

MONUMENT BRANCH MASTER DRAINAGE STUDY(R3) - DEVELOPED with DETENTION FACILITIES

STORM, 1, 0.5, TYPE IIA 24 HOUR STORM DISTRIBUTION

0.0000	0.0025	0.0050	0.0075	0.0100
0.0150	0.0200	0.0250	0.0300	0.0500
0.0600	0.1000	0.7000	0.7500	0.7800
0.8000	0.8200	0.8300	0.8400	0.8500
0.8600	0.8650	0.8700	0.8850	0.8900
0.9000	0.9050	0.9100	0.9150	0.9213
0.9275	0.9338	0.9400	0.9450	0.9500
0.9550	0.9600	0.9650	0.9700	0.9750
0.9800	0.9825	0.9850	0.9875	0.9900
0.9925	0.9950	0.9975	1.0000	1.0000

STORM, 2, .0833, Type IIA 2-hour storm distribution

0.0000	0.0087	0.0346	0.0744	0.1436
0.2647	0.4810	0.6021	0.6713	0.7249
0.7682	0.8028	0.8374	0.8720	0.8893
0.9066	0.9170	0.9273	0.9377	0.9481
0.9585	0.9689	0.9792	0.9896	1.0000

C, Input data (El, Q, Vol) for Res 10A,
STRUCT, 1

6900	0	0
6902	21	1.1
6904	60	2.2
6906	90	4.8
6908	110	7.3
6910	115	9.6
0	0	0

C, Input data (El, Q, Vol) for Res DP 11A
STRUCT, 2

6640	0	0
6642	19	5.5
6644	55	12.1
6646	165	20.0
6648	335	28.0
6650	550	36.3
0	0	0

C, Input data (El, Q, Vol) for Res DP 8A
STRUCT, 3

6790	0	0
6792	24	1.3
6794	70	2.9
6796	110	6.4
6798	140	7.1
0	0	0

C, Input data (El, Q, Vol) for Res DP 6
STRUCT, 4

6716	0	0
6718	85	4.4
6720	240	9.7
6722	440	16.0
6724	680	22.4
6726	950	29.0
0	0	0

C, Input data (El, Q, Vol) for Res DP 10 (4,10-8)
STRUCT, 5

6730	0	0
6732	24	6.3
6734	80	13.8
6736	130	22.5
6738	160	31.6
6740	275	41.0
6742	430	50.4
0	0	0

C, Input data (El, Q, Vol) for Res DP 2
STRUCT, 6

6790	0	0
6795	250	6.5
6800	455	21.5
6810	1510	44.8
6815	4270	83.6
0	0	0

C, Input data (El, Q, Vol) for Res DP 6A
STRUCT, 7

6805	0	0
6810	105	6.6
6815	190	14.8
6820	860	33.2
0	0	0

C, Input data (El, Q, Vol) for Res DP 10B
STRUCT, 9

6820	0	0
6822	24	0.8
6824	70	1.8
6826	110	3.9
6828	140	4.3
0	0	0

C, Input data (El, Q, A) for X-Sect 1
XSECT, 1

6907	0	0
6908	143	34
6909	480	76
6910	999	126
0	0	0

C, Input data (El, Q, A) for X-Sect 2
XSECT, 2

6885	0	0
6886	98	24
6887	339	56
6888	727	96
0	0	0

C, Input data (El, Q, A) for X-Sect 3
XSECT, 3

6820	0	0
6821	260	64
6822	845	136
6823	1707	216
0	0	0

C, Input data (El, Q, A) for X-Sect 4
XSECT, 4

6769	0	0
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6770	196	49
6771	646	106
6772	1317	171
6773	2211	244
0	0	0

