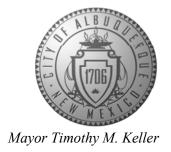
Planning Department Alan Varela, Interim Director



January 21, 2022

Vince Carrica, P.E. Tierra West LLC 5571 Midway Park Place NE Albuquerque, NM 87109

RE: SafeStor Self-Storage

Lot 1 Block 3 Town of Atrisco Grant

**Grading and Drainage Plan** 

Engineer's Stamp Date: 12/14/2021

**Hydrology File: L08D013** 

Dear Mr. Carrica:

Based upon the information provided in your submittal received 12/14/2021, the Grading & Drainage Plan is not approved for Building Permit, and for action by the DRB on Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

PO Box 1293

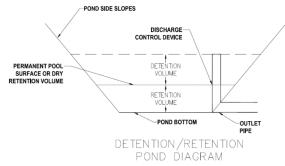
### SHEET GR-1

Albuquerque

NM 87103

www.cabq.gov

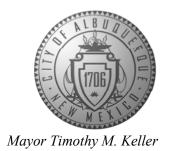
Example: Retention volume = Water Quality Volume.

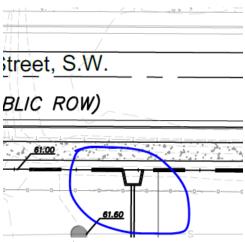


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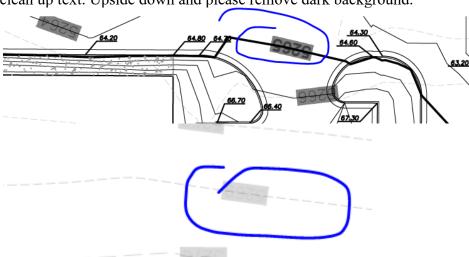
- 2. Provide elevations at the basin boundary and around the site. Also, provide elevations of existing/proposed flowlines for 106<sup>th</sup> and Central.
- 3. What is this? Outfall? (below) provide a detail of how this drainage will discharge downstream into the appropriate proposed infrastructure.

Planning Department Alan Varela, Interim Director





- 4. Provide survey points.
  - a. How does the proposed basins tie into eachother? Show high pt. between defined basins.
- 5. Include project benchmark and datum.
- 6. Please clean up text. Upside down and please remove dark background.



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Albuquerque

NM 87103

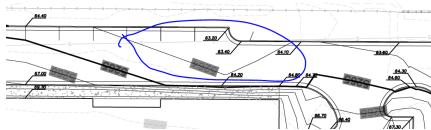
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- 7. A waterblock, 0.87' high, per COA Paving Detail No. 2426, is required at the driveway entrance.
- 8. For a detention pond, please include the 100-year 24 hr. storm calculations and provide volume for that. This may require new calculations. It is not clear what is included in the calcs even though the drainage report stated 24 hr. The numbers do not match up. Please also include the 6 hour typical storm calcs and clearly label them and include the input values from DPM CH-6 Tables.
- 9. The provided drainage report references DPM chapter 22 which is not in use any longer. Please utilize the new DPM Chapter 6 and update calculations.
- 10. This appears to be a ponding area/low spot. How does this flow to pond? (see below)

