CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

July 12, 2023

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

RE: 3815 Mourning Dove Place NW
Grading and Drainage Plans
Engineer's Stamp Date: 07/03/23
Hydrology File: G11D014D1

Dear Mr. Soule:

Based upon the information provided in your submittal received 07/05/2023, the Grading and Drainage Plan is approved for Building Permit and Grading Permit. **Since this site has stem walls, a pad certification is not needed for this project.** Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

<u>PRIOR TO CERTIFICATE OF OCCUPANCY:</u>

1. Engineer's Certification, per the DPM Part 6-14 (F): Engineer's Certification Checklist For Non-Subdivision is required.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov .

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

1706

City of Albuquerque

Planning Department
Development & Building Services Division
DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: 3815 MOURNING DOVE **Building Permit #:** ________ **Hydrology File #:** ________
DRB#: ________ EPC#: ________ __ Work Order#: ________
Legal Description: LOTS 54 P-1 OXBOW SUBDIVISION
City Address: 3815 MOURNING DOVE

Applicant: ________ Contact: ________
Address: ________
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 __X__ RESIDENCE ____ DRB SITE ____ 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?: ____ Yes __X__ 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: ________

BASIN DATA

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)	Q100 GENERATED	V100 GENERATED	Q100 DISCHARGED
A	7377	0.169	0%	0.2955	18.0%	0.1298	29.0%	0.1646	53%	0.0603	0.53	975	0.24 TO B
B	7720	0.177	0%	0.0156	24.0%	0.0747	40.0%	0.0762	36%	0.0527	0.51	872	0.36
REMAINING SITE	1839	0.042	0%	0.0000	20.0%	0.0084	62.0%	0.0262	18%	0.0076	0.12	175.00	0.12
TOTAL SITE HISTORIC	16936	0.389	72%	0.2799	12.0%	0.0467	16.0%	0.0622	0%	0.0000	0.48	749	0.48
											HISTORICAL		0.48
											PROPOSED		0.40

THIS SITE IS PART OF THE OXBOW SUBDIVISON. BASED UPON SUBDIVISION RULES, THE SITE MUST MIMIC PREDEVELOPMENT HYDROLOGY RELATED TO PEAK DISCHARGE RATES. THE SITE CONTAINS THREE DRAINAGE BASINS, BASIN A CONTAINS THE SOUTHERN PORTION OF STRUCTURE AND LOT. THIS BASIN DISCHARGES 0.53 CFS TO A POND. THIS DETENTION POND THROTTLES THE FLOW BY THE CONSTRUCTION OF A 4" OUTLET PIPE TO POND B. BASIN B CONTAINS THE NORHTERN PORTION OF THE SITE AND DRAINS TO A POND THAT RESTRICTS THE COMBINED DISCHARGE OF BASIN A AND B UTILIZING A 4" OUTLET PIPE. THE FRONT PORTION OF THE SITE THAT DOES NOT GET CAPTURED BY THE PONDS DISCHARGE .12 CFS TO THE RIGHT OF WAY. THE PONDS WERE MODELLED UTILIZING AHYMO AND THE PEAK DISCHARGE OF 0.40 CFS IS LESS THAN THE EXISTING DISCAHRGE OF 0.48 CFS. THIS SITE CONFORMS TO BOTH THE CITY OF ALBUQUERQUE DRAINAGE STANDARDS AS WELL AS THE OXBOW DEVELOPMENT GUIDLINES.
REFERENCE SHEET 2 FOR AHYMO MODEL AND POND STAGE-STORAGE CALCULATION

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 07/12/23
BY: Renée C. Brissette
HydroTrans # G11D014D1

THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTION, OR ERROR OR DIMENSIONS IN PLANS, SPECIFICATIONS, OR CONSTRUCTIONS. SUCH APPROVED PLANS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.

EROSION CONTROL NOTES:

