CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

November 21, 2024

Ronald Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

RE: Cibola Loop Multifamily
Conceptual Grading Plan
Engineer's Stamp Date: 11/06/2024
Hydrology File: A13D011B

Dear Mr. Bohannan:

Based upon the information provided in your submittal received 11/06/2024, the Conceptual Grading Plan is preliminarily approved for action by the Development Facilitation Team (DFT) on the Site Plan for a Building Permit.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

PRIOR TO BUILDING PERMIT / WORK ORDER:

1. Please submit a more detailed Grading & Drainage Plan to Hydrology for review and approval. This digital (.pdf) is emailed to PLNDRS@cabq.gov along with the Drainage Transportation Information Sheet.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 505-924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 505-924-3362 or richardmartinez@cabq.gov.

Sincerely,

Richard Martinez, P.E.
Senior Engineer, Hydrology
Planning Department

City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (DTIS)

Project Title: Cibola Loop Multifamily Hydrology File # _____
Legal Description: TR B-1 BULK PLAT TRACTS A-1, A-2, B-1 & C-1 CIBOLA LOOP SUBDIVISION
City Address, UPC, OR Parcel: 101306632712340310

Applicant/Agent: Tierra West LLC Contact: Luis Noriega
Address: 5571 Midway Park Pl NE, Albuquerque, NM 87109 Phone: 505-858-3100
Email: lnoriega@tierrawestllc.com

Applicant/Owner: _____ Contact: _____
Address: _____ Phone: _____
Email: _____

TYPE OF DEVELOPMENT: ☐ Plat (# of lots) _____ ☐ Single Family Home
☑ All other Developments

RE-SUBMITTAL: ☑ YES ☐ NO

DEPARTMENT: ☐ TRANSPORTATION ☑ HYDROLOGY/DRAINAGE

Check all that apply under Both the Type of Submittal and the Type of Approval Sought:

TYPE OF SUBMITTAL:

- ☐ Engineering / Architect Certification
- ☑ Conceptual Grading & Drainage Plan
- ☐ Grading & Drainage Plan, and/or Drainage Report
- ☐ Drainage Report (Work Order)
- ☐ Drainage Master Plan
- ☐ Conditional Letter of Map Revision (CLOMR)
- ☐ Letter of Map Revision (LOMR)
- ☐ Floodplain Development Permit
- ☐ Traffic Circulation Layout (TCL) – Administrative
- ☐ Traffic Circulation Layout (TCL) – DFT Approval
- ☐ Traffic Impact Study (TIS)
- ☐ Street Light Layout
- ☐ OTHER (SPECIFY) _____

TYPE OF APPROVAL SOUGHT:

- ☐ Pad Certification
- ☐ Building Permit
- ☐ Grading Permit
- ☐ Paving Permit
- ☐ SO-19 Permit
- ☐ Foundation Permit
- ☐ Certificate of Occupancy - ☐ Temp ☐ Perm
- ☐ Preliminary / Final Plat
- ☑ Site Plan for Building Permit - DFT
- ☐ Work Order (DRC)
- ☐ Release of Financial Guarantee (ROFG)
- ☐ CLOMR / LOMR
- ☐ Conceptual TCL - DFT
- ☐ OTHER (SPECIFY) _____

DATE SUBMITTED: 11/06/2024

REV. 04/03/24

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

July 31, 2024

Ronald Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

RE: Cibola Loop Multifamily
Conceptual Grading Plan
Engineer's Stamp Date: No Stamp Date
Hydrology File: A13D011B

Dear Mr. Bohannan:

Based upon the information provided in your submittal received 07/31/2024, the Conceptual Grading Plan **is not** approved for action by the Development Facilitation Team (DFT) on Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

1. Please show the existing CoA Police Station that is on Tract B-9E-2-A which has been there since 2011. I do not think that the shown contours are current and reflect the benchmark change. This should be updated.

RESPONSE: It was determined that the previous contours were not current, a new topo survey was provided by a registered surveyor on 10/04/2024 that shows current contours around the perimeter of the police station.

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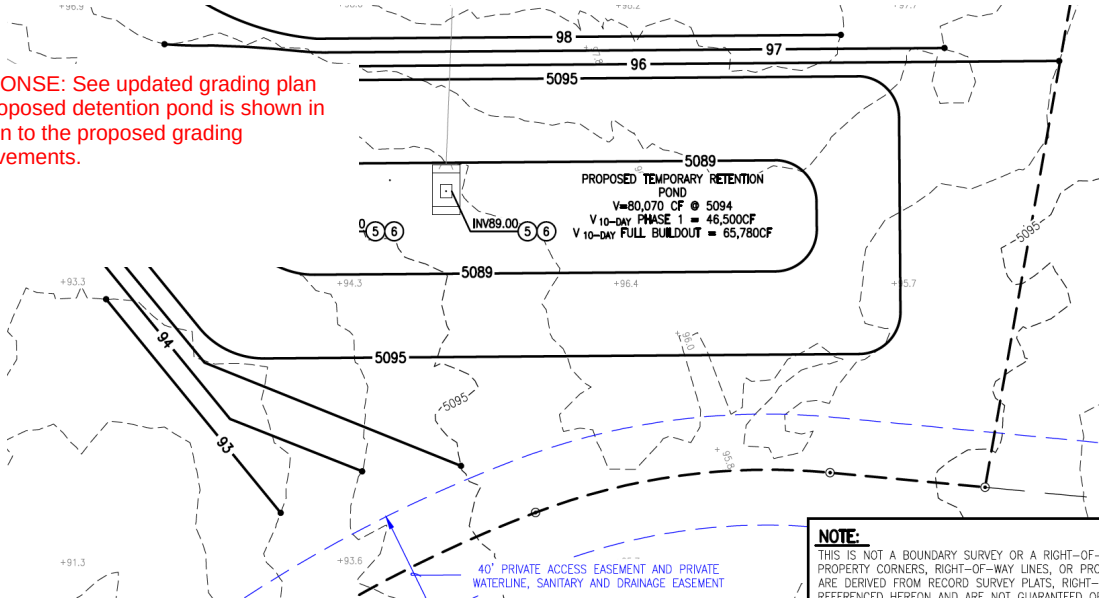
2. Please show the future development of the CoA Cibola Loop Multigenerational Center on Tract A-2 (A13D025). Please note that there is a proposed retention pond near the proposed access road. This is currently under construction.

