

**PRELIMINARY
HYDROLOGY & HYDRAULICS STUDY
TLE
TENTATIVE TRACT MAP 38113
Bermuda Dunes, California**

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Hydrology and Hydraulics Study
For
TLE

ACKNOWLEDGEMENT AND SIGNATURE PAGE

This Hydrology Study prepared by KES Technologies, Inc. under the supervision of Ali Monshizadeh, P.E.

Ali Monshizadeh, R.C.E 67674
KES Technologies, Inc.

Date

I. Introduction:

The 2.44 acre subject site is located at the east of Washington Avenue in Bermuda Dunes. The existing land use is vacant land. The proposed development consists of a proposed pre school with a future apartment use on the easterly portion of the site. The proposed development will include parking, open space, and landscape. The proposed project site will be developed on two phases including the proposed school and apartment use.

II. Description of Watershed

The project lies within the Whitewater River Region. No storm drain exists on the subject site. The existing storm flow follows the existing topography in an east-northeast direction. Historical flows enter the existing channel at the northwest corner. This existing channel flows to the north into an existing detention basin.

III. Methodology

The proposed site's drainage area was analyzed for the 100-year storm event according to the County of Riverside Hydrology Manual. Each drainage sub-area was divided as shown on the hydrology maps enclosed in this report. Each sub-area was analyzed for acreage, impervious cover, and time of concentration according to the Rational Method outlined in the County Flood Control Manual. Peak stormwater runoff flows, expressed in cubic feet per second (cfs), were determined for the existing and proposed conditions.

Per the County requirements the difference between the proposed development and existing conditions shall be mitigated for the 1-hr, 3-hr, 6-hr, and 24-hr storm events for the 2-yr, 5-yr, 10-yr, and 100-yr return periods. The proposed development will contain the difference in volume within the co-shared WQMP chamber system. The chamber system will be terminal in nature and infiltrate through the proposed drywell system. This mitigated volume will be detained in the terminal infiltration chambers on top of the V_{bmp} volume.

The proposed system will consist of one (1) drop inlet catch basin located at the north east corner of the site where the natural drainage pattern currently discharges to an existing drainage channel. The drop inlet will connect to an underground pipe storage system which is sized to capture the Water Quality Volume plus extra to buffer the increased discharge due to the site development. The underground storage will feed a drywell system until it is empty. In the case where the storm event exceeds the capacity of the underground storage and drywell system, the water will overtop a small weir at the curb adjacent to the drop inlet. The water will then be carried by a U shaped concrete channel to the existing drainage channel offsite.

IV. Design Assumptions

1. The onsite drainage area was analyzed for 2-yr, 5-yr, 10-yr, and 100-yr storm event using Unit Hydrograph Method Analysis per the County Hydrology Manual utilizing the County HEC-HMS Pre-Processor to generate the Runoff Hydrographs for each event and duration.
2. Army Corps HEC-HMS used for routing and discharge calculation per County Hydrology Manual.
3. Infiltration rates are field measured per the geotechnical report.
4. Proposed impervious values include all future potential apartment coverage
5. Runoff Index values per Plate 5.5
6. Depth and Intensity precipitation frequency per NOAA Atlas 14, Volume 6, Version 2.

V. Summary

The proposed development has been designed in accordance with County of Riverside Standards. The proposed development will mitigate the difference between proposed and existing flows per County requirements. The proposed development will outlet all flows above chamber volumes per historical flow path.

See complete results in the Appendix.

2-yr Peak Flow (cfs)	1-hr	3-hr	6-hr	24-hr
Pre-development	1.98	0.12	0.10	0.003
Post-development	2.77	0.41	0.60	0.04
Mitigated Outflow	1.74	0*	0*	0*

5-yr Peak Flow (cfs)	1-hr	3-hr	6-hr	24-hr
Pre-development	1.6	0.42	0.40	0.06
Post-development	1.87	0.86	0.95	0.06
Mitigated Outflow	0.83	0*	0*	0*

10-yr Peak Flow (cfs)	1-hr	3-hr	6-hr	24-hr
Pre-development	2.57	1.21	1.33	0.19
Post-development	2.76	1.38	1.50	0.31
Mitigated Outflow	1.73	0.34	0.46	0*

100-yr Peak Flow (cfs)	1-hr	3-hr	6-hr	24-hr
Pre-development	6.60	3.41	3.59	1.19
Post-development	6.63	3.39	3.57	1.14
Mitigated Outflow	5.60	3.36	2.53	0.12

* Flow completely captured and infiltrated

Appendix A.

References

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group			
		A	B	C	D
<u>NATURAL COVERS -</u>					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
<u>URBAN COVERS -</u>					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
<u>AGRICULTURAL COVERS -</u>					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

RCFC & WCD
HYDROLOGY MANUAL

RUNOFF INDEX NUMBERS
FOR
PERVIOUS AREA



NOAA Atlas 14, Volume 6, Version 2
Location name: Palm Desert, California, USA*
Latitude: 33.7398°, Longitude: -116.3035°
Elevation: 132 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.065 (0.054-0.079)	0.101 (0.084-0.12)	0.154 (0.128-0.18)	0.204 (0.168-0.251)	0.283 (0.226-0.360)	0.354 (0.276-0.459)	0.436 (0.331-0.579)	0.531 (0.392-0.727)	0.684 (0.484-0.976)	0.826 (0.565-1.22)
10-min	0.093 (0.078-0.113)	0.144 (0.120-0.175)	0.221 (0.184-0.269)	0.293 (0.241-0.359)	0.406 (0.323-0.515)	0.507 (0.395-0.658)	0.624 (0.474-0.830)	0.761 (0.562-1.04)	0.980 (0.694-1.40)	1.18 (0.809-1.75)
15-min	0.113 (0.094-0.137)	0.174 (0.145-0.21)	0.268 (0.222-0.325)	0.354 (0.292-0.434)	0.491 (0.391-0.623)	0.613 (0.478-0.795)	0.755 (0.574-1.0)	0.921 (0.680-1.26)	1.19 (0.839-1.69)	1.43 (0.979-2.12)
30-min	0.166 (0.138-0.201)	0.255 (0.213-0.3)	0.392 (0.326-0.477)	0.519 (0.428-0.637)	0.720 (0.573-0.913)	0.899 (0.700-1.17)	1.11 (0.841-1.47)	1.35 (0.997-1.85)	1.74 (1.23-2.48)	2.10 (1.43-3.10)
60-min	0.233 (0.181-0.292)	0.359 (0.289-0.44)	0.551 (0.458-0.64)	0.730 (0.601-0.865)	1.01 (0.838-1.22)	1.26 (0.995-1.64)	1.56 (1.18-2.0)	1.90 (1.48-2.5)	2.44 (1.78-3.4)	2.95 (2.02-4.3)
2-hr	0.325 (0.271-0.393)	0.481 (0.401-0.574)	0.717 (0.596-0.872)	0.934 (0.770-1.1)	1.27 (1.01-1.62)	1.57 (1.22-2.04)	1.91 (1.45-2.5)	2.30 (1.70-3.14)	2.90 (2.05-4.13)	3.44 (2.35-5.08)
3-hr	0.390 (0.325-0.472)	0.570 (0.475-0.682)	0.841 (0.698-1.02)	1.09 (0.896-1.3)	1.47 (1.17-1.87)	1.81 (1.41-2.34)	2.18 (1.66-2.9)	2.62 (1.93-3.58)	3.28 (2.32-4.6)	3.87 (2.65-5.72)
6-hr	0.514 (0.429-0.623)	0.747 (0.622-0.886)	1.09 (0.907-1.3)	1.41 (1.16-1.72)	1.89 (1.50-2.39)	2.30 (1.79-2.98)	2.77 (2.10-3.6)	3.30 (2.44-4.51)	4.11 (2.91-5.86)	4.81 (3.29-7.11)
12-hr	0.620 (0.517-0.751)	0.921 (0.767-1.12)	1.36 (1.13-1.63)	1.76 (1.45-2.16)	2.36 (1.88-2.99)	2.87 (2.24-3.72)	3.44 (2.62-4.5)	4.08 (3.02-5.59)	5.05 (3.58-7.21)	5.89 (4.02-8.70)
24-hr	0.759 (0.672-0.876)	1.16 (1.02-1.3)	1.74 (1.54-2.0)	2.26 (1.98-2.62)	3.03 (2.57-3.65)	3.69 (3.06-4.52)	4.41 (3.59-5.5)	5.22 (4.12-6.74)	6.43 (4.99-8.65)	7.46 (5.49-10.4)
2-day	0.870 (0.770-1.00)	1.35 (1.19-1.5)	2.04 (1.80-2.3)	2.65 (2.32-3.05)	3.55 (3.01-4.28)	4.31 (3.58-5.30)	5.15 (4.18-6.4)	6.08 (4.80-7.86)	7.46 (5.66-10.0)	8.63 (6.33-12.0)
3-day	0.928 (0.821-1.07)	1.45 (1.28-1.6)	2.20 (1.94-2.5)	2.85 (2.50-3.33)	3.83 (3.25-4.62)	4.65 (3.86-5.72)	5.55 (4.50-6.9)	6.56 (5.18-8.47)	8.04 (6.10-10.8)	9.30 (6.82-12.9)
4-day	0.978 (0.866-1.13)	1.53 (1.35-1.76)	2.32 (2.05-2.69)	3.02 (2.64-3.52)	4.06 (3.44-4.89)	4.93 (4.09-6.05)	5.88 (4.77-7.40)	6.94 (5.48-8.97)	8.51 (6.46-11.5)	9.84 (7.22-13.7)
7-day	1.03 (0.911-1.19)	1.62 (1.43-1.86)	2.46 (2.17-2.85)	3.21 (2.81-3.75)	4.32 (3.66-5.20)	5.25 (4.36-6.45)	6.26 (5.07-7.87)	7.37 (5.82-9.53)	9.02 (6.84-12.1)	10.4 (7.63-14.5)
10-day	1.05 (0.932-1.21)	1.66 (1.47-1.92)	2.55 (2.25-2.95)	3.33 (2.91-3.88)	4.48 (3.80-5.40)	5.45 (4.52-6.69)	6.49 (5.27-8.17)	7.65 (6.04-9.88)	9.35 (7.09-12.6)	10.8 (7.90-15.0)
20-day	1.11 (0.983-1.28)	1.79 (1.58-2.06)	2.78 (2.45-3.22)	3.66 (3.20-4.27)	4.96 (4.21-5.98)	6.06 (5.03-7.44)	7.24 (5.87-9.10)	8.53 (6.74-11.0)	10.4 (7.90-14.0)	12.0 (8.78-16.6)
30-day	1.17 (1.03-1.34)	1.91 (1.69-2.20)	3.02 (2.66-3.49)	4.00 (3.50-4.67)	5.48 (4.64-6.60)	6.71 (5.57-8.24)	8.03 (6.51-10.1)	9.47 (7.48-12.2)	11.5 (8.76-15.5)	13.2 (9.72-18.4)
45-day	1.25 (1.10-1.44)	2.08 (1.84-2.41)	3.33 (2.94-3.86)	4.46 (3.90-5.20)	6.15 (5.21-7.41)	7.57 (6.29-9.30)	9.09 (7.37-11.4)	10.7 (8.48-13.9)	13.1 (9.94-17.6)	15.0 (11.0-20.9)
60-day	1.31 (1.16-1.51)	2.23 (1.97-2.57)	3.61 (3.18-4.18)	4.86 (4.25-5.66)	6.73 (5.70-8.11)	8.32 (6.91-10.2)	10.0 (8.13-12.6)	11.8 (9.36-15.3)	14.5 (11.0-19.5)	16.6 (12.2-23.1)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical



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NOAA, National Weather Service, Silver Spring, Maryland

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.780 (0.648-0.948)	1.21 (1.01-1.46)	1.85 (1.54-2.26)	2.45 (2.02-3.01)	3.40 (2.71-4.32)	4.25 (3.31-5.51)	5.23 (3.97-6.95)	6.37 (4.70-8.72)	8.21 (5.81-11.7)	9.91 (6.78-14.7)
10-min	0.558 (0.468-0.678)	0.864 (0.720-1.05)	1.33 (1.10-1.61)	1.76 (1.45-2.15)	2.44 (1.94-3.09)	3.04 (2.37-3.95)	3.74 (2.84-4.98)	4.57 (3.37-6.25)	5.88 (4.16-8.39)	7.10 (4.85-10.5)
15-min	0.452 (0.376-0.548)	0.696 (0.580-0.844)	1.07 (0.888-1.30)	1.42 (1.17-1.74)	1.96 (1.56-2.49)	2.45 (1.91-3.18)	3.02 (2.30-4.01)	3.68 (2.72-5.04)	4.74 (3.36-6.77)	5.73 (3.92-8.47)
30-min	0.332 (0.276-0.402)	0.510 (0.426-0.620)	0.784 (0.652-0.954)	1.04 (0.856-1.27)	1.44 (1.15-1.83)	1.80 (1.40-2.33)	2.21 (1.68-2.94)	2.70 (1.99-3.69)	3.47 (2.46-4.96)	4.20 (2.87-6.21)
60-min	0.233 (0.194-0.282)	0.359 (0.299-0.436)	0.551 (0.458-0.671)	0.730 (0.601-0.895)	1.01 (0.806-1.28)	1.26 (0.985-1.64)	1.56 (1.18-2.07)	1.90 (1.40-2.60)	2.44 (1.73-3.49)	2.95 (2.02-4.36)
2-hr	0.162 (0.135-0.196)	0.240 (0.200-0.292)	0.358 (0.298-0.436)	0.467 (0.385-0.573)	0.636 (0.506-0.807)	0.785 (0.611-1.02)	0.953 (0.725-1.27)	1.15 (0.848-1.57)	1.45 (1.02-2.07)	1.72 (1.17-2.54)
3-hr	0.129 (0.108-0.157)	0.189 (0.158-0.230)	0.280 (0.232-0.340)	0.362 (0.298-0.444)	0.490 (0.389-0.621)	0.601 (0.468-0.780)	0.727 (0.553-0.967)	0.872 (0.644-1.19)	1.09 (0.774-1.56)	1.29 (0.881-1.91)
6-hr	0.085 (0.071-0.104)	0.124 (0.103-0.151)	0.182 (0.151-0.221)	0.234 (0.193-0.287)	0.315 (0.250-0.399)	0.384 (0.299-0.498)	0.462 (0.351-0.614)	0.551 (0.406-0.753)	0.686 (0.485-0.979)	0.803 (0.548-1.19)
12-hr	0.051 (0.042-0.062)	0.076 (0.063-0.092)	0.113 (0.093-0.137)	0.145 (0.120-0.178)	0.195 (0.155-0.248)	0.238 (0.185-0.308)	0.285 (0.217-0.379)	0.339 (0.250-0.463)	0.419 (0.296-0.598)	0.488 (0.333-0.722)
24-hr	0.031 (0.028-0.036)	0.048 (0.042-0.055)	0.072 (0.063-0.084)	0.094 (0.082-0.109)	0.126 (0.107-0.152)	0.153 (0.127-0.188)	0.183 (0.149-0.231)	0.217 (0.171-0.281)	0.267 (0.203-0.360)	0.311 (0.228-0.432)
2-day	0.018 (0.016-0.020)	0.028 (0.024-0.032)	0.042 (0.037-0.049)	0.055 (0.048-0.064)	0.073 (0.062-0.089)	0.089 (0.074-0.110)	0.107 (0.086-0.134)	0.126 (0.099-0.163)	0.155 (0.117-0.208)	0.179 (0.131-0.249)
3-day	0.012 (0.011-0.014)	0.020 (0.017-0.023)	0.030 (0.026-0.035)	0.039 (0.034-0.046)	0.053 (0.045-0.064)	0.064 (0.053-0.079)	0.077 (0.062-0.097)	0.091 (0.071-0.117)	0.111 (0.084-0.150)	0.129 (0.094-0.179)
4-day	0.010 (0.009-0.011)	0.015 (0.014-0.018)	0.024 (0.021-0.027)	0.031 (0.027-0.036)	0.042 (0.035-0.050)	0.051 (0.042-0.063)	0.061 (0.049-0.077)	0.072 (0.057-0.093)	0.088 (0.067-0.119)	0.102 (0.075-0.142)
7-day	0.006 (0.005-0.007)	0.009 (0.008-0.011)	0.014 (0.012-0.016)	0.019 (0.016-0.022)	0.025 (0.021-0.030)	0.031 (0.025-0.038)	0.037 (0.030-0.046)	0.043 (0.034-0.056)	0.053 (0.040-0.072)	0.061 (0.045-0.086)
10-day	0.004 (0.003-0.005)	0.006 (0.006-0.007)	0.010 (0.009-0.012)	0.013 (0.012-0.016)	0.018 (0.015-0.022)	0.022 (0.018-0.027)	0.027 (0.021-0.034)	0.031 (0.025-0.041)	0.038 (0.029-0.052)	0.044 (0.032-0.062)
20-day	0.002 (0.002-0.002)	0.003 (0.003-0.004)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.010 (0.008-0.012)	0.012 (0.010-0.015)	0.015 (0.012-0.018)	0.017 (0.014-0.022)	0.021 (0.016-0.029)	0.024 (0.018-0.034)
30-day	0.001 (0.001-0.001)	0.002 (0.002-0.003)	0.004 (0.003-0.004)	0.005 (0.004-0.006)	0.007 (0.006-0.009)	0.009 (0.007-0.011)	0.011 (0.009-0.014)	0.013 (0.010-0.016)	0.016 (0.012-0.021)	0.018 (0.013-0.025)
45-day	0.001 (0.001-0.001)	0.001 (0.001-0.002)	0.003 (0.002-0.003)	0.004 (0.003-0.004)	0.005 (0.004-0.006)	0.007 (0.005-0.008)	0.008 (0.006-0.010)	0.009 (0.007-0.012)	0.012 (0.009-0.016)	0.013 (0.010-0.019)
60-day	0.000 (0.000-0.001)	0.001 (0.001-0.001)	0.002 (0.002-0.002)	0.003 (0.002-0.003)	0.004 (0.003-0.005)	0.005 (0.004-0.007)	0.006 (0.005-0.008)	0.008 (0.006-0.010)	0.010 (0.007-0.013)	0.011 (0.008-0.016)