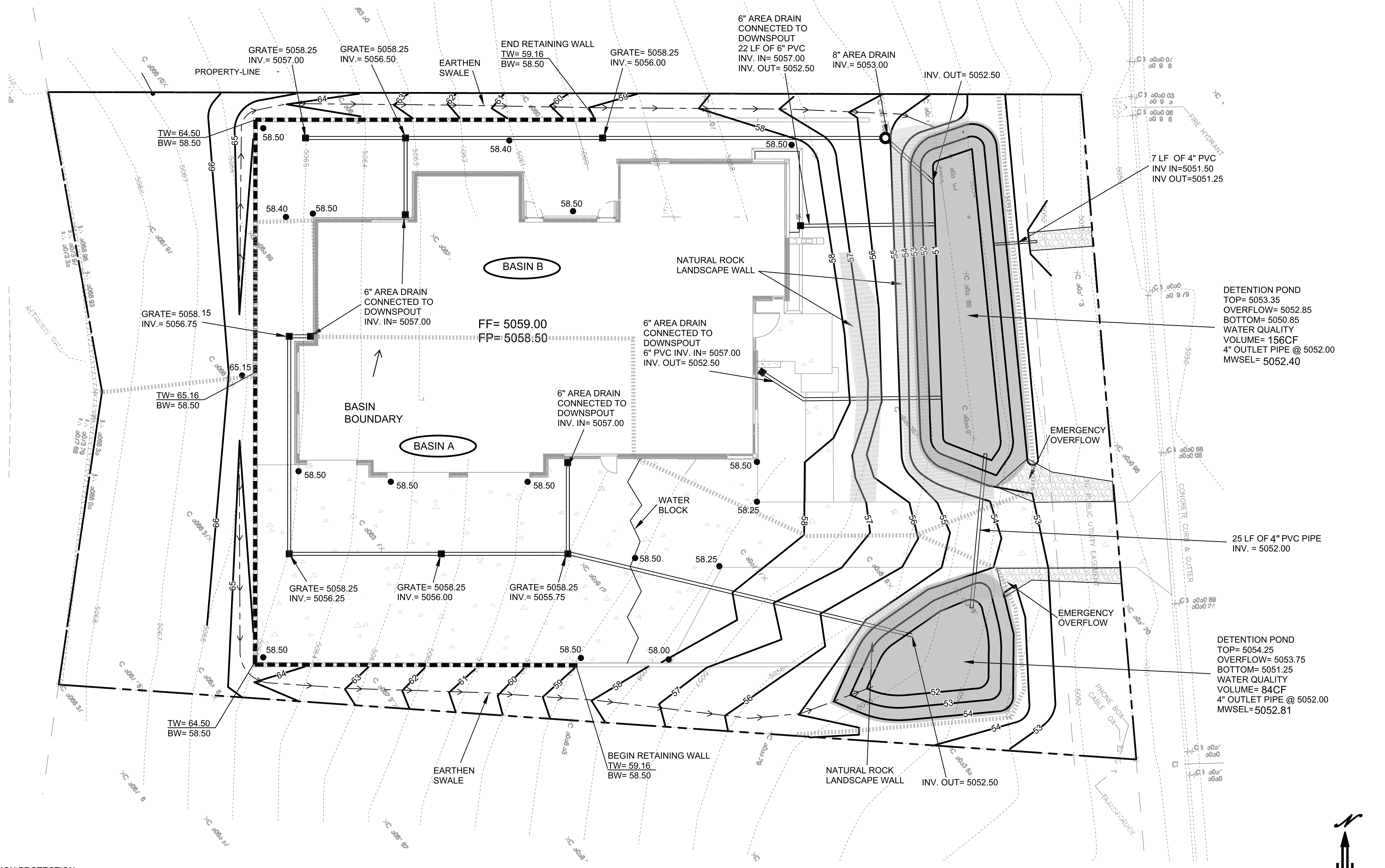
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

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

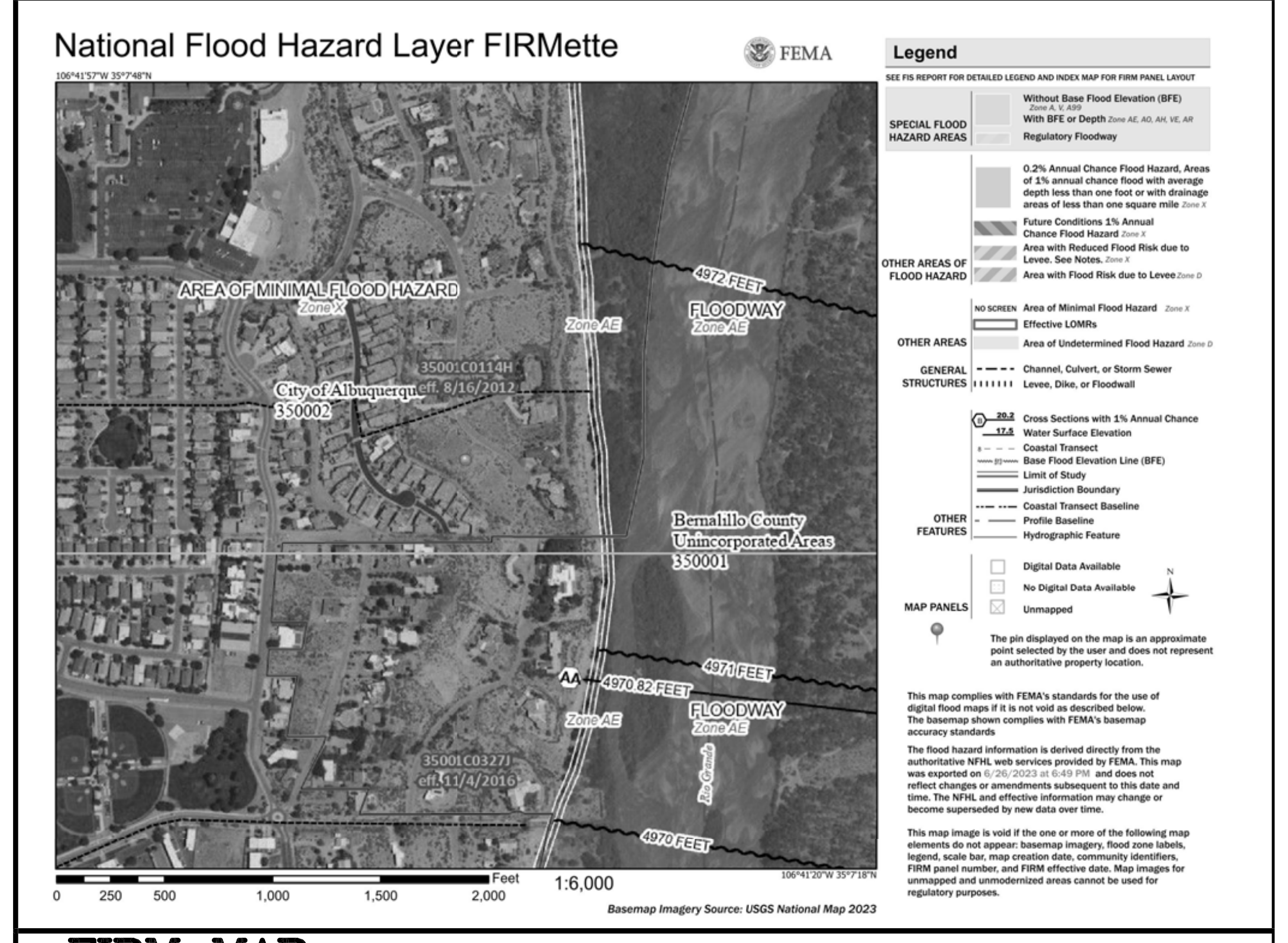
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