RESPONSE: See updated grading plan the proposed detention pond is shown in relation to the proposed grading improvements.



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3. Please provide the Benchmark information (location, description and elevation) for the survey contour information provided.
   RESPONSE: Benchmark information provided on sheet GR-1 NAVD 88 ACS Monument "6_A13"
4. Please provide the legal description of the property.
   RESPONSE: Legal description added to sheet GR-1.
5. This site will need a Sensitive Lands Analysis per the IDO (5-2(C)).
   RESPONSE: Attached is the sensitive lands analysis, no sensitive features found.
6. Please use the procedure for 40 acre and smaller basins as outlined in Development Process Manual (DPM) Article 6-2(a). Please provide both the existing conditions and proposed conditions for the 100 year-6 hour storm event. A statement "Refer to pervious Grading & Drainage Report HydroTrans A13D011B." is not acceptable.
   RESPONSE: See attached GR-2 and GR-3 (existing and proposed basin maps) the method of analysis used was ahymo and those calculations are attached.
7. Please provide calculations for the proposed detention pond.
   RESPONSE: The method of analysis used was ahymo and those calculations are attached.
8. Please provide a section of the proposed detention pond showing the top of bank and the bottom of bank. Also, please show the location of the maintenance ramp.
   RESPONSE: See cross section A on sheet GR-3.
9. The proposed pond itself looks funny and appears to be just a vee shaped. There will not be much volume in this design. Please correct with the calculation that were requested in Comment #5.
   RESPONSE: Volume is sufficient to reduce developed flows below historic as shown on the calculations.

10. Please provide the calculation for the required Stormwater Quality Pond per the DPM Article 6-12. To calculate the required SWQV, multiply the impervious area draining to the BMP by 0.42 inches for new development sites.
    RESPONSE: See sheet GR-3 storm water quality calculations table.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

RESPONSE: Aknoledged

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

August 7, 2023

Ms. Jolene Wolfley
City of Albuquerque – DFT
600 2nd Street NW
Albuquerque NM 87102

RE: CIBOLA LOOP MULTIFAMILY
CIBOLA LP NW ALBUQUERQUE 87114
TRACT B-1 BULK PLAT TRACTS A-1, A-2, B-1 & C-1 CIBOLA LOOP SUBDIVISION
CONT 5.1785 AC
SENSITIVE LANDS ANALYSIS

Dear Ms. Wolfley:

This report outlines the constraints identified within the proposed site plan being comprised of TRACT B-1 BULK PLAT TRACTS A-1, A-2, B-1 & C-1 CIBOLA LOOP SUBDIVISION located along Ellison Rd Albuquerque, NM 87114 (the "subject site"). The subject site is zoned Mixed-Use Low Intensity (MX-L). and lies west of the Rio Grande River. The site is currently vacant with desert shrubs and grasses. A portion of a large detention pond is located along the southwest corner of the site, power poles and overhead electrical lines to the south and a police station to the east.

Tierra West, LLC has performed a Sensitive Lands Analysis report as required under the Integrated Development Ordinance (IDO) Section 5-2(C) for new subdivisions of land, documenting the following:

Item:	Presence:	Commentary:
Floodplains and Flood Hazard	Area of minimal flood hazard	The site is in an area with minimal flood risk
Steep Slopes	None	The overall site is not in an area with steep slopes
Unstable Soils	None	Based on USDS Web Soil Survey Data the site soils are mainly Loamy fine Sand
Wetlands (Constant supply of water)	None	No areas of standing water present on the site
Arroyo	None	No arroyos were identified
Irrigation Facilities	None	No irrigation facilities were identified
Escarpment	None	No areas of escarpment were identified
Large stands of mature trees	None	No large mature trees present
Archeological sites	None	No archaeological issues have been uncovered.


Jul 17, 2024 2:24:43 PM
35.20629857N 106.66339196W
16° N
501
Albuquerque
Altitude:5032.2ft
Speed:0.0mi/h


Jul 17, 2024 2:25:49 PM
35.20666162N 106.66302807W
256° W
501
Albuquerque
Altitude:5024.5ft
Speed:2.2mi/h

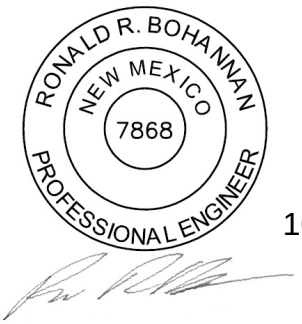

S
E
W
N
Jul 17, 2024 2:26:40 PM
35.20698785N 106.66322048W
178° S
4051 Ellison Road Northwest
Albuquerque
Altitude 5037.2ft
Speed 1.4mi/h


E
N
S
W
Jul 17, 2024 2:27:44 PM
35.20669393N 106.66362015W
92° E
501
Albuquerque
Altitude 5032.3ft
Speed 0.0mi/h

In conclusion, none of the above features have been determined to be present on this site. Various attached documents along with the above photos of the site support our findings of no onsite sensitive land issues.

If you have any questions or need additional information regarding this matter, please do not hesitate to contact me.

