.E. No. 14522

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### **Appendix**

Site Hydrology .....	A
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### **Map Pocket**

Site Grading and Drainage Plan



## **PURPOSE**

The purpose of this report is to provide the Drainage Management Plan for the redevelopment of an existing lot located on the southwest corner of 14<sup>th</sup> and Mountain NW. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the proposed development does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

## **INTRODUCTION**

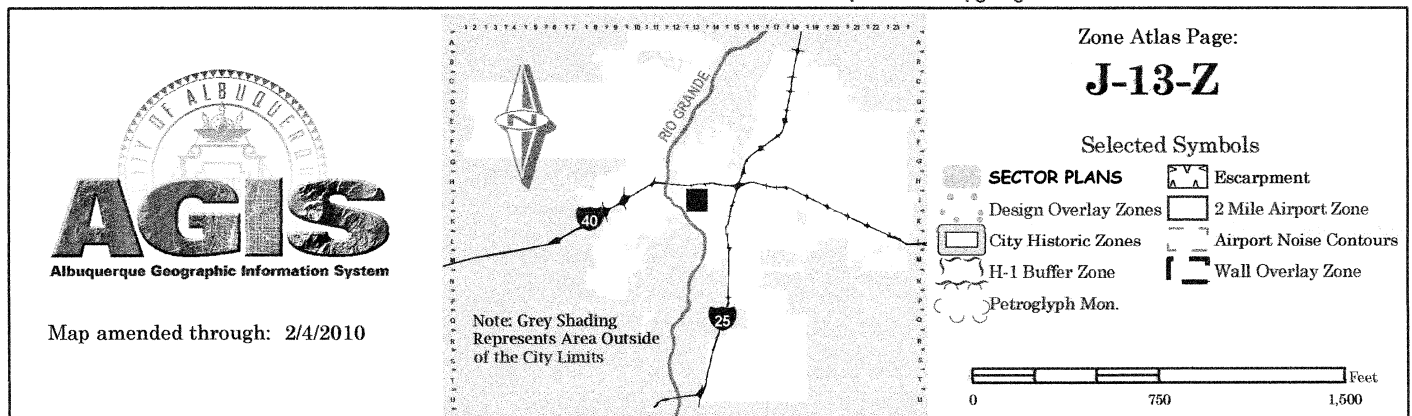
The subject of this report, as shown on the Exhibit A, is a 0.33-acre parcel of land located on the southwest quadrant of 14<sup>th</sup> and Mountain in the near north valley of Albuquerque. The lot is currently being combined into one lot; the existing legal description of this site is lots B, C, D, and E Block 44 Perea Addition. As shown on FIRM map3501C0331HF, the entire property is located within Flood Zone X. This site is an existing site developed as a single family residence with large parking area. Based on the site location and the adjacent drainage infrastructure this development must drain to Mountain and the adjacent property at less than existing conditions.

## **EXISTING CONDITIONS**

The site is currently developed. The site is not impacted by any offsite flows, and is surrounded by developed properties. The site discharges to the adjacent lot to the east, where the flow enters 14<sup>th</sup> street and drains to an inlet at the corner of 14<sup>th</sup> and Mountain. As shown in Appendix A, the existing site discharges at a peak rate of 0.93cfs in a 100-year, 6-hour event. The discharge leaves the site as sheet flow upon the lot to the east where it enters 14<sup>th</sup> street and captured by an inlet at 14<sup>th</sup> and Mountain.



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



## **PROPOSED CONDITIONS**

The proposed improvements consist of a 4 town homes on the combined lot. The site will be graded to create 2 basins. Basin A contains the front half of the buildings and the shared parking areas. This basin generates 0.91 cfs that will drain to a water harvest pond located at the North West corner. The outfall is restricted by a 6" pipe. The parking lot functions as a detention basin and the routed flow is decreased to 0.53 cfs. The maximum water surface elevation will be 4959.77. The parking lot will discharge to the street at 5960 in the event of clogging. This basin will retain a water quality volume of 275 cf, which exceeds the required of 256 cf. Basin B contains the rear of the buildings and back yard. This basin will generate a peak flow rate of .38 cfs draining to the adjacent lot. This basin is throttled by the addition of a 4" pipe with the rear yards acting as a detention basin, the routed discharge rate will be 0.20 cfs. This basin will retain a water quality volume of 286, which exceeds the 84 cf required. In the event of clogging, the basin will discharge to basin A and leave the site via the driveway. The combined flow leaving the site will be 0.73, which is less than existing rate of 0.93 cfs. The drainage patterns are modified to direct more flow to the street. The downstream collection point remains the inlet at 14<sup>th</sup> and Mountain

## **SUMMARY AND RECOMMENDATIONS**

This project is an infill project within a completely developed area of the near north Valley Albuquerque. The project is a redevelopment of an existing site. The site currently discharges .93 cfs to 14<sup>th</sup> street over an adjacent vacant lot. The proposed drainage plan drains the majority of the lot to mountain. The rear portion of the lot will continue to drain upon the adjacent lot, which is a natural gas pipeline valve station. The total flow leaving the site is reduced to 0.73 cfs by utilizing detention ponds with orifice restrictions. The first flush volume is retained onsite. The proposed decrease of 0.2 cfs shall have no negative impact on existing drainage patterns.

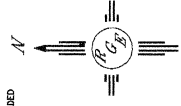


**APPENDIX A**  
**SITE HYDROLOGY**

1. AN EMOBANKMENT/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN OUR RIGHT-OF-WAY.
2. ALL WORK PERFORMED ON THESE PAVEMENTS SHALL BE ACCORDING TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1988.
3. ALL WORK SHALL BE COMPLETED WITHIN THE TIME FRAME ALLOWED BY THE PERMITTING AGENCY. DELAYS WILL BE PENALIZED.
4. NO WORK SHALL BE CONDUCTED DURING THE 7:00-12:00 PM PERIOD FOR LOCATIONS WITHIN THE COMMUNITY CENTER.
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN AND MAINTAIN ALL NECESSARY PERMITS AND SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS.
6. BAYPOLL CONSTRUCTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
7. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
8. WORK ON INTERLUMEN SHALL BE PERFORMED ON A 24-HOUR BASIS.

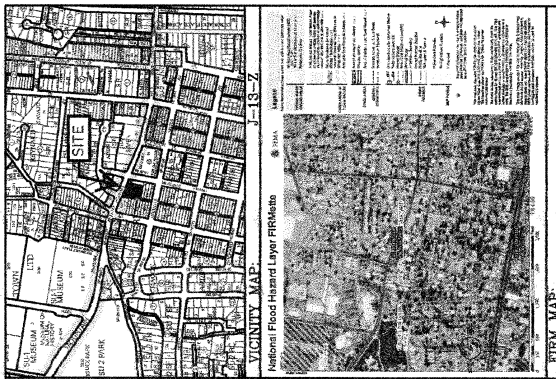
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
4. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
6. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT REMAINING ON THE SITE AFTER COMPLETION OF THE PROJECT ARE THE RESPONSIBILITIES OF THE CONTRACTOR.
7. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.

**CAUTION:**  
EXISTING UTILITIES ARE NOT SHOWN.  
IT SHALL BE THE SOLE RESPONSIBILITY  
OF THE CONTRACTOR TO CONDUCT ALL  
NECESSARY FIELD INVESTIGATIONS PRIOR  
TO ANY EXCAVATION TO DETERMINE THE  
ACTUAL LOCATION OF UTILITIES & OTHER  
IMPROVEMENTS.



GRAPHIC SCALE

SCALE: 1"=20'



**LEGAL DESCRIPTION:**



**DEVAL DELIVERY TACON,  
Lots B, C, D and E of Block 44, Perac Addition**

NOTES:  
1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE

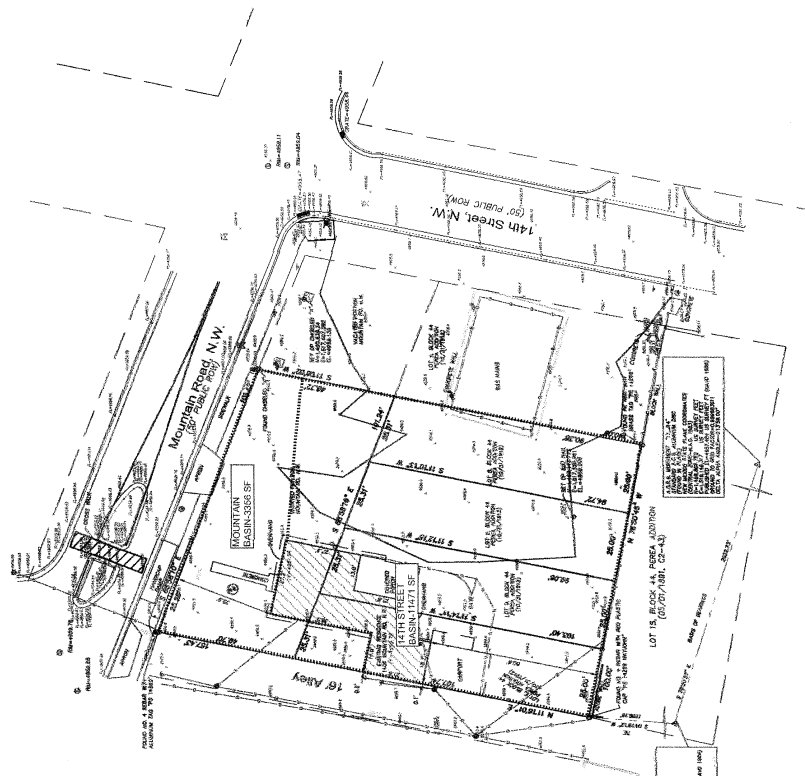
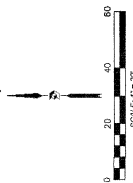
2. ALL CURB AND GUTTER TO 6" HEADER UNLESS OTHERWISE NOTED.
3. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.
4. ANY CURBS OR PAVEMENT NEARLY IMPACTED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.
5. ALL SITE WORK SHALL CONFORM TO CITY OF ALBUQUERQUE STANDARDS FOR PUBLIC WORKS CONSTRUCTION EDITION 9

### LEGEND

[illegible]

ENGINEER'S SEAL		MOUNTAIN TOWNSHIPS PREPARED BATH MAP	DRAWN BY: J. WEND DATE: 2-20-19 SHEET: 1 OF 1 PROJECT: 10000-10-00-10
DUMP SCALE P.E. #1422		Rio Grande <i>Engineering</i> 10000-10-00-10 10000-10-00-10 10000-10-00-10	SHEET # 1001 / 1001

*Topographic Survey of  
Lots B, C, D and E of Block 44  
**Perea Addition**  
And the Vacated Portion of  
**Mountain Road, N.W.**  
Town of Albuquerque Grant, Projected  
Section 18, Township 10 N., Range 3 E., N.M.P.M.  
Albuquerque, Bernalillo County, New Mexico  
February 2019.*



- ## Notes
1. PLANT RESPONSES.
  2. A. PLATT, D. LOTS, B. S. D. AND E. BLOCK: A FIVE ACTION AND VACATED MOUNTAIN (R&O, N.W. (1985) 1985).
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**Legend**

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E **E** ELECTRIC METER  
M **M** WATER METER  
● **●** GAS METER  
● **●** GAS METER  
S **S** SEW  
O **O** OIL AND WATER  
● **●** CEMENT UTILITY LINE  
● **●** CHAIN LANE METER  
● **●** WOOD FENCE