Planning Department
Alan Varela, Interim Director



Mayor Timothy M. Keller



- 11. Please label pipe size and materials utilized. Does 106<sup>th</sup> St. have capacity? It appears to be unpaved and will require infrastructure improvements to be made.
  - a. There appears to be no downstream capacity along 106<sup>th</sup> st.
- 12. Per the IDO § 6-4(Q), the property owner of the property is responsible for building the adjacent half of 106<sup>th</sup> St. Sunset Gardens to include curb & gutter, and sidewalk. The project will have to go to the DRB for approval of the Infrastructure List which will have to financially guaranteed.
- 13. Additionally, the site will be required to adhere to the Amole Hubble Drainage Master Plan. This includes an allowed flow of 3.54 CFS per acre for the 100-year 24-hour storm event.
- 14. A section of the proposed street will be required and will need to show how the intersection will also work at 106<sup>th</sup> St. and Sunset Gardens.
- 15. Provide storm inlets to collect appropriate flow for the shown basin (see attached Amole Hubble Drainage Master Plan section). The site will be required to tie to the existing 60" storm drain and appropriately size new infrastructure to collect flow from the basin to be sized appropriately for future build out. See attached as-builts (675782) to see HGL and existing infrastructure.
- 16. Since this project is adjacent to, or drains into an Albuquerque Metropolitan Arroyo and Flood Control Authority (AMAFCA) facility, approval by AMAFCA will be need prior to Hydrology approval. Please contact Jarod Romero (jromero@amafca.org or 505-884-2215).
- 17. Provide street section of proposed 106<sup>th</sup> and sunset Gardens per CoA standards. See attached as-builts for existing sections.
- 18. Provide hydraulic calculations for this proposed storm drain system, calculated along the Energy Grade Line; include both the HGL and EGLs in the table.
- 19. Please add a note under Grading Notes. "Side slopes need to be stabilized with Native Grass Seed (per City Spec 1012) with Aggregate Mulch or equal (Must satisfy the "Final Stabilization criteria" CGP 2.2.14.b.)".
- 20. If only seeking Site Plan for Building Permit approval at this time, label the grading plan "Conceptual, Not For Construction" or similar and address the SPBP comments. If seeking SPBP and Building Permit simultaneously, forgo the conceptual markings and address all SPBP and Building Permit comments.
- 21. Provide street capacity analysis demonstrating that the 100-year HGL remains at/below top of curb, and the 100-year EGL remains within the ROW. For arterial roads, one travel lane in each direction must also remain open during the 10yr storm.

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Mayor Timothy M. Keller

22. Provide inlet calculations, including 2x capacity (50% clogging factor) for inlets in a sump. For orifice calculations, the open area (or void space) for the new bike-friendly Albuquerque grate (Dwg 2220) is 3.72sf. Please ensure you orifice calculations are updated to reflect this.

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, <a href="mailto:jhughes@cabq.gov">jhughes@cabq.gov</a>, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 924-3695 or dggutierrez@cabq.gov

Sincerely,

PO Box 1293

David G. Gutierrez, P.E. Senior Engineer, Hydrology Planning Department

Die Gul

Albuquerque

NM 87103

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### FORM DRWS: DRAINAGE REPORT/GRADING AND DRAINAGE PLAN / WATER & SANITARY SEWER AVAILABILITY

THIS FORM IS REQUIRED WITH THE DEVELOPMENT REVIEW BOARD APPLICATION FOR SUBDIVISIONS AND SITE PLANS.

PROJECT NAME:	Safe Sto	re Storage		
AGIS MAP#	L-08-Z			
LEGAL DESCRIPT	ONS: 1	3 Town of Atrisco Gra	ant	
		GRADING AND DRAIN		aggo Ordinanco was
submitted to	the City of	Albuquerque Planning	Department, H	
Applie	cant/Agent			Date
	•	Representative	- BE APPROVE	Date  Description of the property of the prope
X WATER ANI	SEWER.	AVAILABILITY STATE	MENT Avai	lability # 210829
		ailability Statement for the floor, Plaza del Sol) on	8/18/2021	
Applie	cant/Agent		12.	Date
	A Represer t #21082	Bergeron ntative 29 Executed on 9/		12/9/2021 ate
		PROJE	CT#	