Sincerely,



10/02/2024

Ronald R. Bohannan, P.E

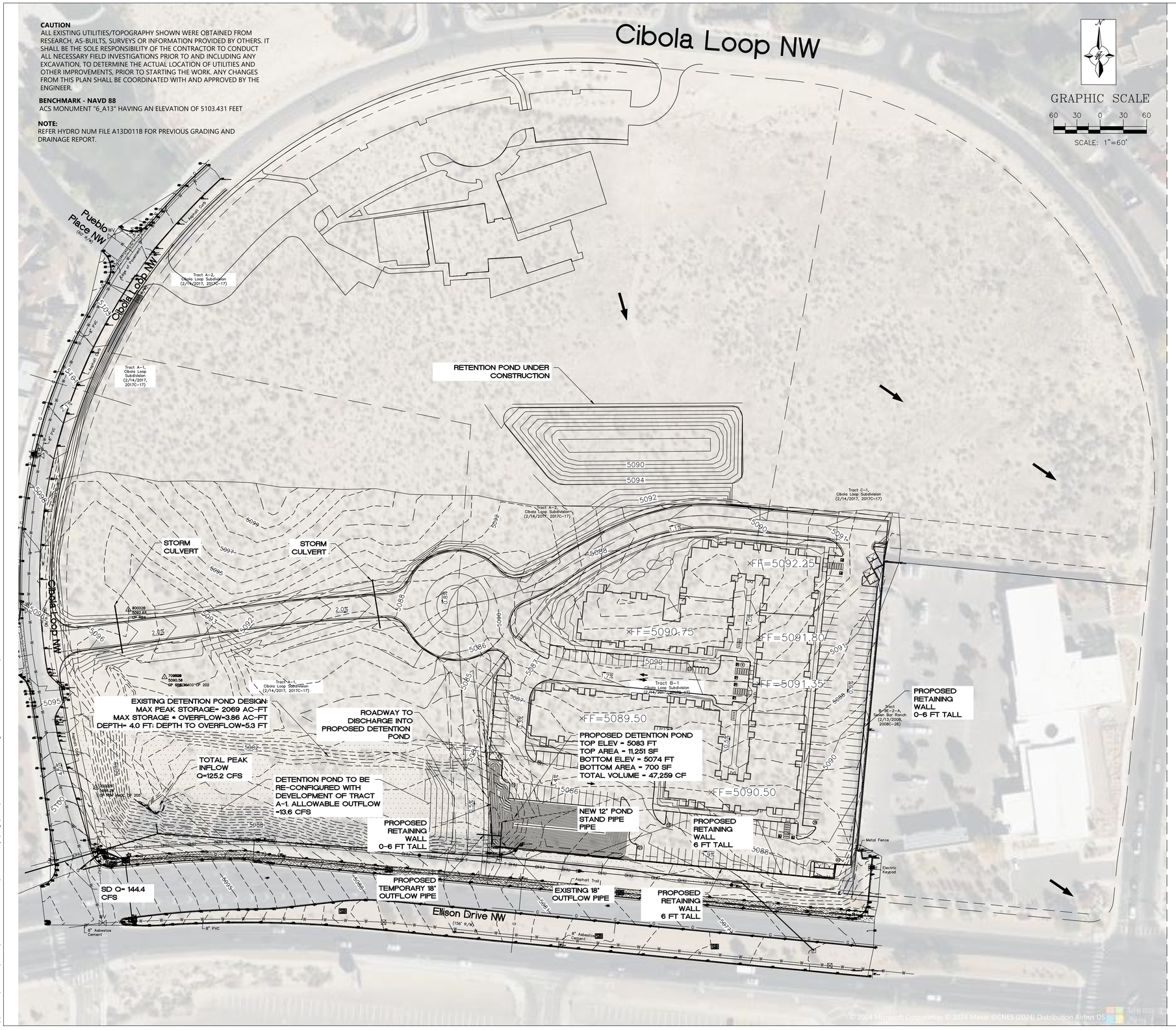
JN: 2024040
RRB/Luis

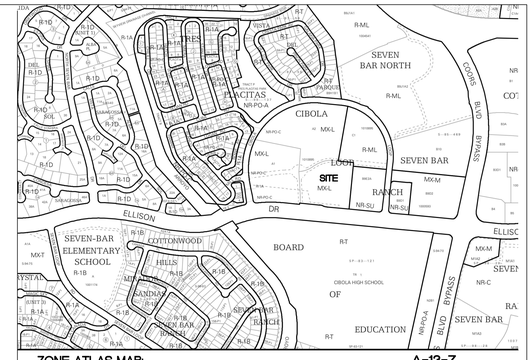
CAUTION
ALL EXISTING UTILITIES/TOPOGRAPHY SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

BENCHMARK - NAVD 88
ACS MONUMENT "6_A13" HAVING AN ELEVATION OF 5103.431 FEET

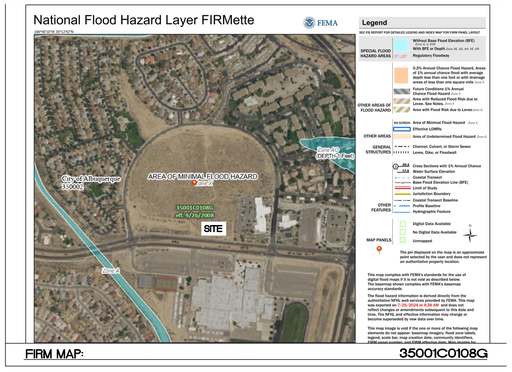
NOTE:
REFER HYDRO NUM FILE A13D011B FOR PREVIOUS GRADING AND DRAINAGE REPORT.

GRAPHIC SCALE
60 30 0 30 60
SCALE: 1"=60'





ZONE ATLAS MAP: A-13-Z



FIRM MAP: 35001C0108G

LEGAL DESCRIPTION:
TRACT B-1 BULK PLAT TRACTS A-1, A-2, B-1 & C-1 CIBOLA LOOP SUBDIVISION CONT 5.1785 AC

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- PROPOSED SIDEWALK
- RETAINING WALL
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- 5010 EXISTING CONTOUR MAJOR
- 5011 EXISTING CONTOUR MINOR
- x 5048.25 EXISTING SPOT ELEVATION
- BASIN

ENGINEER'S SEAL
RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
11/06/2024
RONALD R. BOHANNAN P.E. #7868

CIBOLA LOOP APARTMENTS
ALBUQUERQUE, NM

CONCEPTUAL GRADING & DRAINAGE PLAN

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY: LN
DATE: 07/16/2024
2024040_BASINS
SHEET #: GR-1
JOB #: 2024040

Existing Conditions

Basin ID	Tract	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 24-Hr Runoff (in)	Volume (ac-ft)	Flow cfs
H1	A	332,374	7.63	0.01192	75%	5.723	0%	0.000	25%	1.908	0%	0.000	0.640	0.405	7.36
H2	A	206,021	4.73	0.00739	95%	4.493	0%	0.000	5%	0.236	0%	0.000	0.560	0.222	4.98
Total		**538,395**	**12.36**	**0.01931**		**10.216**		**0.000**		**2.144**		**0.000**		**0.627**	**12.34**

EXISTING CONDITIONS:
BASINS H1 AND H2 ARE CURRENTLY UNDEVELOPED WITH AN EXISTING DETENTION POND LOCATED ON THE SOUTHWEST SIDE OF THE PROJECT SITE. UNDEVELOPED STORM WATER RUNOFF CURRENTLY SHEET FLOWS INTO THE EXISTING DETENTION POND FROM NORTH TO SOUTH. NO OTHER BASIN CONTRIBUTE TO SITE FLOWS AS DEPICTED IN THE EXHIBIT.

