

# CITY OF ALBUQUERQUE

*Planning Department*  
Alan Varela, Director



*Mayor Timothy M. Keller*

August 11, 2023

David Thompson, PE  
Thompson Engineering Consultants, Inc.  
PO Box 65760  
Albuquerque, NM 87193

**RE: BioPark – Asia Exhibit**  
**903 10th Street SW**  
**Permanent C.O. - Accepted**  
**Engineer's Certification Date: 08/09/23**  
**Engineer's Stamp Date: 01/04/21**  
**Hydrology File: K13D034I**

Dear Mr. Thompson:

PO Box 1293

Based on the Certification received 08/10/2023 and site visit on 08/11/2023, this letter serves as a “green tag” from Hydrology Section for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

Albuquerque

If you have any questions, please contact me at 924-3995 or [rbrissette@cabq.gov](mailto:rbrissette@cabq.gov).

NM 87103

Sincerely,

[www.cabq.gov](http://www.cabq.gov)

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



# City of Albuquerque

Planning Department

Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

**Project Title:** \_\_\_\_\_ **Building Permit #:** \_\_\_\_\_ **Hydrology File #:** \_\_\_\_\_

**DRB#:** \_\_\_\_\_ **EPC#:** \_\_\_\_\_ **Work Order#:** \_\_\_\_\_

**Legal Description:** \_\_\_\_\_

**City Address:** \_\_\_\_\_

**Applicant:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Owner:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**TYPE OF SUBMITTAL:** \_\_\_\_\_ PLAT (\_\_\_\_# OF LOTS) \_\_\_\_\_ RESIDENCE \_\_\_\_\_ DRB SITE \_\_\_\_\_ ADMIN SITE

**IS THIS A RESUBMITTAL?:** \_\_\_\_\_ Yes \_\_\_\_\_ No

**DEPARTMENT:** \_\_\_\_\_ TRAFFIC/ TRANSPORTATION \_\_\_\_\_ HYDROLOGY/ DRAINAGE

Check all that Apply:

### TYPE OF SUBMITTAL:

- \_\_\_\_\_ ENGINEER/ARCHITECT CERTIFICATION
- \_\_\_\_\_ PAD CERTIFICATION
- \_\_\_\_\_ CONCEPTUAL G & D PLAN
- \_\_\_\_\_ GRADING PLAN
- \_\_\_\_\_ DRAINAGE MASTER PLAN
- \_\_\_\_\_ DRAINAGE REPORT
- \_\_\_\_\_ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
- \_\_\_\_\_ ELEVATION CERTIFICATE
- \_\_\_\_\_ CLOMR/LOMR
- \_\_\_\_\_ TRAFFIC CIRCULATION LAYOUT (TCL)
- \_\_\_\_\_ TRAFFIC IMPACT STUDY (TIS)
- \_\_\_\_\_ OTHER (SPECIFY) \_\_\_\_\_
- \_\_\_\_\_ PRE-DESIGN MEETING?

### TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- \_\_\_\_\_ 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: \_\_\_\_\_

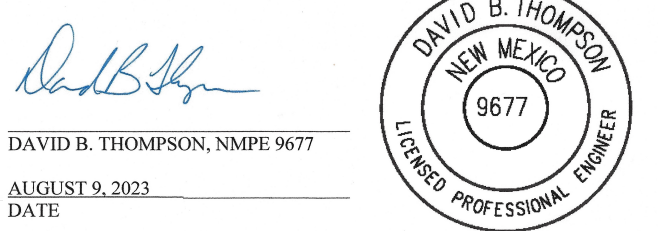




DRAINAGE CERTIFICATION

I, DAVID B. THOMPSON, NMPE #677, OF THE FIRM THOMPSON ENGINEERING CONSULTANTS, INC., HEREBY CERTIFY THAT THE PROJECT WITHIN THE RED BOUNDARY BELOW HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 12/21/21. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY JAYSON NATERA, NMPRS 27749, OF THE FIRM SOUDER MILLER & ASSOCIATES. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 7-28-23 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREIN IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.



VII. CONCLUSIONS

THE SITE HAS BEEN DESIGNED TO UTILIZED SHALLOW RETENTION BASINS AS CLOSE TO THE SOURCE TO THE STORM WATER AS PRACTICAL. SHALLOW PONDS HAVE BEEN CREATED IN SERIES WHERE POSSIBLE TO FURTHER REDUCE THE FLOW RATE OUT INTO THE SURROUNDING SURFACE STREETS AND TO REDUCE THE BURDEN ON THE COA STORM WATER PUMPING STATION. THE PEAK RUNOFF RATE IS LESS THAN THE PRE-DEVELOPMENT CONDITIONS.

AS-BUILT POND VOLUMES												
POND	A	B	C	F	G	H	I	J	L	M	N	
DESIGN VOLUME (CF)	1910	438	394	678	420	222	454	357	0	216	179	
AS-BUILT VOLUME (CF)	2403	481	1100	1528	1830	308	1951	405	0	220	184	

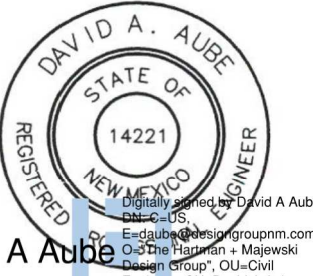
This is based on COA Chapter 6, Hydrographs for small watersheds.