### City of Albuquerque

### Planning Department

### Development & Building Services Division

### DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Contact: VINCE CARRICA  109  E-mail: VCARRICA@TIERRAWESTLLC.COM  Contact:  E-mail:  E-mail:  ADMIN SITE ADMIN SITE  COF APPROVAL/ACCEPTANCE SOUGHT:
Contact: VINCE CARRICA  109  E-mail: VCARRICA@TIERRAWESTLLC.COM  Contact:  E-mail:  ENCE X DRB SITE ADMIN SITE  /DRAINAGE  COF APPROVAL/ACCEPTANCE SOUGHT:
E-mail: VCARRICA@TIERRAWESTLLC.COM  Contact: E-mail: ENCE X DRB SITE ADMIN SITE  DRAINAGE COF APPROVAL/ACCEPTANCE SOUGHT:
E-mail: VCARRICA@TIERRAWESTLLC.COM  Contact: E-mail: ENCE X DRB SITE ADMIN SITE  DRAINAGE COF APPROVAL/ACCEPTANCE SOUGHT:
E-mail: VCARRICA@TIERRAWESTLLC.COM  Contact:  E-mail:  ENCE X DRB SITE ADMIN SITE  DRAINAGE  OF APPROVAL/ACCEPTANCE SOUGHT:
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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 PAVING PERMIT APPROVAL GRADING/ PAD CERTIFICATION WORK ORDER APPROVAL CLOMR/LOMR FLOODPLAIN DEVELOPMENT PERMIT OTHER (SPECIFY)
FOS

FEE PAID:\_\_\_\_

### DRAINAGE REPORT

For

### SAFESTOR SELF-STORAGE LOT 1, BLOCK 3 TOWN OF ATRISCO GRANT ALBUQUERQUE, NEW MEXICO

Prepared by

Tierra West, LLC 5571 Midway Park Place NE Albuquerque, New Mexico 87109

Prepared for

SAFStor Albuquerque, NM

December 8, 2021

12/09/2021

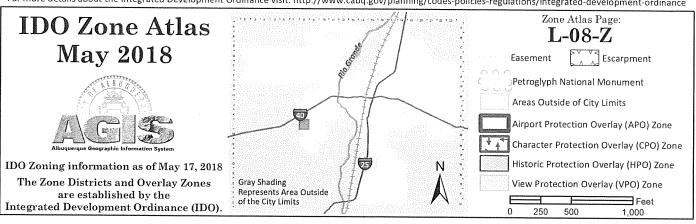
RONALD R BOHANNAN, PE #7868

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Pond Calculation	7
AHYMO Input and Output	8
Grading and Drainage Plan	MAP POCKET



For more details about the Integrated Development Ordinance visit: http://www.cabq.gov/planning/codes-policies-regulations/integrated-development-ordinance



### LOCATION

The proposed light industrial development is located off 106<sup>th</sup> Street south of Central Ave SW, north of Desert Gardens Rd SW in southwest Albuquerque. It is comprised of approximately 4.1965 acres zoned NRBP. This report represents a minimaster drainage management and grading plan for approval by the City of Albuquerque, for grading and Building Permit submittal.

### **DRAINAGE BASIN DESIGNATION**

The drainage basins for proposed conditions are as indicated on the BASIN MAP included in this report. The site is broken into two onsite drainage basins.

### **EXISTING DRAINGE CONDITIONS**

The site is currently vacant with the exception of temporary animal pens in the middle portion along the west property line of the site. The site drains predominantly northwest to southeast. Runoff from the existing site is conveyed to the existing dirt road within the 106<sup>th</sup> Street right of way where it drains to the south.

### FIRM MAP

The site is not located in a designated flood plain as shown on the attached Flood Hazard Zone Map No. 35001C0328J and 35001C0309H both dated 11/4/2016.

### **DESIGN-CRITERIA**

The drainage plan presented in this report was prepared in accordance with the City of Albuquerque Drainage Ordinances and Chapter 22 of the Development Process Manual DPM. The hydrological analysis is based on the 100-year frequency, 24-hour duration storm, as Represented in Section 22, Part A, Hydrology, of the Development Process Manual. The plan will also include retention of the first flush in proposed on-site landscaped areas and a storm water detention pond. See attached Weighted E Table for excess precipitation values calculated for this site.

