CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

August 17, 2018

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

RE: **McMahon Carwash**
McMahon and Fineland NW
Grading Plan Stamp Date: 8/17/18
Drainage Report Stamp Date: 8/17/18
Hydrology File: A11D016A

Dear Mr. Soule,

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based on the submittal received 8/13/18 and updated information provided on 8/17/18, the Grading Plan and Drainage Report are approved for Preliminary Plat and Building Permit.

On the Preliminary Plat:

1. Provide a private drainage easement for the storm drain; include beneficiary and maintenance responsibilities.

Prior to Certificate of Occupancy (For Information):

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

3. The Engineer's Certification for Kidz Academy (A11D016) must be accepted by the City. This project provides the downstream conveyance for the new carwash and must be complete prior to acceptance of the upstream development.

4. A Bernalillo County Recorded Private Facility Drainage Covenant is required for the stormwater quality pond. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee ($25, payable to Bernalillo County) 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. The routing and recording process for covenants can take a month or longer; Hydrology recommends beginning this process as soon as possible as to not delay approval for certificate of occupancy.

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 6/2018)

Project Title: MCMAHON CARWASH Building Permit #:_____ Hydrology File #: A11D016A

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

Legal Description: TRACT A-1-B FINELAND DEVELOPMENT

City Address: MCMAHON AND FINELAND

Applicant: COMMERCIAL CONSTRUCTION AND MAINTENANCE Contact: _____

Address: PO BOX 93924 ALB NM 87199

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

Other Contact: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924 ALB NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: david@riograndeengineering.com

TYPE OF DEVELOPMENT: ___ PLAT ___ RESIDENCE ___ DRB SITE X ADMIN SITE

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

___ TRAFFIC/ TRANSPORTATION

TYPE OF SUBMITTAL:

___ ENGINEER/ARCHITECT CERTIFICATION

___ PAD CERTIFICATION

___ CONCEPTUAL G & D PLAN

X GRADING PLAN

___ DRAINAGE REPORT

___ DRAINAGE MASTER PLAN

___ FLOODPLAIN DEVELOPMENT PERMIT APPLIC

___ ELEVATION CERTIFICATE

___ CLOMR/LOMR

___ TRAFFIC CIRCULATION LAYOUT (TCL)

___ TRAFFIC IMPACT STUDY (TIS)

___ STREET LIGHT LAYOUT

___ OTHER (SPECIFY) _____

___ PRE-DESIGN MEETING?

IS THIS A RESUBMITTAL?: X Yes ___ No

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X 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

___ FLOODPLAIN DEVELOPMENT PERMIT

___ OTHER (SPECIFY) _____

DATE SUBMITTED: _____ By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED:_____

FEE PAID:_____

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

July 18, 2018

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

RE: **McMahon Carwash**
McMahon and Fineland NW
Grading Plan Stamp Date: 6/20/18
Drainage Plan Stamp Date: 6/20/18
Hydrology File: A11D016A

Dear Mr. Soule,

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based on the submittal received 7/10/18, the Grading Plan and Drainage Report cannot be approved for until the following are corrected:

Prior to Building Permit:

1. The first flush retention areas need to be clarified. The 4 small ponds in West Basin do not adequately capture the required volume. The north pond is higher than the parking lot and nothing seems to drain to it. The center pond has the grate elevation set at the bottom of the pond, so no dead storage is provided. The area draining to the 2 south ponds needs to be quantified, and the ponds sized to retain this first flush volume. WE HAVE UPDATED POND TO CAPTURE FIRST FLUSH
2. Provide minor contour labels and define spot elevations (top of curb, flowline, etc…). The spot elevations don't appear to agree with the proposed contours and it is difficult to see where the emergency overflows will go if the orifice plate clogs. WE HAVE CORRECTED CONTOURS AND ADDED LABELS
3. The elevations used in the volume calculations and orifice plate sizing (appendix B) do not match those on the grading plan. Please correct and show the max water surface elevation on the grading plan. WE HAVE CORRECTED AND SHOWN MSWEL
4. A Bernalillo County Recorded Private Facility Drainage Covenant is required for the first flush pond. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee ($25, payable to Bernalillo County) 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.
5. This project requires an ESC Plan, submitted to the Stormwater Quality Engineer (Curtis Cherne PE, ccherne@cabq.gov or 924-3420). AN ESC HAS BEEN ORDERED

Prior to Certificate of Occupancy (For Information):

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

7. The Engineer's Certification for Kidz Academy (A11D016) must be accepted by the City. This project provides the downstream conveyance for the new carwash and must be complete prior to acceptance of the upstream development.