Cibola Loop NW

Pueblo Place NW (60' R/W)

Cibola Loop NW (66' R/W)

Ellison Drive NW (156' R/W)

TRACT A-2
MULTIGENERATIONAL CENTER
FULL RETENTION
FLOW DOES NOT CONTRIBUTE TO SITE FLOWS

RETENTION POND UNDER CONSTRUCTION
REFER HYDROLOGY FILE: A13D025

TRACT C-1
POLICE STATION
Q_ALLOW=8.5 CFS
FLOW DOES NOT CONTRIBUTE TO SITE FLOWS

BASIN H1
7.63 ACRES

BASIN H2
4.73 ACRES

TRACT B-9E-2-A
POLICE STATION
Q_ALLOW=2.1 CFS
FLOW DOES NOT CONTRIBUTE TO SITE FLOWS

EXISTING DETENTION POND TO BE RE-CONFIGURED WITH DEVELOPMENT OF TRACT A-1. ALLOWABLE OUTFLOW =13.6 CFS

Tract A-2, Cibola Loop Subdivision (2/14/2017, 2017C-17)

Tract A-1, Cibola Loop Subdivision (2/14/2017, 2017C-17)

Tract B-1 Cibola Loop Subdivision (2/14/2017, 2017C-17)

Tract B-9E-2-A, Seven Bar Ranch (2/13/2008, 2008C-26)

Tract C-1, Cibola Loop Subdivision (2/14/2017, 2017C-17)

Asphalt Trail

Metal Fence

Electric Keypad

8" Asbestos Cement

8" PVC

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- PROPOSED SIDEWALK
- RETAINING WALL
- 5010 — CONTOUR MAJOR
- 5011 — CONTOUR MINOR
- x 5048.25 — SPOT ELEVATION
- FLOW ARROW
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- 5010 — EXISTING CONTOUR MAJOR
- 5011 — EXISTING CONTOUR MINOR
- x 5048.25 — EXISTING SPOT ELEVATION
- BASIN

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

11/06/2024

RONALD R. BOHANNAN P.E. #7868

CIBOLA LOOP APARTMENTS
ALBUQUERQUE, NM

EXISTING BASIN MAP

DRAWN BY: LN

DATE: 07/16/2024

2024040_BASINS

SHEET # **GR-2**

JOB # 2024040

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505) 858-3100
www.tierrawestllc.com

PROPOSED DETENTION POND STORAGE					
ACTUAL ELEV.	H (FT)	VOLUME (CF)	Q (CFS)	VOLUME (AC-FT)	
5074	0.00	0	0.00	0.0000	
5075	0.00	1099	0.00	0.0252	
5076	0.00	3031	0.00	0.0696	
5077	0.00	5869	0.00	0.1347	
5078	0.00	9689	0.00	0.2224	
5079	0.00	14572	0.00	0.3345	
5080	0.00	20629	0.00	0.4736	INV
5081	1.00	27988	3.78	0.6425	
5082	2.00	36820	5.35	0.8453	
5083	3.00	47259	6.55	1.0849	

Proposed Conditions

Basin Descriptions													100-Year, 24-Hr		
Basin ID	Tract	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Runoff (in)	Volume (ac-ft)	Flow cfs
D1.1	A	59,550	1.37	0.00214	0%	0.000	0%	0.000	0%	0.000	100%	1.367	2.040	0.233	5.04
D1.2	A	140,469	3.22	0.00504	100%	3.225	0%	0.000	0%	0.000	0%	0.000	0.550	0.148	3.51
D1.3	A	132,355	3.04	0.00475	50%	1.519	0%	0.000	50%	1.519	0%	0.000	0.760	0.192	4.81
D2	A	206,021	4.73	0.00739	0%	0.000	0%	0.000	30%	1.419	70%	3.311	1.730	0.680	15.70
Total		**538,395**	**12.36**	**0.01931**		**4.744**		**0.000**		**2.938**		**4.678**		**1.253**	**29.060**

PROPOSED CONDITIONS:
THE DEVELOPED PROJECT SITE CONSISTS OF A NEW RESIDENTIAL APARTMENT DEVELOPMENT AS WELL AS A ROADWAY AND ROUNDABOUT IMPROVEMENTS. BASIN D1.1 AND D2 ARE PROPOSED TO SHEET FLOW INTO A NEW DETENTION POND ON THE SOUTHWEST CORNER OF BASIN D2. THE PROPOSED DETENTION POND PER THE ATTACHED AHYMO CALCULATIONS REDUCES THE COMBINED FLOW RATE OF 5.04 CFS AND 15.70 RESPECTIVELY (20.74 CFS TOTAL) TO 3.76 CFS.

BASINS D1.2 AND D1.3 SHALL CONTINUE TO FLOW TOWARDS THE EXISTING DETENTION POND AT HISTORIC RATES UNTIL FURTHER DEVELOPMENT IS IMPLEMENTED.

THE TOTAL DEVELOPED DISCHARGE IS 12.11 CFS WHICH IS LESS THAN THE HISTORIC RATE OF 12.34 CFS

Cibola Loop NW

TRACT A-2
MULTIGENERATIONAL CENTER
FULL RETENTION
FLOW DOES NOT CONTRIBUTE TO SITE FLOWS

RETENTION POND UNDER CONSTRUCTION
REFER HYDROLOGY FILE: A13D025

TRACT C-1
POLICE STATION
Q_ALLOW=8.5 CFS
FLOW DOES NOT CONTRIBUTE TO SITE FLOWS

BASIN D1.2
3.22 ACRES
FLOW=3.51 CFS

BASIN D1.1
1.37 ACRES
FLOW=5.04 CFS

BASIN D2
4.73 ACRES
FLOW = 15.70 CFS

TRACT B-9E-2-A
POLICE STATION
Q_ALLOW=2.1 CFS
FLOW DOES NOT CONTRIBUTE TO SITE FLOWS

BASIN D1.3
3.04 ACRES
FLOW=4.81 CFS

BASIN D1.1 TO DRAIN TO PROPOSED DETENTION POND

EXISTING DETENTION POND TO BE RE-CONFIGURED WITH DEVELOPMENT OF TRACT A-1 ALLOWABLE OUTFLOW =13.6 CFS

PROPOSED DETENTION POND
INFLOW = 20.74 CFS
OUTFLOW = 3.76 CFS

MAINTENANCE RAMP

Ellison Drive NW

Pueblo Place NW

Tract A-2, Cibola Loop Subdivision (2/14/2017, 2017C-17)