**NOTES:**  
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## Surveyor's Certificate

LARRY W. MEDRAND  
 N.M.P.S. No. 71993

DATE \_\_\_\_\_

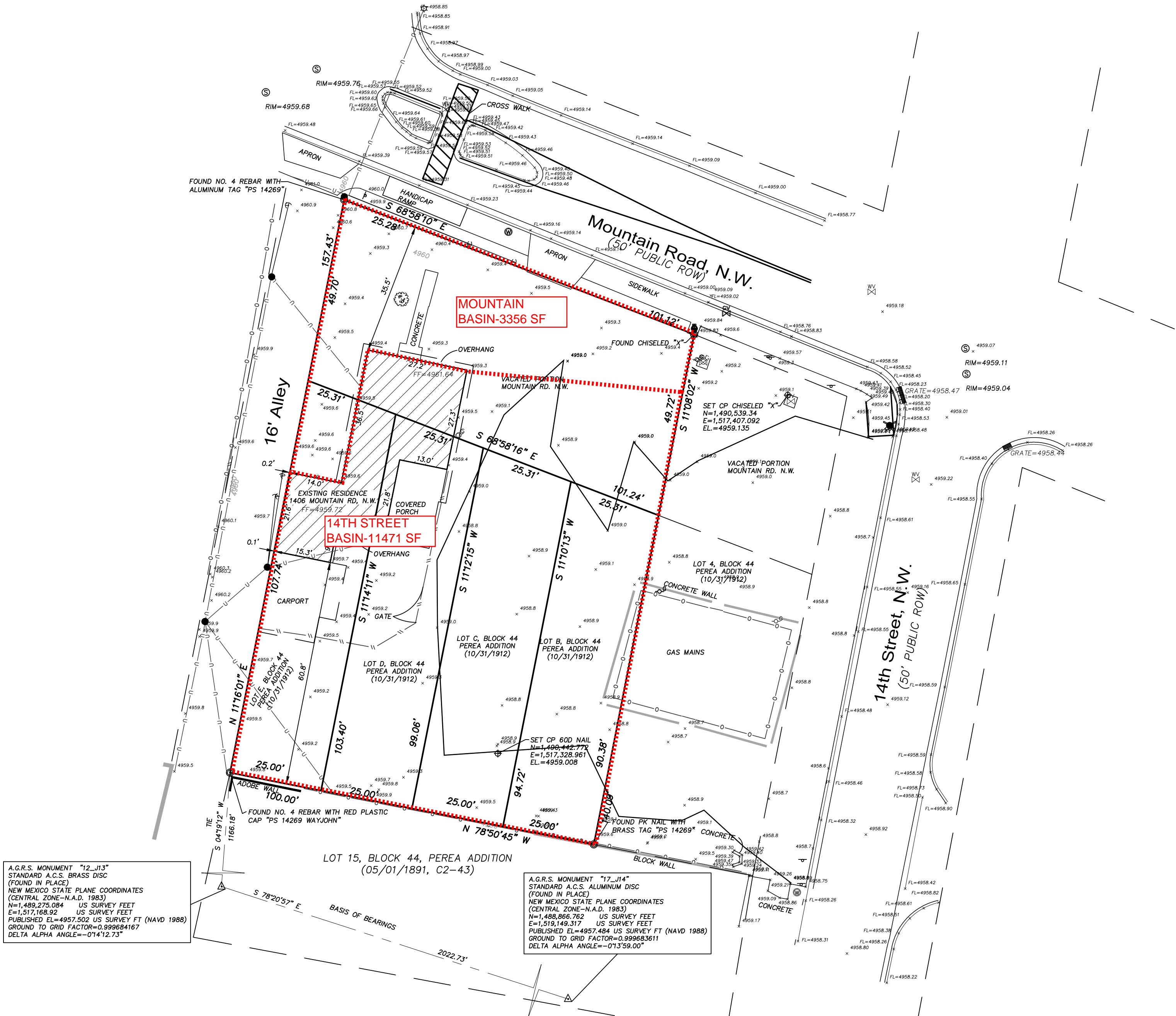
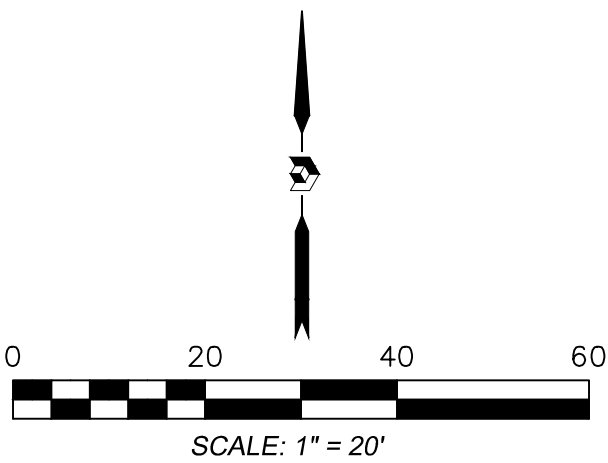
DIGITAL SIGNATURE IS VALID WITHOUT DIGITAL CERTIFICATION  
 IF THE SIGNATURE IS VALID AND IS NOT IN BLUE INK WITH BLUE STAMP OR EMBOSSED STAMP

REGISTERED PROFESSIONAL NOTARY PUBLIC  
 STATE OF NEW YORK  
 11993

[illegible]

THIS IS NOT A BOUNDARY SURVEY  
APPARENT LOT LINES AND PROPERTY CORNERS  
ARE SHOWN FOR ORIENTATION ONLY

Topographic Survey of  
Lots B, C, D and E of Block 44  
**Perea Addition**  
And the Vacated Portion of  
**Mountain Road, N.W.**  
Town of Albuquerque Grant, Projected  
Section 18, Township 10 N., Range 3 E., N.M.P.M.  
Albuquerque, Bernalillo County, New Mexico  
February 2019



Legend

N 90°00'00" E	
MEASURED BEARING AND DISTANCES	
○	FOUND AND USED MONUMENT AS DESIGNATED
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●	SERVICE/DROP POLE AS DESIGNATED
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⊞	ELECTRIC METER
⊙	WATER METER
⊕	GAS VALVE
⊗	GAS METER
⊖	SIGN
—	CURB AND GUTTER
—U—	OVERHEAD UTILITY LINE
—O—	CHAIN LINK FENCE
—/—	WOOD FENCE

Notes

- PLAT REFERENCES:  
A. PLAT OF LOTS B, C, D, AND E, BLOCK 44, PEREA ADDITION AND VACATED MOUNTAIN ROAD, N.W. (10/31/1912)
- ELEVATION DATUM IS BASED ON NAVD 1988 FROM AGRS MONUMENT "12-J13", PUBLISHED ELEVATION (FEET) = 4957.502 (DATE OF RETRIEVAL: JULY 2007 FOR NON AGRS MONUMENTS)
- THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1"=20' WITH A CONTOUR INTERVAL OF ONE FOOT.
- GPS CALIBRATION BASED ON ACS MONUMENTS "12-J13" AND "17-J14", AVERAGE PROJECT GROUND TO GRID SCALE FACTOR= 0.99966807739

Surveyor's Certificate

I, LARRY W. MEDRANO, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NEW MEXICO, LICENSE NUMBER 11993, DO HEREBY CERTIFY THAT THIS TOPOGRAPHIC SURVEY WAS PREPARED BY ME BY FIELD SURVEYS USING GPS RTK MEASUREMENTS BASED ON SITE HORIZONTAL/VERTICAL CALIBRATION UTILIZING AGRS MONUMENTS. ELEVATIONS BASED ON AGRS MONUMENT "12-J13" (NAVD 1988). THIS SURVEY MEETS THE MINIMUM STANDARDS FOR TOPOGRAPHIC SURVEYING IN NEW MEXICO AS ADOPTED BY THE NEW MEXICO BOARD OF LICENSURE FOR PROFESSIONAL ENGINEERS AND SURVEYORS. THIS IS NOT A BOUNDARY SURVEY.

LARRY W. MEDRANO  
N.M.P.S. No. 11993

DATE

DIGITAL SIGNATURE IS INVALID WITHOUT DIGITAL CERTIFICATION  
WET SIGNATURE IS INVALID IF NOT IN BLUE INK WITH BLUE STAMP OR EMBOSSED STAMP



COORDINATE AND DIMENSION INFORMATION				PLSS INFORMATION				INDEXING INFORMATION FOR COUNTY CLERK				PROJECT INFORMATION	
STATE PLANE ZONE: NM-C		GRID		TYPE: STANDARD		LAND GRANT		PROPERTY OWNER		CREW/TECH:		DATE OF SURVEY	
HORIZONTAL DATUM: NAD83		VERTICAL DATUM: NAVD88		ROTATION ANGLE: 0° 00' 00.00" YES		TOWN OF ALBUQUERQUE GRANT		MICHAEL P. TAPIA		MT		02/14/2019	
CONTROL USED: ALBUQUERQUE GEODETIC REFERENCE SYSTEM		BASE POINT FOR SCALING AND/OR ROTATION: N = 0 E = 0		DISTANCE ABNOTATION: GROUND		SECTION 18		TOWNSHIP 10 NORTH		RANGE 3 EAST		MERIDIAN NM	
COMBINED SCALE FACTOR: GRID TO GROUND: 1.00031928 GROUND TO GRID: 0.99966807739		BEARINGS ABNOTATION: GRID		ELEVATION TRANSLATION: ±0.00'		CITY ALBUQUERQUE		COUNTY BERNALILLO		STATE NM		SUBDIVISION NAME PEREA ADDITION	
												UPC 101305839331810906	
												PSI JOB NO. 18-1098T	
												SHEET NUMBER 1 OF 1	



OFFICE LOCATION:  
9200 San Mateo Boulevard, NE  
Albuquerque, NM 87113  
505.856.5700 PHONE  
505.856.7900 FAX



## NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: NM

### Data description

Data type:

