CITY OF ALBUQUERQUE

January 31, 2018

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

RE: **Kidz Academy**
McMahon and Fineland NW
Grading Plan and Drainage Report
Engineer's Stamp Date 1/18/18 (File: A11D016)

Dear Mr. Soule:

Based on the information provided in your submittal received 1/18/18, the Grading Plan and Drainage Report cannot be approved until the following are corrected:

Prior to Site Plan for Building Permit:

1. The current approved grading plan (Goodwin-2018) and the new plat allow blanket cross lot drainage to a new pond (not constructed) with zero discharge from this larger site. This plan will need to restrict upstream discharge from Lot A1B with a new pond on lot A1B restricting discharge to at least 1.3cfs/ac. A Drainage Covenant (no public easement) will be required for this pond and be granted by the owner of Lot A1B.

2. On the Infrastructure List include Pond with Drainage Covenant (no public easement) on Lot A1B and include the required volume and allowable discharge rate.

3. Ponding on Lot A1A of similar nature is required (restrict to 1.3 cfs/ac); on the Infrastructure List include Pond(s) with Drainage Covenant (no public easement) on Lot A1A and include the required volume and allowable discharge rate.

4. The approved Drainage Master Plan that allows 1.3 cfs/acre also includes the half streets of Crown Road and Fineland Road. Please add the free discharge associated with these areas to your runoff analysis.

5. Provide RCP CL III pipe in the Crown Road ROW. There should also be an existing 18" RCP pipe with drop inlet coming from this manhole and onto the property; why not make use of that? This drainage connection will also need to be listed on the Infrastructure List.

6. Show the new lot lines on the grading plan, including the ROW takes for Crown and Fineland.

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Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

7. Please specify a square opening on the orifice plate.

8. Please label this Grading Plan as "conceptual, not for construction" or similar.

9. How is the roof drainage routing through a first flush/detention pond? The drains appear to be plumbed directly to the private storm drain. More detail is need on the ponds and storm drains to demonstrate that they will intercept flows and adequately restrict discharge from the site.

10. Quantify the volume of first flush bypass and state on plans. It appears there may be some bypass from the drive entrance, but it is unclear with the new ROW line.

11. This site has been graded several times and no land treatment A remains, Please update the proposed Hydrology to reflect.

12. There are two Basin C's on the subbasin map and no Basin A; Please correct.

Prior to Building Permit:

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

14. Additional comments may be provided at Building Permit, based on the outcome of the above remarks and level of detail shown on plans.

Prior to Certificate of Occupancy:

15. The new ponds will need to be certified (along with the rest of the site). Once certified, the City can release the previous covenant on the temporary retention pond (not constructed).

16. City acceptance and close-out of the public Work Order will be required, unless financial guarantee has been posted.

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: KIDZ ACADEMY Building Permit #: _____ City Drainage #: _____

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

Legal Description: LOTS A1A AND A1B FINELAND SUBDVISION

City Address: NORTHWEST CORNER OF MCHANON AND FINELAND

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: KEITH CHAVEZ 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: 1/18/18 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

DRAINAGE REPORT

For

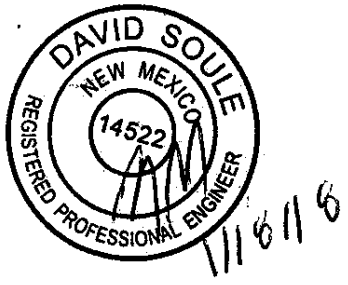
KIDZ ACADEMY
Parcel A1A and A1B Fineland Subdivision

Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

JANUARY 2018



1/16/18

David Soule P.E. No. 14522

TABLE OF CONTENTS

Appendix

Map

Site Grading and Drainage Plan

PURPOSE

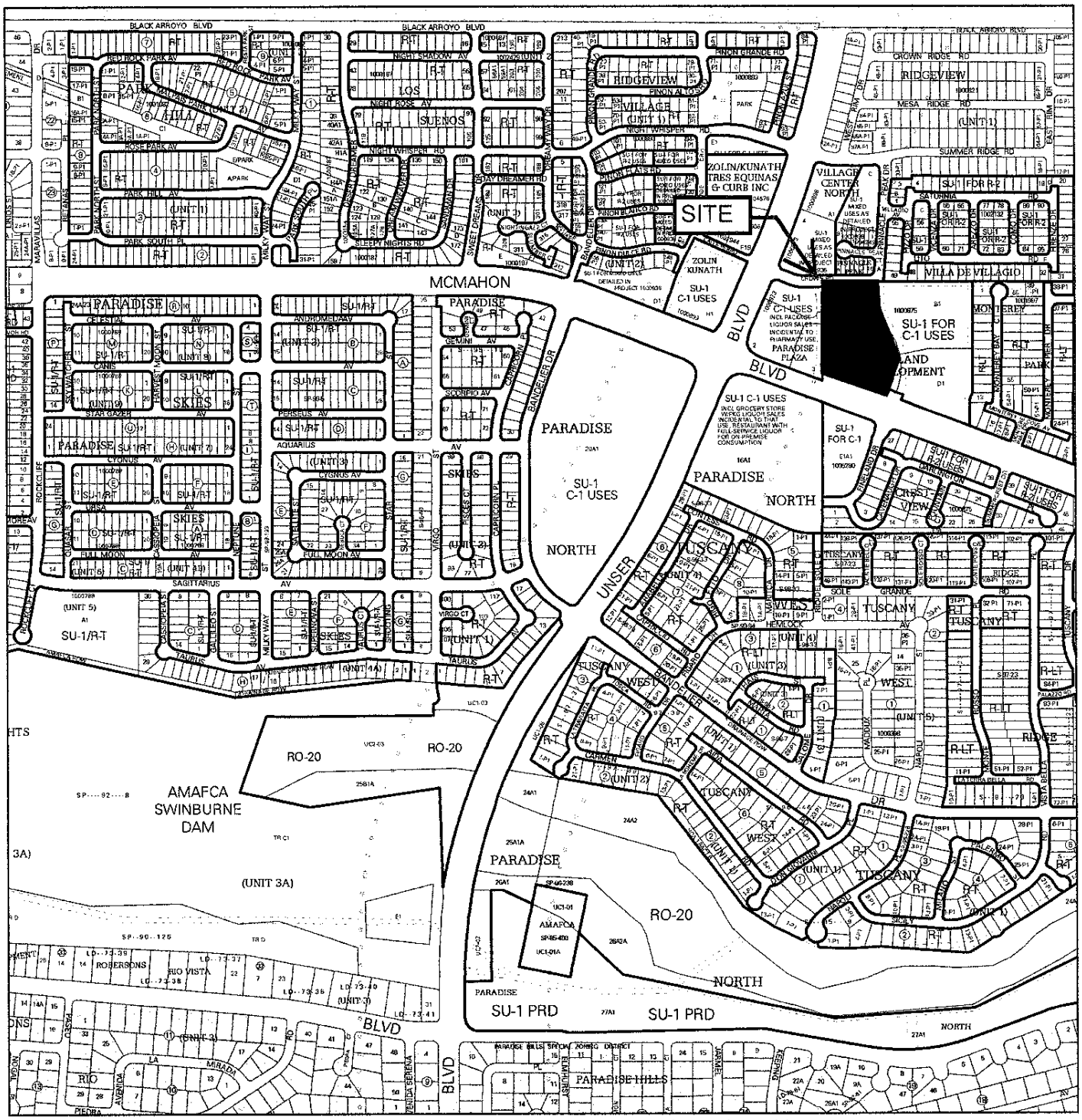
The purpose of this report is to provide the Drainage Management Plan for the subdivision of a 4.33 acre tract and the construction of a Kidz Daycare building with associated parking lot and playground on the northern 1.03 acres. This plan was prepared in accordance with the City of Albuquerque design 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 4.33 -acre parcel of land located on the west side of Fineland drive between McMahon and Crown road. The legal description of this site is tract A1A and 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 free discharges 5.63 cfs to the intersection of Crown road and Fineland. The site is located within basin O as shown in the area drainage plan (A11D009). The proposed improvements include the construction of a day care with parking and play ground areas on tract A1A. The remaining A1B will not be developed at this time. This site must conform to the 1.3 cfs per acre assigned within the master 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 undeveloped. The site currently discharges native flow of 5.63 or 1.3 cfs per acre to the intersection of crown and Fineland. The flows are captured by inlets and conveyed north to the Black Arroyo. Due to being higher than the surrounding roadways, the site is not impacted by upland flows.