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

REVISED
DRAINAGE REPORT

For

Car wash
Parcel A1B Fineland Subdivision

Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

JULY 2018

8/17/18

David Soule P.E. No. 14522

TABLE OF CONTENTS

Appendix

Map

Site Grading and Drainage Plan

PURPOSE

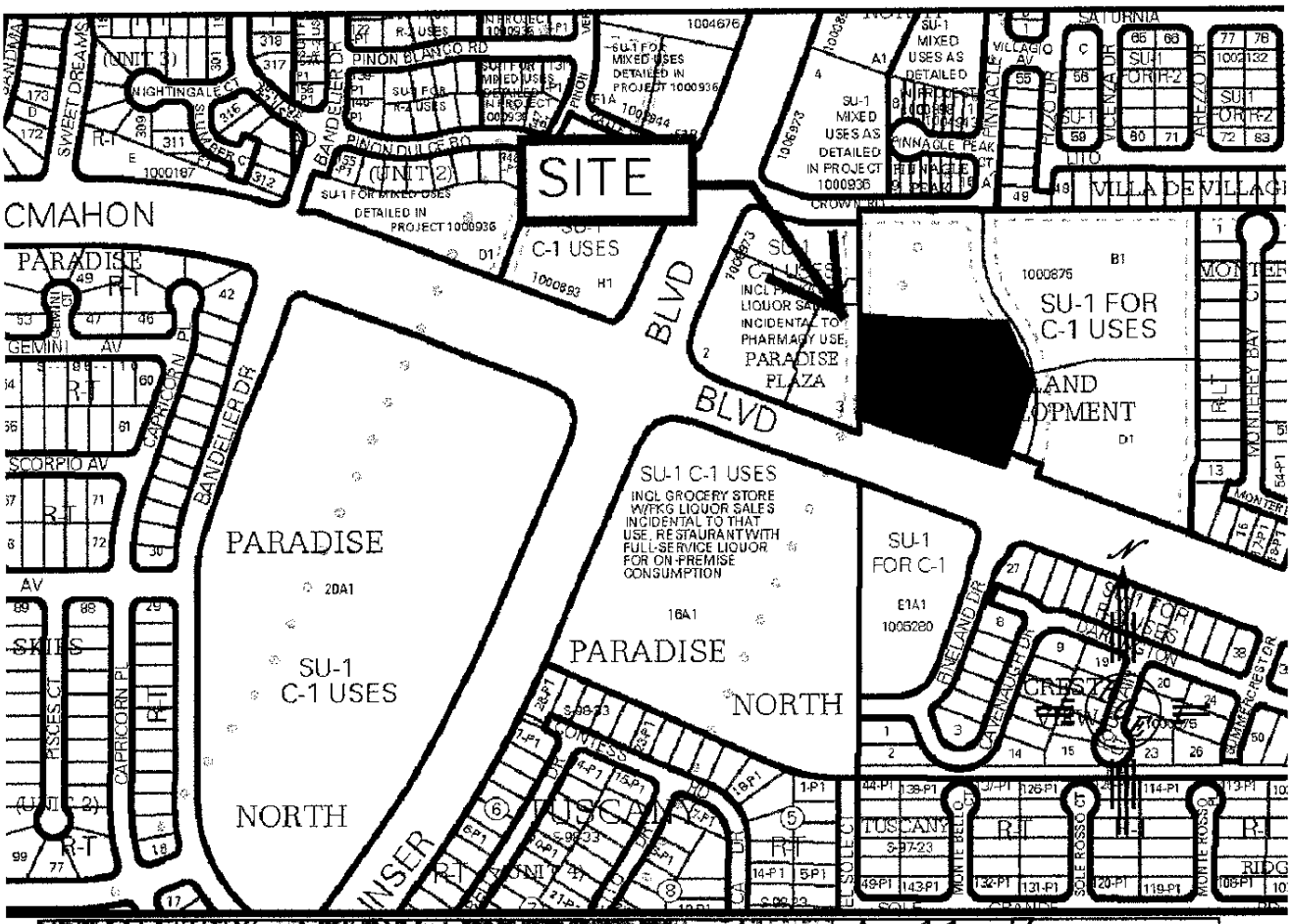
The purpose of this report is to provide the Drainage Management Plan for the subdivision of a 2.689 acre tract and the construction of a new carwash building with associated parking lot on the western 1.12 acres. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing 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 2.689 -acre parcel of land located on the west side of Fineland drive between McMahon and Crown road. The legal description of this site is A1B Fineland 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 site. The site currently retains all of its flow in a temporary retention pond constructed with the adjacent Kidz academy. The site is located within basin O as shown in the area drainage plan (A11D009). The proposed improvements include the construction of a car wash with parking on the westerly 1.12 acres of tract A1B. The remaining A1B will not be developed at this time. This site must conform to the 0.79 cfs per acre assigned within the A11D016 drainage plan and discharge to the existing storm drain system within Crown. The site must manage the first flush volume onsite.

EXISTING CONDITIONS

The site is currently a mass graded site. The site currently retains all developed flow in a temporary retention pond. The adjacent site Kids Academy (file A11D016) is currently being constructed. The outfall for this site is under construction. Due to being higher than the surrounding roadways, the site is not impacted by upland flows.



