

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA A

[SAN BERNARDINO COUNTY]

FILE NAME: 9373HPAH.DAT  
 TIME/DATE OF STUDY: 9:24 4/10/2002  
 100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

CALCULATED BY: R. CLARK  
 CHECKED BY: R. CLARK  
 PAGE NUMBER 2 OF 2

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CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm	Fm (Avg)	Q SUM	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
5.0ft-GUTTER FLOW TO PT.# 8.00	24.9	C	Nat	1.3	19.6	4.09	.22	.165	277.3	462	.0476	12.9	Qest.= 297.4cfs XFALL=.20000 n=.0300 D= 2.3
5.0ft-GUTTER FLOW TO PT.# 9.00	11.9	C	2.5AC	.6	20.2	4.00	.24	.175	311.6	86	.0814	21.9	Qest.= 311.6cfs n=.0240 D= 3.6 57.0"-PIPE
5.0ft-GUTTER FLOW TO PT.# 11.00	6.0	C	1D/AC	.9	21.2	3.88	.22	.178	321.0	671	.0462	12.8	Qest.= 321.4cfs XFALL=.20000 n=.0300 D= 2.8
5.0ft-GUTTER FLOW TO PT.# 11.00	96.4				21.2				321.0				STREAM SUMMARY

EFFECTIVE AREA (ACRES) = 96.42 TOTAL AREA (ACRES) = 98.61  
 TIME OF CONCENTRATION (MIN.) = 21.17 MEAN VALUES: Fp (IN/HR) = .182; Ap = .975; Fm (IN/HR) = .178

PEAK FLOW RATE TABLE

Q (cfs)	Tc (min)	Fp (avg)	Ap (avg)	Fm (avg)	I (in/hr)	Ae (acres)	NODE
321.04	21.17	.182	.98	.178	3.88	96.42	1.0
310.39	22.86	.181	.98	.177	3.67	98.61	4.0

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA B

[SAN BERNARDINO COUNTY]

CALCULATED BY: R. CLARK  
 CHECKED BY: R. CLARK  
 PAGE NUMBER 1 OF 1

FILE NAME: 9373HPBH.DAT  
 TIME/DATE OF STUDY: 9:31 4/10/2002  
 100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

[(c) 1983-1994 ADVANCED ENGINEERING SOFTWARE]												
CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm	Fm (Avg)	Q SUM	PATH SLOPE (ft)	V ft/ft FPS.	HYDRAULICS AND NOTES
2.00	6.6	C	1D/AC	.0	8.7	7.23	.22	.218	41.5	603	.1658	INITIAL SUBAREA
3.00										34	.0588	Qpipe= 41.5cfs n=.0240 D= 1.7 30.0"-PIPE
3.00	6.6				8.7				41.5			STREAM SUMMARY
EFFECTIVE AREA (ACRES) = 6.57 TOTAL AREA (ACRES) = 6.57										PEAK FLOW RATE (CFS) = 41.45		
TIME OF CONCENTRATION (MIN.) = 8.74 MEAN VALUES: Fp (IN/HR) = .272; Ap = .800; Fm (IN/HR) = .218												

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA C

[SAN BERNARDINO COUNTY]

FILE NAME: 9373HPCH.DAT  
 TIME/DATE OF STUDY: 6:27 4/11/2002  
 100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

[[ (c) 1983-1994 ADVANCED ENGINEERING SOFTWARE ]]  
 CONCENTRATION AREA (ACRES) SUM TC MIN. Tt MIN. SOIL DEV. TYPE I Fm (Avg) Fm Q SUM PATH SLOPE V HYDRAULICS AND NOTES  
 POINT NUMBER SUBAREA

POINT NUMBER	AREA (ACRES)	SUM	TC MIN.	Tt MIN.	SOIL DEV. TYPE	I in/h	Fm (Avg)	Fm	Q SUM	PATH SLOPE (ft)	V FPS.	HYDRAULICS AND NOTES
2.00	2.3	2.3	6.8	..	C 2D/AC	8.59	.19	.190	17.7	407	.1843	INITIAL SUBAREA
2.00		2.3	6.8						17.7			STREAM SUMMARY