### Select location

#### 1) Manually:

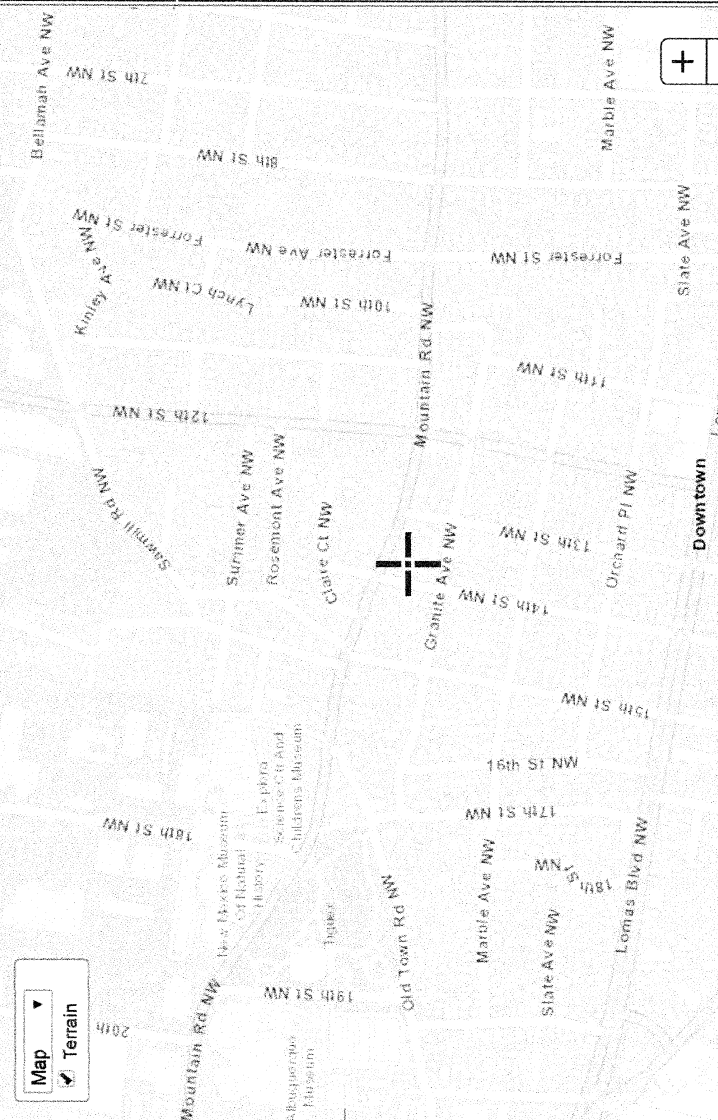
a) By location (decimal degrees, use "." for S and W): Latitude:  Longitude:

b) By station (list of NM stations):

c) By address

2) Use map (if ESRI interactive map is not loading, try adding the host: <https://js.arcgls.com/> to the firewall, or contact us at [hdsc.questions@noaa.gov](mailto:hdsc.questions@noaa.gov)):

☒ Terrain



**a) Select location**  
Move crosshair or double click  
**b) Click on station icon**  
☐ Show stations on map

**Location information:**  
Name: Albuquerque, New Mexico, USA\*  
Latitude: 35.0958°  
Longitude: -106.6608°  
Elevation: 4958.66 ft\*\*

General Information  
Homepage  
Progress Reports  
FAQ  
Glossary

Precipitation Frequency  
Data Server  
GIS Grids  
Maps  
Time Series  
Temporals  
Documents

Probable Maximum Precipitation  
Documents

Miscellaneous  
Publications  
Storm Analysis  
Record Precipitation

Contact Us  
Inquiries



\* Source: ESRI Maps  
\*\* Source: USGS

# POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION

NOAA Atlas 14, Volume 1, Version 5

PF tabular      PF graphical      Supplementary information      Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>												
Duration	Average recurrence interval (years)											
	1	2	5	10	25	50	100	200	500	1000		
5-min	0.169 (0.145-0.197)	0.219 (0.188-0.255)	0.294 (0.251-0.343)	0.353 (0.300-0.410)	0.433 (0.366-0.503)	0.495 (0.417-0.575)	0.561 (0.466-0.651)	0.631 (0.524-0.732)	0.726 (0.596-0.843)	0.801 (0.654-0.930)		
10-min	0.267 (0.221-0.300)	0.333 (0.286-0.389)	0.447 (0.382-0.522)	0.536 (0.457-0.624)	0.658 (0.557-0.765)	0.753 (0.635-0.875)	0.854 (0.714-0.991)	0.961 (0.798-1.11)	1.11 (0.908-1.29)	1.22 (0.996-1.42)		
15-min	0.319 (0.274-0.372)	0.413 (0.354-0.482)	0.554 (0.473-0.647)	0.665 (0.566-0.773)	0.816 (0.690-0.948)	0.934 (0.788-1.09)	1.06 (0.885-1.23)	1.19 (0.989-1.38)	1.37 (1.13-1.59)	1.51 (1.23-1.75)		
30-min	0.430 (0.369-0.501)	0.556 (0.476-0.649)	0.746 (0.637-0.872)	0.885 (0.762-1.04)	1.10 (0.930-1.28)	1.26 (1.06-1.46)	1.43 (1.19-1.66)	1.60 (1.33-1.86)	1.85 (1.52-2.14)	2.04 (1.66-2.36)		
60-min	0.532 (0.456-0.620)	0.688 (0.589-0.803)	0.924 (0.789-1.08)	1.11 (0.943-1.29)	1.36 (1.15-1.58)	1.56 (1.31-1.81)	1.77 (1.48-2.05)	1.99 (1.65-2.30)	2.28 (1.88-2.65)	2.52 (2.06-2.92)		
2-hr	0.610 (0.520-0.725)	0.780 (0.664-0.930)	1.03 (0.876-1.23)	1.24 (1.05-1.46)	1.52 (1.28-1.78)	1.75 (1.46-2.06)	1.99 (1.65-2.34)	2.25 (1.84-2.64)	2.61 (2.1-3.06)	2.89 (2.33-3.40)		
3-hr	0.651 (0.561-0.771)	0.828 (0.710-0.982)	1.09 (0.934-1.28)	1.29 (1.10-1.52)	1.58 (1.34-1.86)	1.81 (1.53-2.12)	2.06 (1.72-2.41)	2.32 (1.92-2.72)	2.68 (2.20-3.14)	2.98 (2.42-3.50)		
6-hr	0.758 (0.656-0.890)	0.956 (0.829-1.12)	1.23 (1.07-1.44)	1.45 (1.25-1.70)	1.75 (1.50-2.04)	1.98 (1.69-2.31)	2.23 (1.89-2.60)	2.49 (2.10-2.90)	2.85 (2.36-3.32)	3.14 (2.60-3.66)		
12-hr	0.836 (0.732-0.959)	1.06 (0.924-1.21)	1.34 (1.17-1.53)	1.56 (1.36-1.78)	1.86 (1.61-2.12)	2.09 (1.80-2.38)	2.33 (2.00-2.66)	2.58 (2.20-2.94)	2.92 (2.46-3.34)	3.20 (2.67-3.69)		
24-hr	0.953 (0.840-1.09)	1.20 (1.05-1.36)	1.49 (1.31-1.70)	1.73 (1.52-1.96)	2.05 (1.79-2.33)	2.29 (2.00-2.60)	2.55 (2.22-2.89)	2.81 (2.43-3.17)	3.15 (2.71-3.57)	3.42 (2.93-3.87)		
2-day	0.990 (0.878-1.12)	1.24 (1.10-1.40)	1.54 (1.37-1.73)	1.78 (1.58-2.00)	2.10 (1.85-2.35)	2.34 (2.06-2.63)	2.59 (2.27-2.91)	2.85 (2.48-3.20)	3.18 (2.77-3.58)	3.44 (2.97-3.91)		
3-day	1.08 (0.972-1.20)	1.35 (1.21-1.50)	1.66 (1.49-1.84)	1.91 (1.71-2.11)	2.24 (2.00-2.47)	2.49 (2.22-2.75)	2.74 (2.44-3.03)	3.00 (2.66-3.32)	3.33 (2.94-3.70)	3.59 (3.16-4.01)		
4-day	1.17 (1.07-1.29)	1.45 (1.32-1.59)	1.78 (1.61-1.95)	2.03 (1.84-2.22)	2.37 (2.15-2.60)	2.63 (2.38-2.88)	2.89 (2.60-3.16)	3.15 (2.85-3.44)	3.49 (3.12-3.82)	3.74 (3.34-4.10)		
7-day	1.33 (1.21-1.45)	1.65 (1.50-1.79)	2.00 (1.82-2.17)	2.27 (2.07-2.46)	2.62 (2.39-2.84)	2.88 (2.62-3.12)	3.14 (2.85-3.41)	3.38 (3.08-3.67)	3.70 (3.36-4.02)	3.93 (3.56-4.28)		
10-day	1.46 (1.34-1.60)	1.81 (1.66-1.97)	2.21 (2.03-2.40)	2.52 (2.31-2.73)	2.93 (2.68-3.17)	3.23 (2.95-3.50)	3.54 (3.22-3.83)	3.83 (3.48-4.15)	4.21 (3.81-4.56)	4.48 (4.05-4.87)		
20-day	1.81 (1.65-1.98)	2.24 (2.05-2.45)	2.71 (2.48-2.96)	3.07 (2.80-3.34)	3.51 (3.21-3.83)	3.84 (3.50-4.17)	4.14 (3.78-4.50)	4.43 (4.03-4.81)	4.79 (4.35-5.20)	5.03 (4.56-5.47)		
30-day	2.16 (1.97-2.34)	2.67 (2.44-2.90)	3.20 (2.93-3.47)	3.59 (3.29-3.89)	4.08 (3.73-4.40)	4.42 (4.04-4.76)	4.74 (4.33-5.11)	5.04 (4.59-5.43)	5.38 (4.90-5.80)	5.61 (5.11-6.06)		
45-day	2.64 (2.43-2.87)	3.27 (3.01-3.55)	3.88 (3.57-4.20)	4.31 (3.96-4.57)	4.83 (4.45-5.22)	5.18 (4.77-5.60)	5.49 (5.05-5.92)	5.75 (5.30-6.20)	6.02 (5.56-6.50)	6.17 (5.72-6.65)		

60-day	3.03 (2.79-3.30)	3.74 (3.45-4.07)	4.45 (4.10-4.82)	4.95 (4.57-5.36)	5.55 (5.12-6.00)	5.95 (5.49-6.43)	6.31 (5.83-6.83)	6.62 (6.13-7.17)	6.96 (6.45-7.54)	7.15 (6.66-7.74)
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<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.  
Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in CSV format: [Precipitation frequency estimates](#) [Submit](#)

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US Department of Commerce  
National Oceanic and Atmospheric Administration  
National Weather Service  
Office of Water Prediction (OWP)  
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Silver Spring, MD 20910  
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Page last modified: April 21, 2017

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\*S AHYMO - DETENTION-LOMAS  
 \*S POND ROUTING

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=2  
 QUARTER=0.0 ONE= 1.77 IN  
 SIX=2.23 IN DAY= 2.55 IN DT = 0.05 HR

\*Basin a  
 COMPUTE NM HYD ID=1 HYD NO=101 DA= .000377 SQ MI  
 PER A=0 PER B=5 PER C=9 PER D=86  
 TP=-.170 MASSRAIN=-1

PRINT HYD ID=1 CODE=3

\* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR  
 ROUTE RESERVOIR ID=2 HYD NO=102 INFLOW=1 CODE=3  

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0.00	0.001	59.35
0.37	0.002	59.50
0.76	0.018	60.00

\*Basin b  
 COMPUTE NM HYD ID=3 HYD NO=103 DA= .000154 SQ MI  
 PER A=0 PER B=5 PER C=9 PER D=86  
 TP=-.170 MASSRAIN=-1

PRINT HYD ID=3 CODE=3

\* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR  
 ROUTE RESERVOIR ID=4 HYD NO=104 INFLOW=3 CODE=3  

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0.0	0.006	59.50
0.21	0.012	59.75

\* existing  
 COMPUTE NM HYD ID=5 HYD NO=105 DA= .000531 SQ MI  
 PER A=0 PER B=20 PER C=64 PER D=16  
 TP=-.170 MASSRAIN=-1

PRINT HYD ID=5 CODE=3

FINISH



# AHYMO.OUT

AHYMO PROGRAM (AHYMO-S4)

- Version: S4.01a - Rel: 01a

RUN DATE (MON/DAY/YR) = 02/26/2019

START TIME (HR:MIN:SEC) = 15:54:56

USER NO.=

RioGrandeSingleA41963517

INPUT FILE = and Settings\Owner\Desktop\2018 JOBS\18226-mountain  
fourplex\pondrout022619.txt