VICINITY MAP A-11-Z

MAP SCALE 1" = 500'

0 500 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0104H

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 104 OF 825

MAP NUMBER 35001C0104H

MAP REVISED AUGUST 16, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRMette. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FIRM MAP: FM35001C0104H

PROPOSED CONDITIONS

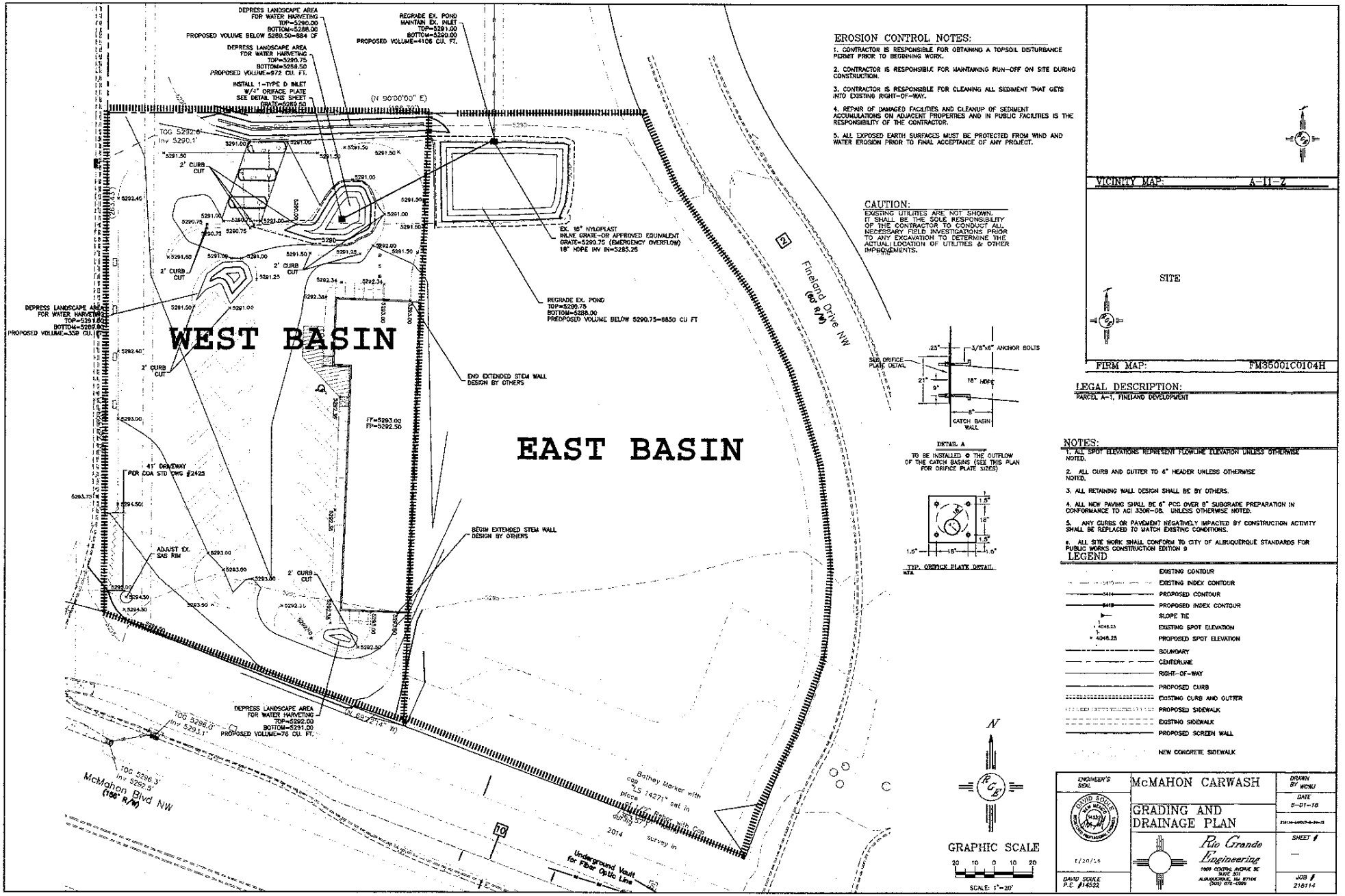
The proposed improvements consist of new building with exterior parking area within the westerly 1.12 acres of tract A1B. The easterly portion of tract A1B will not be developed at this time, but allowance for its future development is provided. The proposed site development will contain 1 basin. The entire site drains to a detention pond with an inlet. The inlet will outfall to the 18" storm drain stubbed into the overall tract. This basin free discharges 4.59 cfs to the pond. The outlet flow is metered by the introduction of an orifice plate with a 3.75" opening. The pond and adjacent parking lot functions as the detention basin. The water quality volume of 1153 cfs is retained onsite. As shown in appendix B, this pond was modeled using AHYMO and the resultant peak out fall will be 0.82 cfs with a maximum water surface elevation of 5290.93. In the event of clogging the site will discharge to the west onto tract A1A and flow out the driveway to Fineland as the emergency overflow. The inlet is connected to an 18" storm drain which will be connected to an existing manhole at Crown. The east Basin contains the undeveloped portion tract A1B. This basin generates 5,377 cubic feet during the 100 year, 10-day event. The undeveloped flow from this basin is captured in a temporary retention pond. The future development must limit its peak flow to 1.26 cfs. The proposed flow leaving this site is 0.82 CFS which is.73 cfs per acre, which matches the allowed rate of .79 cfs per acre.