EFFECTIVE AREA (ACRES) = 2.34 TOTAL AREA (ACRES) = 2.34 PEAK FLOW RATE (CFS) = 17.69  
 TIME OF CONCENTRATION (MIN.) = 6.80 MEAN VALUES: Fp (IN/HR) = .272; Ap = .700; Fm (IN/HR) = .190

CALCULATED BY:	R. CLARK
CHECKED BY:	R. CLARK
PAGE NUMBER	1 OF 1

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA D

[SAN BERNARDINO COUNTY]

FILE NAME: 9373HPDH.DAT

TIME/DATE OF STUDY: 6:34 4/11/2002

100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

[(c) 1983-1994 ADVANCED ENGINEERING SOFTWARE]

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 CHECKED BY: R. CLARK  
 PAGE NUMBER 1 OF 1

CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm	Fm (Avg)	Q SUM	PATH SLOPE (ft)	V FPS.	HYDRAULICS AND NOTES
2.00	2.4	C	2.5AC	..	8.2	7.55	.24	.245	15.8	579	.2522	INITIAL SUBAREA
26.ft-STREET FLOW TO PT.# 3.00	5.2	C	1D/AC	1.3	9.5	6.79	.22	.226	45.1	620	.0753	Qest.= 31.3cfs D=.4 ,D*V= 3.6 FLOODWIDTH=.0
26.ft-STREET FLOW TO PT.# 4.00	2.0	C	1D/AC	.8	10.3	6.42	.22	.224	53.5	322	.0258	Qest.= 50.6cfs D=.5 ,D*V= 3.7 FLOODWIDTH= 6.6
5.00				.1						75	.2267	Qpipe= 53.5cfs n=.0240 D= 1.5 24.0"-PIPE
5.00	9.6				10.4				53.5			STREAM SUMMARY

EFFECTIVE AREA (ACRES) = 9.59 TOTAL AREA (ACRES) = 9.59  
 TIME OF CONCENTRATION (MIN.) = 10.37 MEAN VALUES: Fp (IN/HR) = .272; Ap = .825; Fm (IN/HR) = .224

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA E

[SAN BERNARDINO COUNTY]

FILE NAME: 9373HPEH.DAT

TIME/DATE OF STUDY: 6:41 4/11/2002

100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

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CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm (Avg)	Q SUM	PATH SLOPE (ft)	V FPS.	HYDRAULICS AND NOTES
2.00	.2	C	Com	.2	5.8	9.57	.03	1.9	280	.0304	INITIAL SUBAREA
3.00									105	.1429	Qpipe= 1.9cfs n=.0240 D= .3 18.0"-PIPE
3.00					6.1			1.9			STREAM SUMMARY
EFFECTIVE AREA (ACRES) = .22 TOTAL AREA (ACRES) = .22											
TIME OF CONCENTRATION (MIN.) = 6.06 MEAN VALUES: Fp (IN/HR) = .272; Ap = .100; Fm (IN/HR) = .027											

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA F

[SAN BERNARDINO COUNTY]

FILE NAME: 9373HPFH.DAT  
 TIME/DATE OF STUDY: 6:43 4/11/2002  
 100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

CALCULATED BY: R. CLARK  
 CHECKED BY: R. CLARK  
 PAGE NUMBER 1 OF 1

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CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm	Fm (Avg)	Q SUM	PATH SLOPE (ft) ft/ft	V FPS.	HYDRAULICS AND NOTES
2.00	1.0	C	..	9.5	6.81	.03	.027	6.1	831	.0235	INITIAL SUBAREA
3.00			.2						102	.0882	Qpipe= 6.1cfs n=.0240 D=.6 18.0"-PIPE
3.00	1.0			9.7				6.1			STREAM SUMMARY

EFFECTIVE AREA (ACRES) = 1.00 TOTAL AREA (ACRES) = 1.00 PEAK FLOW RATE (CFS) = 6.10  
 TIME OF CONCENTRATION (MIN.) = 9.67 MEAN VALUES: Fp (IN/HR) = .272; Ap = .100; Fm (IN/HR) = .027

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA G

[SAN BERNARDINO COUNTY]