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PF graphical

Appendix B.
Hydrology Calculations



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point Precipitation <input type="text" value="0.359"/> in.	Point Precipitation <input type="text" value="0.570"/> in.	Point Precipitation <input type="text" value="0.747"/> in.	Point Precipitation <input type="text" value="0.116"/> in.
Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %
Adjusted Point Precipitation 0.36	Adjusted Point Precipitation 0.57	Adjusted Point Precipitation 0.75	Adjusted Point Precipitation 0.12
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 2-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values

AMC Condition:

Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
<input type="text" value="-"/>						<input type="text"/>	<input type="button" value="Add"/>	
Barren N/A	78	0.46400	Natural or Agriculture (0)	0	0.464	2.44	1	0.464 X
Total area =						2.44		
							Average Soil Loss =	0.464



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point Precipitation <input type="text" value="0.359"/> in.	Point Precipitation <input type="text" value="0.570"/> in.	Point Precipitation <input type="text" value="0.747"/> in.	Point Precipitation <input type="text" value="0.116"/> in.
Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %
Adjusted Point Precipitation 0.36	Adjusted Point Precipitation 0.57	Adjusted Point Precipitation 0.75	Adjusted Point Precipitation 0.12
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 2-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) (24-hour Storm Only) % (Typically 50-75%)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0007	00:05	0.0004	00:05	0.0000
00:05	0.0013	00:10	0.0007	00:10	0.0004	00:10	0.0000
00:10	0.0013	00:15	0.0006	00:15	0.0004	00:15	0.0000
00:15	0.0013	00:20	0.0009	00:20	0.0004	00:20	0.0000
00:20	0.0020	00:25	0.0009	00:25	0.0004	00:25	0.0000
00:25	0.0017	00:30	0.0010	00:30	0.0005	00:30	0.0000
00:30	0.0020	00:35	0.0009	00:35	0.0005	00:35	0.0000
00:35	0.0023	00:40	0.0010	00:40	0.0005	00:40	0.0000
00:40	0.0031	00:45	0.0010	00:45	0.0005	00:45	0.0000
00:45	0.0073	00:50	0.0009	00:50	0.0005	00:50	0.0000
00:50	0.0881	00:55	0.0009	00:55	0.0005	00:55	0.0000
00:55	0.0022	01:00	0.0010	01:00	0.0006	01:00	0.0000
01:00	0.0015	01:05	0.0013	01:05	0.0006	01:05	0.0000
		01:10	0.0013	01:10	0.0006	01:10	0.0000
		01:15	0.0013	01:15	0.0006	01:15	0.0000

01:20	0.0011
01:25	0.0015
01:30	0.0015
01:35	0.0014
01:40	0.0015
01:45	0.0019
01:50	0.0018
01:55	0.0017
02:00	0.0017
02:05	0.0018
02:10	0.0024
02:15	0.0028
02:20	0.0020
02:25	0.0001
02:30	0.0029
02:35	0.0081
02:40	0.0034
02:45	0.0011
02:50	0.0010
02:55	0.0010
03:00	0.0003

01:20	0.0006
01:25	0.0006
01:30	0.0006
01:35	0.0006
01:40	0.0006
01:45	0.0006
01:50	0.0006
01:55	0.0006
02:00	0.0007
02:05	0.0006
02:10	0.0007
02:15	0.0007
02:20	0.0007
02:25	0.0007
02:30	0.0007
02:35	0.0007
02:40	0.0007
02:45	0.0007
02:50	0.0007
02:55	0.0007
03:00	0.0007
03:05	0.0007
03:10	0.0008
03:15	0.0008
03:20	0.0008
03:25	0.0009
03:30	0.0010
03:35	0.0010
03:40	0.0010
03:45	0.0011
03:50	0.0011
03:55	0.0012
04:00	0.0012
04:05	0.0013
04:10	0.0013
04:15	0.0014
04:20	0.0015
04:25	0.0016
04:30	0.0016
04:35	0.0016
04:40	0.0017
04:45	0.0018
04:50	0.0018
04:55	0.0019
05:00	0.0019
05:05	0.0023
05:10	0.0027
05:15	0.0029
05:20	0.0031
05:25	0.0035
05:30	0.0032
05:35	0.0014
05:40	0.0007
05:45	0.0004
05:50	0.0004
05:55	0.0002

01:20	0.0000
01:25	0.0000
01:30	0.0000
01:35	0.0000
01:40	0.0000
01:45	0.0000
01:50	0.0000
01:55	0.0000
02:00	0.0000
02:05	0.0000
02:10	0.0000
02:15	0.0000
02:20	0.0000
02:25	0.0000
02:30	0.0000
02:35	0.0000
02:40	0.0000
02:45	0.0000
02:50	0.0000
02:55	0.0000
03:00	0.0000
03:05	0.0000
03:10	0.0000
03:15	0.0000
03:20	0.0000
03:25	0.0000
03:30	0.0000
03:35	0.0000
03:40	0.0000
03:45	0.0000
03:50	0.0000
03:55	0.0000
04:00	0.0000
04:05	0.0000
04:10	0.0000
04:15	0.0000
04:20	0.0000
04:25	0.0000
04:30	0.0000
04:35	0.0000
04:40	0.0000
04:45	0.0000
04:50	0.0000
04:55	0.0000
05:00	0.0000
05:05	0.0000
05:10	0.0000
05:15	0.0000
05:20	0.0000
05:25	0.0000
05:30	0.0000
05:35	0.0000
05:40	0.0000
05:45	0.0000
05:50	0.0000
05:55	0.0000

06:00 0.0001

06:00	0.0000
06:05	0.0000
06:10	0.0000
06:15	0.0000
06:20	0.0000
06:25	0.0000
06:30	0.0000
06:35	0.0000
06:40	0.0000
06:45	0.0000
06:50	0.0000
06:55	0.0000
07:00	0.0000
07:05	0.0000
07:10	0.0000
07:15	0.0000
07:20	0.0000
07:25	0.0000
07:30	0.0000
07:35	0.0000
07:40	0.0000
07:45	0.0000
07:50	0.0000
07:55	0.0000
08:00	0.0000
08:05	0.0001
08:10	0.0001
08:15	0.0001
08:20	0.0001
08:25	0.0001
08:30	0.0001
08:35	0.0001
08:40	0.0001
08:45	0.0001
08:50	0.0001
08:55	0.0001
09:00	0.0001
09:05	0.0001
09:10	0.0001
09:15	0.0001
09:20	0.0001
09:25	0.0001
09:30	0.0001
09:35	0.0001
09:40	0.0001
09:45	0.0001
09:50	0.0001
09:55	0.0001
10:00	0.0001
10:05	0.0001
10:10	0.0001
10:15	0.0001
10:20	0.0001
10:25	0.0001
10:30	0.0001
10:35	0.0001

10:40	0.0001
10:45	0.0001
10:50	0.0001
10:55	0.0001
11:00	0.0001
11:05	0.0001
11:10	0.0001
11:15	0.0001
11:20	0.0001
11:25	0.0001
11:30	0.0001
11:35	0.0001
11:40	0.0001
11:45	0.0001
11:50	0.0001
11:55	0.0001
12:00	0.0001
12:05	0.0001
12:10	0.0001
12:15	0.0001
12:20	0.0001
12:25	0.0001
12:30	0.0001
12:35	0.0001
12:40	0.0001
12:45	0.0001
12:50	0.0001
12:55	0.0001
13:00	0.0001
13:05	0.0001
13:10	0.0001
13:15	0.0001
13:20	0.0001
13:25	0.0001
13:30	0.0001
13:35	0.0001
13:40	0.0001
13:45	0.0001
13:50	0.0001
13:55	0.0001
14:00	0.0001
14:05	0.0001
14:10	0.0001
14:15	0.0001
14:20	0.0001
14:25	0.0001
14:30	0.0001
14:35	0.0001
14:40	0.0001
14:45	0.0001
14:50	0.0001
14:55	0.0001
15:00	0.0001
15:05	0.0001
15:10	0.0001
15:15	0.0001

15:20	0.0001
15:25	0.0001
15:30	0.0001
15:35	0.0001
15:40	0.0001
15:45	0.0001
15:50	0.0001
15:55	0.0001
16:00	0.0001
16:05	0.0000
16:10	0.0000
16:15	0.0000
16:20	0.0000
16:25	0.0000
16:30	0.0000
16:35	0.0000
16:40	0.0000
16:45	0.0000
16:50	0.0000
16:55	0.0000
17:00	0.0000
17:05	0.0000
17:10	0.0000
17:15	0.0000
17:20	0.0000
17:25	0.0000
17:30	0.0000
17:35	0.0000
17:40	0.0000
17:45	0.0000
17:50	0.0000
17:55	0.0000
18:00	0.0000
18:05	0.0000
18:10	0.0000
18:15	0.0000
18:20	0.0000
18:25	0.0000
18:30	0.0000
18:35	0.0000
18:40	0.0000
18:45	0.0000
18:50	0.0000
18:55	0.0000
19:00	0.0000
19:05	0.0000
19:10	0.0000
19:15	0.0000
19:20	0.0000
19:25	0.0000
19:30	0.0000
19:35	0.0000
19:40	0.0000
19:45	0.0000
19:50	0.0000
19:55	0.0000

20:00	0.0000
20:05	0.0000
20:10	0.0000
20:15	0.0000
20:20	0.0000
20:25	0.0000
20:30	0.0000
20:35	0.0000
20:40	0.0000
20:45	0.0000
20:50	0.0000
20:55	0.0000
21:00	0.0000
21:05	0.0000
21:10	0.0000
21:15	0.0000
21:20	0.0000
21:25	0.0000
21:30	0.0000
21:35	0.0000
21:40	0.0000
21:45	0.0000
21:50	0.0000
21:55	0.0000
22:00	0.0000
22:05	0.0000
22:10	0.0000
22:15	0.0000
22:20	0.0000
22:25	0.0000
22:30	0.0000
22:35	0.0000
22:40	0.0000
22:45	0.0000
22:50	0.0000
22:55	0.0000
23:00	0.0000
23:05	0.0000
23:10	0.0000
23:15	0.0000
23:20	0.0000
23:25	0.0000
23:30	0.0000
23:35	0.0000
23:40	0.0000
23:45	0.0000
23:50	0.0000
23:55	0.0000
00:00	0.0000



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point Precipitation <input type="text" value="0.551"/> in.	Point Precipitation <input type="text" value="0.841"/> in.	Point Precipitation <input type="text" value="1.09"/> in.	Point Precipitation <input type="text" value="1.74"/> in.
Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %
Adjusted Point Precipitation 0.55	Adjusted Point Precipitation 0.84	Adjusted Point Precipitation 1.09	Adjusted Point Precipitation 1.74
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 5-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values

AMC Condition:

Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
<input type="text" value="-"/>						<input type="text"/>	<input type="button" value="Add"/>	
Barren N/A A	78	0.46400	Natural or Agriculture (0)	0	0.464	2.44	1	0.464 X
Total area =						2.44		
							Average Soil Loss =	0.464



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.551"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.55</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.841"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.84</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.09"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.09</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.74"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.74</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 5-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) (24-hour Storm Only) % (Typically 50-75%)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0011	00:05	0.0005	00:05	0.0001
00:05	0.0019	00:10	0.0011	00:10	0.0007	00:10	0.0001
00:10	0.0023	00:15	0.0009	00:15	0.0007	00:15	0.0001
00:15	0.0020	00:20	0.0013	00:20	0.0007	00:20	0.0002
00:20	0.0024	00:25	0.0013	00:25	0.0007	00:25	0.0002
00:25	0.0028	00:30	0.0015	00:30	0.0008	00:30	0.0002
00:30	0.0033	00:35	0.0013	00:35	0.0008	00:35	0.0002
00:35	0.0035	00:40	0.0015	00:40	0.0008	00:40	0.0002
00:40	0.0093	00:45	0.0015	00:45	0.0008	00:45	0.0002
00:45	0.0302	00:50	0.0013	00:50	0.0008	00:50	0.0002
00:50	0.1558	00:55	0.0013	00:55	0.0008	00:55	0.0002
00:55	0.0036	01:00	0.0015	01:00	0.0009	01:00	0.0002
01:00	0.0021	01:05	0.0019	01:05	0.0009	01:05	0.0002
		01:10	0.0019	01:10	0.0009	01:10	0.0002
		01:15	0.0019	01:15	0.0009	01:15	0.0002

01:20	0.0017
01:25	0.0022
01:30	0.0023
01:35	0.0020
01:40	0.0023
01:45	0.0028
01:50	0.0026
01:55	0.0024
02:00	0.0025
02:05	0.0026
02:10	0.0035
02:15	0.0034
02:20	0.0029
02:25	0.0185
02:30	0.0227
02:35	0.0303
02:40	0.0110
02:45	0.0017
02:50	0.0015
02:55	0.0015
03:00	0.0005

01:20	0.0009
01:25	0.0009
01:30	0.0009
01:35	0.0009
01:40	0.0009
01:45	0.0009
01:50	0.0009
01:55	0.0009
02:00	0.0010
02:05	0.0009
02:10	0.0010
02:15	0.0010
02:20	0.0010
02:25	0.0010
02:30	0.0010
02:35	0.0010
02:40	0.0010
02:45	0.0011
02:50	0.0011
02:55	0.0011
03:00	0.0011
03:05	0.0011
03:10	0.0012
03:15	0.0012
03:20	0.0012
03:25	0.0013
03:30	0.0014
03:35	0.0015
03:40	0.0015
03:45	0.0016
03:50	0.0016
03:55	0.0017
04:00	0.0017
04:05	0.0019
04:10	0.0020
04:15	0.0021
04:20	0.0022
04:25	0.0023
04:30	0.0023
04:35	0.0024
04:40	0.0025
04:45	0.0026
04:50	0.0026
04:55	0.0027
05:00	0.0028
05:05	0.0034
05:10	0.0006
05:15	0.0038
05:20	0.0071
05:25	0.0126
05:30	0.0224
05:35	0.0021
05:40	0.0010
05:45	0.0007
05:50	0.0005
05:55	0.0003

01:20	0.0002
01:25	0.0002
01:30	0.0002
01:35	0.0002
01:40	0.0002
01:45	0.0002
01:50	0.0002
01:55	0.0002
02:00	0.0002
02:05	0.0002
02:10	0.0002
02:15	0.0002
02:20	0.0002
02:25	0.0002
02:30	0.0002
02:35	0.0003
02:40	0.0003
02:45	0.0003
02:50	0.0003
02:55	0.0003
03:00	0.0003
03:05	0.0003
03:10	0.0003
03:15	0.0003
03:20	0.0003
03:25	0.0003
03:30	0.0003
03:35	0.0003
03:40	0.0003
03:45	0.0003
03:50	0.0003
03:55	0.0003
04:00	0.0003
04:05	0.0003
04:10	0.0003
04:15	0.0003
04:20	0.0004
04:25	0.0004
04:30	0.0004
04:35	0.0004
04:40	0.0004
04:45	0.0004
04:50	0.0005
04:55	0.0005
05:00	0.0005
05:05	0.0003
05:10	0.0003
05:15	0.0003
05:20	0.0004
05:25	0.0004
05:30	0.0004
05:35	0.0005
05:40	0.0005
05:45	0.0005
05:50	0.0005
05:55	0.0005

06:00 0.0002

06:00	0.0005
06:05	0.0005
06:10	0.0005
06:15	0.0005
06:20	0.0005
06:25	0.0005
06:30	0.0005
06:35	0.0006
06:40	0.0006
06:45	0.0006
06:50	0.0006
06:55	0.0006
07:00	0.0006
07:05	0.0006
07:10	0.0006
07:15	0.0006
07:20	0.0006
07:25	0.0006
07:30	0.0006
07:35	0.0007
07:40	0.0007
07:45	0.0007
07:50	0.0007
07:55	0.0007
08:00	0.0007
08:05	0.0009
08:10	0.0009
08:15	0.0009
08:20	0.0009
08:25	0.0009
08:30	0.0009
08:35	0.0009
08:40	0.0009
08:45	0.0009
08:50	0.0010
08:55	0.0010
09:00	0.0010
09:05	0.0011
09:10	0.0011
09:15	0.0011
09:20	0.0012
09:25	0.0012
09:30	0.0012
09:35	0.0012
09:40	0.0012
09:45	0.0012
09:50	0.0013
09:55	0.0013
10:00	0.0013
10:05	0.0009
10:10	0.0009
10:15	0.0009
10:20	0.0009
10:25	0.0009
10:30	0.0009
10:35	0.0012