Pond Routing and Volumes

Pond Routing and Volumes												
Incoming Flow Rate	Q <sub>in</sub>											
Allowable Discharge Rate	Q <sub>out</sub>											
Hydrology Zone												
Area Total	At											
Area Type A	Aa											
Area Type B	Ab											
Area Type C	Ac											
Area Type D Impenious	Ad											
Excess runoff rates	A											
	B											
	C											
Weighted E (Excess Runoff)												
Time of Concentration												
Time to Peak												
Time to Base												
Duration of Peak												
Time for end of peak												
Time when storage begins												
Time incoming is less than discharge												
Volume Required during storm	acre-feet											
Volume Required during storm	cf											
Volume Available by ponds	cf											
Volume Available total by basin	cf											

Drainage Summary

Project:	BioPark Asia							
Project Number:	2555							
Date:	11/02/20							
By:	Dave A							
Site Location								
Precipitation Zone								
2 Per COA DPM Chapter 6								
Proposed summary								
Basin Name								
Pro Basin 1	Pro Basin 2	Pro Basin 3	Pro Basin 4	Pro Basin 5	Pro Basin 6	Pro Basin 7	Pro Basin 8	
81365	22436.38	28433.09	21832	22075.68	6221.82	6831.94	25337.45	
Area (acres)	1.868	0.515	0.653	0.501	0.507	0.143	0.203	0.586
%A Land treatment								
%B Land treatment	50	50	40	70	25	75	25	50
%C Land treatment		40						
%D Land treatment	50	40	20	30	75	25	75	50
Soil Treatment (acres)								
Area "A"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area "B"	0.93	0.31	0.26	0.35	0.13	0.11	0.05	0.29
Area "C"	0.00	0.00	0.26	0.00	0.00	0.00	0.15	0.29
Area "D"	0.93	0.21	0.13	0.15	0.38	0.04	0.00	0.00
Excess Runoff (acre-feet)								
100yr. 6hr.	0.2436	0.0696	0.0652	0.0526	0.0822	0.01	0.02	0.04
10yr. 6hr.	0.1409	0.0337	0.0334	0.0277	0.0510	0.01	0.01	0.02
2yr. 6hr.	0.0785	0.0175	0.0147	0.0130	0.0315	0.00	0.00	0.00
100yr. 24hr.	0.2670	0.0658	0.0684	0.0563	0.0917	0.01	0.02	0.04
Peak Discharge (cfs)								
100 yr.	6.26	1.62	1.98	1.48	1.95	0.41	0.58	1.59
10yr.	3.42	0.85	1.02	0.74	1.15	0.20	0.29	0.74
2yr.	1.63	0.37	0.40	0.28	0.64	0.07	0.10	0.20
Water Quality Ponding Volume (cf)								
1152.7	254.3	161.1	185.6	469.1	44.1	0.0	0.0	0.0 cf
Water Quality Acre Feet								
0.0265	0.0058	0.0037	0.0043	0.0108	0.0010	0.0000	0.0000	0.0000 acre-ft

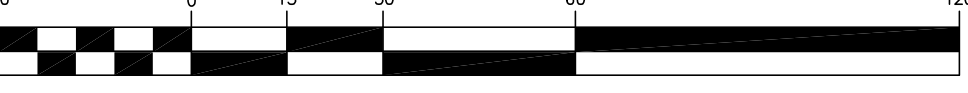


DRAINAGE PLAN PROPOSED CONDITIONS

A1

1" = 30'-0"

GRAPHIC SCALE



( IN FEET )  
1 inch = 30 ft.

VI. PROPOSED DRAINAGE CONDITIONS

PROPOSED IMPROVEMENTS INCLUDE ANIMAL EXHIBITS, ANIMAL HOLDING BUILDINGS, OUTDOOR EXHIBIT SPACES FOR ANIMAL VIEWING AS WELL AS PEDESTRIAN PATHWAYS AND LANDSCAPING BUFFERS.

THE SITE HAS BEEN DIVIDED INTO EIGHT (8) BASINS.

PRO. BASIN #1 ACCOUNTS FOR A LARGE PORTION OF THE SITE. THIS BASIN CONSISTS OF THE PEDESTRIAN AND SOME OF THE ANIMAL EXHIBIT SPACES. THIS BASIN GENERATES A PEAK RUNOFF RATE OF 6.07 CFS. RUNOFF IS ROUTED THROUGH PONDS D, E, F, G, AND H. ROUTING CALCULATIONS SHOW THAT 2,795 CUBIC FEET OF WATER IS RETAINED ON SITE, AND THE REMAINING RUNOFF FROM THE BASIN IS REDUCED TO 3.29 CFS. THIS RUNOFF IS FURTHER REDUCED AS IT PASSES THROUGH BASINS 7 AND 8.