CALCULATED BY: R. CLARK  
 CHECKED BY: R. CLARK  
 PAGE NUMBER 1 OF 1

FILE NAME: 9373HPGH.DAT  
 TIME/DATE OF STUDY: 6:49 4/11/2002  
 100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

[(C) 1983-1994 ADVANCED ENGINEERING SOFTWARE]											
CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm (Avg)	Q SUM	PATH SLOPE (ft) ft/ft	V FPS.	HYDRAULICS AND NOTES
2.00	4.1	C	Nat	..	20.0	4.03	.22	14.1	848	.1592	INITIAL SUBAREA
5.0ft-GUTTER FLOW TO PT.#											Qest.= 61.5cfs XFALL=.20000 n=.0300 D= 1.2
3.00	29.6	C	Nat	1.4	21.4	3.85	.22	110.2	1298	.1726	18.3
4.00				.1					132	.0833	17.1
5.0ft-GUTTER FLOW TO PT.#									537	.0689	12.8
5.00	6.0	C	1D/AC	.7	22.3	3.74	.22	126.0	202	.0545	15.1
6.00				.2							
6.00	39.7							126.0			

EFFECTIVE AREA (ACRES) = 39.71 TOTAL AREA (ACRES) = 39.71  
 TIME OF CONCENTRATION (MIN.) = 22.47 MEAN VALUES: Fp (IN/HR) = .225; Ap = .970; Fm (IN/HR) = .218

PEAK FLOW RATE (CFS) = 126.04  
 STREAM SUMMARY

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA H

FILE NAME: 9373HPHH.DAT  
 TIME/DATE OF STUDY: 6:53 4/11/2002  
 100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)  
 [ (C) 1983-1994 ADVANCED ENGINEERING SOFTWARE ]  
 [ SAN BERNARDINO COUNTY ]

CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm	Fm (Avg)	Q SUM	PATH SLOPE (ft)	V ft/ft	HYDRAULICS AND NOTES
2.00	.3	C	Com	.1	7.6	7.97	.03	.027	2.1	511	.0274	INITIAL SUBAREA
3.00										73	.1781	Qpipe= 2.1cfs n=.0240 D=.3 18.0"-PIPE
3.00	.3				7.7				2.1			STREAM SUMMARY

EFFECTIVE AREA (ACRES) = .30 TOTAL AREA (ACRES) = .30  
 TIME OF CONCENTRATION (MIN.) = 7.71 MEAN VALUES: Fp (IN/HR) = .272; Ap = .100; Fm (IN/HR) = .027

PEAK FLOW RATE (CFS)	Fm (IN/HR)
2.14	.027



TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA I

[SAN BERNARDINO COUNTY]

FILE NAME: 9373HPIH.DAT

TIME/DATE OF STUDY: 6:55 4/11/2002

100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

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 PAGE NUMBER 1 OF 1

CONCENTRATION POINT NUMBER	AREA (ACRES) SUBAREA	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm	Fm (Avg)	Q SUM	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
2.00	.2	C	Com	.2	5.7	9.76	.03	.027	1.8	248	.0274	..	INITIAL SUBAREA
3.00										87	.2644	8.9	Qpipe= 1.8cfs n=.0240 D= .3 18.0"-PIPE
3.00	.2				5.8				1.8				STREAM SUMMARY

EFFECTIVE AREA (ACRES) = .20 TOTAL AREA (ACRES) = .20 PEAK FLOW RATE (CFS) = 1.75  
 TIME OF CONCENTRATION (MIN.) = 5.83 MEAN VALUES: Fp (IN/HR) = .20; Ap = .272; Fm (IN/HR) = .100; Fm (IN/HR) = .027

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA J

[SAN BERNARDINO COUNTY]

FILE NAME: 9373HPJH.DAT

TIME/DATE OF STUDY: 7:10 4/11/2002

100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)

[(c) 1983-1994 ADVANCED ENGINEERING SOFTWARE]

