

CITY OF ALBUQUERQUE



September 15, 2016

Richard J. Berry, Mayor

David Soule, PE
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

**RE: Sigma Chi Parking Lot
Grading and Drainage Plan
Engineer's Stamp Date – 8-2-2016
Hydrology File: J15D098**

Dear Mr. Soule:

Based upon the information provided in your submittal received 8-2-2016, the above referenced Grading Permit submittal is approved for Grading with the following conditions:

1. Remove the 4" pvc drain that is proposed through the sidewalk, which would require an SO-19 Permit. Instead, a curb cut outlet facing the driveway can provide a spillway for the adjacent pond.
2. Ensure that curb cuts are constructed on all the islands at logical low spots; some are not shown on the plan.

If there is an as-built generated for the project, please forward a copy to the City for our file.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

Orig: Drainage file



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: SIGMA CHI PARKING LOT Building Permit #: City Drainage #:
DRB#: EPC#: Work Order#:
Legal Description: lots 8,9 AND NORTHER PORTION 7. BLOCK4 SIGMA CHI ADDITION
City Address: 1835 LOMAS NE

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE
Address: PO BOX 93924, ALBUQUERQUE, NM 87199
Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: 3B BUILDERS, INC Contact:
Address: 1770 HAMILTON LANE BOSQUE FARMS NM 87068
Phone#: Fax#: E-mail:

Architect: Contact:
Address:
Phone#: Fax#: E-mail:

Other Contact: Contact:
Address:
Phone#: Fax#: E-mail:

Check all that Apply:

DEPARTMENT:
☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:
☐ ENGINEER/ ARCHITECT CERTIFICATION

☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ DRAINAGE MASTER PLAN
☐ DRAINAGE REPORT
☐ CLOMR/LOMR

☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)

☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: 8/2/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY

☐ PRELIMINARY PLAT APPROVAL
☐ SITE PLAN FOR SUB'D APPROVAL
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
☐ FINAL PLAT APPROVAL
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
☐ FOUNDATION PERMIT APPROVAL
☒ GRADING PERMIT APPROVAL
☐ SO-19 APPROVAL
☐ PAVING PERMIT APPROVAL
☐ GRADING/ PAD CERTIFICATION
☐ WORK ORDER APPROVAL
☐ CLOMR/LOMR

☐ PRE-DESIGN MEETING
☐ OTHER (SPECIFY) _____

DRAINAGE REPORT

For

SIGMA CHI PARKING LOT
1835 LOMAS
LOTS 8, 9, AND A PORTION OF 7, BLOCK 5 SIGMA CHI ADDITION
Bernalillo County, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

