CITY OF ALBUQUERQUE

February 16, 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 2/12/18 (File: A11D016)

Dear Mr. Soule:

Based on the information provided in your submittal received 2/12/18, the Grading Plan and Drainage Report cannot be approved until the following are corrected:

Prior to Site Plan for Building Permit and Grading Permit:

1. A full resubmittal of the Drainage Report, bound and stamped, is required. Loose calculations cannot be accepted as a resubmittal.
2. This project requires an ESC Plan, submitted to the Stormwater Quality Engineer (Curtis Cherne PE, ccherne@cabq.gov or 924-3420).
3. If no longer under common ownership, provide written permission from the adjoining landowner (Lot A1B) for grading and work on their property.
4. The AHYMO model shows the pond as having outflows beginning at elevation 85.52', but on the plan, the inlet grate elevation is at 87.25'. Please clarify the routing. Is this outflow from Basin A bypassing the pond and going right to the orifice plate inlet?
5. What is the function of the storm drain w/ inline drains around the building? Previously these were used for routing the roof drains to the orifice plat/inlet near the pond, but now they seem to be just for area drains to capture runoff from Basin A. If so, they do not appear to be placed where they will intercept all flows from Basin A.
6. The small amount of impervious area in Basin A does not appear to be routing through any first flush pond. It appears to either free discharge onto Crown Rd or get routed through the orifice plate/inlet, but not get retained anywhere. If true payment, of Fee-in-Lieu will be required for this impervious area.

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7. In the Drainage Report, clarify that the Lot A1B pond is sized for 10-day, 100yr (temporary retention pond) and what the allowable discharge will be once that lot develops.

Prior to Building Permit:

8. Payment of the Fee in Lieu (current estimate= 16CF x $8/CF= $128, per weighted E calc sheet) for the required first flush volume must be made.

Prior to Certificate of Occupancy:

9. 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).

10. 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.

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Sincerely,

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

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 #: A11D016

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) _____

IS THIS A RESUBMITTAL?: X Yes _____ No

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) _____

DATE SUBMITTED: 2/12/18 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

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:

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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.
   WE HAVE REVISED TO POND LOT A1B IN THE INTERIM
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.
   WE HAVE ADDED TO THE INFRASTRUCTURE LIST
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.
   WE HAVE ADDED TO THE INFRASTRUCTURE LIST
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.
   WE HAVE UPDATED THE CALCULATIONS AND ORIFICE
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. THE INLET HAS NOT BEEN CONSTRUCTED.
   WE HAVE ADDED INLET AND PIPE
6. Show the new lot lines on the grading plan, including the ROW takes for Crown and Fineland.
   WE HAVE ADDED

CITY OF ALBUQUERQUE

7. Please specify a square opening on the orifice plate.
A ROUND ORIFICE IS EASIER TO CONSTRUCT, WE REQUEST IT TO REMAIN
8. Please label this Grading Plan as "conceptual, not for construction" or similar.
WE ARE ASKING FOR GRADING PERMIT UNDER THIS PLAN
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. OUTFALL CONTROLLED BY ORIFICE PLATE. ROOF DRAINS CONNECT IN INLET UPSTREAM OF THE RESTRICTION
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. WE HAVE UPDATED

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). SHALL BE SUBMITTED

14. Additional comments may be provided at Building Permit, based on the outcome of the above remarks and level of detail shown on plans.
PLEASE REVIEW PLAN FOR GRADING APPROVAL

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

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EROSION CONTROL NOTES:

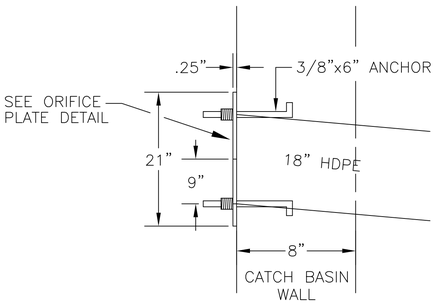
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

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.