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.



VICINITY MAP: G-11-Z



FIRM MAP:

LEGAL DESCRIPTION:

CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

2. ALL SLOPES SHALL BE 3:1 MAX. AND GRAVEL OR NATIVE SEEDING PRIOR TO CO.

3. ANY PERIMETER WALLS MUST BE PERMITED SEPARATELY ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.

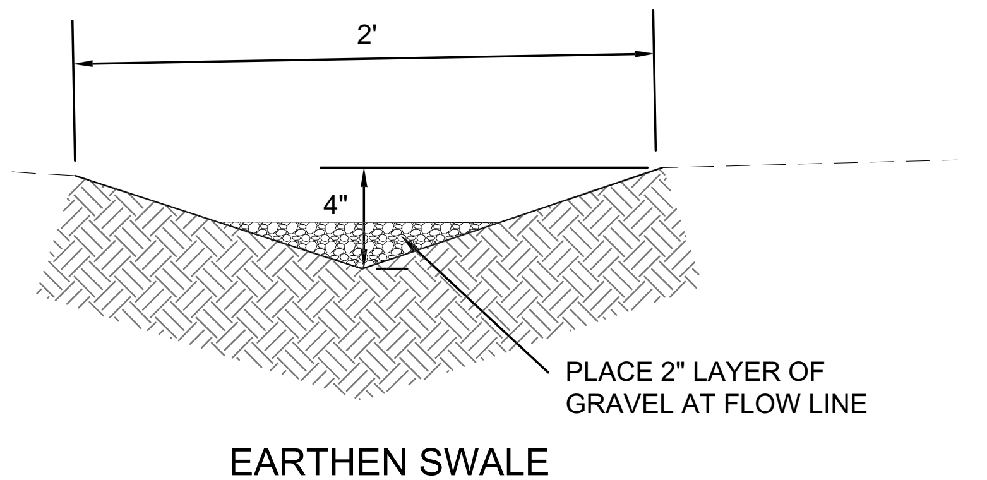
4. SURVEY INFORMATION PROVIDED BY COMMUNITY SCIENCES CORPORATION USING NAVD DATUM 1988.

5. A PAD ELEVATION CERTIFICATION SHALL BE REQUIRED PRIOR TO RELEASE OF BUILDING PERMIT.

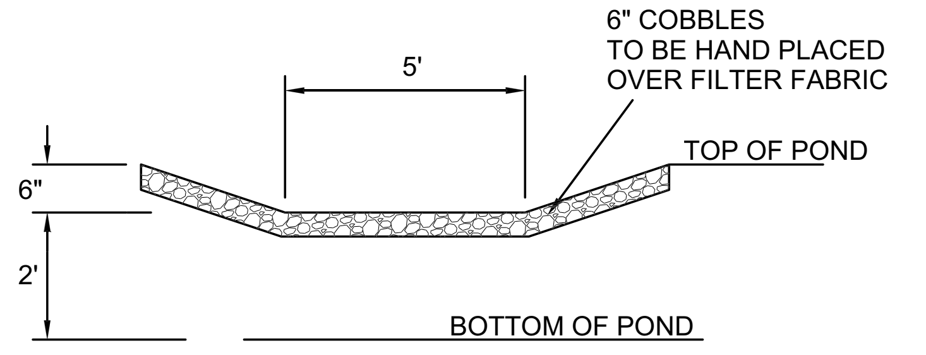
LEGEND

- - - -XXXX- - - -	EXISTING CONTOUR
- - - -XXXX- - - -	EXISTING INDEX CONTOUR
——XXXX——	PROPOSED CONTOUR
——XXXX——	PROPOSED INDEX CONTOUR
× XXXX	EXISTING SPOT ELEVATION
● XXXX	PROPOSED SPOT ELEVATION
— - — - —	BOUNDARY
— — — —	ADJACENT BOUNDARY
═ ═ ═ ═	EXISTING CURB AND GUTTER
—← – —← –	PROPOSED EARTHEN SWALE
■ ■ ■ ■	PROPOSED RETAINING WALL
▨	PROPOSED CONCRETE
▩	PROPOSED PONDING
▧	PROPOSED NATURAL ROCK LANDSCAPE WALL

CONSTRUCT ALL SWALES AND EROSION PROTECTION (SHOWN HATCHED) BELOW ADJACENT GRADE TO ENSURE RUNOFF CAN BE CAPTURED AND CONVEYED PROPERLY.