\*S AHYMO - DETENTION-MOUNTAIN  
\*S POND ROUTING

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=2  
QUARTER=0.0 ONE= 1.77 IN  
SIX=2.23 IN DAY= 2.55 IN DT = 0.05 HR

24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE  
AREAS (NM & AZ) - D1

DT = 0.050000 HOURS				END TIME = 24.000002 HOURS			
0.0000	0.0031	0.0062	0.0096	0.0133	0.0171	0.0213	
0.0274	0.0369	0.0471	0.0577	0.0692	0.0809	0.0929	
0.1054	0.1180	0.1321	0.1467	0.1626	0.1849	0.2105	
0.2448	0.2837	0.3317	0.3957	0.4678	0.5922	0.7856	
1.1170	1.3499	1.5336	1.6259	1.7068	1.7649	1.8112	
1.8515	1.8810	1.9081	1.9304	1.9478	1.9627	1.9760	
1.9886	1.9996	2.0101	2.0203	2.0301	2.0382	2.0428	
2.0473	2.0517	2.0559	2.0600	2.0640	2.0680	2.0719	
2.0755	2.0792	2.0828	2.0863	2.0897	2.0930	2.0963	
2.0995	2.1027	2.1058	2.1088	2.1118	2.1147	2.1176	
2.1205	2.1233	2.1260	2.1288	2.1315	2.1342	2.1368	
2.1394	2.1420	2.1446	2.1471	2.1496	2.1520	2.1545	
2.1569	2.1593	2.1616	2.1640	2.1663	2.1686	2.1708	
2.1731	2.1753	2.1775	2.1797	2.1818	2.1840	2.1861	
2.1882	2.1903	2.1923	2.1944	2.1964	2.1984	2.2004	
2.2023	2.2043	2.2062	2.2081	2.2100	2.2119	2.2138	
2.2157	2.2175	2.2193	2.2211	2.2229	2.2247	2.2265	
2.2283	2.2300	2.2317	2.2335	2.2352	2.2369	2.2387	
2.2404	2.2421	2.2438	2.2455	2.2472	2.2489	2.2506	
2.2523	2.2540	2.2557	2.2573	2.2590	2.2607	2.2623	
2.2640	2.2656	2.2673	2.2689	2.2705	2.2722	2.2738	
2.2754	2.2770	2.2787	2.2803	2.2819	2.2835	2.2851	
2.2867	2.2882	2.2898	2.2914	2.2930	2.2945	2.2961	
2.2977	2.2992	2.3008	2.3023	2.3038	2.3054	2.3069	
2.3084	2.3099	2.3115	2.3130	2.3145	2.3160	2.3175	
2.3190	2.3204	2.3219	2.3234	2.3249	2.3263	2.3278	
2.3293	2.3307	2.3322	2.3336	2.3350	2.3365	2.3379	
2.3393	2.3407	2.3422	2.3436	2.3450	2.3464	2.3478	
2.3492	2.3505	2.3519	2.3533	2.3547	2.3560	2.3574	
2.3588	2.3601	2.3615	2.3628	2.3641	2.3655	2.3668	
2.3681	2.3695	2.3708	2.3721	2.3734	2.3747	2.3760	
2.3773	2.3786	2.3798	2.3811	2.3824	2.3837	2.3849	
2.3862	2.3874	2.3887	2.3899	2.3912	2.3924	2.3936	
2.3949	2.3961	2.3973	2.3985	2.3997	2.4009	2.4021	
2.4033	2.4045	2.4057	2.4068	2.4080	2.4092	2.4103	
2.4115	2.4126	2.4138	2.4149	2.4161	2.4172	2.4183	
2.4195	2.4206	2.4217	2.4228	2.4239	2.4250	2.4261	
2.4272	2.4283	2.4294	2.4304	2.4315	2.4326	2.4336	
2.4347	2.4358	2.4368	2.4378	2.4389	2.4399	2.4409	
2.4420	2.4430	2.4440	2.4450	2.4460	2.4470	2.4480	
2.4490	2.4500	2.4510	2.4519	2.4529	2.4539	2.4548	

AHYMO.OUT

2.4558	2.4567	2.4577	2.4586	2.4596	2.4605	2.4614
2.4623	2.4633	2.4642	2.4651	2.4660	2.4669	2.4678
2.4687	2.4696	2.4704	2.4713	2.4722	2.4730	2.4739
2.4748	2.4756	2.4765	2.4773	2.4781	2.4790	2.4798
2.4806	2.4814	2.4822	2.4830	2.4838	2.4846	2.4854
2.4862	2.4870	2.4878	2.4886	2.4893	2.4901	2.4909
2.4916	2.4924	2.4931	2.4938	2.4946	2.4953	2.4960
2.4968	2.4975	2.4982	2.4989	2.4996	2.5003	2.5010
2.5017	2.5023	2.5030	2.5037	2.5044	2.5050	2.5057
2.5063	2.5070	2.5076	2.5083	2.5089	2.5095	2.5101
2.5108	2.5114	2.5120	2.5126	2.5132	2.5138	2.5144
2.5150	2.5155	2.5161	2.5167	2.5173	2.5178	2.5184
2.5189	2.5195	2.5200	2.5206	2.5211	2.5216	2.5221
2.5227	2.5232	2.5237	2.5242	2.5247	2.5252	2.5257
2.5261	2.5266	2.5271	2.5276	2.5280	2.5285	2.5289
2.5294	2.5298	2.5303	2.5307	2.5311	2.5316	2.5320
2.5324	2.5328	2.5332	2.5336	2.5340	2.5344	2.5348
2.5352	2.5356	2.5359	2.5363	2.5367	2.5370	2.5374
2.5377	2.5381	2.5384	2.5387	2.5391	2.5394	2.5397
2.5400	2.5403	2.5406	2.5409	2.5412	2.5415	2.5418
2.5421	2.5424	2.5426	2.5429	2.5432	2.5434	2.5437
2.5439	2.5442	2.5444	2.5446	2.5448	2.5451	2.5453
2.5455	2.5457	2.5459	2.5461	2.5463	2.5465	2.5467
2.5468	2.5470	2.5472	2.5474	2.5475	2.5477	2.5478
2.5480	2.5481	2.5482	2.5484	2.5485	2.5486	2.5487
2.5488	2.5489	2.5490	2.5491	2.5492	2.5493	2.5494
2.5495	2.5495	2.5496	2.5497	2.5497	2.5498	2.5498
2.5499	2.5499	2.5499	2.5500	2.5500		

\*EXISTING MOUTAIN BASIN

COMPUTE NM HYD

ID=1 HYD NO=101 DA= .0001204 SQ MI  
 PER A=0 PER B=20 PER C=70 PER D=10  
 TP=-.170 MASSRAIN=-1

K = 0.092650HR TP = 0.170000HR K/TP RATIO = 0.545000 SHAPE  
 CONSTANT, N = 7.106428  
 UNIT PEAK = 0.37273E-01CFS UNIT VOLUME = 0.8988 B = 526.28  
 P60 = 1.7700  
 AREA = 0.000012 SQ MI IA = 0.10000 INCHES INF = 0.04000  
 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  
 0.050000

K = 0.141514HR TP = 0.170000HR K/TP RATIO = 0.832437 SHAPE  
 CONSTANT, N = 4.284698  
 UNIT PEAK = 0.23822 CFS UNIT VOLUME = 0.9450 B = 373.73  
 P60 = 1.7700  
 AREA = 0.000108 SQ MI IA = 0.38333 INCHES INF = 0.92333  
 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  
 0.050000

PRINT HYD

ID=1 CODE=3

# PARTIAL HYDROGRAPH 101.00

TIME	TIME	FLOW	TIME	TIME	FLOW	TIME	FLOW
HRS	FLOW	CFS	HRS	FLOW	CFS	HRS	CFS
1.800	0.000	0.0	2.400	0.600	0.0	1.200	0.0
	0.1			0.0			
	0.150	0.0		0.750	0.0	1.350	0.0

# AHYMO.OUT

1.950	0.0					
	0.300	0.0	0.900	0.0	1.500	0.2
2.100	0.0					
	0.450	0.0	1.050	0.0	1.650	0.2
2.250	0.0					

RUNOFF VOLUME = 1.09153 INCHES = 0.0070 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.21 CFS AT 1.550 HOURS BASIN AREA =  
 0.0001 SQ. MI.

## \*EXISTING 14TH STREET BASIN

COMPUTE NM HYD ID=2 HYD NO=102 DA= .0004115 SQ MI  
 PER A=0 PER B=20 PER C=57 PER D=23  
 TP=-.170 MASSRAIN=-1

K = 0.092650HR TP = 0.170000HR K/TP RATIO = 0.545000 SHAPE  
 CONSTANT, N = 7.106428  
 UNIT PEAK = 0.29300 CFS UNIT VOLUME = 0.9587 B = 526.28  
 P60 = 1.7700  
 AREA = 0.000095 SQ MI IA = 0.10000 INCHES INF = 0.04000  
 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  
 0.050000

K = 0.142855HR TP = 0.170000HR K/TP RATIO = 0.840321 SHAPE  
 CONSTANT, N = 4.240570  
 UNIT PEAK = 0.69131 CFS UNIT VOLUME = 0.9827 B = 370.90  
 P60 = 1.7700  
 AREA = 0.000317 SQ MI IA = 0.38896 INCHES INF = 0.93909  
 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  
 0.050000

PRINT HYD ID=2 CODE=3

## PARTIAL HYDROGRAPH 102.00

TIME	TIME	FLOW	TIME	TIME	FLOW	TIME	FLOW
	FLOW			FLOW			
HRS	HRS	CFS	HRS	HRS	CFS	HRS	CFS
	CFS			CFS			
	0.000	0.0		3.300	0.0	6.600	0.0
9.900	0.0		13.200	0.0		6.750	0.0
	0.150	0.0		3.450	0.0		
10.050	0.0		13.350	0.0		6.900	0.0
	0.300	0.0		3.600	0.0		
10.200	0.0		13.500	0.0		7.050	0.0
	0.450	0.0		3.750	0.0		
10.350	0.0		13.650	0.0		7.200	0.0
	0.600	0.0		3.900	0.0		
10.500	0.0		13.800	0.0		7.350	0.0
	0.750	0.0		4.050	0.0		
10.650	0.0		13.950	0.0		7.500	0.0
	0.900	0.0		4.200	0.0		
10.800	0.0		14.100	0.0		7.650	0.0
	1.050	0.0		4.350	0.0		
10.950	0.0		14.250	0.0		7.800	0.0
	1.200	0.0		4.500	0.0		
11.100	0.0		14.400	0.0		7.950	0.0
	1.350	0.1		4.650	0.0		

		AHYMO.OUT					
11.250	0.0	14.550	0.0				
	1.500	0.7	4.800	0.0	8.100	0.0	
11.400	0.0	14.700	0.0				
	1.650	0.6	4.950	0.0	8.250	0.0	
11.550	0.0	14.850	0.0				
	1.800	0.3	5.100	0.0	8.400	0.0	
11.700	0.0	15.000	0.0				
	1.950	0.1	5.250	0.0	8.550	0.0	
11.850	0.0	15.150	0.0				
	2.100	0.1	5.400	0.0	8.700	0.0	
12.000	0.0	15.300	0.0				
	2.250	0.0	5.550	0.0	8.850	0.0	
12.150	0.0	15.450	0.0				
	2.400	0.0	5.700	0.0	9.000	0.0	
12.300	0.0	15.600	0.0				
	2.550	0.0	5.850	0.0	9.150	0.0	
12.450	0.0	15.750	0.0				
	2.700	0.0	6.000	0.0	9.300	0.0	
12.600	0.0						
	2.850	0.0	6.150	0.0	9.450	0.0	
12.750	0.0						
	3.000	0.0	6.300	0.0	9.600	0.0	
12.900	0.0						
	3.150	0.0	6.450	0.0	9.750	0.0	
13.050	0.0						

RUNOFF VOLUME = 1.25922 INCHES = 0.0276 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.75 CFS AT 1.550 HOURS BASIN AREA =  
 0.0004 SQ. MI.