Albuquerque Geographic Information System

Map amended through: 2/4/2010

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

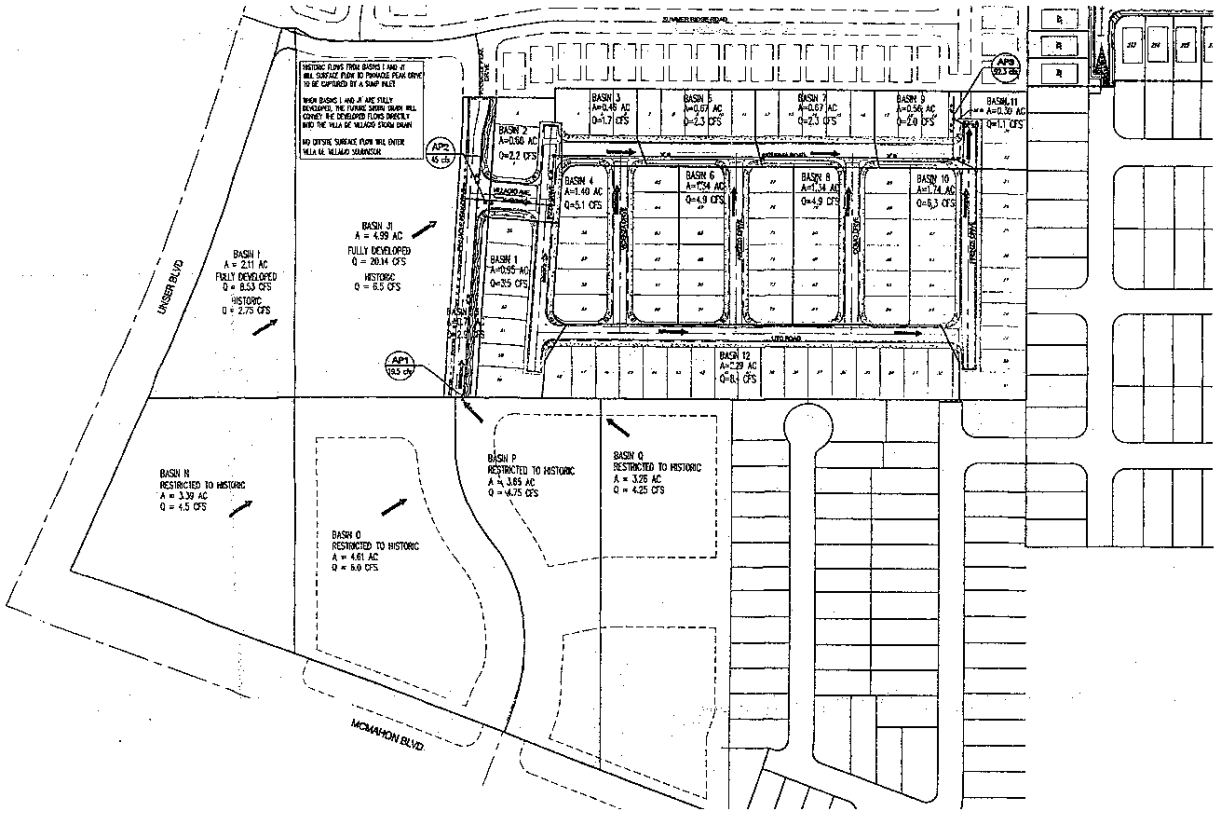
0 750 1,500 Feet

APPENDIX A

SITE HYDROLOGY

A11D009

BASIN MAP
VILLA DE VILLAGIO SUBDIVISION
FEBRUARY 2003



AP1 195 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:\030030\cdp\general\030030_BASINMAP.dwg
Feb 05, 2003 8:56am