Tract A-1, Cibola Loop Subdivision (2/14/2017, 2017C-17)

Tract C-1, Cibola Loop Subdivision (2/14/2017, 2017C-17)

Tract B-1 Cibola Loop Subdivision (2/14/2017, 2017C-17)

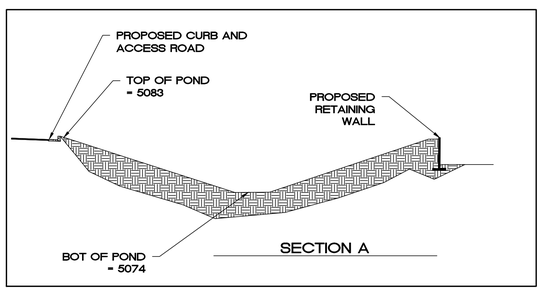
Tract B-9E-2-A, Seven Bar Ranch (2/13/2008, 2008C-26)

FF=5092.25
FF=5091.80
FF=5091.35
FF=5089.50
FF=5090.50

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- PROPOSED SIDEWALK
- RETAINING WALL
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- 5010 EXISTING CONTOUR MAJOR
- 5011 EXISTING CONTOUR MINOR
- x 5048.25 EXISTING SPOT ELEVATION
- BASIN

Stormwater Quality Volume				
Total Impervious Area =			ΣArea in "Treatment D"	
Retainage depth = 0.42" Per DPM			0.0350	FT
Retention Volume =			**0.035 x area D**	CF
Area D (4.678) =			203,773	SF
Volume Required =			7,132.06	CF
Volume Provided =			20,629.00	CF



ENGINEER'S SEAL
RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
11/06/2024
RONALD R. BOHANNAN P.E. #7868

CIBOLA LOOP APARTMENTS
ALBUQUERQUE, NM

PROPOSED BASIN MAP

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY: LN
DATE: 07/16/2024
2024040_BASINS
SHEET #: **GR-2**
JOB #: 2024040

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4) - Ver. S4.01a, Rel: 01a RUN DATE (MON/DAY/YR) =11/06/2024
INPUT FILE = NAS\Z_Drive\2024\2024040 Cibola Loop Multifamily\Drainage\2024040-Hymo.txt USER NO.= AHYMO_Temp_User:20122010

