

DMJM/AHA ALBUQUERQUE	PROJECT	NAPA FACILITY 1510 SECOND ST. NW ALBUQUERQUE, NEW MEXICO	PROJECT NO.	PAGE 1
	SUBJECT	DRAINAGE CALCULATIONS	BY: SFF DATE: 2/29/24	

ZONE ATLAS MAP NO. J-14

RAINFALL: 2.2 INCHES

OVERFLOW THROUGH DRIVEPAD (EMERGENCY SPILLWAY)

$$\begin{aligned}\text{DRIVEPAD CAPACITY} &= 2.6 (25) (0.50)^{3/2} \\ &= 22.98 \text{ CFS}\end{aligned}$$

100 YEAR PEAK FLOW AFTER DEVELOPMENT

$$\begin{aligned}&= 0.6 (4.4^\circ) [29 (0.47)]^{1/2} \\ &= 0.289 \text{ CFS @ TIME} = 120 \text{ MINUTES}\end{aligned}$$

100 YEAR PEAK FLOW BEFORE DEVELOPMENT

$$\begin{aligned}&= 0.40 (4.65) (28400/43560) \\ &= 1.21 \text{ CFS @ TIME} = 10 \text{ MINUTES}\end{aligned}$$

DMJM/AHA ALBUQUERQUE	PROJECT	PROJECT NO.		PAGE 2
		BY:	DATE:	
SUBJECT				

MAXIMUM VOLUME IN STORAGE				
TIME (MIN)	POND 1 (ft. ³)	POND 2 (ft. ³)	POND 3 (ft. ³)	SYSTEM (ft. ³)
5	71	66	84	221
10	119	124	195	438
15	277	321	474	1072
20	456	548	827	1831
25	428	600	1036	2064
30	374	628	1236	2238
40	274	527	1431	2232
50	194	536	1780	2510
60	143	512	2101	2756
80	8	188	2170	2366
100	2	77	2416	2497
120	4	8	2431	2443
150	1	3	2106	2110
180	1	5	1722	1728

STORAGE VOLUME PROVIDED				
	POND 1 (ft. ³)	POND 2 (ft. ³)	POND 3 (ft. ³)	SYSTEM (ft. ³)
	426	633	2544	3603

DMJM / AHA ALBUQUERQUE SUBJECT	PROJECT	PROJECT NO.	PAGE 3
		BY:	

PAVEMENT POND NO 1

1. Effective area

4000	$\frac{C}{1.0}$	4000
5088	0.95	4834
		<u>Σ = 8834 ft²</u>

2. Rainfall : 2.2"

3. Pond Characteristics

Elevation	Area	Volume
57 ⁹⁰	2	14
58 ²	276	86
58 ¹²	1446	327
58 ²²	4000	
		<u>427 ft²</u>

4. Infiltration rate : 0

5. Weirs

1.0' wide @ 57⁹⁰

5.0' wide @ 58²²

 *** BASIN ROUTING ***

DMJM/NM
 4055 MONTGOMERY BLVD, NE
 ALBUQUERQUE, NEW MEXICO 87109

PROJECT: NAPA - POND NO. 1
 DATE: 02/29/84

EFFECTIVE AREA 8834 SQ.FT.
 TOTAL RAINFALL 2.20 INCHES

STORAGE BASIN

ELEV	AREA SQ.FT.	VOLUME CU.FT.
57.90	2	0
58.00	276	13
58.10	1446	100
58.22	4000	426

INFILTRATION 1ST HALF HOUR = 0.00 IN./HR.
 INFILTRATION 2ND HALF HOUR = 0.00 IN./HR.
 INFILTRATION AFTER 1 HOUR = 0.00 IN./HR.

OUTLET INFORMATION:

WEIR

LENGTH FEET	INVERT ELEV.
1.00	57.90
5.00	58.22

TIME	RAINFALL	ACCUM.	POND	AVG.	ACCUM.	STORAGE
MIN.	INCHES	CUBIC	ELEV.	POND	OUTFLOW	
		FEET		ELEV.	CUBIC	CUBIC
					FEET	FEET
0	0.000	0	57.900	57.900	0	0
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.069 CFS		20 CU.FT.		
5	0.125	92	58.078	57.989	20	71
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.224 CFS		67 CU.FT.		
10	0.281	207	58.112	58.095	88	119
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.315 CFS		94 CU.FT.		
15	0.624	459	58.177	58.145	182	277
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.433 CFS		129 CU.FT.		
20	1.045	769	58.227	58.202	312	456
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.482 CFS		144 CU.FT.		
25	1.203	885	58.220	58.223	457	428
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.456 CFS		136 CU.FT.		
30	1.315	968	58.206	58.213	594	374
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.409 CFS		245 CU.FT.		
40	1.513	1114	58.176	58.191	840	274
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.349 CFS		209 CU.FT.		
50	1.689	1243	58.148	58.162	1049	194