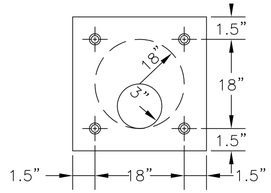
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

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)

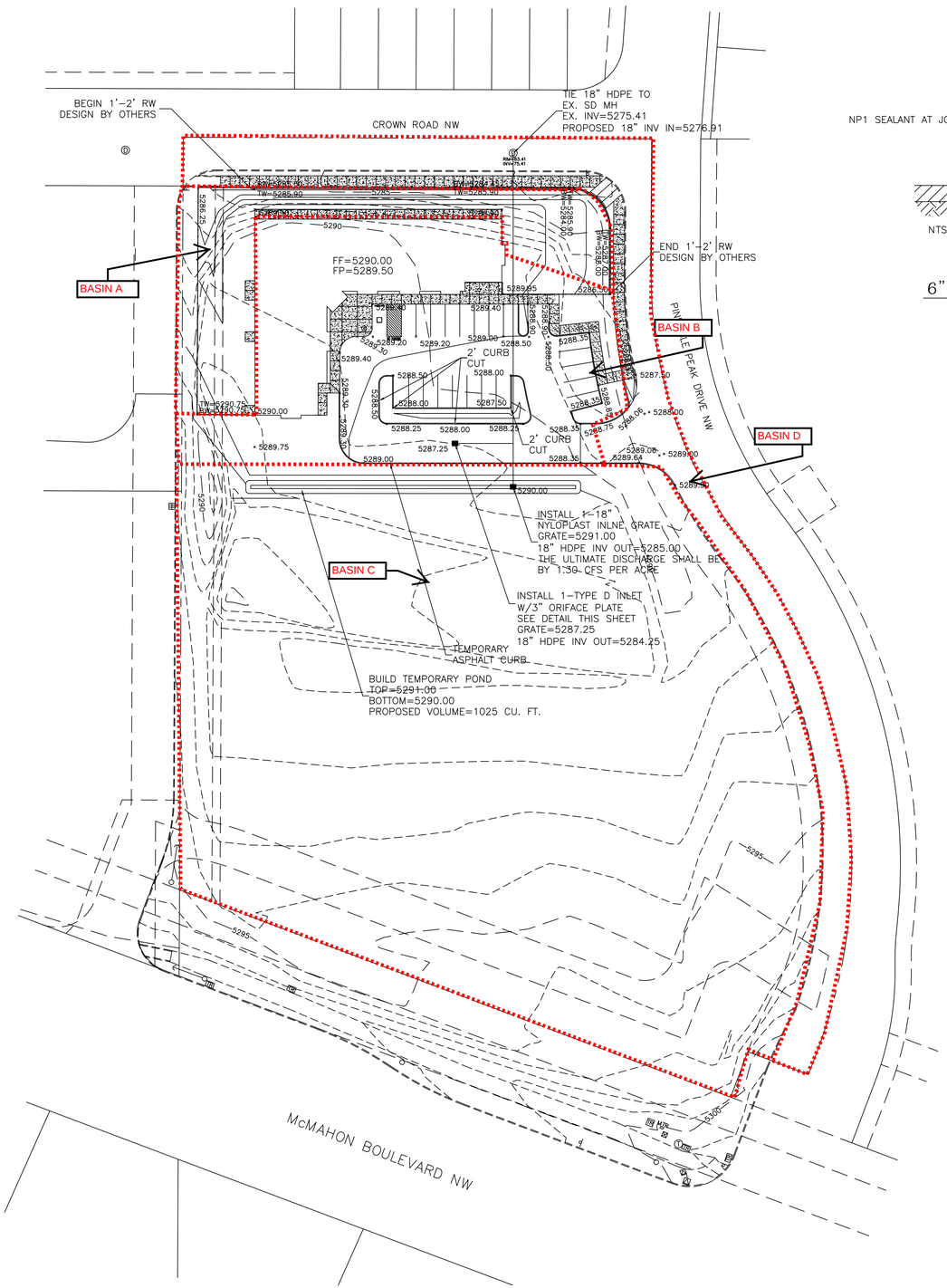


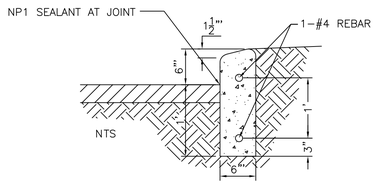
TYP. ORIFICE PLATE DETAIL

N.T.S.

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.