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= 0.00
RAINFALL TYPE= 1 NOAA 14										RAIN6= 2.290
COMPUTE NM HYD	H1	-	1	0.01192	7.36	0.405	0.63699	1.650	0.964	PER IMP= 0.00
COMPUTE NM HYD	H2	-	1	0.00739	4.98	0.222	0.56338	1.500	1.054	PER IMP= 0.00
COMPUTE NM HYD	D11	-	1	0.00214	5.04	0.233	2.03792	1.500	3.681	PER IMP= 100.00
COMPUTE NM HYD	D12	-	2	0.00504	3.51	0.148	0.54897	1.500	1.088	PER IMP= 0.00
COMPUTE NM HYD	D13	-	3	0.00475	4.81	0.192	0.75760	1.500	1.581	PER IMP= 0.00
COMPUTE NM HYD	D2	-	4	0.00739	15.70	0.680	1.72651	1.500	3.319	PER IMP= 70.00
ADD HYD D1.1 AND D2	100.10	1& 4	5	0.00953	20.74	0.913	1.79634	1.500	3.400	
ROUTE RESERVOIR	POND.1	5	6	0.00953	3.76	0.913	1.79634	1.950	0.616	AC-FT= 0.641
FINISH										

```
        AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
             RUN DATE (MON/DAY/YR) = 11/06/2024
             START TIME (HR:MIN:SEC) = 14:08:05     USER NO.= AHYMO_Temp_User:20122010
             INPUT FILE = \\TWNAS\Z_Drive\2024\2024040 Cibola Loop
Multifamily\Drainage\2024040-Hymo.txt

    ************************************************************
    *                Cibola Loop Apartments                    *
    ************************************************************
    *           100-YEAR 24-HR STORM (UNDER EXISTING CONDITIONS)    *
    ************************************************************
    *Zone 1                                                    *
    *NOAA ATLAS 14, VOLUME 1, VERSION 5                        *
    *LATITUDE: 35.2070°                                        *
    *LONGITUDE: -106.6640°                                     *
    *ELEVATION: 5091.00 FT                                     *
    ************************************************************
    START               TIME=0.0
    *
    *
    RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                        RAIN ONE=1.76 IN RAIN SIX=2.29 IN
                        RAIN DAY=2.62 IN DT=0.15 HR

                    6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM &
AZ) - D1
                    DT =   0.150000 HOURS       END TIME =     6.000000 HOURS
                      0.0000  0.0111  0.0245  0.0543  0.0934  0.1362  0.1872
                      0.2698  0.4198  0.8074  1.5512  1.7813  1.8967  1.9646
                      2.0114  2.0481  2.0742  2.0892  2.1030  2.1159  2.1280
                      2.1393  2.1500  2.1601  2.1698  2.1792  2.1882  2.1969
                      2.2054  2.2136  2.2215  2.2292  2.2367  2.2440  2.2511
                      2.2580  2.2647  2.2712  2.2776  2.2839  2.2900

    *
    * EXISTING BASIN H1
    *
    COMPUTE NM HYD      ID=1 HYD NO=H1 AREA=0.01192 SQ MI
                        PER A=75.00 PER B=0.00 PER C=25.00 PER D=0.00
                        TP=0.29 HR MASS RAINFALL=-1

          K =  0.328505HR    TP =  0.290000HR    K/TP RATIO =  1.132777     SHAPE CONSTANT, N
=  3.124531
          UNIT PEAK =   11.995    CFS   UNIT VOLUME =   0.9970       B =   291.83      P60 =
1.7600
          AREA =     0.011920 SQ MI    IA =   0.57500 INCHES    INF =   1.46000 INCHES PER
HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.150000

    PRINT HYD           ID=1 CODE=1

                                          HYDROGRAPH FROM AREA H1


          RUNOFF VOLUME =     0.63699 INCHES     =       0.4050 ACRE-FEET
          PEAK DISCHARGE RATE =       7.36 CFS AT   1.650 HOURS   BASIN AREA =  0.0119 SQ. MI.



    *
    * EXISTING BASIN H2
    *
    COMPUTE NM HYD      ID=1 HYD NO=H2 AREA=0.00739 SQ MI
                        PER A=95.00 PER B=0.00 PER C=5.00 PER D=0.00
                        TP=0.21 HR MASS RAINFALL=-1

          K =  0.257365HR    TP =  0.210000HR    K/TP RATIO =  1.225546     SHAPE CONSTANT, N
=  2.904745
          UNIT PEAK =   9.6411    CFS   UNIT VOLUME =   0.9850       B =   273.97      P60 =
1.7600
          AREA =     0.007390 SQ MI    IA =   0.63500 INCHES    INF =   1.62800 INCHES PER
```

```
HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.150000

    PRINT HYD           ID=1 CODE=1

                                          HYDROGRAPH FROM AREA H2


        RUNOFF VOLUME =     0.56338 INCHES     =       0.2220 ACRE-FEET
        PEAK DISCHARGE RATE =       4.98 CFS  AT   1.500 HOURS   BASIN AREA =  0.0074 SQ. MI.



    ****************************************************************
    *           100-YEAR 24-HR STORM (UNDER PROPOSED CONDITIONS)    *
    ****************************************************************
    *
    * PROPOSED BASIN D1.1
    *
    COMPUTE NM HYD      ID=1 HYD NO=D11 AREA=0.00214 SQ MI
                        PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                        TP=0.18 HR MASS RAINFALL=-1

         K =  0.098100HR    TP =  0.180000HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N
=  7.106428
         UNIT PEAK =   6.2568    CFS   UNIT VOLUME =    1.053       B =   526.28      P60 =
1.7600
         AREA =     0.002140 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER
HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.150000

    PRINT HYD           ID=1 CODE=1

                                          HYDROGRAPH FROM AREA D11


        RUNOFF VOLUME =     2.03792 INCHES     =       0.2326 ACRE-FEET
        PEAK DISCHARGE RATE =       5.04 CFS  AT   1.500 HOURS   BASIN AREA =  0.0021 SQ. MI.




    * PROPOSED BASIN D1.2
    *
    COMPUTE NM HYD      ID=2 HYD NO=D12 AREA=0.00504 SQ MI
                        PER A=100.00 PER B=0.00 PER C=0.00 PER D=0.00
                        TP=0.20 HR MASS RAINFALL=-1

         K =  0.249748HR    TP =  0.200000HR    K/TP RATIO =  1.248739     SHAPE CONSTANT, N
=  2.856080
         UNIT PEAK =   6.8009    CFS   UNIT VOLUME =   0.9815       B =   269.88      P60 =
1.7600
         AREA =     0.005040 SQ MI    IA =   0.65000 INCHES    INF =   1.67000 INCHES PER
HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.150000

    PRINT HYD           ID=2 CODE=1

                                          HYDROGRAPH FROM AREA D12


        RUNOFF VOLUME =     0.54897 INCHES     =       0.1476 ACRE-FEET
        PEAK DISCHARGE RATE =       3.51 CFS  AT   1.500 HOURS   BASIN AREA =  0.0050 SQ. MI.



    *
    * PROPOSED BASIN D1.3
    *
    COMPUTE NM HYD      ID=3 HYD NO=D13 AREA=0.00475 SQ MI
                        PER A=50.00 PER B=0.00 PER C=50.00 PER D=0.00
```

```
                    TP=0.20 HR MASS RAINFALL=-1

        K =  0.203363HR    TP =  0.200000HR    K/TP RATIO =  1.016815     SHAPE CONSTANT, N
=  3.471394
        UNIT PEAK =   7.5582    CFS   UNIT VOLUME =   0.9946       B =   318.24      P60 =
1.7600
        AREA =     0.004750 SQ MI    IA =   0.50000 INCHES    INF =   1.25000 INCHES PER
HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.150000

    PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA D13


        RUNOFF VOLUME =     0.75760 INCHES     =       0.1919 ACRE-FEET
        PEAK DISCHARGE RATE =       4.81 CFS  AT   1.500 HOURS   BASIN AREA =  0.0048 SQ. MI.




    * PROPOSED BASIN D2
    *
    COMPUTE NM HYD      ID=4 HYD NO=D2 AREA=0.00739 SQ MI
                        PER A=0.00 PER B=0.00 PER C=30.00 PER D=70.00
                        TP=0.18 HR MASS RAINFALL=-1

        K =  0.098100HR    TP =  0.180000HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N
=  7.106428
        UNIT PEAK =   15.125    CFS   UNIT VOLUME =    1.054       B =   526.28      P60 =
1.7600
        AREA =     0.005173 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER
HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.150000


        K =  0.141280HR    TP =  0.180000HR    K/TP RATIO =  0.784891     SHAPE CONSTANT, N
=  4.574880
        UNIT PEAK =   4.8261    CFS   UNIT VOLUME =    1.013       B =   391.84      P60 =
1.7600
        AREA =     0.002217 SQ MI    IA =   0.35000 INCHES    INF =   0.83000 INCHES PER
HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.150000

    PRINT HYD           ID=4 CODE=1

                                        HYDROGRAPH FROM AREA D2


        RUNOFF VOLUME =     1.72651 INCHES     =       0.6805 ACRE-FEET
        PEAK DISCHARGE RATE =      15.70 CFS  AT   1.500 HOURS   BASIN AREA =  0.0074 SQ. MI.



    *
    ADD HYD             ID=5 HYD = 100.1 ID I = 1 ID II = 4
    PRINT HYD           ID=5 CODE=1

                                      PARTIAL HYDROGRAPH   100.10


        RUNOFF VOLUME =     1.79634 INCHES     =       0.9130 ACRE-FEET
        PEAK DISCHARGE RATE =      20.74 CFS  AT   1.500 HOURS   BASIN AREA =  0.0095 SQ. MI.



    *

    ****************************************************
    * ROUTE BASINS TO POND 1                           *
    ****************************************************
```