EARTHEN SWALE
NTS



EMERGENCY OVERFLOW DETAIL
NTS

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

10 5 0 5 10
SCALE: 1"=10'

ENGINEER'S SEAL	3815 MOURNING DOVE	DRAWN BY DEM
DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER 7/3/23	GRADING AND DRAINAGE PLAN	DATE 6-27-23
		3815 MOURNING DOVE .DWG
	Rio Grande Engineering PO BOX 93924 ALBUQUERQUE, NM 87199 (505) 321-9099	SHEET # C1
DAVID SOULE P.E. #14522		JOB #

BASIN DATA

Basin	Area	Area	Treatment A		Treatment B		Treatment C		Treatment D		Q100	V100	Q100
	(sf)	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	GENERATED	GENERATED	DISCHARGED
A	7377	0.169	0%	0.2955	18.0%	0.1298	29.0%	0.1646	53%	0.0603	0.53	975	0.24 TO B
B	7720	0.177	0%	0.0156	24.0%	0.0747	40.0%	0.0762	36%	0.0527	0.51	872	0.36
REMAINING SITE	1839	0.042	0%	0.0000	20.0%	0.0084	62.0%	0.0262	18%	0.0076	0.12	175.00	0.12
TOTAL SITE HISTORIC	16936	0.389	72%	0.2799	12.0%	0.0467	16.0%	0.0622	0%	0.0000	0.48	749	0.48
											HISTORICAL		0.48
											PROPOSED		0.40

STAGE/STORAGE VOLUME CALCULATIONS

POND A

	ACTUAL ELEV.	DEPTH (FT)	AREA SF	VOLUME PER UNIT	VOLUME CUMULATIVE	VOLUME AC-FT	Q (CFS)
	51.25	0.00	127.00	0.00	0	0.0000	0.00
OUTFALL	52.00	0.00	209.00	84.00	84.00	0.0019	0.00
	53.75	1.50	457.00	832.50	916.50	0.0210	0.51

Orifice Equation
Q = CA SQRT(2gH)

C = 0.6
Diameter (in) 4
Area (ft^2)= 0.087266463
g = 32.2
H (Ft) = Depth of water above center of orifice
Q (CFS)= Flow

VOLUME CALCULATIONS

pond b

	ACTUAL ELEV.	DEPTH (FT)	AREA SF	VOLUME PER UNIT	VOLUME CUMULATIVE	VOLUME AC-FT	Q (CFS)
	50.85	0.00	84.00	84.00	84	0.001	0.00
OUTFALL	51.50	0.00	204.00	72.00	156.00	0.004	0.00
	52.00	0.83	283.00	365.25	521.25	0.012	0.38
	52.85	1.68	283.00	424.50	945.75	0.022	0.54

Orifice Equation
Q = CA SQRT(2gH)