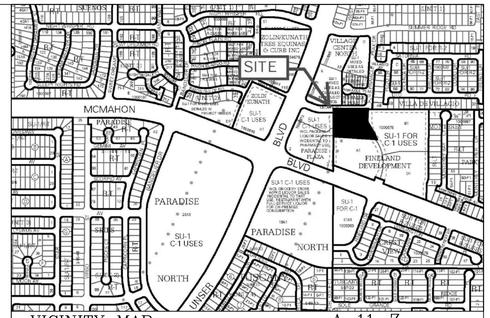




6" HEADER CURB DETAIL

DRAINAGE NARRATIVE

THIS SITE IS LOCATED WIHTIN DRAINAGE BASIN O, WITHIN THE GOVERNING DRAINAGE PLAN (A11D009). THIS SITE WILL RESTRICT THE FLOW BY THE USE OF A PARKING LOT DETENTION POND. THE OUTFALL IS RESTRICTED BYT THE USE OF AN ORIFICE PLATE. THE FIRST FLUSH VOLUME WILL BE RETAINED ONSITE WITHIN THE LANDSCAPE ISLAND. FUTURE DEVELOMENT SHALL DRAIN TO THE PROPOSED 18" STORM DRAIN AND WILL BE RESTRICTED TO 1.3 CFS PER ACRE



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
- 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 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

N

GRAPHIC SCALE

40 20 0 20 40

SCALE: 1"=40'

ENGINEER'S SEAL

DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER

10/20/17

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

Weighted E Method

Existing Developed Basins

											100-Year, 6-hr.			10-day
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)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
BASIN D	26615	0.611	0%	0	5.0%	0.031	5.0%	0.03055	90%	0.550	1.856	0.095	2.55	0.168
BASIN A	12131	0.278	0%	0	64.0%	0.178	18.0%	0.05013	15%	0.042	0.903	0.021	0.69	0.027
BASIN B	32801	0.753	0%	0	7.0%	0.053	15.0%	0.11295	78%	0.587	1.732	0.109	3.00	0.187
BASIN C	117128	2.689	0%	0	10.0%	0.269	90.0%	2.42	0%	0.000	0.958	0.215	7.49	0.215
	44932.00	1.03			22%	0.23	16%	0.16	61%	0.63				

Equations:

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

FIRST FLUSH 776.4589 CF

Volume = Weighted D * Total Area DRIVEWAY NOT CAPTURED 574 SF

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

ALLOWED DISCHARGE=5.63 CFS

DISCHARGE FROM STREET/DRIVE=3.24

REMAINING ALLOWED=2.39 CFS

ONSITE ALLOWABLE DISCHARGE=.64 CFS PER ACRE

TRACT A1A=.66 CFS

TRACT A1B=1.73 CFS

```
*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= .0016094 SQ MI
                    PER A=0  PER B=22 PER C=16  PER D=61
                    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
```

```
       AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
            RUN DATE (MON/DAY/YR) = 02/08/2018
            START TIME (HR:MIN:SEC) = 08:59:24     USER NO.=
RioGrandeSingleA41963517
            INPUT FILE = ents and Settings\Owner\Desktop\2017
jobs\17187-kidz\drainage\pondrout011718.txt


    *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



                  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
                    1.1234  1.3695  1.5635  1.6610  1.7465  1.8079  1.8568
                    1.8994  1.9306  1.9592  1.9828  1.9979  2.0087  2.0183
                    2.0273  2.0352  2.0426  2.0499  2.0568  2.0625  2.0659
                    2.0692  2.0724  2.0754  2.0784  2.0813  2.0842  2.0870
                    2.0896  2.0923  2.0949  2.0974  2.0999  2.1023  2.1046
                    2.1069  2.1092  2.1115  2.1136  2.1158  2.1179  2.1199
                    2.1220  2.1240  2.1260  2.1280  2.1299  2.1318  2.1337
                    2.1356  2.1374  2.1392  2.1411  2.1428  2.1446  2.1463
                    2.1481  2.1498  2.1514  2.1531  2.1548  2.1564  2.1580
                    2.1596  2.1612  2.1628  2.1643  2.1658  2.1674  2.1689
                    2.1704  2.1718  2.1733  2.1747  2.1762  2.1776  2.1790
                    2.1804  2.1818  2.1832  2.1845  2.1859  2.1872  2.1885
                    2.1899  2.1912  2.1924  2.1937  2.1950  2.1963  2.1975
                    2.1988  2.2000  2.2013  2.2026  2.2038  2.2051  2.2064
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                    2.3508  2.3521  2.3533  2.3546  2.3559  2.3572  2.3584
                    2.3597  2.3610  2.3623  2.3636  2.3648  2.3661  2.3674
                    2.3687  2.3699  2.3712  2.3725  2.3738  2.3750  2.3763