10:40	0.0012
10:45	0.0012
10:50	0.0012
10:55	0.0012
11:00	0.0012
11:05	0.0011
11:10	0.0011
11:15	0.0011
11:20	0.0011
11:25	0.0011
11:30	0.0011
11:35	0.0010
11:40	0.0010
11:45	0.0010
11:50	0.0010
11:55	0.0010
12:00	0.0010
12:05	0.0014
12:10	0.0014
12:15	0.0014
12:20	0.0015
12:25	0.0015
12:30	0.0015
12:35	0.0016
12:40	0.0016
12:45	0.0016
12:50	0.0017
12:55	0.0017
13:00	0.0017
13:05	0.0020
13:10	0.0020
13:15	0.0020
13:20	0.0020
13:25	0.0020
13:30	0.0020
13:35	0.0013
13:40	0.0013
13:45	0.0013
13:50	0.0013
13:55	0.0013
14:00	0.0013
14:05	0.0016
14:10	0.0016
14:15	0.0016
14:20	0.0015
14:25	0.0015
14:30	0.0015
14:35	0.0015
14:40	0.0015
14:45	0.0015
14:50	0.0014
14:55	0.0014
15:00	0.0014
15:05	0.0014
15:10	0.0014
15:15	0.0014

15:20	0.0013
15:25	0.0013
15:30	0.0013
15:35	0.0011
15:40	0.0011
15:45	0.0011
15:50	0.0011
15:55	0.0011
16:00	0.0011
16:05	0.0002
16:10	0.0002
16:15	0.0002
16:20	0.0002
16:25	0.0002
16:30	0.0002
16:35	0.0002
16:40	0.0002
16:45	0.0002
16:50	0.0002
16:55	0.0002
17:00	0.0002
17:05	0.0003
17:10	0.0003
17:15	0.0003
17:20	0.0003
17:25	0.0003
17:30	0.0003
17:35	0.0003
17:40	0.0003
17:45	0.0003
17:50	0.0002
17:55	0.0002
18:00	0.0002
18:05	0.0002
18:10	0.0002
18:15	0.0002
18:20	0.0002
18:25	0.0002
18:30	0.0002
18:35	0.0002
18:40	0.0002
18:45	0.0002
18:50	0.0001
18:55	0.0001
19:00	0.0001
19:05	0.0002
19:10	0.0002
19:15	0.0002
19:20	0.0002
19:25	0.0002
19:30	0.0002
19:35	0.0002
19:40	0.0002
19:45	0.0002
19:50	0.0001
19:55	0.0001

20:00	0.0001
20:05	0.0002
20:10	0.0002
20:15	0.0002
20:20	0.0002
20:25	0.0002
20:30	0.0002
20:35	0.0002
20:40	0.0002
20:45	0.0002
20:50	0.0001
20:55	0.0001
21:00	0.0001
21:05	0.0002
21:10	0.0002
21:15	0.0002
21:20	0.0001
21:25	0.0001
21:30	0.0001
21:35	0.0002
21:40	0.0002
21:45	0.0002
21:50	0.0001
21:55	0.0001
22:00	0.0001
22:05	0.0002
22:10	0.0002
22:15	0.0002
22:20	0.0001
22:25	0.0001
22:30	0.0001
22:35	0.0001
22:40	0.0001
22:45	0.0001
22:50	0.0001
22:55	0.0001
23:00	0.0001
23:05	0.0001
23:10	0.0001
23:15	0.0001
23:20	0.0001
23:25	0.0001
23:30	0.0001
23:35	0.0001
23:40	0.0001
23:45	0.0001
23:50	0.0001
23:55	0.0001
00:00	0.0001



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.73"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.73</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.09"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.09</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.41"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.41</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.26"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.26</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 10-yr

Loss Rate Data **Effective Rainfall** S-Graphs

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values

AMC Condition:

Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
<input type="text" value="-"/>						<input type="text"/>	<input type="button" value="Add"/>	
Barren N/A A	78	0.26800	Natural or Agriculture (0)	0	0.268	2.44	1	0.268 <input type="text" value="X"/>
Total area =						2.44		
							Average Soil Loss =	0.268



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point Precipitation <input type="text" value="0.73"/> in.	Point Precipitation <input type="text" value="1.09"/> in.	Point Precipitation <input type="text" value="1.41"/> in.	Point Precipitation <input type="text" value="2.26"/> in.
Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %
Adjusted Point Precipitation 0.73	Adjusted Point Precipitation 1.09	Adjusted Point Precipitation 1.41	Adjusted Point Precipitation 2.26
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 10-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) (24-hour Storm Only) % (Typically 50-75%)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0014	00:05	0.0007	00:05	0.0002
00:05	0.0025	00:10	0.0014	00:10	0.0008	00:10	0.0002
00:10	0.0054	00:15	0.0012	00:15	0.0008	00:15	0.0002
00:15	0.0054	00:20	0.0016	00:20	0.0008	00:20	0.0002
00:20	0.0149	00:25	0.0016	00:25	0.0008	00:25	0.0002
00:25	0.0120	00:30	0.0020	00:30	0.0010	00:30	0.0002
00:30	0.0200	00:35	0.0016	00:35	0.0010	00:35	0.0002
00:35	0.0266	00:40	0.0020	00:40	0.0010	00:40	0.0002
00:40	0.0390	00:45	0.0020	00:45	0.0010	00:45	0.0002
00:45	0.0704	00:50	0.0016	00:50	0.0010	00:50	0.0003
00:50	0.2346	00:55	0.0017	00:55	0.0010	00:55	0.0003
00:55	0.0244	01:00	0.0020	01:00	0.0011	01:00	0.0003
01:00	0.0069	01:05	0.0016	01:05	0.0011	01:05	0.0002
		01:10	0.0016	01:10	0.0011	01:10	0.0002
		01:15	0.0016	01:15	0.0011	01:15	0.0002

01:20	0.0022
01:25	0.0060
01:30	0.0071
01:35	0.0038
01:40	0.0071
01:45	0.0136
01:50	0.0115
01:55	0.0093
02:00	0.0104
02:05	0.0115
02:10	0.0234
02:15	0.0322
02:20	0.0158
02:25	0.0518
02:30	0.0572
02:35	0.0670
02:40	0.0420
02:45	0.0022
02:50	0.0020
02:55	0.0020
03:00	0.0007

01:20	0.0011
01:25	0.0011
01:30	0.0011
01:35	0.0011
01:40	0.0011
01:45	0.0011
01:50	0.0011
01:55	0.0011
02:00	0.0013
02:05	0.0011
02:10	0.0013
02:15	0.0013
02:20	0.0013
02:25	0.0013
02:30	0.0013
02:35	0.0013
02:40	0.0013
02:45	0.0014
02:50	0.0014
02:55	0.0014
03:00	0.0014
03:05	0.0014
03:10	0.0016
03:15	0.0016
03:20	0.0016
03:25	0.0017
03:30	0.0018
03:35	0.0020
03:40	0.0020
03:45	0.0021
03:50	0.0021
03:55	0.0002
04:00	0.0002
04:05	0.0016
04:10	0.0030
04:15	0.0045
04:20	0.0059
04:25	0.0073
04:30	0.0073
04:35	0.0087
04:40	0.0101
04:45	0.0115
04:50	0.0115
04:55	0.0129
05:00	0.0143
05:05	0.0214
05:10	0.0284
05:15	0.0327
05:20	0.0369
05:25	0.0439
05:30	0.0566
05:35	0.0045
05:40	0.0013
05:45	0.0008
05:50	0.0007
05:55	0.0004

01:20	0.0002
01:25	0.0002
01:30	0.0002
01:35	0.0002
01:40	0.0002
01:45	0.0002
01:50	0.0003
01:55	0.0003
02:00	0.0003
02:05	0.0003
02:10	0.0003
02:15	0.0003
02:20	0.0003
02:25	0.0003
02:30	0.0003
02:35	0.0004
02:40	0.0004
02:45	0.0004
02:50	0.0004
02:55	0.0004
03:00	0.0004
03:05	0.0004
03:10	0.0004
03:15	0.0004
03:20	0.0004
03:25	0.0004
03:30	0.0004
03:35	0.0004
03:40	0.0004
03:45	0.0004
03:50	0.0005
03:55	0.0005
04:00	0.0005
04:05	0.0005
04:10	0.0005
04:15	0.0005
04:20	0.0005
04:25	0.0005
04:30	0.0005
04:35	0.0005
04:40	0.0005
04:45	0.0005
04:50	0.0006
04:55	0.0006
05:00	0.0006
05:05	0.0005
05:10	0.0005
05:15	0.0005
05:20	0.0005
05:25	0.0005
05:30	0.0005
05:35	0.0006
05:40	0.0006
05:45	0.0006
05:50	0.0006
05:55	0.0006

06:00 0.0003

06:00	0.0006
06:05	0.0007
06:10	0.0007
06:15	0.0007
06:20	0.0007
06:25	0.0007
06:30	0.0007
06:35	0.0007
06:40	0.0007
06:45	0.0007
06:50	0.0007
06:55	0.0007
07:00	0.0007
07:05	0.0007
07:10	0.0007
07:15	0.0007
07:20	0.0008
07:25	0.0008
07:30	0.0008
07:35	0.0009
07:40	0.0009
07:45	0.0009
07:50	0.0010
07:55	0.0010
08:00	0.0010
08:05	0.0011
08:10	0.0011
08:15	0.0011
08:20	0.0011
08:25	0.0011
08:30	0.0011
08:35	0.0012
08:40	0.0012
08:45	0.0012
08:50	0.0013
08:55	0.0013
09:00	0.0013
09:05	0.0014
09:10	0.0014
09:15	0.0014
09:20	0.0015
09:25	0.0015
09:30	0.0015
09:35	0.0016
09:40	0.0016
09:45	0.0016
09:50	0.0016
09:55	0.0016
10:00	0.0016
10:05	0.0011
10:10	0.0011
10:15	0.0011
10:20	0.0011
10:25	0.0011
10:30	0.0011
10:35	0.0015

10:40	0.0015
10:45	0.0015
10:50	0.0015
10:55	0.0015
11:00	0.0015
11:05	0.0014
11:10	0.0014
11:15	0.0014
11:20	0.0014
11:25	0.0014
11:30	0.0014
11:35	0.0013
11:40	0.0013
11:45	0.0013
11:50	0.0014
11:55	0.0014
12:00	0.0014
12:05	0.0019
12:10	0.0019
12:15	0.0019
12:20	0.0020
12:25	0.0020
12:30	0.0020
12:35	0.0008
12:40	0.0009
12:45	0.0010
12:50	0.0020
12:55	0.0021
13:00	0.0022
13:05	0.0059
13:10	0.0060
13:15	0.0061
13:20	0.0062
13:25	0.0063
13:30	0.0064
13:35	0.0017
13:40	0.0017
13:45	0.0017
13:50	0.0017
13:55	0.0017
14:00	0.0017
14:05	0.0019
14:10	0.0020
14:15	0.0021
14:20	0.0015
14:25	0.0016
14:30	0.0017
14:35	0.0018
14:40	0.0019
14:45	0.0019
14:50	0.0011
14:55	0.0012
15:00	0.0013
15:05	0.0007
15:10	0.0008
15:15	0.0009

15:20	0.0003
15:25	0.0004
15:30	0.0005
15:35	0.0014
15:40	0.0014
15:45	0.0014
15:50	0.0014
15:55	0.0014
16:00	0.0014
16:05	0.0003
16:10	0.0003
16:15	0.0003
16:20	0.0003
16:25	0.0003
16:30	0.0003
16:35	0.0002
16:40	0.0002
16:45	0.0002
16:50	0.0002
16:55	0.0002
17:00	0.0002
17:05	0.0004
17:10	0.0004
17:15	0.0004
17:20	0.0004
17:25	0.0004
17:30	0.0004
17:35	0.0004
17:40	0.0004
17:45	0.0004
17:50	0.0003
17:55	0.0003
18:00	0.0003
18:05	0.0003
18:10	0.0003
18:15	0.0003
18:20	0.0003
18:25	0.0003
18:30	0.0003
18:35	0.0002
18:40	0.0002
18:45	0.0002
18:50	0.0002
18:55	0.0002
19:00	0.0002
19:05	0.0002
19:10	0.0002
19:15	0.0002
19:20	0.0003
19:25	0.0003
19:30	0.0003
19:35	0.0002
19:40	0.0002
19:45	0.0002
19:50	0.0002
19:55	0.0002

20:00	0.0002
20:05	0.0002
20:10	0.0002
20:15	0.0002
20:20	0.0002
20:25	0.0002
20:30	0.0002
20:35	0.0002
20:40	0.0002
20:45	0.0002
20:50	0.0002
20:55	0.0002
21:00	0.0002
21:05	0.0002
21:10	0.0002
21:15	0.0002
21:20	0.0002
21:25	0.0002
21:30	0.0002
21:35	0.0002
21:40	0.0002
21:45	0.0002
21:50	0.0002
21:55	0.0002
22:00	0.0002
22:05	0.0002
22:10	0.0002
22:15	0.0002
22:20	0.0002
22:25	0.0002
22:30	0.0002
22:35	0.0002
22:40	0.0002
22:45	0.0002
22:50	0.0002
22:55	0.0002
23:00	0.0002
23:05	0.0002
23:10	0.0002
23:15	0.0002
23:20	0.0002
23:25	0.0002
23:30	0.0002
23:35	0.0002
23:40	0.0002
23:45	0.0002
23:50	0.0002
23:55	0.0002
00:00	0.0002



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.56"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.56</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.18"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.18</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.77"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.77</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="4.41"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 4.41</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 100-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values

AMC Condition:

Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
<input type="text" value="-"/>						<input type="text"/>	<input type="button" value="Add"/>	
Barren N/A A	78	0.13200	Natural or Agriculture (0)	0	0.132	2.44	1	0.132 X
Total area =						2.44		
							Average Soil Loss =	0.132



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.56"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.56</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.18"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.18</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.77"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.77</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="4.41"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 4.41</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.047** hr

40% Lag Time 1.1 min

Existing 100-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) % (Typically 50-75%)
(24-hour Storm Only)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0173	00:05	0.0028	00:05	0.0003
00:05	0.0452	00:10	0.0173	00:10	0.0056	00:10	0.0003
00:10	0.0467	00:15	0.0130	00:15	0.0056	00:15	0.0003
00:15	0.0545	00:20	0.0217	00:20	0.0056	00:20	0.0004
00:20	0.0608	00:25	0.0217	00:25	0.0056	00:25	0.0004
00:25	0.0654	00:30	0.0282	00:30	0.0084	00:30	0.0004
00:30	0.0795	00:35	0.0217	00:35	0.0084	00:35	0.0004
00:35	0.0935	00:40	0.0282	00:40	0.0084	00:40	0.0004
00:40	0.1185	00:45	0.0282	00:45	0.0084	00:45	0.0004
00:45	0.1871	00:50	0.0217	00:50	0.0084	00:50	0.0006
00:50	0.5397	00:55	0.0239	00:55	0.0084	00:55	0.0006
00:55	0.0888	01:00	0.0282	01:00	0.0112	01:00	0.0006
01:00	0.0514	01:05	0.0370	01:05	0.0112	01:05	0.0004
		01:10	0.0370	01:10	0.0112	01:10	0.0004
		01:15	0.0370	01:15	0.0112	01:15	0.0004

01:20	0.0326
01:25	0.0457
01:30	0.0479
01:35	0.0413
01:40	0.0479
01:45	0.0609
01:50	0.0566
01:55	0.0522
02:00	0.0544
02:05	0.0566
02:10	0.0806
02:15	0.0980
02:20	0.0653
02:25	0.1372
02:30	0.1481
02:35	0.1678
02:40	0.1176
02:45	0.0326
02:50	0.0282
02:55	0.0282
03:00	0.0021

01:20	0.0112
01:25	0.0112
01:30	0.0112
01:35	0.0112
01:40	0.0112
01:45	0.0112
01:50	0.0112
01:55	0.0112
02:00	0.0139
02:05	0.0112
02:10	0.0139
02:15	0.0139
02:20	0.0139
02:25	0.0139
02:30	0.0139
02:35	0.0139
02:40	0.0139
02:45	0.0167
02:50	0.0167
02:55	0.0167
03:00	0.0167
03:05	0.0167
03:10	0.0195
03:15	0.0195
03:20	0.0195
03:25	0.0222
03:30	0.0250
03:35	0.0278
03:40	0.0278
03:45	0.0306
03:50	0.0306
03:55	0.0333
04:00	0.0333
04:05	0.0361
04:10	0.0389
04:15	0.0416
04:20	0.0444
04:25	0.0472
04:30	0.0472
04:35	0.0499
04:40	0.0527
04:45	0.0555
04:50	0.0555
04:55	0.0582
05:00	0.0610
05:05	0.0749
05:10	0.0887
05:15	0.0970
05:20	0.1053
05:25	0.1192
05:30	0.1441
05:35	0.0416
05:40	0.0139
05:45	0.0056
05:50	0.0028
05:55	0.0008

01:20	0.0004
01:25	0.0004
01:30	0.0004
01:35	0.0004
01:40	0.0004
01:45	0.0004
01:50	0.0006
01:55	0.0006
02:00	0.0006
02:05	0.0006
02:10	0.0006
02:15	0.0006
02:20	0.0006
02:25	0.0006
02:30	0.0006
02:35	0.0007
02:40	0.0007
02:45	0.0007
02:50	0.0007
02:55	0.0007
03:00	0.0007
03:05	0.0007
03:10	0.0007
03:15	0.0007
03:20	0.0007
03:25	0.0007
03:30	0.0007
03:35	0.0007
03:40	0.0007
03:45	0.0007
03:50	0.0009
03:55	0.0009
04:00	0.0009
04:05	0.0009
04:10	0.0009
04:15	0.0009
04:20	0.0010
04:25	0.0010
04:30	0.0010
04:35	0.0010
04:40	0.0010
04:45	0.0010
04:50	0.0012
04:55	0.0012
05:00	0.0012
05:05	0.0009
05:10	0.0009
05:15	0.0009
05:20	0.0010
05:25	0.0010
05:30	0.0010
05:35	0.0012
05:40	0.0012
05:45	0.0012
05:50	0.0012
05:55	0.0012