43.56

C = 0.6
Diameter (in) 4
Area (ft^2)= 0.087266463
g = 32.2
H (Ft) = Depth of water above center of orifice
Q (CFS)= Flow

```
                                 AHYMO.OUT
      AHYMO PROGRAM (AHYMO-S4)                 - Version: S4.01a - Rel: 01a
           RUN DATE (MON/DAY/YR) = 07/03/2023
           START TIME (HR:MIN:SEC) = 17:02:26     USER NO.= RioGrandeSingleA41963517
           INPUT FILE = nts and Settings\Owner\Desktop\2023
JOBS\2023144-mourningdove\pondrout070323.txt

    *S     AHYMO -  DETENTION-MOURNING
    *S             POND ROUTING

    START                TIME=0.0  PUNCH CODE=0


    RAINFALL             TYPE=2
                         QUARTER=0.0    ONE= 1.69 IN
                         SIX=2.17 IN   DAY= 2.49 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  0.0032  0.0065  0.0100  0.0138  0.0178  0.0222
                    0.0285  0.0385  0.0492  0.0603  0.0723  0.0845  0.0971
                    0.1101  0.1233  0.1379  0.1531  0.1696  0.1914  0.2158
                    0.2486  0.2857  0.3315  0.3926  0.4614  0.5802  0.7649
                    1.0813  1.3037  1.4791  1.5672  1.6444  1.6999  1.7441
                    1.7826  1.8108  1.8366  1.8580  1.8754  1.8909  1.9048
                    1.9178  1.9294  1.9403  1.9510  1.9613  1.9698  1.9746
                    1.9793  1.9839  1.9882  1.9925  1.9967  2.0008  2.0048
                    2.0087  2.0124  2.0162  2.0198  2.0234  2.0269  2.0303
                    2.0336  2.0369  2.0402  2.0433  2.0464  2.0495  2.0525
                    2.0555  2.0584  2.0613  2.0642  2.0670  2.0698  2.0725
                    2.0753  2.0780  2.0806  2.0833  2.0859  2.0884  2.0910
                    2.0935  2.0960  2.0985  2.1009  2.1033  2.1057  2.1081
                    2.1104  2.1128  2.1151  2.1173  2.1196  2.1218  2.1240
                    2.1262  2.1284  2.1306  2.1327  2.1348  2.1369  2.1390
                    2.1410  2.1431  2.1451  2.1471  2.1491  2.1511  2.1530
                    2.1550  2.1569  2.1588  2.1607  2.1626  2.1645  2.1663
                    2.1682  2.1700  2.1709  2.1718  2.1727  2.1736  2.1744
                    2.1753  2.1762  2.1771  2.1780  2.1789  2.1798  2.1807
                    2.1816  2.1824  2.1833  2.1842  2.1851  2.1860  2.1869
                    2.1878  2.1887  2.1896  2.1904  2.1913  2.1922  2.1931
                    2.1940  2.1949  2.1958  2.1967  2.1976  2.1984  2.1993
                    2.2002  2.2011  2.2020  2.2029  2.2038  2.2047  2.2056
                    2.2064  2.2073  2.2082  2.2091  2.2100  2.2109  2.2118
                    2.2127  2.2136  2.2144  2.2153  2.2162  2.2171  2.2180
                    2.2189  2.2198  2.2207  2.2216  2.2224  2.2233  2.2242
                    2.2251  2.2260  2.2269  2.2278  2.2287  2.2296  2.2304
                    2.2313  2.2322  2.2331  2.2340  2.2349  2.2358  2.2367
                    2.2376  2.2384  2.2393  2.2402  2.2411  2.2420  2.2429
                    2.2438  2.2447  2.2456  2.2464  2.2473  2.2482  2.2491
                    2.2500  2.2509  2.2518  2.2527  2.2536  2.2544  2.2553
                    2.2562  2.2571  2.2580  2.2589  2.2598  2.2607  2.2616
                    2.2624  2.2633  2.2642  2.2651  2.2660  2.2669  2.2678
                    2.2687  2.2696  2.2704  2.2713  2.2722  2.2731  2.2740
                    2.2749  2.2758  2.2767  2.2776  2.2784  2.2793  2.2802
                    2.2811  2.2820  2.2829  2.2838  2.2847  2.2856  2.2864
                    2.2873  2.2882  2.2891  2.2900  2.2909  2.2918  2.2927
                    2.2936  2.2944  2.2953  2.2962  2.2971  2.2980  2.2989
                    2.2998  2.3007  2.3016  2.3024  2.3033  2.3042  2.3051
                    2.3060  2.3069  2.3078  2.3087  2.3096  2.3104  2.3113
                    2.3122  2.3131  2.3140  2.3149  2.3158  2.3167  2.3176
                    2.3185  2.3193  2.3202  2.3211  2.3220  2.3229  2.3238
                    2.3247  2.3256  2.3265  2.3273  2.3282  2.3291  2.3300
                    2.3309  2.3318  2.3327  2.3336  2.3345  2.3353  2.3362
                    2.3371  2.3380  2.3389  2.3398  2.3407  2.3416  2.3425
                    2.3433  2.3442  2.3451  2.3460  2.3469  2.3478  2.3487
                    2.3496  2.3505  2.3513  2.3522  2.3531  2.3540  2.3549
                    2.3558  2.3567  2.3576  2.3585  2.3593  2.3602  2.3611
                    2.3620  2.3629  2.3638  2.3647  2.3656  2.3665  2.3673
                    2.3682  2.3691  2.3700  2.3709  2.3718  2.3727  2.3736
                                  Page 1
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                                 AHYMO.OUT
                    2.3745  2.3753  2.3762  2.3771  2.3780  2.3789  2.3798
                    2.3807  2.3816  2.3825  2.3833  2.3842  2.3851  2.3860
                    2.3869  2.3878  2.3887  2.3896  2.3905  2.3913  2.3922
                    2.3931  2.3940  2.3949  2.3958  2.3967  2.3976  2.3985
                    2.3993  2.4002  2.4011  2.4020  2.4029  2.4038  2.4047
                    2.4056  2.4065  2.4073  2.4082  2.4091  2.4100  2.4109
                    2.4118  2.4127  2.4136  2.4145  2.4153  2.4162  2.4171
                    2.4180  2.4189  2.4198  2.4207  2.4216  2.4225  2.4233
                    2.4242  2.4251  2.4260  2.4269  2.4278  2.4287  2.4296
                    2.4305  2.4313  2.4322  2.4331  2.4340  2.4349  2.4358
                    2.4367  2.4376  2.4385  2.4393  2.4402  2.4411  2.4420
                    2.4429  2.4438  2.4447  2.4456  2.4465  2.4473  2.4482
                    2.4491  2.4500  2.4509  2.4518  2.4527  2.4536  2.4545
                    2.4553  2.4562  2.4571  2.4580  2.4589  2.4598  2.4607
                    2.4616  2.4625  2.4633  2.4642  2.4651  2.4660  2.4669
                    2.4678  2.4687  2.4696  2.4705  2.4713  2.4722  2.4731
                    2.4740  2.4749  2.4758  2.4767  2.4776  2.4785  2.4793
                    2.4802  2.4811  2.4820  2.4829  2.4838  2.4847  2.4856
                    2.4865  2.4873  2.4882  2.4891  2.4900

