

CITY OF ALBUQUERQUE



January 14, 2016

Richard J. Berry, Mayor

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

**RE: Hampton Inn (Holly Ave)
Grading Plan and Drainage Report
Engineer's Stamp Date – 11-16-15
Hydrology File: C18D073B**

Dear Mr. Soule:

Based upon the information provided in your submittal received 11-18-15, the above referenced Grading Plan and Drainage Report is approved for Site Plan for Building Permit.

The above-referenced plan is also approved for Grading Permit and Building Permit.

PO Box 1293

Prior to Building Permit approval, Engineer Certification per the DPM checklist will be required.

Albuquerque

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

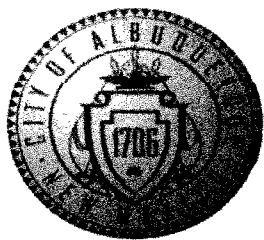
New Mexico 87103

Sincerely,

www.cabq.gov

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: Holly Hotel

Building Permit #:

City Drainage #:

DRB#:

EPC#:

Work Order#:

Legal Description: lots 12, 13 Tract B, Unit A, North Albuquerque Acres

City Address: 5900 Holly 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: Paseo Hospitality,llc

Contact:

Address: 4505 Atherton Way nw 87120

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)

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)

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: 11/15/15 By: DAVID SOULE

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED:

DRAINAGE REPORT

For

HOLLY HOTEL
Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

NOVEMBER 2015



David Soule P.E. No. 14522

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Site Grading and Drainage Plan

PURPOSE

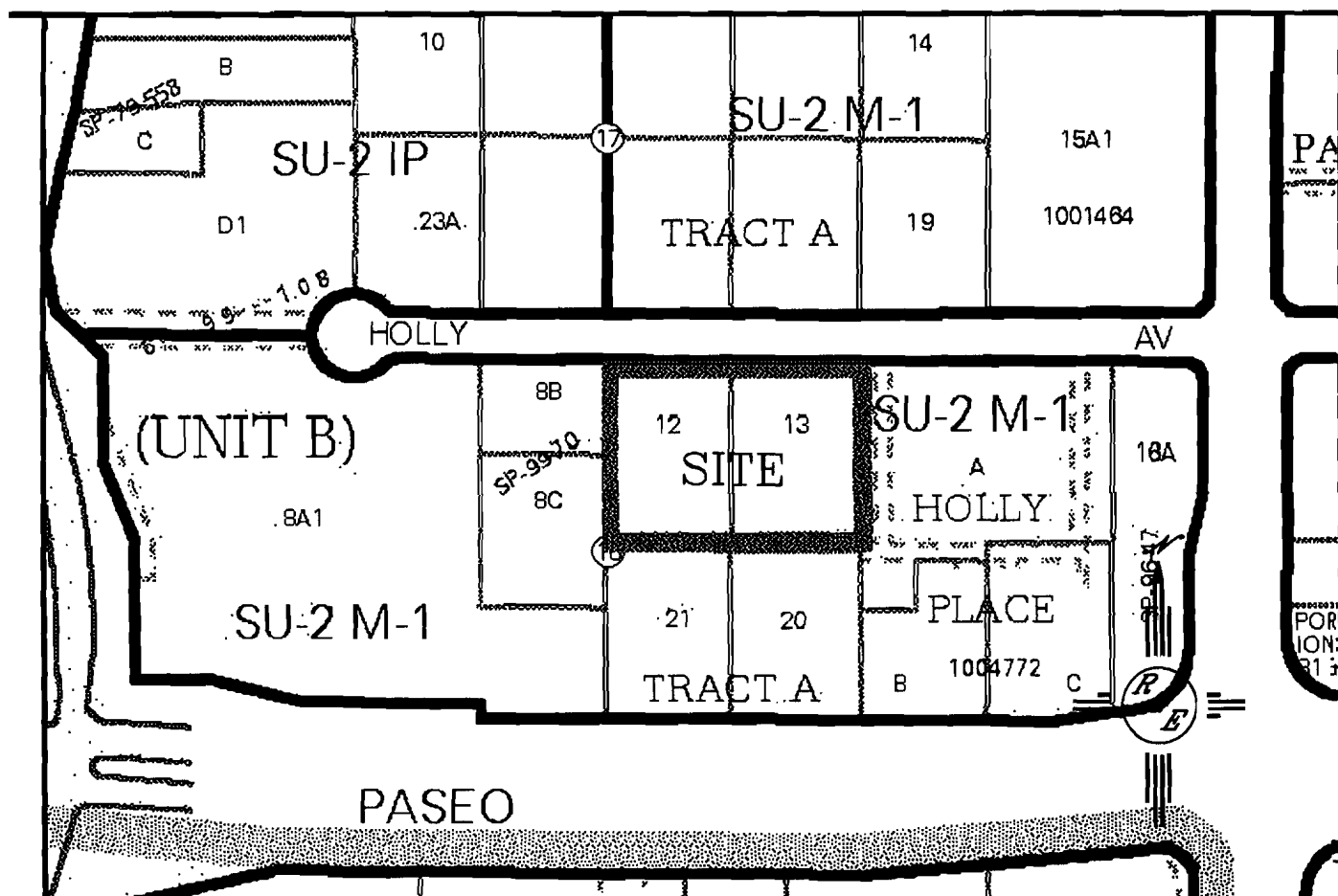
The purpose of this report is to provide the Drainage Management Plan for the development of a 1.77 acre hotels site located at 5900 Holly. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the grading does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