\*PROPOSED MOUNTAIN BASIN  
 COMPUTE NM HYD ID=3 HYD NO=103 DA= .00007015 SQ MI  
 PER A=0 PER B=8 PER C=0 PER D=92  
 TP=-.170 MASSRAIN=-1

K = 0.092650HR TP = 0.170000HR K/TP RATIO = 0.545000 SHAPE  
 CONSTANT, N = 7.106428  
 UNIT PEAK = 0.19979 CFS UNIT VOLUME = 0.9409 B = 526.28  
 P60 = 1.7700  
 AREA = 0.000065 SQ MI IA = 0.10000 INCHES INF = 0.04000  
 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  
 0.050000

K = 0.169300HR TP = 0.170000HR K/TP RATIO = 0.995885 SHAPE  
 CONSTANT, N = 3.544907  
 UNIT PEAK = 0.10683E-01CFS UNIT VOLUME = 0.8744 B = 323.60  
 P60 = 1.7700  
 AREA = 0.000006 SQ MI IA = 0.50000 INCHES INF = 1.25000  
 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  
 0.050000

PRINT HYD ID=3 CODE=3

PARTIAL HYDROGRAPH 103.00

TIME	TIME FLOW HRS	FLOW CFS	TIME	TIME FLOW HRS	FLOW CFS	TIME	FLOW CFS
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AHYMO.OUT						
HRS	CFS	HRS	CFS			
7.650	0.000	0.0	2.550	0.0	5.100	0.0
	0.0	10.200	0.0			
7.800	0.150	0.0	2.700	0.0	5.250	0.0
	0.0	10.350	0.0			
7.950	0.300	0.0	2.850	0.0	5.400	0.0
	0.0	10.500	0.0			
8.100	0.450	0.0	3.000	0.0	5.550	0.0
	0.0	10.650	0.0			
8.250	0.600	0.0	3.150	0.0	5.700	0.0
	0.0	10.800	0.0			
8.400	0.750	0.0	3.300	0.0	5.850	0.0
	0.0	10.950	0.0			
8.550	0.900	0.0	3.450	0.0	6.000	0.0
	0.0	11.100	0.0			
8.700	1.050	0.0	3.600	0.0	6.150	0.0
	0.0	11.250	0.0			
8.850	1.200	0.0	3.750	0.0	6.300	0.0
	0.0	11.400	0.0			
9.000	1.350	0.1	3.900	0.0	6.450	0.0
	0.0	11.550	0.0			
9.150	1.500	0.2	4.050	0.0	6.600	0.0
	0.0	11.700	0.0			
9.300	1.650	0.1	4.200	0.0	6.750	0.0
	0.0	11.850	0.0			
9.450	1.800	0.1	4.350	0.0	6.900	0.0
	0.0	12.000	0.0			
9.600	1.950	0.0	4.500	0.0	7.050	0.0
	0.0					
9.750	2.100	0.0	4.650	0.0	7.200	0.0
	0.0					
9.900	2.250	0.0	4.800	0.0	7.350	0.0
	0.0					
10.050	2.400	0.0	4.950	0.0	7.500	0.0
	0.0					

RUNOFF VOLUME = 2.17864 INCHES = 0.0082 ACRE-Feet  
 PEAK DISCHARGE RATE = 0.18 CFS AT 1.550 HOURS BASIN AREA = 0.0001 SQ. MI.

\*PROPOSED 14TH STREET BASIN

COMPUTE NM HYD ID=4 HYD NO=104 DA= .00046175 SQ MI  
 PER A=0 PER B=10 PER C=16 PER D=74  
 TP=-.170 MASSRAIN=-1

K = 0.092650HR TP = 0.170000HR K/TP RATIO = 0.545000 SHAPE  
 CONSTANT, N = 7.106428  
 UNIT PEAK = 1.0578 CFS UNIT VOLUME = 0.9900 B = 526.28  
 P60 = 1.7700  
 AREA = 0.000342 SQ MI IA = 0.10000 INCHES INF = 0.04000  
 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.147316HR TP = 0.170000HR K/TP RATIO = 0.866563 SHAPE  
 CONSTANT, N = 4.100964  
 UNIT PEAK = 0.25554 CFS UNIT VOLUME = 0.9471 B = 361.85  
 P60 = 1.7700  
 AREA = 0.000120 SQ MI IA = 0.40769 INCHES INF = 0.99154

AHYMO.OUT

INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD

ID=4 CODE=3

PARTIAL HYDROGRAPH 104.00

TIME	TIME	FLOW	TIME	TIME	FLOW	TIME	FLOW
HRS	FLOW	CFS	HRS	FLOW	CFS	HRS	CFS
	HRS			HRS			
	CFS			CFS			
13.500	0.000	0.0	18.000	4.500	0.0	9.000	0.0
	0.150	0.0		4.650	0.0	9.150	0.0
13.650	0.0	0.0	18.150	0.0	0.0	9.300	0.0
	0.300	0.0		4.800	0.0		
13.800	0.0	0.0	18.300	0.0	0.0	9.450	0.0
	0.450	0.0		4.950	0.0		
13.950	0.0	0.0	18.450	0.0	0.0	9.600	0.0
	0.600	0.0		5.100	0.0		
14.100	0.0	0.0	18.600	0.0	0.0	9.750	0.0
	0.750	0.0		5.250	0.0		
14.250	0.0	0.0	18.750	0.0	0.0	9.900	0.0
	0.900	0.0		5.400	0.0		
14.400	0.0	0.1	18.900	0.0	0.0	10.050	0.0
	1.050			5.550	0.0		
14.550	0.0	0.1	19.050	0.0	0.0	10.200	0.0
	1.200			5.700	0.0		
14.700	0.0	0.3	19.200	0.0	0.0	10.350	0.0
	1.350			5.850	0.0		
14.850	0.0	1.0	19.350	0.0	0.0	10.500	0.0
	1.500			6.000	0.0		
15.000	0.0	0.8	19.500	0.0	0.0	10.650	0.0
	1.650			6.150	0.0		
15.150	0.0	0.4	19.650	0.0	0.0	10.800	0.0
	1.800			6.300	0.0		
15.300	0.0	0.2	19.800	0.0	0.0	10.950	0.0
	1.950			6.450	0.0		
15.450	0.0	0.1	19.950	0.0	0.0	11.100	0.0
	2.100			6.600	0.0		
15.600	0.0	0.1	20.100	0.0	0.0	11.250	0.0
	2.250			6.750	0.0		
15.750	0.0	0.1	20.250	0.0	0.0	11.400	0.0
	2.400			6.900	0.0		
15.900	0.0	0.0	20.400	0.0	0.0	11.550	0.0
	2.550			7.050	0.0		
16.050	0.0	0.0	20.550	0.0	0.0	11.700	0.0
	2.700			7.200	0.0		
16.200	0.0	0.0	20.700	0.0	0.0	11.850	0.0
	2.850			7.350	0.0		
16.350	0.0	0.0	20.850	0.0	0.0	12.000	0.0
	3.000			7.500	0.0		
16.500	0.0	0.0	21.000	0.0	0.0	12.150	0.0
	3.150			7.650	0.0		
16.650	0.0	0.0	21.150	0.0	0.0	12.300	0.0
	3.300			7.800	0.0		
16.800	0.0	0.0	21.300	0.0	0.0	12.450	0.0
	3.450			7.950	0.0		
16.950	0.0	0.0	21.450	0.0	0.0	12.600	0.0
	3.600			8.100	0.0		
17.100	0.0	0.0	21.600	0.0	0.0	12.750	0.0
	3.750			8.250	0.0		
17.250	0.0	0.0	21.750	0.0	0.0	12.900	0.0
	3.900			8.400	0.0		
17.400	0.0		21.900	0.0			

				AHYMO.OUT		
17.550	4.050	0.0	22.050	8.550	0.0	13.050
	0.0			0.0		0.0
17.700	4.200	0.0		8.700	0.0	13.200
	0.0					0.0
17.850	4.350	0.0		8.850	0.0	13.350
	0.0					0.0

RUNOFF VOLUME = 1.94084 INCHES = 0.0478 ACRE-FeET  
 PEAK DISCHARGE RATE = 1.05 CFS AT 1.550 HOURS BASIN AREA =  
 0.0005 SQ. MI.

\* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR

ROUTE RESERVOIR	ID=5	HYD NO=105	INFLOW=4	CODE=3
	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)	
	0.00	0.002	59.00	
		0.37	0.004	59.25
	0.76	0.020	60.00	

\* \* \* \* \*

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	59.00	0.002	0.00
0.15	0.00	59.00	0.002	0.00
0.30	0.00	59.00	0.002	0.00
0.45	0.00	59.00	0.002	0.00
0.60	0.00	59.00	0.002	0.00
0.75	0.00	59.00	0.002	0.00
0.90	0.03	59.01	0.002	0.02
1.05	0.06	59.03	0.002	0.05
1.20	0.13	59.07	0.003	0.10
1.35	0.29	59.14	0.003	0.21
1.50	0.96	59.36	0.006	0.43
1.65	0.81	59.63	0.012	0.57
1.80	0.40	59.64	0.012	0.57
1.95	0.23	59.50	0.009	0.50
2.10	0.14	59.34	0.006	0.42
2.25	0.09	59.13	0.003	0.20
2.40	0.06	59.05	0.002	0.08
2.55	0.03	59.03	0.002	0.04
2.70	0.02	59.01	0.002	0.02
2.85	0.01	59.01	0.002	0.01
3.00	0.01	59.01	0.002	0.01
3.15	0.01	59.01	0.002	0.01
3.30	0.01	59.00	0.002	0.01
3.45	0.01	59.00	0.002	0.01
3.60	0.01	59.00	0.002	0.01
3.75	0.01	59.00	0.002	0.01
3.90	0.01	59.00	0.002	0.01
4.05	0.01	59.00	0.002	0.01
4.20	0.01	59.00	0.002	0.01
4.35	0.01	59.00	0.002	0.01
4.50	0.01	59.00	0.002	0.01
4.65	0.01	59.00	0.002	0.01
4.80	0.01	59.00	0.002	0.01