# National Flood Hazard Layer FIRMette



OTHER AREAS OF FLOOD HAZARD OTHER AREAS MAP PANELS ราลุบรามลาย เลี้ยงเราบลุย EL 5231 Feet C. 4WUAL CHANCE FLOOD DISCHARGE C City of Albuquerque 7.5 DOD AREA OF MINIMAL FLOOD HAZARD (E., 574() Feet) Bernalillo County 350001

## Legend

see his report for detailed legend and index map for firm panel layout

SPECIAL FLOOD HAZARD AREAS

With BFE or Dopth James A. Ad. Mr. 48, AM

Without Base Flood Elevation (BFE)

0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile See Regulatory Floodway

Area with Reduced Flood Risk due to Future Conditions 1% Annual Chance Flood Hazard Zone Levee. See Notes. 2

Area with Flood Risk due to Levee Zigne D

NO SCHEEN Area of Minimal Flood Hazard Jone X Effective LOMRs

Area of Undetermined Flood Hazard Zone

Channel, Culvert, or Storm Sewer STRUCTURES | 111111 Leves, Dike, or Floodwall

GENERAL

Cross Sections with 1% Annual Chance \*\*\* Base Flood Elevation Line (BFE) Water Surface Elevation - Coastal Transect 17,5

**Junisdiction Boundary** Limit of Study

Coastal Transect Baseline Hydrographic Feature Profile Baseline

**FEATURES** 

Digital Data Available

No Digital Data Available

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property focation.

This map complies with FEMA's standards for the use of The basemap shown compiles with fEMA's basemap digital flood maps if it is not void as described below.

authoritative MFHL web services provided by FEMA. This map raffect changes or amendments subsequent to this date and time. The NFHL and affective information may change or The flood hazard information is derived directly from the was exported on 8/20/2021 at 4:02 PW and does not become superseded by new data over time. This map image is void if the one or more of the following map elements do not appear; basemap imagery, flood zone labels, FIRM panel number, and FIRM effective date. Map images for legend, scale bar, map creation date, community identifiers, termanend and unmedemized areas connects used for