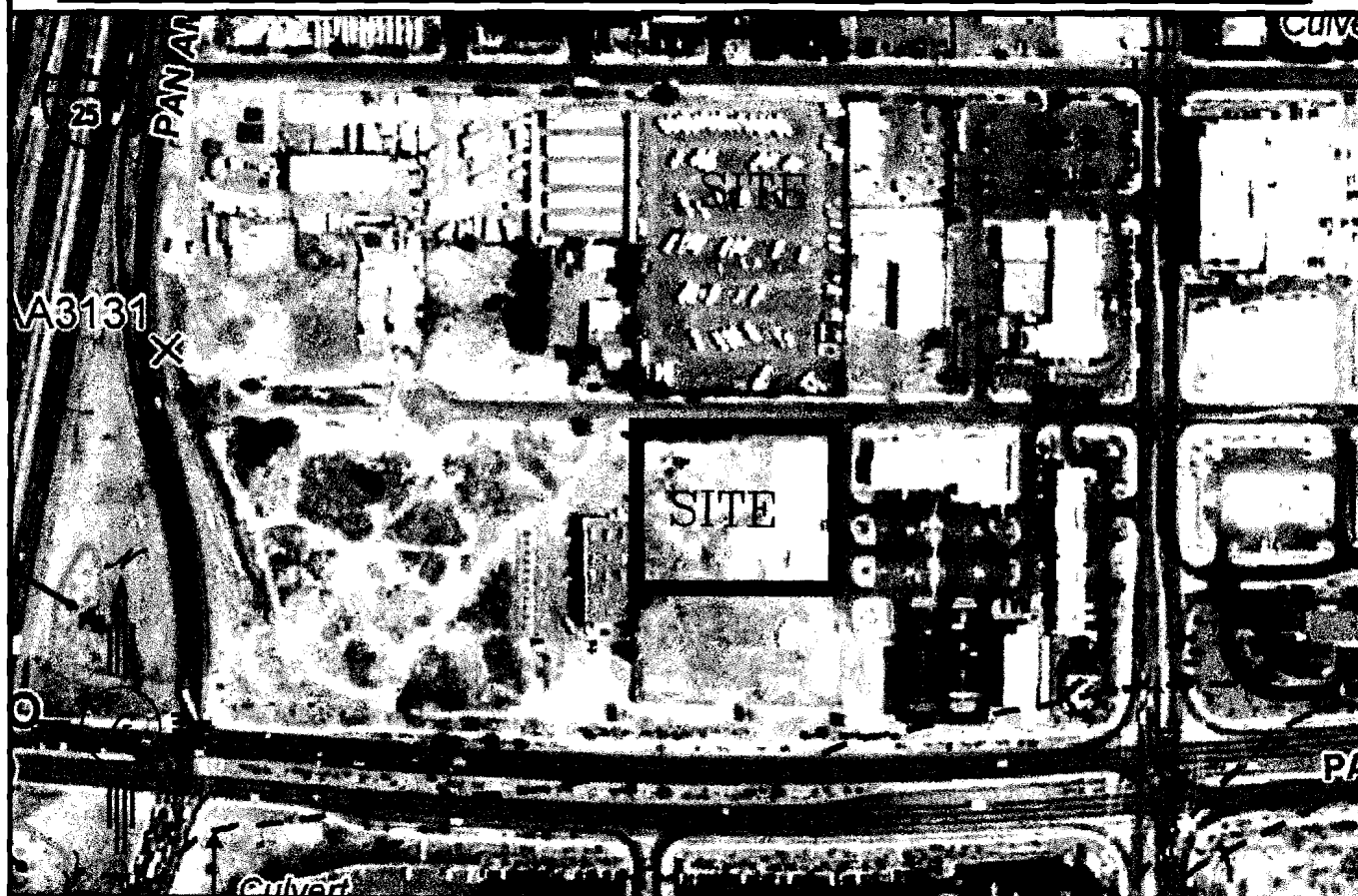
The subject of this report, as shown on the Exhibit A, is a 1.7-acre parcel of land located on the south side of Holly between Interstate 25 and San Pedro Northeast. The legal description of this site is lots 12 and 13, Tract B, Unit A, North Albuquerque Acres. As shown on FIRM map35013C0137H, the entire site is located within Flood Zone X. The site has been graded in the past; it contains large stock piles of material and paved access across the site. The site is impacted by upland flow. The site is a part of a drainage master plan for SAD 224 and pervious drainage reports (C18-073, and C18-077). The site is surrounded by fully developed sites on all sides. The site currently free discharges as sheet flow to the holly via the existing access road and driveway at the north west corner of the site. The development of the site will require the site to discharge at a rate equal to or less than the developed condition assumptions for the SAD 224 (0%A, 10%B, 5%C, 85%D) and retain the first flush water quality volume onsite.