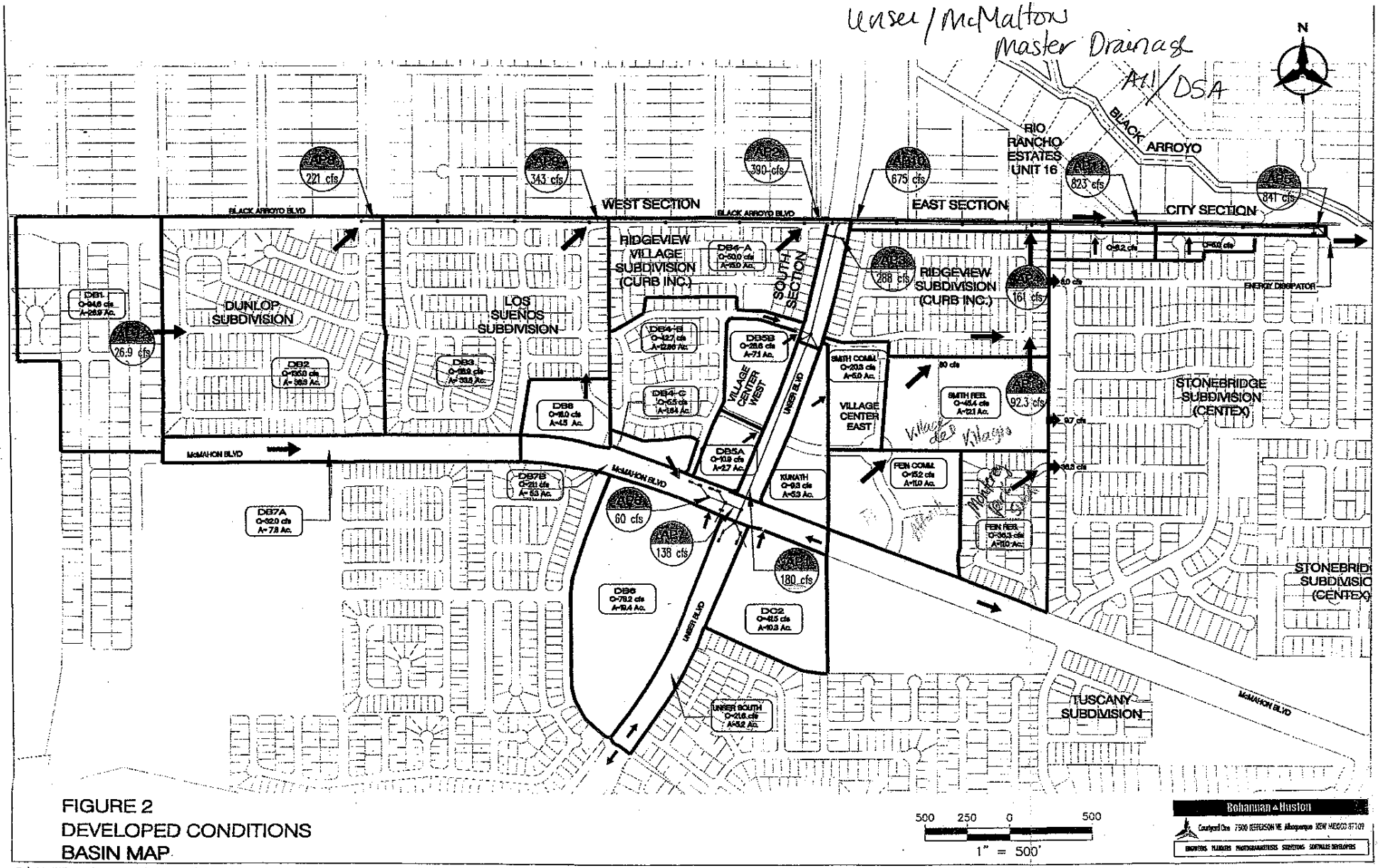


FIGURE 2
DEVELOPED CONDITIONS
BASIN MAP

P:\01177\CDP\GENERAL\EXHIBITS\MSTR-BASIN.DWG

Weighted E Method

KIDZ ACADEMY

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)	Volume (ac-ft)	Flow cfs
BASIN A	13656	0.313	0%	0	79.0%	0.248	16.0%	0.05016	5%	0.016	0.786	0.021	0.72
BASIN B	31296	0.718	0%	0	6.0%	0.043	15.0%	0.10777	79%	0.568	1.745	0.104	2.88
BASIN C	117128	2.689	100%	2.6889	0.0%	0.000	0.0%	0	0%	0.000	0.440	0.099	3.47