06:00 0.0006

06:00	0.0012
06:05	0.0013
06:10	0.0013
06:15	0.0013
06:20	0.0013
06:25	0.0013
06:30	0.0013
06:35	0.0005
06:40	0.0005
06:45	0.0006
06:50	0.0007
06:55	0.0007
07:00	0.0008
07:05	0.0009
07:10	0.0009
07:15	0.0010
07:20	0.0028
07:25	0.0029
07:30	0.0029
07:35	0.0043
07:40	0.0044
07:45	0.0044
07:50	0.0058
07:55	0.0059
08:00	0.0059
08:05	0.0091
08:10	0.0092
08:15	0.0092
08:20	0.0093
08:25	0.0093
08:30	0.0094
08:35	0.0108
08:40	0.0108
08:45	0.0109
08:50	0.0127
08:55	0.0128
09:00	0.0128
09:05	0.0155
09:10	0.0156
09:15	0.0157
09:20	0.0175
09:25	0.0175
09:30	0.0176
09:35	0.0190
09:40	0.0190
09:45	0.0191
09:50	0.0205
09:55	0.0205
10:00	0.0206
10:05	0.0105
10:10	0.0105
10:15	0.0106
10:20	0.0107
10:25	0.0107
10:30	0.0108
10:35	0.0183

10:40	0.0184
10:45	0.0184
10:50	0.0185
10:55	0.0185
11:00	0.0186
11:05	0.0169
11:10	0.0169
11:15	0.0170
11:20	0.0170
11:25	0.0171
11:30	0.0171
11:35	0.0146
11:40	0.0146
11:45	0.0147
11:50	0.0160
11:55	0.0161
12:00	0.0161
12:05	0.0263
12:10	0.0264
12:15	0.0264
12:20	0.0283
12:25	0.0283
12:30	0.0284
12:35	0.0311
12:40	0.0311
12:45	0.0312
12:50	0.0330
12:55	0.0330
13:00	0.0331
13:05	0.0402
13:10	0.0402
13:15	0.0403
13:20	0.0403
13:25	0.0404
13:30	0.0404
13:35	0.0246
13:40	0.0246
13:45	0.0247
13:50	0.0247
13:55	0.0248
14:00	0.0248
14:05	0.0306
14:10	0.0306
14:15	0.0307
14:20	0.0294
14:25	0.0295
14:30	0.0295
14:35	0.0296
14:40	0.0296
14:45	0.0296
14:50	0.0279
14:55	0.0280
15:00	0.0280
15:05	0.0267
15:10	0.0268
15:15	0.0268

15:20	0.0255
15:25	0.0256
15:30	0.0256
15:35	0.0195
15:40	0.0195
15:45	0.0196
15:50	0.0196
15:55	0.0197
16:00	0.0197
16:05	0.0006
16:10	0.0006
16:15	0.0006
16:20	0.0006
16:25	0.0006
16:30	0.0006
16:35	0.0004
16:40	0.0004
16:45	0.0004
16:50	0.0004
16:55	0.0004
17:00	0.0004
17:05	0.0007
17:10	0.0007
17:15	0.0000
17:20	0.0001
17:25	0.0001
17:30	0.0001
17:35	0.0002
17:40	0.0002
17:45	0.0002
17:50	0.0006
17:55	0.0006
18:00	0.0006
18:05	0.0006
18:10	0.0006
18:15	0.0006
18:20	0.0006
18:25	0.0006
18:30	0.0006
18:35	0.0004
18:40	0.0004
18:45	0.0004
18:50	0.0003
18:55	0.0003
19:00	0.0003
19:05	0.0004
19:10	0.0004
19:15	0.0004
19:20	0.0006
19:25	0.0006
19:30	0.0006
19:35	0.0004
19:40	0.0004
19:45	0.0004
19:50	0.0003
19:55	0.0003

20:00	0.0003
20:05	0.0004
20:10	0.0004
20:15	0.0004
20:20	0.0004
20:25	0.0004
20:30	0.0004
20:35	0.0004
20:40	0.0004
20:45	0.0004
20:50	0.0003
20:55	0.0003
21:00	0.0003
21:05	0.0004
21:10	0.0004
21:15	0.0004
21:20	0.0003
21:25	0.0003
21:30	0.0003
21:35	0.0004
21:40	0.0004
21:45	0.0004
21:50	0.0003
21:55	0.0003
22:00	0.0003
22:05	0.0004
22:10	0.0004
22:15	0.0004
22:20	0.0003
22:25	0.0003
22:30	0.0003
22:35	0.0003
22:40	0.0003
22:45	0.0003
22:50	0.0003
22:55	0.0003
23:00	0.0003
23:05	0.0003
23:10	0.0003
23:15	0.0003
23:20	0.0003
23:25	0.0003
23:30	0.0003
23:35	0.0003
23:40	0.0003
23:45	0.0003
23:50	0.0003
23:55	0.0003
00:00	0.0003



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point Precipitation <input type="text" value="0.359"/> in.	Point Precipitation <input type="text" value="0.570"/> in.	Point Precipitation <input type="text" value="0.747"/> in.	Point Precipitation <input type="text" value="1.16"/> in.
Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %
Adjusted Point Precipitation 0.36	Adjusted Point Precipitation 0.57	Adjusted Point Precipitation 0.75	Adjusted Point Precipitation 1.16
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 2-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values

AMC Condition:

Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
<input type="text" value="-"/>						<input type="text"/>	<input type="button" value="Add"/>	
Soil Group / Cover Type	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)	Area/ Total Area	Ave. Adj. Rate (in/hr)
Urban Landscaping Good A	32	0.87000	Apartments (80)	80	0.244	2.44	1	0.244 <input type="text" value="X"/>
Total area =						2.44		
Average Soil Loss =								0.244



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.359"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.36</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.570"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.57</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.747"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.75</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.16"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.16</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 2-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) (24-hour Storm Only) % (Typically 50-75%)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0007	00:05	0.0004	00:05	0.0001
00:05	0.0013	00:10	0.0007	00:10	0.0004	00:10	0.0001
00:10	0.0013	00:15	0.0006	00:15	0.0004	00:15	0.0001
00:15	0.0013	00:20	0.0009	00:20	0.0004	00:20	0.0001
00:20	0.0020	00:25	0.0009	00:25	0.0004	00:25	0.0001
00:25	0.0017	00:30	0.0010	00:30	0.0005	00:30	0.0001
00:30	0.0020	00:35	0.0009	00:35	0.0005	00:35	0.0001
00:35	0.0026	00:40	0.0010	00:40	0.0005	00:40	0.0001
00:40	0.0105	00:45	0.0010	00:45	0.0005	00:45	0.0001
00:45	0.0256	00:50	0.0009	00:50	0.0005	00:50	0.0002
00:50	0.1064	00:55	0.0009	00:55	0.0005	00:55	0.0002
00:55	0.0016	01:00	0.0010	01:00	0.0006	01:00	0.0002
01:00	0.0015	01:05	0.0013	01:05	0.0006	01:05	0.0001
		01:10	0.0013	01:10	0.0006	01:10	0.0001
		01:15	0.0013	01:15	0.0006	01:15	0.0001

01:20	0.0011
01:25	0.0015
01:30	0.0015
01:35	0.0014
01:40	0.0015
01:45	0.0019
01:50	0.0018
01:55	0.0017
02:00	0.0017
02:05	0.0018
02:10	0.0036
02:15	0.0082
02:20	0.0020
02:25	0.0184
02:30	0.0213
02:35	0.0264
02:40	0.0133
02:45	0.0011
02:50	0.0010
02:55	0.0010
03:00	0.0003

01:20	0.0006
01:25	0.0006
01:30	0.0006
01:35	0.0006
01:40	0.0006
01:45	0.0006
01:50	0.0006
01:55	0.0006
02:00	0.0007
02:05	0.0006
02:10	0.0007
02:15	0.0007
02:20	0.0007
02:25	0.0007
02:30	0.0007
02:35	0.0007
02:40	0.0007
02:45	0.0007
02:50	0.0007
02:55	0.0007
03:00	0.0007
03:05	0.0007
03:10	0.0008
03:15	0.0008
03:20	0.0008
03:25	0.0009
03:30	0.0010
03:35	0.0010
03:40	0.0010
03:45	0.0011
03:50	0.0011
03:55	0.0012
04:00	0.0012
04:05	0.0013
04:10	0.0013
04:15	0.0014
04:20	0.0015
04:25	0.0016
04:30	0.0016
04:35	0.0016
04:40	0.0017
04:45	0.0018
04:50	0.0018
04:55	0.0019
05:00	0.0019
05:05	0.0028
05:10	0.0066
05:15	0.0088
05:20	0.0110
05:25	0.0148
05:30	0.0215
05:35	0.0014
05:40	0.0007
05:45	0.0004
05:50	0.0004
05:55	0.0002

01:20	0.0001
01:25	0.0001
01:30	0.0001
01:35	0.0001
01:40	0.0001
01:45	0.0001
01:50	0.0002
01:55	0.0002
02:00	0.0002
02:05	0.0002
02:10	0.0002
02:15	0.0002
02:20	0.0002
02:25	0.0002
02:30	0.0002
02:35	0.0002
02:40	0.0002
02:45	0.0002
02:50	0.0002
02:55	0.0002
03:00	0.0002
03:05	0.0002
03:10	0.0002
03:15	0.0002
03:20	0.0002
03:25	0.0002
03:30	0.0002
03:35	0.0002
03:40	0.0002
03:45	0.0002
03:50	0.0002
03:55	0.0002
04:00	0.0002
04:05	0.0002
04:10	0.0002
04:15	0.0002
04:20	0.0003
04:25	0.0003
04:30	0.0003
04:35	0.0003
04:40	0.0003
04:45	0.0003
04:50	0.0003
04:55	0.0003
05:00	0.0003
05:05	0.0002
05:10	0.0002
05:15	0.0002
05:20	0.0003
05:25	0.0003
05:30	0.0003
05:35	0.0003
05:40	0.0003
05:45	0.0003
05:50	0.0003
05:55	0.0003

06:00 0.0001

06:00	0.0003
06:05	0.0003
06:10	0.0003
06:15	0.0003
06:20	0.0003
06:25	0.0003
06:30	0.0003
06:35	0.0004
06:40	0.0004
06:45	0.0004
06:50	0.0004
06:55	0.0004
07:00	0.0004
07:05	0.0004
07:10	0.0004
07:15	0.0004
07:20	0.0004
07:25	0.0004
07:30	0.0004
07:35	0.0005
07:40	0.0005
07:45	0.0005
07:50	0.0005
07:55	0.0005
08:00	0.0005
08:05	0.0006
08:10	0.0006
08:15	0.0006
08:20	0.0006
08:25	0.0006
08:30	0.0006
08:35	0.0006
08:40	0.0006
08:45	0.0006
08:50	0.0007
08:55	0.0007
09:00	0.0007
09:05	0.0007
09:10	0.0007
09:15	0.0007
09:20	0.0008
09:25	0.0008
09:30	0.0008
09:35	0.0008
09:40	0.0008
09:45	0.0008
09:50	0.0008
09:55	0.0008
10:00	0.0008
10:05	0.0006
10:10	0.0006
10:15	0.0006
10:20	0.0006
10:25	0.0006
10:30	0.0006
10:35	0.0008

10:40	0.0008
10:45	0.0008
10:50	0.0008
10:55	0.0008
11:00	0.0008
11:05	0.0007
11:10	0.0007
11:15	0.0007
11:20	0.0007
11:25	0.0007
11:30	0.0007
11:35	0.0007
11:40	0.0007
11:45	0.0007
11:50	0.0007
11:55	0.0007
12:00	0.0007
12:05	0.0010
12:10	0.0010
12:15	0.0010
12:20	0.0010
12:25	0.0010
12:30	0.0010
12:35	0.0011
12:40	0.0011
12:45	0.0011
12:50	0.0011
12:55	0.0011
13:00	0.0011
13:05	0.0013
13:10	0.0013
13:15	0.0013
13:20	0.0013
13:25	0.0013
13:30	0.0013
13:35	0.0009
13:40	0.0009
13:45	0.0009
13:50	0.0009
13:55	0.0009
14:00	0.0009
14:05	0.0010
14:10	0.0010
14:15	0.0010
14:20	0.0010
14:25	0.0010
14:30	0.0010
14:35	0.0010
14:40	0.0010
14:45	0.0010
14:50	0.0010
14:55	0.0010
15:00	0.0010
15:05	0.0009
15:10	0.0009
15:15	0.0009

15:20	0.0009
15:25	0.0009
15:30	0.0009
15:35	0.0007
15:40	0.0007
15:45	0.0007
15:50	0.0007
15:55	0.0007
16:00	0.0007
16:05	0.0002
16:10	0.0002
16:15	0.0002
16:20	0.0002
16:25	0.0002
16:30	0.0002
16:35	0.0001
16:40	0.0001
16:45	0.0001
16:50	0.0001
16:55	0.0001
17:00	0.0001
17:05	0.0002
17:10	0.0002
17:15	0.0002
17:20	0.0002
17:25	0.0002
17:30	0.0002
17:35	0.0002
17:40	0.0002
17:45	0.0002
17:50	0.0002
17:55	0.0002
18:00	0.0002
18:05	0.0002
18:10	0.0002
18:15	0.0002
18:20	0.0002
18:25	0.0002
18:30	0.0002
18:35	0.0001
18:40	0.0001
18:45	0.0001
18:50	0.0001
18:55	0.0001
19:00	0.0001
19:05	0.0001
19:10	0.0001
19:15	0.0001
19:20	0.0002
19:25	0.0002
19:30	0.0002
19:35	0.0001
19:40	0.0001
19:45	0.0001
19:50	0.0001
19:55	0.0001

20:00	0.0001
20:05	0.0001
20:10	0.0001
20:15	0.0001
20:20	0.0001
20:25	0.0001
20:30	0.0001
20:35	0.0001
20:40	0.0001
20:45	0.0001
20:50	0.0001
20:55	0.0001
21:00	0.0001
21:05	0.0001
21:10	0.0001
21:15	0.0001
21:20	0.0001
21:25	0.0001
21:30	0.0001
21:35	0.0001
21:40	0.0001
21:45	0.0001
21:50	0.0001
21:55	0.0001
22:00	0.0001
22:05	0.0001
22:10	0.0001
22:15	0.0001
22:20	0.0001
22:25	0.0001
22:30	0.0001
22:35	0.0001
22:40	0.0001
22:45	0.0001
22:50	0.0001
22:55	0.0001
23:00	0.0001
23:05	0.0001
23:10	0.0001
23:15	0.0001
23:20	0.0001
23:25	0.0001
23:30	0.0001
23:35	0.0001
23:40	0.0001
23:45	0.0001
23:50	0.0001
23:55	0.0001
00:00	0.0001



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point Precipitation <input type="text" value="0.551"/> in.	Point Precipitation <input type="text" value="0.841"/> in.	Point Precipitation <input type="text" value="1.09"/> in.	Point Precipitation <input type="text" value="1.74"/> in.
Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %
Adjusted Point Precipitation 0.55	Adjusted Point Precipitation 0.84	Adjusted Point Precipitation 1.09	Adjusted Point Precipitation 1.74
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 5-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values

AMC Condition:

Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
<input type="text" value="-"/>						<input type="text"/>	<input type="button" value="Add"/>	
Soil Group / Cover Type	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)	Area/ Total Area	Ave. Adj. Rate (in/hr)
Urban Landscaping Good A	32	0.87000	Apartments (80)	80	0.244	2.44	1	0.244 <input type="text" value="X"/>
Total area =						2.44		
Average Soil Loss =								0.244



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point Precipitation <input type="text" value="0.551"/> in.	Point Precipitation <input type="text" value="0.841"/> in.	Point Precipitation <input type="text" value="1.09"/> in.	Point Precipitation <input type="text" value="1.74"/> in.
Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %	Areal Adjustment Factor <input type="text" value="100"/> %
Adjusted Point Precipitation 0.55	Adjusted Point Precipitation 0.84	Adjusted Point Precipitation 1.09	Adjusted Point Precipitation 1.74
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 5-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) % (Typically 50-75%)
(24-hour Storm Only)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0011	00:05	0.0005	00:05	0.0001
00:05	0.0019	00:10	0.0011	00:10	0.0007	00:10	0.0001
00:10	0.0028	00:15	0.0009	00:15	0.0007	00:15	0.0001
00:15	0.0020	00:20	0.0013	00:20	0.0007	00:20	0.0002
00:20	0.0039	00:25	0.0013	00:25	0.0007	00:25	0.0002
00:25	0.0078	00:30	0.0015	00:30	0.0008	00:30	0.0002
00:30	0.0127	00:35	0.0013	00:35	0.0008	00:35	0.0002
00:35	0.0149	00:40	0.0015	00:40	0.0008	00:40	0.0002
00:40	0.0276	00:45	0.0015	00:45	0.0008	00:45	0.0002
00:45	0.0485	00:50	0.0013	00:50	0.0008	00:50	0.0002
00:50	0.1742	00:55	0.0013	00:55	0.0008	00:55	0.0002
00:55	0.0155	01:00	0.0015	01:00	0.0009	01:00	0.0002
01:00	0.0006	01:05	0.0019	01:05	0.0009	01:05	0.0002
		01:10	0.0019	01:10	0.0009	01:10	0.0002
		01:15	0.0019	01:15	0.0009	01:15	0.0002