PRO. BASIN #2 IS ALSO AT THE CORE OF THE ASIA EXHIBIT. PEAK RUNOFF FROM THIS BASIN IS 1.62 CFS. WATER IS ROUTED THROUGH PONDS A, B, AND C. AFTER ROUTING THE PEAK RUNOFF IS REDUCED TO 0.32 CFS.

PRO. BASIN #3 IS LOCATED ALONG THE PERIMETER OF THE SITE AND INCLUDE A MAIN FIRE DEPARTMENT ACCESS LANE. RUNOFF FROM BASIN 4, 5, AND 6 ALSO ENTER BASIN #3 AND WILL FLOW WEST TOWARD THE UNDERGROUND CONVEYANCE AND EVENTUALLY THE CITY STORMWATER PUMP STATION THAT PUSHES EXCESS RUNOFF PAST THE IRRIGATION CHANNELS OVER TO THE RIO GRANDE. PRO. BASIN #3 GENERATES A PEAK RUNOFF OF 1.98 CFS.

PRO. BASIN #4 INCLUDES THE STELLAR SEA EAGLE AND A PORTION SNOW LEOPARD EXHIBITS. THIS BASIN INCLUDES A CLOSED BASINS THAT CONTAINS A WATER FEATURE FOR THE SEA EAGLE. THERE IS A FILTRATION SYSTEM THAT IS INCLUDED AS PART OF THE LIFE SUPPORT SYSTEM. FOR THE PURPOSE OF EVALUATING THE EXCESS RUNOFF, THE CLOSED BASIN HAS BEEN IGNORED. PRO. BASIN #4 GENERATES A PEAK RUNOFF OF 1.64 CFS.

PRO. BASIN #5 IS PRIMARILY THE ANIMAL HOLDING BUILDING AND SUPPORT SPACES FOR THE SNOW LEOPARD AND MALAYAN TIGER. THE BASINS PEAK RUNOFF IS 1.95 CFS AND ONCE ROUTED THROUGH TWO SMALL RETENTION PONDS IS REDUCED TO 1.53 CFS.

PRO. BASIN #6 IS THE EXHIBIT SPACE FOR THE MALAYAN TIGER. THIS BASIN ALSO CONTAINS A CLOSED BASIN AND A LIFE SUPPORT SYSTEM TO FILTER THE WATER. PEAK RUNOFF FROM BASIN #6 IS 0.41 CFS, AND FLOWS DIRECTLY INTO BASIN 3.

PRO. BASIN #7 IS THE FIRE DEPARTMENT LANE ALONG THE NORTH EAST SIDES OF THE SITE. RUNOFF IS COLLECTED AND DIVERTED FROM BASIN #1 AND ALLOWED TO FLOW INTO STOVER AVENUE SE. THE PEAK RUNOFF GENERATED FROM BASIN #7 IS 0.58 CFS AND AFTER THE EXCESS RUNOFF PASSING THROUGH POND G (0.92 CFS) IS ADDED THE PEAK RUNOFF ENTERING STOVER AVENUE IS 1.50 CFS.

PRO. BASIN #8 IS THE FIRE DEPARTMENT LANE IN THE SOUTH EAST CORNER AND A PORTION OF THE ELEPHANT EXHIBIT SPACE. BASIN #8 CONTAINS PONDS IDENTIFIED AS PONDS K, THAT ACT AS FULL RETENTION BASINS, AS THE VOLUME IS SUFFICIENT TO CONTAIN THE PEAK RUNOFF. PONDS I AND J RECEIVE WATER THAT IS RELEASED FROM BASIN #1. POND I ROUTES INTO J. AFTER THE SERIES OF PONDS THE EXCESS RUNOFF THAT FLOW TOWARD RIO AVENUE IS DOWN TO 0.10 CFS.

THE COMBINED PEAK FLOW RATE LEAVING THE SITE IS 7.28 CFS. THE PEAK RUNOFF RATE IN THE HISTORIC CONDITION WAS 12.15 CFS. PRIOR TO THE INSTALLATION OF THE RAILROAD TRACKS THAT TRAPPED 7.82 CFS OF THIS WATER, IT WOULD HAVE FLOWED INTO THE NEIGHBORHOOD AND TO THE NORTH WEST TOWARD THE COA STORM WATER PUMP STATION.

COMPARING THE HISTORIC (PRE RAILROAD TRACKS) TO THE PROPOSED, SHOWS A REDUCTION IN EXCESS RUNOFF OF 4.87 CFS. THE SITE CONTAINS 8,020 CUBIC FEET OF STORM WATER RETENTION. THE STORM WATER QUALITY VOLUME FOR THIS DEVELOPMENT IS 2,267 CUBIC FEET. PONDING FAR EXCEEDS THE STORM WATER QUALITY REQUIREMENTS.



CITY OF ALBUQUERQUE CAPITAL IMPLEMENTATION PROGRAM

PROJECT TITLE: ABQ BIOPARK ASIA

DRAINAGE PLAN PROPOSED CONDITIONS

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
CONSTRUCTION DOCUMENTS	City Project No. 7303.95	Zone Map No. K-13-Z	DWG. CD-2
			Sheet