CALCULATED BY: R. CLARK  
 CHECKED BY: R. CLARK  
 PAGE NUMBER 1 OF 2

CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL TYPE	DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm	Fm (Avg)	Q SUM	PATH (ft)	SLOPE ft/ft	V FPS.	HYDRAULICS AND NOTES
2.00	4.3	C	4D/AC	.5	9.4	6.83	.16	.163	25.7	1050	.1762	..	INITIAL SUBAREA
3.00										499	.1884	16.5	Qpipe= 25.7cfs n=.0240 D= 1.0
8.00				.8						538	.0781	11.7	24.0"-PIPE
8.00	4.3				10.7	6.25			25.7				Qpipe= 25.7cfs n=.0240 D= 1.3
5.00	1.2	C	1D/AC		6.8	8.59	.22	.218	8.7	400	.2500	..	24.0"-PIPE
26.ft-STREET FLOW TO PT.#										1088	.0827	9.0	FOR CONFLUENCE
6.00	6.0	C	1D/AC	2.4	9.2	6.94	.22	.218	43.6	212	.0142	5.0	INITIAL SUBAREA
64.ft-STREET FLOW TO PT.#													Qest.= 27.2cfs D=.4 , D*V= 3.5 FLOODWIDTH= .9
7.00	7.0	C	1D/AC	.7	9.9	6.59	.22	.218	81.3	210	.0190	9.1	Qest.= 63.6cfs D=.9 , D*V= 4.3 FLOODWIDTH=41.8
8.00				.4									Qpipe= 81.3cfs n=.0240 D= 2.8 45.0"-PIPE

PEAK FLOW RATE (CFS) = 106.7

TIME OF CONCENTRATION (MIN.) = 10.3

MEAN VALUES: Fp(IN/HR) = .272; Ap = .755; Fm(IN/HR) = .205

EFFECTIVE AREA (ACRES) = 18.28 TOTAL AREA (ACRES) = 18.44

Q(cfs) Tc(min) Fp(avg) Ap(avg) Fm(avg) I(in/hr) Ae(acres) NODE

104.78 10.69 .272 .75 .205 6.25 18.44 1.0

106.68 10.30 .272 .75 .205 6.42 18.28 4.0

LARGEST CONFLUENCE Q= 106.7

TRACT No. 16136 MOON CAMP (JN 9373)  
 PROPOSED HYDROLOGY  
 AREA J

FILE NAME: 9373HPJH.DAT  
 TIME/DATE OF STUDY: 7:10 4/11/2002  
 100.0-YEAR STORM RATIONAL METHOD STUDY (AMC III LOSSES)  
 [(c) 1983-1994 ADVANCED ENGINEERING SOFTWARE]

CONCENTRATION POINT NUMBER	AREA (ACRES)	SOIL DEV. TYPE	Tt MIN.	Tc MIN.	I in/h	Fm (avg)	Q SUM	PATH (ft)	SLOPE ft/ft	V FPS	HYDRAULICS AND NOTES
9.00								142	.0352	12.3	Qpipe= 106.7cfs n=.0240 D= 2.8 45.0"-PIPE
9.00	18.3			10.5			106.7				STREAM SUMMARY
EFFECTIVE AREA (ACRES) = 18.28 TOTAL AREA (ACRES) = 18.44											
TIME OF CONCENTRATION (MIN.) = 10.50 MEAN VALUES: Fp (IN/HR) = .272; Ap = .755; Fm (IN/HR) = .205											

PEAK FLOW RATE TABLE

Q (cfs)	Tc (min)	Fp (avg)	Ap (avg)	Fm (avg)	I (in/hr)	Ae (acres)	NODE
106.68	10.50	.272	.75	.205	6.34	18.28	4.0
104.78	10.89	.272	.75	.205	6.18	18.44	1.0

## **15.10 Jurisdictional Delineation**

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**DELINEATION OF JURISDICTIONAL WATERS**  
***Moon Camp***  
***Tentative Tract #16136***  
**County of San Bernardino, California**

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Prepared For:

**County of San Bernardino**  
385 N. Arrowhead Avenue, 1<sup>st</sup> Floor  
San Bernardino, California 92415  
**Contact: Mr. Mike Williams**  
909/387-4168

Prepared By:

**RBF Consulting**  
14725 Alton Parkway  
Irvine, California 92618  
**Contact: Mr. Trevor Smith**  
949/855-5718

March 2002

JN 10-101901