    *OVERALL SITE EXISTING
    COMPUTE NM HYD       ID=1  HYD NO=101  DA= .0006074954 SQ MI
                         PER A=100  PER B=0 PER C=0 PER D=0
                         TP=-.170  MASSRAIN=-1


         K =  0.214536HR    TP =  0.170000HR    K/TP RATIO =  1.261977     SHAPE CONSTANT, N =
2.829292
         UNIT PEAK =  0.95628    CFS   UNIT VOLUME =   0.9845       B =   267.60      P60 =
1.6900
         AREA =     0.000607 SQ MI    IA =   0.65000 INCHES    INF =   1.67000 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
FLOW          TIME      FLOW
          HRS       CFS           HRS       CFS           HRS       CFS           HRS
CFS           HRS       CFS
         0.000       0.0         0.750       0.0         1.500       0.4         2.250
0.0          3.000       0.0
         0.150       0.0         0.900       0.0         1.650       0.4         2.400
0.0          3.150       0.0
         0.300       0.0         1.050       0.0         1.800       0.2         2.550
0.0          3.300       0.0
         0.450       0.0         1.200       0.0         1.950       0.1         2.700
0.0          3.450       0.0
         0.600       0.0         1.350       0.0         2.100       0.1         2.850
0.0          3.600       0.0

        RUNOFF VOLUME =     0.53126 INCHES     =       0.0172 ACRE-FEET
        PEAK DISCHARGE RATE =       0.48 CFS  AT   1.550 HOURS   BASIN AREA =  0.0006 SQ. MI.



    *BASIN A
    COMPUTE NM HYD       ID=2  HYD NO=102  DA= .0002646135 SQ MI
                         PER A=0  PER B=18 PER C=29 PER D=53
                         TP=-.170  MASSRAIN=-1


         K =  0.092650HR    TP =  0.170000HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =
7.106428
         UNIT PEAK =  0.43416    CFS   UNIT VOLUME =   0.9758       B =   526.28      P60 =
1.6900
         AREA =     0.000140 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

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                                 AHYMO.OUT
         K =  0.147235HR    TP =  0.170000HR    K/TP RATIO =  0.866087     SHAPE CONSTANT, N =
4.103405
         UNIT PEAK =  0.26484    CFS   UNIT VOLUME =   0.9528       B =   362.01      P60 =
1.6900
         AREA =     0.000124 SQ MI    IA =   0.40745 INCHES    INF =   0.99085 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

    PRINT HYD            ID=2  CODE=3

                                        PARTIAL HYDROGRAPH   102.00

         TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME
FLOW          TIME      FLOW
          HRS       CFS           HRS       CFS           HRS       CFS           HRS
CFS           HRS       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       0.0         6.000       0.0        10.950       0.0        15.900
0.0         20.850       0.0
         1.200       0.1         6.150       0.0        11.100       0.0        16.050
0.0         21.000       0.0
         1.350       0.1         6.300       0.0        11.250       0.0        16.200
0.0         21.150       0.0
         1.500       0.5         6.450       0.0        11.400       0.0        16.350
0.0         21.300       0.0
         1.650       0.4         6.600       0.0        11.550       0.0        16.500
0.0         21.450       0.0
         1.800       0.2         6.750       0.0        11.700       0.0        16.650
0.0         21.600       0.0
         1.950       0.1         6.900       0.0        11.850       0.0        16.800
0.0         21.750       0.0
         2.100       0.1         7.050       0.0        12.000       0.0        16.950
0.0         21.900       0.0
         2.250       0.0         7.200       0.0        12.150       0.0        17.100
0.0         22.050       0.0
         2.400       0.0         7.350       0.0        12.300       0.0        17.250
0.0         22.200       0.0
         2.550       0.0         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
                                  Page 3
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                                 AHYMO.OUT
0.0         24.150       0.0
         4.500       0.0         9.450       0.0        14.400       0.0        19.350
0.0
         4.650       0.0         9.600       0.0        14.550       0.0        19.500
0.0
         4.800       0.0         9.750       0.0        14.700       0.0        19.650
0.0

        RUNOFF VOLUME =     1.58963 INCHES     =       0.0224 ACRE-FEET
        PEAK DISCHARGE RATE =       0.53 CFS  AT   1.550 HOURS   BASIN AREA =  0.0003 SQ. MI.



    *Basin B
    COMPUTE NM HYD       ID=3  HYD NO=103  DA= .0002769169 SQ MI
                         PER A=00 PER B=24 PER C=40  PER D=36
                         TP=-.170  MASSRAIN=-1


         K =  0.092650HR    TP =  0.170000HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =
7.106428
         UNIT PEAK =  0.30861    CFS   UNIT VOLUME =   0.9655       B =   526.28      P60 =
1.6900
         AREA =     0.000100 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

         K =  0.146926HR    TP =  0.170000HR    K/TP RATIO =  0.864272     SHAPE CONSTANT, N =
4.112730
         UNIT PEAK =  0.37803    CFS   UNIT VOLUME =   0.9668       B =   362.62      P60 =
1.6900
         AREA =     0.000177 SQ MI    IA =   0.40625 INCHES    INF =   0.98750 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

    PRINT HYD            ID=3  CODE=3

                                        PARTIAL HYDROGRAPH   103.00

         TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME
FLOW          TIME      FLOW
          HRS       CFS           HRS       CFS           HRS       CFS           HRS
CFS           HRS       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       0.0         6.000       0.0        10.950       0.0        15.900
0.0         20.850       0.0
         1.200       0.0         6.150       0.0        11.100       0.0        16.050
0.0         21.000       0.0
         1.350       0.1         6.300       0.0        11.250       0.0        16.200
