CITY OF ALBUQUERQUE

April 4, 2018

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

RE: **Superior Carwash**
10900 Unser NW
Grading and Drainage Plan
Engineer's Stamp Date: 3/23/18
Drainage File: A11D018

Dear Mr. Soule:

Based on the information provided in your submittal received 3/26/18, the grading and drainage plan cannot be approved until the following are addressed:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Prior to Site Plan for Building Permit:

1. If only seeking Site Plan for Building Permit approval at this time, label the grading plan "Conceptual, Not For Construction" or similar and address the SPBP comments. If seeking SPBP and Building Permit simultaneously, forgo the conceptual markings and address all SPBP and Building Permit comments.

2. Basin A seems to be a landscaping strip with very little impervious, but is claimed as 92% D; please clarify/correct.

3. Basin D appears to be wholly contained onsite and shouldn't be counted against the site's allowable discharge, therefore reducing the site discharge from 3.85cfs to 2.93cfs.

Prior to Building Permit:

4. Add note on the plan that "No work shall be performed in the public ROW without an approved Work Order."

5. Payment of the Fee in Lieu for the required first flush volume must be made. This appears to be Basin B1, Basin B2, Basin A, and a portion of Basin E, as described in the drainage report hydrology. Once Basin A is corrected, a treasury deposit slip can be generated.

6. A Private Facility Drainage Covenant is required for the stormwater quality ponds. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee ($25,

payable to City of Albuquerque) must be turned into DRC (4th, Plaza del Sol) for routing. Please contact Charlotte LaBadie (clabadie@cabq.gov, 924-3996) or Madeline Carruthers (mtafoya@cabq.gov, 924-3997) regarding the routing and recording process for covenants.

7. This project requires an ESC Plan, submitted to the Stormwater Quality Engineer (Curtis Cherne PE, ccherne@cabq.gov or 924-3420).

Prior to Certificate of Occupancy:

8. The Private Facility Drainage Covenant must be recorded with Bernalillo County and a copy included with the drainage certification.

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

Sincerely,

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: SUPERIOR CARWAHS Building Permit #: _____ City Drainage #: _____

DRB#: _____ EPC#: _____ Work Order#: _____

Legal Description: PORTION OF LOT 4 PARADISE PLAZA

City Address: NORTHEAST CORNER OF UNSER AND CROWN- 10900 UNSER

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: BRANDENBIRG Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Architect: SCOTT ANDERSON Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

_____ TRAFFIC/ TRANSPORTATION

_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN

X 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:

X BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY

_____ PRELIMINARY PLAT APPROVAL

_____ SITE PLAN FOR SUB'D APPROVAL

X SITE PLAN FOR BLDG. PERMIT APPROVAL

_____ FINAL PLAT APPROVAL

_____ SIA/ RELEASE OF FINANCIAL GUARANTEE

_____ FOUNDATION PERMIT APPROVAL

X 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 X No

DATE SUBMITTED: 3/23/18 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

DRAINAGE REPORT

For

Superior Express Car Wash
10900 Unser NW

Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

March 2018

David Soule P.E. No. 14522

TABLE OF CONTENTS

Appendix

Map

Site Grading and Drainage Plan

PURPOSE

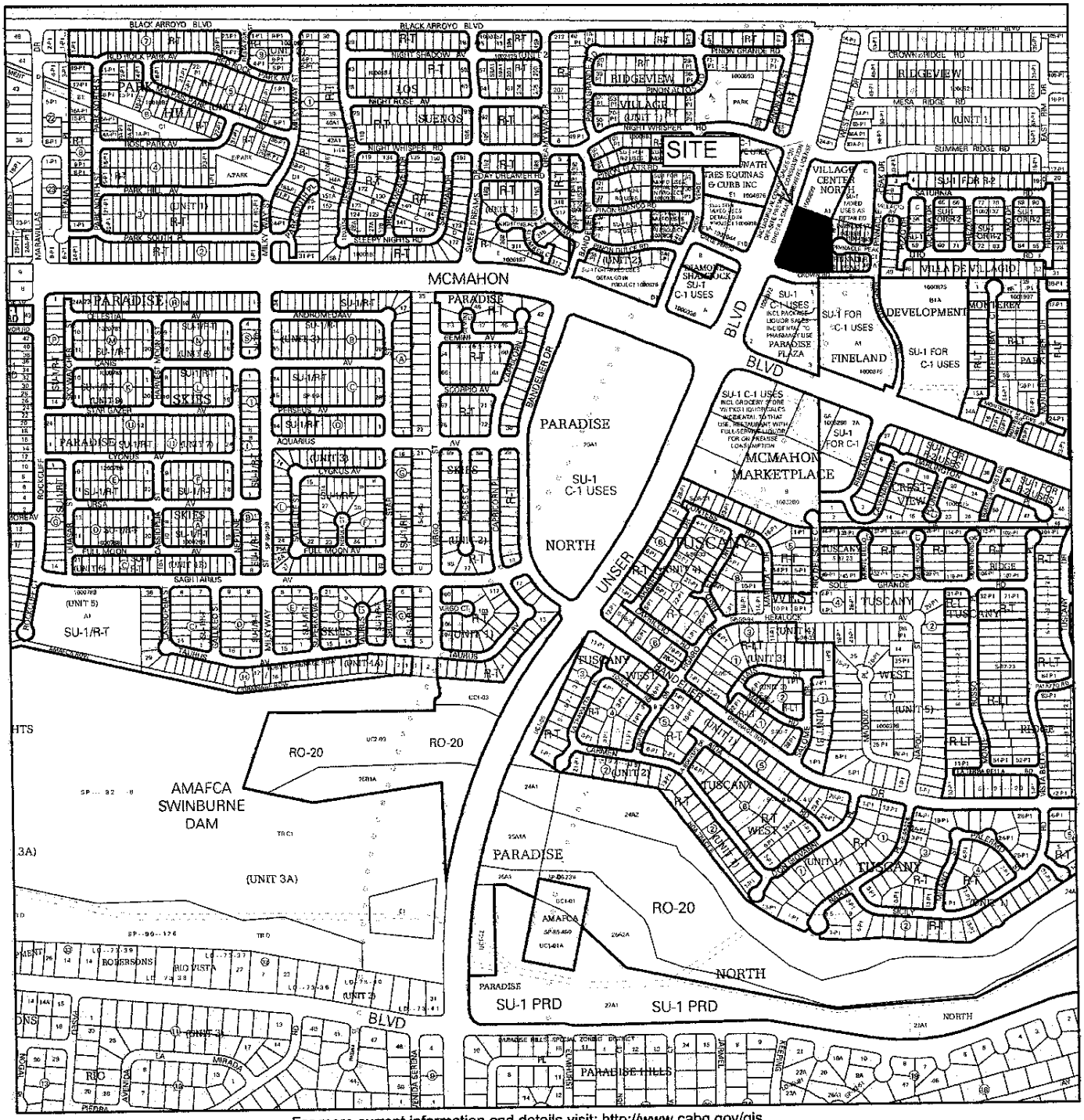
The purpose of this report is to provide the Drainage Management Plan for the development of the southern 1.004 acres of a 1.823 acre tract as a car wash building with associated parking lot. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's 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 1.004 acre portion of 1.823 acre parcel of land located on the north east corner of Crown Road and Unser. The legal description of this site is tract 4 Paradise Plaza Subdivision. As shown on FIRM map35001C0104H, the entire site is located within Flood Zone X. The site is bound on all sides by roadways and not impacted by upland flows. The site is an undeveloped parcel surrounded by developed sites. The site free discharges undeveloped 2.75 cfs to an existing rundown at the terminus of Pinnacle peak court. The site is located within basin I as shown in the area drainage plan (A11D009). The site is allowed to discharge 4.04 cfs per acre in developed condition. The proposed improvements include the construction of a car wash with parking on the southerly portion. The remaining northerly portion of the lot will not be developed at this time. This site must conform to the 4.04 cfs per acre assigned within the master drainage plan and discharge to the existing rundown at pinnacle peak court The site must manage the first flush volume onsite.

EXISTING CONDITIONS

The site is currently undeveloped. The development portion of the site currently discharges native flow of 2.73 cfs per acre to the 10' rundown. The flows are conveyed to the storm drain at Pinnacle peak drive and conveyed north to the Black Arroyo. Due to the site being surrounded by developed roads upstream, the site is not impacted by upland flows.



