

Appendix F

Preliminary Hydrology

ARMTEC DEFENSE TECHNOLOGIES
COACHELLA, CA

PRELIMINARY HYDROLOGY REPORT

PREPARED FOR:
ARMTEC DEFENSE TECHNOLOGIES
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FEBRUARY 3, 2025

Prepared Under the Supervision of:



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Expiration Date: December 31, 2026

2/3/25



ARMTEC DEFENSE TECHNOLOGIES

PRELIMINARY HYDROLOGY REPORT

TABLE OF CONTENTS:

- I PURPOSE AND SCOPE**
- II DESIGN METHODOLOGY**
- III RCFCD SYNTHETIC UNIT HYDROGRAPH CALCULATIONS**
- IV APPENDIX – REFERENCE MATERIAL**

I. PURPOSE AND SCOPE

This report was prepared in support of the Armtec Defense Technologies Warehouse Expansion entitlement package submittal. The purpose of this preliminary report is to analyze the existing and proposed drainage patterns, discuss the on-site drainage design and size the proposed on-site drainage facilities to meet the City of Coachella drainage ordinance requirements.

Armtec Defense Technologies (Armtec) manufactures state-of-the-art combustible ordinance products at its facility located at 85091 Avenue 53 in Coachella, Riverside County, CA. The project includes the construction of new and expanded buildings within the existing footprint of the Armtec facility, which occupies the southwest corner of the intersection of Avenue 53 and Tyler Street. The facility consists of two parcels totaling approximately 52.65 acres in size, identified by assessor's parcel numbers (APNs) 778-420-013 (14.96 acres) and 778-390-008 (37.69 acres). Armtec's existing operations, utilized for industrial and manufacturing purposes, are located on the southern parcel (APN: 778-390-008).

Overall, the proposed project is anticipated to be completed in phases and includes the construction of new small and medium sized warehouses for both production and storage purposes, along with a new truck staging area. The project will incorporate the phasing of off-site street improvements required by the City along Tyler Street.

On the northern parcel (APN: 778-420-013), a new 15,000 SF warehouse will be constructed solely for storage purposes. This facility will remain unoccupied except when goods are moved in and out. The northern parcel will also include the construction of a new truck staging area and paved parking lot.

On the southern parcel (APN: 778-390-008), a new 3,000 SF production facility will be constructed for research and development activities. The southern parcel currently houses all of Armtec's existing operations.

A separate surface infiltration type retention basin designed with the capacity to store storm runoff generated during the 100 year design storm tributary to each of the two new on-site facilities (15,000 SF warehouse and 3,000 SF research and production). Runoff that exceeds the capacity of the on-site retention basin storage systems in an emergency overflow condition, is designed to overflow onto perimeter public streets, Avenue 53 to the north and Tyler Street to the east, then east from Tyler Street following a dedicated drainage easement toward the Coachella Valley Stormwater Channel.

II. DESIGN METHODOLOGY AND CALCULATIONS

Riverside County Flood Control District Synthetic Unit Hydrograph methods are used to quantify the runoff volume generated and stored on-site during the 100 year "worst case" design storm return period. The program data and results prepared for this project are included in the Appendix of this report. The program model typically accounts for the volume of runoff lost due to infiltration in the basins and the allowable design retention basin infiltration rate of 10 gal./s.f./day (0.67 in/hr) established by City of Coachella will be applied over the surface area of the basin bottoms. The capacity of the on-site basins will be compared to the total design runoff volume generated over the two separate on-site development areas to show that runoff generated during the 100 year design storm can be

stored within the basins at a depth not to exceed 3.5ft and the runoff generated during the 10 year storm event can be stored within the on-site basins at a depth not to exceed 1.5 feet in accordance with City of Coachella retention basin criteria.

The northern parcel where the 15,000 SF warehouse and associated improvements will be constructed is currently vacant. Storm water tributary to this improvement area will be directed via surface flow to a new infiltration type retention basin. The southern parcel is developed in its existing condition housing all of Armtec's existing operations and includes existing infiltration type surface retention basins. The new 3,000 SF research and development facility and associated improvements will be constructed adjacent to an existing retention basin currently providing storm water storage for a portion of the existing site. New improvements in this portion of the site will include expansion and realignment of the existing retention basin to provide capacity to store the additional runoff generated due to the new development and addition of impervious surface area.

City of Coachella requires that runoff water stored on-site must be evacuated completely via infiltration within a period of 72 hours in order to comply with vector control concerns. In order to help facilitate this requirement, City of Coachella has limited the maximum depth of stored runoff within any basin to 3.5 feet and establishes a design infiltration rate for basin storage at 10 gal./s.f./day (0.67 in/hr), thereby ensuring total evacuation of the basins via infiltration within the required period.

DESIGN CRITERIA

The following Riverside County Flood Control District (RCFCD) parameters were used in the preparation of the analyses:

• 10 year – 3 hour Precipitation	0.992" (NOAA)
• 10 year – 6 hour Precipitation	1.29" (NOAA)
• 10 year – 24 hour Precipitation	2.09" (NOAA)
• 100 year – 3 hour Precipitation	2.04" (NOAA)
• 100 year – 6 hour Precipitation	2.73" (NOAA)
• 100 year – 24 hour Precipitation	4.28" (NOAA)
• Hydrologic Soil Type "B"	US Dept. of Agriculture, SCS
• Runoff Index Number	56 (RCFC&WCD Plate E-6.1)
• Assumed Design Percolation Rate	0.67 in/hr

III RCFCD SYNTHETIC UNIT HYDROGRAPH CALCULATED RETENTION VOLUMES

SUBAREA	100 YR. VOLUME REQUIRED (CU.FT.)	BASIN VOLUME PROVIDED (CU.FT.)	100 YR. BASIN STORAGE DEPTH	10 YR. BASIN STORAGE DEPTH
NORTH (15,000 SF FACILITY)	18,216	21,778	3.04'	0.74'

SUBAREA	EXISTING BASIN VOLUME (CU.FT.)	100 YR. ADDITIONAL VOLUME REQUIRED (CU.FT.)	BASIN ADDITIONAL VOLUME PROVIDED (CU.FT.)	100 YR. BASIN STORAGE DEPTH INCREASE	10 YR. BASIN STORAGE DEPTH INCREASE
SOUTH (3,000 SF FACILITY)	169,929	9,142	32,822	0.17'	0.04' (0.5 in)

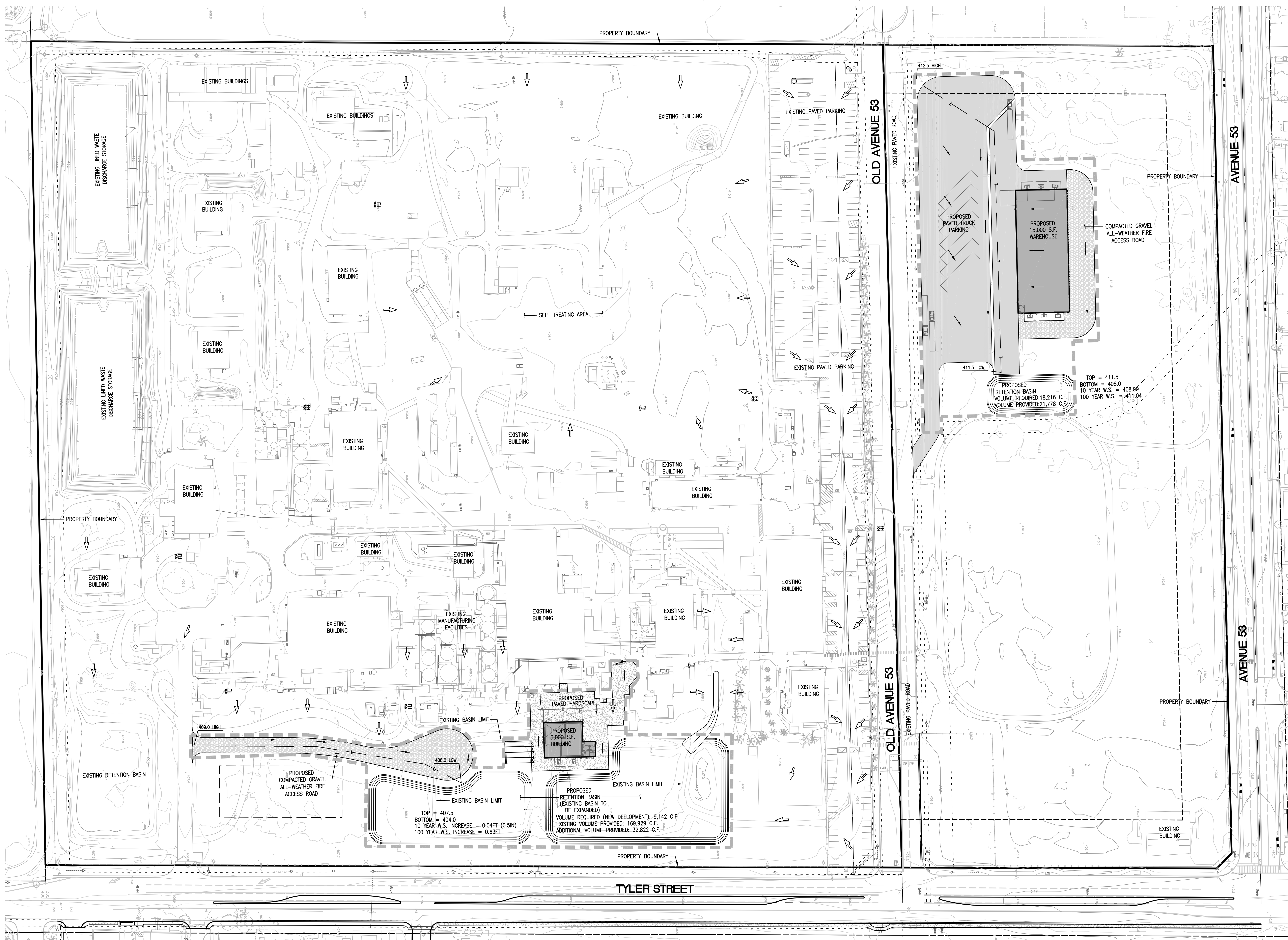
IV APPENDIX



VICINITY MAP
NOT TO SCALE

PRELIMINARY HYDROLOGY/WATER QUALITY MANAGEMENT MAP

IN THE CITY OF COACHELLA, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA



LEGEND

- SUBAREA BOUNDARY
- DIRECTIONAL DRAINAGE ARROWS
- HISTORICAL DRAINAGE PATH
- LENGTH OF WATERCOURSE

NOAA POINT RAINFALL DATA

10 YEAR - 3 HR = 0.992 IN. 100 YEAR - 3 HR = 2.04 IN.
10 YEAR - 6 HR = 1.29 IN. 100 YEAR - 6 HR = 2.73 IN.
10 YEAR - 24 HR = 2.09 IN. 100 YEAR - 24 HR = 4.28 IN.

INFILTRATION RATE

DESIGN INFILTRATION RATE = 0.67 IN/HR
(PER CITY OF COACHELLA STANDARDS)

HYDROLOGIC SOIL GROUP

HYDROLOGIC SOIL GROUP "B"

SITE DATA

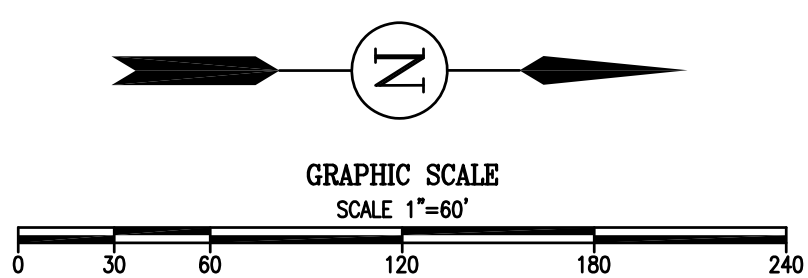
15,000 S.F. WAREHOUSE SUBAREA
AREA = 3.20 ACRES

EXISTING IMPERVIOUS AREA: 0.0 AC. = 0.0%
EXISTING PERVIOUS AREA: 3.20 AC. = 100%
PROPOSED IMPERVIOUS AREA: 2.37 AC. = 74%
PROPOSED PERVIOUS AREA: 0.83 AC. = 26%

3,000 S.F. WAREHOUSE SUBAREA
AREA = 2.68 ACRES

EXISTING IMPERVIOUS AREA: 0.0 AC. = 0.0%
EXISTING PERVIOUS AREA: 2.68 AC. = 100%
PROPOSED IMPERVIOUS AREA: 0.65 AC. = 24%
PROPOSED PERVIOUS AREA: 2.03 AC. = 76%
LENGTH OF WATERCOURSE (L) = 430'

EXISTING RETENTION BASIN VOLUME = 169,929 CU.FT.
PROPOSED RETENTION BASIN VOLUME = 202,751 CU.FT.
ADDITIONAL RETENTION VOLUME REQUIRED = 9,465 CU.FT.
ADDITIONAL RETENTION VOLUME PROVIDED = 32,822 CU.FT.



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ENGINEERING | PLANNING | SURVEY | ENVIRONMENTAL

CITY OF COACHELLA, CALIFORNIA

PRELIMINARY HYDROLOGY/
WATER QUALITY MANAGEMENT PLAN

FOR:

ARMTEC INDUSTRIES EXPANSION

SHEET NO.



NOAA Atlas 14, Volume 6, Version 2
Location name: Coachella, California, USA*
Latitude: 33.662°, Longitude: -116.1684°
Elevation: -91 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 & aerals](#)

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	0.061 (0.051-0.074)	0.097 (0.081-0.118)	0.148 (0.123-0.180)	0.192 (0.158-0.235)	0.255 (0.203-0.323)	0.307 (0.239-0.397)	0.362 (0.275-0.481)	0.423 (0.312-0.578)	0.511 (0.362-0.728)	0.584 (0.399-0.863)
10-min	0.088 (0.073-0.106)	0.140 (0.117-0.169)	0.212 (0.177-0.258)	0.275 (0.227-0.337)	0.365 (0.291-0.463)	0.440 (0.343-0.569)	0.519 (0.395-0.689)	0.606 (0.448-0.828)	0.732 (0.518-1.04)	0.837 (0.572-1.24)
15-min	0.106 (0.088-0.128)	0.169 (0.141-0.205)	0.257 (0.214-0.312)	0.333 (0.274-0.407)	0.442 (0.352-0.560)	0.532 (0.415-0.689)	0.628 (0.478-0.834)	0.733 (0.542-1.00)	0.885 (0.627-1.26)	1.01 (0.692-1.50)
30-min	0.149 (0.124-0.180)	0.237 (0.198-0.287)	0.360 (0.300-0.438)	0.467 (0.385-0.572)	0.620 (0.494-0.786)	0.746 (0.582-0.966)	0.881 (0.670-1.17)	1.03 (0.760-1.40)	1.24 (0.880-1.77)	1.42 (0.971-2.10)
60-min	0.209 (0.174-0.252)	0.333 (0.278-0.403)	0.506 (0.421-0.614)	0.655 (0.540-0.802)	0.870 (0.693-1.10)	1.05 (0.816-1.36)	1.24 (0.940-1.64)	1.44 (1.07-1.97)	1.74 (1.23-2.48)	1.99 (1.36-2.94)
2-hr	0.288 (0.241-0.349)	0.433 (0.361-0.524)	0.646 (0.537-0.785)	0.839 (0.692-1.03)	1.14 (0.904-1.44)	1.39 (1.08-1.80)	1.68 (1.28-2.23)	2.00 (1.48-2.74)	2.50 (1.77-3.57)	2.94 (2.01-4.35)
3-hr	0.351 (0.293-0.424)	0.514 (0.429-0.623)	0.762 (0.633-0.925)	0.992 (0.818-1.22)	1.35 (1.08-1.71)	1.67 (1.30-2.17)	2.04 (1.55-2.71)	2.47 (1.82-3.37)	3.13 (2.22-4.47)	3.73 (2.55-5.51)
6-hr	0.466 (0.389-0.563)	0.672 (0.561-0.814)	0.992 (0.825-1.20)	1.29 (1.07-1.58)	1.78 (1.42-2.25)	2.22 (1.73-2.87)	2.73 (2.07-3.62)	3.33 (2.46-4.55)	4.30 (3.04-6.13)	5.18 (3.54-7.65)
12-hr	0.553 (0.462-0.669)	0.813 (0.678-0.985)	1.21 (1.01-1.47)	1.58 (1.31-1.94)	2.18 (1.74-2.76)	2.71 (2.12-3.52)	3.33 (2.53-4.43)	4.06 (3.00-5.55)	5.21 (3.69-7.44)	6.26 (4.28-9.24)
24-hr	0.702 (0.621-0.809)	1.06 (0.937-1.22)	1.60 (1.41-1.85)	2.09 (1.83-2.44)	2.85 (2.42-3.44)	3.52 (2.93-4.33)	4.28 (3.48-5.39)	5.16 (4.08-6.67)	6.51 (4.94-8.76)	7.71 (5.66-10.7)
2-day	0.799 (0.707-0.922)	1.23 (1.09-1.42)	1.85 (1.63-2.14)	2.40 (2.10-2.80)	3.24 (2.74-3.90)	3.95 (3.28-4.85)	4.73 (3.84-5.95)	5.61 (4.43-7.25)	6.93 (5.26-9.31)	8.05 (5.91-11.2)
3-day	0.860 (0.761-0.992)	1.33 (1.18-1.53)	2.00 (1.76-2.31)	2.59 (2.26-3.02)	3.46 (2.93-4.17)	4.19 (3.48-5.15)	4.99 (4.05-6.27)	5.87 (4.64-7.59)	7.18 (5.45-9.65)	8.28 (6.08-11.5)
4-day	0.911 (0.806-1.05)	1.41 (1.24-1.63)	2.11 (1.86-2.44)	2.73 (2.39-3.18)	3.63 (3.08-4.38)	4.39 (3.64-5.39)	5.20 (4.22-6.54)	6.10 (4.82-7.89)	7.42 (5.63-9.98)	8.53 (6.26-11.8)
7-day	0.976 (0.863-1.12)	1.49 (1.32-1.72)	2.22 (1.96-2.57)	2.86 (2.50-3.33)	3.78 (3.20-4.56)	4.55 (3.78-5.59)	5.37 (4.36-6.76)	6.28 (4.96-8.11)	7.60 (5.76-10.2)	8.69 (6.38-12.1)
10-day	1.01 (0.894-1.16)	1.54 (1.36-1.78)	2.28 (2.01-2.64)	2.93 (2.56-3.42)	3.87 (3.28-4.66)	4.64 (3.85-5.70)	5.47 (4.44-6.88)	6.38 (5.04-8.25)	7.71 (5.85-10.4)	8.81 (6.47-12.2)
20-day	1.09 (0.962-1.25)	1.67 (1.47-1.92)	2.47 (2.18-2.86)	3.16 (2.77-3.69)	4.17 (3.53-5.02)	4.99 (4.15-6.14)	5.88 (4.77-7.39)	6.84 (5.40-8.83)	8.23 (6.24-11.1)	9.38 (6.88-13.0)
30-day	1.15 (1.02-1.33)	1.79 (1.58-2.06)	2.67 (2.35-3.09)	3.43 (3.00-4.00)	4.52 (3.83-5.45)	5.42 (4.50-6.66)	6.38 (5.17-8.02)	7.41 (5.86-9.58)	8.91 (6.76-12.0)	10.1 (7.45-14.1)
45-day	1.26 (1.12-1.46)	1.99 (1.76-2.30)	2.99 (2.64-3.46)	3.86 (3.37-4.50)	5.10 (4.32-6.14)	6.12 (5.08-7.52)	7.20 (5.84-9.06)	8.38 (6.62-10.8)	10.1 (7.64-13.5)	11.5 (8.41-15.9)
60-day	1.33 (1.18-1.53)	2.12 (1.88-2.45)	3.22 (2.84-3.72)	4.16 (3.64-4.85)	5.51 (4.67-6.64)	6.62 (5.49-8.13)	7.79 (6.32-9.80)	9.07 (7.16-11.7)	10.9 (8.27-14.7)	12.4 (9.10-17.2)
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.										

[Back to Top](#)

[PF graphical](#)

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

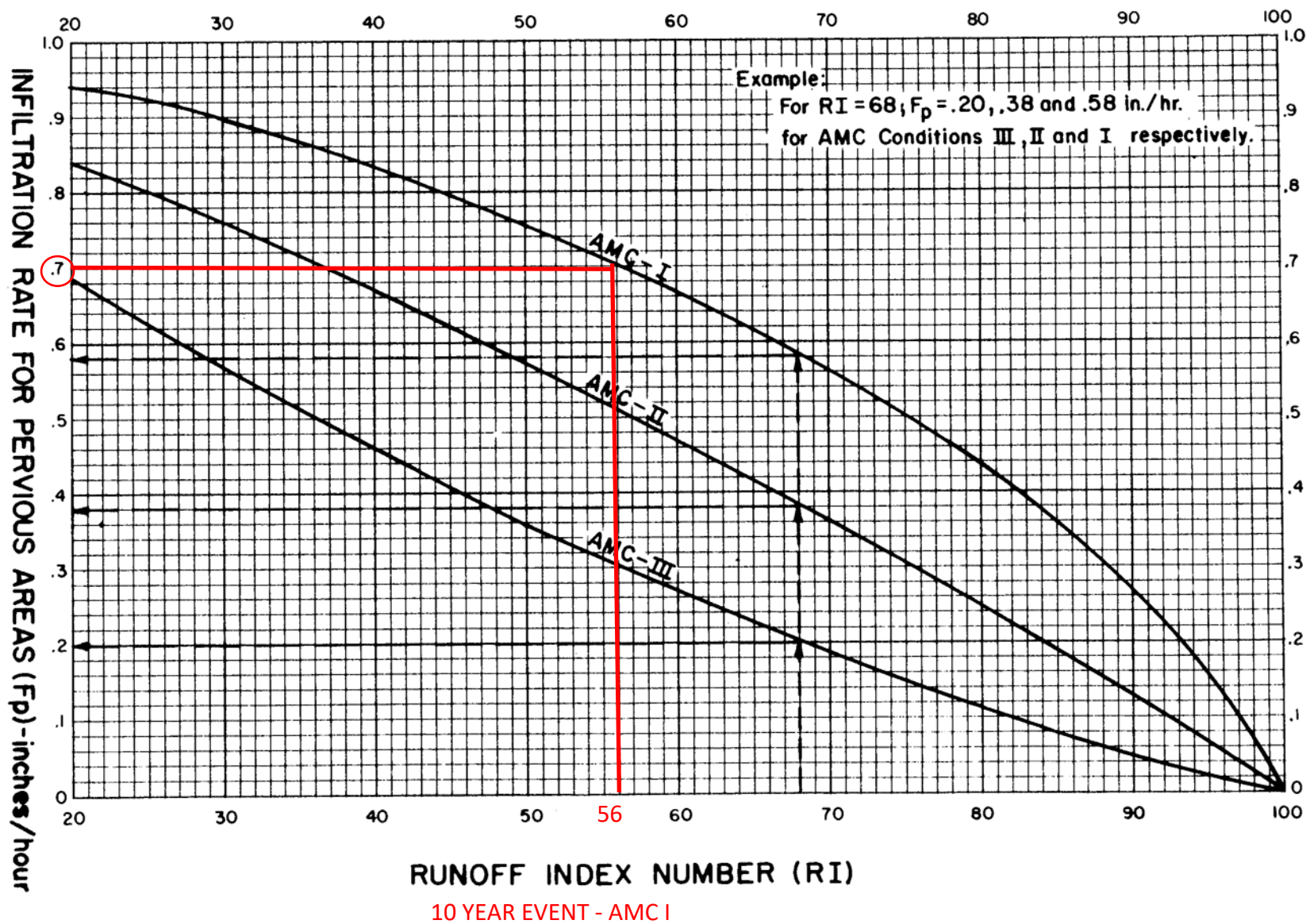
Cover Type (3)	Quality of Cover (2)	Soil Group			
		A	B	C	D
<u>NATURAL COVERS</u> -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	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 AREAS**

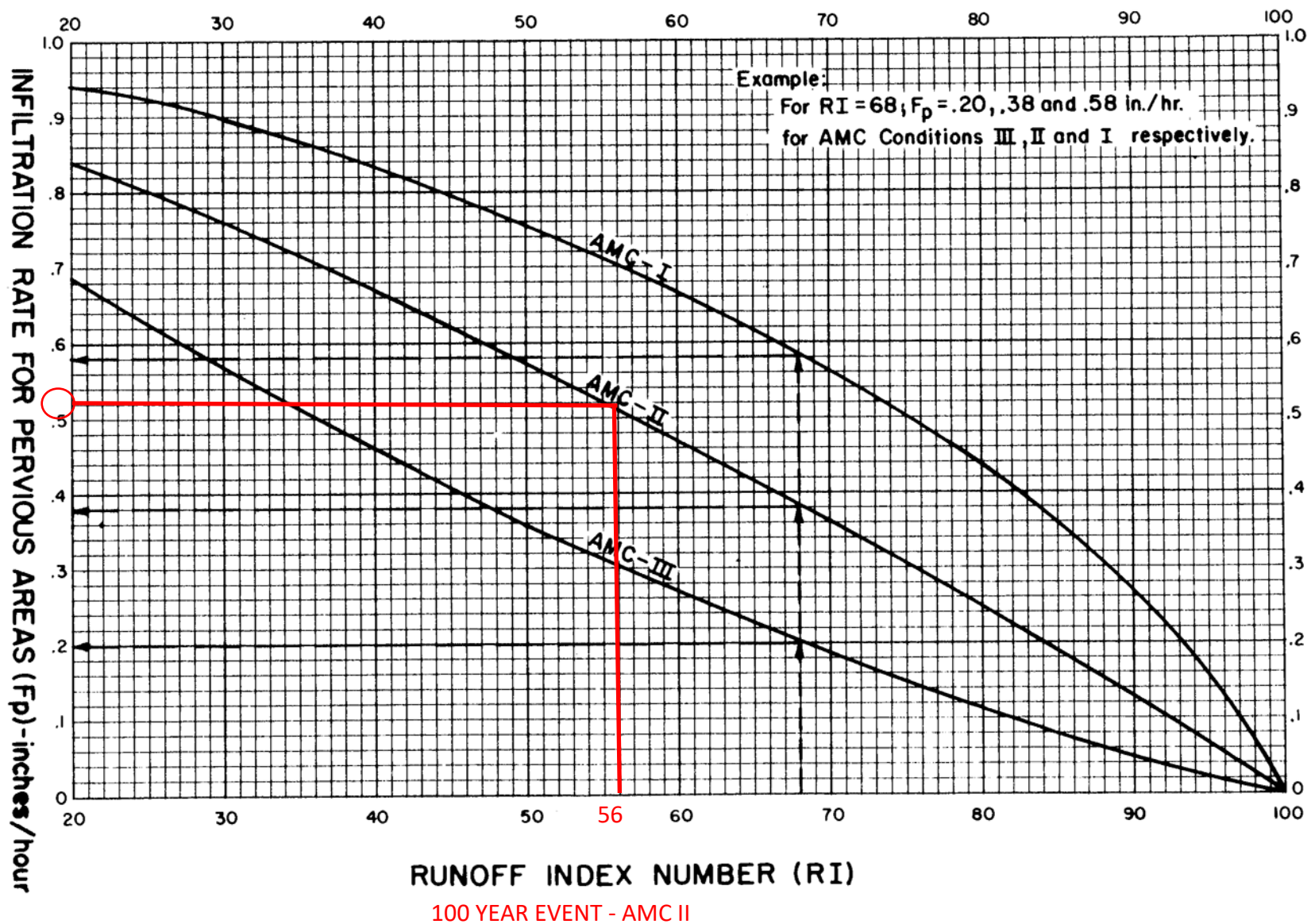
NOTES:

I. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.