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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
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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
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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= .0016094 SQ MI
PER A=0 PER B=22 PER C=16 PER D=61
TP=-.142 MASSRAIN=-1

*****WARNING***** SUM OF TREATMENT TYPES DOES NOT EQUAL 100 PERCENT OR TOTAL AREA

K = 0.077390HR TP = 0.142000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 3.6752 CFS UNIT VOLUME = 0.9962 B = 526.28 P60 = 1.8700
AREA = 0.000992 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.128272HR TP = 0.142000HR K/TP RATIO = 0.903323 SHAPE CONSTANT, N = 3.922324
UNIT PEAK = 1.5225 CFS UNIT VOLUME = 0.9931 B = 349.96 P60 = 1.8700
AREA = 0.000618 SQ MI IA = 0.43684 INCHES INF = 1.07316 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 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	0.2	6.000	0.0	10.950	0.0
15.900	0.0	20.850	0.0		
1.200	0.4	6.150	0.0	11.100	0.0
16.050	0.0	21.000	0.0		
1.350	1.1	6.300	0.0	11.250	0.0
16.200	0.0	21.150	0.0		
1.500	3.8	6.450	0.0	11.400	0.0
16.350	0.0	21.300	0.0		
1.650	2.5	6.600	0.0	11.550	0.0
16.500	0.0	21.450	0.0		
1.800	1.2	6.750	0.0	11.700	0.0
16.650	0.0	21.600	0.0		
1.950	0.6	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	0.2	7.200	0.0	12.150	0.0
17.100	0.0	22.050	0.0		
2.400	0.1	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 = 1.84975 INCHES = 0.1588 ACRE-FEET
PEAK DISCHARGE RATE = 3.78 CFS AT 1.500 HOURS BASIN AREA = 0.0016 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

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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	0.18	85.86	0.000	0.13
1.20	0.43	86.50	0.001	0.37
1.35	1.13	87.51	0.004	0.52
1.50	3.78	88.06	0.028	0.59
1.65	2.48	88.34	0.062	0.62
1.80	1.16	88.45	0.076	0.63
1.95	0.65	88.47	0.079	0.64
2.10	0.35	88.46	0.077	0.64
2.25	0.21	88.42	0.072	0.63
2.40	0.14	88.38	0.067	0.63
2.55	0.07	88.33	0.060	0.62
2.70	0.04	88.27	0.053	0.61
2.85	0.03	88.21	0.046	0.61
3.00	0.01	88.15	0.039	0.60

3.15	0.01	88.10	0.032	0.59
3.30	0.01	88.04	0.025	0.58
3.45	0.01	87.92	0.017	0.57
3.60	0.01	87.71	0.011	0.54
3.75	0.01	87.50	0.004	0.52
3.90	0.01	85.61	0.000	0.04
4.05	0.01	85.52	0.000	0.01
4.20	0.01	85.52	0.000	0.01
4.35	0.01	85.52	0.000	0.01
4.50	0.01	85.52	0.000	0.01
4.65	0.01	85.52	0.000	0.01