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

Albuquerque Geographic Information System

Map amended through: 1/28/2016

Note: Grey Shading Represents Area Outside of the City Limits

Zone Atlas Page:

A-11-Z

Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone

0 750 1,500 Feet

PROPOSED CONDITIONS

The proposed improvements consist of new building with exterior parking area within the southerly 1.004 acres of the lot. The northerly portion of the lot will not be developed at this time, but allowance for its future development is provided via the driveway opening at the east end of the site. The proposed site development will contain 5 basins. Basin A contains landscaped area between the curb and wall; this basin will discharge 0.19 cfs to the rundown by a swale adjacent to the existing privacy wall on lot 9 of the pinnacle peak townhomes. Basin B1+B2 contains area between the onsite water block and crown road, this basin free discharges 0.12 cfs to Crown road, the first flush within this basin is not captured, therefore a fee in lieu of $568 is required for the 71 CF not treated. Basin C contains the southern portion of the parking lot. This basin discharges 1.17 cfs to a new type C inlet that is connected to a first flush pond at the north east corner of the lot. Basin D contains the western portion of the lot, this basin generates 0.92 cfs, this basin passes through one first flush pond then drains to the first flush pond at the north east corner. Basin E contains the building and the northerly portion of the lot. This basin generates 1.45 cfs; this basin is captured by the first flush pond which spills and drains to the existing 10' concrete rundown. A portion of this basin does not enter the pond, which discharges 59 CF that is not treated, generating an additional $472.00 of fee in lieu. The combined flow from this development shall be 3.85 cfs, which is less than the 4.06 cfs allowed. The combined onsite retains 2699 cubic feet, which exceed the required 785 cubic feet.

SUMMARY AND RECOMMENDATIONS

This project is located within basin I of the area drainage plan (A11D009). The site has a total peak discharge to the city maintained facilities of 3.85 cfs. The peak discharge is less than the allowed discharge rate of 4.06 cfs (4.043 cfs per acre). The first flush volume of 785 cubic feet is retained onsite. The site has 130 CF that is not treated for first flush water quality, generating a fee in lieu of $1040.00. The plan allows for the future development of the northern

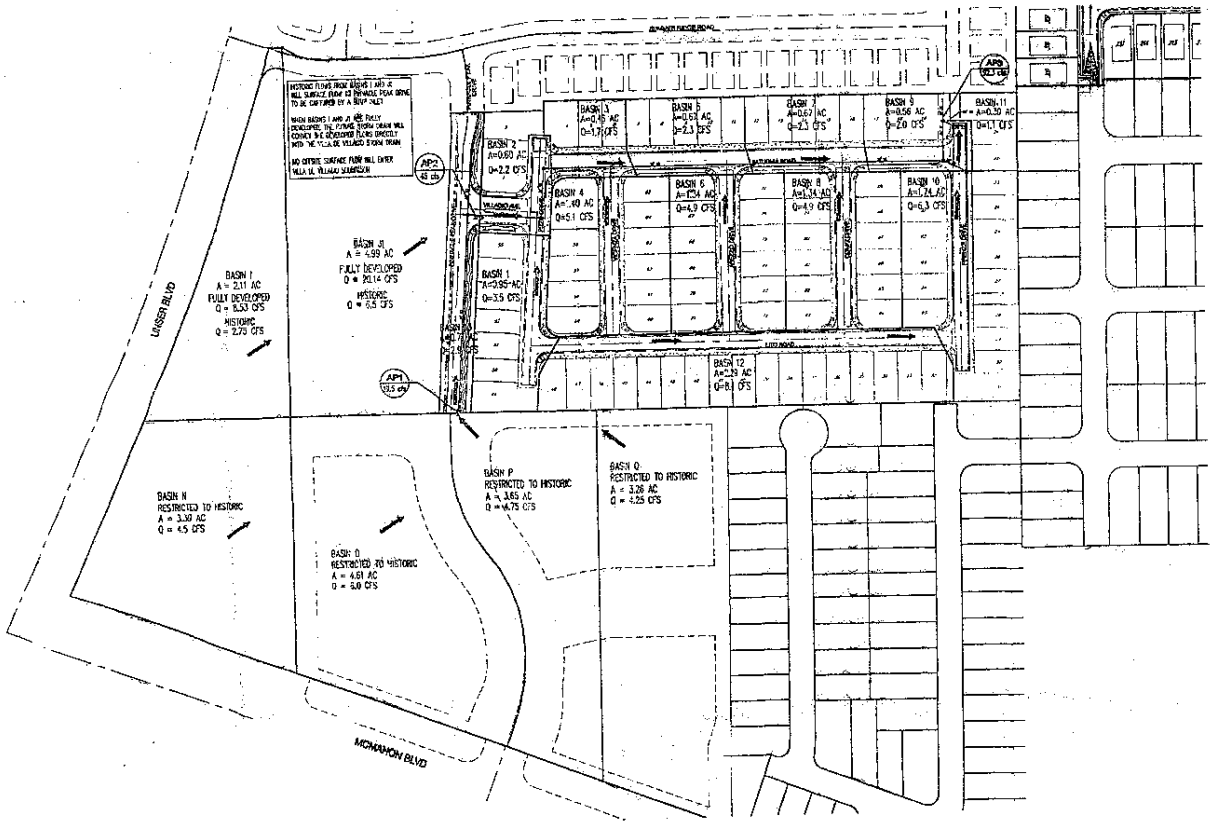
portion of the parcel to the existing rundown. The onsite storm drain was designed to convey the flow. The development of this site will not negatively impact the upstream nor down stream facilities. Since the work area does exceed 1 acre, erosion and sediment Control Plan shall be required prior to any construction activity.