EXISTING CONDITIONS

The site is currently disturbed yet undeveloped and is impacted by upland flows. The site is located in flood zone x. The site currently generates 5.47 cfs as sheet flow to Holly via an existing drives way. The site passes the flow from the upland site thru the paved drive and driveway. All downstream improvements are in place and maintained by the city of Albuquerque.



VICINITY MAP: C-18-Z



FIRM MAP: 35001C0137H

PROPOSED CONDITIONS

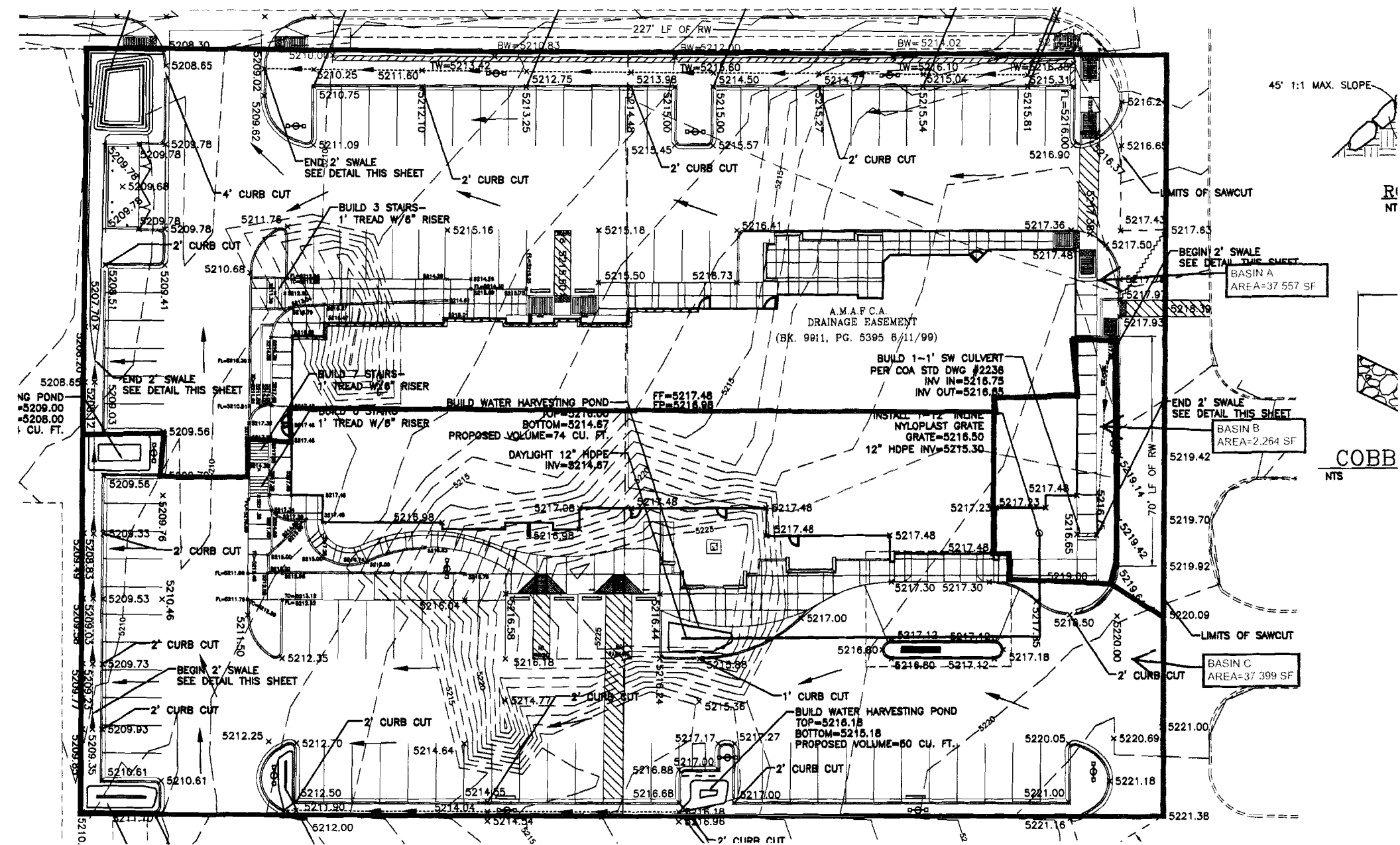
The proposed improvements consist of a new multi-story Hotel. A drainage sub basin map and hydraulic spread sheet is included in appendix A. The proposed development will drain from east to west, passing thru landscape areas and small ponds located within the landscape areas before discharging north to Holly via the existing driveway. The entire site will generate 8.24 cfs which is less than the 8.33 cfs allowed within the governing master plan C18-D0073/77. Basin B will be conveyed between landscape areas via a 12" underground storm drain @.5%. As shown in appendix B, the storm drain has been sized to convey the contributing flow. The swale and curb openings have been sized to pass the upland flows the outfall contains a first flush pond that when filled to the curb flow line will then spill out the driveway. The onsite ponds contain 2004 cubic feet, exceeding the first flush requirement of 1802 cubic feet

SUMMARY AND RECOMMENDATIONS

This project is a development of multistory hotels within a larger development. This site has been designed to discharge less than the developed condition assumptions of the master drainage plan. The development of this site will retain the first flush volume onsite. The pond entrance acts as the overflow once the first flush volume is captured. The drainage structures have been adequately sized. The development of this site will not negatively impact the upstream nor down stream facilities. Since this site exceed 1 acre, an erosion and sediment Control Plan will be required, a NPDES permit will also be required prior to any construction activity.