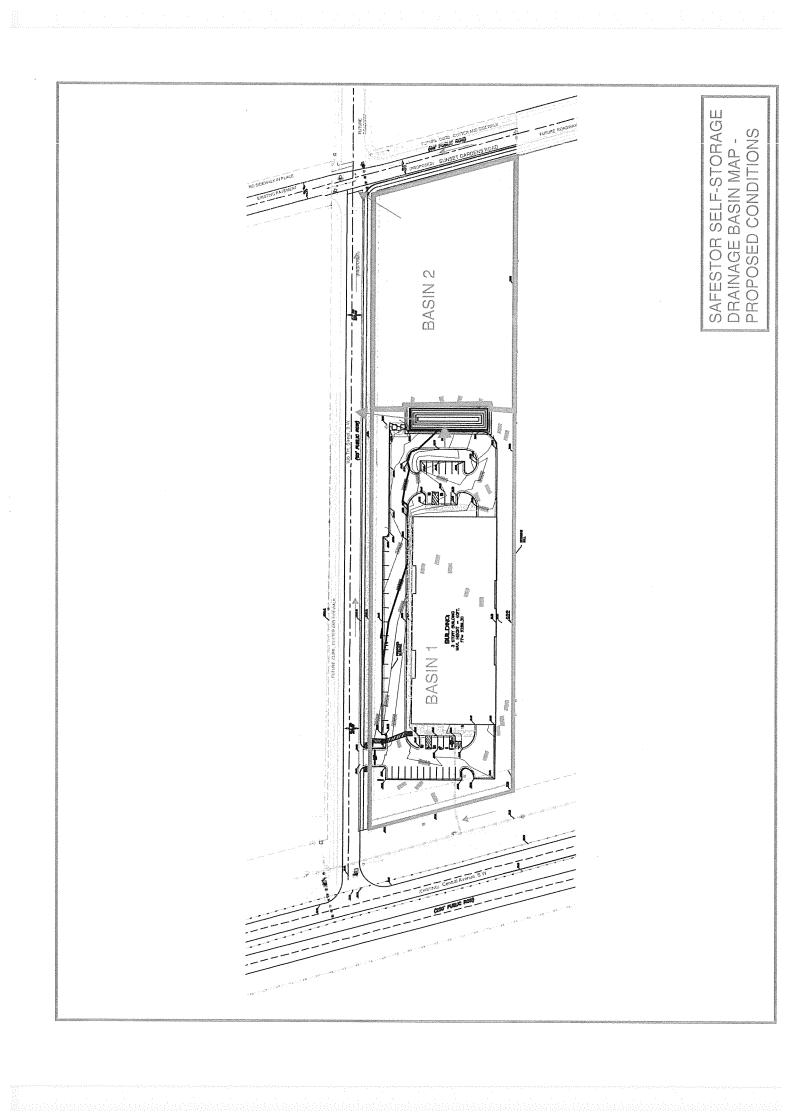
### **DEVELOPED-DRAINAGE CONDITIONS**

The site is proposed to be developed with one user, SAFStor Self-Storage on the northern two thirds of the site with approximately one third of the site left undeveloped. The proposed development includes a 104,400 sf, 3-story building with associated parking, drive aisles, landscaping and storm drainage detention pond. The proposed adjacent 106<sup>th</sup> Street roadway will be constructed from Central Ave. to Sunset Gardens with this project.

The developed portion of the site is proposed to drain to an onsite detention pond that will retain the required first flush volume and release remaining flows to 106<sup>th</sup> Street at a controlled flow rate less than or equal to historic values. Refer to enclosed Weighted E computation spreadsheet for undeveloped and developed conditions.

### SUMMARY

The proposed grading and drainage plan for the proposed development of the existing undeveloped Lot 1, Block 3, Lands of Atrisco Grant property includes surface flows of runoff to a water quality and storm water detention pond. The pond will retain first flush volumes for the developed portion of the lot and the pond will exit the site to the 106<sup>th</sup> Street right of way at or below the historic flow rate. The storm drain capacity downstream of the site is sufficient to carry the historic runoff.



# Weighted E Method

Zone #1

Undeveloped Basins

	Г	7		1	٠ -	т	1,0	,T
		Flow	cfs	.V &	2.17	o	A 76	5
	100-Year	Volume	(ac-ft)	0.097	0.00	0	0 183	
		Weighted E	(ac-ft)	0 440	0.670	o o		
		Freatment D	(acres)	0000	0000	2000	0.000	
		Treat	%	%0	%0			
		Treatment C	(acres)	0	C			
		Treat	%	%0	%0			
		reatment B	(acres)	0.000	1.544			
		Treatr	%	%0	100%			
		Treatment A	(acres)	2.652158	0			
		Treat	%	100%	%0			
		Area	(sd miles)	0.00414	0.00241		0.00656	
		Area	(acres)	2.652	1.544		4.197	
		Area	(st)	115528.00	67273.00		182801.00	
		Basin		1	2		Total	

Developed Basins

	A + 1 0 0 000 0 0 0 0 0 0 0 0 0 0 0 0 0 0	V 1000		1		-		+	***************************************		100-Year	
Alea		real	rearment A	l rea	reatment B	reati	reatment C	Ireat	l reatment D	Weighted E	Volume	Flow
sd miles		%	(acres)	%	(acres)	%	(acres)	%	(acres)	(ac-ft)	(ac-ft)	cfs
0.00414		%0	0	30%	0.796	%0	0	%02	1.857	1 580	0.349	9 73
0.00241		%0	0	100%	1.544	%0	0	%0	0.000	0.670	0.036	3.14
	l										)	;
0.00656									1.857		0 435	12 86
	l											20.3

# Equations:

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

(0.0650 ACRE-FEET)

FIRST FLUSH VOLUME = 2,830 CU.FT.

Volume = Weighted D \* Total Area

Flow = Qa \* Aa + Qb \* Ab + Qc \* Ac + Qd \* Ad

### **VOLUME CALCULATIONS**

### **SAFESTOR**

Ab - Bottom Of The Pond Surface Area

At - Top Of The Pond Surface Area

D - Water Depth

B Elev. =

Dt - Total Pond Depth

C - Change In Surface Area / Water Depth

Volume =  $Ab * D + 0.5 * C * D^2$ C = (At - Ab) / DtAb =500.00 B.O.P.= 5264.00 At =5,153.00 T.O.P. = 5270.00 Dt =6.00 C =775.50

5,264.00

ACTUAL	DEPTH	VOLUME	Q
ELEV.	(FT)	(AC-FT)	(CFS)
5264.00	0	0	0.000
5265.00	1.00	0.0204	0.000
5266.00	2.00	0.0586	0.000
5266.50	2.50	0.0843	0.000
5267.00	3.00	0.1145	1.476
5268.00	4.00	0.1883	2.139
5269.00	5.00	0.2799	3.387
5270.00	6.00	0.3893	4.286