C, Input data (El, Q, A) for X-Sect 5
XSECT, 5

6678	0	0
6679	290	74
6680	941	156
6681	1891	246
0	0	0

C, Input data (El, Q, A) for X-Sect 6
XSECT, 6

6820	0	0
6821	26	2.4
6822	100	5.8
6823	167	8.9
6823.5	160	9.6
0	0	0

C, Input data (El, Q, A) for X-Sect 7
XSECT, 7

6836	0	0
6837	175	44
6838	579	96
6839	1188	156
6840	2004	224
0	0	0

C, Input data (El, Q, A) for X-Sect 8
XSECT, 8

6681	0	0
6682	175	44
6683	579	96
6684	1188	156
6685	2004	224
0	0	0

C, Input data (El, Q, A) for X-Sect 9
XSECT, 9

6630	0	0
6631	290	74
6632	941	156
6633	1891	246
6634	3128	344
0	0	0

C, Input data (El, Q, A) for X-Sect 11
XSECT, 11

6691	0	0
6692	182	44
6693	601	96
6694	1233	156
0	0	0

C, Input data (El, Q, A) for X-Sect 12
XSECT, 12

6558	0	0
6558.5	10	3

6559	37	8
6560	165	24
6561	419	48
6562	828	80
6563	1184	124
6564	1809	213
6565	2420	311
6566	3748	412
6567	5621	515
0	0	0
C, Input data (E1, Q, A) for X-Sect 13		
XSECT, 13		
6600	0	0
6601	30	4
6602	105	10
6603	231	18
6604	416	28
6605	668	40
0	0	0
C, Input data (E1, Q, A) for X-Sect 10-B		
XSECT, 14		
6780	0	0
6781	33	2.5
6782	142	6.7
6783	287	11.3
6784	385	15.1
6784.5	364	15.9
0	0	0
C, Input data (E1, Q, A) for X-Sect 16 - Diversion Channel (Reach 10)		
XSECT, 15		
6740	0	0
6741	16	9
6742	69	26
6743	171	51
6744	333	84
6745	566	125
6746	884	174
0	0	0
C, Basin B1		
RUNOFF, B1	1	.20
C, Route B1 thru B2		.10
REACH, 1	1	2
C, Basin B2		2000
RUNOFF, B2	1	.09
C, Total below B2		.05
ADD, 1	2	3
C, Route to confluence in G2		
REACH, 1	3	4
C, Basins A & G1		1300
RUNOFF, AG1	1	.20
C, Print hydrograph for basin AG1		.18
C, Route to confluence in G2		
REACH, 1	1	2
C, Combine at confluence in G2		1700
ADD, 2	4	1

73.7

76

77

C, Route thru G2					
REACH,	1	1	2	1300	
C, Bain G2					
RUNOFF,	G2	1	.20	.10	76
C, Total below G2					
ADD,	1	2	3		
C, Basin E					
RUNOFF,	E	1	.20	.33	70
C, Route thru F					
REACH,	2	1	2	1800	
C, Basin F					
RUNOFF,	F	1	.11	.15	78
C, Total below F					
ADD,	1	2	4		
C, Total DP 1					
ADD,	3	4	1		
C, Route to below J					
REACH,	3	1	2	2700	
C, Basin J					
RUNOFF,	J	1	.25	.14	82
C, Combine to below J					
ADD,	1	2	3		
C, Basin I					
RUNOFF,	I	1	.15	.07	.76
C, Route to below J					
REACH,	3	1	2	1500	
C, Combine I to total below J					
ADD,	2	3	4		
C, Basins K					
RUNOFF,	K	1	.03	.03	81
C, Route to DP 2					
REACH,	3	1	3	1400	
C, Total at DP 2					
ADD,	3	4	2		
C, Reservoir at DP 2					
C, PRHYD, 2					
RESVOR,	6	2	5	6790	
C, PRHYD, 5					
CHANGE,	5	2			
C, Route to DP 3					
REACH,	4	2	1	2875	
C, Basin N1					
RUNOFF,	N1	2	.11	.12	84
C, Combine N1 to DP 3					
ADD,	1	2	5		
C, Basin L1					
RUNOFF,	L1	1	.06	.06	81
C, Reservoir at DP 10B					
C, PRHYD, 1					
RESVOR,	9	1	6	6820	
C, PRHYD, 6					
CHANGE,	6	1			
C, Basin L2					
RUNOFF,	L2	2	.02	.03	92
C, Total at DP 9					

ADD,		1	2	3	
CHANGE,	3	1			
C, Basin M1					
RUNOFF,	M1	2	.05	.05	92
C, Reservoir at DP 10A					
C, PRHYD,	2				
RESVOR,	1	2	6	6900	
C, PRHYD,	6				
CHANGE,	6	2			
C, Basin M2					
RUNOFF,	M2	3	.13	.08	92
C, Total M1 & M2 at DP 10A					
ADD,	2	3	4		
C, Total below DP 10A					
ADD,	4	1	2		
C, Route into Reservoir above DP 10(Dev)					
REACH,	15	2	1	1550	
C, Basin N2					
RUNOFF,	N2	2	.06	.07	92
C, Total diversion & inflow into Reservoir					
ADD,	1	2	3		
C, Reservoir at DP 10					
C, PRHYD,	3				
RESVOR,	5	3	6	6730	
C, PRHYD,	6				
CHANGE,	6	3			
C, Total below DP 3 & 10					
ADD,	5	3	2		
C, Route total DP 3 & 10 to DP 7 - North Branch					
REACH,	5	2	1	3250	
C, Basin R					
RUNOFF,	R	2	.08	.11	81
C, Total North Branch DP 7					
ADD,	1	2	7		
C, Basin C1					
RUNOFF,	C1	1	.19	.10	78
C, Route to DP 5					
REACH,	7	1	2	2125	
C, Basin C2					
RUNOFF,	C2	1	.10	.13	81
C, Combine C1 & C2 at DP 5					
ADD,	1	2	3		
C, Basin D					
RUNOFF,	D	1	.17	.14	80
C, Total at DP 5					
ADD,	1	3	2		
C, Route to DP 6A					
REACH,	7	2	3	2060	
C, Basin H					
RUNOFF,	H	1	.10	.10	82
C, Route H to DP 6A					
REACH,	6	1	2	1175	
C, Combine DP 5 & H at DP 6A					
ADD,	2	3	1		
C, Basin O1					