APPENDIX A

SITE HYDROLOGY

A11D009

BASIN MAP
VILLA DE VILLAGIO SUBDIVISION
FEBRUARY 2003



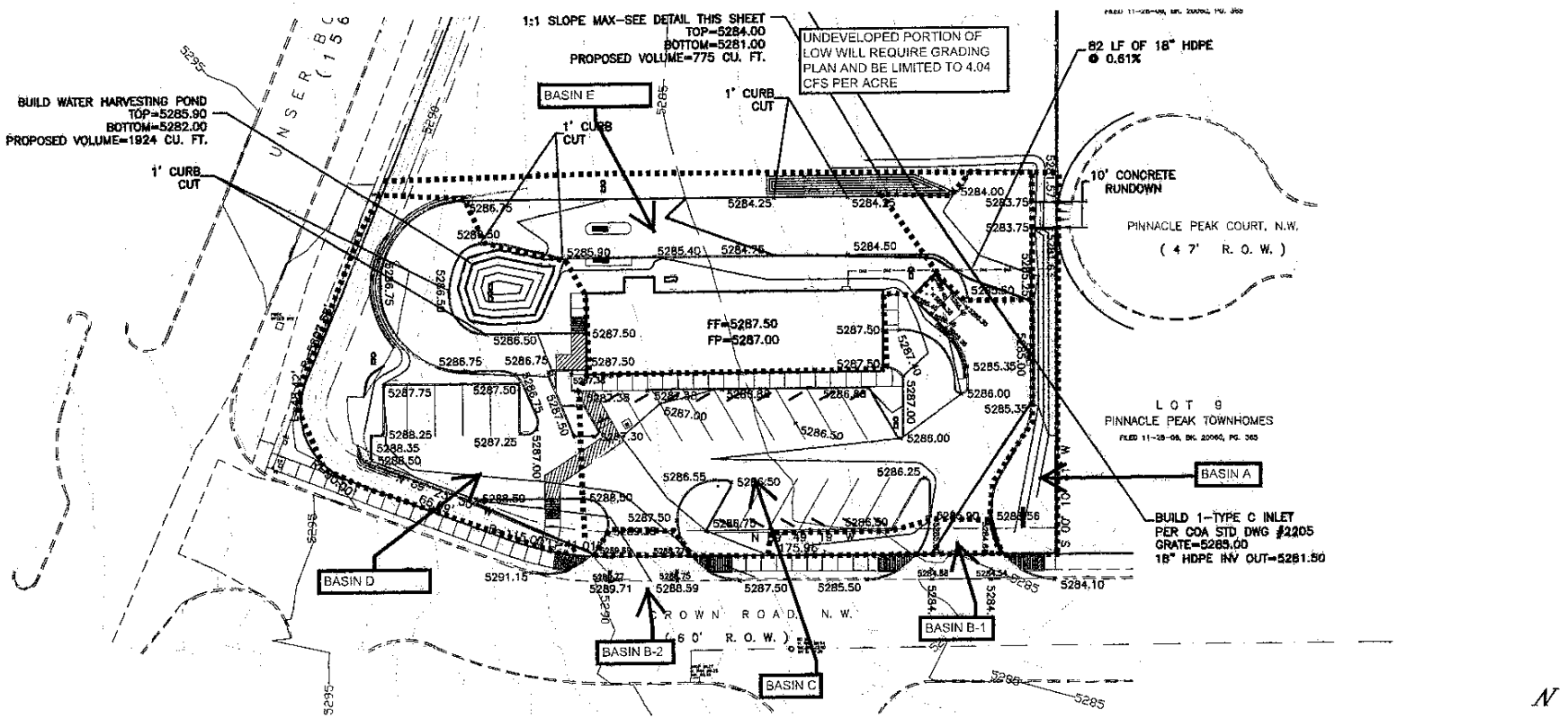
AP1
19.5 cfs

THIS SYMBOL REPRESENTS THE AMOUNT OF FLOW CONTAINED WITHIN THE STORM DRAIN AT EACH ANALYSIS POINT DURING THE 100-YEAR STORM

2/10/03

Bohannan Huston
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING • SPATIAL DATA • ADVANCED TECHNOLOGIES

P:\C20030\cdp\general\C20030_BASINMAP.dwg
Feb 7, 2003 8:54am


1:1 SLOPE MAX–SEE DETAIL THIS SHEET
TOP=5284.00
BOTTOM=5281.00
PROPOSED VOLUME=775 CU. FT.
UNDEVELOPED PORTION OF LOW WILL REQUIRE GRADING PLAN AND BE LIMITED TO 4.04 CFS PER ACRE
82 LF OF 18" HDPE @ 0.61%
BUILD WATER HARVESTING POND
TOP=5285.90
BOTTOM=5282.00
PROPOSED VOLUME=1924 CU. FT.
1' CURB CUT
BASIN E
10' CONCRETE RUNDOWN
PINNACLE PEAK COURT, N.W.
(4 7' R. O. W.)
FF=5287.50
FP=5287.00
L O T 9
PINNACLE PEAK TOWNHOMES
BASIN A
BUILD 1–TYPE C INLET
PER COA STD DWG #2205