01:20	0.0017
01:25	0.0015
01:30	0.0024
01:35	0.0020
01:40	0.0024
01:45	0.0074
01:50	0.0057
01:55	0.0041
02:00	0.0049
02:05	0.0057
02:10	0.0150
02:15	0.0217
02:20	0.0091
02:25	0.0369
02:30	0.0411
02:35	0.0486
02:40	0.0293
02:45	0.0017
02:50	0.0015
02:55	0.0015
03:00	0.0005

01:20	0.0009
01:25	0.0009
01:30	0.0009
01:35	0.0009
01:40	0.0009
01:45	0.0009
01:50	0.0009
01:55	0.0009
02:00	0.0010
02:05	0.0009
02:10	0.0010
02:15	0.0010
02:20	0.0010
02:25	0.0010
02:30	0.0010
02:35	0.0010
02:40	0.0010
02:45	0.0011
02:50	0.0011
02:55	0.0011
03:00	0.0011
03:05	0.0011
03:10	0.0012
03:15	0.0012
03:20	0.0012
03:25	0.0013
03:30	0.0014
03:35	0.0015
03:40	0.0015
03:45	0.0016
03:50	0.0016
03:55	0.0017
04:00	0.0017
04:05	0.0019
04:10	0.0020
04:15	0.0004
04:20	0.0015
04:25	0.0026
04:30	0.0026
04:35	0.0036
04:40	0.0047
04:45	0.0058
04:50	0.0058
04:55	0.0069
05:00	0.0080
05:05	0.0135
05:10	0.0189
05:15	0.0222
05:20	0.0254
05:25	0.0309
05:30	0.0407
05:35	0.0004
05:40	0.0010
05:45	0.0007
05:50	0.0005
05:55	0.0003

01:20	0.0002
01:25	0.0002
01:30	0.0002
01:35	0.0002
01:40	0.0002
01:45	0.0002
01:50	0.0002
01:55	0.0002
02:00	0.0002
02:05	0.0002
02:10	0.0002
02:15	0.0002
02:20	0.0002
02:25	0.0002
02:30	0.0002
02:35	0.0003
02:40	0.0003
02:45	0.0003
02:50	0.0003
02:55	0.0003
03:00	0.0003
03:05	0.0003
03:10	0.0003
03:15	0.0003
03:20	0.0003
03:25	0.0003
03:30	0.0003
03:35	0.0003
03:40	0.0003
03:45	0.0003
03:50	0.0003
03:55	0.0003
04:00	0.0003
04:05	0.0003
04:10	0.0003
04:15	0.0003
04:20	0.0004
04:25	0.0004
04:30	0.0004
04:35	0.0004
04:40	0.0004
04:45	0.0004
04:50	0.0005
04:55	0.0005
05:00	0.0005
05:05	0.0003
05:10	0.0003
05:15	0.0003
05:20	0.0004
05:25	0.0004
05:30	0.0004
05:35	0.0005
05:40	0.0005
05:45	0.0005
05:50	0.0005
05:55	0.0005

06:00 0.0002

06:00	0.0005
06:05	0.0005
06:10	0.0005
06:15	0.0005
06:20	0.0005
06:25	0.0005
06:30	0.0005
06:35	0.0006
06:40	0.0006
06:45	0.0006
06:50	0.0006
06:55	0.0006
07:00	0.0006
07:05	0.0006
07:10	0.0006
07:15	0.0006
07:20	0.0006
07:25	0.0006
07:30	0.0006
07:35	0.0007
07:40	0.0007
07:45	0.0007
07:50	0.0007
07:55	0.0007
08:00	0.0007
08:05	0.0009
08:10	0.0009
08:15	0.0009
08:20	0.0009
08:25	0.0009
08:30	0.0009
08:35	0.0009
08:40	0.0009
08:45	0.0009
08:50	0.0010
08:55	0.0010
09:00	0.0010
09:05	0.0011
09:10	0.0011
09:15	0.0011
09:20	0.0012
09:25	0.0012
09:30	0.0012
09:35	0.0012
09:40	0.0012
09:45	0.0012
09:50	0.0013
09:55	0.0013
10:00	0.0013
10:05	0.0009
10:10	0.0009
10:15	0.0009
10:20	0.0009
10:25	0.0009
10:30	0.0009
10:35	0.0012

10:40	0.0012
10:45	0.0012
10:50	0.0012
10:55	0.0012
11:00	0.0012
11:05	0.0011
11:10	0.0011
11:15	0.0011
11:20	0.0011
11:25	0.0011
11:30	0.0011
11:35	0.0010
11:40	0.0010
11:45	0.0010
11:50	0.0010
11:55	0.0010
12:00	0.0010
12:05	0.0014
12:10	0.0014
12:15	0.0014
12:20	0.0015
12:25	0.0015
12:30	0.0015
12:35	0.0016
12:40	0.0016
12:45	0.0016
12:50	0.0017
12:55	0.0017
13:00	0.0017
13:05	0.0018
13:10	0.0019
13:15	0.0020
13:20	0.0021
13:25	0.0022
13:30	0.0022
13:35	0.0013
13:40	0.0013
13:45	0.0013
13:50	0.0013
13:55	0.0013
14:00	0.0013
14:05	0.0016
14:10	0.0016
14:15	0.0016
14:20	0.0015
14:25	0.0015
14:30	0.0015
14:35	0.0015
14:40	0.0015
14:45	0.0015
14:50	0.0014
14:55	0.0014
15:00	0.0014
15:05	0.0014
15:10	0.0014
15:15	0.0014

15:20	0.0013
15:25	0.0013
15:30	0.0013
15:35	0.0011
15:40	0.0011
15:45	0.0011
15:50	0.0011
15:55	0.0011
16:00	0.0011
16:05	0.0002
16:10	0.0002
16:15	0.0002
16:20	0.0002
16:25	0.0002
16:30	0.0002
16:35	0.0002
16:40	0.0002
16:45	0.0002
16:50	0.0002
16:55	0.0002
17:00	0.0002
17:05	0.0003
17:10	0.0003
17:15	0.0003
17:20	0.0003
17:25	0.0003
17:30	0.0003
17:35	0.0003
17:40	0.0003
17:45	0.0003
17:50	0.0002
17:55	0.0002
18:00	0.0002
18:05	0.0002
18:10	0.0002
18:15	0.0002
18:20	0.0002
18:25	0.0002
18:30	0.0002
18:35	0.0002
18:40	0.0002
18:45	0.0002
18:50	0.0001
18:55	0.0001
19:00	0.0001
19:05	0.0002
19:10	0.0002
19:15	0.0002
19:20	0.0002
19:25	0.0002
19:30	0.0002
19:35	0.0002
19:40	0.0002
19:45	0.0002
19:50	0.0001
19:55	0.0001

20:00	0.0001
20:05	0.0002
20:10	0.0002
20:15	0.0002
20:20	0.0002
20:25	0.0002
20:30	0.0002
20:35	0.0002
20:40	0.0002
20:45	0.0002
20:50	0.0001
20:55	0.0001
21:00	0.0001
21:05	0.0002
21:10	0.0002
21:15	0.0002
21:20	0.0001
21:25	0.0001
21:30	0.0001
21:35	0.0002
21:40	0.0002
21:45	0.0002
21:50	0.0001
21:55	0.0001
22:00	0.0001
22:05	0.0002
22:10	0.0002
22:15	0.0002
22:20	0.0001
22:25	0.0001
22:30	0.0001
22:35	0.0001
22:40	0.0001
22:45	0.0001
22:50	0.0001
22:55	0.0001
23:00	0.0001
23:05	0.0001
23:10	0.0001
23:15	0.0001
23:20	0.0001
23:25	0.0001
23:30	0.0001
23:35	0.0001
23:40	0.0001
23:45	0.0001
23:50	0.0001
23:55	0.0001
00:00	0.0001



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.73"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.73</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.09"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.09</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.41"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.41</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.26"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.26</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 10-yr

Loss Rate Data **Effective Rainfall** S-Graphs

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values

AMC Condition:

Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
-						<input type="text"/>	<input type="button" value="Add"/>	
Urban Landscaping Good A	32	0.74200	Apartments (80)	80	0.208	2.44	1	0.208 <input type="text"/>
						Total area =	2.44	
							Average Soil Loss =	0.208



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="0.73"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 0.73</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.09"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.09</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.41"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.41</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.26"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.26</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 10-yr

[Loss Rate Data](#) [Effective Rainfall](#) [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) (24-hour Storm Only) % (Typically 50-75%)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0014	00:05	0.0007	00:05	0.0002
00:05	0.0075	00:10	0.0014	00:10	0.0008	00:10	0.0002
00:10	0.0104	00:15	0.0012	00:15	0.0008	00:15	0.0002
00:15	0.0104	00:20	0.0016	00:20	0.0008	00:20	0.0002
00:20	0.0199	00:25	0.0016	00:25	0.0008	00:25	0.0002
00:25	0.0170	00:30	0.0023	00:30	0.0010	00:30	0.0002
00:30	0.0250	00:35	0.0016	00:35	0.0010	00:35	0.0002
00:35	0.0316	00:40	0.0023	00:40	0.0010	00:40	0.0002
00:40	0.0440	00:45	0.0023	00:45	0.0010	00:45	0.0002
00:45	0.0754	00:50	0.0016	00:50	0.0010	00:50	0.0003
00:50	0.2396	00:55	0.0001	00:55	0.0010	00:55	0.0003
00:55	0.0294	01:00	0.0023	01:00	0.0011	01:00	0.0003
01:00	0.0119	01:05	0.0066	01:05	0.0011	01:05	0.0002
		01:10	0.0066	01:10	0.0011	01:10	0.0002
		01:15	0.0066	01:15	0.0011	01:15	0.0002

01:20	0.0045	01:20	0.0011	01:20	0.0002
01:25	0.0110	01:25	0.0011	01:25	0.0002
01:30	0.0121	01:30	0.0011	01:30	0.0002
01:35	0.0088	01:35	0.0011	01:35	0.0002
01:40	0.0121	01:40	0.0011	01:40	0.0002
01:45	0.0186	01:45	0.0011	01:45	0.0002
01:50	0.0165	01:50	0.0011	01:50	0.0003
01:55	0.0143	01:55	0.0011	01:55	0.0003
02:00	0.0154	02:00	0.0013	02:00	0.0003
02:05	0.0165	02:05	0.0011	02:05	0.0003
02:10	0.0284	02:10	0.0013	02:10	0.0003
02:15	0.0372	02:15	0.0013	02:15	0.0003
02:20	0.0208	02:20	0.0013	02:20	0.0003
02:25	0.0568	02:25	0.0013	02:25	0.0003
02:30	0.0622	02:30	0.0013	02:30	0.0003
02:35	0.0720	02:35	0.0013	02:35	0.0004
02:40	0.0470	02:40	0.0013	02:40	0.0004
02:45	0.0045	02:45	0.0014	02:45	0.0004
02:50	0.0023	02:50	0.0014	02:50	0.0004
02:55	0.0023	02:55	0.0014	02:55	0.0004
03:00	0.0007	03:00	0.0014	03:00	0.0004
		03:05	0.0014	03:05	0.0004
		03:10	0.0016	03:10	0.0004
		03:15	0.0016	03:15	0.0004
		03:20	0.0016	03:20	0.0004
		03:25	0.0017	03:25	0.0004
		03:30	0.0010	03:30	0.0004
		03:35	0.0024	03:35	0.0004
		03:40	0.0024	03:40	0.0004
		03:45	0.0038	03:45	0.0004
		03:50	0.0038	03:50	0.0005
		03:55	0.0052	03:55	0.0005
		04:00	0.0052	04:00	0.0005
		04:05	0.0066	04:05	0.0005
		04:10	0.0080	04:10	0.0005
		04:15	0.0095	04:15	0.0005
		04:20	0.0109	04:20	0.0005
		04:25	0.0123	04:25	0.0005
		04:30	0.0123	04:30	0.0005
		04:35	0.0137	04:35	0.0005
		04:40	0.0151	04:40	0.0005
		04:45	0.0165	04:45	0.0005
		04:50	0.0165	04:50	0.0006
		04:55	0.0179	04:55	0.0006
		05:00	0.0193	05:00	0.0006
		05:05	0.0264	05:05	0.0005
		05:10	0.0334	05:10	0.0005
		05:15	0.0377	05:15	0.0005
		05:20	0.0419	05:20	0.0005
		05:25	0.0489	05:25	0.0005
		05:30	0.0616	05:30	0.0005
		05:35	0.0095	05:35	0.0006
		05:40	0.0013	05:40	0.0006
		05:45	0.0008	05:45	0.0006
		05:50	0.0007	05:50	0.0006
		05:55	0.0004	05:55	0.0006

06:00 0.0003

06:00	0.0006
06:05	0.0007
06:10	0.0007
06:15	0.0007
06:20	0.0007
06:25	0.0007
06:30	0.0007
06:35	0.0007
06:40	0.0007
06:45	0.0007
06:50	0.0007
06:55	0.0007
07:00	0.0007
07:05	0.0007
07:10	0.0007
07:15	0.0007
07:20	0.0008
07:25	0.0008
07:30	0.0008
07:35	0.0009
07:40	0.0009
07:45	0.0009
07:50	0.0010
07:55	0.0010
08:00	0.0010
08:05	0.0011
08:10	0.0011
08:15	0.0011
08:20	0.0011
08:25	0.0011
08:30	0.0011
08:35	0.0012
08:40	0.0012
08:45	0.0012
08:50	0.0013
08:55	0.0013
09:00	0.0013
09:05	0.0014
09:10	0.0014
09:15	0.0014
09:20	0.0015
09:25	0.0015
09:30	0.0015
09:35	0.0016
09:40	0.0016
09:45	0.0016
09:50	0.0016
09:55	0.0016
10:00	0.0016
10:05	0.0011
10:10	0.0011
10:15	0.0011
10:20	0.0011
10:25	0.0011
10:30	0.0011
10:35	0.0015

10:40	0.0015
10:45	0.0015
10:50	0.0015
10:55	0.0015
11:00	0.0015
11:05	0.0014
11:10	0.0014
11:15	0.0014
11:20	0.0014
11:25	0.0014
11:30	0.0014
11:35	0.0013
11:40	0.0013
11:45	0.0013
11:50	0.0014
11:55	0.0014
12:00	0.0014
12:05	0.0026
12:10	0.0027
12:15	0.0027
12:20	0.0037
12:25	0.0038
12:30	0.0039
12:35	0.0053
12:40	0.0054
12:45	0.0055
12:50	0.0065
12:55	0.0065
13:00	0.0066
13:05	0.0103
13:10	0.0104
13:15	0.0105
13:20	0.0105
13:25	0.0106
13:30	0.0107
13:35	0.0026
13:40	0.0027
13:45	0.0028
13:50	0.0029
13:55	0.0029
14:00	0.0030
14:05	0.0060
14:10	0.0061
14:15	0.0062
14:20	0.0056
14:25	0.0056
14:30	0.0057
14:35	0.0058
14:40	0.0058
14:45	0.0059
14:50	0.0051
14:55	0.0052
15:00	0.0052
15:05	0.0046
15:10	0.0047
15:15	0.0047

15:20	0.0041
15:25	0.0042
15:30	0.0043
15:35	0.0012
15:40	0.0012
15:45	0.0013
15:50	0.0014
15:55	0.0014
16:00	0.0015
16:05	0.0003
16:10	0.0003
16:15	0.0003
16:20	0.0003
16:25	0.0003
16:30	0.0003
16:35	0.0002
16:40	0.0002
16:45	0.0002
16:50	0.0002
16:55	0.0002
17:00	0.0002
17:05	0.0004
17:10	0.0004
17:15	0.0004
17:20	0.0004
17:25	0.0004
17:30	0.0004
17:35	0.0004
17:40	0.0004
17:45	0.0004
17:50	0.0003
17:55	0.0003
18:00	0.0003
18:05	0.0003
18:10	0.0003
18:15	0.0003
18:20	0.0003
18:25	0.0003
18:30	0.0003
18:35	0.0002
18:40	0.0002
18:45	0.0002
18:50	0.0002
18:55	0.0002
19:00	0.0002
19:05	0.0002
19:10	0.0002
19:15	0.0002
19:20	0.0003
19:25	0.0003
19:30	0.0003
19:35	0.0002
19:40	0.0002
19:45	0.0002
19:50	0.0002
19:55	0.0002

20:00	0.0002
20:05	0.0002
20:10	0.0002
20:15	0.0002
20:20	0.0002
20:25	0.0002
20:30	0.0002
20:35	0.0002
20:40	0.0002
20:45	0.0002
20:50	0.0002
20:55	0.0002
21:00	0.0002
21:05	0.0002
21:10	0.0002
21:15	0.0002
21:20	0.0002
21:25	0.0002
21:30	0.0002
21:35	0.0002
21:40	0.0002
21:45	0.0002
21:50	0.0002
21:55	0.0002
22:00	0.0002
22:05	0.0002
22:10	0.0002
22:15	0.0002
22:20	0.0002
22:25	0.0002
22:30	0.0002
22:35	0.0002
22:40	0.0002
22:45	0.0002
22:50	0.0002
22:55	0.0002
23:00	0.0002
23:05	0.0002
23:10	0.0002
23:15	0.0002
23:20	0.0002
23:25	0.0002
23:30	0.0002
23:35	0.0002
23:40	0.0002
23:45	0.0002
23:50	0.0002
23:55	0.0002
00:00	0.0002



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.56"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.56</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.18"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.18</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.77"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.77</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="4.41"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 4.41</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 100-yr

Loss Rate Data **Effective Rainfall** S-Graphs

Average Adjusted Loss Rate Calculator (Plate E-2.1) Average Adjusted Loss Rate (Manual Entry)