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 Qa= 1.29
Eb= 0.67 Qb= 2.03
Ec= 0.99 Qc= 2.87
Ed= 1.97 Qd= 4.37

FIRST FLUSH	
BASIN A	19
BASIN B	701
BASIN C	0
TOTAL	720 CF

```
*S      AHYMO -  DETENTION-KIDZ ACADEMY
*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= .0011226 SQ MI
                    PER A=0  PER B=6  PER C=15  PER D=79
                    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             0.000          85.50
                       0.37             0.001          86.50

                       0.52             0.004          87.50
                       0.58             0.020          88.00
                       0.64             0.082          88.50
                       0.67             0.134          88.75



FINISH
```

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
14.850	0.000	19.800	0.0	4.950	0.0	9.900	0.0
15.000	0.0	19.950	0.0	5.100	0.0	10.050	0.0
15.150	0.150	20.100	0.0	5.250	0.0	10.200	0.0
15.300	0.0	20.250	0.0	5.400	0.0	10.350	0.0
15.450	0.300	20.400	0.0	5.550	0.0	10.500	0.0
15.600	0.0	20.550	0.0	5.700	0.0	10.650	0.0
15.750	0.450	20.700	0.0	5.850	0.0	10.800	0.0
15.900	0.0	20.850	0.2	6.000	0.0	10.950	0.0
16.050	0.600	21.000	0.4	6.150	0.0	11.100	0.0
16.200	0.0	21.150	0.9	6.300	0.0	11.250	0.0
16.350	0.750	21.300	2.9	6.450	0.0	11.400	0.0
16.500	0.0	21.450	1.9	6.600	0.0	11.550	0.0
16.650	0.900	21.600	0.9	6.750	0.0	11.700	0.0
16.800	0.0	21.750	0.5	6.900	0.0	11.850	0.0
16.950	1.050	21.900	0.3	7.050	0.0	12.000	0.0
17.100	0.0	22.050	0.2	7.200	0.0	12.150	0.0
17.250	1.200	22.200	0.1	7.350	0.0	12.300	0.0
17.400	0.0	22.350	0.0	7.500	0.0	12.450	0.0
17.550	1.350	22.500	0.0	7.650	0.0	12.600	0.0
17.700	0.0	22.650	0.0	7.800	0.0	12.750	0.0
17.850	1.500	22.800	0.0	7.950	0.0	12.900	0.0
18.000	0.0	22.950	0.0	8.100	0.0	13.050	0.0
18.150	1.650	23.100	0.0	8.250	0.0	13.200	0.0
18.300	0.0	23.250	0.0	8.400	0.0	13.350	0.0
18.450	1.800	23.400	0.0	8.550	0.0	13.500	0.0
18.600	0.0	23.550	0.0	8.700	0.0	13.650	0.0
18.750	1.950	23.700	0.0	8.850	0.0	13.800	0.0
18.900	0.0	23.850	0.0	9.000	0.0	13.950	0.0
19.050	2.100	24.000	0.0	9.150	0.0	14.100	0.0
19.200	0.0	24.150	0.0	9.300	0.0	14.250	0.0
	2.250						
	0.0						
	2.400						
	0.0						
	2.550						
	0.0						
	2.700						
	0.0						
	2.850						
	0.0						
	3.000						
	0.0						
	3.150						
	0.0						
	3.300						
	0.0						
	3.450						
	0.0						
	3.600						
	0.0						
	3.750						
	0.0						
	3.900						
	0.0						
	4.050						
	0.0						
	4.200						
	0.0						
	4.350						
	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 = 2.12017 INCHES = 0.1269 ACRE-FEET
PEAK DISCHARGE RATE = 2.89 CFS AT 1.500 HOURS BASIN AREA =
0.0011 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	0.000	85.50	
0.37	0.001	86.50	
0.52	0.004	87.50	
0.58	0.020	88.00	
0.64	0.082	88.50	
0.67	0.134	88.75	