NOTES:

I. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.



	A	B	C	D
1	RCFC&WCD SHORTCUT UNIT HYDROGRAPH METHOD			
2	DATA INPUT SHEET			
3				
4	WORKSHEET PREPARED BY:	JAMES R. BAZUA, P.E.		
5				
6	PROJECT NAME	ARMTEC DEFENSE TECHNOLOGY - 10 YEAR		
7	JOB #			
8				
9	CONCENTRATION POINT DESIGNATION	1		
10	AREA DESIGNATION	15000 SF BUILDING		
11				
12	TRIBUTARY AREAS	ACRES		
13				
14	COMMERCIAL			
15	PAVING/HARDSCAPE	2.37		
16	SF - 1 ACRE			
17	SF - 1/2 ACRE			
18	SF - 1/4 ACRE			
19	MF - CONDOMINIUMS			
20	MF - APARTMENTS			
21	MOBILE HOME PARK			
22	LANDSCAPING			
23	RETENTION BASIN	0.83		
24	GOLF COURSE			
25	MOUNTAINOUS			
26	LOW LOSS RATE (PERCENT)	90%		
27				
28	LENGTH OF WATERCOURSE (L)	480		
29	LENGTH TO POINT OPPOSITE CENTROID (Lca)	65		
30				
31	ELEVATION OF HEADWATER	412.5		
32	ELEVATION OF CONCENTRATION POINT	411.5		
33				
34	AVERAGE MANNINGS 'N' VALUE	0.02		
35				
36	STORM FREQUENCY (YEAR)	100		
37				
38	POINT RAIN			
39	3-HOUR	0.992		
40	6-HOUR	1.29		
41	24-HOUR	2.09		
42				
43	BASIN CHARACTERISTICS:	ELEVATION	AREA	
44		408	4560	
45		409	5470	
46		410	6430	
47		411	7470	
48		411.5	7980	
49				
50				
51				
52	PERCOLATION RATE (in/hr)	0.67		
53				
54	DRYWELL DATA			
55	NUMBER USED			
56	PERCOLATION RATE (cfs)			

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD				PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR			
BASIC DATA CALCULATION FORM				JOB # 0			
SHORTCUT METHOD				BY ES R. BAZUA, P.E.		DATE 2/2/2025	

PHYSICAL DATA							
[1] CONCENTRATION POINT	1						
[2] AREA DESIGNATION	15000 SF BUILDING						
[3] AREA - ACRES	3.200						
[4] L- FEET	480						
[5] L-MILES	0.091						
[6] La- FEET	65.00						
[7] La-MILES	0.012						
[8] ELEVATION OF HEADWATER	412.5						
[9] ELEVATION OF CONCENTRATION POINT	411.5						
[10] H- FEET	1						
[11] S- FEET/MILE	11.0						
[12] S^0.5	3.32						
[13] L*LCA/S^0.5	0.000						
[14] AVERAGE MANNINGS 'N'	0.02						
[15] LAG TIME-HOURS	0.02						
[16] LAG TIME-MINUTES	1.4						
[17] 100% OF LAG-MINUTES	1.4						
[18] 200% OF LAG-MINUTES	2.8						
[19] UNIT TIME-MINUTES (100%-200% OF LAG)	5						
[24] TOTAL PERCOLATION RATE (cfs)	0.07						

RAINFALL DATA			
[1] SOURCE			
[2] FREQUENCY-YEARS		100	
[3] DURATION:			
3-HOURS			
[4] POINT RAIN INCHES (Plate E-5.2)	[5] AREA	[6]	[7] AVERAGE POINT RAIN INCHES
0.99	3.200	1.00	0.99
		0.00	0.00
		0.00	0.00
		0.00	0.00
SUM [5]		3.2	SUM [7]
[16] AREA ADJ FACTOR			1.000
[17] ADJ AVG POINT RAIN			0.99
6-HOURS			
[8] POINT RAIN INCHES (Plate E-5.4)	[9] AREA	[10]	[11] AVERAGE POINT RAIN INCHES
1.29	3.200	1.00	1.29
		0.00	0.00
		0.00	0.00
		0.00	0.00
SUM [9]		3.20	SUM [11]
			1.29
			1.000
			1.29
24-HOURS			
[12] POINT RAIN INCHES (Plate E-5.6)	[13] AREA	[14]	[15] AVERAGE POINT RAIN INCHES
2.09	3.200	1.00	2.09
		0.00	0.00
		0.00	0.00
		0.00	0.00
SUM [13]		3.20	SUM [15]
			2.09
			1.000
			2.09

STORM EVENT SUMMARY			
DURATION	3-HOUR	6-HOUR	24-HOUR
EFFECTIVE RAIN (in)	0.38	0.37	0.24
FLOOD VOLUME (cu-ft)	4,424	4,333	2,799
(acre-ft)	0.10	0.10	0.06
REQUIRED STORAGE (cu-ft)	3,716	3,218	475
(acre-ft)	0.09	0.07	0.01
PEAK FLOW (cfs)	2.38	2.03	0.27
MAXIMUM WSEL (ft)	408.74	408.64	408.09

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD				PROJECT ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1 BY MES R. BAZUA, P.E. DATE 2/2/2025					
ADJUSTED LOSS RATE									
SOIL GROUP	LAND USE	RI NUMBER	PERVIOUS AREA INFILTRATION RATE (in/hr)	DECIMAL PERCENT OF AREA IMPERVIOUS	ADJUSTED INFILTRATION RATE (in/hr)	AREA		AVERAGE ADJUSTED INFILTRATION RATE (in/hr)	
[Plate C-1]		[Plate E-6.1]	[Plate E-6.2]	[Plate E-6.3]					
B	COMMERCIAL	56	0.70	90%	0.13	0.00	0.000	0.0000	
B	PAVING/HARDSCAPE	56	0.70	100%	0.07	2.37	0.741	0.0518	
B	SF - 1 ACRE	56	0.70	20%	0.57	0.00	0.000	0.0000	
B	SF - 1/2 ACRE	56	0.70	40%	0.45	0.00	0.000	0.0000	
B	SF - 1/4 ACRE	56	0.70	50%	0.39	0.00	0.000	0.0000	
B	MF - CONDOMINIUMS	56	0.70	65%	0.29	0.00	0.000	0.0000	
B	MF - APARTMENTS	56	0.70	80%	0.20	0.00	0.000	0.0000	
B	MOBILE HOME PARKS	56	0.70	75%	0.23	0.00	0.000	0.0000	
B	LANDSCAPING	56	0.70	0%	0.70	0.00	0.000	0.0000	
B	RETENTION BASINS	56	0.70	0%	0.70	0.83	0.259	0.1816	
B	GOLF COURSE	56	0.70	0%	0.70	0.00	0.000	0.0000	
D	MOUNTAINOUS	93	0.70	90%	0.13	0.00	0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
					0.00		0.000	0.0000	
SUM						3.2	SUM		0.2334

VARIABLE LOSS RATE CURVE (24-HOUR STORM ONLY)

Fm= 0.116703125

C= 0.00216

$F_t = C(24 - (T/60))^{1.55}$
=
0.00216
(24 - (T/60))^{1.55} +
0.12
in/hr

LOW LOSS RATE (80-90 PERCENT) = 90%

Where:

T=Time in minutes. To get an average value for each unit time period, Use T=1/2 the unit time for the first time period,
 T=1 1/2 unit time for the second period, etc.

RCFC D SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 3 HOUR STORM EVENT					PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1				
BY: IES R. BAZUA, DATE 2/2/2025									
EFFECTIVE RAIN CALCULATION FORM									
DRAINAGE AREA-ACRES 3.20 UNIT TIME-MINUTES 5 LAG TIME - MINUTES 1.38 UNIT TIME-PERCENT OF LAG 362.1 TOTAL ADJUSTED STORM RAIN-INCHES 0.99 CONSTANT LOSS RATE-in/hr 0.23 LOW LOSS RATE - PERCENT 90%				TOTAL PERCOLATION RATE (cfs) 0.07 cfs					
Unit Time Period	Time Minutes Hours		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate in/hr Max Low		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
1	5	0.08	1.3	0.155	0.23	0.14	0.02	0.05	0.00
2	10	0.17	1.3	0.155	0.23	0.14	0.02	0.05	0.00
3	15	0.25	1.1	0.131	0.23	0.12	0.01	0.04	0.00
4	20	0.33	1.5	0.179	0.23	0.16	0.02	0.06	0.00
5	25	0.42	1.5	0.179	0.23	0.16	0.02	0.06	0.00
6	30	0.50	1.8	0.214	0.23	0.19	0.02	0.07	0.00
7	35	0.58	1.5	0.179	0.23	0.16	0.02	0.06	0.00
8	40	0.67	1.8	0.214	0.23	0.19	0.02	0.07	0.00
9	45	0.75	1.8	0.214	0.23	0.19	0.02	0.07	0.00
10	50	0.83	1.5	0.179	0.23	0.16	0.02	0.06	0.00
11	55	0.92	1.6	0.190	0.23	0.17	0.02	0.06	0.00
12	60	1.00	1.8	0.214	0.23	0.19	0.02	0.07	0.00
13	65	1.08	2.2	0.262	0.23	0.24	0.03	0.09	6.13
14	70	1.17	2.2	0.262	0.23	0.24	0.03	0.09	6.13
15	75	1.25	2.2	0.262	0.23	0.24	0.03	0.09	6.13
16	80	1.33	2.0	0.238	0.23	0.21	0.00	0.01	0.00
17	85	1.42	2.6	0.310	0.23	0.28	0.08	0.24	51.84
18	90	1.50	2.7	0.321	0.23	0.29	0.09	0.28	63.27
19	95	1.58	2.4	0.286	0.23	0.26	0.05	0.17	28.98
20	100	1.67	2.7	0.321	0.23	0.29	0.09	0.28	63.27
21	105	1.75	3.3	0.393	0.23	0.35	0.16	0.51	131.83
22	110	1.83	3.1	0.369	0.23	0.33	0.14	0.43	108.98
23	115	1.92	2.9	0.345	0.23	0.31	0.11	0.36	86.12
24	120	2.00	3.0	0.357	0.23	0.32	0.12	0.40	97.55
25	125	2.08	3.1	0.369	0.23	0.33	0.14	0.43	108.98
26	130	2.17	4.2	0.500	0.23	0.45	0.27	0.85	234.68
27	135	2.25	5.0	0.595	0.23	0.54	0.36	1.16	326.11
28	140	2.33	3.5	0.417	0.23	0.37	0.18	0.59	154.69
29	145	2.42	6.8	0.809	0.23	0.73	0.58	1.84	531.81
30	150	2.50	7.3	0.869	0.23	0.78	0.64	2.03	588.95
31	155	2.58	8.2	0.976	0.23	0.88	0.74	2.38	691.80
32	160	2.67	5.9	0.702	0.23	0.63	0.47	1.50	428.96
33	165	2.75	2.0	0.238	0.23	0.21	0.00	0.01	0.00
34	170	2.83	1.8	0.214	0.23	0.19	0.02	0.07	0.00
35	175	2.92	1.8	0.214	0.23	0.19	0.02	0.07	0.00
36	180	3.00	0.6	0.071	0.23	0.06	0.01	0.02	0.00

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY	
EFFECTIVE RAIN (in)	0.38
FLOOD VOLUME (acft)	0.10
FLOOD VOLUME (cuft)	4424.24
REQUIRED STORAGE (acft)	0.09
REQUIRED STORAGE (cuft)	3716.16
PEAK FLOW RATE (cfs)	2.38

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT:	ARMTEC DEFENSE TECHNOLOGY - 10 YEAR
	CONCENTRATION POINT:	1
	BY: JAMES R. BAZ DATE:	2/2/2025

EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	3.20	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.38	
UNIT TIME-PERCENT OF LAG	362.1	
TOTAL ADJUSTED STORM RAIN-INCHES	1.29	
CONSTANT LOSS RATE-in/hr	0.233	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.07 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			Max	Low			
1	5	0.08	0.5	0.077	0.23	0.07	0.01	0.02	0.00
2	10	0.17	0.6	0.093	0.23	0.08	0.01	0.03	0.00
3	15	0.25	0.6	0.093	0.23	0.08	0.01	0.03	0.00
4	20	0.33	0.6	0.093	0.23	0.08	0.01	0.03	0.00
5	25	0.42	0.6	0.093	0.23	0.08	0.01	0.03	0.00
6	30	0.50	0.7	0.108	0.23	0.10	0.01	0.03	0.00
7	35	0.58	0.7	0.108	0.23	0.10	0.01	0.03	0.00
8	40	0.67	0.7	0.108	0.23	0.10	0.01	0.03	0.00
9	45	0.75	0.7	0.108	0.23	0.10	0.01	0.03	0.00
10	50	0.83	0.7	0.108	0.23	0.10	0.01	0.03	0.00
11	55	0.92	0.7	0.108	0.23	0.10	0.01	0.03	0.00
12	60	1.00	0.8	0.124	0.23	0.11	0.01	0.04	0.00
13	65	1.08	0.8	0.124	0.23	0.11	0.01	0.04	0.00
14	70	1.17	0.8	0.124	0.23	0.11	0.01	0.04	0.00
15	75	1.25	0.8	0.124	0.23	0.11	0.01	0.04	0.00
16	80	1.33	0.8	0.124	0.23	0.11	0.01	0.04	0.00
17	85	1.42	0.8	0.124	0.23	0.11	0.01	0.04	0.00
18	90	1.50	0.8	0.124	0.23	0.11	0.01	0.04	0.00
19	95	1.58	0.8	0.124	0.23	0.11	0.01	0.04	0.00
20	100	1.67	0.8	0.124	0.23	0.11	0.01	0.04	0.00
21	105	1.75	0.8	0.124	0.23	0.11	0.01	0.04	0.00
22	110	1.83	0.8	0.124	0.23	0.11	0.01	0.04	0.00
23	115	1.92	0.8	0.124	0.23	0.11	0.01	0.04	0.00
24	120	2.00	0.9	0.139	0.23	0.13	0.01	0.04	0.00
25	125	2.08	0.8	0.124	0.23	0.11	0.01	0.04	0.00
26	130	2.17	0.9	0.139	0.23	0.13	0.01	0.04	0.00
27	135	2.25	0.9	0.139	0.23	0.13	0.01	0.04	0.00
28	140	2.33	0.9	0.139	0.23	0.13	0.01	0.04	0.00
29	145	2.42	0.9	0.139	0.23	0.13	0.01	0.04	0.00
30	150	2.50	0.9	0.139	0.23	0.13	0.01	0.04	0.00
31	155	2.58	0.9	0.139	0.23	0.13	0.01	0.04	0.00
32	160	2.67	0.9	0.139	0.23	0.13	0.01	0.04	0.00
33	165	2.75	1.0	0.155	0.23	0.14	0.02	0.05	0.00
34	170	2.83	1.0	0.155	0.23	0.14	0.02	0.05	0.00
35	175	2.92	1.0	0.155	0.23	0.14	0.02	0.05	0.00
36	180	3.00	1.0	0.155	0.23	0.14	0.02	0.05	0.00
37	185	3.08	1.0	0.155	0.23	0.14	0.02	0.05	0.00
38	190	3.17	1.1	0.170	0.23	0.15	0.02	0.05	0.00
39	195	3.25	1.1	0.170	0.23	0.15	0.02	0.05	0.00
40	200	3.33	1.1	0.170	0.23	0.15	0.02	0.05	0.00
41	205	3.42	1.2	0.186	0.23	0.17	0.02	0.06	0.00
42	210	3.50	1.3	0.201	0.23	0.18	0.02	0.06	0.00
43	215	3.58	1.4	0.217	0.23	0.20	0.02	0.07	0.00
44	220	3.67	1.4	0.217	0.23	0.20	0.02	0.07	0.00
45	225	3.75	1.5	0.232	0.23	0.21	0.02	0.07	1.07
46	230	3.83	1.5	0.232	0.23	0.21	0.02	0.07	1.07
47	235	3.92	1.6	0.248	0.23	0.22	0.01	0.05	0.00
48	240	4.00	1.6	0.248	0.23	0.22	0.01	0.05	0.00
49	245	4.08	1.7	0.263	0.23	0.24	0.03	0.10	7.35
50	250	4.17	1.8	0.279	0.23	0.25	0.05	0.14	22.21
51	255	4.25	1.9	0.294	0.23	0.26	0.06	0.19	37.07
52	260	4.33	2.0	0.310	0.23	0.28	0.08	0.24	51.93
53	265	4.42	2.1	0.325	0.23	0.29	0.09	0.29	66.79
54	270	4.50	2.1	0.325	0.23	0.29	0.09	0.29	66.79
55	275	4.58	2.2	0.341	0.23	0.31	0.11	0.34	81.65
56	280	4.67	2.3	0.356	0.23	0.32	0.12	0.39	96.51

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1 BY: JAMES R. BAZ DATE: 2/2/2025
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EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	3.20	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.38	
UNIT TIME-PERCENT OF LAG	362.1	
TOTAL ADJUSTED STORM RAIN-INCHES	1.29	
CONSTANT LOSS RATE-in/hr	0.233	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.07 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr				
					Max	Low			
57	285	4.75	2.4	0.372	0.23	0.33	0.14	0.44	111.37
58	290	4.83	2.4	0.372	0.23	0.33	0.14	0.44	111.37
59	295	4.92	2.5	0.387	0.23	0.35	0.15	0.49	126.23
60	300	5.00	2.6	0.402	0.23	0.36	0.17	0.54	141.09
61	305	5.08	3.1	0.480	0.23	0.43	0.25	0.79	215.40
62	310	5.17	3.6	0.557	0.23	0.50	0.32	1.04	289.70
63	315	5.25	3.9	0.604	0.23	0.54	0.37	1.19	334.28
64	320	5.33	4.2	0.650	0.23	0.59	0.42	1.33	378.87
65	325	5.42	4.7	0.728	0.23	0.65	0.49	1.58	453.17
66	330	5.50	5.6	0.867	0.23	0.78	0.63	2.03	586.92
67	335	5.58	1.9	0.294	0.23	0.26	0.06	0.19	37.07
68	340	5.67	0.9	0.139	0.23	0.13	0.01	0.04	0.00
69	345	5.75	0.6	0.093	0.23	0.08	0.01	0.03	0.00
70	350	5.83	0.5	0.077	0.23	0.07	0.01	0.02	0.00
71	355	5.92	0.3	0.046	0.23	0.04	0.00	0.01	0.00
72	360	6.00	0.2	0.031	0.23	0.03	0.00	0.01	0.00

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	0.37
FLOOD VOLUME (acft)	0.10
FLOOD VOLUME (cuft)	4333.03
REQUIRED STORAGE (acft)	0.07
REQUIRED STORAGE (cuft)	3217.93
PEAK FLOW RATE (cfs)	2.03

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT					PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1				
					BY: JAMES R. BAZ DATE: 2/2/2025				
EFFECTIVE RAIN CALCULATION FORM									
DRAINAGE AREA-ACRES			3.200	CONSTANT LOSS RATE-in/hr			n/a		
UNIT TIME-MINUTES			15	VARIABLE LOSS RATE (AVG) in/hr			0.2334		
LAG TIME - MINUTES			1.38	MINIMUM LOSS RATE (for var. loss) - in/hr			0.117		
UNIT TIME-PERCENT OF LAG			1086.4	LOW LOSS RATE - DECIMAL			0.90		
TOTAL ADJUSTED STORM RAIN-INCHES			2.09	C			0.00216		
				PERCOLATION RATE (cfs) 0.07					
Unit Time Period	Time Minutes Hours		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate in/hr Max Low		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
1	15	0.25	0.2	0.017	0.412	0.015	0.002	0.01	0.00
2	30	0.50	0.3	0.025	0.407	0.023	0.003	0.01	0.00
3	45	0.75	0.3	0.025	0.403	0.023	0.003	0.01	0.00
4	60	1.00	0.4	0.033	0.398	0.030	0.003	0.01	0.00
5	75	1.25	0.3	0.025	0.393	0.023	0.003	0.01	0.00
6	90	1.50	0.3	0.025	0.389	0.023	0.003	0.01	0.00
7	105	1.75	0.3	0.025	0.384	0.023	0.003	0.01	0.00
8	120	2.00	0.4	0.033	0.379	0.030	0.003	0.01	0.00
9	135	2.25	0.4	0.033	0.375	0.030	0.003	0.01	0.00
10	150	2.50	0.4	0.033	0.370	0.030	0.003	0.01	0.00
11	165	2.75	0.5	0.042	0.366	0.038	0.004	0.01	0.00
12	180	3.00	0.5	0.042	0.361	0.038	0.004	0.01	0.00
13	195	3.25	0.5	0.042	0.357	0.038	0.004	0.01	0.00
14	210	3.50	0.5	0.042	0.352	0.038	0.004	0.01	0.00
15	225	3.75	0.5	0.042	0.348	0.038	0.004	0.01	0.00
16	240	4.00	0.6	0.050	0.343	0.045	0.005	0.02	0.00
17	255	4.25	0.6	0.050	0.339	0.045	0.005	0.02	0.00
18	270	4.50	0.7	0.059	0.335	0.053	0.006	0.02	0.00
19	285	4.75	0.7	0.059	0.330	0.053	0.006	0.02	0.00
20	300	5.00	0.8	0.067	0.326	0.060	0.007	0.02	0.00
21	315	5.25	0.6	0.050	0.322	0.045	0.005	0.02	0.00
22	330	5.50	0.7	0.059	0.318	0.053	0.006	0.02	0.00
23	345	5.75	0.8	0.067	0.314	0.060	0.007	0.02	0.00
24	360	6.00	0.8	0.067	0.309	0.060	0.007	0.02	0.00
25	375	6.25	0.9	0.075	0.305	0.068	0.008	0.02	0.00
26	390	6.50	0.9	0.075	0.301	0.068	0.008	0.02	0.00
27	405	6.75	1.0	0.084	0.297	0.075	0.008	0.03	0.00
28	420	7.00	1.0	0.084	0.293	0.075	0.008	0.03	0.00
29	435	7.25	1.0	0.084	0.289	0.075	0.008	0.03	0.00
30	450	7.50	1.1	0.092	0.285	0.083	0.009	0.03	0.00
31	465	7.75	1.2	0.100	0.281	0.090	0.010	0.03	0.00
32	480	8.00	1.3	0.109	0.278	0.098	0.011	0.03	0.00
33	495	8.25	1.5	0.125	0.274	0.113	0.013	0.04	0.00
34	510	8.50	1.5	0.125	0.270	0.113	0.013	0.04	0.00
35	525	8.75	1.6	0.134	0.266	0.120	0.013	0.04	0.00
36	540	9.00	1.7	0.142	0.262	0.128	0.014	0.05	0.00
37	555	9.25	1.9	0.159	0.259	0.143	0.016	0.05	0.00
38	570	9.50	2.0	0.167	0.255	0.150	0.017	0.05	0.00
39	585	9.75	2.1	0.176	0.251	0.158	0.018	0.06	0.00
40	600	10.00	2.2	0.184	0.248	0.166	0.018	0.06	0.00
41	615	10.25	1.5	0.125	0.244	0.113	0.013	0.04	0.00
42	630	10.50	1.5	0.125	0.241	0.113	0.013	0.04	0.00
43	645	10.75	2.0	0.167	0.237	0.150	0.017	0.05	0.00
44	660	11.00	2.0	0.167	0.234	0.150	0.017	0.05	0.00
45	675	11.25	1.9	0.159	0.230	0.143	0.016	0.05	0.00
46	690	11.50	1.9	0.159	0.227	0.143	0.016	0.05	0.00
47	705	11.75	1.7	0.142	0.223	0.128	0.014	0.05	0.00
48	720	12.00	1.8	0.150	0.220	0.135	0.015	0.05	0.00
49	735	12.25	2.5	0.209	0.217	0.188	0.021	0.07	0.00
50	750	12.50	2.6	0.217	0.214	0.196	0.004	0.01	0.00
51	765	12.75	2.8	0.234	0.210	0.211	0.024	0.08	4.74
52	780	13.00	2.9	0.242	0.207	0.218	0.035	0.11	37.95
53	795	13.25	3.4	0.284	0.204	0.256	0.080	0.26	167.35
54	810	13.50	3.4	0.284	0.201	0.256	0.083	0.27	176.26
55	825	13.75	2.3	0.192	0.198	0.173	0.019	0.06	0.00
56	840	14.00	2.3	0.192	0.195	0.173	0.019	0.06	0.00
57	855	14.25	2.7	0.226	0.192	0.203	0.034	0.11	33.74
58	870	14.50	2.6	0.217	0.189	0.196	0.028	0.09	18.10
59	885	14.75	2.6	0.217	0.186	0.196	0.031	0.10	26.42
60	900	15.00	2.5	0.209	0.183	0.188	0.026	0.08	10.54
61	915	15.25	2.4	0.201	0.180	0.181	0.020	0.06	0.00
62	930	15.50	2.3	0.192	0.178	0.173	0.015	0.05	0.00
63	945	15.75	1.9	0.159	0.175	0.143	0.016	0.05	0.00
64	960	16.00	1.9	0.159	0.172	0.143	0.016	0.05	0.00
65	975	16.25	0.4	0.033	0.170	0.030	0.003	0.01	0.00
66	990	16.50	0.4	0.033	0.167	0.030	0.003	0.01	0.00
67	1005	16.75	0.3	0.025	0.165	0.023	0.003	0.01	0.00