### Orifice Equation

Q = CA SQRT(2gH)

C =0.6 Diameter (in)

Area (ft $^2$ )= 0.545415391

g =32.2

H(Ft) =Depth of water above center of orifice

10

Q(CFS)=Flow

```
SAFESTOR - Self Storage
************************
* 100-YEAR, 24-HR STORM (UNDER PROPOSED CONDITIONS) W/ routing *
************************************
START
                   TIME=0.0
RAINFALL
                   TYPE=2 RAIN QUARTER=0.0 IN
                   RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                   RAIN DAY=2.66 IN DT=0.05 HR
*BASIN 1
COMPUTE NM HYD
                   ID=1 HYD NO=100.1 AREA=0.00414 SO MI
                   PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00
                   TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD
                   ID=1 CODE=1
*BASIN 2
COMPUTE NM HYD
                   ID=2 HYD NO=100.2 AREA=0.00241 SQ MI
                   PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                   TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD
                   ID=2 CODE=1
ADD HYD
                   ID=20 HYD NO=100.20 ID=1 ID=2
*ROUTE BASIN 1 THROUGH WATER QUALITY DETENTION POND
ROUTE RESERVOIR
                   ID=55 HYD NO=200.1 INFLOW ID=20 CODE=24
                   OUTFLOW (CFS) STORAGE(AC-FT) ELEVATION(FT)
                   0.000
                                 0.0000
                                                   64.00
                   0.010
                                 0.0204
                                                   65.00
                   0.020
                                 0.0586
                                                   66.00
                   0.030
                                 0.0843
                                                   66.50
                   0.040
                                 0.1145
                                                   67.00
                   2.139
                                 0.1883
                                                   68.00
                   3.387
                                 0.2799
                                                   69.00
                   4.286
                                 0.3893
                                                   70.00
*TOTAL RUNOFF FROM POND
PRINT HYD
                   ID=55 CODE=1
```

\*

\*

\*TOTAL RUNOFF FROM SITE

\*

\*

ADD HYD

ID=60 HYD NO=100.60 ID=55 ID=2

PRINT HYD

ID=60 CODE=1

\*

FINISH

START TIME (HR:MIN:SEC) = 09:22:42USER NO.= AHYMO\_Temp\_User:20122010 INPUT FILE = C:\Users\Vince\Desktop\HYMO SAFESTOR.txt SAFESTOR - Self Storage \* 100-YEAR, 24-HR STORM (UNDER PROPOSED CONDITIONS) W/ routing \* TIME=0.0 RAINFALL TYPE=2 RAIN QUARTER=0.0 IN RAIN ONE=1.87 IN RAIN SIX=2.20 IN RAIN 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 2.2077 2.2089 2.2102 2.2115 2.2128 2.2141 2.2153 2.2166 2.2179 2.2192 2.2204 2.2217 2.2230 2.2243 2.2256 2.2268 2.2281 2.2294 2.2307 2.2319 2.2332 2.2345 2.2358 2.2371 2.2383 2.2396 2.2409 2.2422 2.2434 2.2447 2.2460 2.2473 2.2486 2.2498 2.2511 2.2524 2.2537 2.2549 2.2562 2.2575 2.2588 2.2601 2.2613 2.2626 2.2639 2.2652 2.2664 2.2677 2.2690 2.2703 2.2716 2.2728 2.2741 2.2754 2.2767 2.2779

2.2792 2.2805 2.2818 2.2831 2.2843 2.2856 2.2869

- Version: S4.01a - Rel: 01a

AHYMO PROGRAM (AHYMO-S4)