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	85.50	0.000	0.00
0.15	0.00	85.50	0.000	0.00
0.30	0.00	85.50	0.000	0.00
0.45	0.00	85.50	0.000	0.00
0.60	0.00	85.50	0.000	0.00
0.75	0.00	85.50	0.000	0.00
0.90	0.01	85.52	0.000	0.01
1.05	0.16	85.82	0.000	0.12
1.20	0.38	86.40	0.001	0.33
1.35	0.94	87.27	0.003	0.49
1.50	2.89	88.00	0.020	0.58
1.65	1.88	88.20	0.045	0.60
1.80	0.91	88.27	0.054	0.61
1.95	0.52	88.28	0.055	0.61
2.10	0.28	88.26	0.052	0.61
2.25	0.16	88.22	0.047	0.61
2.40	0.11	88.17	0.041	0.60
2.55	0.04	88.12	0.035	0.59
2.70	0.02	88.06	0.028	0.59
2.85	0.01	88.01	0.021	0.58
3.00	0.01	87.81	0.014	0.56
3.15	0.01	87.60	0.007	0.53
3.30	0.01	86.59	0.001	0.38
3.45	0.01	85.52	0.000	0.01

```
    3.60        0.00      85.51        0.000       0.00
 PEAK DISCHARGE =          0.614 CFS - PEAK OCCURS AT HOUR    1.90
 MAXIMUM WATER SURFACE ELEVATION =        88.281
 MAXIMUM STORAGE =          0.0548 AC-FT      INCREMENTAL TIME=    0.050000HRS

FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 17:17:40
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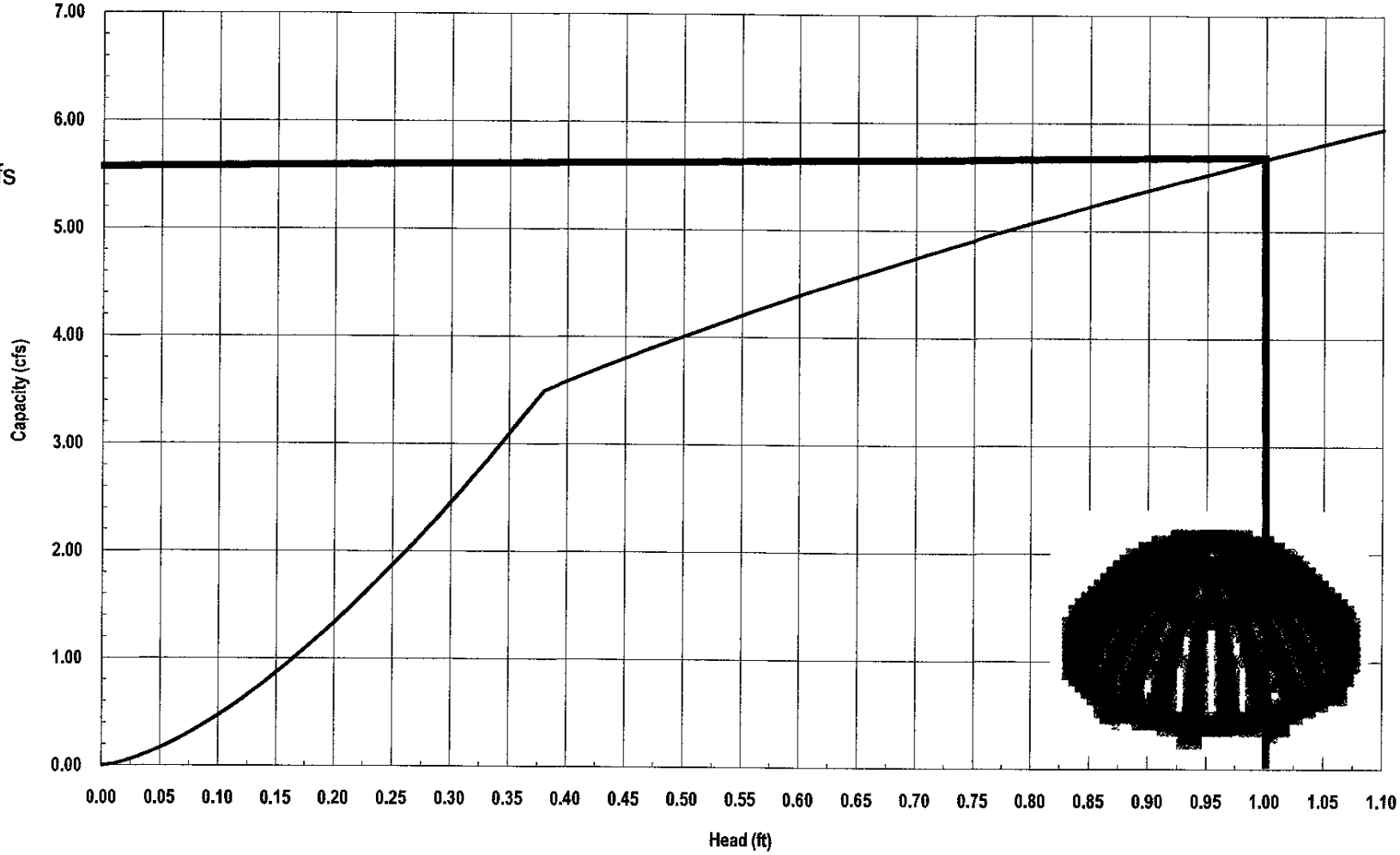
Nyloplast 18" Dome Grate Inlet Capacity Chart

5.5 cfs



3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490

DROP INLET CALCULATIONS

INLET	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
INLET A	SINGLE	3.84	2.88	0.0243	1.5

ORIFICE EQUATION

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
18HDPE	18	4	1.77	0.375	18.26	4.18	2.37

Manning's Equation:

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

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

EROSION CONTROL NOTES:

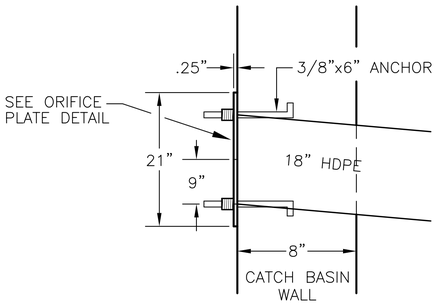
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

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.

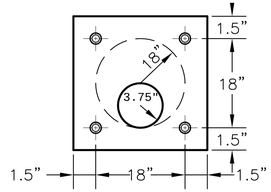
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