SUMMARY AND RECOMMENDATIONS

This project is located within basin O of the area drainage plan (A11D009). The overall tract has an allowed total peak discharge to the city maintained facilities of 2.15 cfs (0.79 cfs per acre). The first flush volume of 1153 cubic feet is retained onsite. The proposed development retains 1214 cubic feet, and discharges .82 cfs. The plan allows for the future development of the parcel A1B. The onsite storm drain was designed to convey the flow. The ponds will overflow in an emergency or clogging situation via the parking lot discharging to Fineland. 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

APPENDIX A

SITE HYDROLOGY



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.

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.

DETAIL A

TO BE INSTALLED @ THE OUTFLOW OF THE CATCH BASINS (SEE THIS PLAN FOR ORIFICE PLATE SIZES)

TYP. ORIFICE PLATE DETAIL

VICINITY MAP: A-11-Z

SITE

FIRM MAP: FM35001C0104H

LEGAL DESCRIPTION:

PARCEL A-1, FINELAND DEVELOPMENT

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. ALL NEW PAVING SHALL BE 6" PCC OVER 8" SUBGRADE PREPARATION IN CONFORMANCE TO ACI 330R-08. UNLESS OTHERWISE NOTED.
5. ANY CURBS OR PAVEMENT NEGATIVELY IMPACTED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.
6. 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
- PROPOSED SIDEWALK
- EXISTING SIDEWALK
- PROPOSED SCREEN WALL
- NEW CONCRETE SIDEWALK

N

GRAPHIC SCALE

20 10 0 10 20

SCALE: 1"=20'

ENGINEER'S SEAL: DAVID SCALE NEW MEXICO 14522 PROFESSIONAL ENGINEER

6/20/16

DAVID SCALE P.E. #14522

McMAHON CARWASH

GRADING AND DRAINAGE PLAN

Rio Grande Engineering
1606 CENTRAL AVENUE SE SUITE 200 ALBUQUERQUE, NM 87106 (505) 872-0999

DRAWN BY: MCWJ

DATE: 6-01-16

SHEET #: —

JOB #: 21611-4

APPENDIX B

HYDRAULIC MODELING AND CALCULATIONS

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
18HDPE	18	0.8	1.77	0.375	8.16	0.88	0.50

Manning's Equation:

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

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

VOLUME CALCULATIONS

PARKING LOT POND

	ACTUAL ELEV.	DEPTH (FT)	AREA SF	VOLUME PER UNIT	VOLUME CUMULATIVE	VOLUME AC-FT	Q (CFS)
INVER OUT	86	0	0	0	0	0.000	
POND BOTTOM	87.25	0.00	184.00	41.4	40	0.001	0.00
GRATE	88.75	2.75	1184.00	855.00	895	0.021	0.61
POND TOP	90.50	4.50	2480.00	1374.00	2269	0.052	0.78
DETENTIION TOP	91.00	5.00	9210.00	2922.50	5191.5	0.119	0.83

90.45

Orifice Equation

Q = CA SQRT(2gH)

C =	0.6
Diameter (in)	3.75
Area (ft^2)=	0.076699039
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

```
*S      AHYMO -  DETENTION-mcmahon carwash
*S             POND ROUTING

START                TIME=0.0  PUNCH CODE=0


RAINFALL             TYPE=2
                     QUARTER=0.0    ONE= 1.87 IN
                     SIX=2.20 IN   DAY= 2.66 IN   DT = 0.05 HR



COMPUTE NM HYD       ID=1  HYD NO=101  DA= .0017375 SQ MI


                     PER A=0  PER B=0 PER C=16  PER D=84
                     TP=-.142  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         86.00

                        0.61             0.021         88.75
                        0.78             0.052         90.50
                        0.83             0.119         91.00




FINISH
```

```
      AHYMO PROGRAM (AHYMO-S4)                        - Version: S4.01a - Rel: 01a
           RUN DATE (MON/DAY/YR) = 07/31/2018
           START TIME (HR:MIN:SEC) = 10:43:31      USER NO.=
RioGrandeSingleA41963517
           INPUT FILE = ts and Settings\Owner\Desktop\2018 JOBS\18111-mcmahon
carwash\pondrout071018.txt


    *S     AHYMO -  DETENTION-mcmahon carwash
    *S            POND ROUTING

    START              TIME=0.0  PUNCH CODE=0


    RAINFALL           TYPE=2
                       QUARTER=0.0    ONE= 1.87 IN
                       SIX=2.20 IN   DAY= 2.66 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  0.0022  0.0045  0.0069  0.0096  0.0123  0.0154
                    0.0197  0.0264  0.0336  0.0412  0.0494  0.0578  0.0664
                    0.0753  0.0844  0.0946  0.1052  0.1168  0.1387  0.1657
                    0.2020  0.2430  0.2937  0.3614  0.4375  0.5689  0.7733
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                    1.8994  1.9306  1.9592  1.9828  1.9979  2.0087  2.0183
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                    2.0896  2.0923  2.0949  2.0974  2.0999  2.1023  2.1046
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2.4134	2.4147	2.4159	2.4172	2.4185	2.4198	2.4210
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2.4313	2.4325	2.4338	2.4351	2.4364	2.4377	2.4389
2.4402	2.4415	2.4428	2.4440	2.4453	2.4466	2.4479
2.4492	2.4504	2.4517	2.4530	2.4543	2.4555	2.4568
2.4581	2.4594	2.4607	2.4619	2.4632	2.4645	2.4658
2.4670	2.4683	2.4696	2.4709	2.4722	2.4734	2.4747
2.4760	2.4773	2.4785	2.4798	2.4811	2.4824	2.4837
2.4849	2.4862	2.4875	2.4888	2.4900	2.4913	2.4926
2.4939	2.4952	2.4964	2.4977	2.4990	2.5003	2.5015
2.5028	2.5041	2.5054	2.5067	2.5079	2.5092	2.5105
2.5118	2.5130	2.5143	2.5156	2.5169	2.5182	2.5194
2.5207	2.5220	2.5233	2.5245	2.5258	2.5271	2.5284
2.5297	2.5309	2.5322	2.5335	2.5348	2.5360	2.5373
2.5386	2.5399	2.5412	2.5424	2.5437	2.5450	2.5463
2.5475	2.5488	2.5501	2.5514	2.5527	2.5539	2.5552
2.5565	2.5578	2.5590	2.5603	2.5616	2.5629	2.5642
2.5654	2.5667	2.5680	2.5693	2.5705	2.5718	2.5731
2.5744	2.5757	2.5769	2.5782	2.5795	2.5808	2.5820
2.5833	2.5846	2.5859	2.5872	2.5884	2.5897	2.5910
2.5923	2.5935	2.5948	2.5961	2.5974	2.5987	2.5999
2.6012	2.6025	2.6038	2.6050	2.6063	2.6076	2.6089
2.6102	2.6114	2.6127	2.6140	2.6153	2.6165	2.6178
2.6191	2.6204	2.6217	2.6229	2.6242	2.6255	2.6268
2.6280	2.6293	2.6306	2.6319	2.6332	2.6344	2.6357
2.6370	2.6383	2.6395	2.6408	2.6421	2.6434	2.6447
2.6459	2.6472	2.6485	2.6498	2.6510	2.6523	2.6536
2.6549	2.6562	2.6574	2.6587	2.6600		