AUGUST 2016



David Soule P.E. No. 14522

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Site Hydrology A

Map Pocket

Site Grading and Drainage Plan

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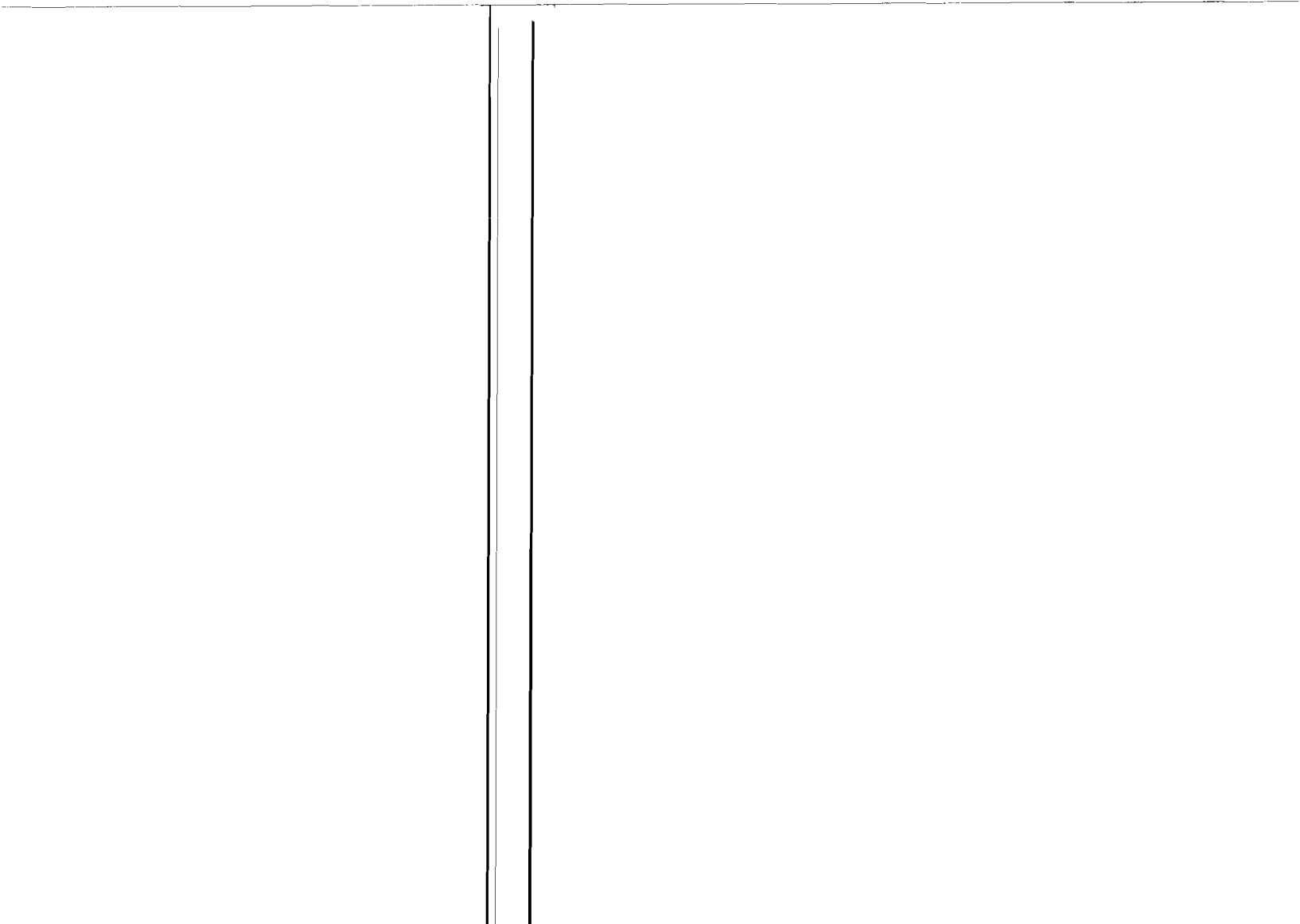
PURPOSE