0.0         21.150       0.0
         1.500       0.5         6.450       0.0        11.400       0.0        16.350
0.0         21.300       0.0
         1.650       0.4         6.600       0.0        11.550       0.0        16.500
0.0         21.450       0.0
         1.800       0.2         6.750       0.0        11.700       0.0        16.650
0.0         21.600       0.0
         1.950       0.1         6.900       0.0        11.850       0.0        16.800
0.0         21.750       0.0
                                  Page 4
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                                 AHYMO.OUT
         2.100       0.1         7.050       0.0        12.000       0.0        16.950
0.0         21.900       0.0
         2.250       0.0         7.200       0.0        12.150       0.0        17.100
0.0         22.050       0.0
         2.400       0.0         7.350       0.0        12.300       0.0        17.250
0.0         22.200       0.0
         2.550       0.0         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
         4.500       0.0         9.450       0.0        14.400       0.0        19.350
0.0
         4.650       0.0         9.600       0.0        14.550       0.0        19.500
0.0
         4.800       0.0         9.750       0.0        14.700       0.0        19.650
0.0

        RUNOFF VOLUME =     1.35588 INCHES     =       0.0200 ACRE-FEET
        PEAK DISCHARGE RATE =       0.51 CFS  AT   1.550 HOURS   BASIN AREA =  0.0003 SQ. MI.



    *Basin REMAINING SITE
    COMPUTE NM HYD       ID=4  HYD NO=104  DA= .0000659650 SQ MI
                         PER A=0  PER B=20 PER C=62  PER D=18
                         TP=-.170  MASSRAIN=-1


         K =  0.092650HR    TP =  0.170000HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =
7.106428
         UNIT PEAK =  0.36758E-01CFS   UNIT VOLUME =   0.8988       B =   526.28      P60 =
1.6900
         AREA =     0.000012 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

         K =  0.141857HR    TP =  0.170000HR    K/TP RATIO =  0.834450     SHAPE CONSTANT, N =
4.273330
         UNIT PEAK =  0.11868    CFS   UNIT VOLUME =   0.8876       B =   373.00      P60 =
1.6900
         AREA =     0.000054 SQ MI    IA =   0.38659 INCHES    INF =   0.93244 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

    PRINT HYD            ID=4  CODE=3

                                        PARTIAL HYDROGRAPH   104.00

         TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME
FLOW          TIME      FLOW
                                  Page 5
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                                 AHYMO.OUT
          HRS       CFS           HRS       CFS           HRS       CFS           HRS
CFS           HRS       CFS
         0.000       0.0         0.600       0.0         1.200       0.0         1.800
0.0          2.400       0.0
         0.150       0.0         0.750       0.0         1.350       0.0         1.950
0.0
         0.300       0.0         0.900       0.0         1.500       0.1         2.100
0.0
         0.450       0.0         1.050       0.0         1.650       0.1         2.250
0.0

        RUNOFF VOLUME =     1.13212 INCHES     =       0.0040 ACRE-FEET
        PEAK DISCHARGE RATE =       0.12 CFS  AT   1.550 HOURS   BASIN AREA =  0.0001 SQ. MI.




    * ROUTE THE BASIN A FLOW THROUGH THE PROPOSED RESERVOIR A
    ROUTE RESERVOIR      ID=5   HYD NO=105   INFLOW=2   CODE=3
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0.00            0.0019        52.00
                            0.51            0.0210        53.75

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

        TIME      INFLOW    ELEV      VOLUME    OUTFLOW
        (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

         0.00       0.00     52.00      0.002      0.00
         0.15       0.00     52.00      0.002      0.00
         0.30       0.00     52.00      0.002      0.00
         0.45       0.00     52.00      0.002      0.00
         0.60       0.00     52.00      0.002      0.00
         0.75       0.00     52.00      0.002      0.00
         0.90       0.02     52.01      0.002      0.00
         1.05       0.03     52.03      0.002      0.01
         1.20       0.05     52.06      0.003      0.02
         1.35       0.13     52.12      0.003      0.03
         1.50       0.48     52.38      0.006      0.11
         1.65       0.41     52.74      0.010      0.22
         1.80       0.20     52.81      0.011      0.24
         1.95       0.10     52.72      0.010      0.21
         2.10       0.06     52.59      0.008      0.17
         2.25       0.04     52.48      0.007      0.14
         2.40       0.02     52.37      0.006      0.11
         2.55       0.01     52.28      0.005      0.08
         2.70       0.01     52.21      0.004      0.06
         2.85       0.00     52.16      0.004      0.05
         3.00       0.00     52.12      0.003      0.03
         3.15       0.00     52.09      0.003      0.03
         3.30       0.00     52.06      0.003      0.02
         3.45       0.00     52.05      0.002      0.01
         3.60       0.00     52.04      0.002      0.01
         3.75       0.00     52.03      0.002      0.01
         3.90       0.00     52.02      0.002      0.01
         4.05       0.00     52.02      0.002      0.01
         4.20       0.00     52.02      0.002      0.00
     PEAK DISCHARGE =        0.237 CFS - PEAK OCCURS AT HOUR    1.75
     MAXIMUM WATER SURFACE ELEVATION =       52.814
     MAXIMUM STORAGE =        0.0108 AC-FT      INCREMENTAL TIME=    0.050000HRS

    *ADD OUTFALL OF POND A TO BASIN B
    ADD HYD              ID=6   HYD NO=106  ID I=3  ID II=5

    * ROUTE THE BASIN B FLOW THROUGH THE PROPOSED RESERVOIR  B
    ROUTE RESERVOIR      ID=7   HYD NO=107   INFLOW=6   CODE=3
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0.00            0.004         51.50
                            0.54            0.022         52.85

                                  Page 6