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1 BY: JAMES R. BAZ DATE: 2/2/2025
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EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	3.200	CONSTANT LOSS RATE-in/hr	n/a
UNIT TIME-MINUTES	15	VARIABLE LOSS RATE (AVG) in/hr	0.2334
LAG TIME - MINUTES	1.38	MINIMUM LOSS RATE (for var. loss) - in/hr	0.117
UNIT TIME-PERCENT OF LAG	1086.4	LOW LOSS RATE - DECIMAL	0.90
TOTAL ADJUSTED STORM RAIN-INCHES	2.09	C	0.00216
		PERCOLATION RATE (cfs)	0.07

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			Max	Low			
68	1020	17.00	0.3	0.025	0.162	0.023	0.003	0.01	0.00
69	1035	17.25	0.5	0.042	0.160	0.038	0.004	0.01	0.00
70	1050	17.50	0.5	0.042	0.157	0.038	0.004	0.01	0.00
71	1065	17.75	0.5	0.042	0.155	0.038	0.004	0.01	0.00
72	1080	18.00	0.4	0.033	0.153	0.030	0.003	0.01	0.00
73	1095	18.25	0.4	0.033	0.150	0.030	0.003	0.01	0.00
74	1110	18.50	0.4	0.033	0.148	0.030	0.003	0.01	0.00
75	1125	18.75	0.3	0.025	0.146	0.023	0.003	0.01	0.00
76	1140	19.00	0.2	0.017	0.144	0.015	0.002	0.01	0.00
77	1155	19.25	0.3	0.025	0.142	0.023	0.003	0.01	0.00
78	1170	19.50	0.4	0.033	0.140	0.030	0.003	0.01	0.00
79	1185	19.75	0.3	0.025	0.138	0.023	0.003	0.01	0.00
80	1200	20.00	0.2	0.017	0.136	0.015	0.002	0.01	0.00
81	1215	20.25	0.3	0.025	0.134	0.023	0.003	0.01	0.00
82	1230	20.50	0.3	0.025	0.133	0.023	0.003	0.01	0.00
83	1245	20.75	0.3	0.025	0.131	0.023	0.003	0.01	0.00
84	1260	21.00	0.2	0.017	0.129	0.015	0.002	0.01	0.00
85	1275	21.25	0.3	0.025	0.128	0.023	0.003	0.01	0.00
86	1290	21.50	0.2	0.017	0.126	0.015	0.002	0.01	0.00
87	1305	21.75	0.3	0.025	0.125	0.023	0.003	0.01	0.00
88	1320	22.00	0.2	0.017	0.124	0.015	0.002	0.01	0.00
89	1335	22.25	0.3	0.025	0.122	0.023	0.003	0.01	0.00
90	1350	22.50	0.2	0.017	0.121	0.015	0.002	0.01	0.00
91	1365	22.75	0.2	0.017	0.120	0.015	0.002	0.01	0.00
92	1380	23.00	0.2	0.017	0.119	0.015	0.002	0.01	0.00
93	1395	23.25	0.2	0.017	0.118	0.015	0.002	0.01	0.00
94	1410	23.50	0.2	0.017	0.118	0.015	0.002	0.01	0.00
95	1425	23.75	0.2	0.017	0.117	0.015	0.002	0.01	0.00
96	1440	24.00	0.2	0.017	0.117	0.015	0.002	0.01	0.00

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	0.24
FLOOD VOLUME (acft)	0.06
FLOOD VOLUME (cuft)	2799.27
REQUIRED STORAGE (acft)	0.01
REQUIRED STORAGE (cuft)	475.11
PEAK FLOW (cfs)	0.27

PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR
 JOB # 0
 1

BASIN CHARACTERISTICS

CONTOUR	DEPTH		AREA		VOLUME		
	INCR (ft)	TOTAL (ft)	INCR (sf)	TOTAL (sf)	INCR (cuft)	TOTAL (cuft)	TOTAL (acre-ft)
408	0	0		4560	0	0	0.00
409	1	1	910	5470	5015	5015	0.12
410	1	2	960	6430	5950	10965	0.25
411	1	3	1040	7470	6950	17915	0.41
411.5	0.5	3.5	510	7980	3863	21778	0.50

PERCOLATION CALCULATIONS

PERCOLATION RATE 0.67 in/hr 0.07 cfs

MAXWELL IV DRYWELLS

NUMBER USED 0
 RATE/DRYWELL 0 cfs
 TOTAL DISSIPATED 0 cfs

TOTAL PERCOLATION RATE 0.07 cfs

1
 JOB # 0
 100 YEAR - 3 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
1	5	0.05	15	15	21	-	408.00	-	0.00
2	10	0.05	15	15	21	-	408.00	-	0.00
3	15	0.04	13	13	21	-	408.00	-	0.00
4	20	0.06	17	17	21	-	408.00	-	0.00
5	25	0.06	17	17	21	-	408.00	-	0.00
6	30	0.07	21	21	21	-	408.00	-	0.00
7	35	0.06	17	17	21	-	408.00	-	0.00
8	40	0.07	21	21	21	-	408.00	-	0.00
9	45	0.07	21	21	21	-	408.00	-	0.00
10	50	0.06	17	17	21	-	408.00	-	0.00
11	55	0.06	18	18	21	-	408.00	-	0.00
12	60	0.07	21	21	21	-	408.00	-	0.00
13	65	0.09	27	27	21	6	408.00	6	0.00
14	70	0.09	27	33	21	12	408.00	12	0.00
15	75	0.09	27	40	21	18	408.00	18	0.00
16	80	0.01	4	23	21	2	408.00	2	0.00
17	85	0.24	73	75	21	53	408.01	53	0.00
18	90	0.28	84	138	21	117	408.02	117	0.00
19	95	0.17	50	167	21	146	408.03	146	0.00
20	100	0.28	84	230	21	209	408.04	209	0.00
21	105	0.51	153	362	21	341	408.07	341	0.01
22	110	0.43	130	471	21	450	408.09	450	0.01
23	115	0.36	107	557	21	536	408.11	536	0.01
24	120	0.40	119	655	21	633	408.13	633	0.01
25	125	0.43	130	764	21	742	408.15	742	0.02
26	130	0.85	256	998	21	977	408.19	977	0.02
27	135	1.16	347	1,324	21	1,303	408.26	1,303	0.03
28	140	0.59	176	1,479	21	1,458	408.29	1,458	0.03
29	145	1.84	553	2,011	21	1,990	408.40	1,990	0.05
30	150	2.03	610	2,600	21	2,579	408.51	2,579	0.06
31	155	2.38	713	3,292	21	3,270	408.65	3,270	0.08
32	160	1.50	450	3,721	21	3,699	408.74	3,699	0.08
33	165	0.01	4	3,704	21	3,683	408.73	3,683	0.08
34	170	0.07	21	3,703	21	3,682	408.73	3,682	0.08
35	175	0.07	21	3,703	21	3,681	408.73	3,681	0.08
36	180	0.02	7	3,688	21	3,667	408.73	3,667	0.08

1
 JOB # 0
 100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
1	5	0.02	7	7	21	-	408.00	-	0.00
2	10	0.03	9	9	21	-	408.00	-	0.00
3	15	0.03	9	9	21	-	408.00	-	0.00
4	20	0.03	9	9	21	-	408.00	-	0.00
5	25	0.03	9	9	21	-	408.00	-	0.00
6	30	0.03	10	10	21	-	408.00	-	0.00
7	35	0.03	10	10	21	-	408.00	-	0.00
8	40	0.03	10	10	21	-	408.00	-	0.00
9	45	0.03	10	10	21	-	408.00	-	0.00
10	50	0.03	10	10	21	-	408.00	-	0.00
11	55	0.03	10	10	21	-	408.00	-	0.00
12	60	0.04	12	12	21	-	408.00	-	0.00
13	65	0.04	12	12	21	-	408.00	-	0.00
14	70	0.04	12	12	21	-	408.00	-	0.00
15	75	0.04	12	12	21	-	408.00	-	0.00
16	80	0.04	12	12	21	-	408.00	-	0.00
17	85	0.04	12	12	21	-	408.00	-	0.00
18	90	0.04	12	12	21	-	408.00	-	0.00
19	95	0.04	12	12	21	-	408.00	-	0.00
20	100	0.04	12	12	21	-	408.00	-	0.00
21	105	0.04	12	12	21	-	408.00	-	0.00
22	110	0.04	12	12	21	-	408.00	-	0.00
23	115	0.04	12	12	21	-	408.00	-	0.00
24	120	0.04	13	13	21	-	408.00	-	0.00
25	125	0.04	12	12	21	-	408.00	-	0.00
26	130	0.04	13	13	21	-	408.00	-	0.00
27	135	0.04	13	13	21	-	408.00	-	0.00
28	140	0.04	13	13	21	-	408.00	-	0.00
29	145	0.04	13	13	21	-	408.00	-	0.00
30	150	0.04	13	13	21	-	408.00	-	0.00
31	155	0.04	13	13	21	-	408.00	-	0.00
32	160	0.04	13	13	21	-	408.00	-	0.00
33	165	0.05	15	15	21	-	408.00	-	0.00
34	170	0.05	15	15	21	-	408.00	-	0.00
35	175	0.05	15	15	21	-	408.00	-	0.00
36	180	0.05	15	15	21	-	408.00	-	0.00
37	185	0.05	15	15	21	-	408.00	-	0.00
38	190	0.05	16	16	21	-	408.00	-	0.00
39	195	0.05	16	16	21	-	408.00	-	0.00
40	200	0.05	16	16	21	-	408.00	-	0.00
41	205	0.06	18	18	21	-	408.00	-	0.00
42	210	0.06	19	19	21	-	408.00	-	0.00
43	215	0.07	21	21	21	-	408.00	-	0.00
44	220	0.07	21	21	21	-	408.00	-	0.00
45	225	0.07	22	22	21	1	408.00	1	0.00
46	230	0.07	22	23	21	2	408.00	2	0.00
47	235	0.05	14	16	21	-	408.00	-	0.00
48	240	0.05	14	14	21	-	408.00	-	0.00
49	245	0.10	29	29	21	7	408.00	7	0.00
50	250	0.14	43	51	21	30	408.01	30	0.00
51	255	0.19	58	88	21	67	408.01	67	0.00
52	260	0.24	73	140	21	119	408.02	119	0.00
53	265	0.29	88	207	21	185	408.04	185	0.00
54	270	0.29	88	273	21	252	408.05	252	0.01
55	275	0.34	103	355	21	334	408.07	334	0.01

1
 JOB # 0
 100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN	
								(cuft)	(acre-ft)
56	280	0.39	118	452	21	430	408.09	430	0.01
57	285	0.44	133	563	21	542	408.11	542	0.01
58	290	0.44	133	674	21	653	408.13	653	0.01
59	295	0.49	147	800	21	779	408.16	779	0.02
60	300	0.54	162	942	21	920	408.18	920	0.02
61	305	0.79	237	1,157	21	1,136	408.23	1,136	0.03
62	310	1.04	311	1,447	21	1,425	408.28	1,425	0.03
63	315	1.19	356	1,781	21	1,760	408.35	1,760	0.04
64	320	1.33	400	2,160	21	2,139	408.43	2,139	0.05
65	325	1.58	474	2,613	21	2,592	408.52	2,592	0.06
66	330	2.03	608	3,200	21	3,179	408.63	3,179	0.07
67	335	0.19	58	3,237	21	3,216	408.64	3,216	0.07
68	340	0.04	13	3,229	21	3,208	408.64	3,208	0.07
69	345	0.03	9	3,217	21	3,196	408.64	3,196	0.07
70	350	0.02	7	3,203	21	3,182	408.63	3,182	0.07
71	355	0.01	4	3,186	21	3,165	408.63	3,165	0.07
72	360	0.01	3	3,168	21	3,147	408.63	3,147	0.07

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	BALANCE IN BASIN (acre-ft)
1	15	0.01	5	5	64	-	408.00	-	0.00
2	30	0.01	7	7	64	-	408.00	-	0.00
3	45	0.01	7	7	64	-	408.00	-	0.00
4	60	0.01	10	10	64	-	408.00	-	0.00
5	75	0.01	7	7	64	-	408.00	-	0.00
6	90	0.01	7	7	64	-	408.00	-	0.00
7	105	0.01	7	7	64	-	408.00	-	0.00
8	120	0.01	10	10	64	-	408.00	-	0.00
9	135	0.01	10	10	64	-	408.00	-	0.00
10	150	0.01	10	10	64	-	408.00	-	0.00
11	165	0.01	12	12	64	-	408.00	-	0.00
12	180	0.01	12	12	64	-	408.00	-	0.00
13	195	0.01	12	12	64	-	408.00	-	0.00
14	210	0.01	12	12	64	-	408.00	-	0.00
15	225	0.01	12	12	64	-	408.00	-	0.00
16	240	0.02	14	14	64	-	408.00	-	0.00
17	255	0.02	14	14	64	-	408.00	-	0.00
18	270	0.02	17	17	64	-	408.00	-	0.00
19	285	0.02	17	17	64	-	408.00	-	0.00
20	300	0.02	19	19	64	-	408.00	-	0.00
21	315	0.02	14	14	64	-	408.00	-	0.00
22	330	0.02	17	17	64	-	408.00	-	0.00
23	345	0.02	19	19	64	-	408.00	-	0.00
24	360	0.02	19	19	64	-	408.00	-	0.00
25	375	0.02	22	22	64	-	408.00	-	0.00
26	390	0.02	22	22	64	-	408.00	-	0.00
27	405	0.03	24	24	64	-	408.00	-	0.00
28	420	0.03	24	24	64	-	408.00	-	0.00
29	435	0.03	24	24	64	-	408.00	-	0.00
30	450	0.03	26	26	64	-	408.00	-	0.00
31	465	0.03	29	29	64	-	408.00	-	0.00
32	480	0.03	31	31	64	-	408.00	-	0.00
33	495	0.04	36	36	64	-	408.00	-	0.00
34	510	0.04	36	36	64	-	408.00	-	0.00
35	525	0.04	39	39	64	-	408.00	-	0.00
36	540	0.05	41	41	64	-	408.00	-	0.00
37	555	0.05	46	46	64	-	408.00	-	0.00
38	570	0.05	48	48	64	-	408.00	-	0.00
39	585	0.06	51	51	64	-	408.00	-	0.00
40	600	0.06	53	53	64	-	408.00	-	0.00
41	615	0.04	36	36	64	-	408.00	-	0.00
42	630	0.04	36	36	64	-	408.00	-	0.00
43	645	0.05	48	48	64	-	408.00	-	0.00
44	660	0.05	48	48	64	-	408.00	-	0.00
45	675	0.05	46	46	64	-	408.00	-	0.00
46	690	0.05	46	46	64	-	408.00	-	0.00
47	705	0.05	41	41	64	-	408.00	-	0.00
48	720	0.05	43	43	64	-	408.00	-	0.00
49	735	0.07	60	60	64	-	408.00	-	0.00
50	750	0.01	11	11	64	-	408.00	-	0.00
51	765	0.08	68	68	64	5	408.00	5	0.00
52	780	0.11	102	106	64	43	408.01	43	0.00
53	795	0.26	231	274	64	210	408.04	210	0.00
54	810	0.27	240	450	64	386	408.08	386	0.01
55	825	0.06	55	442	64	378	408.08	378	0.01
56	840	0.06	55	433	64	370	408.07	370	0.01
57	855	0.11	97	467	64	403	408.08	403	0.01
58	870	0.09	82	485	64	422	408.08	422	0.01

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN	
								(cuft)	(acre-ft)
59	885	0.10	90	512	64	448	408.09	448	0.01
60	900	0.08	74	522	64	459	408.09	459	0.01
61	915	0.06	58	517	64	453	408.09	453	0.01
62	930	0.05	42	495	64	432	408.09	432	0.01
63	945	0.05	46	477	64	414	408.08	414	0.01
64	960	0.05	46	459	64	396	408.08	396	0.01
65	975	0.01	10	405	64	342	408.07	342	0.01
66	990	0.01	10	351	64	288	408.06	288	0.01
67	1005	0.01	7	295	64	231	408.05	231	0.01
68	1020	0.01	7	238	64	175	408.03	175	0.00
69	1035	0.01	12	187	64	123	408.02	123	0.00
70	1050	0.01	12	135	64	72	408.01	72	0.00
71	1065	0.01	12	84	64	20	408.00	20	0.00
72	1080	0.01	10	30	64	-	408.00	-	0.00
73	1095	0.01	10	10	64	-	408.00	-	0.00
74	1110	0.01	10	10	64	-	408.00	-	0.00
75	1125	0.01	7	7	64	-	408.00	-	0.00
76	1140	0.01	5	5	64	-	408.00	-	0.00
77	1155	0.01	7	7	64	-	408.00	-	0.00
78	1170	0.01	10	10	64	-	408.00	-	0.00
79	1185	0.01	7	7	64	-	408.00	-	0.00
80	1200	0.01	5	5	64	-	408.00	-	0.00
81	1215	0.01	7	7	64	-	408.00	-	0.00
82	1230	0.01	7	7	64	-	408.00	-	0.00
83	1245	0.01	7	7	64	-	408.00	-	0.00
84	1260	0.01	5	5	64	-	408.00	-	0.00
85	1275	0.01	7	7	64	-	408.00	-	0.00
86	1290	0.01	5	5	64	-	408.00	-	0.00
87	1305	0.01	7	7	64	-	408.00	-	0.00
88	1320	0.01	5	5	64	-	408.00	-	0.00
89	1335	0.01	7	7	64	-	408.00	-	0.00
90	1350	0.01	5	5	64	-	408.00	-	0.00
91	1365	0.01	5	5	64	-	408.00	-	0.00
92	1380	0.01	5	5	64	-	408.00	-	0.00
93	1395	0.01	5	5	64	-	408.00	-	0.00
94	1410	0.01	5	5	64	-	408.00	-	0.00
95	1425	0.01	5	5	64	-	408.00	-	0.00
96	1440	0.01	5	5	64	-	408.00	-	0.00

	A	B	C	D
1	RCFC&WCD SHORTCUT UNIT HYDROGRAPH METHOD			
2	DATA INPUT SHEET			
3				
4	WORKSHEET PREPARED BY:	JAMES R. BAZUA, P.E.		
5				
6	PROJECT NAME	ARMTEC DEFENSE TECHNOLOGY - 100 YEAR		
7	JOB #			
8				
9	CONCENTRATION POINT DESIGNATION	1		
10	AREA DESIGNATION	15000 SF BUILDING		
11				
12	TRIBUTARY AREAS	ACRES		
13				
14	COMMERCIAL			
15	PAVING/HARDSCAPE	2.37		
16	SF - 1 ACRE			
17	SF - 1/2 ACRE			
18	SF - 1/4 ACRE			
19	MF - CONDOMINIUMS			
20	MF - APARTMENTS			
21	MOBILE HOME PARK			
22	LANDSCAPING			
23	RETENTION BASIN	0.83		
24	GOLF COURSE			
25	MOUNTAINOUS			
26	LOW LOSS RATE (PERCENT)	90%		
27				
28	LENGTH OF WATERCOURSE (L)	480		
29	LENGTH TO POINT OPPOSITE CENTROID (Lca)	65		
30				
31	ELEVATION OF HEADWATER	412.5		
32	ELEVATION OF CONCENTRATION POINT	411.5		
33				
34	AVERAGE MANNINGS 'N' VALUE	0.02		
35				
36	STORM FREQUENCY (YEAR)	100		
37				
38	POINT RAIN			
39	3-HOUR	2.04		
40	6-HOUR	2.73		
41	24-HOUR	4.28		
42				
43	BASIN CHARACTERISTICS:	ELEVATION	AREA	
44		408	4560	
45		409	5470	
46		410	6430	
47		411	7470	
48		411.5	7980	
49				
50				
51				
52	PERCOLATION RATE (in/hr)	0.67		
53				
54	DRYWELL DATA			
55	NUMBER USED			
56	PERCOLATION RATE (cfs)			

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD				PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR							
BASIC DATA CALCULATION FORM				JOB # 0							
SHORTCUT METHOD				BY ES R. BAZUA, P.E.		DATE 2/2/2025					
PHYSICAL DATA											
[1] CONCENTRATION POINT				1							
[2] AREA DESIGNATION				15000 SF BUILDING							
[3] AREA - ACRES				3.200							
[4] L- FEET				480							
[5] L-MILES				0.091							
[6] La- FEET				65.00							
[7] La-MILES				0.012							
[8] ELEVATION OF HEADWATER				412.5							
[9] ELEVATION OF CONCENTRATION POINT				411.5							
[10] H- FEET				1							
[11] S- FEET/MILE				11.0							
[12] S^0.5				3.32							
[13] L*LCA/S^0.5				0.000							
[14] AVERAGE MANNINGS 'N'				0.02							
[15] LAG TIME-HOURS				0.02							
[16] LAG TIME-MINUTES				1.4							
[17] 100% OF LAG-MINUTES				1.4							
[18] 200% OF LAG-MINUTES				2.8							
[19] UNIT TIME-MINUTES (100%-200% OF LAG)				5							
[24] TOTAL PERCOLATION RATE (cfs)				0.07							
RAINFALL DATA											
[1] SOURCE											
[2] FREQUENCY-YEARS 100											
[3] DURATION:											
3-HOURS				6-HOURS				24-HOURS			
[4] POINT RAIN INCHES (Plate E-5.2)	[5] AREA	[6]	[7] AVERAGE POINT RAIN INCHES	[8] POINT RAIN INCHES (Plate E-5.4)	[9] AREA	[10]	[11] AVERAGE POINT RAIN INCHES	[12] POINT RAIN INCHES (Plate E-5.6)	[13] AREA	[14]	[15] AVERAGE POINT RAIN INCHES
2.04	3.200	1.00	2.04	2.73	3.200	1.00	2.73	4.28	3.200	1.00	4.28
		0.00	0.00			0.00	0.00			0.00	0.00
		0.00	0.00			0.00	0.00			0.00	0.00
		0.00	0.00			0.00	0.00			0.00	0.00
SUM [5]	3.2	SUM [7]	2.04	SUM [9]	3.20	SUM [11]	2.73	SUM [13]	3.20	SUM [15]	4.28
[16] AREA ADJ FACTOR			1.000				1.000				1.000
[17] ADJ AVG POINT RAIN			2.04				2.73				4.28