RUN DATE (MON/DAY/YR) = 12/09/2021

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2.2882
        2.2894
                2.2907
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                                 2.2933
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2.2971
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                        2.3099
                                 2.3112
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                                2.4095
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                        2.4172
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                                2.4185
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                                2.4722
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                                2.4811
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                        2.4888
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                                        2.6076
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                2.6127
                        2.6140
                                2.6153
                                        2.6165
                                                 2.6178
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                2.6217
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                                2.6242
                                        2.6255
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                                2.6332 2.6344
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                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
```

\*

\*BASIN 1

\*

COMPUTE NM HYD

ID=1 HYD NO=100.1 AREA=0.00414 SQ MI PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00 TP=-0.1333 HR MASS RAINFALL=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428

UNIT PEAK = 11.441 CFS UNIT VOLUME = 0.9981 B = 526.28P60 = 1.8700

AREA = 0.002898 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.130992HR TP = 0.133300HR K/TP RATIO = 0.982685 SHAPE CONSTANT, N = 3.593298

UNIT PEAK = 3.0475 CFS UNIT VOLUME = 0.9966 B = 327.08 P60 = 1.8700

AREA = 0.001242 SQ MI IA = 0.50000 INCHES INF = 1.25000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

### PARTIAL HYDROGRAPH 100.10

RUNOFF VOLUME = 1.94258 INCHES = 0.4289 ACRE-FEET PEAK DISCHARGE RATE = 10.24 CFS AT 1.500 HOURS BASIN AREA = 0.0041 SQ. MI.

\*BASIN 2

COMPUTE NM HYD ID=2 HYD NO=100.2 AREA=0.00241 SQ MI PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00 TP=-0.1333 HR MASS RAINFALL=-1

K = 0.130992HR TP = 0.133300HR K/TP RATIO = 0.982685 SHAPE CONSTANT, N = 3.593298

UNIT PEAK = 5.9135 CFS UNIT VOLUME = 0.9990 B = 327.08 P60 = 1.8700

AREA = 0.002410 SQ MI IA = 0.50000 INCHES INF = 1.25000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=2 CODE=1

### PARTIAL HYDROGRAPH 100.20

RUNOFF VOLUME = 0.83873 INCHES = 0.1078 ACRE-FEET PEAK DISCHARGE RATE = 3.74 CFS AT 1.500 HOURS BASIN AREA = 0.0024 SQ. MI.

ADD HYD

ID=20 HYD NO=100.20 ID=1 ID=2

\*ROUTE BASIN 1 THROUGH WATER QUALITY DETENTION POND

ROUTE RESERVOIR ID=55 HYD NO=200.1 INFLOW ID=20 CODE=24

OUTFLOW (CFS)	STORAGE(AC-FT) ELEVA	ATION(FT)