RUNOFF.	01	2	.10	.09	82
C, Total at DP 6A					
ADD.	1	2	3		
C, Reservoir at DP 6A					
C, PRHYD,	3				
RESVOR.	7	3	5	6805	
C, PRHYD,	5				
CHANGE.	5	3			
C, Route to DP 6					
REACH.	7	3	2	3500	
C, Basin 02					
RUNOFF.	02	1	.17	.11	83
C, Total at DP 6					
ADD.	1	2	3		
C, Route to DP 7					
REACH.	8	3	2	3000	
C, Basin 5					
RUNOFF.	5	1	.10	.08	81
C, Total at DP 7 - South Branch					
ADD.	1	2	3		
C, Total at DP 7					
ADD.	3	7	6		
C, Route to DP 8A					
REACH.	9	6	7	875	
C, Basin T2					
RUNOFF.	T2	1	.02	.03	87
C, Basin T3					
RUNOFF.	T3	2	.07	.06	88
C, Reservoir for T3 (DP 8A)					
C, PRHYD,	2				
RESVOR.	3	2	5	6790	
C, PRHYD,	5				
CHANGE.	5	2			
C, Combine T2 & T3					
ADD.	1	2	3		
C, Total at DP 8A					
ADD.	3	7	6		
C, Route to DP 8					
REACH.	9	6	7	600	
C, Basin T1					
RUNOFF.	T1	1	.06	.17	69
C, Total at DP 8					
ADD.	1	7	6		
C, Route DP 8 to DP 13					
REACH.	13	6	7	500	
C, Basin Q2					
RUNOFF.	Q2	1	.27	.10	92
C, Basin P2					
RUNOFF.	P2	4	.08	.08	92
DIVERT.	4	3	80		
C, Route Diverted flows to Reservoir at DP 11A					
REACH.	15	3	2	2000	
ADD.	1	2	3		
C, Reservoir at DP 11A					
C, PRHYD,	3				

RESVOR,	2	3	5	6640	
C, PRHYD,	5				
CHANGE,	5	3			
C, Total DP 11A					
C, Route DP 11A to DP 11					
REACH,	11	3	1	500	
C, Basin Q1					
RUNOFF,	Q1	2	.03	.11	69
C, Total DP 11					
ADD,	1	2	3		
C, Route P2 base flows (DP12A) to DP12					
REACH,	11	4	2	750	
C, Basin P1					
RUNOFF,	P1	1	.03	.08	69
C, Total DP 12					
ADD,	1	2	5		
C, Route DP 12 to DP 11					
REACH,	13	5	4	1500	
C, Total below DP 11					
ADD,	4	3	2		
C, Basin U					
RUNOFF,	U	1	.10	.23	74
C, Total DP 13					
ADD,	1	2	3		
ADD,	3	7	1		
C, Route to DP 14					
REACH,	12	1	2	2250	
C, Basin V					
RUNOFF,	V	1	.19	.20	69
C, Total DP 14 (Basin Total)					
ADD,	1	2	3		


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                      program R U N D F F  version 2
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08-07-1987      17:32:31
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Input file name: a:r3devp.dat
 MONUMENT BRANCH MASTER DRAINAGE STUDY(R3) - DEVELOPED with DETENTION FACILITIES
 100-YEAR 24-HOUR STORM : PROJECT NO 46382

Time increment .1 hrs

Storm pattern no. 1

time increment= .5 hrs

0.0000	0.0025	0.0050	0.0075	0.0100
0.0150	0.0200	0.0250	0.0300	0.0500
0.0600	0.1000	0.7000	0.7500	0.7800
0.8000	0.8200	0.8300	0.8400	0.8500
0.8600	0.8650	0.8700	0.8850	0.8900
0.9000	0.9050	0.9100	0.9150	0.9213
0.9275	0.9338	0.9400	0.9450	0.9500
0.9550	0.9600	0.9650	0.9700	0.9750
0.9800	0.9825	0.9850	0.9875	0.9900
0.9925	0.9950	0.9975	1.0000	1.0000