STORM EVENT SUMMARY			
DURATION	3-HOUR	6-HOUR	24-HOUR
EFFECTIVE RAIN (in)	1.52	1.71	1.81
FLOOD VOLUME (cu-ft)	17,694	19,871	21,042
(acre-ft)	0.41	0.46	0.48
REQUIRED STORAGE (cu-ft)	16,791	18,216	17,364
(acre-ft)	0.39	0.42	0.40
PEAK FLOW (cfs)	5.87	5.32	1.38
MAXIMUM WSEL (ft)	410.84	411.04	410.92

RCFC D SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 3 HOUR STORM EVENT					PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR CONCENTRATION POINT: 1				
BY: IES R. BAZUA, DATE 2/2/2025									
EFFECTIVE RAIN CALCULATION FORM									
DRAINAGE AREA-ACRES 3.20 UNIT TIME-MINUTES 5 LAG TIME - MINUTES 1.38 UNIT TIME-PERCENT OF LAG 362.1 TOTAL ADJUSTED STORM RAIN-INCHES 2.04 CONSTANT LOSS RATE-in/hr 0.17 LOW LOSS RATE - PERCENT 90%				TOTAL PERCOLATION RATE (cfs) 0.07 cfs					
Unit Time Period	Time Minutes Hours		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate in/hr Max Low		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
1	5	0.08	1.3	0.318	0.17	0.29	0.14	0.46	117.84
2	10	0.17	1.3	0.318	0.17	0.29	0.14	0.46	117.84
3	15	0.25	1.1	0.269	0.17	0.24	0.10	0.31	70.84
4	20	0.33	1.5	0.367	0.17	0.33	0.19	0.62	164.84
5	25	0.42	1.5	0.367	0.17	0.33	0.19	0.62	164.84
6	30	0.50	1.8	0.441	0.17	0.40	0.27	0.86	235.35
7	35	0.58	1.5	0.367	0.17	0.33	0.19	0.62	164.84
8	40	0.67	1.8	0.441	0.17	0.40	0.27	0.86	235.35
9	45	0.75	1.8	0.441	0.17	0.40	0.27	0.86	235.35
10	50	0.83	1.5	0.367	0.17	0.33	0.19	0.62	164.84
11	55	0.92	1.6	0.392	0.17	0.35	0.22	0.70	188.34
12	60	1.00	1.8	0.441	0.17	0.40	0.27	0.86	235.35
13	65	1.08	2.2	0.539	0.17	0.48	0.37	1.17	329.35
14	70	1.17	2.2	0.539	0.17	0.48	0.37	1.17	329.35
15	75	1.25	2.2	0.539	0.17	0.48	0.37	1.17	329.35
16	80	1.33	2.0	0.490	0.17	0.44	0.32	1.01	282.35
17	85	1.42	2.6	0.636	0.17	0.57	0.46	1.48	423.35
18	90	1.50	2.7	0.661	0.17	0.59	0.49	1.56	446.85
19	95	1.58	2.4	0.588	0.17	0.53	0.41	1.33	376.35
20	100	1.67	2.7	0.661	0.17	0.59	0.49	1.56	446.85
21	105	1.75	3.3	0.808	0.17	0.73	0.63	2.03	587.86
22	110	1.83	3.1	0.759	0.17	0.68	0.59	1.87	540.86
23	115	1.92	2.9	0.710	0.17	0.64	0.54	1.72	493.85
24	120	2.00	3.0	0.734	0.17	0.66	0.56	1.80	517.36
25	125	2.08	3.1	0.759	0.17	0.68	0.59	1.87	540.86
26	130	2.17	4.2	1.028	0.17	0.93	0.85	2.74	799.36
27	135	2.25	5.0	1.224	0.17	1.10	1.05	3.36	987.37
28	140	2.33	3.5	0.857	0.17	0.77	0.68	2.19	634.86
29	145	2.42	6.8	1.665	0.17	1.50	1.49	4.77	1410.39
30	150	2.50	7.3	1.787	0.17	1.61	1.61	5.16	1527.89
31	155	2.58	8.2	2.007	0.17	1.81	1.83	5.87	1739.40
32	160	2.67	5.9	1.444	0.17	1.30	1.27	4.07	1198.88
33	165	2.75	2.0	0.490	0.17	0.44	0.32	1.01	282.35
34	170	2.83	1.8	0.441	0.17	0.40	0.27	0.86	235.35
35	175	2.92	1.8	0.441	0.17	0.40	0.27	0.86	235.35
36	180	3.00	0.6	0.147	0.17	0.13	0.01	0.05	0.00

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	1.52
FLOOD VOLUME (acft)	0.41
FLOOD VOLUME (cuft)	17694.38
REQUIRED STORAGE (acft)	0.39
REQUIRED STORAGE (cuft)	16791.39
PEAK FLOW RATE (cfs)	5.87

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT:	ARMTEC DEFENSE TECHNOLOGY - 100 YEAR
	CONCENTRATION POINT:	1
	BY: JAMES R. BAZ DATE:	2/2/2025

EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	3.20	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.38	
UNIT TIME-PERCENT OF LAG	362.1	
TOTAL ADJUSTED STORM RAIN-INCHES	2.73	
CONSTANT LOSS RATE-in/hr	0.173	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.07 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			Max	Low			
1	5	0.08	0.5	0.164	0.17	0.15	0.02	0.05	0.00
2	10	0.17	0.6	0.197	0.17	0.18	0.02	0.07	1.03
3	15	0.25	0.6	0.197	0.17	0.18	0.02	0.07	1.03
4	20	0.33	0.6	0.197	0.17	0.18	0.02	0.07	1.03
5	25	0.42	0.6	0.197	0.17	0.18	0.02	0.07	1.03
6	30	0.50	0.7	0.229	0.17	0.21	0.06	0.18	32.48
7	35	0.58	0.7	0.229	0.17	0.21	0.06	0.18	32.48
8	40	0.67	0.7	0.229	0.17	0.21	0.06	0.18	32.48
9	45	0.75	0.7	0.229	0.17	0.21	0.06	0.18	32.48
10	50	0.83	0.7	0.229	0.17	0.21	0.06	0.18	32.48
11	55	0.92	0.7	0.229	0.17	0.21	0.06	0.18	32.48
12	60	1.00	0.8	0.262	0.17	0.24	0.09	0.28	63.93
13	65	1.08	0.8	0.262	0.17	0.24	0.09	0.28	63.93
14	70	1.17	0.8	0.262	0.17	0.24	0.09	0.28	63.93
15	75	1.25	0.8	0.262	0.17	0.24	0.09	0.28	63.93
16	80	1.33	0.8	0.262	0.17	0.24	0.09	0.28	63.93
17	85	1.42	0.8	0.262	0.17	0.24	0.09	0.28	63.93
18	90	1.50	0.8	0.262	0.17	0.24	0.09	0.28	63.93
19	95	1.58	0.8	0.262	0.17	0.24	0.09	0.28	63.93
20	100	1.67	0.8	0.262	0.17	0.24	0.09	0.28	63.93
21	105	1.75	0.8	0.262	0.17	0.24	0.09	0.28	63.93
22	110	1.83	0.8	0.262	0.17	0.24	0.09	0.28	63.93
23	115	1.92	0.8	0.262	0.17	0.24	0.09	0.28	63.93
24	120	2.00	0.9	0.295	0.17	0.27	0.12	0.39	95.38
25	125	2.08	0.8	0.262	0.17	0.24	0.09	0.28	63.93
26	130	2.17	0.9	0.295	0.17	0.27	0.12	0.39	95.38
27	135	2.25	0.9	0.295	0.17	0.27	0.12	0.39	95.38
28	140	2.33	0.9	0.295	0.17	0.27	0.12	0.39	95.38
29	145	2.42	0.9	0.295	0.17	0.27	0.12	0.39	95.38
30	150	2.50	0.9	0.295	0.17	0.27	0.12	0.39	95.38
31	155	2.58	0.9	0.295	0.17	0.27	0.12	0.39	95.38
32	160	2.67	0.9	0.295	0.17	0.27	0.12	0.39	95.38
33	165	2.75	1.0	0.328	0.17	0.29	0.15	0.49	126.83
34	170	2.83	1.0	0.328	0.17	0.29	0.15	0.49	126.83
35	175	2.92	1.0	0.328	0.17	0.29	0.15	0.49	126.83
36	180	3.00	1.0	0.328	0.17	0.29	0.15	0.49	126.83
37	185	3.08	1.0	0.328	0.17	0.29	0.15	0.49	126.83
38	190	3.17	1.1	0.360	0.17	0.32	0.19	0.60	158.28
39	195	3.25	1.1	0.360	0.17	0.32	0.19	0.60	158.28
40	200	3.33	1.1	0.360	0.17	0.32	0.19	0.60	158.28
41	205	3.42	1.2	0.393	0.17	0.35	0.22	0.70	189.73
42	210	3.50	1.3	0.426	0.17	0.38	0.25	0.81	221.18
43	215	3.58	1.4	0.459	0.17	0.41	0.29	0.91	252.63
44	220	3.67	1.4	0.459	0.17	0.41	0.29	0.91	252.63
45	225	3.75	1.5	0.491	0.17	0.44	0.32	1.02	284.08
46	230	3.83	1.5	0.491	0.17	0.44	0.32	1.02	284.08
47	235	3.92	1.6	0.524	0.17	0.47	0.35	1.12	315.52
48	240	4.00	1.6	0.524	0.17	0.47	0.35	1.12	315.52
49	245	4.08	1.7	0.557	0.17	0.50	0.38	1.23	346.97
50	250	4.17	1.8	0.590	0.17	0.53	0.42	1.33	378.42
51	255	4.25	1.9	0.622	0.17	0.56	0.45	1.44	409.87
52	260	4.33	2.0	0.655	0.17	0.59	0.48	1.54	441.32
53	265	4.42	2.1	0.688	0.17	0.62	0.51	1.65	472.77
54	270	4.50	2.1	0.688	0.17	0.62	0.51	1.65	472.77
55	275	4.58	2.2	0.721	0.17	0.65	0.55	1.75	504.22
56	280	4.67	2.3	0.753	0.17	0.68	0.58	1.86	535.67

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR CONCENTRATION POINT: 1
	BY: JAMES R. BAZ DATE: 2/2/2025

EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	3.20	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.38	
UNIT TIME-PERCENT OF LAG	362.1	
TOTAL ADJUSTED STORM RAIN-INCHES	2.73	
CONSTANT LOSS RATE-in/hr	0.173	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.07 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr				
					Max	Low			
57	285	4.75	2.4	0.786	0.17	0.71	0.61	1.96	567.12
58	290	4.83	2.4	0.786	0.17	0.71	0.61	1.96	567.12
59	295	4.92	2.5	0.819	0.17	0.74	0.65	2.07	598.57
60	300	5.00	2.6	0.852	0.17	0.77	0.68	2.17	630.02
61	305	5.08	3.1	1.016	0.17	0.91	0.84	2.69	787.27
62	310	5.17	3.6	1.179	0.17	1.06	1.01	3.22	944.52
63	315	5.25	3.9	1.278	0.17	1.15	1.10	3.53	1038.87
64	320	5.33	4.2	1.376	0.17	1.24	1.20	3.85	1133.21
65	325	5.42	4.7	1.540	0.17	1.39	1.37	4.37	1290.46
66	330	5.50	5.6	1.835	0.17	1.65	1.66	5.32	1573.51
67	335	5.58	1.9	0.622	0.17	0.56	0.45	1.44	409.87
68	340	5.67	0.9	0.295	0.17	0.27	0.12	0.39	95.38
69	345	5.75	0.6	0.197	0.17	0.18	0.02	0.07	1.03
70	350	5.83	0.5	0.164	0.17	0.15	0.02	0.05	0.00
71	355	5.92	0.3	0.098	0.17	0.09	0.01	0.03	0.00
72	360	6.00	0.2	0.066	0.17	0.06	0.01	0.02	0.00

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	1.71
FLOOD VOLUME (acft)	0.46
FLOOD VOLUME (cuft)	19870.59
REQUIRED STORAGE (acft)	0.42
REQUIRED STORAGE (cuft)	18216.39
PEAK FLOW RATE (cfs)	5.32

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR
	CONCENTRATION POINT: 1
BY: JAMES R. BAZ	DATE: 2/2/2025

EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES			3.200	CONSTANT LOSS RATE-in/hr		n/a			
UNIT TIME-MINUTES			15	VARIABLE LOSS RATE (AVG) in/hr		0.1734			
LAG TIME - MINUTES			1.38	MINIMUM LOSS RATE (for var. loss) - in/hr		0.087			
UNIT TIME-PERCENT OF LAG			1086.4	LOW LOSS RATE - DECIMAL		0.90			
TOTAL ADJUSTED STORM RAIN-INCHES			4.28	C		0.00161			
				PERCOLATION RATE (cfs)		0.07			
Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			Max	Low			
1	15	0.25	0.2	0.034	0.306	0.031	0.003	0.01	0.00
2	30	0.50	0.3	0.051	0.303	0.046	0.005	0.02	0.00
3	45	0.75	0.3	0.051	0.299	0.046	0.005	0.02	0.00
4	60	1.00	0.4	0.068	0.296	0.062	0.007	0.02	0.00
5	75	1.25	0.3	0.051	0.292	0.046	0.005	0.02	0.00
6	90	1.50	0.3	0.051	0.289	0.046	0.005	0.02	0.00
7	105	1.75	0.3	0.051	0.285	0.046	0.005	0.02	0.00
8	120	2.00	0.4	0.068	0.282	0.062	0.007	0.02	0.00
9	135	2.25	0.4	0.068	0.278	0.062	0.007	0.02	0.00
10	150	2.50	0.4	0.068	0.275	0.062	0.007	0.02	0.00
11	165	2.75	0.5	0.086	0.272	0.077	0.009	0.03	0.00
12	180	3.00	0.5	0.086	0.268	0.077	0.009	0.03	0.00
13	195	3.25	0.5	0.086	0.265	0.077	0.009	0.03	0.00
14	210	3.50	0.5	0.086	0.262	0.077	0.009	0.03	0.00
15	225	3.75	0.5	0.086	0.258	0.077	0.009	0.03	0.00
16	240	4.00	0.6	0.103	0.255	0.092	0.010	0.03	0.00
17	255	4.25	0.6	0.103	0.252	0.092	0.010	0.03	0.00
18	270	4.50	0.7	0.120	0.249	0.108	0.012	0.04	0.00
19	285	4.75	0.7	0.120	0.245	0.108	0.012	0.04	0.00
20	300	5.00	0.8	0.137	0.242	0.123	0.014	0.04	0.00
21	315	5.25	0.6	0.103	0.239	0.092	0.010	0.03	0.00
22	330	5.50	0.7	0.120	0.236	0.108	0.012	0.04	0.00
23	345	5.75	0.8	0.137	0.233	0.123	0.014	0.04	0.00
24	360	6.00	0.8	0.137	0.230	0.123	0.014	0.04	0.00
25	375	6.25	0.9	0.154	0.227	0.139	0.015	0.05	0.00
26	390	6.50	0.9	0.154	0.224	0.139	0.015	0.05	0.00
27	405	6.75	1.0	0.171	0.221	0.154	0.017	0.05	0.00
28	420	7.00	1.0	0.171	0.218	0.154	0.017	0.05	0.00
29	435	7.25	1.0	0.171	0.215	0.154	0.017	0.05	0.00
30	450	7.50	1.1	0.188	0.212	0.169	0.019	0.06	0.00
31	465	7.75	1.2	0.205	0.209	0.185	0.021	0.07	0.00
32	480	8.00	1.3	0.223	0.206	0.200	0.016	0.05	0.00
33	495	8.25	1.5	0.257	0.203	0.231	0.054	0.17	90.45
34	510	8.50	1.5	0.257	0.200	0.231	0.056	0.18	98.61
35	525	8.75	1.6	0.274	0.198	0.247	0.076	0.24	156.00
36	540	9.00	1.7	0.291	0.195	0.262	0.096	0.31	213.33
37	555	9.25	1.9	0.325	0.192	0.293	0.133	0.43	319.88
38	570	9.50	2.0	0.342	0.189	0.308	0.153	0.49	377.06
39	585	9.75	2.1	0.360	0.187	0.324	0.173	0.55	434.17
40	600	10.00	2.2	0.377	0.184	0.339	0.193	0.62	491.19
41	615	10.25	1.5	0.257	0.181	0.231	0.075	0.24	153.71
42	630	10.50	1.5	0.257	0.179	0.231	0.078	0.25	161.28
43	645	10.75	2.0	0.342	0.176	0.308	0.166	0.53	415.30
44	660	11.00	2.0	0.342	0.174	0.308	0.169	0.54	422.73
45	675	11.25	1.9	0.325	0.171	0.293	0.154	0.49	380.76
46	690	11.50	1.9	0.325	0.168	0.293	0.157	0.50	388.03
47	705	11.75	1.7	0.291	0.166	0.262	0.125	0.40	296.61
48	720	12.00	1.8	0.308	0.163	0.277	0.145	0.46	353.02
49	735	12.25	2.5	0.428	0.161	0.385	0.267	0.85	705.19
50	750	12.50	2.6	0.445	0.159	0.401	0.286	0.92	761.44
51	765	12.75	2.8	0.479	0.156	0.431	0.323	1.03	866.91
52	780	13.00	2.9	0.496	0.154	0.447	0.343	1.10	923.00
53	795	13.25	3.4	0.582	0.152	0.524	0.431	1.38	1176.23
54	810	13.50	3.4	0.582	0.149	0.524	0.433	1.38	1182.85
55	825	13.75	2.3	0.394	0.147	0.354	0.247	0.79	647.01
56	840	14.00	2.3	0.394	0.145	0.354	0.249	0.80	653.46
57	855	14.25	2.7	0.462	0.143	0.416	0.320	1.02	857.04
58	870	14.50	2.6	0.445	0.140	0.401	0.305	0.98	814.00
59	885	14.75	2.6	0.445	0.138	0.401	0.307	0.98	820.18
60	900	15.00	2.5	0.428	0.136	0.385	0.292	0.93	776.97
61	915	15.25	2.4	0.411	0.134	0.370	0.277	0.89	733.66
62	930	15.50	2.3	0.394	0.132	0.354	0.262	0.84	690.26
63	945	15.75	1.9	0.325	0.130	0.293	0.195	0.63	498.85
64	960	16.00	1.9	0.325	0.128	0.293	0.197	0.63	504.57
65	975	16.25	0.4	0.068	0.126	0.062	0.007	0.02	0.00
66	990	16.50	0.4	0.068	0.124	0.062	0.007	0.02	0.00
67	1005	16.75	0.3	0.051	0.122	0.046	0.005	0.02	0.00

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR CONCENTRATION POINT: 1 BY: JAMES R. BAZ DATE: 2/2/2025
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EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES			3.200	CONSTANT LOSS RATE-in/hr		n/a			
UNIT TIME-MINUTES			15	VARIABLE LOSS RATE (AVG) in/hr		0.1734			
LAG TIME - MINUTES			1.38	MINIMUM LOSS RATE (for var. loss) - in/hr		0.087			
UNIT TIME-PERCENT OF LAG			1086.4	LOW LOSS RATE - DECIMAL		0.90			
TOTAL ADJUSTED STORM RAIN-INCHES			4.28	C		0.00161			
				PERCOLATION RATE (cfs)		0.07			
Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr	Low			
68	1020	17.00	0.3	0.051	0.120	0.046	0.005	0.02	0.00
69	1035	17.25	0.5	0.086	0.119	0.077	0.009	0.03	0.00
70	1050	17.50	0.5	0.086	0.117	0.077	0.009	0.03	0.00
71	1065	17.75	0.5	0.086	0.115	0.077	0.009	0.03	0.00
72	1080	18.00	0.4	0.068	0.113	0.062	0.007	0.02	0.00
73	1095	18.25	0.4	0.068	0.112	0.062	0.007	0.02	0.00
74	1110	18.50	0.4	0.068	0.110	0.062	0.007	0.02	0.00
75	1125	18.75	0.3	0.051	0.108	0.046	0.005	0.02	0.00
76	1140	19.00	0.2	0.034	0.107	0.031	0.003	0.01	0.00
77	1155	19.25	0.3	0.051	0.105	0.046	0.005	0.02	0.00
78	1170	19.50	0.4	0.068	0.104	0.062	0.007	0.02	0.00
79	1185	19.75	0.3	0.051	0.103	0.046	0.005	0.02	0.00
80	1200	20.00	0.2	0.034	0.101	0.031	0.003	0.01	0.00
81	1215	20.25	0.3	0.051	0.100	0.046	0.005	0.02	0.00
82	1230	20.50	0.3	0.051	0.099	0.046	0.005	0.02	0.00
83	1245	20.75	0.3	0.051	0.097	0.046	0.005	0.02	0.00
84	1260	21.00	0.2	0.034	0.096	0.031	0.003	0.01	0.00
85	1275	21.25	0.3	0.051	0.095	0.046	0.005	0.02	0.00
86	1290	21.50	0.2	0.034	0.094	0.031	0.003	0.01	0.00
87	1305	21.75	0.3	0.051	0.093	0.046	0.005	0.02	0.00
88	1320	22.00	0.2	0.034	0.092	0.031	0.003	0.01	0.00
89	1335	22.25	0.3	0.051	0.091	0.046	0.005	0.02	0.00
90	1350	22.50	0.2	0.034	0.090	0.031	0.003	0.01	0.00
91	1365	22.75	0.2	0.034	0.089	0.031	0.003	0.01	0.00
92	1380	23.00	0.2	0.034	0.089	0.031	0.003	0.01	0.00
93	1395	23.25	0.2	0.034	0.088	0.031	0.003	0.01	0.00
94	1410	23.50	0.2	0.034	0.087	0.031	0.003	0.01	0.00
95	1425	23.75	0.2	0.034	0.087	0.031	0.003	0.01	0.00
96	1440	24.00	0.2	0.034	0.087	0.031	0.003	0.01	0.00

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	1.81
FLOOD VOLUME (acft)	0.48
FLOOD VOLUME (cuft)	21041.77
REQUIRED STORAGE (acft)	0.40
REQUIRED STORAGE (cuft)	17363.74
PEAK FLOW (cfs)	1.38

PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR
 JOB # 0
 1

BASIN CHARACTERISTICS

CONTOUR	DEPTH		AREA		VOLUME		
	INCR (ft)	TOTAL (ft)	INCR (sf)	TOTAL (sf)	INCR (cuft)	TOTAL (cuft)	TOTAL (acre-ft)
408	0	0		4560	0	0	0.00
409	1	1	910	5470	5015	5015	0.12
410	1	2	960	6430	5950	10965	0.25
411	1	3	1040	7470	6950	17915	0.41
411.5	0.5	3.5	510	7980	3863	21778	0.50

PERCOLATION CALCULATIONS

PERCOLATION RATE 0.67 in/hr 0.07 cfs

MAXWELL IV DRYWELLS

NUMBER USED 0
 RATE/DRYWELL 0 cfs
 TOTAL DISSIPATED 0 cfs

TOTAL PERCOLATION RATE 0.07 cfs

1
 JOB # 0
 100 YEAR - 3 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
1	5	0.46	139	139	21	118	408.02	118	0.00
2	10	0.46	139	257	21	236	408.05	236	0.01
3	15	0.31	92	328	21	307	408.06	307	0.01
4	20	0.62	186	493	21	471	408.09	471	0.01
5	25	0.62	186	657	21	636	408.13	636	0.01
6	30	0.86	257	893	21	872	408.17	872	0.02
7	35	0.62	186	1,058	21	1,036	408.21	1,036	0.02
8	40	0.86	257	1,293	21	1,272	408.25	1,272	0.03
9	45	0.86	257	1,528	21	1,507	408.30	1,507	0.03
10	50	0.62	186	1,693	21	1,672	408.33	1,672	0.04
11	55	0.70	210	1,881	21	1,860	408.37	1,860	0.04
12	60	0.86	257	2,117	21	2,096	408.42	2,096	0.05
13	65	1.17	351	2,446	21	2,425	408.48	2,425	0.06
14	70	1.17	351	2,776	21	2,754	408.55	2,754	0.06
15	75	1.17	351	3,105	21	3,084	408.61	3,084	0.07
16	80	1.01	304	3,387	21	3,366	408.67	3,366	0.08
17	85	1.48	445	3,811	21	3,789	408.76	3,789	0.09
18	90	1.56	468	4,257	21	4,236	408.84	4,236	0.10
19	95	1.33	398	4,634	21	4,613	408.92	4,613	0.11
20	100	1.56	468	5,081	21	5,059	409.01	5,059	0.12
21	105	2.03	609	5,669	21	5,647	409.11	5,647	0.13
22	110	1.87	562	6,209	21	6,188	409.20	6,188	0.14
23	115	1.72	515	6,703	21	6,682	409.28	6,682	0.15
24	120	1.80	539	7,221	21	7,199	409.37	7,199	0.17
25	125	1.87	562	7,761	21	7,740	409.46	7,740	0.18
26	130	2.74	821	8,561	21	8,540	409.59	8,540	0.20
27	135	3.36	1,009	9,548	21	9,527	409.76	9,527	0.22
28	140	2.19	656	10,183	21	10,162	409.87	10,162	0.23
29	145	4.77	1,432	11,593	21	11,572	410.09	11,572	0.27
30	150	5.16	1,549	13,121	21	13,100	410.31	13,100	0.30
31	155	5.87	1,761	14,861	21	14,839	410.56	14,839	0.34
32	160	4.07	1,220	16,060	21	16,038	410.73	16,038	0.37
33	165	1.01	304	16,342	21	16,321	410.77	16,321	0.37
34	170	0.86	257	16,577	21	16,556	410.80	16,556	0.38
35	175	0.86	257	16,813	21	16,791	410.84	16,791	0.39
36	180	0.05	14	16,805	21	16,784	410.84	16,784	0.39