Add Loss Rate Values								
AMC Condition: III								
Soil Group / Cover Type View Chart	RI Number	Perv. Area Infiltrn Rate (in/hr)	Land Use	Imp. Area Decimal %	Adj. Infiltrn Rate (in/hr)	Area (acres)		
-						<input type="text"/>	<input type="button" value="Add"/>	
Urban Landscaping Good A	32	0.55200	Apartments (80)	80	0.155	2.44	1	0.155 X
						Total area =	2.44	
							Average Soil Loss =	0.155



HEC HMS Preprocessor

Watershed Area sq mi

<p>1 Hour Storm</p> <p>Point Precipitation <input type="text" value="1.56"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 1.56</p> <p>Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.59"/></p>	<p>3 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.18"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.18</p>	<p>6 Hour Storm</p> <p>Point Precipitation <input type="text" value="2.77"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 2.77</p>	<p>24 Hour Storm</p> <p>Point Precipitation <input type="text" value="4.41"/> in.</p> <p>Areal Adjustment Factor <input type="text" value="100"/> %</p> <p>Adjusted Point Precipitation 4.41</p>
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Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time **0.031** hr

40% Lag Time 0.7 min

Proposed 100-yr

[Loss Rate Data](#) | [Effective Rainfall](#) | [S-Graphs](#)

Unit Time Period min (Use interval less than 40% of lag time)

Low Loss %

Fm (Percentage of F) (24-hour Storm Only) % (Typically 50-75%)

1 Hour		3 Hour		6 Hour		24 Hour	
Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)	Unit Time	Effective Rainfall (inches)
00:00		00:05	0.0154	00:05	0.0009	00:05	0.0003
00:05	0.0432	00:10	0.0154	00:10	0.0037	00:10	0.0003
00:10	0.0448	00:15	0.0111	00:15	0.0037	00:15	0.0003
00:15	0.0526	00:20	0.0198	00:20	0.0037	00:20	0.0004
00:20	0.0588	00:25	0.0198	00:25	0.0037	00:25	0.0004
00:25	0.0635	00:30	0.0263	00:30	0.0065	00:30	0.0004
00:30	0.0776	00:35	0.0198	00:35	0.0065	00:35	0.0004
00:35	0.0916	00:40	0.0263	00:40	0.0065	00:40	0.0004
00:40	0.1166	00:45	0.0263	00:45	0.0065	00:45	0.0004
00:45	0.1852	00:50	0.0198	00:50	0.0065	00:50	0.0006
00:50	0.5378	00:55	0.0220	00:55	0.0065	00:55	0.0006
00:55	0.0869	01:00	0.0263	01:00	0.0092	01:00	0.0006
01:00	0.0495	01:05	0.0350	01:05	0.0092	01:05	0.0004
		01:10	0.0350	01:10	0.0092	01:10	0.0004
		01:15	0.0350	01:15	0.0092	01:15	0.0004

01:20	0.0307	01:20	0.0092	01:20	0.0004
01:25	0.0438	01:25	0.0092	01:25	0.0004
01:30	0.0459	01:30	0.0092	01:30	0.0004
01:35	0.0394	01:35	0.0092	01:35	0.0004
01:40	0.0459	01:40	0.0092	01:40	0.0004
01:45	0.0590	01:45	0.0092	01:45	0.0004
01:50	0.0547	01:50	0.0092	01:50	0.0006
01:55	0.0503	01:55	0.0092	01:55	0.0006
02:00	0.0525	02:00	0.0120	02:00	0.0006
02:05	0.0547	02:05	0.0092	02:05	0.0006
02:10	0.0786	02:10	0.0120	02:10	0.0006
02:15	0.0961	02:15	0.0120	02:15	0.0006
02:20	0.0634	02:20	0.0120	02:20	0.0006
02:25	0.1353	02:25	0.0120	02:25	0.0006
02:30	0.1462	02:30	0.0120	02:30	0.0006
02:35	0.1658	02:35	0.0120	02:35	0.0007
02:40	0.1157	02:40	0.0120	02:40	0.0007
02:45	0.0307	02:45	0.0148	02:45	0.0007
02:50	0.0263	02:50	0.0148	02:50	0.0007
02:55	0.0263	02:55	0.0148	02:55	0.0007
03:00	0.0002	03:00	0.0148	03:00	0.0007
		03:05	0.0148	03:05	0.0007
		03:10	0.0176	03:10	0.0007
		03:15	0.0176	03:15	0.0007
		03:20	0.0176	03:20	0.0007
		03:25	0.0203	03:25	0.0007
		03:30	0.0231	03:30	0.0007
		03:35	0.0259	03:35	0.0007
		03:40	0.0259	03:40	0.0007
		03:45	0.0286	03:45	0.0007
		03:50	0.0286	03:50	0.0009
		03:55	0.0314	03:55	0.0009
		04:00	0.0314	04:00	0.0009
		04:05	0.0342	04:05	0.0009
		04:10	0.0369	04:10	0.0009
		04:15	0.0397	04:15	0.0009
		04:20	0.0425	04:20	0.0010
		04:25	0.0453	04:25	0.0010
		04:30	0.0453	04:30	0.0010
		04:35	0.0480	04:35	0.0010
		04:40	0.0508	04:40	0.0010
		04:45	0.0536	04:45	0.0010
		04:50	0.0536	04:50	0.0012
		04:55	0.0563	04:55	0.0012
		05:00	0.0591	05:00	0.0012
		05:05	0.0730	05:05	0.0009
		05:10	0.0868	05:10	0.0009
		05:15	0.0951	05:15	0.0009
		05:20	0.1034	05:20	0.0010
		05:25	0.1173	05:25	0.0010
		05:30	0.1422	05:30	0.0010
		05:35	0.0397	05:35	0.0012
		05:40	0.0120	05:40	0.0012
		05:45	0.0037	05:45	0.0012
		05:50	0.0009	05:50	0.0012
		05:55	0.0008	05:55	0.0012

06:00 0.0006

06:00	0.0012
06:05	0.0013
06:10	0.0013
06:15	0.0013
06:20	0.0013
06:25	0.0013
06:30	0.0013
06:35	0.0015
06:40	0.0015
06:45	0.0015
06:50	0.0015
06:55	0.0015
07:00	0.0015
07:05	0.0015
07:10	0.0015
07:15	0.0015
07:20	0.0005
07:25	0.0005
07:30	0.0006
07:35	0.0020
07:40	0.0021
07:45	0.0021
07:50	0.0035
07:55	0.0036
08:00	0.0037
08:05	0.0068
08:10	0.0069
08:15	0.0070
08:20	0.0070
08:25	0.0071
08:30	0.0072
08:35	0.0086
08:40	0.0086
08:45	0.0087
08:50	0.0106
08:55	0.0106
09:00	0.0107
09:05	0.0134
09:10	0.0135
09:15	0.0135
09:20	0.0154
09:25	0.0154
09:30	0.0155
09:35	0.0169
09:40	0.0170
09:45	0.0170
09:50	0.0184
09:55	0.0185
10:00	0.0186
10:05	0.0085
10:10	0.0085
10:15	0.0086
10:20	0.0087
10:25	0.0087
10:30	0.0088
10:35	0.0164

10:40	0.0164
10:45	0.0165
10:50	0.0166
10:55	0.0166
11:00	0.0167
11:05	0.0150
11:10	0.0150
11:15	0.0151
11:20	0.0152
11:25	0.0152
11:30	0.0153
11:35	0.0127
11:40	0.0128
11:45	0.0128
11:50	0.0142
11:55	0.0143
12:00	0.0143
12:05	0.0245
12:10	0.0246
12:15	0.0247
12:20	0.0265
12:25	0.0265
12:30	0.0266
12:35	0.0293
12:40	0.0294
12:45	0.0294
12:50	0.0313
12:55	0.0313
13:00	0.0314
13:05	0.0385
13:10	0.0385
13:15	0.0386
13:20	0.0387
13:25	0.0387
13:30	0.0388
13:35	0.0229
13:40	0.0230
13:45	0.0231
13:50	0.0231
13:55	0.0232
14:00	0.0232
14:05	0.0290
14:10	0.0291
14:15	0.0291
14:20	0.0279
14:25	0.0279
14:30	0.0280
14:35	0.0280
14:40	0.0281
14:45	0.0281
14:50	0.0264
14:55	0.0265
15:00	0.0265
15:05	0.0252
15:10	0.0253
15:15	0.0253

15:20	0.0241
15:25	0.0241
15:30	0.0242
15:35	0.0181
15:40	0.0181
15:45	0.0182
15:50	0.0182
15:55	0.0182
16:00	0.0183
16:05	0.0006
16:10	0.0006
16:15	0.0006
16:20	0.0006
16:25	0.0006
16:30	0.0006
16:35	0.0004
16:40	0.0004
16:45	0.0004
16:50	0.0004
16:55	0.0004
17:00	0.0004
17:05	0.0007
17:10	0.0007
17:15	0.0007
17:20	0.0007
17:25	0.0007
17:30	0.0007
17:35	0.0007
17:40	0.0007
17:45	0.0007
17:50	0.0006
17:55	0.0006
18:00	0.0006
18:05	0.0006
18:10	0.0006
18:15	0.0006
18:20	0.0006
18:25	0.0006
18:30	0.0006
18:35	0.0004
18:40	0.0004
18:45	0.0004
18:50	0.0003
18:55	0.0003
19:00	0.0003
19:05	0.0004
19:10	0.0004
19:15	0.0004
19:20	0.0006
19:25	0.0006
19:30	0.0006
19:35	0.0004
19:40	0.0004
19:45	0.0004
19:50	0.0003
19:55	0.0003

20:00	0.0003
20:05	0.0004
20:10	0.0004
20:15	0.0004
20:20	0.0004
20:25	0.0004
20:30	0.0004
20:35	0.0004
20:40	0.0004
20:45	0.0004
20:50	0.0003
20:55	0.0003
21:00	0.0003
21:05	0.0004
21:10	0.0004
21:15	0.0004
21:20	0.0003
21:25	0.0003
21:30	0.0003
21:35	0.0004
21:40	0.0004
21:45	0.0004
21:50	0.0003
21:55	0.0003
22:00	0.0003
22:05	0.0004
22:10	0.0004
22:15	0.0004
22:20	0.0003
22:25	0.0003
22:30	0.0003
22:35	0.0003
22:40	0.0003
22:45	0.0003
22:50	0.0003
22:55	0.0003
23:00	0.0003
23:05	0.0003
23:10	0.0003
23:15	0.0003
23:20	0.0003
23:25	0.0003
23:30	0.0003
23:35	0.0003
23:40	0.0003
23:45	0.0003
23:50	0.0003
23:55	0.0003
00:00	0.0003



HEC HMS Preprocessor

Watershed Area sq mi

1 Hour Storm	3 Hour Storm	6 Hour Storm	24 Hour Storm
Point <input type="text" value="1.43"/>	Point <input type="text" value="2.35"/>	Point <input type="text" value="3.26"/>	Point <input type="text" value="6.13"/>
Precipitation in.	Precipitation in.	Precipitation in.	Precipitation in.
Areal Adjustment Factor % <input type="text" value="100"/>	Areal Adjustment Factor % <input type="text" value="100"/>	Areal Adjustment Factor % <input type="text" value="100"/>	Areal Adjustment Factor % <input type="text" value="100"/>
Adjusted Point 1.43	Adjusted Point 2.35	Adjusted Point 3.26	Adjusted Point 6.13
Precipitation	Precipitation	Precipitation	Precipitation
Slope of Rainfall Intensity - Duration Curve <input type="text" value="0.48"/>			

Lag Time Calculator

Basin Factor - n

Length along longest watercourse - L ft

Length along longest watercourse measured upstream to a point opposite the centroid of the area - Lca ft

Elevation Difference ft

Lag Time 0.037 hr

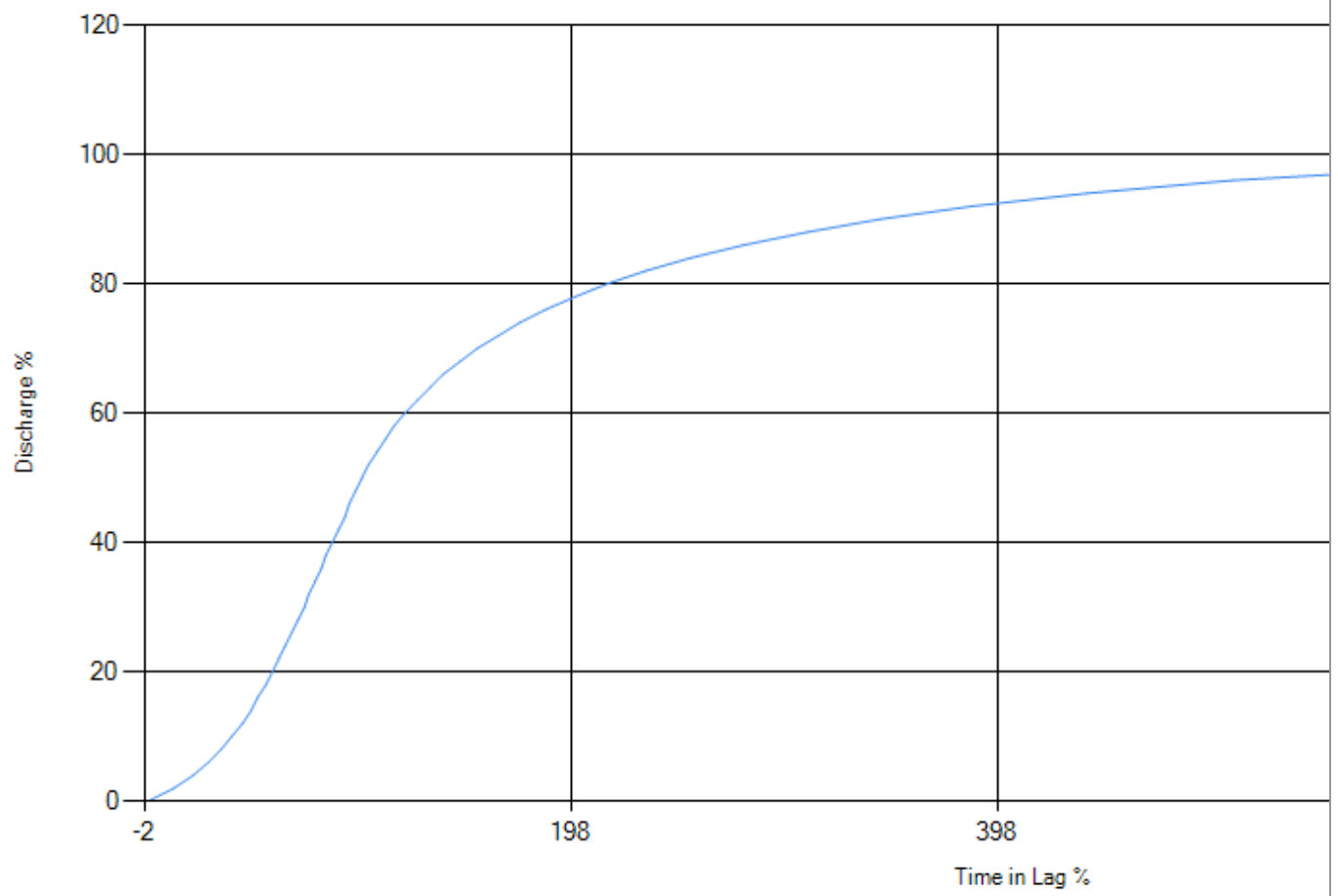
40% Lag Time 0.9 min

S-Graph 1		S-Graph 2		S-Graph 3		S-Graph 4	
Type:	Mountain	Type:	Valley	Type:	Foothill	Type:	Desert
Weight %	<input type="text"/>	Weight %	100	Weight %	<input type="text"/>	Weight %	<input type="text"/>
Time in Percent of Lag	Discharge (percent)	Time in Percent of Lag	Discharge (percent)	Time in Percent of Lag	Discharge (percent)	Time in Percent of Lag	Discharge (percent)
0	0	0	0	0	0	0	0
0	2	12	2	0	2	0	2
0	4	21	4	0	4	0	4
0	6	28	6	0	6	0	6
0	8	34	8	0	8	0	8
0	10	39	10	0	10	0	10
0	12	44	12	0	12	0	12
0	14	48	14	0	14	0	14
0	16	51	16	0	16	0	16
0	18	55	18	0	18	0	18

S-Graph Combined	
Type:	Combined
Weight %	<input type="text"/>
Time in Percent of Lag	Discharge (percent)
0	0
12	2
21	4
28	6
34	8
39	10
44	12
48	14
51	16

0	20	58	20	0	20	0	20	55	18
0	22	61	22	0	22	0	22	58	20
0	24	64	24	0	24	0	24	61	22
0	26	67	26	0	26	0	26	64	24
0	28	70	28	0	28	0	28	67	26
0	30	73	30	0	30	0	30	70	28
0	32	75	32	0	32	0	32	73	30
0	34	78	34	0	34	0	34	75	32
0	36	81	36	0	36	0	36	78	34
0	38	83	38	0	38	0	38	81	36
0	40	86	40	0	40	0	40	83	38
0	42	89	42	0	42	0	42	86	40
0	44	92	44	0	44	0	44	89	42
0	46	94	46	0	46	0	46	92	44
0	48	97	48	0	48	0	48	94	46
0	50	100	50	0	50	0	50	97	48
0	52	103	52	0	52	0	52	100	50
0	54	107	54	0	54	0	54	103	52
0	56	111	56	0	56	0	56	107	54
0	58	115	58	0	58	0	58	111	56
0	60	120	60	0	60	0	60	115	58
0	62	126	62	0	62	0	62	120	60
0	64	132	64	0	64	0	64	126	62
0	66	138	66	0	66	0	66	132	64
0	68	146	68	0	68	0	68	138	66
0	70	154	70	0	70	0	70	146	68
0	72	164	72	0	72	0	72	154	70
0	74	174	74	0	74	0	74	164	72
0	76	186	76	0	76	0	76	174	74
0	78	200	78	0	78	0	78	186	76
0	80	215	80	0	80	0	80	200	78
0	82	233	82	0	82	0	82	215	80
0	84	254	84	0	84	0	84	233	82
0	86	279	86	0	86	0	86	254	84
0	88	309	88	0	88	0	88	279	86
0	90	343	90	0	90	0	90	309	88
0	92	386	92	0	92	0	92	343	90
0	94	440	94	0	94	0	94	386	92
0	96	508	96	0	96	0	96	440	94
0	98	611	98	0	98	0	98	508	96
0	100	820	100	0	100	0	100	611	98
								820	100

S-Graph Combined



Appendix C.