```
 COMPUTE NM HYD       ID=1  HYD NO=101  DA= .0017375 SQ MI
                      PER A=0  PER B=0 PER C=16  PER D=84
                      TP=-.142  MASSRAIN=-1


        K =  0.077390HR    TP =  0.142000HR    K/TP RATIO =  0.545000     SHAPE
CONSTANT, N =  7.106428
        UNIT PEAK =   5.4091    CFS   UNIT VOLUME =   0.9972       B =   526.28
 P60 = 1.8700
        AREA =     0.001460 SQ MI    IA =   0.10000 INCHES    INF =   0.04000
INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
0.050000


        K =  0.112776HR    TP =  0.142000HR    K/TP RATIO =  0.794199     SHAPE
CONSTANT, N =  4.514592
        UNIT PEAK =  0.75987    CFS   UNIT VOLUME =   0.9857       B =   388.14
 P60 = 1.8700
        AREA =     0.000278 SQ MI    IA =   0.35000 INCHES    INF =   0.83000
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      FLOW            TIME      FLOW            TIME      FLOW
```

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	4.950	0.0	9.900	0.0
14.850	0.0	19.800	0.0		
0.150	0.0	5.100	0.0	10.050	0.0
15.000	0.0	19.950	0.0		
0.300	0.0	5.250	0.0	10.200	0.0
15.150	0.0	20.100	0.0		
0.450	0.0	5.400	0.0	10.350	0.0
15.300	0.0	20.250	0.0		
0.600	0.0	5.550	0.0	10.500	0.0
15.450	0.0	20.400	0.0		
0.750	0.0	5.700	0.0	10.650	0.0
15.600	0.0	20.550	0.0		
0.900	0.0	5.850	0.0	10.800	0.0
15.750	0.0	20.700	0.0		
1.050	0.3	6.000	0.0	10.950	0.0
15.900	0.0	20.850	0.0		
1.200	0.6	6.150	0.0	11.100	0.0
16.050	0.0	21.000	0.0		
1.350	1.5	6.300	0.0	11.250	0.0
16.200	0.0	21.150	0.0		
1.500	4.6	6.450	0.0	11.400	0.0
16.350	0.0	21.300	0.0		
1.650	3.0	6.600	0.0	11.550	0.0
16.500	0.0	21.450	0.0		
1.800	1.5	6.750	0.0	11.700	0.0
16.650	0.0	21.600	0.0		
1.950	0.8	6.900	0.0	11.850	0.0
16.800	0.0	21.750	0.0		
2.100	0.4	7.050	0.0	12.000	0.0
16.950	0.0	21.900	0.0		
2.250	0.3	7.200	0.0	12.150	0.0
17.100	0.0	22.050	0.0		
2.400	0.2	7.350	0.0	12.300	0.0
17.250	0.0	22.200	0.0		
2.550	0.1	7.500	0.0	12.450	0.0
17.400	0.0	22.350	0.0		
2.700	0.0	7.650	0.0	12.600	0.0
17.550	0.0	22.500	0.0		
2.850	0.0	7.800	0.0	12.750	0.0
17.700	0.0	22.650	0.0		
3.000	0.0	7.950	0.0	12.900	0.0
17.850	0.0	22.800	0.0		
3.150	0.0	8.100	0.0	13.050	0.0
18.000	0.0	22.950	0.0		
3.300	0.0	8.250	0.0	13.200	0.0
18.150	0.0	23.100	0.0		
3.450	0.0	8.400	0.0	13.350	0.0
18.300	0.0	23.250	0.0		
3.600	0.0	8.550	0.0	13.500	0.0
18.450	0.0	23.400	0.0		
3.750	0.0	8.700	0.0	13.650	0.0
18.600	0.0	23.550	0.0		
3.900	0.0	8.850	0.0	13.800	0.0
18.750	0.0	23.700	0.0		
4.050	0.0	9.000	0.0	13.950	0.0
18.900	0.0	23.850	0.0		
4.200	0.0	9.150	0.0	14.100	0.0
19.050	0.0	24.000	0.0		
4.350	0.0	9.300	0.0	14.250	0.0
19.200	0.0	24.150	0.0		

	4.500	0.0	9.450	0.0	14.400	0.0	
19.350	0.0	24.300	0.0				
	4.650	0.0	9.600	0.0	14.550	0.0	
19.500	0.0	24.450	0.0				
	4.800	0.0	9.750	0.0	14.700	0.0	
19.650	0.0						

RUNOFF VOLUME = 2.20290 INCHES = 0.2041 ACRE-FEET
PEAK DISCHARGE RATE = 4.59 CFS AT 1.500 HOURS BASIN AREA = 0.0017 SQ. MI.