			AHYMO. OUT	
4.95	0.01	59.00	0.002	0.01
5.10	0.01	59.00	0.002	0.01
5.25	0.01	59.00	0.002	0.01
5.40	0.01	59.00	0.002	0.01
5.55	0.01	59.00	0.002	0.01
5.70	0.01	59.00	0.002	0.01
5.85	0.01	59.00	0.002	0.01
6.00	0.01	59.00	0.002	0.01
6.15	0.01	59.01	0.002	0.01
6.30	0.01	59.01	0.002	0.01
6.45	0.01	59.01	0.002	0.01
6.60	0.01	59.01	0.002	0.01
6.75	0.01	59.01	0.002	0.01
6.90	0.01	59.01	0.002	0.01
7.05	0.01	59.00	0.002	0.01
7.20	0.01	59.00	0.002	0.01
7.35	0.01	59.00	0.002	0.01
7.50	0.01	59.00	0.002	0.01
7.65	0.01	59.00	0.002	0.01
7.80	0.01	59.00	0.002	0.01
7.95	0.01	59.00	0.002	0.01
8.10	0.01	59.00	0.002	0.01
8.25	0.01	59.00	0.002	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
8.40	0.01	59.00	0.002	0.01
8.55	0.01	59.00	0.002	0.01
8.70	0.01	59.00	0.002	0.01
8.85	0.01	59.00	0.002	0.01
9.00	0.01	59.00	0.002	0.01
9.15	0.01	59.00	0.002	0.01
9.30	0.01	59.00	0.002	0.01
9.45	0.01	59.00	0.002	0.01
9.60	0.01	59.00	0.002	0.01
9.75	0.01	59.00	0.002	0.01
9.90	0.01	59.00	0.002	0.01
10.05	0.01	59.00	0.002	0.01
10.20	0.01	59.00	0.002	0.01
10.35	0.01	59.00	0.002	0.01
10.50	0.01	59.00	0.002	0.01
10.65	0.01	59.00	0.002	0.01
10.80	0.01	59.00	0.002	0.01
10.95	0.01	59.00	0.002	0.01
11.10	0.01	59.00	0.002	0.01
11.25	0.01	59.00	0.002	0.01
11.40	0.01	59.00	0.002	0.01
11.55	0.01	59.00	0.002	0.01
11.70	0.01	59.00	0.002	0.01
11.85	0.01	59.00	0.002	0.01
12.00	0.01	59.00	0.002	0.01
12.15	0.01	59.00	0.002	0.01
12.30	0.01	59.00	0.002	0.01
12.45	0.01	59.00	0.002	0.01
12.60	0.01	59.00	0.002	0.01
12.75	0.01	59.00	0.002	0.01
12.90	0.00	59.00	0.002	0.00

PEAK DISCHARGE = 0.584 CFS - PEAK OCCURS AT HOUR 1.70  
 MAXIMUM WATER SURFACE ELEVATION = 59.661  
 MAXIMUM STORAGE = 0.0128 AC-FT INCREMENTAL TIME= 0.050000HRS

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 15:54:56

# VOLUME CALCULATIONS

pond a

outfall

ACTUAL ELEV.	DEPTH (FT)	AREA SF	VOLUME PER UNIT	VOLUME CUMULATIVE	VOLUME AC-FT	Q (CFS)
58.50	0.00	42.00	0	0	0.000	0.00
59.00	0.00	280.00	80.50	80.5	0.002	0.00
59.25	0.15	508.00	98.50	179.00	0.004	0.37
60.00	0.65	1380.00	708.00	887	0.020	0.76

Orifice Equation

$Q = CA \sqrt{2gH}$

C = 0.6  
Diameter (in) 6  
Area (ft<sup>2</sup>)= 0.196349541  
g = 32.2  
H (Ft) = Depth of water above center of orifice  
Q (CFS)= Flow



## DRAINAGE EASEMENT

Grant of Permanent Drainage Easement, by New Mexico Gas Company, Inc., a Delaware corporation ("Grantor"), whose address is 7120 Wyoming Blvd, NE, Suite 20, Albuquerque, NM 87109, for the benefit of Lots B-1, C-1, D-1 and E-1, Block 44, of the Perea Addition ("Grantee"), situate in Section 18, Township 10 North, Range 3 East, N.M.P.M., City of Albuquerque, Bernalillo County, New Mexico.

Grantor grants to the Grantee a non-exclusive, perpetual drainage easement ("Easement"), said Easement being more particularly described on Exhibit "A," for the construction, installation, maintenance, repair, modification, replacement and operation of a private drainage facility ("Facility"), together with the right to remove trees, shrubs, undergrowth and any other obstacles within the Easement if the Grantee determines they interfere with the appropriate use of this Easement. The maintenance of the Facility shall be the responsibility of the Grantee and shall be in accordance with the approved Drainage Report and Plans. Grantee agrees that all installation, maintenance, repair, modification, replacement, operation and any other activities within the Easement will be coordinated with Grantor so as to minimize any disruption to Grantor's property.

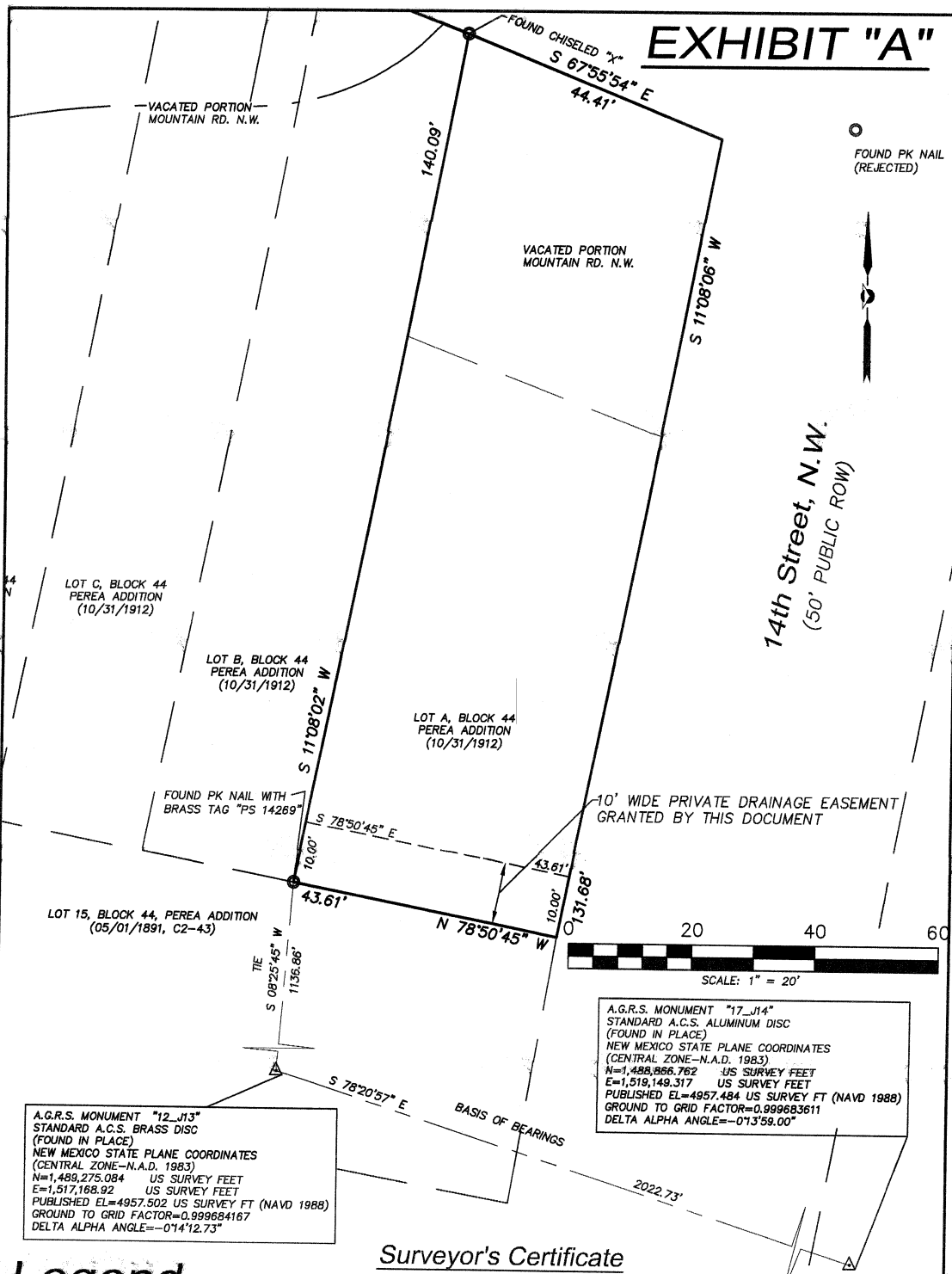
In no event shall Grantee's use of the Easement interfere with the Grantor's use of the Grantor's property. Grantee shall not enter into Grantor's property other than as explicitly authorized by this grant of Easement, and in no event shall Grantee enter upon or perform any work upon any of Grantor's improvements on Grantor's property. Grantor shall coordinate with Grantee prior to constructing any improvements or encroachment ("Improvements") within the easement, and Grantee shall have the right to object to any Improvements which would unreasonably interfere with Grantee's use of the Easement.

To the fullest extent permitted by applicable law. Grantee shall indemnify, defend and hold harmless Grantor, Grantor's affiliates and their respective directors, officers, employees, representatives, and agents from and against any and all damages, losses, claims, obligations, demands, assessments, penalties, liabilities, costs, and expenses (including attorney fees and expenses), arising out of or resulting from Grantee or Grantee's members, officers, employees, representatives, and agents use of the Easement, including but not limited to the existence of the Facility thereon. Grantee shall not cause or permit to be caused by any of its employees or agents any hazardous substances, pollutants or contaminants, as defined by applicable law, to be dumped, spilled, released, stored or deposited on, over or beneath the Easement or any other property owned by Grantor.

Grantor covenants and warrants that Grantor is the owner in fee simple of the real property comprising the Easement, and that Grantor has a good lawful right to convey the Easement.

The grant and other provisions of this Easement constitute covenants running

3-26-08



## Legend

N 90°00'00" E MEASURED BEARING AND DISTANCES	
○	FOUND AND USED MONUMENT AS DESIGNATED
△	FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED

## Surveyor's Certificate

I, LARRY W. MEDRANO, A REGISTERED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF NEW MEXICO, HEREBY CERTIFY THAT THIS EXHIBIT (UN-CLASSIFIED) SURVEYING SURVEY WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MEETING THE MINIMUM REQUIREMENTS FOR THIS CLASSIFICATION OF SURVEY AS PER THE MINIMUM STANDARDS FOR LAND SURVEYING IN NEW MEXICO AS ADOPTED BY THE N.M. BOARD OF LICENSURE FOR ENGINEERS AND SURVEYORS, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

**PRECISION SURVEYING, P.C.**

OFFICE LOCATION:  
10205 San Mateo Blvd., NE  
Albuquerque, NM 87110  
TEL: 505.271.7000 FAX: 505.271.7000

LARRY W. MEDRANO  
N.M.P.S. No. 11993  
DIGITAL SIGNATURE IS INVALID WITHOUT DIGITAL CERTIFICATION  
WET SIGNATURE IS INVALID IF NOT IN BLUE INK  
WITH BLUE STAMP OR EMBOSSED STAMP