ROUTE RESERVOIR ID=6 HYD NO=POND.1 INFLOW ID=5 CODE=1

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEVATION(FT)
0.0000	0.0000	74.00
1.0000	0.4736	80.00
3.7800	0.6425	81.00
5.3500	0.8453	82.00
6.5500	1.0849	83.00

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	74.00	0.000	0.00
0.15	0.00	74.00	0.000	0.00
0.30	0.00	74.00	0.000	0.00
0.45	0.00	74.00	0.000	0.00
0.60	0.00	74.00	0.000	0.00
0.75	0.57	74.04	0.004	0.01
0.90	1.09	74.17	0.014	0.03
1.05	1.85	74.40	0.031	0.07
1.20	3.47	74.80	0.063	0.13
1.35	9.68	75.80	0.142	0.30
1.50	20.74	78.11	0.324	0.68
1.65	13.73	80.29	0.523	1.81
1.80	6.82	80.85	0.618	3.37
1.95	4.06	80.99	0.641	3.76
2.10	2.69	80.97	0.637	3.69
2.25	1.90	80.87	0.621	3.43
2.40	1.32	80.75	0.601	3.09
2.55	0.82	80.62	0.578	2.72
2.70	0.56	80.48	0.555	2.34
2.85	0.42	80.36	0.534	2.00
3.00	0.32	80.25	0.516	1.70
3.15	0.26	80.16	0.500	1.44
3.30	0.22	80.08	0.487	1.21
3.45	0.19	80.01	0.475	1.03
3.60	0.17	79.89	0.465	0.98
3.75	0.16	79.76	0.455	0.96
3.90	0.16	79.64	0.445	0.94
4.05	0.15	79.52	0.436	0.92
4.20	0.15	79.40	0.426	0.90
4.35	0.15	79.28	0.417	0.88
4.50	0.15	79.17	0.408	0.86
4.65	0.16	79.06	0.400	0.84
4.80	0.16	78.96	0.391	0.83
4.95	0.16	78.85	0.383	0.81
5.10	0.16	78.75	0.375	0.79
5.25	0.17	78.65	0.367	0.78
5.40	0.17	78.56	0.360	0.76
5.55	0.17	78.47	0.353	0.74
5.70	0.18	78.38	0.346	0.73
5.85	0.18	78.30	0.339	0.72
6.00	0.19	78.21	0.333	0.70
6.15	0.08	78.13	0.326	0.69
6.30	0.03	78.03	0.318	0.67
6.45	0.02	77.93	0.310	0.65
6.60	0.01	77.83	0.302	0.64
6.75	0.01	77.73	0.294	0.62
6.90	0.00	77.63	0.287	0.61
7.05	0.00	77.54	0.279	0.59
7.20	0.00	77.45	0.272	0.57
7.35	0.00	77.36	0.265	0.56
7.50	0.00	77.27	0.258	0.55
7.65	0.00	77.19	0.252	0.53
7.80	0.00	77.11	0.245	0.52
7.95	0.00	77.03	0.239	0.50
8.10	0.00	76.95	0.233	0.49
8.25	0.00	76.87	0.227	0.48

TIME	INFLOW	ELEV	VOLUME	OUTFLOW

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
8.40	0.00	76.80	0.221	0.47
8.55	0.00	76.73	0.215	0.45
8.70	0.00	76.65	0.210	0.44
8.85	0.00	76.59	0.204	0.43
9.00	0.00	76.52	0.199	0.42
9.15	0.00	76.45	0.194	0.41
9.30	0.00	76.39	0.189	0.40
9.45	0.00	76.33	0.184	0.39
9.60	0.00	76.27	0.179	0.38
9.75	0.00	76.21	0.174	0.37
9.90	0.00	76.15	0.170	0.36
10.05	0.00	76.10	0.166	0.35
10.20	0.00	76.04	0.161	0.34
10.35	0.00	75.99	0.157	0.33
10.50	0.00	75.94	0.153	0.32
10.65	0.00	75.89	0.149	0.31
10.80	0.00	75.84	0.145	0.31
10.95	0.00	75.79	0.141	0.30
11.10	0.00	75.75	0.138	0.29
11.25	0.00	75.70	0.134	0.28
11.40	0.00	75.66	0.131	0.28
11.55	0.00	75.61	0.127	0.27
11.70	0.00	75.57	0.124	0.26
11.85	0.00	75.53	0.121	0.26
12.00	0.00	75.49	0.118	0.25
12.15	0.00	75.45	0.115	0.24
12.30	0.00	75.42	0.112	0.24
12.45	0.00	75.38	0.109	0.23
12.60	0.00	75.34	0.106	0.22
12.75	0.00	75.31	0.103	0.22
12.90	0.00	75.28	0.101	0.21
13.05	0.00	75.24	0.098	0.21
13.20	0.00	75.21	0.096	0.20
13.35	0.00	75.18	0.093	0.20
13.50	0.00	75.15	0.091	0.19
13.65	0.00	75.12	0.088	0.19
13.80	0.00	75.09	0.086	0.18
13.95	0.00	75.06	0.084	0.18
14.10	0.00	75.03	0.082	0.17
14.25	0.00	75.01	0.080	0.17
14.40	0.00	74.98	0.077	0.16
14.55	0.00	74.96	0.075	0.16
14.70	0.00	74.93	0.074	0.16
14.85	0.00	74.91	0.072	0.15
15.00	0.00	74.88	0.070	0.15
15.15	0.00	74.86	0.068	0.14
15.30	0.00	74.84	0.066	0.14
15.45	0.00	74.82	0.065	0.14
15.60	0.00	74.80	0.063	0.13
15.75	0.00	74.78	0.061	0.13
15.90	0.00	74.76	0.060	0.13
16.05	0.00	74.74	0.058	0.12
16.20	0.00	74.72	0.057	0.12
16.35	0.00	74.70	0.055	0.12
16.50	0.00	74.68	0.054	0.11
16.65	0.00	74.66	0.052	0.11
16.80	0.00	74.65	0.051	0.11
16.95	0.00	74.63	0.050	0.10
17.10	0.00	74.61	0.048	0.10
17.25	0.00	74.60	0.047	0.10
17.40	0.00	74.58	0.046	0.10
17.55	0.00	74.57	0.045	0.09
17.70	0.00	74.55	0.044	0.09
17.85	0.00	74.54	0.042	0.09
18.00	0.00	74.52	0.041	0.09
18.15	0.00	74.51	0.040	0.09