GRATE=5285.00
18" HDPE INV OUT=5281.50
BASIN D
BASIN B-1
BASIN B-2
BASIN C
C R O W N R O A D N. W.
(6 0' R. O. W.)
N

Weighted E Method

Existing Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-hr. Weighted E (ac-ft)	100-Year, 6-hr. Volume (ac-ft)	100-Year, 6-hr. Flow cfs	10-day Volume (ac-ft)
BASIN A	1913	0.044	0%	0	0.0%	0.000	8.0%	0.00351	92%	0.040	1.892	0.007	0.19	0.012
BASIN B1+B2	1418	0.033	0%	0	0.0%	0.000	48.0%	0.01563	52%	0.017	1.500	0.004	0.12	0.006
BASIN C	12375	0.284	0%	0	0.0%	0.000	16.0%	0.04545	84%	0.239	1.813	0.043	1.17	0.075
BASIN D	11602	0.266	0%	0	18.0%	0.048	32.0%	0.08523	50%	0.133	1.422	0.032	0.92	0.049
BASIN E	16467	0.378	0%	0	10.0%	0.038	20.0%	0.07561	70%	0.265	1.644	0.052	1.45	0.087
TOTAL PROPOSED	43775	1.005			8.5%	0.086	22.4%	0.225	69%	0.694	1.639	0.137	3.85	
ALLOWED	43775.00	1.00											4.06	
EXISTING	43775.00												2.76	

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 1)