DATE

COORDINATE AND DIMENSION INFORMATION				PLSS INFORMATION				PROJECT INFORMATION			
STATE PLANE ZONE		GRID COORDINATE COORDINATES		TYPE		LAND GRANT		CREWTECH: MT		DATE OF SURVEY: 06/27/2018	
NM-C		GRID		STANDARD		TOWN OF ALBUQUERQUE GRANT		DRAWN BY: JK		CHECKED BY: LM	
HORIZONTAL DATUM: NAD83		VERTICAL DATUM: NAVD88		ROTATION ANGLE: 0° 00' 00.00"		SECTION 18	TOWNSHIP 10 NORTH	RANGE 3 EAST	MERIDIAN NMPM		
ALBUQUERQUE GEODETIC REFERENCE SYSTEM				N = 0 E = 0		CITY ALBUQUERQUE	COUNTY BERNALILLO	STATE NM	PSI JOB NO: 18-1098EX		
GRID TO GROUND: 1.00031928		GROUND TO GRID: 0.99968607		DISTANCE TO GROUND: 0.00000000						SHEET NUMBER 2 OF 2	

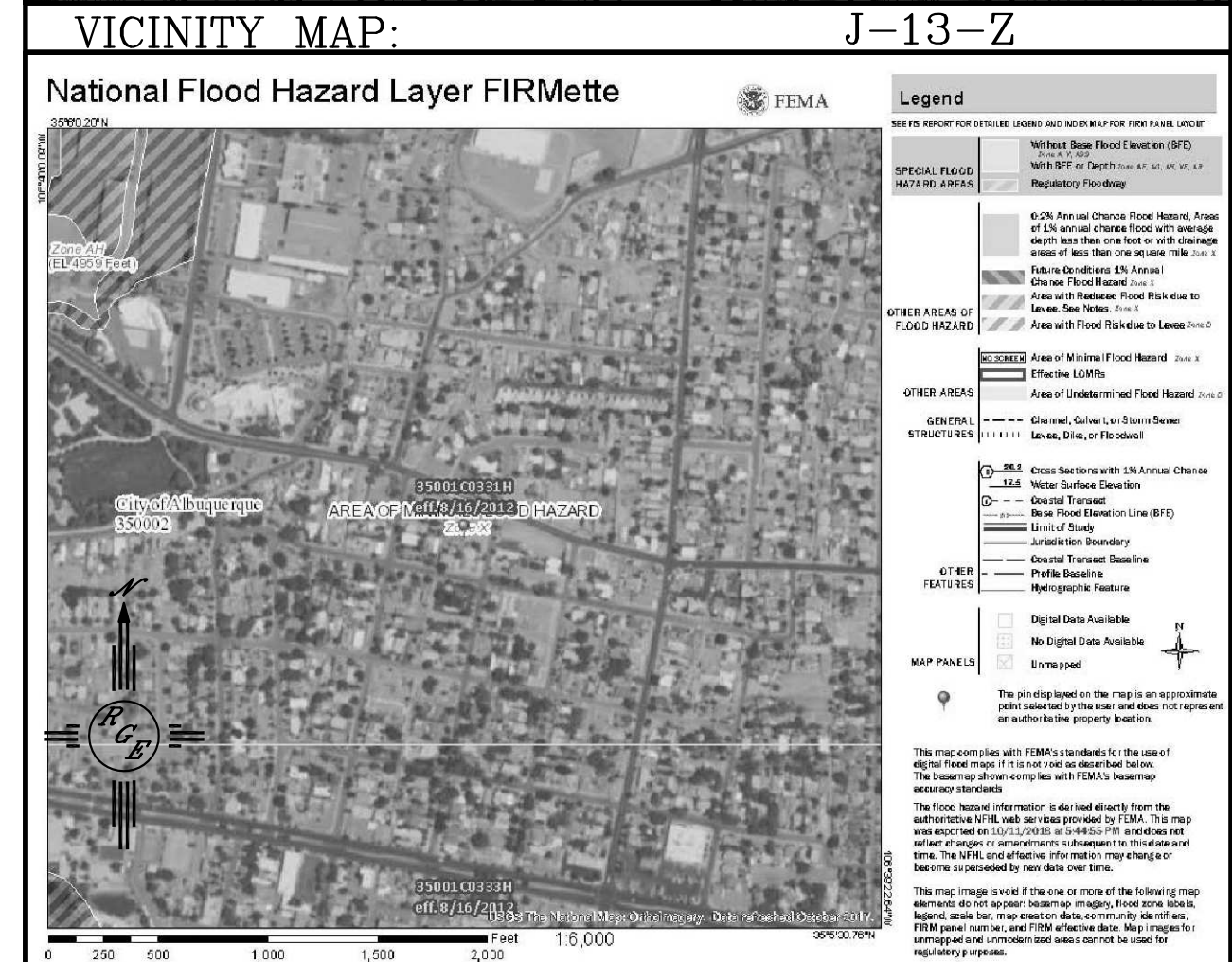
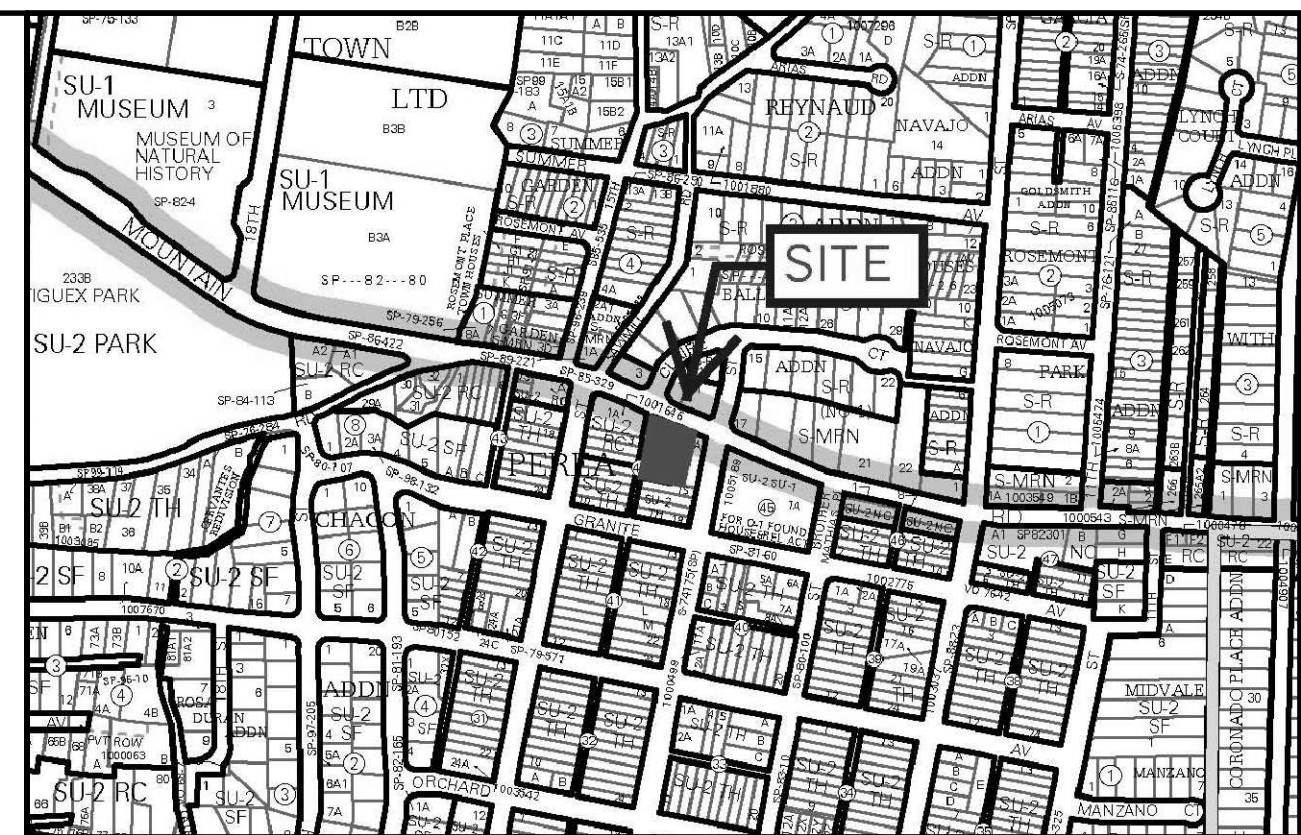




1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVAL	NAME	DATE
INSPECTOR		

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 ACCEPTANCE OF ANY PROJECT.



LEGAL DESCRIPTION:

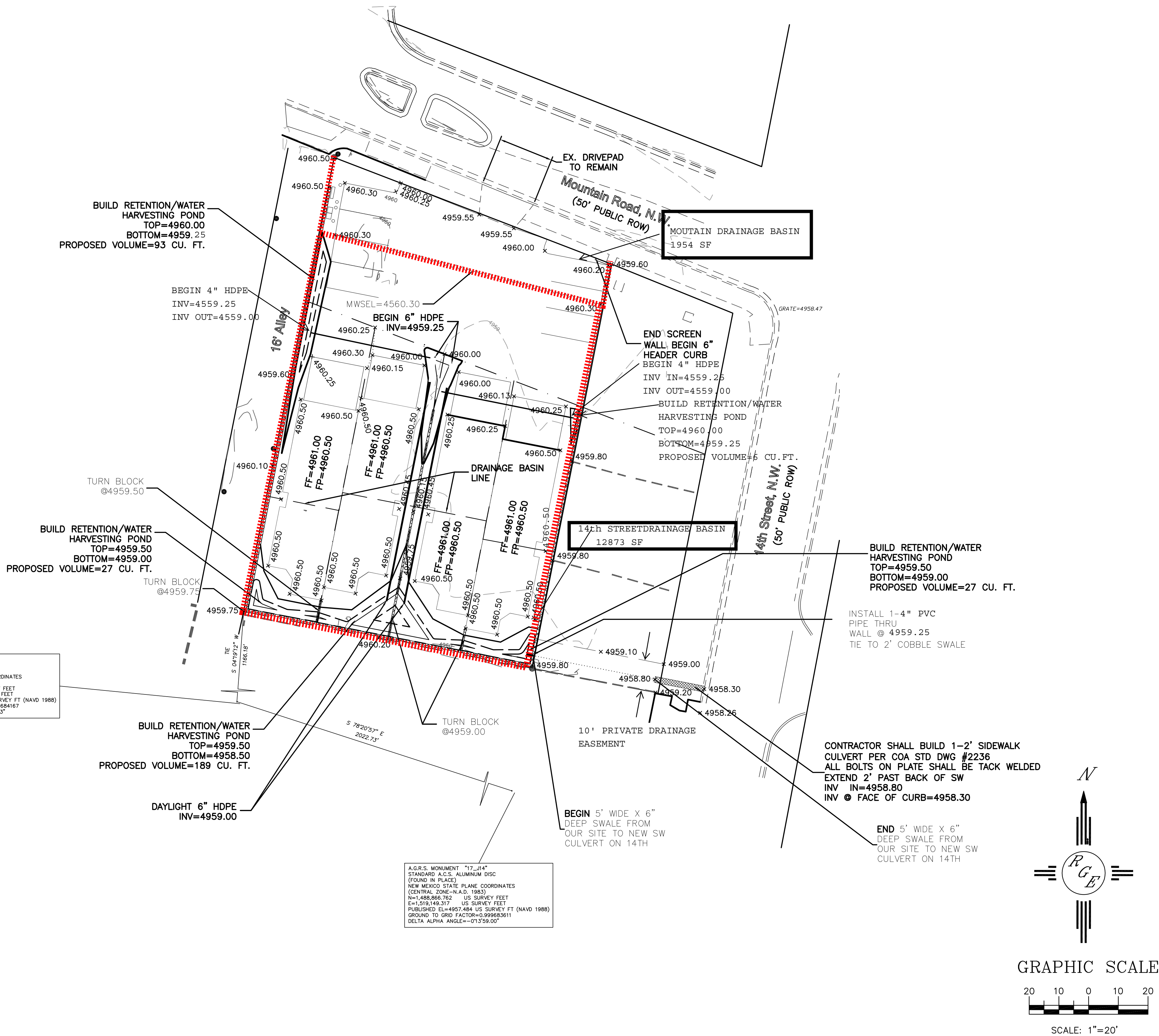
Lots B, C, D and E of Block 44, Perea Addition