			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.299 CFS			179 CU.FT.
60	1.865	1373		58.125	58.136	1229	143
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.153 CFS			184 CU.FT.
80	1.931	1421		57.977	58.051	1413	8
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.038 CFS			45 CU.FT.
100	1.986	1462		57.942	57.960	1459	2
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.027 CFS			32 CU.FT.
120	2.032	1496		57.953	57.948	1492	4
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.022 CFS			39 CU.FT.
150	2.083	1533		57.929	57.941	1532	1
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.013 CFS			24 CU.FT.
180	2.116	1558		57.930	57.930	1556	1
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.011 CFS			19 CU.FT.
210	2.142	1577		57.922	57.926	1576	0
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.008 CFS			14 CU.FT.
240	2.162	1592		57.920	57.921	1591	0
			INFILTRATION				0 CU.FT.
			ORIFICE FLOW	0.000 CFS			0 CU.FT.
			WEIR FLOW	0.006 CFS			23 CU.FT.
300	2.193	1614		57.916	57.918	1614	0

DMJM / AHA ALBUQUERQUE	PROJECT	PROJECT NO.	PAGE 7
		BY:	
SUBJECT			

PAVEMENT POND NO. 2

1. Effective Area

4189	$\frac{C}{1.0}$	4189
4349	0.95	4132
		$E = 8321 ft^2$

2. Rainfall: 2.2"

3. Flows from Pond No. 1

Period	Flow	Accum. Flow
2	20	20
3	67	87
4	94	181
5	129	310
6	144	454
7	136	590
8	245	835
9	209	1044
10	179	1223
11	184	1407
12	45	1452
13	32	1484
14	39	1523
15	24	1547
16	19	1566
17	14	1580
18	23	1603

NOTE: FLOWS FROM POND 1 HAVE BEEN INCLUDED IN POND 2 CALCULATIONS. HOWEVER, LISTING OF FLOWS FROM POND 1 ARE NOT SHOWN ON COMPUTER PRINTOUT.

DMJM/AHA ALBUQUERQUE	PROJECT	PROJECT NO.		PAGE 8
		BY:	DATE:	
SUBJECT				

PAVEMENT POND NO. 2 (CONT)

4. Pond Characteristics

<u>Elevation</u>	<u>Area</u>	<u>Volume</u>
57 ⁶⁵	2	16
57 ⁷⁵	312	76
57 ⁸⁵	1211	196
57 ⁹⁵	2714	345
58 ⁰⁵	4189	
		<u>633 ft³</u>

5. Infiltration rate: 0

6. Weirs

1.0' wide @ 57 ⁶⁵

5.0' wide @ 58 ⁰⁵

** BASIN ROUTING **

DMJM/NM
4055 MONTGOMERY BLVD, NE
ALBUQUERQUE, NEW MEXICO 87109

PROJECT: NAPA - POND NO. 2
DATE: 02/29/84

EFFECTIVE AREA 9321 SQ.FT.
TOTAL RAINFALL 2.20 INCHES

STORAGE BASIN

ELEV	AREA SQ.FT.	VOLUME CU.FT.
57.65	2	0
57.75	312	15
57.85	1211	91
57.95	2714	288
58.05	4189	633

INFILTRATION 1ST HALF HOUR = 0.00 IN./HR.
INFILTRATION 2ND HALF HOUR = 0.00 IN./HR.
INFILTRATION AFTER 1 HOUR = 0.00 IN./HR.

OUTLET INFORMATION:

WEIR

LENGTH FEET	INVERT ELEV.
1.00	57.65
5.00	58.05

TIME	RAINFALL	ACCUM. INFLOW	POND ELEV.	AVG. POND ELEV.	ACCUM. OUTFLOW	STORAGE
MIN.	INCHES	CUBIC FEET			CUBIC FEET	CUBIC FEET
0	0.000	0	57.650	57.650	0	0
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.068 CFS		20 CU.FT.		
5	0.125	86	57.827	57.738	20	66
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.233 CFS		70 CU.FT.		
10	0.281	215	57.873	57.850	90	124
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.360 CFS		108 CU.FT.		
15	0.624	520	57.962	57.917	198	321
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.528 CFS		158 CU.FT.		
20	1.045	905	58.029	57.995	357	548
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.622 CFS		186 CU.FT.		
25	1.203	1144	58.042	58.035	543	600
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.646 CFS		194 CU.FT.		
30	1.315	1366	58.048	58.045	737	628
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.623 CFS		374 CU.FT.		
40	1.513	1639	58.023	58.034	1112	527
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.596 CFS		357 CU.FT.		
50	1.689	2006	58.025	58.024	1470	536