APPENDIX A
SITE HYDROLOGY





Weighted E Method

HOLLY HOTEL

											100-Year, 6-hr.			10-day
Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
			%	(acres)	%	(acres)	%	(acres)	%	(acres)				
# EXISTING ONSITE DISCHARGE	77220	1.773	0%	0	80.0%	1.418	0.0%	0	20%	0.355	1.208	0.178	5.47	0.226
ALLOWED PER SAD 224	77220	1.773	0%	0	10.0%	0.177	5.0%	0.08864	85%	1.507	2.163	0.319	8.33	0.520
BASIN A	37557	0.862	0%	0	11.0%	0.095	5.0%	0.04311	84%	0.724	2.148	0.154	4.03	0.251
BASIN B	2264	0.052	0%	0	20.0%	0.010	19.0%	0.00988	61%	0.032	1.869	0.008	0.22	0.012
BASIN C	37399	0.859	0%	0	11.0%	0.094	7.0%	0.0601	82%	0.704	2.127	0.152	3.99	0.246
OVERALLPROPOSED	77220	1.773	0%	0	22.0%	0.200	6%	0.113	82%	1.460	2.130	0.315	8.24	0.509

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 (zone 3)

Ea= 0.66
Eb= 0.92
Ec= 1.29
Ed= 2.36

Qa= 1.87
Qb= 2.6
Qc= 3.45
Qd= 5.02

FIRST FLUSH REQUIREMENT
1801.9 CUBIC FEET
2004 CUBIC FEET PROVIDED

DESIGN FLOW RATES
LANDSCAPE SWALE-BASIN B+C+3.99* 8.20 CFS
CURB OPENING AT MAIN POND=A 4.03 CFS
STORM DRAIN 0.22 CFS

Pond volume required
FIRST FLUSH REQUIRED 1801.89 cf
FIRST FLUSH PROVIDED 2004.00 cf
EXISTING ONSITE DISCHARGE 5.47 CFS
PROPOSED ONSITE DISCHARGE 8.24 CFS
ALLOWED ONSITE DISCHARGE 8.33 CFS

NARRATIVE
THIS SITE IS AN NEW DEVELOPMENT OF AN SITE LOCATED WITH SAD 224. THIS SITE CURRENTLY FREE DISCHARGES 5.47 CFS. THE PROPOSED IMPROVEMENTS REDUCE THE DISCH. 8.24 CFS, WHICH IS LESS THAN THE 8.33 ALLOWED. THE FIRST FLUSH VOLUME OF1802 CUBIC FEET IS CAPTURED ON SITE

APPENDIX B
HYDRAULIC CALCULATIONS

1

Channel Capacity

	Top Width	Bottom Width	Depth	Area	WP	R	Slope	Q Provided	Q Required	Velocity
	(ft)	(ft)	(ft)	(ft^2)	(ft)		(%)	(cfs)	(cfs)	(ft/s)
Beginning	6	0.25	1	3.13	6.34	0.4930657	1	9.69	8.22	2.63

Manning's Equation:

$Q = 1.49/n * A * R^{(2/3)} * S^{(1/2)}$

A = Area

R = D/4

S = Slope

n = 0.03

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
12HDPE	12	0.5	0.79	0.25	2.05	0.22	0.28