Total rain depth 4.6 inches

* Input data (El, Q, Vol) for Res 10A,

Structure no. 1

Elev ft	Q cfs	Vol acft
6900.00	0.0	0.0
6902.00	21.0	1.1
6904.00	60.0	2.2
6906.00	90.0	4.8
6908.00	110.0	7.3
6910.00	115.0	9.6

* Input data (El, Q, Vol) for Res DP 11A

Structure no. 2

Elev ft	Q cfs	Vol acft
6640.00	0.0	0.0
6642.00	19.0	5.5
6644.00	55.0	12.1
6646.00	165.0	20.0
6648.00	335.0	28.0
6650.00	550.0	36.3

* Input data (El, Q, Vol) for Res DP 8A

Structure no. 3

Elev ft	Q cfs	Vol acft
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6790.00	0.0	0.0
6792.00	24.0	1.3
6794.00	70.0	2.9
6796.00	110.0	6.4
6798.00	140.0	7.1

* Input data (El, Q, Vol) for Res DP 6

Structure no. 4

Elev ft	Q cfs	Vol acft
6716.00	0.0	0.0
6718.00	85.0	4.4
6720.00	240.0	9.7
6722.00	440.0	16.0
6724.00	680.0	22.4
6726.00	950.0	29.0

* Input data (El, Q, Vol) for Res DP 10 (4,10-8)

Structure no. 5

Elev ft	Q cfs	Vol acft
6730.00	0.0	0.0
6732.00	24.0	6.3
6734.00	80.0	13.8
6736.00	130.0	22.5
6738.00	160.0	31.6
6740.00	275.0	41.0
6742.00	430.0	50.4

* Input data (El, Q, Vol) for Res DP 2

Structure no. 6

Elev ft	Q cfs	Vol acft
6790.00	0.0	0.0
6795.00	250.0	6.5
6800.00	455.0	21.5
6810.00	1510.0	44.8
6815.00	4270.0	83.6

* Input data (El, Q, Vol) for Res DP 6A

Structure no. 7

Elev ft	Q cfs	Vol acft
6805.00	0.0	0.0
6810.00	105.0	6.6
6815.00	190.0	14.8
6820.00	860.0	33.2

* Input data (El, Q, Vol) for Res DP 10B

Structure no. 9

Elev	Q	Vol
ft	cfs	acft
6820.00	0.0	0.0
6822.00	24.0	0.8
6824.00	70.0	1.8
6826.00	110.0	3.9
6828.00	140.0	4.3

* Input data (El, Q, A) for X-Sect 1

Reach no. 1

Elev	Q	Area
ft	cfs	sqft
6907.00	0.0	0.0
6908.00	143.0	34.0
6909.00	480.0	76.0
6910.00	999.0	126.0

* Input data (El, Q, A) for X-Sect 2

Reach no. 2

Elev	Q	Area
ft	cfs	sqft
6885.00	0.0	0.0
6886.00	98.0	24.0
6887.00	339.0	56.0
6888.00	727.0	96.0

* Input data (El, Q, A) for X-Sect 3

Reach no. 3

Elev	Q	Area
ft	cfs	sqft
6820.00	0.0	0.0
6821.00	260.0	64.0
6822.00	845.0	136.0
6823.00	1707.0	216.0

* Input data (El, Q, A) for X-Sect 4

Reach no. 4

Elev	Q	Area
ft	cfs	sqft
6769.00	0.0	0.0
6770.00	196.0	49.0
6771.00	646.0	106.0
6772.00	1317.0	171.0
6773.00	2211.0	244.0

* Input data (El, Q, A) for X-Sect 5

Reach no. 5

Elev ft	Q cfs	Area sqft
6678.00	0.0	0.0
6679.00	290.0	74.0
6680.00	941.0	156.0
6681.00	1891.0	246.0

* Input data (El, Q, A) for X-Sect 6

Reach no. 6

Elev ft	Q cfs	Area sqft
6820.00	0.0	0.0
6821.00	26.0	2.4
6822.00	100.0	5.8
6823.00	167.0	8.9
6823.50	160.0	9.6

* Input data (El, Q, A) for X-Sect 7

Reach no. 7

Elev ft	Q cfs	Area sqft
6836.00	0.0	0.0
6837.00	175.0	44.0
6838.00	579.0	96.0
6839.00	1188.0	156.0
6840.00	2004.0	224.0

* Input data (El, Q, A) for X-Sect 8

Reach no. 8

Elev ft	Q cfs	Area sqft
6681.00	0.0	0.0
6682.00	175.0	44.0
6683.00	579.0	96.0
6684.00	1188.0	156.0
6685.00	2004.0	224.0