11

	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.591 CFS		355 CU.FT.		
60	1.965	2337	58.019	58.022	1825	512
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.457 CFS		548 CU.FT.		
80	1.931	2562	57.908	57.963	2374	188
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.275 CFS		330 CU.FT.		
100	1.986	2784	57.839	57.873	2704	79
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.123 CFS		148 CU.FT.		
120	2.032	2861	57.723	57.781	2853	8
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.039 CFS		71 CU.FT.		
150	2.083	2928	57.699	57.711	2924	3
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.033 CFS		60 CU.FT.		
180	2.116	2990	57.709	57.704	2984	5
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.025 CFS		46 CU.FT.		
210	2.142	3032	57.682	57.696	3031	1
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.017 CFS		32 CU.FT.		
240	2.162	3065	57.689	57.686	3063	2
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.010 CFS		27 CU.FT.		
300	2.193	3100	57.660	57.675	3100	0
	INFILTRATION			0 CU.FT.		
	ORIFICE FLOW	0.000 CFS		0 CU.FT.		
	WEIR FLOW	0.007 CFS		26 CU.FT.		
360	2.200	3128	57.679	57.669	3126	1

MAXIMUM OUT FLOW IS AT POND ELEV. 58.048
ORIFICE OUTFLOW IS 0.000 CFS
WEIR OUTFLOW IS 0.654 CFS

12

DMJM/AHA ALBUQUERQUE	PROJECT	PROJECT NO.		PAGE 13
		BY:	DATE:	
SUBJECT				

PAVEMENT POND NO. 3

1. Effective Area

6986	$\frac{C}{1.0}$	6986
1552	0.95	<u>1474</u>
		$\Sigma = 8460 \text{ ft}^2$

2. Rainfall: 2.2"

3. Flows from Pond No. 2

Period	Flow	Accum. Flow
2	20	20
3	70	90
4	108	198
5	158	356
6	186	542
7	194	736
8	374	1110
9	357	1467
10	355	1822
11	548	2370
12	330	2700
13	148	2848
14	71	2919
15	60	2979
16	46	3025
17	32	3057
18	37	3094

NOTE: FLOWS FROM POND 2 HAVE BEEN INCLUDED IN POND 3 CALCULATIONS. HOWEVER, LISTING OF FLOWS FROM POND 2 ARE NOT SHOWN ON COMPUTER PRINTOUT.

DMJM/AHA ALBUQUERQUE SUBJECT	PROJECT	PROJECT NO.	PAGE
		BY:	DATE: 14

PAVEMENT POND NO. 3 (CONT.)

4. Pond Characteristics

<u>Elevation</u>	<u>Area</u>	<u>Volume</u>
57 ²⁹	2	29
57 ⁴⁹	576	150
57 ⁶⁹	2445	329
57 ⁸⁹	4160	452
57 ⁹⁹	4885	541
57 ⁸⁹	5934	631
57 ⁹⁹	6685	410
58 ⁰⁵	6986	
		<u>2542 ft³</u>

5. Infiltration rate: 0

6. Round orifice: 4" ϕ @ 57⁸⁹

7. Weir: 3.0' wide @ 58⁰⁵

***** BASIN ROUTING *****

DHJM/NH
4055 MONTGOMERY BLVD, NE
ALBUQUERQUE, NEW MEXICO 87109

PROJECT: NAPA - POND NO. 3
DATE: 02/29/84

EFFECTIVE AREA 8460 SQ.FT.
TOTAL RAINFALL 2.20 INCHES

STORAGE BASIN

ELEV	AREA SQ.FT.	VOLUME CU.FT.
57.39	2	0
57.49	576	28
57.59	2445	179
57.69	4160	510
57.79	4885	962
57.89	5934	1503
57.99	6685	2134
58.05	6986	2544

INFILTRATION 1ST HALF HOUR = 0.00 IN./HR.
INFILTRATION 2ND HALF HOUR = 0.00 IN./HR.
INFILTRATION AFTER 1 HOUR = 0.00 IN./HR.

OUTLET INFORMATION:

ROUND ORIFICE

DIAMETER INCHES	INVERT ELEV.
4.0	57.39

WEIR

LENGTH FEET	INVERT ELEV.
3.00	58.05

TIME	RAINFALL	ACCUM. INFLOW	POND ELEV.	AVG. POND ELEV.	ACCUM. OUTFLOW	STORAGE
MIN.	INCHES	CUBIC FEET			CUBIC FEET	CUBIC FEET
0	0.000	0	57.390	57.390	0	0
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.012 CFS	3 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
5	0.125	88	57.542	57.466	3	84
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.063 CFS	19 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
10	0.281	218	57.596	57.569	22	195
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.112 CFS	33 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
15	0.624	530	57.681	57.638	56	474
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.170 CFS	51 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
20	1.045	934	57.761	57.721	107	827
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.200 CFS	60 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
25	1.203	1204	57.804	57.783	167	1036
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.217 CFS	65 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
30	1.315	1469	57.843	57.824	232	1236
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.231 CFS	138 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
40	1.513	1803	57.877	57.860	371	1431
		INFILTRATION		0 CU.FT.		
		ORIFICE FLOW	0.248 CFS	149 CU.FT.		
		WEIR FLOW	0.000 CFS	0 CU.FT.		
50	1.689	2301	57.935	57.906	521	1780

10

MAXIMUM OUT FLOW IS AT POND ELEV. 58.033

ORIFICE OUTFLOW IS 0.290 CFS

WEIR OUTFLOW IS 0.000 CFS