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

- A = Area
- R = D/4
- S = Slope
- n = 0.016

OPENINGS

Weir Equation:

$$Q = CLH^{3/2}$$

Q = 1.52 cfs

C = 2.95

H = 0.5 ft

L = Length of weir

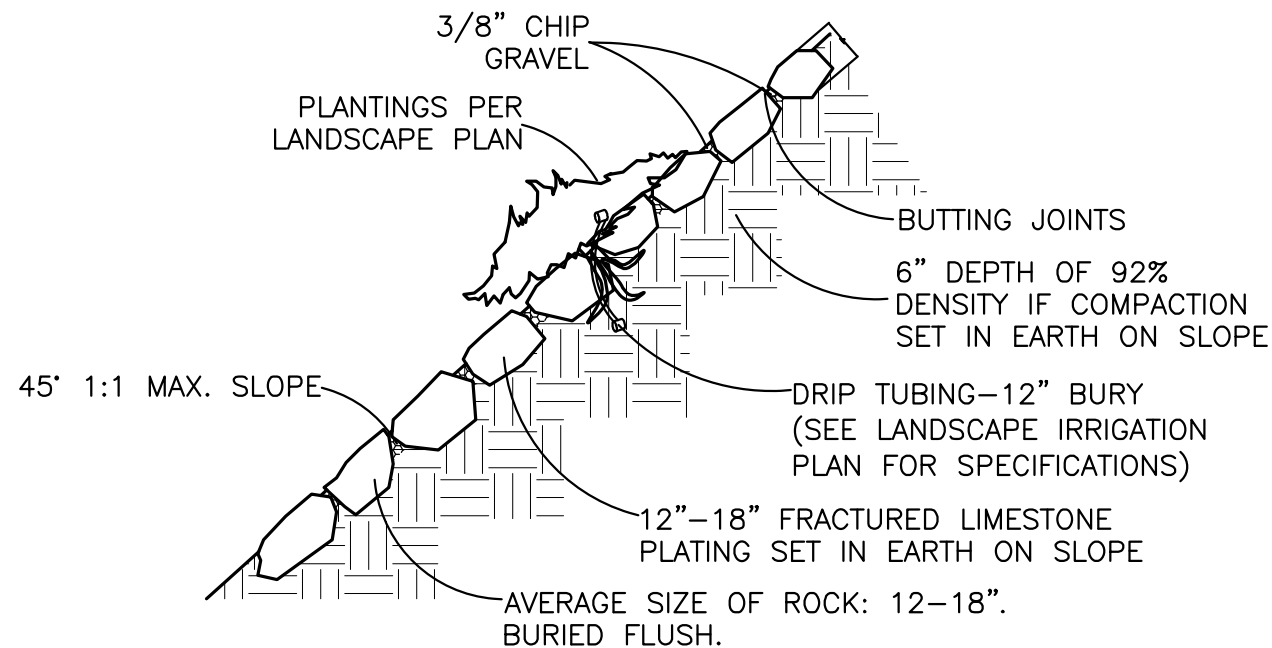
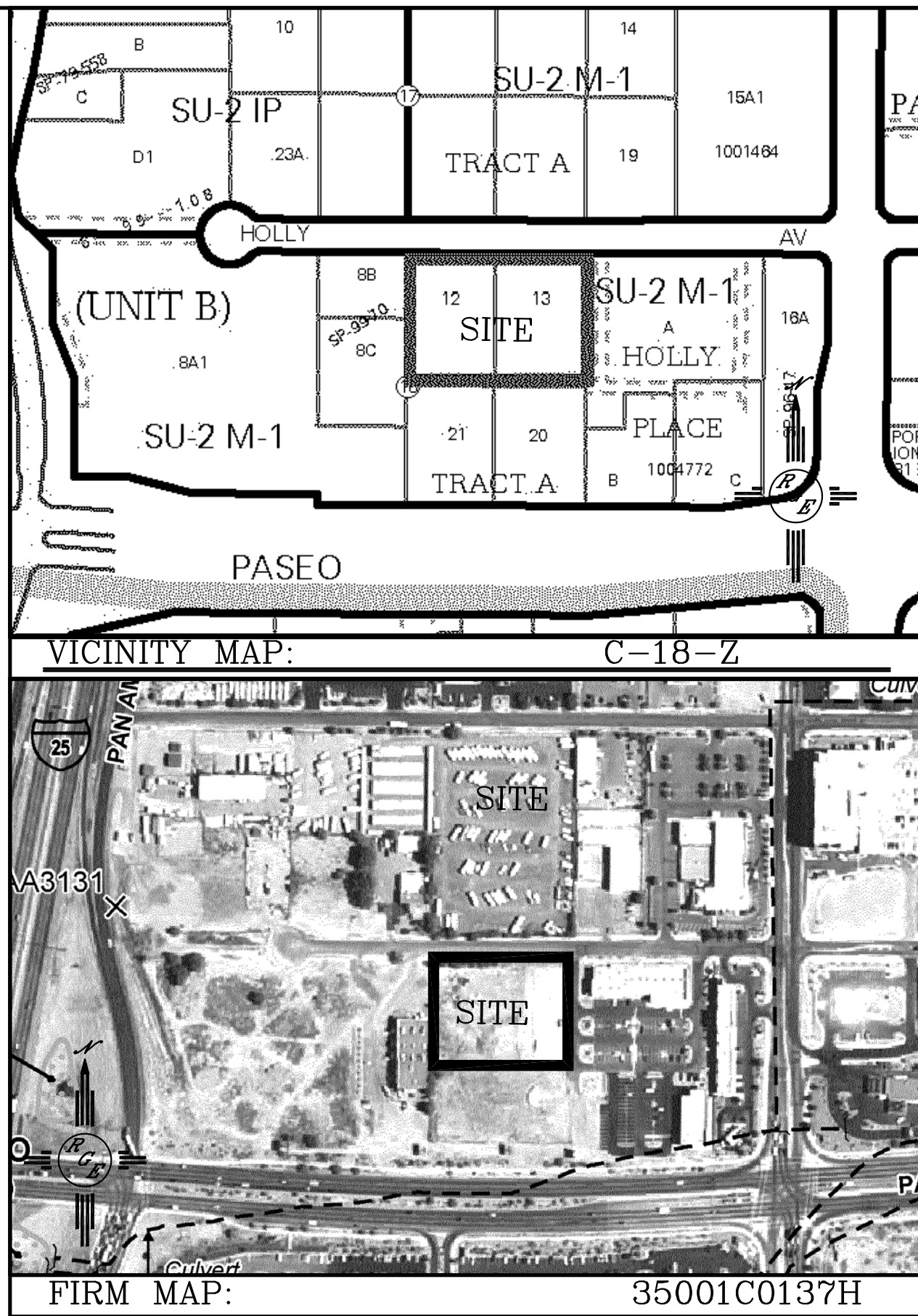
2' CURB OPENING/ 2' CURB CUT