4.80	0.01	85.52	0.000	0.01
4.95	0.01	85.53	0.000	0.01
5.10	0.01	85.53	0.000	0.01
5.25	0.01	85.53	0.000	0.01
5.40	0.01	85.53	0.000	0.01
5.55	0.01	85.53	0.000	0.01
5.70	0.01	85.54	0.000	0.01
5.85	0.01	85.54	0.000	0.01
6.00	0.02	85.54	0.000	0.02
6.15	0.02	85.54	0.000	0.02
6.30	0.02	85.54	0.000	0.02
6.45	0.02	85.54	0.000	0.02
6.60	0.02	85.54	0.000	0.02
6.75	0.02	85.54	0.000	0.02
6.90	0.02	85.54	0.000	0.02
7.05	0.02	85.54	0.000	0.02
7.20	0.02	85.54	0.000	0.02
7.35	0.02	85.54	0.000	0.02
7.50	0.02	85.54	0.000	0.02
7.65	0.02	85.54	0.000	0.02
7.80	0.02	85.54	0.000	0.02
7.95	0.02	85.54	0.000	0.02
8.10	0.02	85.54	0.000	0.02
8.25	0.02	85.54	0.000	0.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
8.40	0.02	85.54	0.000	0.02
8.55	0.02	85.54	0.000	0.02
8.70	0.02	85.54	0.000	0.02
8.85	0.02	85.54	0.000	0.02
9.00	0.02	85.54	0.000	0.02
9.15	0.02	85.54	0.000	0.02
9.30	0.02	85.54	0.000	0.02
9.45	0.02	85.54	0.000	0.02
9.60	0.02	85.54	0.000	0.02
9.75	0.02	85.54	0.000	0.02
9.90	0.02	85.54	0.000	0.02
10.05	0.02	85.54	0.000	0.02
10.20	0.02	85.54	0.000	0.02
10.35	0.02	85.54	0.000	0.02
10.50	0.02	85.54	0.000	0.02
10.65	0.02	85.54	0.000	0.02
10.80	0.02	85.54	0.000	0.02
10.95	0.02	85.54	0.000	0.02
11.10	0.02	85.54	0.000	0.02
11.25	0.02	85.54	0.000	0.02
11.40	0.02	85.54	0.000	0.02
11.55	0.02	85.54	0.000	0.02
11.70	0.02	85.54	0.000	0.02
11.85	0.02	85.54	0.000	0.02

12.00	0.02	85.54	0.000	0.02
12.15	0.02	85.54	0.000	0.02
12.30	0.02	85.54	0.000	0.02
12.45	0.02	85.54	0.000	0.02
12.60	0.02	85.54	0.000	0.02
12.75	0.02	85.54	0.000	0.02
12.90	0.02	85.54	0.000	0.02
13.05	0.02	85.54	0.000	0.02
13.20	0.02	85.54	0.000	0.02
13.35	0.02	85.54	0.000	0.02
13.50	0.02	85.54	0.000	0.02
13.65	0.02	85.54	0.000	0.02
13.80	0.02	85.54	0.000	0.02
13.95	0.02	85.54	0.000	0.02
14.10	0.02	85.54	0.000	0.02
14.25	0.02	85.54	0.000	0.02
14.40	0.02	85.54	0.000	0.02
14.55	0.02	85.54	0.000	0.02
14.70	0.02	85.54	0.000	0.02
14.85	0.02	85.54	0.000	0.02
15.00	0.02	85.54	0.000	0.02
15.15	0.02	85.54	0.000	0.02
15.30	0.02	85.54	0.000	0.02
15.45	0.02	85.54	0.000	0.02
15.60	0.02	85.54	0.000	0.02
15.75	0.02	85.54	0.000	0.02
15.90	0.02	85.54	0.000	0.02
16.05	0.02	85.54	0.000	0.02
16.20	0.02	85.54	0.000	0.02
16.35	0.02	85.54	0.000	0.02
16.50	0.02	85.54	0.000	0.02
16.65	0.02	85.54	0.000	0.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
16.80	0.02	85.54	0.000	0.02
16.95	0.02	85.54	0.000	0.02
17.10	0.02	85.54	0.000	0.02