Unit Hydrology and Basin Calculations

Stage-Storage-Discharge table

Gravel Storage around Pipe Gravel Elev ft Gravel Width ft Gravel Height Assumed to the top of pipe Gravel Area 0 sq ft Void Ratio % Infil Rate in/hr 0.000000 cfs	Pipe Storage Pipe Elev 112 ft Diameter 4 ft Radius 2 ft Length 130.00 ft No. of Pipes 2 each Infiltration Safety Factor 3	Manhole Storage Manhole Elev 112 ft Manhole Width 4.67 ft Manhole Length 4.67 ft Manhole Height 4.00 ft No. of Manholes 4 each	Drywell Bottom Sect 69 Top Sect 99 ft Drywell Elev 69 Drywell Dia 4 Drywell Height 30 Drywell Middle 2 ft Drywell Area 12.566 No. of Drywells 2 each	Bottom Sect 4 Top Sect 4.9 ft Infil Height Bot 0 Infil Height Top 30 Infil Area 12.566 Infil Rate 4.36 in/hr 0.000034 cfs/sf	Drywell Bottom Sect 4 Top Sect 4.9 ft Infil Height Bot 0 Infil Height Top 30 Infil Area 12.566 Infil Rate 4.36 in/hr 0.000034 cfs/sf	Bottom Sect 4 Top Sect 4.9 ft Infil Height Bot 0 Infil Height Top 30 Infil Area 12.566 Infil Rate 4.36 in/hr 0.000034 cfs/sf
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Depth	Elevation	Storage														Gravel cfs	Discharge		Total cfs
		Gravel			Pipe			Manhole			Drywell			Total			Gravel	Drywell	
		cu ft	ac-ft	Area	cu ft	ac-ft	cu ft	ac-ft	cu ft	ac-ft	cu ft	ac-ft	cu ft	ac-ft	cu ft	ac-ft	cfs	cfs	
0.000	112.000	0	0.0000	0.000	0	0.0000	0	0.0000	0	0.0000	623	0.0143	623	0.0143	0.00000	0.03509	0.03509	0.03509	
0.200	112.200	0	0.0000	0.235	61	0.0014	17	0.0004	628	0.0144	628	0.0144	707	0.0162	0.00000	0.03509	0.03509	0.03509	
0.400	112.400	0	0.0000	0.654	170	0.0039	35	0.0008	633	0.0145	633	0.0145	838	0.0192	0.00000	0.03509	0.03509	0.03509	
0.600	112.600	0	0.0000	1.182	307	0.0071	52	0.0012	638	0.0147	638	0.0147	998	0.0229	0.00000	0.03509	0.03509	0.03509	
0.800	112.800	0	0.0000	1.789	465	0.0107	70	0.0016	643	0.0148	643	0.0148	1,178	0.0270	0.00000	0.03509	0.03509	0.03509	
1.000	113.000	0	0.0000	2.457	639	0.0147	87	0.0020	648	0.0149	648	0.0149	1,374	0.0315	0.00000	0.03509	0.03509	0.03509	
1.200	113.200	0	0.0000	3.171	824	0.0189	105	0.0024	653	0.0150	653	0.0150	1,582	0.0363	0.00000	0.03509	0.03509	0.03509	
1.400	113.400	0	0.0000	3.920	1,019	0.0234	122	0.0028	658	0.0151	658	0.0151	1,800	0.0413	0.00000	0.03509	0.03509	0.03509	
1.600	113.600	0	0.0000	4.694	1,220	0.0280	139	0.0032	664	0.0152	664	0.0152	2,023	0.0464	0.00000	0.03509	0.03509	0.03509	
1.800	113.800	0	0.0000	5.485	1,426	0.0327	157	0.0036	669	0.0153	669	0.0153	2,251	0.0517	0.00000	0.03509	0.03509	0.03509	
2.000	114.000	0	0.0000	6.283	1,634	0.0375	174	0.0040	674	0.0155	674	0.0155	2,481	0.0570	0.00000	0.03509	0.03509	0.03509	
2.200	114.200	0	0.0000	7.082	1,841	0.0423	192	0.0044	679	0.0156	679	0.0156	2,712	0.0622	0.00000	0.03509	0.03509	0.03509	
2.400	114.400	0	0.0000	7.872	2,047	0.0470	209	0.0048	684	0.0157	684	0.0157	2,940	0.0675	0.00000	0.03509	0.03509	0.03509	
2.600	114.600	0	0.0000	8.647	2,248	0.0516	226	0.0052	689	0.0158	689	0.0158	3,163	0.0726	0.00000	0.03509	0.03509	0.03509	
2.800	114.800	0	0.0000	9.396	2,443	0.0561	244	0.0056	694	0.0159	694	0.0159	3,380	0.0776	0.00000	0.03509	0.03509	0.03509	
3.000	115.000	0	0.0000	10.110	2,629	0.0603	261	0.0060	699	0.0160	699	0.0160	3,589	0.0824	0.00000	0.03509	0.03509	0.03509	
3.200	115.200	0	0.0000	10.777	2,802	0.0643	279	0.0064	704	0.0162	704	0.0162	3,785	0.0869	0.00000	0.03509	0.03509	0.03509	
3.400	115.400	0	0.0000	11.384	2,960	0.0680	296	0.0068	709	0.0163	709	0.0163	3,965	0.0910	0.00000	0.03509	0.03509	0.03509	
3.600	115.600	0	0.0000	11.912	3,097	0.0711	314	0.0072	714	0.0164	714	0.0164	4,125	0.0947	0.00000	0.03509	0.03509	0.03509	
3.800	115.800	0	0.0000	12.331	3,206	0.0736	331	0.0076	719	0.0165	719	0.0165	4,256	0.0977	0.00000	0.03509	0.03509	0.03509	
4.000	116.000	0	0.0000	12.566	3,267	0.0750	348	0.0080	724	0.0166	724	0.0166	4,340	0.0996	0.00000	0.03509	0.03509	0.03509	
4.200	116.200	0	0.0000	12.566	3,267	0.0750	348	0.0080	729	0.0167	729	0.0167	4,345	0.0997	0.00000	0.03509	0.03509	0.03509	
4.400	116.400	0	0.0000	12.566	3,267	0.0750	348	0.0080	734	0.0168	734	0.0168	4,350	0.0999	0.00000	0.03509	0.03509	0.03509	
4.600	116.600	0	0.0000	12.566	3,267	0.0750	348	0.0080	739	0.0170	739	0.0170	4,355	0.1000	0.00000	0.03509	0.03509	0.03509	
4.800	116.800	0	0.0000	12.566	3,267	0.0750	348	0.0080	744	0.0171	744	0.0171	4,360	0.1001	0.00000	0.03509	0.03509	0.03509	
5.000	117.000	0	0.0000	12.566	3,267	0.0750	348	0.0080	749	0.0172	749	0.0172	4,365	0.1002	0.00000	0.03509	0.03509	0.03509	
5.200	117.200	0	0.0000	12.566	3,267	0.0750	348	0.0080	754	0.0173	754	0.0173	4,370	0.1003	0.00000	0.03509	0.03509	0.03509	
5.400	117.400	0	0.0000	12.566	3,267	0.0750	348	0.0080	759	0.0174	759	0.0174	4,375	0.1004	0.00000	0.03509	0.03509	0.03509	
5.600	117.600	0	0.0000	12.566	3,267	0.0750	348	0.0080	764	0.0175	764	0.0175	4,380	0.1005	0.00000	0.03509	0.03509	0.03509	
5.800	117.800	0	0.0000	12.566	3,267	0.0750	348	0.0080	769	0.0177	769	0.0177	4,385	0.1007	0.00000	0.03509	0.03509	0.03509	
6.000	118.000	0	0.0000	12.566	3,267	0.0750	348	0.0080	774	0.0178	774	0.0178	4,390	0.1008	0.00000	0.03509	0.03509	0.03509	
6.200	118.200	0	0.0000	12.566	3,267	0.0750	348	0.0080	779	0.0179	779	0.0179	4,395	0.1009	0.00000	0.03509	0.03509	0.03509	
6.400	118.400	0	0.0000	12.566	3,267	0.0750	348	0.0080	784	0.0180	784	0.0180	4,400	0.1010	0.00000	0.03509	0.03509	0.03509	
6.600	118.600	0	0.0000	12.566	3,267	0.0750	348	0.0080	789	0.0181	789	0.0181	4,405	0.1011	0.00000	0.03509	0.03509	0.03509	
6.800	118.800	0	0.0000	12.566	3,267	0.0750	348	0.0080	794	0.0182	794	0.0182	4,410	0.1012	0.00000	0.03509	0.03509	0.03509	
7.000	119.000	0	0.0000	12.566	3,267	0.0750	348	0.0080	799	0.0183	799	0.0183	4,415	0.1014	0.00000	0.03509	0.03509	0.03509	

Drywell starts at elevation 69, it has a total of 400 CF per drywell, 799 for the whole system.

Pipe storage starts at elevation 112 (Stage 0). There are manholes at each end of each pipe for access and cleaning (87 CF).



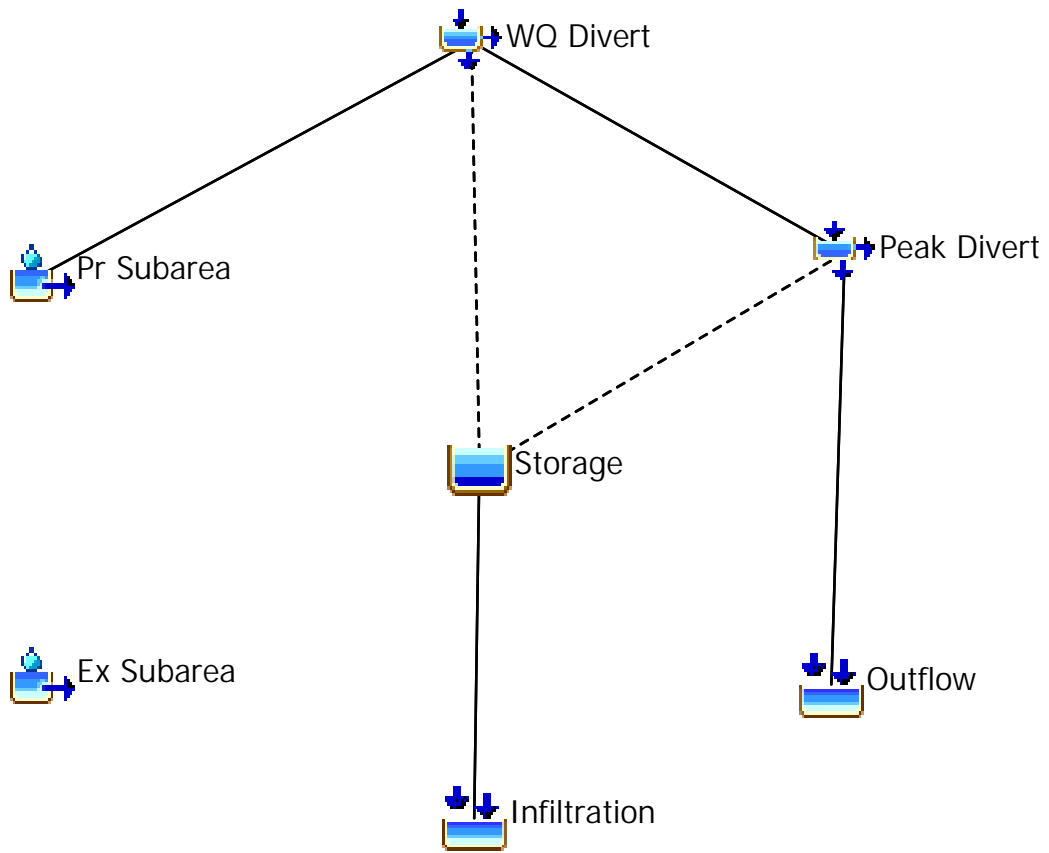
HEC-HMS

HEC-HMS 4.11

Project: Bermuda Dunes

Prepared by KES Technologies

Date: 1/18/2024



002y 01h

Peak Outflow = 1.7 cfs

Peak Elevation = 0.7 ft

Time to Drain <= 24 hrs

Global Summary Results for Run "002y 01h"

Project: Bermuda Dunes Simulation Run: 002y 01h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 00:00 Meteorologic Model: 002y 01h
Compute Time: 19Jan2024, 15:59:31 Control Specifications: 24h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	1.9829	1 January 2000, 00...	0.0232
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	1.7366	1 January 2000, 00...	0.0120
Pr Subarea	0.0038	2.7744	1 January 2000, 00...	0.0321
WQ Divert	0.0038	2.7366	1 January 2000, 00...	0.0289
Outflow	0.0038	1.7366	1 January 2000, 00...	0.0120
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 002y 01h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 00:00 Meteorologic Model: 002y 01h
Compute Time: 19Jan2024, 15:59:31 Control Specifications: 24h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 00:50
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:25
Inflow Volume:	0.0201 (ACRE-FT)	Peak Storage:	0.0201 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	0.6566 (FT)

002y 03h

Peak Outflow = 0.00 cfs

Peak Elevation = 0.9 ft

Time to Drain <= 24 hrs

Global Summary Results for Run "002y 03h"

Project: Bermuda Dunes Simulation Run: 002y 03h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 002y 03h
Compute Time: 19Jan2024, 15:59:31 Control Specifications: 36h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	0.1214	1 January 2000, 02...	0.0113
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.0000	31 December 1999,...	0.0000
Pr Subarea	0.0038	0.4102	1 January 2000, 02...	0.0258
WQ Divert	0.0038	0.3723	1 January 2000, 02...	0.0177
Outflow	0.0038	0.0000	31 December 1999,...	0.0000
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 002y 03h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 002y 03h
Compute Time: 19Jan2024, 15:59:31 Control Specifications: 36h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	0.4102 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 02:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0258 (ACRE-FT)	Peak Storage:	0.0257 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	0.9144 (FT)

002y 06h

Peak Outflow = 0.00 cfs

Peak Elevation = 0.8 ft

Time to Drain <= 24 hrs

Global Summary Results for Run "002y 06h"

Project: Bermuda Dunes Simulation Run: 002y 06h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 00:00 Meteorologic Model: 002y 06h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 24h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	0.0995	1 January 2000, 05...	0.0149
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.0000	31 December 1999,...	0.0000
Pr Subarea	0.0038	0.6019	1 January 2000, 05...	0.0246
WQ Divert	0.0038	0.5640	1 January 2000, 05...	0.0125
Outflow	0.0038	0.0000	31 December 1999,...	0.0000
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 002y 06h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 00:00 Meteorologic Model: 002y 06h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 24h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	0.6019 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 05:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:25
Inflow Volume:	0.0246 (ACRE-FT)	Peak Storage:	0.0242 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	0.8497 (FT)

002y 24h

Peak Outflow = 0.00 cfs

Peak Elevation = 0.01 ft

Time to Drain <= 24 hrs

Global Summary Results for Run "002y 24h"

Project: Bermuda Dunes Simulation Run: 002y 24h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 002y 24h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 36h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	0.0030	1 January 2000, 08...	0.0020
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.0000	31 December 1999,...	0.0000
Pr Subarea	0.0038	0.0384	1 January 2000, 13...	0.0239
WQ Divert	0.0038	0.0006	1 January 2000, 13...	0.0000
Outflow	0.0038	0.0000	31 December 1999,...	0.0000
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 002y 24h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 002y 24h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 36h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	0.0384 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 13:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0239 (ACRE-FT)	Peak Storage:	0.0085 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)		

005y 01h

Peak Outflow = 0.83 cfs

Peak Elevation = 1.7 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "005y 01h"

Project: Bermuda Dunes Simulation Run: 005y 01h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 005y 01h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 36h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	1.5495	1 January 2000, 01...	0.0446
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.8343	1 January 2000, 01...	0.0172
Pr Subarea	0.0038	1.8721	1 January 2000, 01...	0.0635
WQ Divert	0.0038	1.8343	1 January 2000, 01...	0.0604
Outflow	0.0038	0.8343	1 January 2000, 01...	0.0172
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 005y 01h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 005y 01h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 36h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 01:00
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0463 (ACRE-FT)	Peak Storage:	0.0462 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	1.7440 (FT)

005y 03h

Peak Outflow = 0.0 cfs

Peak Elevation = 2.0 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "005y 03h"