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL CURB AND GUTTER TO 6" HEADER UNLESS OTHERWISE NOTED.
3. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.
4. ANY CURBS OR PAVEMENT NEGATIVELY IMPACTED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.
5. ALL SITE WORK SHALL CONFORM TO CITY OF ALBUQUERQUE STANDARDS FOR PUBLIC WORKS CONSTRUCTION EDITION 9

Diagram illustrating a cross-section of a road profile with the following features and elevations:

- EXISTING CONTOUR (Elevation: -5414)
- EXISTING INDEX CONTOUR (Elevation: -5415)
- PROPOSED CONTOUR (Elevation: -5414)
- PROPOSED INDEX CONTOUR (Elevation: -5415)
- SLOPE TIE (Elevation: -5415)
- EXISTING SPOT ELEVATION (Elevation: 4048.25)
- PROPOSED SPOT ELEVATION (Elevation: 4048.25)
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- PROPOSED CURB
- EXISTING CURB AND GUTTER
- EXISTING SIDEWALK
- PROPOSED SCREEN WALL 18" MAX. RETAINAGE

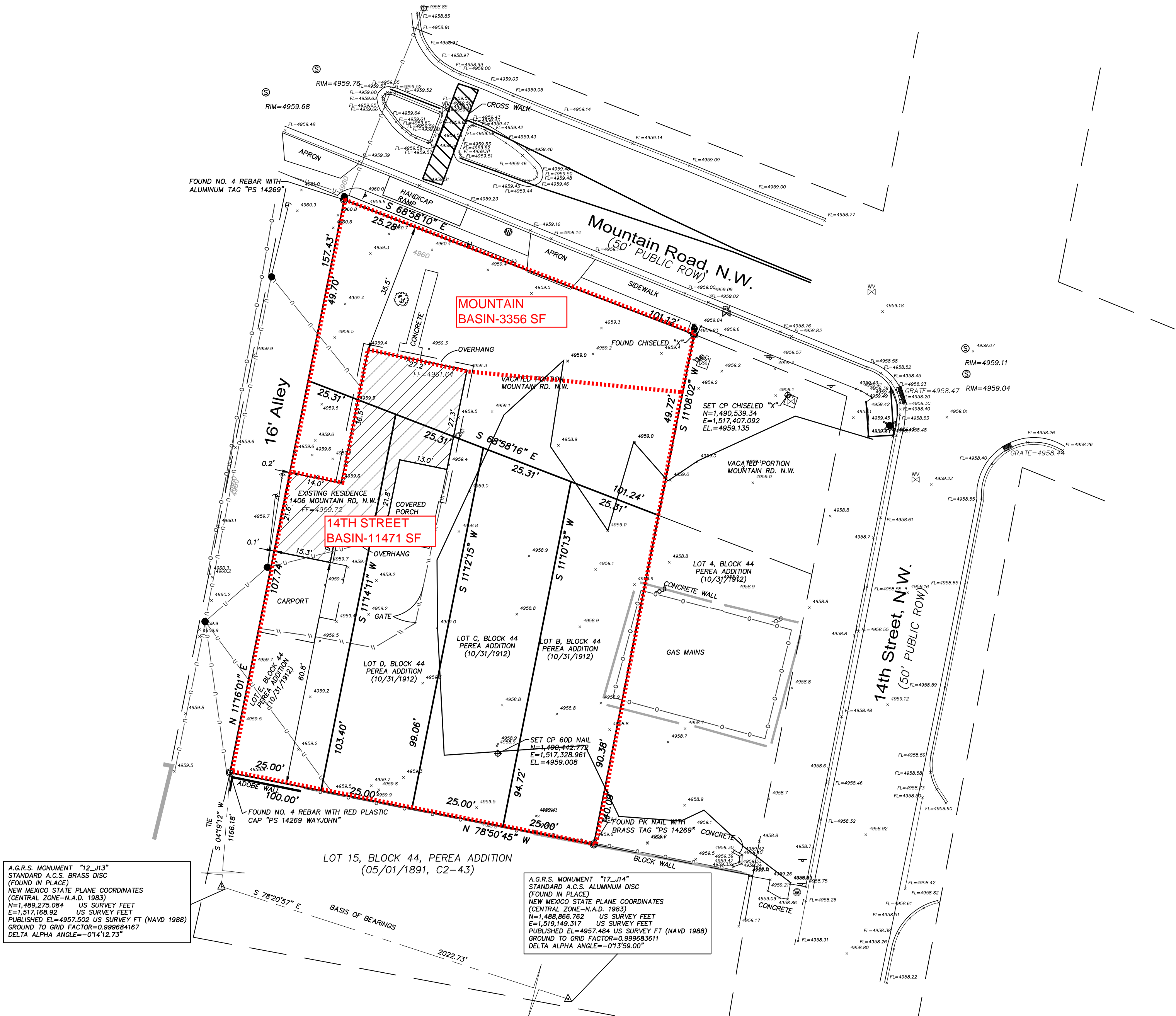
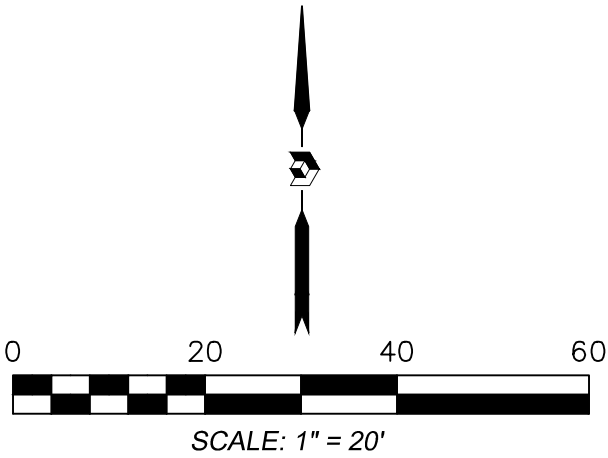
EXISTING UTILITIES ARE NOT SHOWN.  
IT SHALL BE THE SOLE RESPONSIBILITY  
OF THE CONTRACTOR TO CONDUCT ALL  
NECESSARY FIELD INVESTIGATIONS PRIOR  
TO ANY EXCAVATION TO DETERMINE THE  
ACTUAL LOCATION OF UTILITIES & OTHER  
IMPROVEMENTS.





THIS IS NOT A BOUNDARY SURVEY  
APPARENT LOT LINES AND PROPERTY CORNERS  
ARE SHOWN FOR ORIENTATION ONLY

Topographic Survey of  
Lots B, C, D and E of Block 44  
**Perea Addition**  
And the Vacated Portion of  
**Mountain Road, N.W.**  
Town of Albuquerque Grant, Projected  
Section 18, Township 10 N., Range 3 E., N.M.P.M.  
Albuquerque, Bernalillo County, New Mexico  
February 2019



Legend

N 90°00'00" E	
MEASURED BEARING AND DISTANCES	
○	FOUND AND USED MONUMENT AS DESIGNATED
△	FOUND ALUMINUM AGRS MONUMENT AS DESIGNATED
●	SERVICE/DROP POLE AS DESIGNATED
•	UTILITY POLE
⊥	GUY WIRE
⊞	ELECTRIC METER
⊙	WATER METER
⊕	GAS VALVE
⊗	GAS METER
⊖	SIGN
—	CURB AND GUTTER
—U—	OVERHEAD UTILITY LINE
—O—	CHAIN LINK FENCE
—/—	WOOD FENCE

Notes

1. PLAT REFERENCES:  
A. PLAT OF LOTS B, C, D, AND E, BLOCK 44, PEREA ADDITION AND VACATED MOUNTAIN ROAD, N.W. (10/31/1912)
2. ELEVATION DATUM IS BASED ON NAVD 1988 FROM AGRS MONUMENT "12-J13", PUBLISHED ELEVATION (FEET) = 4957.502 (DATE OF RETRIEVAL: JULY 2007 FOR NON AGRS MONUMENTS)
3. THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1"=20' WITH A CONTOUR INTERVAL OF ONE FOOT.
8. GPS CALIBRATION BASED ON ACS MONUMENTS "12-J13" AND "17-J14", AVERAGE PROJECT GROUND TO GRID SCALE FACTOR= 0.99966807739

Surveyor's Certificate

I, LARRY W. MEDRANO, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NEW MEXICO, LICENSE NUMBER 11993, DO HEREBY CERTIFY THAT THIS TOPOGRAPHIC SURVEY WAS PREPARED BY ME BY FIELD SURVEYS USING GPS RTK MEASUREMENTS BASED ON SITE HORIZONTAL/VERTICAL CALIBRATION UTILIZING AGRS MONUMENTS. ELEVATIONS BASED ON AGRS MONUMENT "12-J13" (NAVD 1988). THIS SURVEY MEETS THE MINIMUM STANDARDS FOR TOPOGRAPHIC SURVEYING IN NEW MEXICO AS ADOPTED BY THE NEW MEXICO BOARD OF LICENSURE FOR PROFESSIONAL ENGINEERS AND SURVEYORS. THIS IS NOT A BOUNDARY SURVEY.

LARRY W. MEDRANO  
N.M.P.S. No. 11993

DATE \_\_\_\_\_

DIGITAL SIGNATURE IS INVALID WITHOUT DIGITAL CERTIFICATION  
WET SIGNATURE IS INVALID IF NOT IN BLUE INK WITH BLUE STAMP OR EMBOSSED STAMP



COORDINATE AND DIMENSION INFORMATION				PLSS INFORMATION				INDEXING INFORMATION FOR COUNTY CLERK				PROJECT INFORMATION	
STATE PLANE ZONE: NM-C		GRID		TYPE: STANDARD		LAND GRANT		PROPERTY OWNER		CREW/TECH:		DATE OF SURVEY	
HORIZONTAL DATUM: NAD83		VERTICAL DATUM: NAVD88		ROTATION ANGLE: 0° 00' 00.00" YES		TOWN OF ALBUQUERQUE GRANT		MICHAEL P. TAPIA		MT		02/14/2019	
CONTROL USED: ALBUQUERQUE GEODETIC REFERENCE SYSTEM		BASE POINT FOR SCALING AND/OR ROTATION: N = 0 E = 0		DISTANCE ABNOTATION: GROUND		SECTION 18	TOWNSHIP 10 NORTH	RANGE 3 EAST	MERIDIAN NMPM	SUBDIVISION NAME		DRAWN BY:	
COMBINED SCALE FACTOR: GRID TO GROUND: 1.00031928 GROUND TO GRID: 0.99966807739		BEARINGS ABNOTATION: GRID		ELEVATION TRANSLATION: ±0.00'		CITY ALBUQUERQUE		COUNTY BERNALILLO		STATE NM		CHECKED BY: LM	
								UPC 101305839331810906		PSI JOB NO. 18-1098T		SHEET NUMBER 1 OF 1	



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