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                                 AHYMO.OUT
      *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

        TIME      INFLOW    ELEV      VOLUME    OUTFLOW
        (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

         0.00       0.00     51.50      0.004      0.00
         0.15       0.00     51.50      0.004      0.00
         0.30       0.00     51.50      0.004      0.00
         0.45       0.00     51.50      0.004      0.00
         0.60       0.00     51.50      0.004      0.00
         0.75       0.00     51.50      0.004      0.00
         0.90       0.01     51.51      0.004      0.00
         1.05       0.03     51.52      0.004      0.01
         1.20       0.05     51.54      0.005      0.02
         1.35       0.14     51.60      0.005      0.04
         1.50       0.57     51.84      0.009      0.14
         1.65       0.61     52.23      0.014      0.29
         1.80       0.42     52.40      0.016      0.36
         1.95       0.30     52.39      0.016      0.36
         2.10       0.23     52.32      0.015      0.33
         2.25       0.17     52.22      0.014      0.29
         2.40       0.13     52.11      0.012      0.24
         2.55       0.09     52.01      0.011      0.20
         2.70       0.07     51.91      0.009      0.16
         2.85       0.05     51.83      0.008      0.13
         3.00       0.04     51.76      0.007      0.10
         3.15       0.03     51.70      0.007      0.08
         3.30       0.02     51.66      0.006      0.06
         3.45       0.02     51.62      0.006      0.05
         3.60       0.01     51.60      0.005      0.04
         3.75       0.01     51.57      0.005      0.03
         3.90       0.01     51.56      0.005      0.02
         4.05       0.01     51.55      0.005      0.02
         4.20       0.01     51.54      0.004      0.01
         4.35       0.01     51.53      0.004      0.01
         4.50       0.01     51.53      0.004      0.01
         4.65       0.01     51.52      0.004      0.01
         4.80       0.00     51.52      0.004      0.01
         4.95       0.00     51.52      0.004      0.01
         5.10       0.00     51.52      0.004      0.01
         5.25       0.00     51.51      0.004      0.01
         5.40       0.00     51.51      0.004      0.01
         5.55       0.00     51.51      0.004      0.01
         5.70       0.01     51.51      0.004      0.01
         5.85       0.01     51.51      0.004      0.01
         6.00       0.01     51.51      0.004      0.01
         6.15       0.00     51.51      0.004      0.01
         6.30       0.00     51.51      0.004      0.00
     PEAK DISCHARGE =        0.363 CFS - PEAK OCCURS AT HOUR    1.85
     MAXIMUM WATER SURFACE ELEVATION =       52.408
     MAXIMUM STORAGE =        0.0161 AC-FT      INCREMENTAL TIME=    0.050000HRS

    *ADD OUTFALL OF POND B TO REMAINING BASIN FOR TOTAL PROPOSED DISCHARGE

    ADD HYD              ID=8   HYD NO=108  ID I=7  ID II=4
    PRINT HYD            ID=8 CODE=3

                                        PARTIAL HYDROGRAPH   108.00

         TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME
FLOW          TIME      FLOW
          HRS       CFS           HRS       CFS           HRS       CFS           HRS
CFS           HRS       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
                                  Page 7
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                                 AHYMO.OUT
         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       0.0         6.000       0.0        10.950       0.0        15.900
0.0         20.850       0.0
         1.200       0.0         6.150       0.0        11.100       0.0        16.050
0.0         21.000       0.0
         1.350       0.1         6.300       0.0        11.250       0.0        16.200
0.0         21.150       0.0
         1.500       0.2         6.450       0.0        11.400       0.0        16.350
0.0         21.300       0.0
         1.650       0.4         6.600       0.0        11.550       0.0        16.500
0.0         21.450       0.0
         1.800       0.4         6.750       0.0        11.700       0.0        16.650
0.0         21.600       0.0
         1.950       0.4         6.900       0.0        11.850       0.0        16.800
0.0         21.750       0.0
         2.100       0.3         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       0.2         7.500       0.0        12.450       0.0        17.400
0.0         22.350       0.0
         2.700       0.2         7.650       0.0        12.600       0.0        17.550
0.0         22.500       0.0
         2.850       0.1         7.800       0.0        12.750       0.0        17.700
0.0         22.650       0.0
         3.000       0.1         7.950       0.0        12.900       0.0        17.850
0.0         22.800       0.0
         3.150       0.1         8.100       0.0        13.050       0.0        18.000
0.0         22.950       0.0
         3.300       0.1         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         24.600       0.0

        RUNOFF VOLUME =     1.42188 INCHES     =       0.0461 ACRE-FEET
        PEAK DISCHARGE RATE =       0.40 CFS  AT   1.750 HOURS   BASIN AREA =  0.0006 SQ. MI.



    FINISH

        NORMAL PROGRAM FINISH         END TIME (HR:MIN:SEC) = 17:02:26


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City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 07/12/23
BY: Renée C. Brissette
HydroTrans # G11D014D1

THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTION, OR ERROR OR DIMENSIONS IN PLANS, SPECIFICATIONS, OR CONSTRUCTIONS. SUCH APPROVED PLANS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.

ENGINEER'S SEAL	3815 MOURNING DOVE	DRAWN BY DEM
DAVID SOULE 14522 7/3/23	GRADING AND DRAINAGE PLAN	DATE 6-27-23
		3815 MOURNING DOVE .DWG
	Rio Grande Engineering PO BOX 93924 ALBUQUERQUE, NM 87199 (505) 321-9099	SHEET # C2
DAVID SOULE P.E. #14522		JOB #