* Input data (El, Q, A) for X-Sect 9

Reach no. 9

Elev ft	Q cfs	Area sqft
6630.00	0.0	0.0
6631.00	290.0	74.0
6632.00	941.0	156.0
6633.00	1891.0	246.0
6634.00	3128.0	344.0

* Input data (E1, Q, A) for X-Sect 11

Reach no. 11

Elev ft	Q cfs	Area sqft
6691.00	0.0	0.0
6692.00	182.0	44.0
6693.00	601.0	96.0
6694.00	1233.0	156.0

* Input data (E1, Q, A) for X-Sect 12

Reach no. 12

Elev ft	Q cfs	Area sqft
6558.00	0.0	0.0
6558.50	10.0	3.0
6559.00	37.0	8.0
6560.00	165.0	24.0
6561.00	419.0	48.0
6562.00	828.0	80.0
6563.00	1184.0	124.0
6564.00	1809.0	213.0
6565.00	2420.0	311.0
6566.00	3748.0	412.0
6567.00	5621.0	515.0

* Input data (E1, Q, A) for X-Sect 13

Reach no. 13

Elev ft	Q cfs	Area sqft
6600.00	0.0	0.0
6601.00	30.0	4.0
6602.00	105.0	10.0
6603.00	231.0	18.0
6604.00	416.0	28.0
6605.00	668.0	40.0

* Input data (E1, Q, A) for X-Sect 10-E

Reach no. 14

Elev ft	Q cfs	Area sqft
6780.00	0.0	0.0
6781.00	33.0	2.5
6782.00	142.0	6.7
6783.00	287.0	11.3
6784.00	385.0	15.1
6784.50	364.0	15.9

* Input data (E1, Q, A) for X-Sect 16 - Diversion Channel (Reach 10)

Reach no. 15

Elev ft	Q cfs	Area sqft
6740.00	0.0	0.0
6741.00	16.0	9.0
6742.00	69.0	26.0
6743.00	171.0	51.0
6744.00	333.0	84.0
6745.00	566.0	125.0
6746.00	884.0	174.0

* Basin B1

Calculate the hydrograph for basin no. 0 to unit 1
area= .2 sq. miles tc= .1 hours cn= 76

total volume= 23.39609 acre-ft
peak flow = 456.6398 cfs

* Route B1 thru B2

Route the hydrograph in unit 1 through reach 1 to unit 2

total volume= 23.39609 acre-ft
peak flow = 444.7042 cfs

* Basin B2

Calculate the hydrograph for basin no. 0 to unit 1
area= .09 sq. miles tc= .05 hours cn= 77

total volume= 9.585321 acre-ft
peak flow = 220.8295 cfs

* Total below B2

Add the hydrographs in units 1 and 2 to unit 3

total volume= 32.9814 acre-ft
peak flow = 598.4907 cfs

* Route to confluence in G2

Route the hydrograph in unit 3 through reach 1 to unit 4

total volume= 32.9814 acre-ft
peak flow = 590.6024 cfs

* Basins A & G1

Calculate the hydrograph for basin no. 0 to unit 1
area= .2 sq. miles tc= .18 hours cn= 73.7

total volume= 21.51527 acre-ft
peak flow = 377.5818 cfs

* Print hydrograph for basin AG1

* Route to confluence in G2

Route the hydrograph in unit 1 through reach 1 to unit 2

total volume= 21.51526 acre-ft
peak flow = 363.4675 cfs

* Combine at confluence in G2

Add the hydrographs in units 2 and 4 to unit 1

total volume= 54.49667 acre-ft
peak flow = 954.07 cfs

* Route thru G2

Route the hydrograph in unit 1 through reach 1 to unit 2

total volume= 54.49669 acre-ft
peak flow = 946.0282 cfs

* Bain G2

Calculate the hydrograph for basin no. 0 to unit 1
area= .2 sq. miles tc= .1 hours cn= 76

total volume= 23.39609 acre-ft
peak flow = 456.6398 cfs

* Total below G2

Add the hydrographs in units 1 and 2 to unit 3

total volume= 77.89278 acre-ft
peak flow = 996.6688 cfs

* Basin E

Calculate the hydrograph for basin no. 0 to unit 1
area= .2 sq. miles tc= .33 hours cn= 70

total volume= 18.56744 acre-ft
peak flow = 266.8068 cfs

* Route thru F

Route the hydrograph in unit 1 through reach 2 to unit 2

total volume= 18.56744 acre-ft
peak flow = 256.8458 cfs

* Basin F

Calculate the hydrograph for basin no. 0 to unit 1
area= .11 sq. miles tc= .15 hours cn= 78