0.000	0.0000	64.00
0.010	0.0204	65.00
0.020	0.0586	66.00
0.030	0.0843	66.50
0.040	0.1145	67.00
2.139	0.1883	68.00
3.387	0.2799	69.00
4.286	0.3893	70.00

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	64.00	0.000	0.00
1.20	1.31	64.73	0.015	0.01
2.40	0.47	68.30	0.215	2.51
3.60	0.02	67.09	0.121	0.23
4.80	0.03	67.00	0.114	0.04
6.00	0.04	66.99	0.114	0.04
7.20	0.05	67.00	0.115	0.04
8.40	0.05	67.00	0.115	0.05

9.60	0.05	67.00	0.115	0.05
10.80	0.05	67.00	0.115	0.05
12.00	0.05	67.00	0.115	0.05
13.20	0.05	67.00	0.115	0.05
14.40	0.05	67.00	0.115	0.05
15.60	0.05	67.00	0.115	0.05
16.80	0.05	67.00	0.115	0.05
18.00	0.05	67.00	0.115	0.05
19.20	0.05	67.00	0.115	0.05
20.40	0.05	67.00	0.115	0.05
21.60	0.05	67.00	0.115	0.05
22.80	0.05	67.00	0.115	0.05
24.00	0.05	67.00	0.115	0.05
25.20	0.00	66.95	0.111	0.04
26.40	0.00	66.89	0.108	0.04
27.60	0.00	66.83	0.104	0.04
28.80	0.00	66.77	0.100	0.04
30.00	0.00	66.71	0.097	0.03
31.20	0.00	66.65	0.094	0.03
32.40	0.00	66.60	0.090	0.03
33.60	0.00	66.55	0.087	0.03
34.80	0.00	66.50	0.084	0.03
36.00	0.00	66.44	0.081	0.03
37.20	0.00	66.39	0.079	0.03
38.40	0.00	66.34	0.076	0.03
39.60	0.00	66.28	0.073	0.03
40.80	0.00	66.24	0.071	0.02
42.00	0.00	66.19	0.068	0.02
43.20	0.00	66.14	0.066	0.02
44.40	0.00	66.10	0.064	0.02
45.60	0.00	66.06	0.062	0.02
46.80	0.00	66.02	0.060	0.02
48.00	0.00	65.97	0.058	0.02
49.20	0.00	65.92	0.056	0.02
50.40	0.00	65.87	0.054	0.02
51.60	0.00	65.83	0.052	0.02
52.80	0.00	65.78	0.050	0.02
54.00	0.00	65.73	0.048	0.02
55.20	0.00	65.69	0.047	0.02
56.40	0.00	65.65	0.045	0.02
57.60	0.00	65.60	0.043	0.02
58.80	0.00	65.56	0.042	0.02
60.00	0.00	65.52	0.040	0.02
61.20	0.00	65.48	0.039	0.01
62.40	0.00	65.45	0.037	0.01
63.60	0.00	65.41	0.036	0.01
64.80	0.00	65.37	0.035	0.01
66.00	0.00	65.34	0.033	0.01
TIME	INFLOW	ELEV	VOLUME	OUTFLOW

(HRS)	(CFS)	(FEET)	(AC-FT)	(CFS)		
67.20	0.00	65.30	0.032	0.01		
68.40	0.00	65.27	0.031	0.01		
69.60	0.00	65.24	0.029	0.01		
70.80	0.00	65.21	0.028	0.01		
72.00	0.00	65.17	0.027	0.01		
73.20	0.00	65.14	0.026	0.01		
74.40	0.00	65.11	0.025	0.01		
75.60	0.00	65.09	0.024	0.01		
76.80	0.00	65.06	0.023	0.01		
78.00	0.00	65.03	0.022	0.01		
79.20	0.00	65.00	0.021	0.01		
80.40	0.00	64.96	0.020	0.01		
81.60	0.00	64.92	0.019	0.01		
82.80	0.00	64.87	0.018	0.01		
84.00	0.00	64.83	0.017	0.01		
85.20	0.00	64.79	0.016	0.01		
86.40	0.00	64.75	0.015	0.01		
87.60	0.00	64.72	0.015	0.01		
88.80	0.00	64.68	0.014	0.01		
90.00	0.00	64.65	0.013	0.01		
91.20	0.00	64.62	0.013	0.01		
92.40	0.00	64.59	0.012	0.01		
93.60	0.00	64.56	0.011	0.01		
94.80	0.00	64.54	0.011	0.01		
96.00	0.00	64.51	0.010	0.01		
97.20	0.00	64.49	0.010	0.00		
PEAK DISCHA	RGE =	3.549 C	FS - PEAK C	OCCURS AT HOL	JR 1.80	)
MAXIMUM WAT	ER SURFACE	ELEVATION	= 69	3.180		
MAXIMUM STO	RAGE =	0.2996	AC-FT	INCREMENTAL	. TIME=	0.050000HRS

\*TOTAL RUNOFF FROM POND
PRINT HYD ID=55 CODE=1

### PARTIAL HYDROGRAPH 200.10

RUNOFF VOLUME = 1.53593 INCHES = 0.5365 ACRE-FEET PEAK DISCHARGE RATE = 3.55 CFS AT 1.800 HOURS BASIN AREA = 0.0066 SQ. MI.

\*

\*TOTAL RUNOFF FROM SITE

\*

\*

ADD HYD

ID=60 HYD NO=100.60 ID=55 ID=2

PRINT HYD ID=60 CODE=1

PARTIAL HYDROGRAPH 100.60

RUNOFF VOLUME = 1.34445 INCHES = 0.6425 ACRE-FEET
PEAK DISCHARGE RATE = 6.05 CFS AT 1.550 HOURS BASIN AREA = 0.0090 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 09:22:42