Project: Bermuda Dunes Simulation Run: 005y 03h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 03Jan2000, 00:00 Meteorologic Model: 005y 03h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 48h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	0.4236	1 January 2000, 02:...	0.0289
Storage	0.0000	0.0404	1 January 2000, 13:...	0.0154
Peak Divert	0.0038	0.0000	31 December 1999,...	0.0000
Pr Subarea	0.0038	0.8569	1 January 2000, 02:...	0.0541
WQ Divert	0.0038	0.8190	1 January 2000, 02:...	0.0449
Outflow	0.0038	0.0000	31 December 1999,...	0.0000
Infiltration	0.0000	0.0404	1 January 2000, 13:...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 005y 03h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 03Jan2000, 00:00 Meteorologic Model: 005y 03h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 48h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow: 0.8569 (CFS)	Date/Time of Peak Inflow: 01Jan2000, 02:30
Peak Discharge: 0.0404 (CFS)	Date/Time of Peak Discharge: 01Jan2000, 13:30
Inflow Volume: 0.0541 (ACRE-FT)	Peak Storage: 0.0540 (ACRE-FT)
Discharge Volume: 0.0154 (ACRE-FT)	Peak Elevation: 2.0362 (FT)

005y 06h

Peak Outflow = 0.00 cfs

Peak Elevation = 1.9 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "005y 06h"

Project: Bermuda Dunes Simulation Run: 005y 06h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 03Jan2000, 00:00 Meteorologic Model: 005y 06h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 48h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	0.4028	1 January 2000, 05...	0.0269
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.0000	31 December 1999,...	0.0000
Pr Subarea	0.0038	0.9543	1 January 2000, 05...	0.0508
WQ Divert	0.0038	0.9165	1 January 2000, 05...	0.0358
Outflow	0.0038	0.0000	31 December 1999,...	0.0000
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 005y 06h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 03Jan2000, 00:00 Meteorologic Model: 005y 06h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 48h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	0.9543 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 05:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0508 (ACRE-FT)	Peak Storage:	0.0504 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	1.9020 (FT)

005y 24h

Peak Outflow = 0.00 cfs

Peak Elevation = 0.7 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "005y 24h"

Project: Bermuda Dunes Simulation Run: 005y 24h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 005y 24h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 36h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	0.0591	1 January 2000, 13...	0.0353
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.0000	31 December 1999,...	0.0000
Pr Subarea	0.0038	0.0640	1 January 2000, 13...	0.0354
WQ Divert	0.0038	0.0261	1 January 2000, 13...	0.0022
Outflow	0.0038	0.0000	31 December 1999,...	0.0000
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 005y 24h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 02Jan2000, 12:00 Meteorologic Model: 005y 24h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 36h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	0.0640 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 13:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0354 (ACRE-FT)	Peak Storage:	0.0200 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	0.6510 (FT)

010y 01h

Peak Outflow = 1.7 cfs

Peak Elevation = 2.3 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "010y 01h"

Project: Bermuda Dunes Simulation Run: 010y 01h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 03Jan2000, 00:00 Meteorologic Model: 010y 01h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 48h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	2.5732	1 January 2000, 01...	0.0940
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	1.7257	1 January 2000, 01...	0.0449
Pr Subarea	0.0038	2.7636	1 January 2000, 01...	0.1062
WQ Divert	0.0038	2.7257	1 January 2000, 01...	0.1030
Outflow	0.0038	1.7257	1 January 2000, 01...	0.0449
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 010y 01h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 03Jan2000, 00:00 Meteorologic Model: 010y 01h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 48h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 00:45
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0613 (ACRE-FT)	Peak Storage:	0.0612 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	2.3124 (FT)

010y 03h

Peak Outflow = 0.34 cfs

Peak Elevation = 3.7 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "010y 03h"

Project: Bermuda Dunes Simulation Run: 010y 03h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 010y 03h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	1.2089	1 January 2000, 02...	0.0821
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.3376	1 January 2000, 02...	0.0107
Pr Subarea	0.0038	1.3755	1 January 2000, 02...	0.1024
WQ Divert	0.0038	1.3376	1 January 2000, 02...	0.0930
Outflow	0.0038	0.3376	1 January 2000, 02...	0.0107
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 010y 03h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 010y 03h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 02:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0917 (ACRE-FT)	Peak Storage:	0.0916 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	3.6605 (FT)

010y 06h

Peak Outflow = 0.46 cfs

Peak Elevation = 3.6 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "010y 06h"

Project: Bermuda Dunes Simulation Run: 010y 06h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 010y 06h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	1.3338	1 January 2000, 05...	0.0783
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.4617	1 January 2000, 05...	0.0095
Pr Subarea	0.0038	1.4995	1 January 2000, 05...	0.1003
WQ Divert	0.0038	1.4617	1 January 2000, 05...	0.0834
Outflow	0.0038	0.4617	1 January 2000, 05...	0.0095
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 010y 06h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 010y 06h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 05:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0908 (ACRE-FT)	Peak Storage:	0.0904 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	3.5851 (FT)

010y 24h

Peak Outflow = 0.00 cfs

Peak Elevation = 2.3 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "010y 24h"

Project: Bermuda Dunes Simulation Run: 010y 24h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 010y 24h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	0.1857	1 January 2000, 13...	0.0474
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.0000	31 December 1999,...	0.0000
Pr Subarea	0.0038	0.3130	1 January 2000, 13...	0.0755
WQ Divert	0.0038	0.2752	1 January 2000, 13...	0.0370
Outflow	0.0038	0.0000	31 December 1999,...	0.0000
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 010y 24h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 010y 24h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	0.3130 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 13:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0755 (ACRE-FT)	Peak Storage:	0.0601 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	2.2706 (FT)

100y 01h

Peak Outflow = 5.6 cfs

Peak Elevation = 3.3 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "100y 01h"

Project: Bermuda Dunes Simulation Run: 100y 01h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 100y 01h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	6.5971	1 January 2000, 01...	0.2910
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	5.5954	1 January 2000, 01...	0.2004
Pr Subarea	0.0038	6.6333	1 January 2000, 01...	0.2864
WQ Divert	0.0038	6.5954	1 January 2000, 01...	0.2831
Outflow	0.0038	5.5954	1 January 2000, 01...	0.2004
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 100y 01h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 04Jan2000, 00:00 Meteorologic Model: 100y 01h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 72h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 00:15
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.0859 (ACRE-FT)	Peak Storage:	0.0859 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	3.3441 (FT)

100y 03h

Peak Outflow = 2.4 cfs

Peak Elevation = 3.2 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "100y 03h"

Project: Bermuda Dunes Simulation Run: 100y 03h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 07Jan2000, 00:00 Meteorologic Model: 100y 03h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 144h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	3.4118	1 January 2000, 02...	0.3628
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	2.3558	1 January 2000, 02...	0.1374
Pr Subarea	0.0038	3.3936	1 January 2000, 02...	0.3487
WQ Divert	0.0038	3.3558	1 January 2000, 02...	0.3393
Outflow	0.0038	2.3558	1 January 2000, 02...	0.1374
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 100y 03h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 07Jan2000, 00:00 Meteorologic Model: 100y 03h
Compute Time: 19Jan2024, 15:59:32 Control Specifications: 144h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 01:30
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.2113 (ACRE-FT)	Peak Storage:	0.2111 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	3.1822 (FT)

100y 06h

Peak Outflow = 2.5 cfs

Peak Elevation = 3.2 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "100y 06h"

Project: Bermuda Dunes Simulation Run: 100y 06h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 09Jan2000, 00:00 Meteorologic Model: 100y 06h
Compute Time: 19Jan2024, 15:59:33 Control Specifications: 192h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	3.5915	1 January 2000, 05...	0.4042
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	2.5330	1 January 2000, 05...	0.1119
Pr Subarea	0.0038	3.5709	1 January 2000, 05...	0.3768
WQ Divert	0.0038	3.5330	1 January 2000, 05...	0.3584
Outflow	0.0038	2.5330	1 January 2000, 05...	0.1119
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 100y 06h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 09Jan2000, 00:00 Meteorologic Model: 100y 06h
Compute Time: 19Jan2024, 15:59:33 Control Specifications: 192h

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:15
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.2650 (ACRE-FT)	Peak Storage:	0.2646 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	3.2156 (FT)

100y 24h

Peak Outflow= 0.11 cfs

Peak Elevation= 3.6 ft

Time to Drain <= 48 hrs

Global Summary Results for Run "100y 24h"

Project: Bermuda Dunes Simulation Run: 100y 24h

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 13Jan2000, 00:00 Meteorologic Model: 100y 24h
Compute Time: 19Jan2024, 15:59:33 Control Specifications: 288h

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
Ex Subarea	0.0038	1.1918	1 January 2000, 13...	0.4536
Storage	0.0000	0.0404	1 January 2000, 13...	0.0154
Peak Divert	0.0038	0.1059	1 January 2000, 13...	0.0042
Pr Subarea	0.0038	1.1437	1 January 2000, 13...	0.4163
WQ Divert	0.0038	1.1059	1 January 2000, 13...	0.3664
Outflow	0.0038	0.1059	1 January 2000, 13...	0.0042
Infiltration	0.0000	0.0404	1 January 2000, 13...	0.0154

Summary Results for Reservoir "Storage"

Project: Bermuda Dunes Simulation Run: 100y 24h
Reservoir: Storage

Start of Run: 01Jan2000, 00:00 Basin Model: Basin
End of Run: 13Jan2000, 00:00 Meteorologic Model: 100y 24h
Compute Time: 19Jan2024, 15:59:33 Control Specifications: 288h

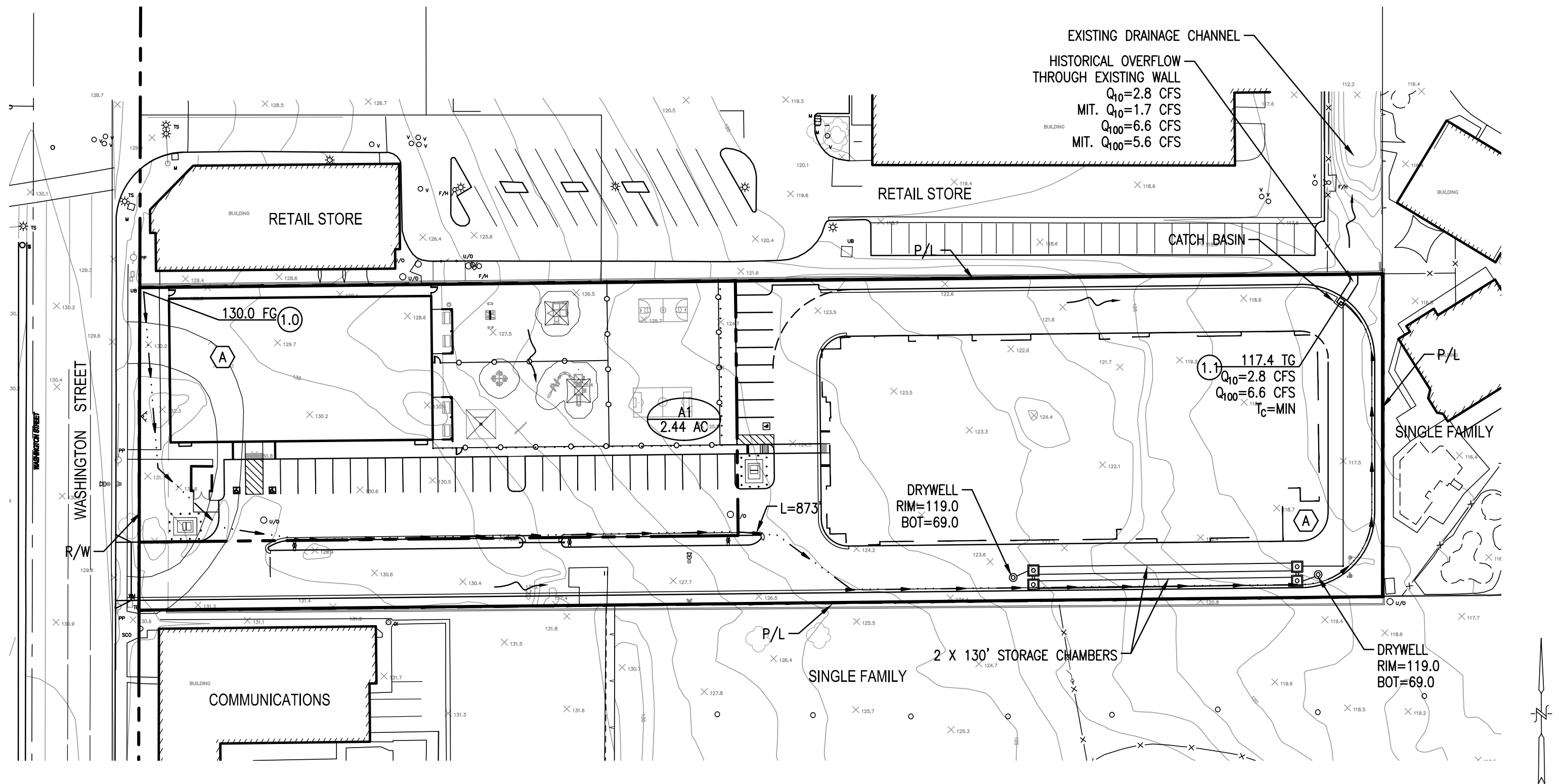
Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	1.0378 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 13:15
Peak Discharge:	0.0404 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 13:30
Inflow Volume:	0.4120 (ACRE-FT)	Peak Storage:	0.3966 (ACRE-FT)
Discharge Volume:	0.0154 (ACRE-FT)	Peak Elevation:	3.5698 (FT)

Exhibit 1

Developed Hydrology Map

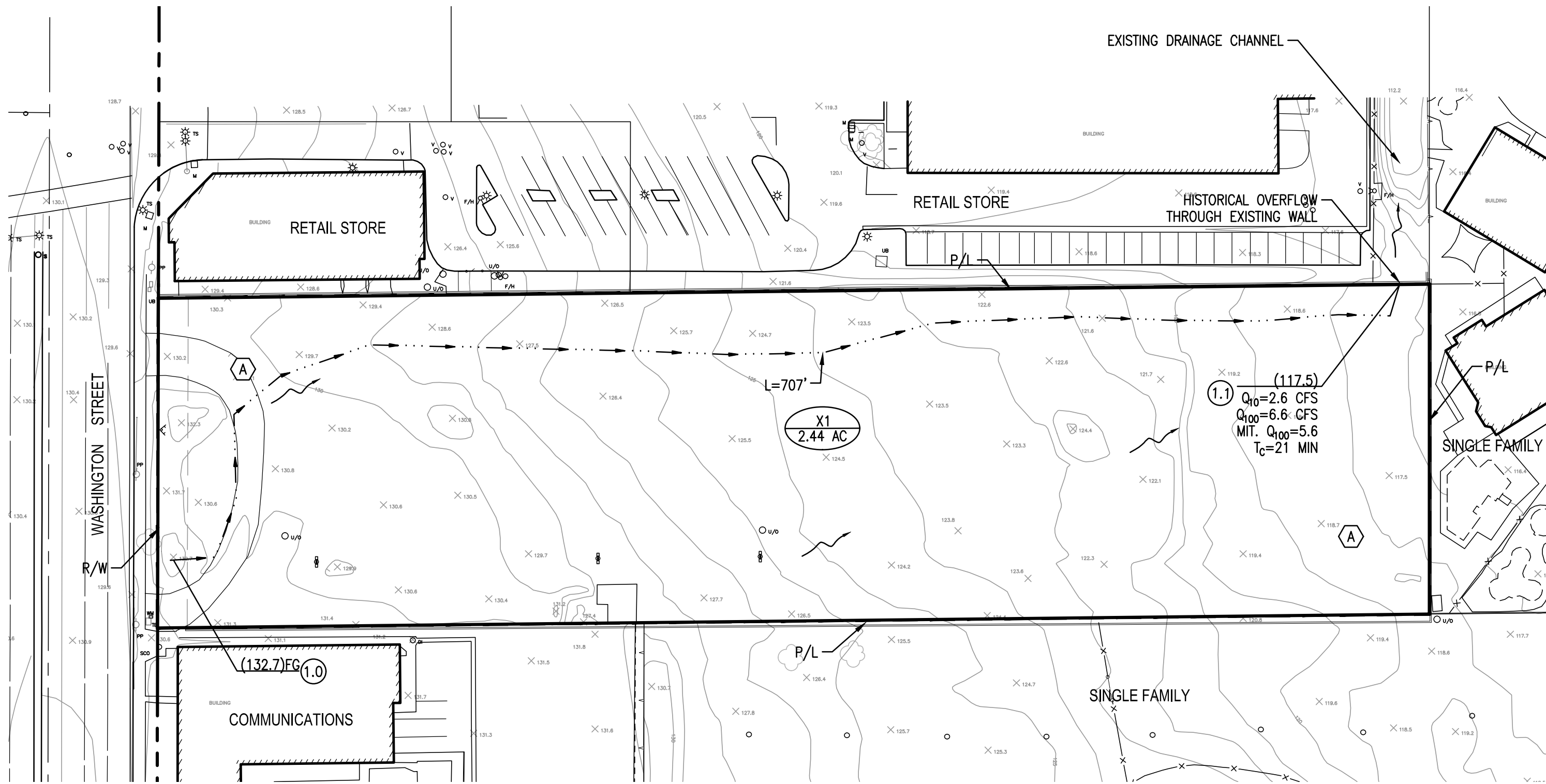


SHEET 1 OF 1
JOB NO. 201-006
BY: DSK
DATE: 01/19/24
SCALE: 1"=50'

EXHIBIT
HYDROLOGY PROPOSED CONDITIONS

KES TECHNOLOGIES INC
 1 VENTURE STE 130
 IRVINE, CALIFORNIA 92618
 PHONE (949) 339-5331

Exhibit 2
Existing Hydrology Map



SHEET 1 OF 1
JOB NO. 201-006
BY: DSK
DATE: 01/19/24
SCALE: 1"=50'

EXHIBIT
HYDROLOGY EXISTING CONDITIONS

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