17.25	0.02	85.54	0.000	0.02
17.40	0.02	85.54	0.000	0.02
17.55	0.02	85.54	0.000	0.02
17.70	0.02	85.54	0.000	0.02
17.85	0.02	85.54	0.000	0.02
18.00	0.02	85.54	0.000	0.02
18.15	0.02	85.54	0.000	0.02
18.30	0.02	85.54	0.000	0.02
18.45	0.02	85.54	0.000	0.02
18.60	0.02	85.54	0.000	0.02
18.75	0.02	85.54	0.000	0.02
18.90	0.02	85.54	0.000	0.02
19.05	0.02	85.54	0.000	0.02
19.20	0.02	85.54	0.000	0.02
19.35	0.02	85.54	0.000	0.02
19.50	0.02	85.54	0.000	0.02
19.65	0.02	85.54	0.000	0.02
19.80	0.02	85.54	0.000	0.02
19.95	0.02	85.54	0.000	0.02
20.10	0.02	85.54	0.000	0.02
20.25	0.02	85.54	0.000	0.02
20.40	0.02	85.54	0.000	0.02
20.55	0.02	85.54	0.000	0.02
20.70	0.02	85.54	0.000	0.02

20.85	0.02	85.54	0.000	0.02
21.00	0.02	85.54	0.000	0.02
21.15	0.02	85.54	0.000	0.02
21.30	0.02	85.54	0.000	0.02
21.45	0.02	85.54	0.000	0.02
21.60	0.02	85.54	0.000	0.02
21.75	0.02	85.54	0.000	0.02
21.90	0.02	85.54	0.000	0.02
22.05	0.02	85.54	0.000	0.02
22.20	0.02	85.54	0.000	0.02
22.35	0.02	85.54	0.000	0.02
22.50	0.02	85.54	0.000	0.02
22.65	0.02	85.54	0.000	0.02
22.80	0.02	85.54	0.000	0.02
22.95	0.02	85.54	0.000	0.02
23.10	0.02	85.54	0.000	0.02
23.25	0.02	85.54	0.000	0.02
23.40	0.02	85.54	0.000	0.02
23.55	0.02	85.54	0.000	0.02
23.70	0.02	85.54	0.000	0.02
23.85	0.02	85.54	0.000	0.02
24.00	0.02	85.54	0.000	0.02
24.15	0.01	85.53	0.000	0.01
24.30	0.00	85.51	0.000	0.00

PEAK DISCHARGE = 0.637 CFS - PEAK OCCURS AT HOUR 1.95
MAXIMUM WATER SURFACE ELEVATION = 88.473
MAXIMUM STORAGE = 0.0787 AC-FT INCREMENTAL TIME= 0.050000HRS

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 08:59:24

EROSION CONTROL NOTES:

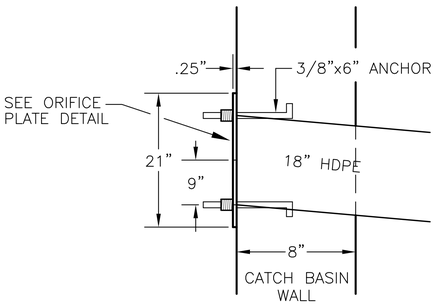
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

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.

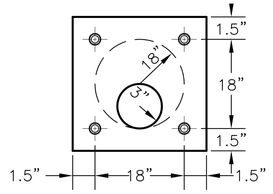
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

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



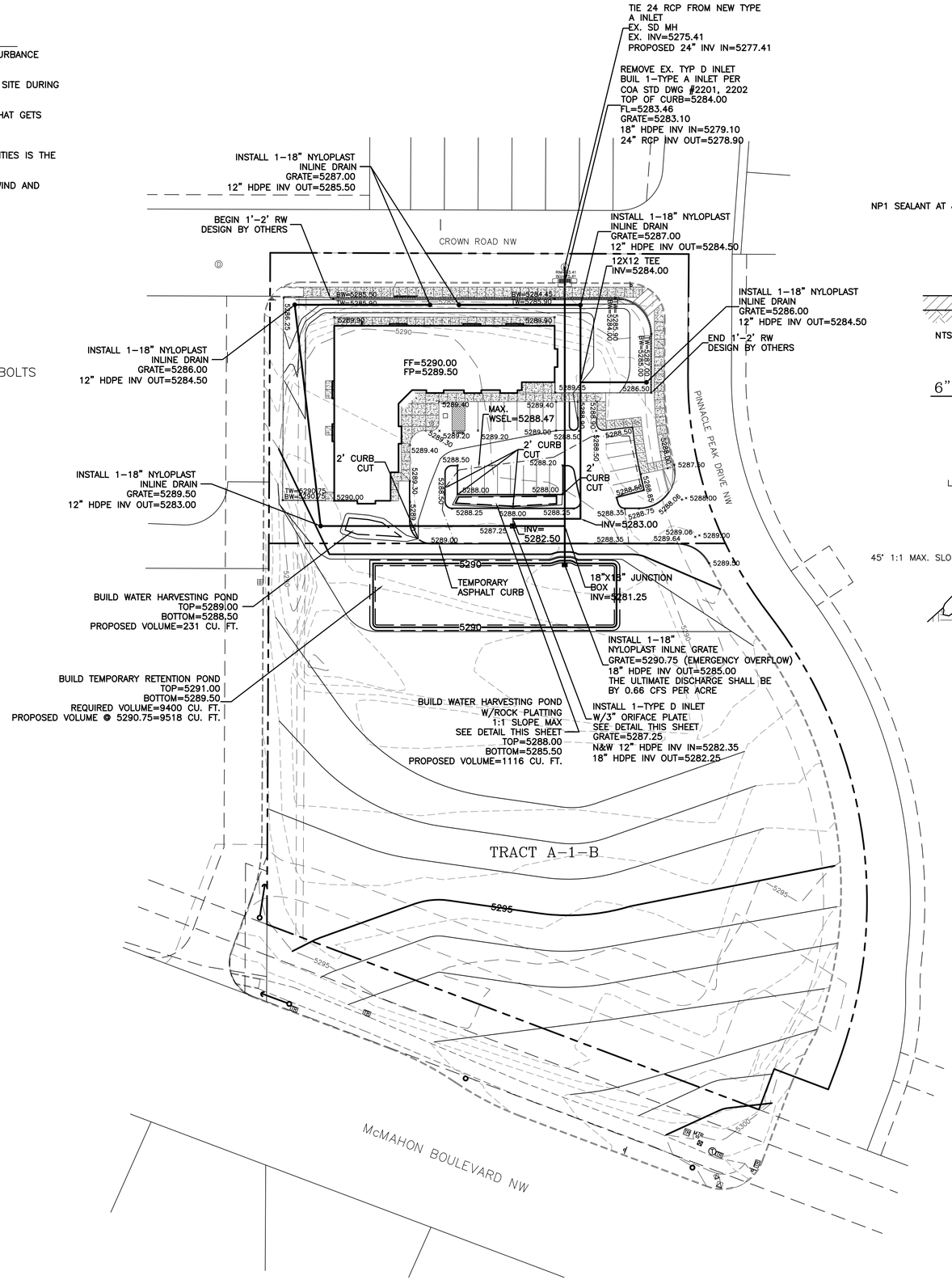
DETAIL A

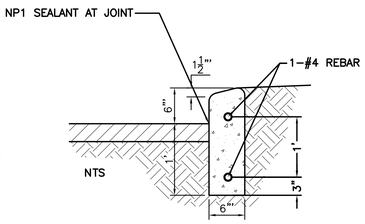
TO BE INSTALLED @ THE OUTFLOW OF THE CATCH BASINS (SEE THIS PLAN FOR ORIFICE PLATE SIZES)



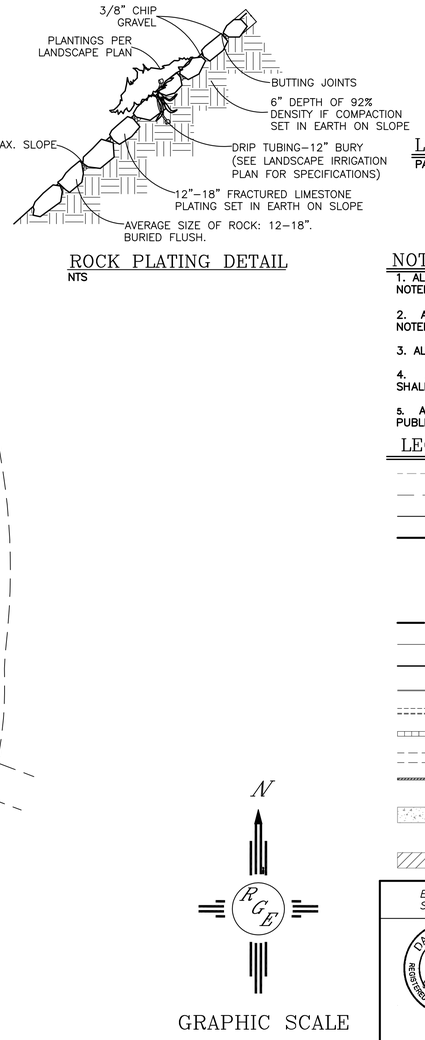
TYP. ORIFICE PLATE DETAIL

N.T.S.



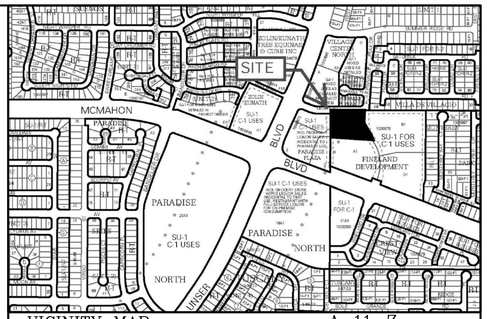


6" HEADER CURB DETAIL



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

2/12/18

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 2-12-18

21801-LAYOUT-9-25-17

SHEET #

JOB # 21801