Ea= 0.44
Eb= 0.67
Ec= 0.99
Ed= 1.97

Qa= 1.29
Qb= 2.03
Qc= 2.87
Qd= 4.37

FIRST FLUSH 785 CF

DRIVEWAY NOT CAPTURED BASN A+B1+B2 71 CF X8=$568.00

PORTION OF BASIN E THAT IS NOT CAPTURED 59 X8=$472.00

TOTAL FEE IN LIEU =$1,040.00

ALLOWED DISCHARGE=4.04 CFS PER ACRE 4.06 CFS

APPENDIX B

HYDRAULIC CALCULATIONS

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
18HDPE	18	0.6	1.77	0.375	7.07	1.17	0.66

Manning's Equation:

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

A = Area
R = D/4
S = Slope
n = 0.015

DROP INLET CALCULATIONS

POND	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
	Single 'A'	5.92	2.34	0.0067	0.5

ORIFICE EQUATION

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

INLETS IN SUMP CONDITION. ONE INLET CAN HANDLE THE FLOW , DOUBLED TO ALLOW FOR CLOGGING.

rundown

Weir Equation:

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

Q= 7.36 total allowed
C = 2.95
H = 0.5 ft
L = Length of weir=10

Q=2.95x10x.5^(1.5)

Q allowable = 10.42 ft > Q required=7.36 therfore ok

EROSION CONTROL NOTES:

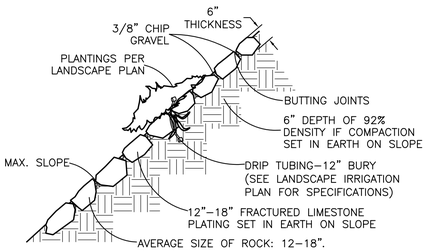
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

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

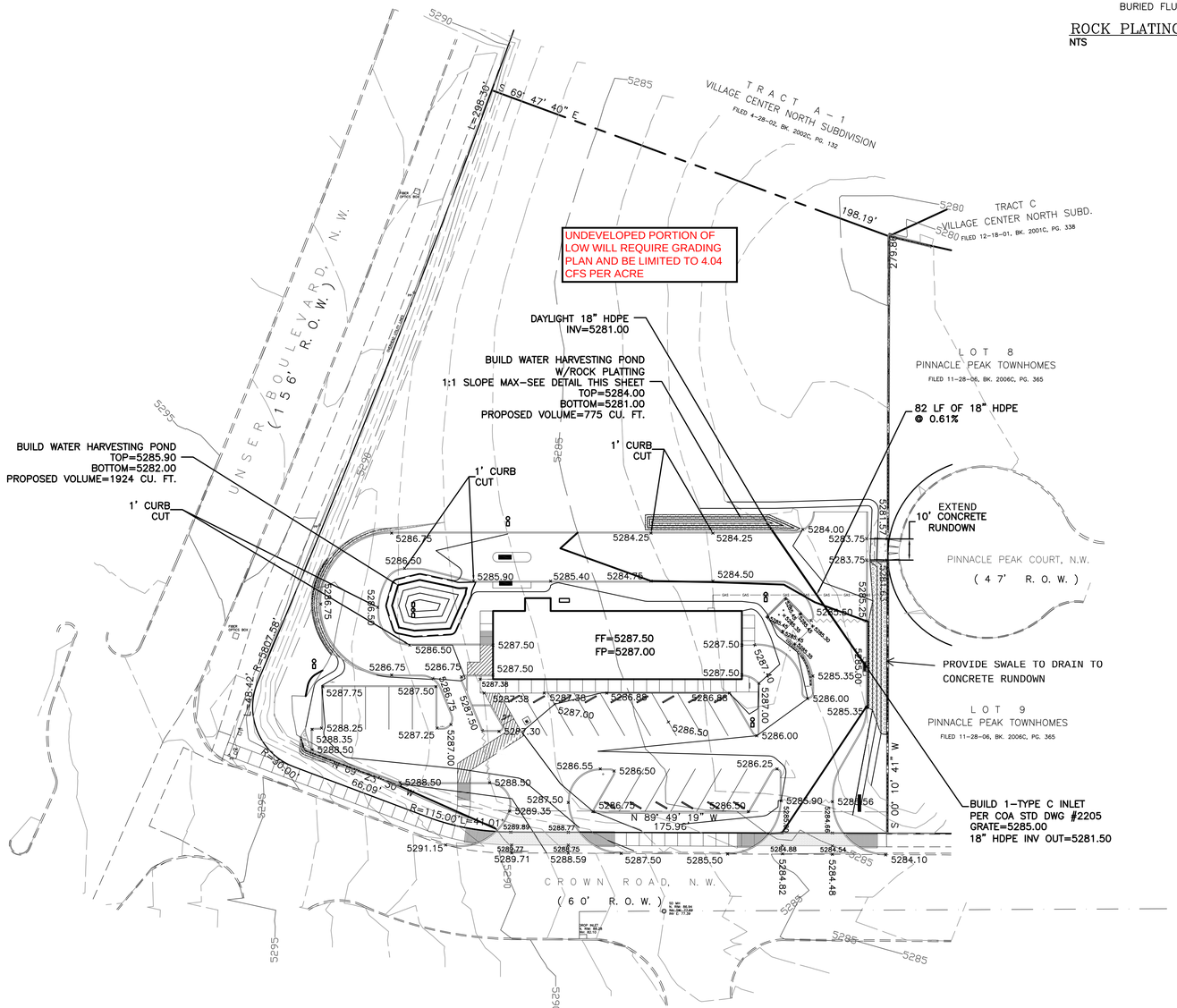
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