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



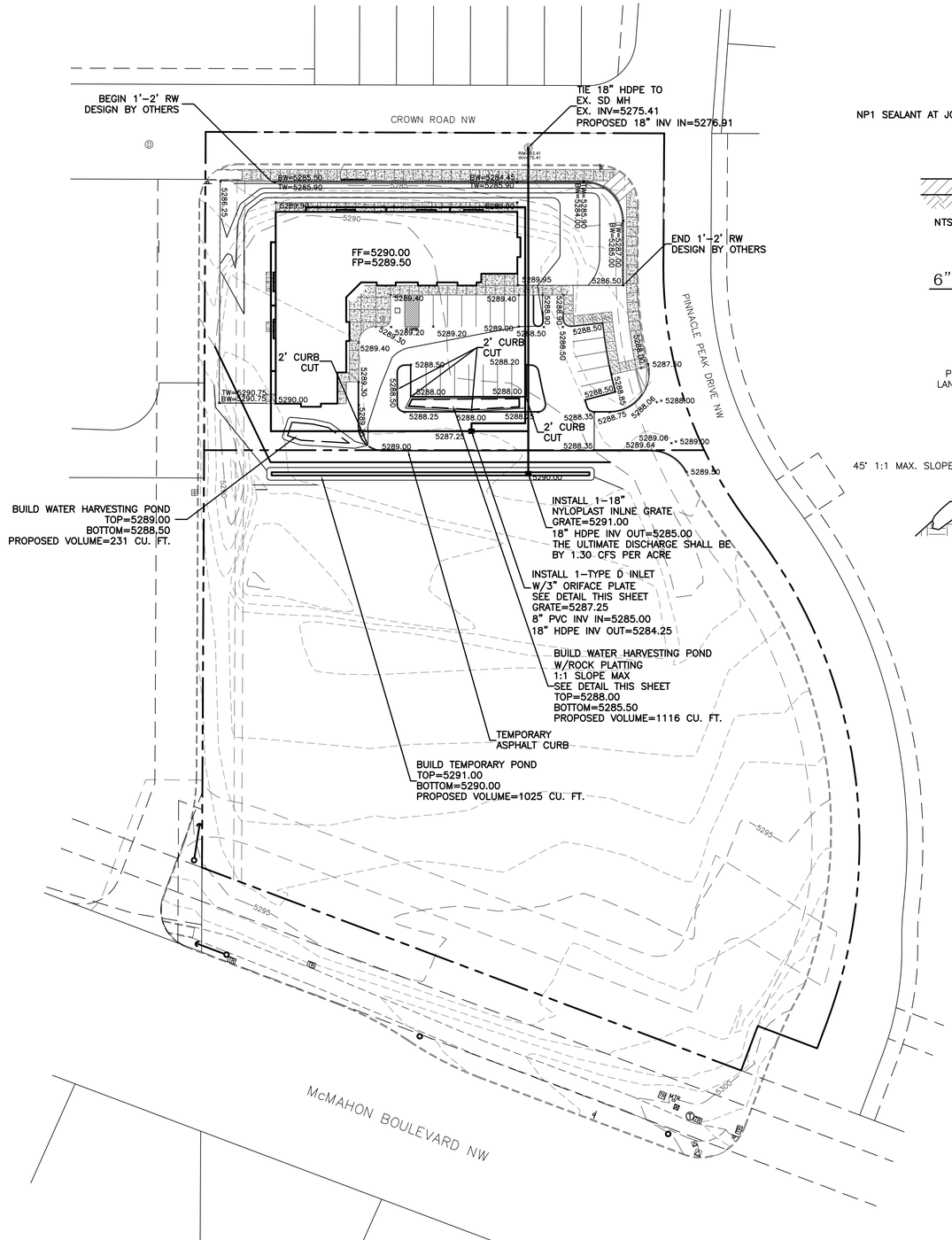
DETAIL A

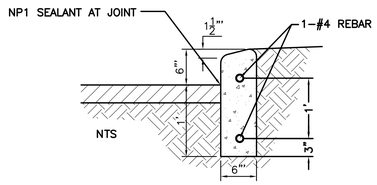
TO BE INSTALLED @ THE OUTFLOW OF THE CATCH BASINS (SEE THIS PLAN FOR ORIFICE PLATE SIZES)



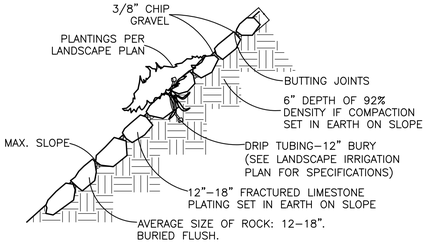
TYP. ORIFICE PLATE DETAIL

N.T.S.



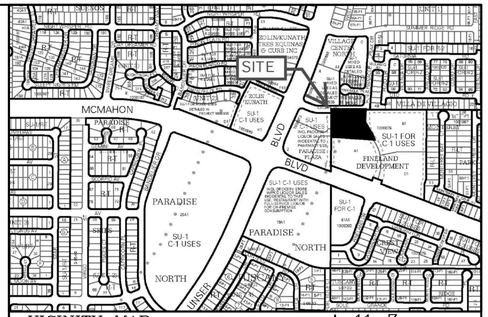


6" HEADER CURB DETAIL



ROCK PLATING DETAIL

NTS



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. 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
- REMOVE AND REPLACE EX.SW PER COA STD DWG #2430

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

40 20 0 20 40

SCALE: 1"=40'

ENGINEER'S SEAL

DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER

1/18/18

DAVID SOULE P.E. #14522

KIDZ ACADEMY

GRADING AND DRAINAGE PLAN

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

DRAWN BY WCWJ

DATE 9-25-17

21801-LAYOUT-9-25-17

SHEET #

JOB # 21801