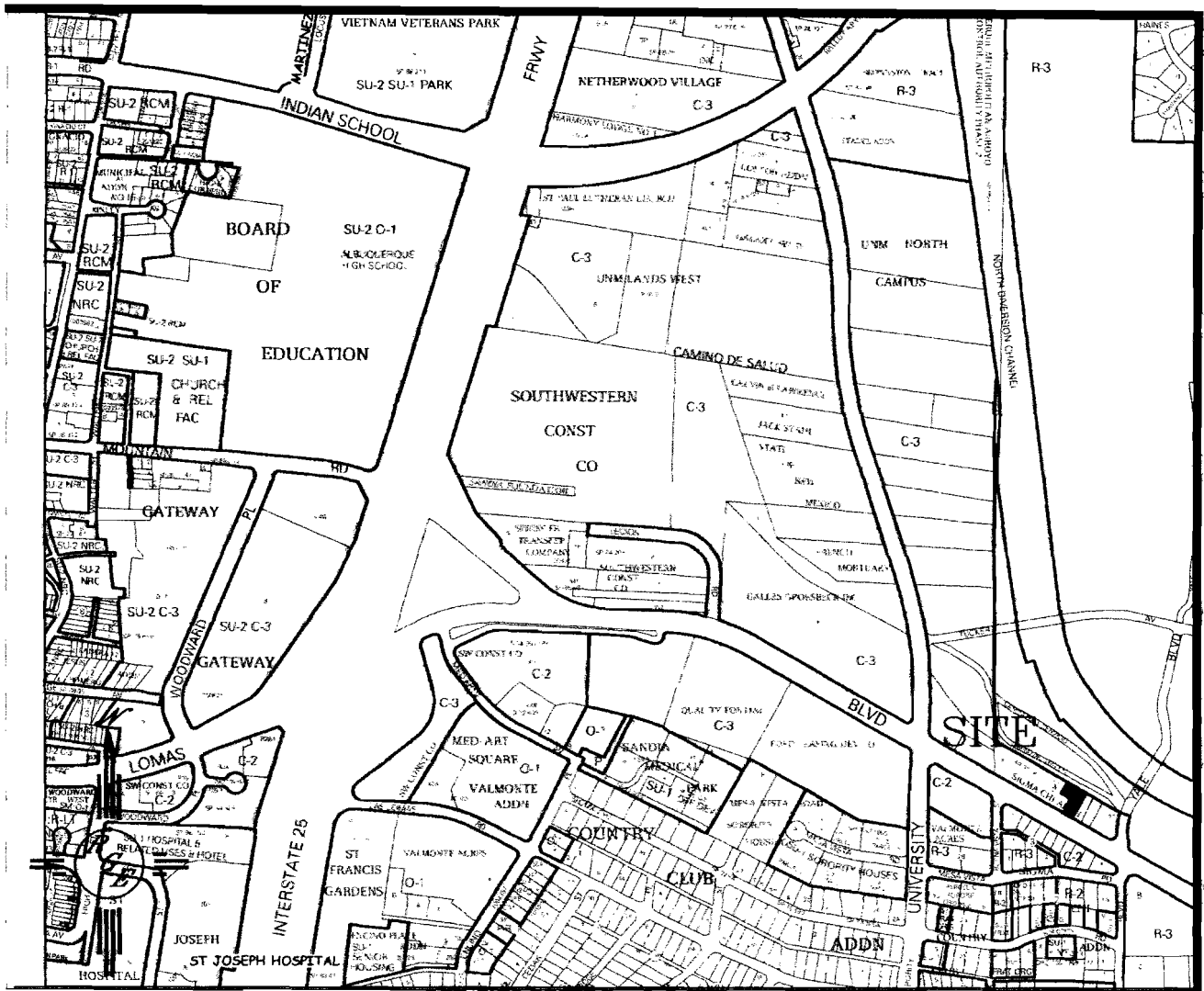
The purpose of this report is to provide the Drainage Management Plan for a proposed redevelopment of an existing warehouse and contractors yard into a parking lot. The site is located west of university on the north side of Lomas. The site development consists of removing the existing buildings and the construction of a paved parking area. 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 with the proposed development will function appropriately. The report shall show that the improvements do 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 0.43-acre parcel of land located at 1835 Lomas. The legal description of this site is lots 8, 9 and a portion of 7, block 5 sigma chi addition. As shown on FIRM map 35013C2125D, the entire site is located entirely within zone x.

The site is currently completely developed. The site currently discharges 1.90 cfs to the adjacent property to the west. The proposed development will drain as much as is practical to Lomas, pond as much is practical and discharge less than historical to the existing outfall.





VICINITY MAP:



FIRM MAP:

FM35043C2125D

EXISTING CONDITIONS

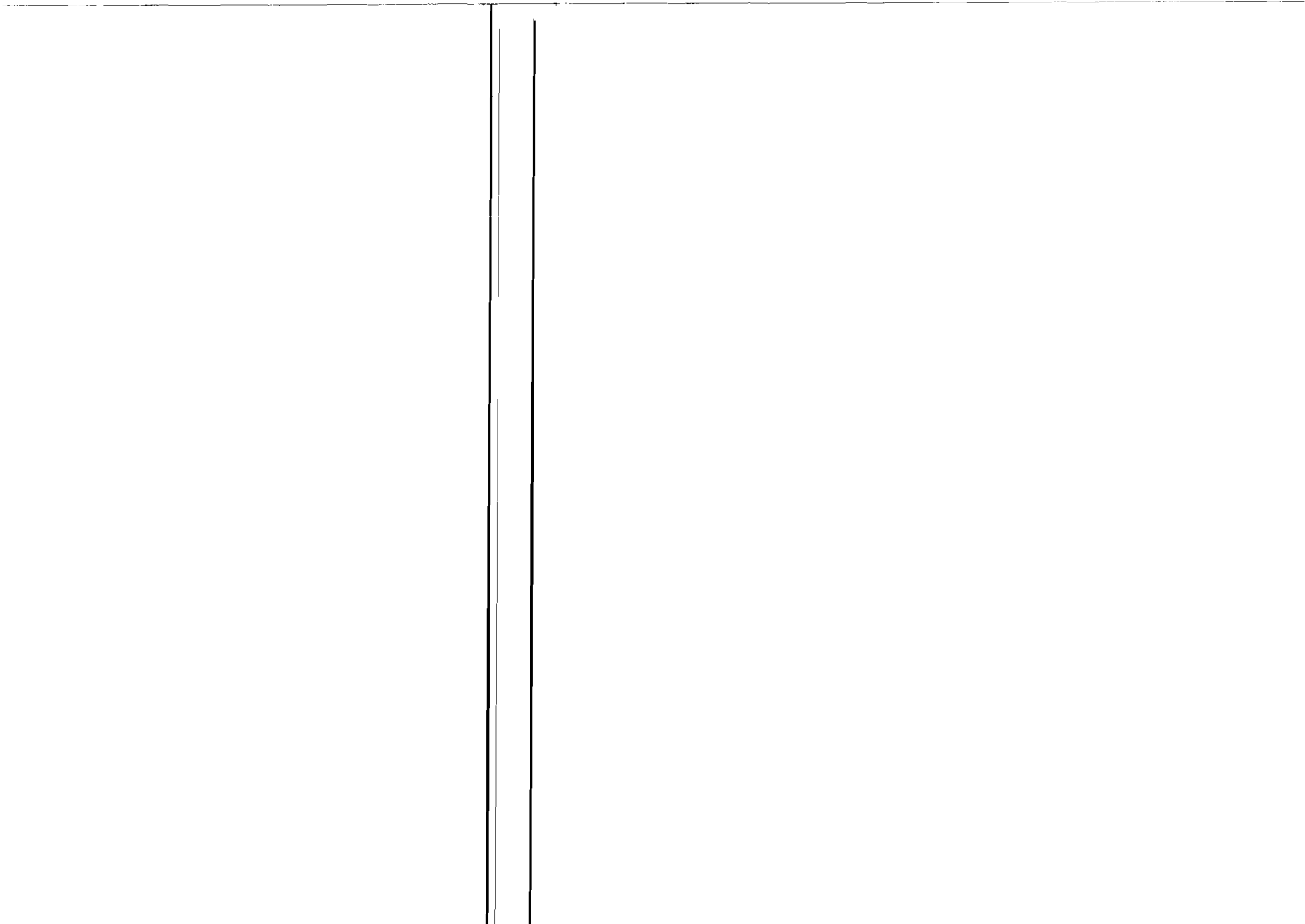
The site is currently fully developed. The site bound on all sides by developed property. The site currently drains entirely to the adjacent lot. The site discharge 1.9 cfs to the adjacent property. There is currently no landscaping or ponding onsite.

PROPOSED CONDITIONS

The proposed development consists of the removal of the existing buildings and asphalt and the construction of a parking lot with depressed landscape island. The site will be grade such that .15 acres will drain to Lomas, generating .65 cfs and 1041 cubic feet of water. The addition of first flush volumes within the landscape island captures 152 CF, letting 889 CF of water to drain to Lomas. The remaining site will continue to discharge at the historic outfall. The site will discharge 1.21 cfs to the outfall and 1932 cf. Due to the construction of first flush ponds the basin will capture 1314 CF with only 618 CF leaving the site. The total site is required to retain a first flush volume of 442 cubic feet of storm water. The site captures a total of 1466 cubic feet of the rainfall volume.

SUMMARY AND RECOMMENDATIONS

This site is a redevelopment of and existing parcel. The site improvements do alter existing drainage patterns. The site is graded such that as much storm water as is practical will discharge to Lomas, increasing that basin by .65 cfs. The remaining onsite flow will continue to drain to the historical outfall with a peak rate of 1.21 cfs, which is 0.69 cfs less than historical. The onsite ponding exceeds the first flush requirement. The total flow leaving the site and impacting the down stream developments is 1.86 cfs, which is 0.04 cfs less than historical. The onsite ponding reduces the total volume leaving the site from 3049 CF to 1517 cfs. The proposed development has a total reduction in peak and total volume leaving the site.