```
* 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          86.00
                                 0.78              0.052          90.50

                       0.83             0.119          91.00
```

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	86.00	0.001	0.00
0.15	0.00	86.00	0.001	0.00
0.30	0.00	86.00	0.001	0.00
0.45	0.00	86.00	0.001	0.00
0.60	0.00	86.00	0.001	0.00
0.75	0.00	86.00	0.001	0.00
0.90	0.02	86.00	0.001	0.00
1.05	0.26	86.13	0.002	0.02
1.20	0.63	86.55	0.007	0.10
1.35	1.52	87.45	0.017	0.25
1.50	4.59	90.29	0.050	0.74
1.65	2.97	90.78	0.090	0.81
1.80	1.46	90.90	0.106	0.82
1.95	0.84	90.93	0.110	0.82
2.10	0.44	90.91	0.107	0.82
2.25	0.26	90.87	0.101	0.82
2.40	0.17	90.81	0.094	0.81
2.55	0.08	90.75	0.085	0.80
2.70	0.04	90.68	0.076	0.80
2.85	0.02	90.61	0.067	0.79
3.00	0.02	90.54	0.057	0.78
3.15	0.01	90.14	0.048	0.72
3.30	0.01	89.43	0.040	0.59
3.45	0.01	88.85	0.033	0.49
3.60	0.01	88.36	0.028	0.41
3.75	0.01	87.96	0.023	0.34

3.90	0.01	87.63	0.020	0.28
4.05	0.01	87.36	0.016	0.24
4.20	0.01	87.13	0.014	0.20
4.35	0.01	86.95	0.012	0.16
4.50	0.01	86.80	0.010	0.14
4.65	0.01	86.67	0.009	0.12
4.80	0.01	86.57	0.007	0.10
4.95	0.01	86.48	0.006	0.08
5.10	0.01	86.41	0.006	0.07
5.25	0.02	86.36	0.005	0.06
5.40	0.02	86.31	0.005	0.05
5.55	0.02	86.28	0.004	0.05
5.70	0.02	86.25	0.004	0.04
5.85	0.02	86.23	0.004	0.04
6.00	0.02	86.21	0.003	0.04
6.15	0.02	86.20	0.003	0.03
6.30	0.02	86.18	0.003	0.03
6.45	0.02	86.18	0.003	0.03
6.60	0.02	86.17	0.003	0.03
6.75	0.02	86.16	0.003	0.03
6.90	0.02	86.16	0.003	0.03
7.05	0.02	86.16	0.003	0.03
7.20	0.02	86.15	0.003	0.03
7.35	0.02	86.15	0.003	0.03
7.50	0.02	86.15	0.003	0.03
7.65	0.02	86.15	0.003	0.03
7.80	0.02	86.15	0.003	0.03
7.95	0.02	86.14	0.003	0.03
8.10	0.02	86.14	0.003	0.02
8.25	0.02	86.14	0.003	0.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
8.40	0.02	86.14	0.003	0.02
8.55	0.02	86.14	0.003	0.02
8.70	0.02	86.14	0.003	0.02
8.85	0.02	86.14	0.003	0.02
9.00	0.02	86.14	0.003	0.02
9.15	0.02	86.14	0.003	0.02
9.30	0.02	86.14	0.003	0.02
9.45	0.02	86.14	0.003	0.02
9.60	0.02	86.14	0.003	0.02
9.75	0.02	86.14	0.003	0.02
9.90	0.02	86.14	0.003	0.02
10.05	0.02	86.14	0.003	0.02
10.20	0.02	86.14	0.003	0.02
10.35	0.02	86.14	0.003	0.02
10.50	0.02	86.14	0.003	0.02
10.65	0.02	86.14	0.003	0.02
10.80	0.02	86.14	0.003	0.02
10.95	0.02	86.14	0.003	0.02
11.10	0.02	86.14	0.003	0.02
11.25	0.02	86.14	0.003	0.02
11.40	0.02	86.14	0.003	0.02
11.55	0.02	86.14	0.003	0.02
11.70	0.02	86.14	0.003	0.02
11.85	0.02	86.14	0.003	0.02
12.00	0.02	86.14	0.003	0.02
12.15	0.02	86.14	0.003	0.02
12.30	0.02	86.14	0.003	0.02
12.45	0.02	86.14	0.003	0.02
12.60	0.02	86.14	0.003	0.02

12.75	0.02	86.14	0.003	0.02
12.90	0.02	86.14	0.003	0.02