total volume= 13.87659 acre-ft
peak flow = 253.4615 cfs

* Total below F

Add the hydrographs in units 1 and 2 to unit 4

total volume= 32.44404 acre-ft
peak flow = 375.7286 cfs

* Total DP 1

Add the hydrographs in units 3 and 4 to unit 1

total volume= 110.3368 acre-ft
peak flow = 1305.008 cfs

* Route to below J

Route the hydrograph in unit 1 through reach 3 to unit 2

total volume= 110.3368 acre-ft
peak flow = 1295.667 cfs

* Basin J

Calculate the hydrograph for basin no. 0 to unit 1
area= .25 sq. miles tc= .14 hours cn= 82

total volume= 36.1493 acre-ft
peak flow = 656.6283 cfs

* Combine to below J

Add the hydrographs in units 1 and 2 to unit 3

total volume= 146.4862 acre-ft
peak flow = 1586.48 cfs

* Basin I

Calculate the hydrograph for basin no. 0 to unit 1
area= .15 sq. miles tc= .07 hours cn= 76

total volume= 16.71702 acre-ft
peak flow = 351.5088 cfs

* Route to below J

Route the hydrograph in unit 1 through reach 3 to unit 2

total volume= 16.71702 acre-ft
peak flow = 340.6504 cfs

* Combine I to total below J

Add the hydrographs in units 2 and 3 to unit 4

total volume= 163.2032 acre-ft
peak flow = 1927.13 cfs

* Basins K

Calculate the hydrograph for basin no. 0 to unit 1
area= .03 sq. miles tc= .03 hours cn= 81

total volume= 3.23621 acre-ft
peak flow = 82.57072 cfs

* Route to DP 2

Route the hydrograph in unit 1 through reach 3 to unit 3

total volume= 3.236211 acre-ft
peak flow = 80.82408 cfs

* Total at DP 2

Add the hydrographs in units 3 and 4 to unit 2

total volume= 166.4394 acre-ft
peak flow = 2007.954 cfs

* Reservoir at DP 2

* FRHYD, 2

Route the hydrograph in unit 2 thru structure 6 to unit 5

total volume= 166.4864 acre-ft
peak flow = 1290.243 cfs

* FRHYD, 5

Hydrograph in unit 5 placed in unit 2

* Route to DP 3

Route the hydrograph in unit 2 through reach 4 to unit 1

total volume= 166.4863 acre-ft
peak flow = 1283.892 cfs

* Basin N1

Calculate the hydrograph for basin no. 0 to unit 2

area= .11 sq. miles tc= .12 hours cn= 84

total volume= 16.95739 acre-ft
peak flow = 309.544 cfs

* Combine N1 to DP 3

Add the hydrographs in units 1 and 2 to unit 5

total volume= 183.4435 acre-ft
peak flow = 1311.564 cfs

* Basin L1

Calculate the hydrograph for basin no. 0 to unit 1

area= .06 sq. miles tc= .06 hours cn= 81

total volume= 7.73921 acre-ft
peak flow = 162.5881 cfs

* Reservoir at DP 10B

* FRHYD, 1

Route the hydrograph in unit 1 thru structure 9 to unit 6

total volume= 7.769649 acre-ft
peak flow = 85.89844 cfs

* PRHYD, 6

Hydrograph in unit 6 placed in unit 1

* Basin L2

Calculate the hydrograph for basin no. 0 to unit 2
area= .02 sq. miles tc= .03 hours cn= 92
total volume= 3.141738 acre-ft
peak flow = 67.13051 cfs

* Total at DF 9

Add the hydrographs in units 1 and 2 to unit 3

total volume= 10.91124 acre-ft
peak flow = 151.9938 cfs

Hydrograph in unit 3 placed in unit 1

* Basin M1

Calculate the hydrograph for basin no. 0 to unit 2
area= .05 sq. miles tc= .05 hours cn= 92
total volume= 8.843995 acre-ft
peak flow = 167.3357 cfs

* Reservoir at DF 10A

* PRHYD, 2

Route the hydrograph in unit 2 thru structure 1 to unit 6

total volume= 8.884997 acre-ft
peak flow = 80.17822 cfs

* PRHYD, 6

Hydrograph in unit 6 placed in unit 2

* Basin M2

Calculate the hydrograph for basin no. 0 to unit 3
area= .13 sq. miles tc= .08 hours cn= 92

total volume= 25.16542 acre-ft
peak flow = 433.6245 cfs

* Total M1 & M2 at DP 10A

Add the hydrographs in units 2 and 3 to unit 4

total volume= 34.05015 acre-ft
peak flow = 512.5869 cfs

* Total below DP 10A

Add the hydrographs in units 4 and 1 to unit 2

total volume= 44.96222 acre-ft
peak flow = 664.5806 cfs

* Route into Reservoir above DP 10(Dev)