APPENDIX A
SITE HYDROLOGY

Weighted E Method

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year, 6-hr.			
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
Existing	18554.00	0.426	0%	0	5%	0.021	8%	0.034	87%	0.371	1.974	0.070	1.90	0.119
PROPOSED	18554.00	0.426	0%	0	11%	0.047	5%	0.021	84%	0.358	1.923	0.068	1.86	0.116
comparison	0.00	0.000		0	0%	0.02556	0%	-0.0128	42%	-0.013	-0.051	-0.002	-0.04	-0.004
prop to lomas	6498.00	0.149	0%	0	11%	0.016	5%	0.007	84%	0.125	1.923	0.024	0.65	0.041
prop to west	12056.00	0.277	0%	0	11%	0.030	5%	0.014	84%	0.232	1.923	0.044	1.21	0.075

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm(zone2)

Ea= 0.53 Qa= 1.56
Eb= 0.78 Qb= 2.28
Ec= 1.13 Qc= 3.14
Ed= 2.12 Qd= 4.7

First flush pond requirements (.34") x 15585

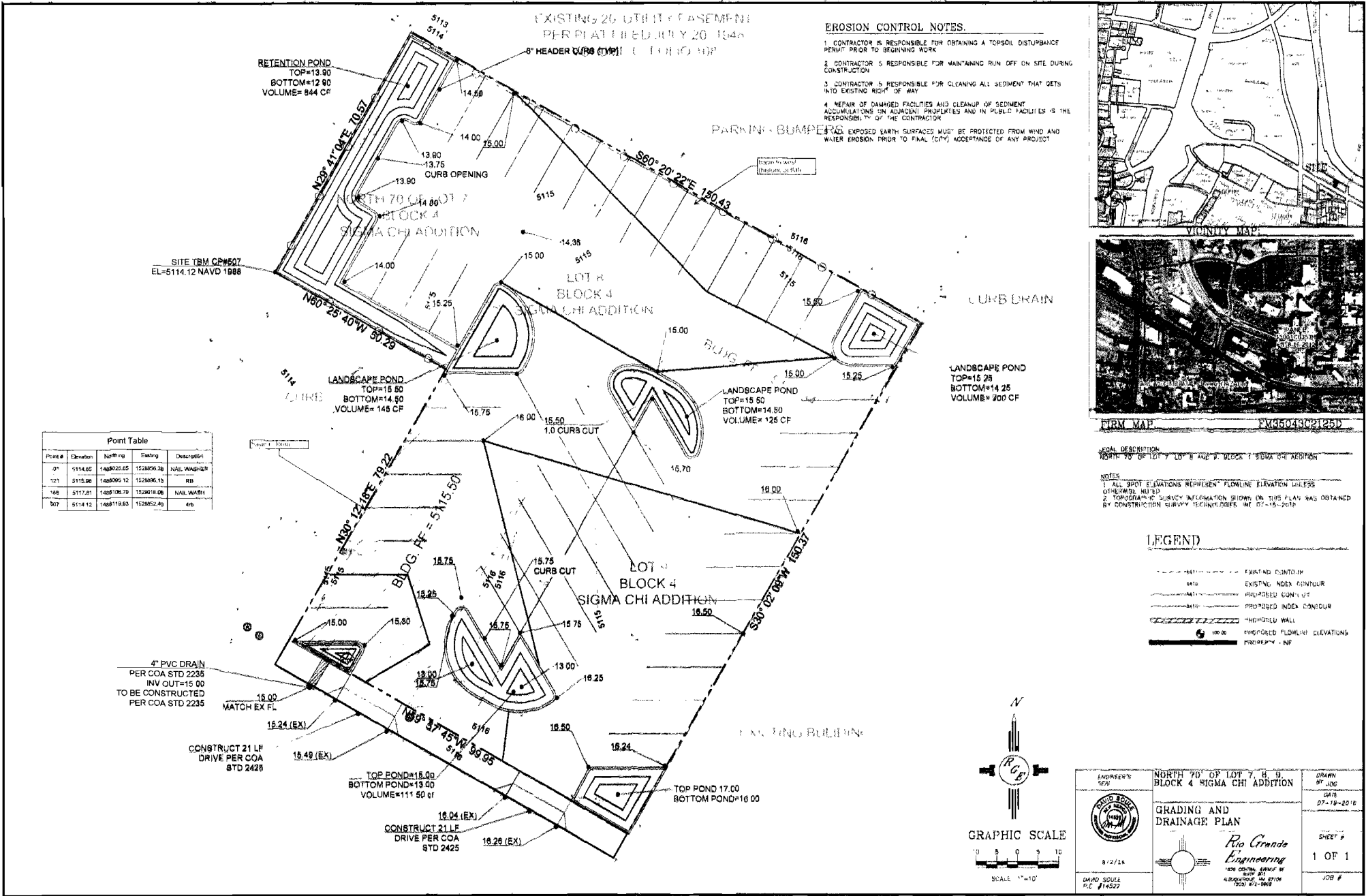
442 cubic feet

total basin to lomas

	proposed	historic	COMPARISON	
peak flow	0.65 cfs	0	0.65	CFS INCREASE
total flow	1041.36 cf	0		
captured	152.000 cf	0		
net flow	889.359 cf	0	889	CF INCREASE