13.05	0.02	86.14	0.003	0.02
13.20	0.02	86.14	0.003	0.02
13.35	0.02	86.14	0.003	0.02
13.50	0.02	86.14	0.003	0.02
13.65	0.02	86.14	0.003	0.02
13.80	0.02	86.14	0.003	0.02
13.95	0.02	86.14	0.003	0.02
14.10	0.02	86.14	0.003	0.02
14.25	0.02	86.14	0.003	0.02
14.40	0.02	86.14	0.003	0.02
14.55	0.02	86.14	0.003	0.02
14.70	0.02	86.14	0.003	0.02
14.85	0.02	86.14	0.003	0.02
15.00	0.02	86.14	0.003	0.02
15.15	0.02	86.14	0.003	0.02
15.30	0.02	86.14	0.003	0.02
15.45	0.02	86.14	0.003	0.02
15.60	0.02	86.14	0.003	0.02
15.75	0.02	86.14	0.003	0.02
15.90	0.02	86.14	0.003	0.02
16.05	0.02	86.14	0.003	0.02
16.20	0.02	86.14	0.003	0.02
16.35	0.02	86.14	0.003	0.02
16.50	0.02	86.14	0.003	0.02
16.65	0.02	86.14	0.003	0.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
16.80	0.02	86.14	0.003	0.02
16.95	0.02	86.14	0.003	0.02
17.10	0.02	86.14	0.003	0.02
17.25	0.02	86.14	0.003	0.02
17.40	0.02	86.14	0.003	0.02
17.55	0.02	86.14	0.003	0.02
17.70	0.02	86.14	0.003	0.02
17.85	0.02	86.14	0.003	0.02
18.00	0.02	86.14	0.003	0.02
18.15	0.02	86.14	0.003	0.02
18.30	0.02	86.14	0.003	0.02
18.45	0.02	86.14	0.003	0.02
18.60	0.02	86.14	0.003	0.02
18.75	0.02	86.14	0.003	0.02
18.90	0.02	86.14	0.003	0.02
19.05	0.02	86.14	0.003	0.02
19.20	0.02	86.14	0.003	0.02
19.35	0.02	86.14	0.003	0.02
19.50	0.02	86.14	0.003	0.02
19.65	0.02	86.14	0.003	0.02
19.80	0.02	86.14	0.003	0.02
19.95	0.02	86.14	0.003	0.02
20.10	0.02	86.14	0.003	0.02
20.25	0.02	86.14	0.003	0.02
20.40	0.02	86.14	0.003	0.02
20.55	0.02	86.14	0.003	0.02
20.70	0.02	86.14	0.003	0.02
20.85	0.02	86.14	0.003	0.02
21.00	0.02	86.14	0.003	0.02
21.15	0.02	86.14	0.003	0.02
21.30	0.02	86.14	0.003	0.02
21.45	0.02	86.14	0.003	0.02

21.60	0.02	86.14	0.003	0.02
21.75	0.02	86.14	0.003	0.02
21.90	0.02	86.14	0.003	0.02
22.05	0.02	86.14	0.003	0.02
22.20	0.02	86.14	0.003	0.02
22.35	0.02	86.14	0.003	0.02
22.50	0.02	86.14	0.003	0.02
22.65	0.02	86.14	0.003	0.02
22.80	0.02	86.14	0.003	0.02
22.95	0.02	86.14	0.003	0.02
23.10	0.02	86.14	0.003	0.02
23.25	0.02	86.14	0.003	0.02
23.40	0.02	86.14	0.003	0.02
23.55	0.02	86.14	0.003	0.02
23.70	0.02	86.14	0.003	0.02
23.85	0.02	86.14	0.003	0.02
24.00	0.02	86.14	0.003	0.02
24.15	0.01	86.13	0.003	0.02
24.30	0.00	86.12	0.002	0.02
24.45	0.00	86.10	0.002	0.02
24.60	0.00	86.08	0.002	0.01
24.75	0.00	86.07	0.002	0.01
24.90	0.00	86.06	0.002	0.01
25.05	0.00	86.05	0.002	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
25.20	0.00	86.04	0.001	0.01
25.35	0.00	86.03	0.001	0.01
25.50	0.00	86.03	0.001	0.00

PEAK DISCHARGE = 0.823 CFS - PEAK OCCURS AT HOUR 1.95
MAXIMUM WATER SURFACE ELEVATION = 90.930
MAXIMUM STORAGE = 0.1096 AC-FT INCREMENTAL TIME= 0.050000HRS

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 10:43:31

DEPRESS LANDSCAPE AREA