$$Q = 2.95 \times 2 \times 0.5 \times 1.5 = 2.10 \text{ CFS}$$

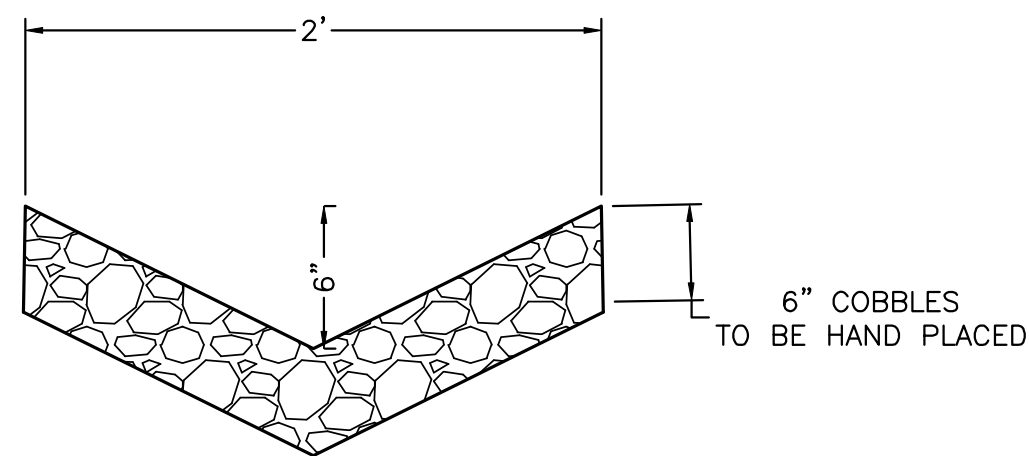
"10-C18 1985"
Datum: NAD 83
Projection: New Mexico State Plane
Zone: Central
Latitude: 35 - 11 - 19.24965
Longitude: 106 - 34 - 39.00037
Ellipsoidal Height (meters): 1570.768
Order: Class
Ground to Grid Factor: 0.999665042
Mapping Angle: -0 - 11 - 19.43
Northing (US survey feet): 1524123.885
Easting (US survey feet): 1542565.263
Northing (meters): 464553.889
Easting (meters): 470174.833
NAVD 1988 Elevation
Datum: NAVD 1988
Orthometric Height (US survey feet): 5222.090
Order: Class

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.



ROCK PLATING DETAIL
NTS



COBBLE SWALE DETAIL
NTS

LEGAL DESCRIPTION:

LOTS 12 AND 13, TRACT 2, UNIT 1 NORTH ALBUQUERQUE ACRES

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.

LEGEND

- 5414--- EXISTING CONTOUR
- 5415--- EXISTING INDEX CONTOUR
- 5414--- PROPOSED CONTOUR
- 5415--- PROPOSED INDEX CONTOUR
- ▲ SLOPE TIE
- + 4048.25 EXISTING SPOT ELEVATION
- x 4048.25 PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- PROPOSED CURB AND GUTTER
- EXISTING CURB AND GUTTER
- PROPOSED SIDEWALK
- PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED SCREEN WALL
- PROPOSED RETAINING WALL
- LIMITS OF FLOODPLAIN

ROUGH GRADING APPROVAL

DATE

ENGINEER'S
SEAL

HOLLY HAMPTON INN

DRAWN
BY WCWJ

DATE
11-16-15

21423-LAYOUT-12-05-14

SHEET #

JOB #
21423

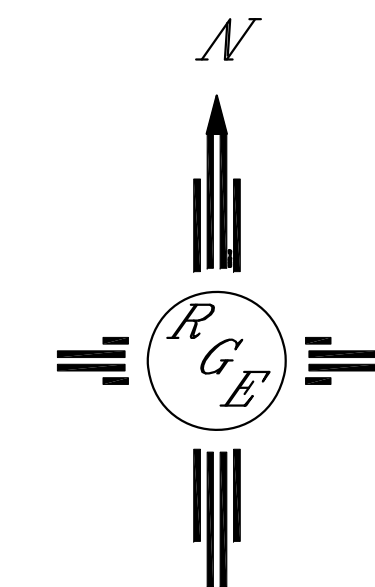
GRADING AND
DRAINAGE PLAN

*Rio Grande
Engineering*
1806 CENTRAL AVENUE SE
SUITE 201
ALBUQUERQUE, NM 87106
(505) 872-0999

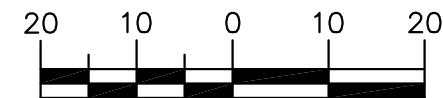


11/16/15

DAVID SOULE
P.E. #14522



GRAPHIC SCALE



SCALE: 1"=20'

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.

BUILD WATER HARVESTING POND
TOP=5210.50
BOTTOM=5209.50
PROPOSED VOLUME=74 CU. FT.