1
JOB # 0
100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
1	5	0.05	16	16	21	-	408.00	-	0.00
2	10	0.07	22	22	21	1	408.00	1	0.00
3	15	0.07	22	23	21	2	408.00	2	0.00
4	20	0.07	22	24	21	3	408.00	3	0.00
5	25	0.07	22	25	21	4	408.00	4	0.00
6	30	0.18	54	58	21	37	408.01	37	0.00
7	35	0.18	54	90	21	69	408.01	69	0.00
8	40	0.18	54	123	21	102	408.02	102	0.00
9	45	0.18	54	155	21	134	408.03	134	0.00
10	50	0.18	54	188	21	167	408.03	167	0.00
11	55	0.18	54	220	21	199	408.04	199	0.00
12	60	0.28	85	284	21	263	408.05	263	0.01
13	65	0.28	85	348	21	327	408.07	327	0.01
14	70	0.28	85	412	21	391	408.08	391	0.01
15	75	0.28	85	476	21	455	408.09	455	0.01
16	80	0.28	85	540	21	519	408.10	519	0.01
17	85	0.28	85	604	21	583	408.12	583	0.01
18	90	0.28	85	668	21	646	408.13	646	0.01
19	95	0.28	85	732	21	710	408.14	710	0.02
20	100	0.28	85	796	21	774	408.15	774	0.02
21	105	0.28	85	859	21	838	408.17	838	0.02
22	110	0.28	85	923	21	902	408.18	902	0.02
23	115	0.28	85	987	21	966	408.19	966	0.02
24	120	0.39	117	1,083	21	1,062	408.21	1,062	0.02
25	125	0.28	85	1,147	21	1,125	408.22	1,125	0.03
26	130	0.39	117	1,242	21	1,221	408.24	1,221	0.03
27	135	0.39	117	1,337	21	1,316	408.26	1,316	0.03
28	140	0.39	117	1,433	21	1,412	408.28	1,412	0.03
29	145	0.39	117	1,528	21	1,507	408.30	1,507	0.03
30	150	0.39	117	1,624	21	1,602	408.32	1,602	0.04
31	155	0.39	117	1,719	21	1,698	408.34	1,698	0.04
32	160	0.39	117	1,814	21	1,793	408.36	1,793	0.04
33	165	0.49	148	1,941	21	1,920	408.38	1,920	0.04
34	170	0.49	148	2,068	21	2,047	408.41	2,047	0.05
35	175	0.49	148	2,195	21	2,174	408.43	2,174	0.05
36	180	0.49	148	2,322	21	2,300	408.46	2,300	0.05
37	185	0.49	148	2,448	21	2,427	408.48	2,427	0.06
38	190	0.60	179	2,607	21	2,585	408.52	2,585	0.06
39	195	0.60	179	2,765	21	2,744	408.55	2,744	0.06
40	200	0.60	179	2,923	21	2,902	408.58	2,902	0.07
41	205	0.70	211	3,113	21	3,092	408.62	3,092	0.07
42	210	0.81	242	3,334	21	3,313	408.66	3,313	0.08
43	215	0.91	274	3,587	21	3,566	408.71	3,566	0.08
44	220	0.91	274	3,839	21	3,818	408.76	3,818	0.09
45	225	1.02	305	4,123	21	4,102	408.82	4,102	0.09
46	230	1.02	305	4,408	21	4,386	408.87	4,386	0.10
47	235	1.12	337	4,723	21	4,702	408.94	4,702	0.11
48	240	1.12	337	5,039	21	5,017	409.00	5,017	0.12
49	245	1.23	368	5,386	21	5,364	409.06	5,364	0.12
50	250	1.33	400	5,764	21	5,743	409.12	5,743	0.13
51	255	1.44	431	6,174	21	6,153	409.19	6,153	0.14
52	260	1.54	463	6,615	21	6,594	409.27	6,594	0.15
53	265	1.65	494	7,088	21	7,067	409.34	7,067	0.16
54	270	1.65	494	7,561	21	7,540	409.42	7,540	0.17
55	275	1.75	525	8,065	21	8,044	409.51	8,044	0.18

1
 JOB # 0
 100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN	
								(cuft)	(acre-ft)
56	280	1.86	557	8,601	21	8,579	409.60	8,579	0.20
57	285	1.96	588	9,168	21	9,147	409.69	9,147	0.21
58	290	1.96	588	9,735	21	9,714	409.79	9,714	0.22
59	295	2.07	620	10,333	21	10,312	409.89	10,312	0.24
60	300	2.17	651	10,963	21	10,942	410.00	10,942	0.25
61	305	2.69	808	11,751	21	11,730	410.11	11,730	0.27
62	310	3.22	966	12,695	21	12,674	410.25	12,674	0.29
63	315	3.53	1,060	13,734	21	13,713	410.40	13,713	0.31
64	320	3.85	1,154	14,867	21	14,846	410.56	14,846	0.34
65	325	4.37	1,312	16,158	21	16,137	410.74	16,137	0.37
66	330	5.32	1,595	17,731	21	17,710	410.97	17,710	0.41
67	335	1.44	431	18,141	21	18,120	411.03	18,120	0.42
68	340	0.39	117	18,237	21	18,215	411.04	18,215	0.42
69	345	0.07	22	18,238	21	18,216	411.04	18,216	0.42
70	350	0.05	16	18,232	21	18,211	411.04	18,211	0.42
71	355	0.03	9	18,220	21	18,199	411.04	18,199	0.42
72	360	0.02	6	18,205	21	18,184	411.03	18,184	0.42

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	BALANCE IN BASIN (acre-ft)
1	15	0.01	10	10	64	-	408.00	-	0.00
2	30	0.02	15	15	64	-	408.00	-	0.00
3	45	0.02	15	15	64	-	408.00	-	0.00
4	60	0.02	20	20	64	-	408.00	-	0.00
5	75	0.02	15	15	64	-	408.00	-	0.00
6	90	0.02	15	15	64	-	408.00	-	0.00
7	105	0.02	15	15	64	-	408.00	-	0.00
8	120	0.02	20	20	64	-	408.00	-	0.00
9	135	0.02	20	20	64	-	408.00	-	0.00
10	150	0.02	20	20	64	-	408.00	-	0.00
11	165	0.03	25	25	64	-	408.00	-	0.00
12	180	0.03	25	25	64	-	408.00	-	0.00
13	195	0.03	25	25	64	-	408.00	-	0.00
14	210	0.03	25	25	64	-	408.00	-	0.00
15	225	0.03	25	25	64	-	408.00	-	0.00
16	240	0.03	30	30	64	-	408.00	-	0.00
17	255	0.03	30	30	64	-	408.00	-	0.00
18	270	0.04	35	35	64	-	408.00	-	0.00
19	285	0.04	35	35	64	-	408.00	-	0.00
20	300	0.04	39	39	64	-	408.00	-	0.00
21	315	0.03	30	30	64	-	408.00	-	0.00
22	330	0.04	35	35	64	-	408.00	-	0.00
23	345	0.04	39	39	64	-	408.00	-	0.00
24	360	0.04	39	39	64	-	408.00	-	0.00
25	375	0.05	44	44	64	-	408.00	-	0.00
26	390	0.05	44	44	64	-	408.00	-	0.00
27	405	0.05	49	49	64	-	408.00	-	0.00
28	420	0.05	49	49	64	-	408.00	-	0.00
29	435	0.05	49	49	64	-	408.00	-	0.00
30	450	0.06	54	54	64	-	408.00	-	0.00
31	465	0.07	59	59	64	-	408.00	-	0.00
32	480	0.05	47	47	64	-	408.00	-	0.00
33	495	0.17	154	154	64	90	408.02	90	0.00
34	510	0.18	162	253	64	189	408.04	189	0.00
35	525	0.24	220	409	64	345	408.07	345	0.01
36	540	0.31	277	622	64	558	408.11	558	0.01
37	555	0.43	384	942	64	878	408.18	878	0.02
38	570	0.49	441	1,319	64	1,255	408.25	1,255	0.03
39	585	0.55	498	1,753	64	1,689	408.34	1,689	0.04
40	600	0.62	555	2,244	64	2,181	408.43	2,181	0.05
41	615	0.24	217	2,398	64	2,334	408.47	2,334	0.05
42	630	0.25	225	2,559	64	2,496	408.50	2,496	0.06
43	645	0.53	479	2,975	64	2,911	408.58	2,911	0.07
44	660	0.54	486	3,397	64	3,334	408.66	3,334	0.08
45	675	0.49	444	3,778	64	3,714	408.74	3,714	0.09
46	690	0.50	452	4,166	64	4,102	408.82	4,102	0.09
47	705	0.40	360	4,463	64	4,399	408.88	4,399	0.10
48	720	0.46	417	4,816	64	4,752	408.95	4,752	0.11
49	735	0.85	769	5,521	64	5,457	409.07	5,457	0.13
50	750	0.92	825	6,282	64	6,219	409.20	6,219	0.14
51	765	1.03	931	7,149	64	7,086	409.35	7,086	0.16
52	780	1.10	987	8,072	64	8,009	409.50	8,009	0.18
53	795	1.38	1,240	9,249	64	9,185	409.70	9,185	0.21
54	810	1.38	1,246	10,431	64	10,368	409.90	10,368	0.24
55	825	0.79	711	11,078	64	11,015	410.01	11,015	0.25
56	840	0.80	717	11,732	64	11,668	410.10	11,668	0.27
57	855	1.02	921	12,589	64	12,525	410.22	12,525	0.29
58	870	0.98	878	13,403	64	13,339	410.34	13,339	0.31

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
59	885	0.98	884	14,223	64	14,159	410.46	14,159	0.33
60	900	0.93	841	15,000	64	14,936	410.57	14,936	0.34
61	915	0.89	797	15,734	64	15,670	410.68	15,670	0.36
62	930	0.84	754	16,424	64	16,360	410.78	16,360	0.38
63	945	0.63	563	16,923	64	16,859	410.85	16,859	0.39
64	960	0.63	568	17,427	64	17,364	410.92	17,364	0.40
65	975	0.02	20	17,383	64	17,320	410.91	17,320	0.40
66	990	0.02	20	17,340	64	17,276	410.91	17,276	0.40
67	1005	0.02	15	17,291	64	17,227	410.90	17,227	0.40
68	1020	0.02	15	17,242	64	17,178	410.89	17,178	0.39
69	1035	0.03	25	17,203	64	17,139	410.89	17,139	0.39
70	1050	0.03	25	17,164	64	17,100	410.88	17,100	0.39
71	1065	0.03	25	17,125	64	17,061	410.88	17,061	0.39
72	1080	0.02	20	17,081	64	17,017	410.87	17,017	0.39
73	1095	0.02	20	17,037	64	16,973	410.86	16,973	0.39
74	1110	0.02	20	16,993	64	16,929	410.86	16,929	0.39
75	1125	0.02	15	16,944	64	16,881	410.85	16,881	0.39
76	1140	0.01	10	16,890	64	16,827	410.84	16,827	0.39
77	1155	0.02	15	16,842	64	16,778	410.84	16,778	0.39
78	1170	0.02	20	16,798	64	16,734	410.83	16,734	0.38
79	1185	0.02	15	16,749	64	16,685	410.82	16,685	0.38
80	1200	0.01	10	16,695	64	16,631	410.82	16,631	0.38
81	1215	0.02	15	16,646	64	16,582	410.81	16,582	0.38
82	1230	0.02	15	16,597	64	16,534	410.80	16,534	0.38
83	1245	0.02	15	16,548	64	16,485	410.79	16,485	0.38
84	1260	0.01	10	16,495	64	16,431	410.79	16,431	0.38
85	1275	0.02	15	16,446	64	16,382	410.78	16,382	0.38
86	1290	0.01	10	16,392	64	16,328	410.77	16,328	0.37
87	1305	0.02	15	16,343	64	16,279	410.76	16,279	0.37
88	1320	0.01	10	16,289	64	16,226	410.76	16,226	0.37
89	1335	0.02	15	16,240	64	16,177	410.75	16,177	0.37
90	1350	0.01	10	16,187	64	16,123	410.74	16,123	0.37
91	1365	0.01	10	16,133	64	16,069	410.73	16,069	0.37
92	1380	0.01	10	16,079	64	16,015	410.73	16,015	0.37
93	1395	0.01	10	16,025	64	15,962	410.72	15,962	0.37
94	1410	0.01	10	15,971	64	15,908	410.71	15,908	0.37
95	1425	0.01	10	15,918	64	15,854	410.70	15,854	0.36
96	1440	0.01	10	15,864	64	15,800	410.70	15,800	0.36

	A	B	C	D
1	RCFC&WCD SHORTCUT UNIT HYDROGRAPH METHOD			
2	DATA INPUT SHEET			
3				
4	WORKSHEET PREPARED BY:	JAMES R. BAZUA, P.E.		
5				
6	PROJECT NAME	ARMTEC DEFENSE TECHNOLOGY - 10 YEAR		
7	JOB #			
8				
9	CONCENTRATION POINT DESIGNATION	1		
10	AREA DESIGNATION	3000 SF BUILDING		
11				
12	TRIBUTARY AREAS	ACRES		
13				
14	COMMERCIAL			
15	PAVING/HARDSCAPE	0.65		
16	SF - 1 ACRE			
17	SF - 1/2 ACRE			
18	SF - 1/4 ACRE			
19	MF - CONDOMINIUMS			
20	MF - APARTMENTS			
21	MOBILE HOME PARK			
22	LANDSCAPING			
23	RETENTION BASIN	2.03		
24	GOLF COURSE			
25	MOUNTAINOUS			
26	LOW LOSS RATE (PERCENT)	90%		
27				
28	LENGTH OF WATERCOURSE (L)	430		
29	LENGTH TO POINT OPPOSITE CENTROID (Lca)	100		
30				
31	ELEVATION OF HEADWATER	409		
32	ELEVATION OF CONCENTRATION POINT	408		
33				
34	AVERAGE MANNINGS 'N' VALUE	0.02		
35				
36	STORM FREQUENCY (YEAR)	100		
37				
38	POINT RAIN			
39	3-HOUR	0.992		
40	6-HOUR	1.29		
41	24-HOUR	2.09		
42				
43	BASIN CHARACTERISTICS:	ELEVATION	AREA	
44		404	50322	
45		405	54589	
46		406	58968	
47		407	63461	
48		407.5	65750	
49				
50				
51				
52	PERCOLATION RATE (in/hr)	0		
53	NEGLECTING INFILTRATION IN PARTIALLY			
54	DRYWELL DATA	FULL BASIN		
55	NUMBER USED			
56	PERCOLATION RATE (cfs)			

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD				PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR							
BASIC DATA CALCULATION FORM				JOB # 0							
SHORTCUT METHOD				BY ES R. BAZUA, P.E.		DATE 2/2/2025					
PHYSICAL DATA											
[1] CONCENTRATION POINT				1							
[2] AREA DESIGNATION				3000 SF BUILDING							
[3] AREA - ACRES				2.680							
[4] L- FEET				430							
[5] L-MILES				0.081							
[6] La- FEET				100.00							
[7] La-MILES				0.019							
[8] ELEVATION OF HEADWATER				409							
[9] ELEVATION OF CONCENTRATION POINT				408							
[10] H- FEET				1							
[11] S- FEET/MILE				12.3							
[12] S^0.5				3.50							
[13] L*LCA/S^0.5				0.000							
[14] AVERAGE MANNINGS 'N'				0.02							
[15] LAG TIME-HOURS				0.03							
[16] LAG TIME-MINUTES				1.5							
[17] 100% OF LAG-MINUTES				1.5							
[18] 200% OF LAG-MINUTES				3.1							
[19] UNIT TIME-MINUTES (100%-200% OF LAG)				5							
[24] TOTAL PERCOLATION RATE (cfs)				0.00							
RAINFALL DATA											
[1] SOURCE											
[2] FREQUENCY-YEARS 100											
[3] DURATION:											
3-HOURS				6-HOURS				24-HOURS			
[4] POINT RAIN INCHES (Plate E-5.2)	[5] AREA	[6]	[7] AVERAGE POINT RAIN INCHES	[8] POINT RAIN INCHES (Plate E-5.4)	[9] AREA	[10]	[11] AVERAGE POINT RAIN INCHES	[12] POINT RAIN INCHES (Plate E-5.6)	[13] AREA	[14]	[15] AVERAGE POINT RAIN INCHES
0.99	2.680	1.00	0.99	1.29	2.680	1.00	1.29	2.09	2.680	1.00	2.09
		0.00	0.00			0.00	0.00			0.00	0.00
		0.00	0.00			0.00	0.00			0.00	0.00
		0.00	0.00			0.00	0.00			0.00	0.00
SUM [5]	2.68	SUM [7]	0.99	SUM [9]	2.68	SUM [11]	1.29	SUM [13]	2.68	SUM [15]	2.09
[16] AREA ADJ FACTOR			1.000				1.000				1.000
[17] ADJ AVG POINT RAIN			0.99				1.29				2.09

STORM EVENT SUMMARY			
DURATION	3-HOUR	6-HOUR	24-HOUR
EFFECTIVE RAIN (in)	0.17	0.16	0.21
FLOOD VOLUME (cu-ft)	1,631	1,522	2,033
(acre-ft)	0.04	0.03	0.05
REQUIRED STORAGE (cu-ft)	1,617	1,509	2,016
(acre-ft)	0.04	0.03	0.05
PEAK FLOW (cfs)	1.15	0.86	0.08
MAXIMUM WSEL (ft)	404.03	404.03	404.04

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD				PROJECT ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1 BY MES R. BAZUA, P.E. DATE 2/2/2025				
ADJUSTED LOSS RATE								
SOIL GROUP	LAND USE	RI NUMBER	PERVIOUS AREA INFILTRATION RATE (in/hr)	DECIMAL PERCENT OF AREA IMPERVIOUS	ADJUSTED INFILTRATION RATE (in/hr)	AREA		AVERAGE ADJUSTED INFILTRATION RATE (in/hr)
[Plate C-1]		[Plate E-6.1]	[Plate E-6.2]	[Plate E-6.3]				
B	COMMERCIAL	56	0.70	90%	0.13	0.00	0.000	0.0000
B	PAVING/HARDSCAPE	56	0.70	100%	0.07	0.65	0.243	0.0170
B	SF - 1 ACRE	56	0.70	20%	0.57	0.00	0.000	0.0000
B	SF - 1/2 ACRE	56	0.70	40%	0.45	0.00	0.000	0.0000
B	SF - 1/4 ACRE	56	0.70	50%	0.39	0.00	0.000	0.0000
B	MF - CONDOMINIUMS	56	0.70	65%	0.29	0.00	0.000	0.0000
B	MF - APARTMENTS	56	0.70	80%	0.20	0.00	0.000	0.0000
B	MOBILE HOME PARKS	56	0.70	75%	0.23	0.00	0.000	0.0000
B	LANDSCAPING	56	0.70	0%	0.70	0.00	0.000	0.0000
B	RETENTION BASINS	56	0.70	0%	0.70	2.03	0.757	0.5302
B	GOLF COURSE	56	0.70	0%	0.70	0.00	0.000	0.0000
D	MOUNTAINOUS	93	0.70	90%	0.13	0.00	0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
					0.00		0.000	0.0000
SUM						2.68	SUM	0.5472

VARIABLE LOSS RATE CURVE (24-HOUR STORM ONLY)

Fm= 0.273600746

C= 0.00507

$F_t = C(24 - (T/60))^{1.55}$
=
0.00507
(24 - (T/60))^{1.55} +
0.27
in/hr

LOW LOSS RATE (80-90 PERCENT) = 90%

Where:

T=Time in minutes. To get an average value for each unit time period, Use T=1/2 the unit time for the first time period,
 T=1 1/2 unit time for the second period, etc.

RCFC D SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 3 HOUR STORM EVENT					PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1 BY: IES R. BAZUA, DATE 2/2/2025				
EFFECTIVE RAIN CALCULATION FORM									
DRAINAGE AREA-ACRES 2.68 UNIT TIME-MINUTES 5 LAG TIME - MINUTES 1.53 UNIT TIME-PERCENT OF LAG 327.3 TOTAL ADJUSTED STORM RAIN-INCHES 0.99 CONSTANT LOSS RATE-in/hr 0.55 LOW LOSS RATE - PERCENT 90%				TOTAL PERCOLATION RATE (cfs) 0.00 cfs					
Unit Time Period	Time Minutes Hours		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate in/hr Max Low		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
1	5	0.08	1.3	0.155	0.55	0.14	0.02	0.04	12.44
2	10	0.17	1.3	0.155	0.55	0.14	0.02	0.04	12.44
3	15	0.25	1.1	0.131	0.55	0.12	0.01	0.04	10.53
4	20	0.33	1.5	0.179	0.55	0.16	0.02	0.05	14.36
5	25	0.42	1.5	0.179	0.55	0.16	0.02	0.05	14.36
6	30	0.50	1.8	0.214	0.55	0.19	0.02	0.06	17.23
7	35	0.58	1.5	0.179	0.55	0.16	0.02	0.05	14.36
8	40	0.67	1.8	0.214	0.55	0.19	0.02	0.06	17.23
9	45	0.75	1.8	0.214	0.55	0.19	0.02	0.06	17.23
10	50	0.83	1.5	0.179	0.55	0.16	0.02	0.05	14.36
11	55	0.92	1.6	0.190	0.55	0.17	0.02	0.05	15.31
12	60	1.00	1.8	0.214	0.55	0.19	0.02	0.06	17.23
13	65	1.08	2.2	0.262	0.55	0.24	0.03	0.07	21.06
14	70	1.17	2.2	0.262	0.55	0.24	0.03	0.07	21.06
15	75	1.25	2.2	0.262	0.55	0.24	0.03	0.07	21.06
16	80	1.33	2.0	0.238	0.55	0.21	0.02	0.06	19.14
17	85	1.42	2.6	0.310	0.55	0.28	0.03	0.08	24.88
18	90	1.50	2.7	0.321	0.55	0.29	0.03	0.09	25.84
19	95	1.58	2.4	0.286	0.55	0.26	0.03	0.08	22.97
20	100	1.67	2.7	0.321	0.55	0.29	0.03	0.09	25.84
21	105	1.75	3.3	0.393	0.55	0.35	0.04	0.11	31.58
22	110	1.83	3.1	0.369	0.55	0.33	0.04	0.10	29.67
23	115	1.92	2.9	0.345	0.55	0.31	0.03	0.09	27.76
24	120	2.00	3.0	0.357	0.55	0.32	0.04	0.10	28.71
25	125	2.08	3.1	0.369	0.55	0.33	0.04	0.10	29.67
26	130	2.17	4.2	0.500	0.55	0.45	0.05	0.13	40.20
27	135	2.25	5.0	0.595	0.55	0.54	0.05	0.13	38.59
28	140	2.33	3.5	0.417	0.55	0.37	0.04	0.11	33.50
29	145	2.42	6.8	0.809	0.55	0.73	0.26	0.70	210.87
30	150	2.50	7.3	0.869	0.55	0.78	0.32	0.86	258.72
31	155	2.58	8.2	0.976	0.55	0.88	0.43	1.15	344.86
32	160	2.67	5.9	0.702	0.55	0.63	0.16	0.42	124.73
33	165	2.75	2.0	0.238	0.55	0.21	0.02	0.06	19.14
34	170	2.83	1.8	0.214	0.55	0.19	0.02	0.06	17.23
35	175	2.92	1.8	0.214	0.55	0.19	0.02	0.06	17.23
36	180	3.00	0.6	0.071	0.55	0.06	0.01	0.02	5.74

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY	
EFFECTIVE RAIN (in)	0.17
FLOOD VOLUME (acft)	0.04
FLOOD VOLUME (cuft)	1630.57
REQUIRED STORAGE (acft)	0.04
REQUIRED STORAGE (cuft)	1617.09
PEAK FLOW RATE (cfs)	1.15

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT:	ARMTEC DEFENSE TECHNOLOGY - 10 YEAR
	CONCENTRATION POINT:	1
	BY: JAMES R. BAZ DATE:	2/2/2025

EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	2.68	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.53	
UNIT TIME-PERCENT OF LAG	327.3	
TOTAL ADJUSTED STORM RAIN-INCHES	1.29	
CONSTANT LOSS RATE-in/hr	0.547	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.00 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr				
					Max	Low			
1	5	0.08	0.5	0.077	0.55	0.07	0.01	0.02	6.22
2	10	0.17	0.6	0.093	0.55	0.08	0.01	0.02	7.47
3	15	0.25	0.6	0.093	0.55	0.08	0.01	0.02	7.47
4	20	0.33	0.6	0.093	0.55	0.08	0.01	0.02	7.47
5	25	0.42	0.6	0.093	0.55	0.08	0.01	0.02	7.47
6	30	0.50	0.7	0.108	0.55	0.10	0.01	0.03	8.71
7	35	0.58	0.7	0.108	0.55	0.10	0.01	0.03	8.71
8	40	0.67	0.7	0.108	0.55	0.10	0.01	0.03	8.71
9	45	0.75	0.7	0.108	0.55	0.10	0.01	0.03	8.71
10	50	0.83	0.7	0.108	0.55	0.10	0.01	0.03	8.71
11	55	0.92	0.7	0.108	0.55	0.10	0.01	0.03	8.71
12	60	1.00	0.8	0.124	0.55	0.11	0.01	0.03	9.96
13	65	1.08	0.8	0.124	0.55	0.11	0.01	0.03	9.96
14	70	1.17	0.8	0.124	0.55	0.11	0.01	0.03	9.96
15	75	1.25	0.8	0.124	0.55	0.11	0.01	0.03	9.96
16	80	1.33	0.8	0.124	0.55	0.11	0.01	0.03	9.96
17	85	1.42	0.8	0.124	0.55	0.11	0.01	0.03	9.96
18	90	1.50	0.8	0.124	0.55	0.11	0.01	0.03	9.96
19	95	1.58	0.8	0.124	0.55	0.11	0.01	0.03	9.96
20	100	1.67	0.8	0.124	0.55	0.11	0.01	0.03	9.96
21	105	1.75	0.8	0.124	0.55	0.11	0.01	0.03	9.96
22	110	1.83	0.8	0.124	0.55	0.11	0.01	0.03	9.96
23	115	1.92	0.8	0.124	0.55	0.11	0.01	0.03	9.96
24	120	2.00	0.9	0.139	0.55	0.13	0.01	0.04	11.20
25	125	2.08	0.8	0.124	0.55	0.11	0.01	0.03	9.96
26	130	2.17	0.9	0.139	0.55	0.13	0.01	0.04	11.20
27	135	2.25	0.9	0.139	0.55	0.13	0.01	0.04	11.20
28	140	2.33	0.9	0.139	0.55	0.13	0.01	0.04	11.20
29	145	2.42	0.9	0.139	0.55	0.13	0.01	0.04	11.20
30	150	2.50	0.9	0.139	0.55	0.13	0.01	0.04	11.20
31	155	2.58	0.9	0.139	0.55	0.13	0.01	0.04	11.20
32	160	2.67	0.9	0.139	0.55	0.13	0.01	0.04	11.20
33	165	2.75	1.0	0.155	0.55	0.14	0.02	0.04	12.45
34	170	2.83	1.0	0.155	0.55	0.14	0.02	0.04	12.45
35	175	2.92	1.0	0.155	0.55	0.14	0.02	0.04	12.45
36	180	3.00	1.0	0.155	0.55	0.14	0.02	0.04	12.45
37	185	3.08	1.0	0.155	0.55	0.14	0.02	0.04	12.45
38	190	3.17	1.1	0.170	0.55	0.15	0.02	0.05	13.69
39	195	3.25	1.1	0.170	0.55	0.15	0.02	0.05	13.69
40	200	3.33	1.1	0.170	0.55	0.15	0.02	0.05	13.69
41	205	3.42	1.2	0.186	0.55	0.17	0.02	0.05	14.94
42	210	3.50	1.3	0.201	0.55	0.18	0.02	0.05	16.18
43	215	3.58	1.4	0.217	0.55	0.20	0.02	0.06	17.42
44	220	3.67	1.4	0.217	0.55	0.20	0.02	0.06	17.42
45	225	3.75	1.5	0.232	0.55	0.21	0.02	0.06	18.67
46	230	3.83	1.5	0.232	0.55	0.21	0.02	0.06	18.67
47	235	3.92	1.6	0.248	0.55	0.22	0.02	0.07	19.91
48	240	4.00	1.6	0.248	0.55	0.22	0.02	0.07	19.91
49	245	4.08	1.7	0.263	0.55	0.24	0.03	0.07	21.16
50	250	4.17	1.8	0.279	0.55	0.25	0.03	0.07	22.40
51	255	4.25	1.9	0.294	0.55	0.26	0.03	0.08	23.65
52	260	4.33	2.0	0.310	0.55	0.28	0.03	0.08	24.89
53	265	4.42	2.1	0.325	0.55	0.29	0.03	0.09	26.14
54	270	4.50	2.1	0.325	0.55	0.29	0.03	0.09	26.14
55	275	4.58	2.2	0.341	0.55	0.31	0.03	0.09	27.38
56	280	4.67	2.3	0.356	0.55	0.32	0.04	0.10	28.63

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1 BY: JAMES R. BAZ DATE: 2/2/2025
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EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	2.68	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.53	
UNIT TIME-PERCENT OF LAG	327.3	
TOTAL ADJUSTED STORM RAIN-INCHES	1.29	
CONSTANT LOSS RATE-in/hr	0.547	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.00 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			Max	Low			
57	285	4.75	2.4	0.372	0.55	0.33	0.04	0.10	29.87
58	290	4.83	2.4	0.372	0.55	0.33	0.04	0.10	29.87
59	295	4.92	2.5	0.387	0.55	0.35	0.04	0.10	31.11
60	300	5.00	2.6	0.402	0.55	0.36	0.04	0.11	32.36
61	305	5.08	3.1	0.480	0.55	0.43	0.05	0.13	38.58
62	310	5.17	3.6	0.557	0.55	0.50	0.01	0.03	8.10
63	315	5.25	3.9	0.604	0.55	0.54	0.06	0.15	45.44
64	320	5.33	4.2	0.650	0.55	0.59	0.10	0.28	82.78
65	325	5.42	4.7	0.728	0.55	0.65	0.18	0.48	145.01
66	330	5.50	5.6	0.867	0.55	0.78	0.32	0.86	257.02
67	335	5.58	1.9	0.294	0.55	0.26	0.03	0.08	23.65
68	340	5.67	0.9	0.139	0.55	0.13	0.01	0.04	11.20
69	345	5.75	0.6	0.093	0.55	0.08	0.01	0.02	7.47
70	350	5.83	0.5	0.077	0.55	0.07	0.01	0.02	6.22
71	355	5.92	0.3	0.046	0.55	0.04	0.00	0.01	3.73
72	360	6.00	0.2	0.031	0.55	0.03	0.00	0.01	2.49

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	0.16
FLOOD VOLUME (acft)	0.03
FLOOD VOLUME (cuft)	1521.72
REQUIRED STORAGE (acft)	0.03
REQUIRED STORAGE (cuft)	1509.13
PEAK FLOW RATE (cfs)	0.86

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT					PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1				
					BY: JAMES R. BAZ DATE: 2/2/2025				
EFFECTIVE RAIN CALCULATION FORM									
DRAINAGE AREA-ACRES			2.680	CONSTANT LOSS RATE-in/hr			n/a		
UNIT TIME-MINUTES			15	VARIABLE LOSS RATE (AVG) in/hr			0.5472		
LAG TIME - MINUTES			1.53	MINIMUM LOSS RATE (for var. loss) - in/hr			0.274		
UNIT TIME-PERCENT OF LAG			982.0	LOW LOSS RATE - DECIMAL			0.90		
TOTAL ADJUSTED STORM RAIN-INCHES			2.09	C			0.00507		
				PERCOLATION RATE (cfs) 0.00					
Unit Time Period	Time Minutes Hours		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate in/hr Max Low		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
1	15	0.25	0.2	0.017	0.966	0.015	0.002	0.00	4.03
2	30	0.50	0.3	0.025	0.955	0.023	0.003	0.01	6.05
3	45	0.75	0.3	0.025	0.944	0.023	0.003	0.01	6.05
4	60	1.00	0.4	0.033	0.933	0.030	0.003	0.01	8.07
5	75	1.25	0.3	0.025	0.922	0.023	0.003	0.01	6.05
6	90	1.50	0.3	0.025	0.911	0.023	0.003	0.01	6.05
7	105	1.75	0.3	0.025	0.900	0.023	0.003	0.01	6.05
8	120	2.00	0.4	0.033	0.889	0.030	0.003	0.01	8.07
9	135	2.25	0.4	0.033	0.878	0.030	0.003	0.01	8.07
10	150	2.50	0.4	0.033	0.868	0.030	0.003	0.01	8.07
11	165	2.75	0.5	0.042	0.857	0.038	0.004	0.01	10.08
12	180	3.00	0.5	0.042	0.847	0.038	0.004	0.01	10.08
13	195	3.25	0.5	0.042	0.836	0.038	0.004	0.01	10.08
14	210	3.50	0.5	0.042	0.826	0.038	0.004	0.01	10.08
15	225	3.75	0.5	0.042	0.815	0.038	0.004	0.01	10.08
16	240	4.00	0.6	0.050	0.805	0.045	0.005	0.01	12.10
17	255	4.25	0.6	0.050	0.795	0.045	0.005	0.01	12.10
18	270	4.50	0.7	0.059	0.785	0.053	0.006	0.02	14.12
19	285	4.75	0.7	0.059	0.775	0.053	0.006	0.02	14.12
20	300	5.00	0.8	0.067	0.765	0.060	0.007	0.02	16.13
21	315	5.25	0.6	0.050	0.755	0.045	0.005	0.01	12.10
22	330	5.50	0.7	0.059	0.745	0.053	0.006	0.02	14.12
23	345	5.75	0.8	0.067	0.735	0.060	0.007	0.02	16.13
24	360	6.00	0.8	0.067	0.726	0.060	0.007	0.02	16.13
25	375	6.25	0.9	0.075	0.716	0.068	0.008	0.02	18.15
26	390	6.50	0.9	0.075	0.706	0.068	0.008	0.02	18.15
27	405	6.75	1.0	0.084	0.697	0.075	0.008	0.02	20.16
28	420	7.00	1.0	0.084	0.687	0.075	0.008	0.02	20.16
29	435	7.25	1.0	0.084	0.678	0.075	0.008	0.02	20.16
30	450	7.50	1.1	0.092	0.669	0.083	0.009	0.02	22.18
31	465	7.75	1.2	0.100	0.660	0.090	0.010	0.03	24.20
32	480	8.00	1.3	0.109	0.651	0.098	0.011	0.03	26.21
33	495	8.25	1.5	0.125	0.642	0.113	0.013	0.03	30.25
34	510	8.50	1.5	0.125	0.633	0.113	0.013	0.03	30.25
35	525	8.75	1.6	0.134	0.624	0.120	0.013	0.04	32.26
36	540	9.00	1.7	0.142	0.615	0.128	0.014	0.04	34.28
37	555	9.25	1.9	0.159	0.606	0.143	0.016	0.04	38.31
38	570	9.50	2.0	0.167	0.598	0.150	0.017	0.04	40.33
39	585	9.75	2.1	0.176	0.589	0.158	0.018	0.05	42.35
40	600	10.00	2.2	0.184	0.581	0.166	0.018	0.05	44.36
41	615	10.25	1.5	0.125	0.572	0.113	0.013	0.03	30.25
42	630	10.50	1.5	0.125	0.564	0.113	0.013	0.03	30.25
43	645	10.75	2.0	0.167	0.556	0.150	0.017	0.04	40.33
44	660	11.00	2.0	0.167	0.548	0.150	0.017	0.04	40.33
45	675	11.25	1.9	0.159	0.540	0.143	0.016	0.04	38.31
46	690	11.50	1.9	0.159	0.532	0.143	0.016	0.04	38.31
47	705	11.75	1.7	0.142	0.524	0.128	0.014	0.04	34.28
48	720	12.00	1.8	0.150	0.516	0.135	0.015	0.04	36.30
49	735	12.25	2.5	0.209	0.508	0.188	0.021	0.06	50.41
50	750	12.50	2.6	0.217	0.501	0.196	0.022	0.06	52.43
51	765	12.75	2.8	0.234	0.493	0.211	0.023	0.06	56.46
52	780	13.00	2.9	0.242	0.486	0.218	0.024	0.06	58.48
53	795	13.25	3.4	0.284	0.478	0.256	0.028	0.08	68.56
54	810	13.50	3.4	0.284	0.471	0.256	0.028	0.08	68.56
55	825	13.75	2.3	0.192	0.464	0.173	0.019	0.05	46.38
56	840	14.00	2.3	0.192	0.457	0.173	0.019	0.05	46.38
57	855	14.25	2.7	0.226	0.450	0.203	0.023	0.06	54.44
58	870	14.50	2.6	0.217	0.443	0.196	0.022	0.06	52.43
59	885	14.75	2.6	0.217	0.436	0.196	0.022	0.06	52.43
60	900	15.00	2.5	0.209	0.430	0.188	0.021	0.06	50.41
61	915	15.25	2.4	0.201	0.423	0.181	0.020	0.05	48.39
62	930	15.50	2.3	0.192	0.417	0.173	0.019	0.05	46.38
63	945	15.75	1.9	0.159	0.410	0.143	0.016	0.04	38.31
64	960	16.00	1.9	0.159	0.404	0.143	0.016	0.04	38.31
65	975	16.25	0.4	0.033	0.398	0.030	0.003	0.01	8.07
66	990	16.50	0.4	0.033	0.392	0.030	0.003	0.01	8.07
67	1005	16.75	0.3	0.025	0.386	0.023	0.003	0.01	6.05

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR CONCENTRATION POINT: 1 BY: JAMES R. BAZ DATE: 2/2/2025
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EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES			2.680	CONSTANT LOSS RATE-in/hr			n/a		
UNIT TIME-MINUTES			15	VARIABLE LOSS RATE (AVG) in/hr			0.5472		
LAG TIME - MINUTES			1.53	MINIMUM LOSS RATE (for var. loss) - in/hr			0.274		
UNIT TIME-PERCENT OF LAG			982.0	LOW LOSS RATE - DECIMAL			0.90		
TOTAL ADJUSTED STORM RAIN-INCHES			2.09	C			0.00507		
				PERCOLATION RATE (cfs)			0.00		
Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr	Max			
68	1020	17.00	0.3	0.025	0.380	0.023	0.003	0.01	6.05
69	1035	17.25	0.5	0.042	0.374	0.038	0.004	0.01	10.08
70	1050	17.50	0.5	0.042	0.369	0.038	0.004	0.01	10.08
71	1065	17.75	0.5	0.042	0.363	0.038	0.004	0.01	10.08
72	1080	18.00	0.4	0.033	0.358	0.030	0.003	0.01	8.07
73	1095	18.25	0.4	0.033	0.352	0.030	0.003	0.01	8.07
74	1110	18.50	0.4	0.033	0.347	0.030	0.003	0.01	8.07
75	1125	18.75	0.3	0.025	0.342	0.023	0.003	0.01	6.05
76	1140	19.00	0.2	0.017	0.337	0.015	0.002	0.00	4.03
77	1155	19.25	0.3	0.025	0.333	0.023	0.003	0.01	6.05
78	1170	19.50	0.4	0.033	0.328	0.030	0.003	0.01	8.07
79	1185	19.75	0.3	0.025	0.324	0.023	0.003	0.01	6.05
80	1200	20.00	0.2	0.017	0.319	0.015	0.002	0.00	4.03
81	1215	20.25	0.3	0.025	0.315	0.023	0.003	0.01	6.05
82	1230	20.50	0.3	0.025	0.311	0.023	0.003	0.01	6.05
83	1245	20.75	0.3	0.025	0.307	0.023	0.003	0.01	6.05
84	1260	21.00	0.2	0.017	0.303	0.015	0.002	0.00	4.03
85	1275	21.25	0.3	0.025	0.300	0.023	0.003	0.01	6.05
86	1290	21.50	0.2	0.017	0.296	0.015	0.002	0.00	4.03
87	1305	21.75	0.3	0.025	0.293	0.023	0.003	0.01	6.05
88	1320	22.00	0.2	0.017	0.290	0.015	0.002	0.00	4.03
89	1335	22.25	0.3	0.025	0.287	0.023	0.003	0.01	6.05
90	1350	22.50	0.2	0.017	0.284	0.015	0.002	0.00	4.03
91	1365	22.75	0.2	0.017	0.282	0.015	0.002	0.00	4.03
92	1380	23.00	0.2	0.017	0.280	0.015	0.002	0.00	4.03
93	1395	23.25	0.2	0.017	0.278	0.015	0.002	0.00	4.03
94	1410	23.50	0.2	0.017	0.276	0.015	0.002	0.00	4.03
95	1425	23.75	0.2	0.017	0.275	0.015	0.002	0.00	4.03
96	1440	24.00	0.2	0.017	0.274	0.015	0.002	0.00	4.03

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	0.21
FLOOD VOLUME (acft)	0.05
FLOOD VOLUME (cuft)	2033.24
REQUIRED STORAGE (acft)	0.05
REQUIRED STORAGE (cuft)	2016.43
PEAK FLOW (cfs)	0.08

PROJECT: ARMTEC DEFENSE TECHNOLOGY - 10 YEAR
 JOB # 0
 1

BASIN CHARACTERISTICS

CONTOUR	DEPTH		AREA		VOLUME		
	INCR (ft)	TOTAL (ft)	INCR (sf)	TOTAL (sf)	INCR (cuft)	TOTAL (cuft)	TOTAL (acre-ft)
404	0	0		50322	0	0	0.00
405	1	1	4267	54589	52456	52456	1.20
406	1	2	4379	58968	56779	109234	2.51
407	1	3	4493	63461	61215	170449	3.91
407.5	0.5	3.5	2289	65750	32303	202751	4.65

PERCOLATION CALCULATIONS

PERCOLATION RATE 0 in/hr 0.00 cfs

MAXWELL IV DRYWELLS

NUMBER USED 0
 RATE/DRYWELL 0 cfs
 TOTAL DISSIPATED 0 cfs

TOTAL PERCOLATION RATE 0.00 cfs

1
 JOB # 0
 100 YEAR - 3 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN	
								(cuft)	(acre-ft)
1	5	0.04	12	12	0	12	404.00	12	0.00
2	10	0.04	12	25	0	25	404.00	25	0.00
3	15	0.04	11	35	0	35	404.00	35	0.00
4	20	0.05	14	50	0	50	404.00	50	0.00
5	25	0.05	14	64	0	64	404.00	64	0.00
6	30	0.06	17	81	0	81	404.00	81	0.00
7	35	0.05	14	96	0	96	404.00	96	0.00
8	40	0.06	17	113	0	113	404.00	113	0.00
9	45	0.06	17	130	0	130	404.00	130	0.00
10	50	0.05	14	145	0	145	404.00	145	0.00
11	55	0.05	15	160	0	160	404.00	160	0.00
12	60	0.06	17	177	0	177	404.00	177	0.00
13	65	0.07	21	198	0	198	404.00	198	0.00
14	70	0.07	21	219	0	219	404.00	219	0.01
15	75	0.07	21	240	0	240	404.00	240	0.01
16	80	0.06	19	259	0	259	404.00	259	0.01
17	85	0.08	25	284	0	284	404.01	284	0.01
18	90	0.09	26	310	0	310	404.01	310	0.01
19	95	0.08	23	333	0	333	404.01	333	0.01
20	100	0.09	26	359	0	359	404.01	359	0.01
21	105	0.11	32	390	0	390	404.01	390	0.01
22	110	0.10	30	420	0	420	404.01	420	0.01
23	115	0.09	28	448	0	448	404.01	448	0.01
24	120	0.10	29	477	0	477	404.01	477	0.01
25	125	0.10	30	506	0	506	404.01	506	0.01
26	130	0.13	40	546	0	546	404.01	546	0.01
27	135	0.13	39	585	0	585	404.01	585	0.01
28	140	0.11	33	619	0	619	404.01	619	0.01
29	145	0.70	211	829	0	829	404.02	829	0.02
30	150	0.86	259	1,088	0	1,088	404.02	1,088	0.02
31	155	1.15	345	1,433	0	1,433	404.03	1,433	0.03
32	160	0.42	125	1,558	0	1,558	404.03	1,558	0.04
33	165	0.06	19	1,577	0	1,577	404.03	1,577	0.04
34	170	0.06	17	1,594	0	1,594	404.03	1,594	0.04
35	175	0.06	17	1,611	0	1,611	404.03	1,611	0.04
36	180	0.02	6	1,617	0	1,617	404.03	1,617	0.04

1
 JOB # 0
 100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
1	5	0.02	6	6	0	6	404.00	6	0.00
2	10	0.02	7	14	0	14	404.00	14	0.00
3	15	0.02	7	21	0	21	404.00	21	0.00
4	20	0.02	7	29	0	29	404.00	29	0.00
5	25	0.02	7	36	0	36	404.00	36	0.00
6	30	0.03	9	45	0	45	404.00	45	0.00
7	35	0.03	9	54	0	54	404.00	54	0.00
8	40	0.03	9	62	0	62	404.00	62	0.00
9	45	0.03	9	71	0	71	404.00	71	0.00
10	50	0.03	9	80	0	80	404.00	80	0.00
11	55	0.03	9	88	0	88	404.00	88	0.00
12	60	0.03	10	98	0	98	404.00	98	0.00
13	65	0.03	10	108	0	108	404.00	108	0.00
14	70	0.03	10	118	0	118	404.00	118	0.00
15	75	0.03	10	128	0	128	404.00	128	0.00
16	80	0.03	10	138	0	138	404.00	138	0.00
17	85	0.03	10	148	0	148	404.00	148	0.00
18	90	0.03	10	158	0	158	404.00	158	0.00
19	95	0.03	10	168	0	168	404.00	168	0.00
20	100	0.03	10	178	0	178	404.00	178	0.00
21	105	0.03	10	188	0	188	404.00	188	0.00
22	110	0.03	10	198	0	198	404.00	198	0.00
23	115	0.03	10	208	0	208	404.00	208	0.00
24	120	0.04	11	219	0	219	404.00	219	0.01
25	125	0.03	10	229	0	229	404.00	229	0.01
26	130	0.04	11	240	0	240	404.00	240	0.01
27	135	0.04	11	251	0	251	404.00	251	0.01
28	140	0.04	11	263	0	263	404.01	263	0.01
29	145	0.04	11	274	0	274	404.01	274	0.01
30	150	0.04	11	285	0	285	404.01	285	0.01
31	155	0.04	11	296	0	296	404.01	296	0.01
32	160	0.04	11	307	0	307	404.01	307	0.01
33	165	0.04	12	320	0	320	404.01	320	0.01
34	170	0.04	12	332	0	332	404.01	332	0.01
35	175	0.04	12	345	0	345	404.01	345	0.01
36	180	0.04	12	357	0	357	404.01	357	0.01
37	185	0.04	12	370	0	370	404.01	370	0.01
38	190	0.05	14	383	0	383	404.01	383	0.01
39	195	0.05	14	397	0	397	404.01	397	0.01
40	200	0.05	14	411	0	411	404.01	411	0.01
41	205	0.05	15	426	0	426	404.01	426	0.01
42	210	0.05	16	442	0	442	404.01	442	0.01
43	215	0.06	17	459	0	459	404.01	459	0.01
44	220	0.06	17	477	0	477	404.01	477	0.01
45	225	0.06	19	495	0	495	404.01	495	0.01
46	230	0.06	19	514	0	514	404.01	514	0.01
47	235	0.07	20	534	0	534	404.01	534	0.01
48	240	0.07	20	554	0	554	404.01	554	0.01
49	245	0.07	21	575	0	575	404.01	575	0.01
50	250	0.07	22	597	0	597	404.01	597	0.01
51	255	0.08	24	621	0	621	404.01	621	0.01
52	260	0.08	25	646	0	646	404.01	646	0.01
53	265	0.09	26	672	0	672	404.01	672	0.02
54	270	0.09	26	698	0	698	404.01	698	0.02
55	275	0.09	27	726	0	726	404.01	726	0.02

1
 JOB # 0
 100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN	
								(cuft)	(acre-ft)
56	280	0.10	29	754	0	754	404.01	754	0.02
57	285	0.10	30	784	0	784	404.01	784	0.02
58	290	0.10	30	814	0	814	404.02	814	0.02
59	295	0.10	31	845	0	845	404.02	845	0.02
60	300	0.11	32	877	0	877	404.02	877	0.02
61	305	0.13	39	916	0	916	404.02	916	0.02
62	310	0.03	8	924	0	924	404.02	924	0.02
63	315	0.15	45	970	0	970	404.02	970	0.02
64	320	0.28	83	1,052	0	1,052	404.02	1,052	0.02
65	325	0.48	145	1,197	0	1,197	404.02	1,197	0.03
66	330	0.86	257	1,454	0	1,454	404.03	1,454	0.03
67	335	0.08	24	1,478	0	1,478	404.03	1,478	0.03
68	340	0.04	11	1,489	0	1,489	404.03	1,489	0.03
69	345	0.02	7	1,497	0	1,497	404.03	1,497	0.03
70	350	0.02	6	1,503	0	1,503	404.03	1,503	0.03
71	355	0.01	4	1,507	0	1,507	404.03	1,507	0.03
72	360	0.01	2	1,509	0	1,509	404.03	1,509	0.03