total basin to historic outfall

	proposed	historic		
peak flow	1.21	1.90	0.690	CFS DECREASE
total flow	1932.07 cf	3052		
captured	1314.000 cf	0		
net flow	618.074 cf	2824	2206	CF DECREASE



Point Table				
Point #	Elevation	Northing	Easting	Description
101	5114.85	1488026.65	1528856.28	NAIL WASHER
121	5115.98	1488095.12	1528896.13	RB
168	5117.81	1488106.79	1529018.06	NAIL WASH
507	5114.12	1488119.93	1528852.40	4rb

SITE TBM CP#507
EL=5114.12 NAVD 1988

RETENTION POND
TOP=13.90
BOTTOM=12.90
VOLUME= 844 CF

LANDSCAPE POND
TOP=15.50
BOTTOM=14.50
VOLUME= 145 CF

LANDSCAPE POND
TOP=15.50
BOTTOM=14.50
VOLUME= 125 CF

LANDSCAPE POND
TOP=15.25
BOTTOM=14.25
VOLUME= 200 CF

TOP POND=15.00
BOTTOM POND=13.00
VOLUME=111.50 cf

TOP POND 17.00
BOTTOM POND=16.00

CONSTRUCT 21 LF
DRIVE PER COA
STD 2425

4" PVC DRAIN
PER COA STD 2235
INV OUT=15.00
TO BE CONSTRUCTED
PER COA STD 2235

CONSTRUCT 21 LF
DRIVE PER COA
STD 2425

CONSTRUCT 21 LF
DRIVE PER COA
STD 2425

EXISTING 20' UTILITY EASEMENT
PER PLAT FILED:JULY 20, 1948
6" HEADER CURB (TYP)