18.30	0.00	74.50	0.039	0.08
18.45	0.00	74.48	0.038	0.08
18.60	0.00	74.47	0.037	0.08
18.75	0.00	74.46	0.036	0.08
18.90	0.00	74.45	0.035	0.07
19.05	0.00	74.44	0.034	0.07
19.20	0.00	74.42	0.034	0.07
19.35	0.00	74.41	0.033	0.07
19.50	0.00	74.40	0.032	0.07
19.65	0.00	74.39	0.031	0.07
19.80	0.00	74.38	0.030	0.06
19.95	0.00	74.37	0.029	0.06
20.10	0.00	74.36	0.029	0.06
20.25	0.00	74.35	0.028	0.06
20.40	0.00	74.34	0.027	0.06
20.55	0.00	74.34	0.026	0.06
20.70	0.00	74.33	0.026	0.05
20.85	0.00	74.32	0.025	0.05
21.00	0.00	74.31	0.024	0.05
21.15	0.00	74.30	0.024	0.05
21.30	0.00	74.29	0.023	0.05
21.45	0.00	74.29	0.023	0.05
21.60	0.00	74.28	0.022	0.05
21.75	0.00	74.27	0.021	0.05
21.90	0.00	74.27	0.021	0.04
22.05	0.00	74.26	0.020	0.04
22.20	0.00	74.25	0.020	0.04
22.35	0.00	74.25	0.019	0.04
22.50	0.00	74.24	0.019	0.04
22.65	0.00	74.23	0.018	0.04
22.80	0.00	74.23	0.018	0.04
22.95	0.00	74.22	0.017	0.04
23.10	0.00	74.22	0.017	0.04
23.25	0.00	74.21	0.017	0.03
23.40	0.00	74.20	0.016	0.03
23.55	0.00	74.20	0.016	0.03
23.70	0.00	74.19	0.015	0.03
23.85	0.00	74.19	0.015	0.03
24.00	0.00	74.18	0.015	0.03
24.15	0.00	74.18	0.014	0.03
24.30	0.00	74.17	0.014	0.03
24.45	0.00	74.17	0.013	0.03
24.60	0.00	74.17	0.013	0.03
24.75	0.00	74.16	0.013	0.03
24.90	0.00	74.16	0.012	0.03
25.05	0.00	74.15	0.012	0.03

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
25.20	0.00	74.15	0.012	0.02
25.35	0.00	74.15	0.011	0.02
25.50	0.00	74.14	0.011	0.02
25.65	0.00	74.14	0.011	0.02
25.80	0.00	74.13	0.011	0.02
25.95	0.00	74.13	0.010	0.02
26.10	0.00	74.13	0.010	0.02
26.25	0.00	74.12	0.010	0.02
26.40	0.00	74.12	0.010	0.02
26.55	0.00	74.12	0.009	0.02
26.70	0.00	74.11	0.009	0.02
26.85	0.00	74.11	0.009	0.02
27.00	0.00	74.11	0.009	0.02
27.15	0.00	74.11	0.008	0.02
27.30	0.00	74.10	0.008	0.02
27.45	0.00	74.10	0.008	0.02
27.60	0.00	74.10	0.008	0.02
27.75	0.00	74.10	0.008	0.02
27.90	0.00	74.09	0.007	0.02
28.05	0.00	74.09	0.007	0.02
28.20	0.00	74.09	0.007	0.01
28.35	0.00	74.09	0.007	0.01

```
    28.50       0.00     74.08      0.007      0.01
    28.65       0.00     74.08      0.006      0.01
    28.80       0.00     74.08      0.006      0.01
    28.95       0.00     74.08      0.006      0.01
    29.10       0.00     74.08      0.006      0.01
    29.25       0.00     74.07      0.006      0.01
    29.40       0.00     74.07      0.006      0.01
    29.55       0.00     74.07      0.006      0.01
    29.70       0.00     74.07      0.005      0.01
    29.85       0.00     74.07      0.005      0.01
    30.00       0.00     74.06      0.005      0.01
    30.15       0.00     74.06      0.005      0.01
    30.30       0.00     74.06      0.005      0.01
    30.45       0.00     74.06      0.005      0.01
    30.60       0.00     74.06      0.005      0.01
    30.75       0.00     74.06      0.004      0.01
    30.90       0.00     74.06      0.004      0.01
    31.05       0.00     74.05      0.004      0.01
    31.20       0.00     74.05      0.004      0.01
    31.35       0.00     74.05      0.004      0.01
    31.50       0.00     74.05      0.004      0.01
    31.65       0.00     74.05      0.004      0.01
    31.80       0.00     74.05      0.004      0.01
    31.95       0.00     74.05      0.004      0.01
    32.10       0.00     74.04      0.004      0.01
    32.25       0.00     74.04      0.003      0.01
    32.40       0.00     74.04      0.003      0.01
    32.55       0.00     74.04      0.003      0.01
    32.70       0.00     74.04      0.003      0.01
    32.85       0.00     74.04      0.003      0.01
    33.00       0.00     74.04      0.003      0.01
    33.15       0.00     74.04      0.003      0.01
    33.30       0.00     74.04      0.003      0.01
    33.45       0.00     74.04      0.003      0.01

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

    33.60       0.00     74.03      0.003      0.01
    33.75       0.00     74.03      0.003      0.01
    33.90       0.00     74.03      0.003      0.01
    34.05       0.00     74.03      0.003      0.01
    34.20       0.00     74.03      0.002      0.01
    34.35       0.00     74.03      0.002      0.01
    34.50       0.00     74.03      0.002      0.00
  PEAK DISCHARGE =        3.756 CFS - PEAK OCCURS AT HOUR    1.95
  MAXIMUM WATER SURFACE ELEVATION =       80.991
  MAXIMUM STORAGE =        0.6411 AC-FT      INCREMENTAL TIME=    0.150000HRS

PRINT HYD           ID=6 CODE=1

                                        HYDROGRAPH FROM AREA POND.1


    RUNOFF VOLUME =     1.79634 INCHES     =       0.9130 ACRE-FEET
    PEAK DISCHARGE RATE =       3.76 CFS  AT   1.950 HOURS   BASIN AREA =  0.0095 SQ. MI.



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FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 14:08:05
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