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
1	15	0.00	4	4	0	4	404.00	4	0.00
2	30	0.01	6	10	0	10	404.00	10	0.00
3	45	0.01	6	16	0	16	404.00	16	0.00
4	60	0.01	8	24	0	24	404.00	24	0.00
5	75	0.01	6	30	0	30	404.00	30	0.00
6	90	0.01	6	36	0	36	404.00	36	0.00
7	105	0.01	6	42	0	42	404.00	42	0.00
8	120	0.01	8	50	0	50	404.00	50	0.00
9	135	0.01	8	58	0	58	404.00	58	0.00
10	150	0.01	8	67	0	67	404.00	67	0.00
11	165	0.01	10	77	0	77	404.00	77	0.00
12	180	0.01	10	87	0	87	404.00	87	0.00
13	195	0.01	10	97	0	97	404.00	97	0.00
14	210	0.01	10	107	0	107	404.00	107	0.00
15	225	0.01	10	117	0	117	404.00	117	0.00
16	240	0.01	12	129	0	129	404.00	129	0.00
17	255	0.01	12	141	0	141	404.00	141	0.00
18	270	0.02	14	155	0	155	404.00	155	0.00
19	285	0.02	14	169	0	169	404.00	169	0.00
20	300	0.02	16	186	0	186	404.00	186	0.00
21	315	0.01	12	198	0	198	404.00	198	0.00
22	330	0.02	14	212	0	212	404.00	212	0.00
23	345	0.02	16	228	0	228	404.00	228	0.01
24	360	0.02	16	244	0	244	404.00	244	0.01
25	375	0.02	18	262	0	262	404.00	262	0.01
26	390	0.02	18	280	0	280	404.01	280	0.01
27	405	0.02	20	300	0	300	404.01	300	0.01
28	420	0.02	20	321	0	321	404.01	321	0.01
29	435	0.02	20	341	0	341	404.01	341	0.01
30	450	0.02	22	363	0	363	404.01	363	0.01
31	465	0.03	24	387	0	387	404.01	387	0.01
32	480	0.03	26	413	0	413	404.01	413	0.01
33	495	0.03	30	444	0	444	404.01	444	0.01
34	510	0.03	30	474	0	474	404.01	474	0.01
35	525	0.04	32	506	0	506	404.01	506	0.01
36	540	0.04	34	540	0	540	404.01	540	0.01
37	555	0.04	38	579	0	579	404.01	579	0.01
38	570	0.04	40	619	0	619	404.01	619	0.01
39	585	0.05	42	661	0	661	404.01	661	0.02
40	600	0.05	44	706	0	706	404.01	706	0.02
41	615	0.03	30	736	0	736	404.01	736	0.02
42	630	0.03	30	766	0	766	404.01	766	0.02
43	645	0.04	40	807	0	807	404.02	807	0.02
44	660	0.04	40	847	0	847	404.02	847	0.02
45	675	0.04	38	885	0	885	404.02	885	0.02
46	690	0.04	38	924	0	924	404.02	924	0.02
47	705	0.04	34	958	0	958	404.02	958	0.02
48	720	0.04	36	994	0	994	404.02	994	0.02
49	735	0.06	50	1,045	0	1,045	404.02	1,045	0.02
50	750	0.06	52	1,097	0	1,097	404.02	1,097	0.03
51	765	0.06	56	1,153	0	1,153	404.02	1,153	0.03
52	780	0.06	58	1,212	0	1,212	404.02	1,212	0.03
53	795	0.08	69	1,280	0	1,280	404.02	1,280	0.03
54	810	0.08	69	1,349	0	1,349	404.03	1,349	0.03
55	825	0.05	46	1,395	0	1,395	404.03	1,395	0.03
56	840	0.05	46	1,442	0	1,442	404.03	1,442	0.03
57	855	0.06	54	1,496	0	1,496	404.03	1,496	0.03
58	870	0.06	52	1,549	0	1,549	404.03	1,549	0.04

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	BALANCE IN BASIN (acre-ft)
59	885	0.06	52	1,601	0	1,601	404.03	1,601	0.04
60	900	0.06	50	1,651	0	1,651	404.03	1,651	0.04
61	915	0.05	48	1,700	0	1,700	404.03	1,700	0.04
62	930	0.05	46	1,746	0	1,746	404.03	1,746	0.04
63	945	0.04	38	1,785	0	1,785	404.03	1,785	0.04
64	960	0.04	38	1,823	0	1,823	404.03	1,823	0.04
65	975	0.01	8	1,831	0	1,831	404.03	1,831	0.04
66	990	0.01	8	1,839	0	1,839	404.04	1,839	0.04
67	1005	0.01	6	1,845	0	1,845	404.04	1,845	0.04
68	1020	0.01	6	1,851	0	1,851	404.04	1,851	0.04
69	1035	0.01	10	1,861	0	1,861	404.04	1,861	0.04
70	1050	0.01	10	1,871	0	1,871	404.04	1,871	0.04
71	1065	0.01	10	1,881	0	1,881	404.04	1,881	0.04
72	1080	0.01	8	1,889	0	1,889	404.04	1,889	0.04
73	1095	0.01	8	1,897	0	1,897	404.04	1,897	0.04
74	1110	0.01	8	1,906	0	1,906	404.04	1,906	0.04
75	1125	0.01	6	1,912	0	1,912	404.04	1,912	0.04
76	1140	0.00	4	1,916	0	1,916	404.04	1,916	0.04
77	1155	0.01	6	1,922	0	1,922	404.04	1,922	0.04
78	1170	0.01	8	1,930	0	1,930	404.04	1,930	0.04
79	1185	0.01	6	1,936	0	1,936	404.04	1,936	0.04
80	1200	0.00	4	1,940	0	1,940	404.04	1,940	0.04
81	1215	0.01	6	1,946	0	1,946	404.04	1,946	0.04
82	1230	0.01	6	1,952	0	1,952	404.04	1,952	0.04
83	1245	0.01	6	1,958	0	1,958	404.04	1,958	0.04
84	1260	0.00	4	1,962	0	1,962	404.04	1,962	0.05
85	1275	0.01	6	1,968	0	1,968	404.04	1,968	0.05
86	1290	0.00	4	1,972	0	1,972	404.04	1,972	0.05
87	1305	0.01	6	1,978	0	1,978	404.04	1,978	0.05
88	1320	0.00	4	1,982	0	1,982	404.04	1,982	0.05
89	1335	0.01	6	1,988	0	1,988	404.04	1,988	0.05
90	1350	0.00	4	1,992	0	1,992	404.04	1,992	0.05
91	1365	0.00	4	1,996	0	1,996	404.04	1,996	0.05
92	1380	0.00	4	2,000	0	2,000	404.04	2,000	0.05
93	1395	0.00	4	2,004	0	2,004	404.04	2,004	0.05
94	1410	0.00	4	2,008	0	2,008	404.04	2,008	0.05
95	1425	0.00	4	2,012	0	2,012	404.04	2,012	0.05
96	1440	0.00	4	2,016	0	2,016	404.04	2,016	0.05

	A	B	C	D
1	RCFC&WCD SHORTCUT UNIT HYDROGRAPH METHOD			
2	DATA INPUT SHEET			
3				
4	WORKSHEET PREPARED BY:	JAMES R. BAZUA, P.E.		
5				
6	PROJECT NAME	ARMTEC DEFENSE TECHNOLOGY - 100 YEAR		
7	JOB #			
8				
9	CONCENTRATION POINT DESIGNATION	1		
10	AREA DESIGNATION	3000 SF BUILDING		
11				
12	TRIBUTARY AREAS	ACRES		
13				
14	COMMERCIAL			
15	PAVING/HARDSCAPE	0.65		
16	SF - 1 ACRE			
17	SF - 1/2 ACRE			
18	SF - 1/4 ACRE			
19	MF - CONDOMINIUMS			
20	MF - APARTMENTS			
21	MOBILE HOME PARK			
22	LANDSCAPING			
23	RETENTION BASIN	2.03		
24	GOLF COURSE			
25	MOUNTAINOUS			
26	LOW LOSS RATE (PERCENT)	90%		
27				
28	LENGTH OF WATERCOURSE (L)	430		
29	LENGTH TO POINT OPPOSITE CENTROID (Lca)	100		
30				
31	ELEVATION OF HEADWATER	409		
32	ELEVATION OF CONCENTRATION POINT	408		
33				
34	AVERAGE MANNINGS 'N' VALUE	0.02		
35				
36	STORM FREQUENCY (YEAR)	100		
37				
38	POINT RAIN			
39	3-HOUR	2.04		
40	6-HOUR	2.73		
41	24-HOUR	4.28		
42				
43	BASIN CHARACTERISTICS:	ELEVATION	AREA	
44		404	50322	
45		405	54589	
46		406	58968	
47		407	63641	
48		407.5	65750	
49				
50				
51				
52	PERCOLATION RATE (in/hr)	0		
53	NEGLECTING INFILTRATION IN			
54	DRYWELL DATA	PARTIALLY FULL BASIN		
55	NUMBER USED			
56	PERCOLATION RATE (cfs)			

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD				PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR							
BASIC DATA CALCULATION FORM				JOB # 0							
SHORTCUT METHOD				BY ES R. BAZUA, P.E.		DATE 2/2/2025					
PHYSICAL DATA											
[1] CONCENTRATION POINT	1										
[2] AREA DESIGNATION	3000 SF BUILDING										
[3] AREA - ACRES	2.680										
[4] L- FEET	430										
[5] L-MILES	0.081										
[6] La- FEET	100.00										
[7] La-MILES	0.019										
[8] ELEVATION OF HEADWATER	409										
[9] ELEVATION OF CONCENTRATION POINT	408										
[10] H- FEET	1										
[11] S- FEET/MILE	12.3										
[12] S^0.5	3.50										
[13] L*LCA/S^0.5	0.000										
[14] AVERAGE MANNINGS 'N'	0.02										
[15] LAG TIME-HOURS	0.03										
[16] LAG TIME-MINUTES	1.5										
[17] 100% OF LAG-MINUTES	1.5										
[18] 200% OF LAG-MINUTES	3.1										
[19] UNIT TIME-MINUTES (100%-200% OF LAG)	5										
[24] TOTAL PERCOLATION RATE (cfs)	0.00										
RAINFALL DATA											
[1] SOURCE											
[2] FREQUENCY-YEARS	100										
[3] DURATION:											
3-HOURS				6-HOURS				24-HOURS			
[4] POINT RAIN INCHES (Plate E-5.2)	[5] AREA	[6]	[7] AVERAGE POINT RAIN INCHES	[8] POINT RAIN INCHES (Plate E-5.4)	[9] AREA	[10]	[11] AVERAGE POINT RAIN INCHES	[12] POINT RAIN INCHES (Plate E-5.6)	[13] AREA	[14]	[15] AVERAGE POINT RAIN INCHES
2.04	2.680	1.00	2.04	2.73	2.680	1.00	2.73	4.28	2.680	1.00	4.28
		0.00	0.00			0.00	0.00			0.00	0.00
		0.00	0.00			0.00	0.00			0.00	0.00
		0.00	0.00			0.00	0.00			0.00	0.00
SUM [5]	2.68	SUM [7]	2.04	SUM [9]	2.68	SUM [11]	2.73	SUM [13]	2.68	SUM [15]	4.28
[16] AREA ADJ FACTOR			1.000				1.000				1.000
[17] ADJ AVG POINT RAIN			2.04				2.73				4.28

STORM EVENT SUMMARY			
DURATION	3-HOUR	6-HOUR	24-HOUR
EFFECTIVE RAIN (in)	0.91	0.95	0.66
FLOOD VOLUME (cu-ft)	8,823	9,218	6,430
(acre-ft)	0.20	0.21	0.15
REQUIRED STORAGE (cu-ft)	8,750	9,142	6,377
(acre-ft)	0.20	0.21	0.15
PEAK FLOW (cfs)	4.29	3.83	0.62
MAXIMUM WSEL (ft)	404.17	404.17	404.12

RCFC D SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 3 HOUR STORM EVENT					PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR CONCENTRATION POINT: 1				
BY: IES R. BAZUA, DATE 2/2/2025									
EFFECTIVE RAIN CALCULATION FORM									
DRAINAGE AREA-ACRES 2.68 UNIT TIME-MINUTES 5 LAG TIME - MINUTES 1.53 UNIT TIME-PERCENT OF LAG 327.3 TOTAL ADJUSTED STORM RAIN-INCHES 2.04 CONSTANT LOSS RATE-in/hr 0.41 LOW LOSS RATE - PERCENT 90%				TOTAL PERCOLATION RATE (cfs) 0.00 cfs					
Unit Time Period	Time Minutes Hours		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate in/hr Max Low		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
1	5	0.08	1.3	0.318	0.41	0.29	0.03	0.09	25.59
2	10	0.17	1.3	0.318	0.41	0.29	0.03	0.09	25.59
3	15	0.25	1.1	0.269	0.41	0.24	0.03	0.07	21.65
4	20	0.33	1.5	0.367	0.41	0.33	0.04	0.10	29.52
5	25	0.42	1.5	0.367	0.41	0.33	0.04	0.10	29.52
6	30	0.50	1.8	0.441	0.41	0.40	0.03	0.09	27.45
7	35	0.58	1.5	0.367	0.41	0.33	0.04	0.10	29.52
8	40	0.67	1.8	0.441	0.41	0.40	0.03	0.09	27.45
9	45	0.75	1.8	0.441	0.41	0.40	0.03	0.09	27.45
10	50	0.83	1.5	0.367	0.41	0.33	0.04	0.10	29.52
11	55	0.92	1.6	0.392	0.41	0.35	0.04	0.10	31.49
12	60	1.00	1.8	0.441	0.41	0.40	0.03	0.09	27.45
13	65	1.08	2.2	0.539	0.41	0.48	0.13	0.35	106.18
14	70	1.17	2.2	0.539	0.41	0.48	0.13	0.35	106.18
15	75	1.25	2.2	0.539	0.41	0.48	0.13	0.35	106.18
16	80	1.33	2.0	0.490	0.41	0.44	0.08	0.22	66.82
17	85	1.42	2.6	0.636	0.41	0.57	0.23	0.62	184.91
18	90	1.50	2.7	0.661	0.41	0.59	0.25	0.68	204.59
19	95	1.58	2.4	0.588	0.41	0.53	0.18	0.49	145.55
20	100	1.67	2.7	0.661	0.41	0.59	0.25	0.68	204.59
21	105	1.75	3.3	0.808	0.41	0.73	0.40	1.08	322.68
22	110	1.83	3.1	0.759	0.41	0.68	0.35	0.94	283.32
23	115	1.92	2.9	0.710	0.41	0.64	0.30	0.81	243.96
24	120	2.00	3.0	0.734	0.41	0.66	0.33	0.88	263.64
25	125	2.08	3.1	0.759	0.41	0.68	0.35	0.94	283.32
26	130	2.17	4.2	1.028	0.41	0.93	0.62	1.67	499.82
27	135	2.25	5.0	1.224	0.41	1.10	0.82	2.19	657.28
28	140	2.33	3.5	0.857	0.41	0.77	0.45	1.21	362.05
29	145	2.42	6.8	1.665	0.41	1.50	1.26	3.37	1011.55
30	150	2.50	7.3	1.787	0.41	1.61	1.38	3.70	1109.96
31	155	2.58	8.2	2.007	0.41	1.81	1.60	4.29	1287.10
32	160	2.67	5.9	1.444	0.41	1.30	1.04	2.78	834.41
33	165	2.75	2.0	0.490	0.41	0.44	0.08	0.22	66.82
34	170	2.83	1.8	0.441	0.41	0.40	0.03	0.09	27.45
35	175	2.92	1.8	0.441	0.41	0.40	0.03	0.09	27.45
36	180	3.00	0.6	0.147	0.41	0.13	0.01	0.04	11.81

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY	
EFFECTIVE RAIN (in)	0.91
FLOOD VOLUME (acft)	0.20
FLOOD VOLUME (cuft)	8822.80
REQUIRED STORAGE (acft)	0.20
REQUIRED STORAGE (cuft)	8749.85
PEAK FLOW RATE (cfs)	4.29

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT:	ARMTEC DEFENSE TECHNOLOGY - 100 YE
	CONCENTRATION POINT:	1
	BY: JAMES R. BAZ DATE:	2/2/2025

EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	2.68	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.53	
UNIT TIME-PERCENT OF LAG	327.3	
TOTAL ADJUSTED STORM RAIN-INCHES	2.73	
CONSTANT LOSS RATE-in/hr	0.406	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.00 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			Max	Low			
1	5	0.08	0.5	0.164	0.41	0.15	0.02	0.04	13.17
2	10	0.17	0.6	0.197	0.41	0.18	0.02	0.05	15.80
3	15	0.25	0.6	0.197	0.41	0.18	0.02	0.05	15.80
4	20	0.33	0.6	0.197	0.41	0.18	0.02	0.05	15.80
5	25	0.42	0.6	0.197	0.41	0.18	0.02	0.05	15.80
6	30	0.50	0.7	0.229	0.41	0.21	0.02	0.06	18.44
7	35	0.58	0.7	0.229	0.41	0.21	0.02	0.06	18.44
8	40	0.67	0.7	0.229	0.41	0.21	0.02	0.06	18.44
9	45	0.75	0.7	0.229	0.41	0.21	0.02	0.06	18.44
10	50	0.83	0.7	0.229	0.41	0.21	0.02	0.06	18.44
11	55	0.92	0.7	0.229	0.41	0.21	0.02	0.06	18.44
12	60	1.00	0.8	0.262	0.41	0.24	0.03	0.07	21.07
13	65	1.08	0.8	0.262	0.41	0.24	0.03	0.07	21.07
14	70	1.17	0.8	0.262	0.41	0.24	0.03	0.07	21.07
15	75	1.25	0.8	0.262	0.41	0.24	0.03	0.07	21.07
16	80	1.33	0.8	0.262	0.41	0.24	0.03	0.07	21.07
17	85	1.42	0.8	0.262	0.41	0.24	0.03	0.07	21.07
18	90	1.50	0.8	0.262	0.41	0.24	0.03	0.07	21.07
19	95	1.58	0.8	0.262	0.41	0.24	0.03	0.07	21.07
20	100	1.67	0.8	0.262	0.41	0.24	0.03	0.07	21.07
21	105	1.75	0.8	0.262	0.41	0.24	0.03	0.07	21.07
22	110	1.83	0.8	0.262	0.41	0.24	0.03	0.07	21.07
23	115	1.92	0.8	0.262	0.41	0.24	0.03	0.07	21.07
24	120	2.00	0.9	0.295	0.41	0.27	0.03	0.08	23.71
25	125	2.08	0.8	0.262	0.41	0.24	0.03	0.07	21.07
26	130	2.17	0.9	0.295	0.41	0.27	0.03	0.08	23.71
27	135	2.25	0.9	0.295	0.41	0.27	0.03	0.08	23.71
28	140	2.33	0.9	0.295	0.41	0.27	0.03	0.08	23.71
29	145	2.42	0.9	0.295	0.41	0.27	0.03	0.08	23.71
30	150	2.50	0.9	0.295	0.41	0.27	0.03	0.08	23.71
31	155	2.58	0.9	0.295	0.41	0.27	0.03	0.08	23.71
32	160	2.67	0.9	0.295	0.41	0.27	0.03	0.08	23.71
33	165	2.75	1.0	0.328	0.41	0.29	0.03	0.09	26.34
34	170	2.83	1.0	0.328	0.41	0.29	0.03	0.09	26.34
35	175	2.92	1.0	0.328	0.41	0.29	0.03	0.09	26.34
36	180	3.00	1.0	0.328	0.41	0.29	0.03	0.09	26.34
37	185	3.08	1.0	0.328	0.41	0.29	0.03	0.09	26.34
38	190	3.17	1.1	0.360	0.41	0.32	0.04	0.10	28.97
39	195	3.25	1.1	0.360	0.41	0.32	0.04	0.10	28.97
40	200	3.33	1.1	0.360	0.41	0.32	0.04	0.10	28.97
41	205	3.42	1.2	0.393	0.41	0.35	0.04	0.11	31.61
42	210	3.50	1.3	0.426	0.41	0.38	0.02	0.05	15.59
43	215	3.58	1.4	0.459	0.41	0.41	0.05	0.14	41.93
44	220	3.67	1.4	0.459	0.41	0.41	0.05	0.14	41.93
45	225	3.75	1.5	0.491	0.41	0.44	0.08	0.23	68.27
46	230	3.83	1.5	0.491	0.41	0.44	0.08	0.23	68.27
47	235	3.92	1.6	0.524	0.41	0.47	0.12	0.32	94.60
48	240	4.00	1.6	0.524	0.41	0.47	0.12	0.32	94.60
49	245	4.08	1.7	0.557	0.41	0.50	0.15	0.40	120.94
50	250	4.17	1.8	0.590	0.41	0.53	0.18	0.49	147.28
51	255	4.25	1.9	0.622	0.41	0.56	0.22	0.58	173.62
52	260	4.33	2.0	0.655	0.41	0.59	0.25	0.67	199.96
53	265	4.42	2.1	0.688	0.41	0.62	0.28	0.75	226.30
54	270	4.50	2.1	0.688	0.41	0.62	0.28	0.75	226.30
55	275	4.58	2.2	0.721	0.41	0.65	0.31	0.84	252.64
56	280	4.67	2.3	0.753	0.41	0.68	0.35	0.93	278.98

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 6 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR CONCENTRATION POINT: 1 BY: JAMES R. BAZ DATE: 2/2/2025
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EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES	2.68	
UNIT TIME-MINUTES	5	
LAG TIME - MINUTES	1.53	
UNIT TIME-PERCENT OF LAG	327.3	
TOTAL ADJUSTED STORM RAIN-INCHES	2.73	
CONSTANT LOSS RATE-in/hr	0.406	
LOW LOSS RATE - PERCENT	90%	TOTAL PERCOLATION RATE (cfs) 0.00 cfs

Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr				
					Max	Low			
57	285	4.75	2.4	0.786	0.41	0.71	0.38	1.02	305.32
58	290	4.83	2.4	0.786	0.41	0.71	0.38	1.02	305.32
59	295	4.92	2.5	0.819	0.41	0.74	0.41	1.11	331.66
60	300	5.00	2.6	0.852	0.41	0.77	0.45	1.19	358.00
61	305	5.08	3.1	1.016	0.41	0.91	0.61	1.63	489.69
62	310	5.17	3.6	1.179	0.41	1.06	0.77	2.07	621.39
63	315	5.25	3.9	1.278	0.41	1.15	0.87	2.33	700.40
64	320	5.33	4.2	1.376	0.41	1.24	0.97	2.60	779.42
65	325	5.42	4.7	1.540	0.41	1.39	1.13	3.04	911.11
66	330	5.50	5.6	1.835	0.41	1.65	1.43	3.83	1148.17
67	335	5.58	1.9	0.622	0.41	0.56	0.22	0.58	173.62
68	340	5.67	0.9	0.295	0.41	0.27	0.03	0.08	23.71
69	345	5.75	0.6	0.197	0.41	0.18	0.02	0.05	15.80
70	350	5.83	0.5	0.164	0.41	0.15	0.02	0.04	13.17
71	355	5.92	0.3	0.098	0.41	0.09	0.01	0.03	7.90
72	360	6.00	0.2	0.066	0.41	0.06	0.01	0.02	5.27

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	0.95
FLOOD VOLUME (acft)	0.21
FLOOD VOLUME (cuft)	9218.15
REQUIRED STORAGE (acft)	0.21
REQUIRED STORAGE (cuft)	9141.94
PEAK FLOW RATE (cfs)	3.83

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR CONCENTRATION POINT: 1
BY: JAMES R. BAZ	DATE: 2/2/2025

EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES			2.680	CONSTANT LOSS RATE-in/hr			n/a		
UNIT TIME-MINUTES			15	VARIABLE LOSS RATE (AVG) in/hr			0.4065		
LAG TIME - MINUTES			1.53	MINIMUM LOSS RATE (for var. loss) - in/hr			0.203		
UNIT TIME-PERCENT OF LAG			982.0	LOW LOSS RATE - DECIMAL			0.90		
TOTAL ADJUSTED STORM RAIN-INCHES			4.28	C			0.00376		
				PERCOLATION RATE (cfs)			0.00		
Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr	Low			
1	15	0.25	0.2	0.034	0.718	0.031	0.003	0.01	8.26
2	30	0.50	0.3	0.051	0.709	0.046	0.005	0.01	12.39
3	45	0.75	0.3	0.051	0.701	0.046	0.005	0.01	12.39
4	60	1.00	0.4	0.068	0.693	0.062	0.007	0.02	16.52
5	75	1.25	0.3	0.051	0.685	0.046	0.005	0.01	12.39
6	90	1.50	0.3	0.051	0.677	0.046	0.005	0.01	12.39
7	105	1.75	0.3	0.051	0.669	0.046	0.005	0.01	12.39
8	120	2.00	0.4	0.068	0.661	0.062	0.007	0.02	16.52
9	135	2.25	0.4	0.068	0.653	0.062	0.007	0.02	16.52
10	150	2.50	0.4	0.068	0.645	0.062	0.007	0.02	16.52
11	165	2.75	0.5	0.086	0.637	0.077	0.009	0.02	20.65
12	180	3.00	0.5	0.086	0.629	0.077	0.009	0.02	20.65
13	195	3.25	0.5	0.086	0.621	0.077	0.009	0.02	20.65
14	210	3.50	0.5	0.086	0.613	0.077	0.009	0.02	20.65
15	225	3.75	0.5	0.086	0.606	0.077	0.009	0.02	20.65
16	240	4.00	0.6	0.103	0.598	0.092	0.010	0.03	24.78
17	255	4.25	0.6	0.103	0.591	0.092	0.010	0.03	24.78
18	270	4.50	0.7	0.120	0.583	0.108	0.012	0.03	28.91
19	285	4.75	0.7	0.120	0.576	0.108	0.012	0.03	28.91
20	300	5.00	0.8	0.137	0.568	0.123	0.014	0.04	33.03
21	315	5.25	0.6	0.103	0.561	0.092	0.010	0.03	24.78
22	330	5.50	0.7	0.120	0.553	0.108	0.012	0.03	28.91
23	345	5.75	0.8	0.137	0.546	0.123	0.014	0.04	33.03
24	360	6.00	0.8	0.137	0.539	0.123	0.014	0.04	33.03
25	375	6.25	0.9	0.154	0.532	0.139	0.015	0.04	37.16
26	390	6.50	0.9	0.154	0.525	0.139	0.015	0.04	37.16
27	405	6.75	1.0	0.171	0.518	0.154	0.017	0.05	41.29
28	420	7.00	1.0	0.171	0.511	0.154	0.017	0.05	41.29
29	435	7.25	1.0	0.171	0.504	0.154	0.017	0.05	41.29
30	450	7.50	1.1	0.188	0.497	0.169	0.019	0.05	45.42
31	465	7.75	1.2	0.205	0.490	0.185	0.021	0.06	49.55
32	480	8.00	1.3	0.223	0.483	0.200	0.022	0.06	53.68
33	495	8.25	1.5	0.257	0.477	0.231	0.026	0.07	61.94
34	510	8.50	1.5	0.257	0.470	0.231	0.026	0.07	61.94
35	525	8.75	1.6	0.274	0.463	0.247	0.027	0.07	66.07
36	540	9.00	1.7	0.291	0.457	0.262	0.029	0.08	70.20
37	555	9.25	1.9	0.325	0.450	0.293	0.033	0.09	78.46
38	570	9.50	2.0	0.342	0.444	0.308	0.034	0.09	82.59
39	585	9.75	2.1	0.360	0.438	0.324	0.036	0.10	86.72
40	600	10.00	2.2	0.377	0.431	0.339	0.038	0.10	90.85
41	615	10.25	1.5	0.257	0.425	0.231	0.026	0.07	61.94
42	630	10.50	1.5	0.257	0.419	0.231	0.026	0.07	61.94
43	645	10.75	2.0	0.342	0.413	0.308	0.034	0.09	82.59
44	660	11.00	2.0	0.342	0.407	0.308	0.034	0.09	82.59
45	675	11.25	1.9	0.325	0.401	0.293	0.033	0.09	78.46
46	690	11.50	1.9	0.325	0.395	0.293	0.033	0.09	78.46
47	705	11.75	1.7	0.291	0.389	0.262	0.029	0.08	70.20
48	720	12.00	1.8	0.308	0.383	0.277	0.031	0.08	74.33
49	735	12.25	2.5	0.428	0.378	0.385	0.050	0.14	121.68
50	750	12.50	2.6	0.445	0.372	0.401	0.073	0.20	176.61
51	765	12.75	2.8	0.479	0.366	0.431	0.113	0.30	272.68
52	780	13.00	2.9	0.496	0.361	0.447	0.136	0.36	327.29
53	795	13.25	3.4	0.582	0.355	0.524	0.227	0.61	546.91
54	810	13.50	3.4	0.582	0.350	0.524	0.232	0.62	559.90
55	825	13.75	2.3	0.394	0.345	0.354	0.049	0.13	118.49
56	840	14.00	2.3	0.394	0.339	0.354	0.054	0.15	131.15
57	855	14.25	2.7	0.462	0.334	0.416	0.128	0.34	308.80
58	870	14.50	2.6	0.445	0.329	0.401	0.116	0.31	279.82
59	885	14.75	2.6	0.445	0.324	0.401	0.121	0.32	291.95
60	900	15.00	2.5	0.428	0.319	0.385	0.109	0.29	262.62
61	915	15.25	2.4	0.411	0.314	0.370	0.097	0.26	233.10
62	930	15.50	2.3	0.394	0.309	0.354	0.084	0.23	203.41
63	945	15.75	1.9	0.325	0.305	0.293	0.021	0.06	49.65
64	960	16.00	1.9	0.325	0.300	0.293	0.025	0.07	60.87
65	975	16.25	0.4	0.068	0.295	0.062	0.007	0.02	16.52
66	990	16.50	0.4	0.068	0.291	0.062	0.007	0.02	16.52
67	1005	16.75	0.3	0.051	0.287	0.046	0.005	0.01	12.39

RCFCD SYNTHETIC UNIT HYDROGRAPH METHOD 100 YEAR - 24 HOUR STORM EVENT	PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR CONCENTRATION POINT: 1 BY: JAMES R. BAZ DATE: 2/2/2025
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EFFECTIVE RAIN CALCULATION FORM

DRAINAGE AREA-ACRES			2.680	CONSTANT LOSS RATE-in/hr			n/a		
UNIT TIME-MINUTES			15	VARIABLE LOSS RATE (AVG) in/hr			0.4065		
LAG TIME - MINUTES			1.53	MINIMUM LOSS RATE (for var. loss) - in/hr			0.203		
UNIT TIME-PERCENT OF LAG			982.0	LOW LOSS RATE - DECIMAL			0.90		
TOTAL ADJUSTED STORM RAIN-INCHES			4.28	C			0.00376		
				PERCOLATION RATE (cfs)			0.00		
Unit Time Period	Time		Pattern Percent (Plate E-5.9)	Storm Rain in/hr	Loss Rate		Effective Rain in/hr	Flood Hydrograph Flow cfs	Required Storage cf
	Minutes	Hours			in/hr	Max			
68	1020	17.00	0.3	0.051	0.282	0.046	0.005	0.01	12.39
69	1035	17.25	0.5	0.086	0.278	0.077	0.009	0.02	20.65
70	1050	17.50	0.5	0.086	0.274	0.077	0.009	0.02	20.65
71	1065	17.75	0.5	0.086	0.270	0.077	0.009	0.02	20.65
72	1080	18.00	0.4	0.068	0.266	0.062	0.007	0.02	16.52
73	1095	18.25	0.4	0.068	0.262	0.062	0.007	0.02	16.52
74	1110	18.50	0.4	0.068	0.258	0.062	0.007	0.02	16.52
75	1125	18.75	0.3	0.051	0.254	0.046	0.005	0.01	12.39
76	1140	19.00	0.2	0.034	0.251	0.031	0.003	0.01	8.26
77	1155	19.25	0.3	0.051	0.247	0.046	0.005	0.01	12.39
78	1170	19.50	0.4	0.068	0.244	0.062	0.007	0.02	16.52
79	1185	19.75	0.3	0.051	0.240	0.046	0.005	0.01	12.39
80	1200	20.00	0.2	0.034	0.237	0.031	0.003	0.01	8.26
81	1215	20.25	0.3	0.051	0.234	0.046	0.005	0.01	12.39
82	1230	20.50	0.3	0.051	0.231	0.046	0.005	0.01	12.39
83	1245	20.75	0.3	0.051	0.228	0.046	0.005	0.01	12.39
84	1260	21.00	0.2	0.034	0.225	0.031	0.003	0.01	8.26
85	1275	21.25	0.3	0.051	0.223	0.046	0.005	0.01	12.39
86	1290	21.50	0.2	0.034	0.220	0.031	0.003	0.01	8.26
87	1305	21.75	0.3	0.051	0.218	0.046	0.005	0.01	12.39
88	1320	22.00	0.2	0.034	0.215	0.031	0.003	0.01	8.26
89	1335	22.25	0.3	0.051	0.213	0.046	0.005	0.01	12.39
90	1350	22.50	0.2	0.034	0.211	0.031	0.003	0.01	8.26
91	1365	22.75	0.2	0.034	0.209	0.031	0.003	0.01	8.26
92	1380	23.00	0.2	0.034	0.208	0.031	0.003	0.01	8.26
93	1395	23.25	0.2	0.034	0.206	0.031	0.003	0.01	8.26
94	1410	23.50	0.2	0.034	0.205	0.031	0.003	0.01	8.26
95	1425	23.75	0.2	0.034	0.204	0.031	0.003	0.01	8.26
96	1440	24.00	0.2	0.034	0.203	0.031	0.003	0.01	8.26

EFFECTIVE RAIN & FLOOD VOLUMES SUMMARY

EFFECTIVE RAIN (in)	0.66
FLOOD VOLUME (acft)	0.15
FLOOD VOLUME (cuft)	6430.28
REQUIRED STORAGE (acft)	0.15
REQUIRED STORAGE (cuft)	6377.11
PEAK FLOW (cfs)	0.62

PROJECT: ARMTEC DEFENSE TECHNOLOGY - 100 YEAR
 JOB # 0
 1

BASIN CHARACTERISTICS

CONTOUR	DEPTH		AREA		VOLUME		
	INCR (ft)	TOTAL (ft)	INCR (sf)	TOTAL (sf)	INCR (cuft)	TOTAL (cuft)	TOTAL (acre-ft)
404	0	0		50322	0	0	0.00
405	1	1	4267	54589	52456	52456	1.20
406	1	2	4379	58968	56779	109234	2.51
407	1	3	4673	63641	61305	170539	3.92
407.5	0.5	3.5	2109	65750	32348	202886	4.66

PERCOLATION CALCULATIONS

PERCOLATION RATE 0 in/hr 0.00 cfs

MAXWELL IV DRYWELLS

NUMBER USED 0
 RATE/DRYWELL 0 cfs
 TOTAL DISSIPATED 0 cfs

TOTAL PERCOLATION RATE 0.00 cfs

1
 JOB # 0
 100 YEAR - 3 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN	
								(cuft)	(acre-ft)
1	5	0.09	26	26	0	26	404.00	26	0.00
2	10	0.09	26	51	0	51	404.00	51	0.00
3	15	0.07	22	73	0	73	404.00	73	0.00
4	20	0.10	30	102	0	102	404.00	102	0.00
5	25	0.10	30	132	0	132	404.00	132	0.00
6	30	0.09	27	159	0	159	404.00	159	0.00
7	35	0.10	30	189	0	189	404.00	189	0.00
8	40	0.09	27	216	0	216	404.00	216	0.00
9	45	0.09	27	244	0	244	404.00	244	0.01
10	50	0.10	30	273	0	273	404.01	273	0.01
11	55	0.10	31	305	0	305	404.01	305	0.01
12	60	0.09	27	332	0	332	404.01	332	0.01
13	65	0.35	106	438	0	438	404.01	438	0.01
14	70	0.35	106	545	0	545	404.01	545	0.01
15	75	0.35	106	651	0	651	404.01	651	0.01
16	80	0.22	67	718	0	718	404.01	718	0.02
17	85	0.62	185	902	0	902	404.02	902	0.02
18	90	0.68	205	1,107	0	1,107	404.02	1,107	0.03
19	95	0.49	146	1,253	0	1,253	404.02	1,253	0.03
20	100	0.68	205	1,457	0	1,457	404.03	1,457	0.03
21	105	1.08	323	1,780	0	1,780	404.03	1,780	0.04
22	110	0.94	283	2,063	0	2,063	404.04	2,063	0.05
23	115	0.81	244	2,307	0	2,307	404.04	2,307	0.05
24	120	0.88	264	2,571	0	2,571	404.05	2,571	0.06
25	125	0.94	283	2,854	0	2,854	404.05	2,854	0.07
26	130	1.67	500	3,354	0	3,354	404.06	3,354	0.08
27	135	2.19	657	4,011	0	4,011	404.08	4,011	0.09
28	140	1.21	362	4,373	0	4,373	404.08	4,373	0.10
29	145	3.37	1,012	5,385	0	5,385	404.10	5,385	0.12
30	150	3.70	1,110	6,495	0	6,495	404.12	6,495	0.15
31	155	4.29	1,287	7,782	0	7,782	404.15	7,782	0.18
32	160	2.78	834	8,616	0	8,616	404.16	8,616	0.20
33	165	0.22	67	8,683	0	8,683	404.17	8,683	0.20
34	170	0.09	27	8,711	0	8,711	404.17	8,711	0.20
35	175	0.09	27	8,738	0	8,738	404.17	8,738	0.20
36	180	0.04	12	8,750	0	8,750	404.17	8,750	0.20

1
 JOB # 0
 100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	(acre-ft)
1	5	0.04	13	13	0	13	404.00	13	0.00
2	10	0.05	16	29	0	29	404.00	29	0.00
3	15	0.05	16	45	0	45	404.00	45	0.00
4	20	0.05	16	61	0	61	404.00	61	0.00
5	25	0.05	16	76	0	76	404.00	76	0.00
6	30	0.06	18	95	0	95	404.00	95	0.00
7	35	0.06	18	113	0	113	404.00	113	0.00
8	40	0.06	18	132	0	132	404.00	132	0.00
9	45	0.06	18	150	0	150	404.00	150	0.00
10	50	0.06	18	169	0	169	404.00	169	0.00
11	55	0.06	18	187	0	187	404.00	187	0.00
12	60	0.07	21	208	0	208	404.00	208	0.00
13	65	0.07	21	229	0	229	404.00	229	0.01
14	70	0.07	21	250	0	250	404.00	250	0.01
15	75	0.07	21	271	0	271	404.01	271	0.01
16	80	0.07	21	292	0	292	404.01	292	0.01
17	85	0.07	21	313	0	313	404.01	313	0.01
18	90	0.07	21	335	0	335	404.01	335	0.01
19	95	0.07	21	356	0	356	404.01	356	0.01
20	100	0.07	21	377	0	377	404.01	377	0.01
21	105	0.07	21	398	0	398	404.01	398	0.01
22	110	0.07	21	419	0	419	404.01	419	0.01
23	115	0.07	21	440	0	440	404.01	440	0.01
24	120	0.08	24	464	0	464	404.01	464	0.01
25	125	0.07	21	485	0	485	404.01	485	0.01
26	130	0.08	24	508	0	508	404.01	508	0.01
27	135	0.08	24	532	0	532	404.01	532	0.01
28	140	0.08	24	556	0	556	404.01	556	0.01
29	145	0.08	24	579	0	579	404.01	579	0.01
30	150	0.08	24	603	0	603	404.01	603	0.01
31	155	0.08	24	627	0	627	404.01	627	0.01
32	160	0.08	24	651	0	651	404.01	651	0.01
33	165	0.09	26	677	0	677	404.01	677	0.02
34	170	0.09	26	703	0	703	404.01	703	0.02
35	175	0.09	26	730	0	730	404.01	730	0.02
36	180	0.09	26	756	0	756	404.01	756	0.02
37	185	0.09	26	782	0	782	404.01	782	0.02
38	190	0.10	29	811	0	811	404.02	811	0.02
39	195	0.10	29	840	0	840	404.02	840	0.02
40	200	0.10	29	869	0	869	404.02	869	0.02
41	205	0.11	32	901	0	901	404.02	901	0.02
42	210	0.05	16	916	0	916	404.02	916	0.02
43	215	0.14	42	958	0	958	404.02	958	0.02
44	220	0.14	42	1,000	0	1,000	404.02	1,000	0.02
45	225	0.23	68	1,069	0	1,069	404.02	1,069	0.02
46	230	0.23	68	1,137	0	1,137	404.02	1,137	0.03
47	235	0.32	95	1,231	0	1,231	404.02	1,231	0.03
48	240	0.32	95	1,326	0	1,326	404.03	1,326	0.03
49	245	0.40	121	1,447	0	1,447	404.03	1,447	0.03
50	250	0.49	147	1,594	0	1,594	404.03	1,594	0.04
51	255	0.58	174	1,768	0	1,768	404.03	1,768	0.04
52	260	0.67	200	1,968	0	1,968	404.04	1,968	0.05
53	265	0.75	226	2,194	0	2,194	404.04	2,194	0.05
54	270	0.75	226	2,420	0	2,420	404.05	2,420	0.06
55	275	0.84	253	2,673	0	2,673	404.05	2,673	0.06

1
 JOB # 0
 100 YEAR - 6 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft) (acre-ft)	
56	280	0.93	279	2,952	0	2,952	404.06	2,952	0.07
57	285	1.02	305	3,257	0	3,257	404.06	3,257	0.07
58	290	1.02	305	3,563	0	3,563	404.07	3,563	0.08
59	295	1.11	332	3,894	0	3,894	404.07	3,894	0.09
60	300	1.19	358	4,252	0	4,252	404.08	4,252	0.10
61	305	1.63	490	4,742	0	4,742	404.09	4,742	0.11
62	310	2.07	621	5,363	0	5,363	404.10	5,363	0.12
63	315	2.33	700	6,064	0	6,064	404.12	6,064	0.14
64	320	2.60	779	6,843	0	6,843	404.13	6,843	0.16
65	325	3.04	911	7,754	0	7,754	404.15	7,754	0.18
66	330	3.83	1,148	8,902	0	8,902	404.17	8,902	0.20
67	335	0.58	174	9,076	0	9,076	404.17	9,076	0.21
68	340	0.08	24	9,100	0	9,100	404.17	9,100	0.21
69	345	0.05	16	9,116	0	9,116	404.17	9,116	0.21
70	350	0.04	13	9,129	0	9,129	404.17	9,129	0.21
71	355	0.03	8	9,137	0	9,137	404.17	9,137	0.21
72	360	0.02	5	9,142	0	9,142	404.17	9,142	0.21

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	BALANCE IN BASIN (acre-ft)
1	15	0.01	8	8	0	8	404.00	8	0.00
2	30	0.01	12	21	0	21	404.00	21	0.00
3	45	0.01	12	33	0	33	404.00	33	0.00
4	60	0.02	17	50	0	50	404.00	50	0.00
5	75	0.01	12	62	0	62	404.00	62	0.00
6	90	0.01	12	74	0	74	404.00	74	0.00
7	105	0.01	12	87	0	87	404.00	87	0.00
8	120	0.02	17	103	0	103	404.00	103	0.00
9	135	0.02	17	120	0	120	404.00	120	0.00
10	150	0.02	17	136	0	136	404.00	136	0.00
11	165	0.02	21	157	0	157	404.00	157	0.00
12	180	0.02	21	178	0	178	404.00	178	0.00
13	195	0.02	21	198	0	198	404.00	198	0.00
14	210	0.02	21	219	0	219	404.00	219	0.01
15	225	0.02	21	240	0	240	404.00	240	0.01
16	240	0.03	25	264	0	264	404.01	264	0.01
17	255	0.03	25	289	0	289	404.01	289	0.01
18	270	0.03	29	318	0	318	404.01	318	0.01
19	285	0.03	29	347	0	347	404.01	347	0.01
20	300	0.04	33	380	0	380	404.01	380	0.01
21	315	0.03	25	405	0	405	404.01	405	0.01
22	330	0.03	29	434	0	434	404.01	434	0.01
23	345	0.04	33	467	0	467	404.01	467	0.01
24	360	0.04	33	500	0	500	404.01	500	0.01
25	375	0.04	37	537	0	537	404.01	537	0.01
26	390	0.04	37	574	0	574	404.01	574	0.01
27	405	0.05	41	615	0	615	404.01	615	0.01
28	420	0.05	41	657	0	657	404.01	657	0.02
29	435	0.05	41	698	0	698	404.01	698	0.02
30	450	0.05	45	743	0	743	404.01	743	0.02
31	465	0.06	50	793	0	793	404.02	793	0.02
32	480	0.06	54	847	0	847	404.02	847	0.02
33	495	0.07	62	908	0	908	404.02	908	0.02
34	510	0.07	62	970	0	970	404.02	970	0.02
35	525	0.07	66	1,036	0	1,036	404.02	1,036	0.02
36	540	0.08	70	1,107	0	1,107	404.02	1,107	0.03
37	555	0.09	78	1,185	0	1,185	404.02	1,185	0.03
38	570	0.09	83	1,268	0	1,268	404.02	1,268	0.03
39	585	0.10	87	1,354	0	1,354	404.03	1,354	0.03
40	600	0.10	91	1,445	0	1,445	404.03	1,445	0.03
41	615	0.07	62	1,507	0	1,507	404.03	1,507	0.03
42	630	0.07	62	1,569	0	1,569	404.03	1,569	0.04
43	645	0.09	83	1,652	0	1,652	404.03	1,652	0.04
44	660	0.09	83	1,734	0	1,734	404.03	1,734	0.04
45	675	0.09	78	1,813	0	1,813	404.03	1,813	0.04
46	690	0.09	78	1,891	0	1,891	404.04	1,891	0.04
47	705	0.08	70	1,961	0	1,961	404.04	1,961	0.05
48	720	0.08	74	2,036	0	2,036	404.04	2,036	0.05
49	735	0.14	122	2,157	0	2,157	404.04	2,157	0.05
50	750	0.20	177	2,334	0	2,334	404.04	2,334	0.05
51	765	0.30	273	2,607	0	2,607	404.05	2,607	0.06
52	780	0.36	327	2,934	0	2,934	404.06	2,934	0.07
53	795	0.61	547	3,481	0	3,481	404.07	3,481	0.08
54	810	0.62	560	4,041	0	4,041	404.08	4,041	0.09
55	825	0.13	118	4,159	0	4,159	404.08	4,159	0.10
56	840	0.15	131	4,290	0	4,290	404.08	4,290	0.10
57	855	0.34	309	4,599	0	4,599	404.09	4,599	0.11
58	870	0.31	280	4,879	0	4,879	404.09	4,879	0.11

1
 JOB # 0
 100 YEAR - 24 HOUR STORM EVENT

UNIT PERIOD	TIME (min)	FLOW IN (cfs)	VOLUME IN (cuft)	TOTAL IN BASIN (cuft)	PERC OUT (cuft)	TOTAL IN BASIN (cuft)	BASIN DEPTH (ft)	BALANCE IN BASIN (cuft)	BALANCE IN BASIN (acre-ft)
59	885	0.32	292	5,171	0	5,171	404.10	5,171	0.12
60	900	0.29	263	5,434	0	5,434	404.10	5,434	0.12
61	915	0.26	233	5,667	0	5,667	404.11	5,667	0.13
62	930	0.23	203	5,870	0	5,870	404.11	5,870	0.13
63	945	0.06	50	5,920	0	5,920	404.11	5,920	0.14
64	960	0.07	61	5,981	0	5,981	404.11	5,981	0.14
65	975	0.02	17	5,997	0	5,997	404.11	5,997	0.14
66	990	0.02	17	6,014	0	6,014	404.11	6,014	0.14
67	1005	0.01	12	6,026	0	6,026	404.11	6,026	0.14
68	1020	0.01	12	6,039	0	6,039	404.12	6,039	0.14
69	1035	0.02	21	6,059	0	6,059	404.12	6,059	0.14
70	1050	0.02	21	6,080	0	6,080	404.12	6,080	0.14
71	1065	0.02	21	6,100	0	6,100	404.12	6,100	0.14
72	1080	0.02	17	6,117	0	6,117	404.12	6,117	0.14
73	1095	0.02	17	6,133	0	6,133	404.12	6,133	0.14
74	1110	0.02	17	6,150	0	6,150	404.12	6,150	0.14
75	1125	0.01	12	6,162	0	6,162	404.12	6,162	0.14
76	1140	0.01	8	6,171	0	6,171	404.12	6,171	0.14
77	1155	0.01	12	6,183	0	6,183	404.12	6,183	0.14
78	1170	0.02	17	6,200	0	6,200	404.12	6,200	0.14
79	1185	0.01	12	6,212	0	6,212	404.12	6,212	0.14
80	1200	0.01	8	6,220	0	6,220	404.12	6,220	0.14
81	1215	0.01	12	6,233	0	6,233	404.12	6,233	0.14
82	1230	0.01	12	6,245	0	6,245	404.12	6,245	0.14
83	1245	0.01	12	6,257	0	6,257	404.12	6,257	0.14
84	1260	0.01	8	6,266	0	6,266	404.12	6,266	0.14
85	1275	0.01	12	6,278	0	6,278	404.12	6,278	0.14
86	1290	0.01	8	6,286	0	6,286	404.12	6,286	0.14
87	1305	0.01	12	6,299	0	6,299	404.12	6,299	0.14
88	1320	0.01	8	6,307	0	6,307	404.12	6,307	0.14
89	1335	0.01	12	6,319	0	6,319	404.12	6,319	0.15
90	1350	0.01	8	6,328	0	6,328	404.12	6,328	0.15
91	1365	0.01	8	6,336	0	6,336	404.12	6,336	0.15
92	1380	0.01	8	6,344	0	6,344	404.12	6,344	0.15
93	1395	0.01	8	6,352	0	6,352	404.12	6,352	0.15
94	1410	0.01	8	6,361	0	6,361	404.12	6,361	0.15
95	1425	0.01	8	6,369	0	6,369	404.12	6,369	0.15
96	1440	0.01	8	6,377	0	6,377	404.12	6,377	0.15