Route the hydrograph in unit 2 through reach 15 to unit 1

total volume= 44.96216 acre-ft
peak flow = 655.8859 cfs

* Basin N2

Calculate the hydrograph for basin no. 0 to unit 2
area= .06 sq. miles tc= .07 hours cn= 92

total volume= 11.35407 acre-ft
peak flow = 200.01 cfs

* Total diversion & inflow into Reservoir

Add the hydrographs in units 1 and 2 to unit 3

total volume= 56.31601 acre-ft
peak flow = 816.7122 cfs

* Reservoir at DP 10

* PRHYD, 3

Route the hydrograph in unit 3 thru structure 5 to unit 6

total volume= 56.41181 acre-ft
peak flow = 151.665 cfs

* PRHYD, 6

Hydrograph in unit 6 placed in unit 3

* Total below DP 3 & 10

Add the hydrographs in units 5 and 3 to unit 2

total volume= 239.8566 acre-ft
peak flow = 1462.885 cfs

* Route total DP 3 & 10 to DP 7 - North Branch

Route the hydrograph in unit 2 through reach 5 to unit 1

total volume= 239.8552 acre-ft
peak flow = 1448.599 cfs

* Basin R

Calculate the hydrograph for basin no. 0 to unit 2

area= .08 sq. miles tc= .11 hours cn= 81

total volume= 11.16431 acre-ft
peak flow = 209.6475 cfs

* Total North Branch DP 7

Add the hydrographs in units 1 and 2 to unit 7

total volume= 251.0183 acre-ft
peak flow = 1460.333 cfs

* Basin C1

Calculate the hydrograph for basin no. 0 to unit 1

area= .19 sq. miles tc= .1 hours cn= 78

total volume= 23.90625 acre-ft
peak flow = 461.1372 cfs

* Route to DP 5

Route the hydrograph in unit 1 through reach 7 to unit 2

total volume= 23.90624 acre-ft
peak flow = 446.0996 cfs

* Basin C2

Calculate the hydrograph for basin no. 0 to unit 1

area= .1 sq. miles tc= .13 hours cn= 81

total volume= 13.97578 acre-ft
peak flow = 258.2068 cfs

* Combine C1 & C2 at DP 5

Add the hydrographs in units 1 and 2 to unit 3

total volume= 37.88205 acre-ft
peak flow = 642.0231 cfs

* Basin D

Calculate the hydrograph for basin no. 0 to unit 1

area= .17 sq. miles tc= .14 hours cn= 80

total volume= 22.98088 acre-ft
peak flow = 421.4912 cfs

* Total at DP 5

Add the hydrographs in units 1 and 3 to unit 2

total volume= 60.86287 acre-ft
peak flow = 1063.514 cfs

* Route to DP 6A

Route the hydrograph in unit 2 through reach 7 to unit 3

total volume= 60.8629 acre-ft
peak flow = 1039.715 cfs

* Basin H

Calculate the hydrograph for basin no. 0 to unit 1

area= .1 sq. miles tc= .1 hours cn= 82

total volume= 14.44097 acre-ft

peak flow = 270.9276 cfs

* Route H to DP 6A

Route the hydrograph in unit 1 through reach 6 to unit 2

total volume= 14.44097 acre-ft
peak flow = 270.9276 cfs

* Combine DP 5 & H at DP 6A

Add the hydrographs in units 2 and 3 to unit 1

total volume= 75.30389 acre-ft
peak flow = 1310.642 cfs

* Basin 01

Calculate the hydrograph for basin no. 0 to unit 2
area= .1 sq. miles tc= .09 hours cn= 82

total volume= 14.45164 acre-ft
peak flow = 272.3858 cfs

* Total at DP 6A

Add the hydrographs in units 1 and 2 to unit 3

total volume= 89.75549 acre-ft
peak flow = 1383.602 cfs

* Reservoir at DP 6A

* PRHYD, 3

Route the hydrograph in unit 3 thru structure 7 to unit 5

total volume= 89.82609 acre-ft
peak flow = 756.8828 cfs

* PRHYD, 5

Hydrograph in unit 5 placed in unit 3

* Route to DP 6

Route the hydrograph in unit 3 through reach 7 to unit 2

total volume= 89.82566 acre-ft
peak flow = 734.6968 cfs

* Basin 02

Calculate the hydrograph for basin no. 0 to unit 1
area= .17 sq. miles tc= .11 hours cn= 83

total volume= 25.35213 acre-ft
peak flow = 469.3349 cfs

* Total at DP 6

Add the hydrographs in units 1 and 2 to unit 3

total volume= 115.1775 acre-ft
peak flow = 776.691 cfs

* Route to DP 7

Route the hydrograph in unit 3 through reach 8 to unit 2

total volume= 115.177 acre-ft
peak flow = 760.6113 cfs

* Basin 8

Calculate the hydrograph for basin no. 0 to unit 1
area= .1 sq. miles tc= .08 hours cn= 81