FOR WATER HARVETING
TOP=5290.00
BOTTOM=5288.00
PROPOSED VOLUME BELOW 5289.50=884 CF

DEPRESS LANDSCAPE AREA
FOR WATER HARVETING
TOP=5290.75
BOTTOM=5286.00
PROPOSED VOLUME@5289.75=855 CF
PROPOSED VOLUME@5290.50=1374 CF

INSTALL 1-TYPE D INLET
W/3.75"ORIFACE PLATE
SEE DETAIL THIS SHEET
GRATE=5289.75
18" HDPE INV OUT=5286.00

MAINTAIN EX. INLET

EMERGENCY OVER FLOW TO ADJACENT
PROPERTY AND TO FINELAND VIA
DRIVEWAY

TOG=5292.6'
Inv 5290.1'

(N 90°00'00" E)
(106.30')

(263.43')

2' CURB CUT

FF=5191.50

DEPRESS LANDSCAPE AREA
FOR WATER HARVETING
TOP=5291.00
BOTTOM=5289.00
PROPOSED VOLUME=359 CU. FT.

EX. 18" NYLOPLAST
INLNE GRATE-OR APPROVED EQUIVALENT
GRATE=5290.75 (EMERGENCY OVERFLOW)
18" HDPE INV IN=5285.25

MAX WSEL=5290.93

REGRADE EX. POND
TOP=5290.75
BOTTOM=5288.00
PREOPOSED VOLUME BELOW 5290.75=6850 CU FT

END EXTENDED STEM WALL
DESIGN BY OTHERS

FF=5293.00
FP=5292.50

41' DRIVEWAY
PER COA STD DWG #2425

ADJUST EX.
SAS RIM

BEGIN EXTENDED STEM WALL
DESIGN BY OTHERS

FLOW LINE

TEMPORARY ASPHALT
NO CURB AND GUTTER

DEPRESS LANDSCAPE AREA
FOR WATER HARVETING
TOP=5292.00
BOTTOM=5291.00
PROPOSED VOLUME=76 CU. FT.

(N 69°22'14" W)

(363.57')

TOG 5296.0'
Inv 5293.1'

TOG 5296.3'
Inv 5292.5'

McMahon Blvd NW
(156' R/W)

Fineland Drive NW
(60' R/W)

INSTALL 3" X 30" SPEED HUMP UTILIZE
TO ELIMINATE CROSS LOT DRAINGE

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.

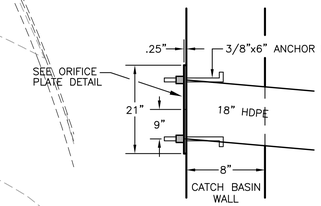
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

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.

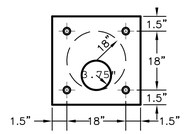
CAUTION:

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.

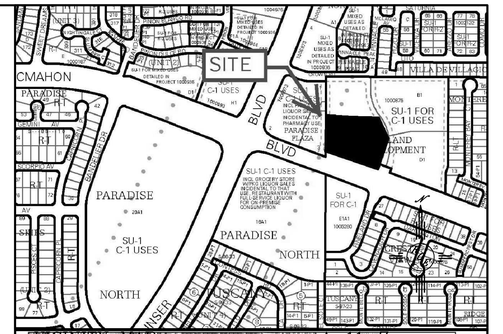


DETAIL A

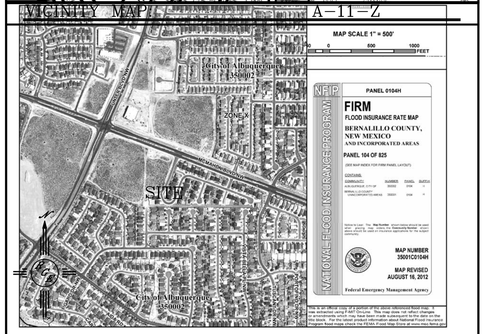
TO BE INSTALLED @ THE OUTFLOW OF THE CATCH BASINS (SEE THIS PLAN FOR ORIFICE PLATE SIZES)



TYP. ORIFICE PLATE DETAIL
N.T.S.



VICINITY MAP: A-11-Z



FIRM MAP: FM35001C0104H

LEGAL DESCRIPTION:

PARCEL A-1, FINELAND DEVELOPMENT

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. ALL NEW PAVING SHALL BE 6" PCC OVER 8" SUBGRADE PREPARATION IN CONFORMANCE TO ACI 330R-08. UNLESS OTHERWISE NOTED.

5. ANY CURBS OR PAVEMENT NEGATIVELY IMPACTED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.

6. 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 SCREEN WALL
- NEW CONCRETE SIDEWALK

N

GRAPHIC SCALE
20 10 0 10 20
SCALE: 1"=20'

ENGINEER'S SEAL DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER 8/17/18 DAVID SOULE P.E. #14522	McMAHON CARWASH GRADING AND DRAINAGE PLAN Rio Grande Engineering 1606 CENTRAL AVENUE SE SUITE 201 ALBUQUERQUE, NM 87106 (505) 872-0999	DRAWN BY WCWJ DATE 7-24-18 218114-LAYOUT-5-24-18 SHEET # — JOB # 218114