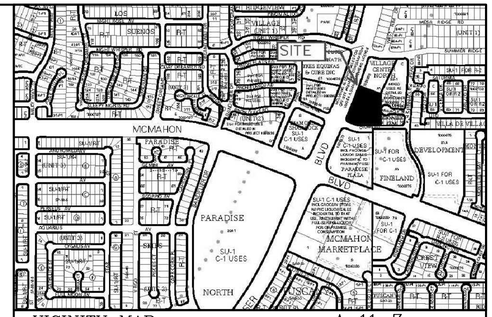
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

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

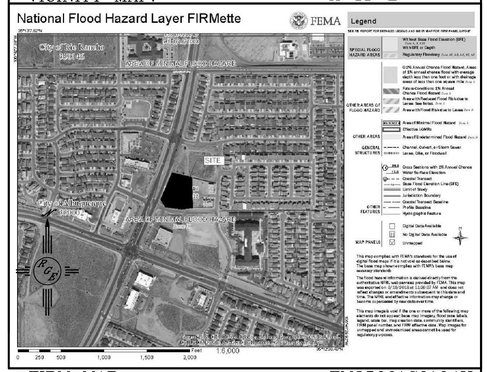


ROCK PLATING DETAIL
NTS





VICINITY MAP: A-11-Z



FIRM MAP: FM35001C0104H

LEGAL DESCRIPTION:
Tract 4 of the Plat of Tracts 1, 2, 3, & 4, PARADISE PLAZA

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 (5414)
- EXISTING INDEX CONTOUR (5415)
- PROPOSED CONTOUR (5414)
- PROPOSED INDEX CONTOUR (5415)
- SLOPE TIE
- EXISTING SPOT ELEVATION (× 4048.25)
- PROPOSED SPOT ELEVATION (× 4048.25)
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- PROPOSED CURB
- EXISTING CURB AND GUTTER
- PROPOSED SIDEWALK
- EXISTING SIDEWALK
- PROPOSED RETAINING WALL (SEE STRUCTURAL DRAWINGS)
- 6" CONCRETE OVER 4" AGGREGATE BASE COURSE, WITH 12" SUBGRADE PREP
- ADA PATH 2% MAX. CROSS SLOPE
- ROCK PLATTING-SEE DETAIL THIS SHEET

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.

N

GRAPHIC SCALE
30 15 0 15 30
SCALE: 1"=30'

ENGINEER'S SEAL
DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER
3/23/18
DAVID SOULE P.E. #14522

SUPERIOR CAR WASH
GRADING AND DRAINAGE PLAN

DRAWN BY WCWJ
DATE 3-22-18
21878-LAYOUT-3-22-18
SHEET #
JOB # 21878

Rio Grande Engineering
1606 CENTRAL AVENUE SE
SUITE 201
ALBUQUERQUE, NM 87106
(505) 872-0999