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

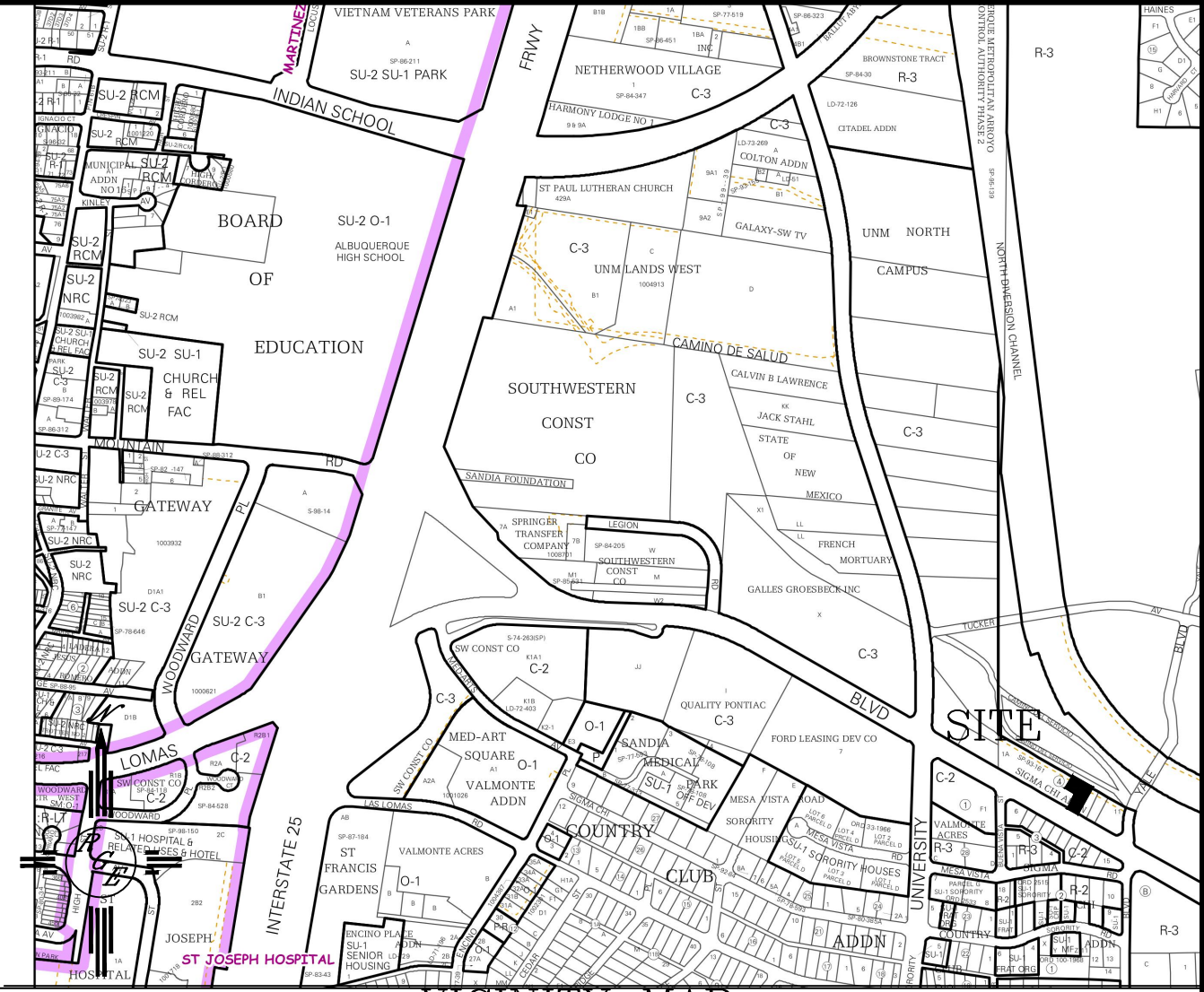
PARKING BUMPERS

basin to west
(historic outfall)

basin to lomas

CURB DRAIN

EXISTING BUILDING



VICINITY MAP:



FIRM MAP:

FM35043C2125D

LEGAL DESCRIPTION:

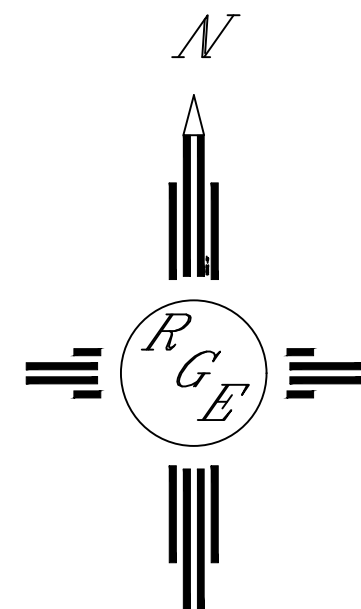
NORTH 70' OF LOT 7, LOT 8 AND 9, BLOCK 4 SIGMA CHI ADDITION

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN WAS OBTAINED BY CONSTRUCTION SURVEY TECHNOLOGIES, INC 07-15-2016


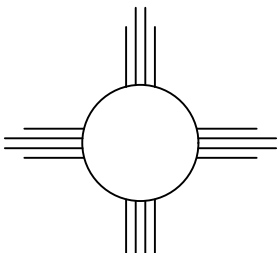
LEGEND

- 5411--- EXISTING CONTOUR
- 5410--- EXISTING INDEX CONTOUR
- 5411--- PROPOSED CONTOUR
- 5410--- PROPOSED INDEX CONTOUR
- PROPOSED WALL
- 100.00 PROPOSED FLOWLINE ELEVATIONS
- PROPERTY LINE



GRAPHIC SCALE

10 5 0 5 10
SCALE: 1"=10'

ENGINEER'S SEAL  8/2/16 DAVID SOULE P.E. #14522	NORTH 70' OF LOT 7, 8, 9, BLOCK 4 SIGMA CHI ADDITION	DRAWN BY JDG
	GRADING AND DRAINAGE PLAN	DATE 07-19-2016
 Rio Grande Engineering 1606 CENTRAL AVENUE SE SUITE 201 ALBUQUERQUE, NM 87106 (505) 872-0999	SHEET # 1 OF 1	JOB #