total volume= 13.73625 acre-ft
peak flow = 267.7264 cfs

* Total at DP 7 - South Branch

Add the hydrographs in units 1 and 2 to unit 3

total volume= 128.9129 acre-ft
peak flow = 775.0277 cfs

* Total at DP 7

Add the hydrographs in units 3 and 7 to unit 6

total volume= 379.9291 acre-ft
peak flow = 2235.361 cfs

* Route to DP 8A

Route the hydrograph in unit 6 through reach 9 to unit 7

total volume= 379.929 acre-ft

peak flow = 2234.38 cfs

* Basin T2

Calculate the hydrograph for basin no. 0 to unit 1

area= .02 sq. miles tc= .03 hours cn= 87

total volume= 2.670946 acre-ft

peak flow = 62.24632 cfs

* Basin T3

Calculate the hydrograph for basin no. 0 to unit 2

area= .07 sq. miles tc= .06 hours cn= 88

total volume= 11.37482 acre-ft

peak flow = 220.0374 cfs

* Reservoir for T3 (DP 8A)

* PRHYD, 2

Route the hydrograph in unit 2 thru structure 3 to unit 5

total volume= 11.4161 acre-ft

peak flow = 94.22852 cfs

* PRHYD, 5

Hydrograph in unit 5 placed in unit 2

* Combine T2 & T3

Add the hydrographs in units 1 and 2 to unit 3

total volume= 14.08705 acre-ft

peak flow = 153.4963 cfs

* Total at DP 8A

Add the hydrographs in units 3 and 7 to unit 6

total volume= 394.0158 acre-ft

peak flow = 2279.175 cfs

* Route to DP 8

Route the hydrograph in unit 6 through reach 9 to unit 7

total volume= 394.0159 acre-ft
peak flow = 2279.023 cfs

* Basin T1

Calculate the hydrograph for basin no. 0 to unit 1

area= .06 sq. miles tc= .17 hours cn= 69

total volume= 5.328621 acre-ft
peak flow = 94.22789 cfs

* Total at DP 8

Add the hydrographs in units 1 and 7 to unit 6

total volume= 399.3426 acre-ft
peak flow = 2285.467 cfs

* Route DP 8 to DP 13

Route the hydrograph in unit 6 through reach 13 to unit 7

total volume= 399.3426 acre-ft
peak flow = 2285.467 cfs

* Basin Q2

Calculate the hydrograph for basin no. 0 to unit 1

area= .27 sq. miles tc= .1 hours cn= 92

total volume= 53.04608 acre-ft
peak flow = 896.8577 cfs

* Basin P2

Calculate the hydrograph for basin no. 0 to unit 4

area= .08 sq. miles tc= .08 hours cn= 92

total volume= 15.48642 acre-ft
peak flow = 266.8458 cfs

Divert the flow in excess of 80 cfs from unit 4 to unit 3

* Route Diverted flows to Reservoir at DP 11A

Route the hydrograph in unit 3 through reach 15 to unit 2

total volume= 6.19091 acre-ft
peak flow = 181.0504 cfs

Add the hydrographs in units 1 and 2 to unit 3

total volume= 59.237 acre-ft
peak flow = 1045.525 cfs

* Reservoir at DP 11A

* PRHYD, 3

Route the hydrograph in unit 3 thru structure 2 to unit 5

total volume= 59.28308 acre-ft
peak flow = 383.7634 cfs

* PRHYD, 5

Hydrograph in unit 5 placed in unit 3

* Total DP 11A

* Route DP 11A to DP 11

Route the hydrograph in unit 3 through reach 11 to unit 1

total volume= 59.28303 acre-ft
peak flow = 383.2111 cfs

* Basin Q1

Calculate the hydrograph for basin no. 0 to unit 2

area= .03 sq. miles tc= .11 hours cn= 69

total volume= 2.655247 acre-ft
peak flow = 52.54515 cfs

* Total DP 11

Add the hydrographs in units 1 and 2 to unit 3

total volume= 61.93764 acre-ft
peak flow = 389.9836 cfs

* Route F2 base flows (DF12A) to DP12

Route the hydrograph in unit 4 through reach 11 to unit 2

total volume= 9.295505 acre-ft
peak flow = 79.99991 cfs

* Basin F1

Calculate the hydrograph for basin no. 0 to unit 1

area= .03 sq. miles tc= .08 hours cn= 69

total volume= 2.59705 acre-ft
peak flow = 54.88467 cfs

* Total DP 12

Add the hydrographs in units 1 and 2 to unit 5

total volume= 11.89256 acre-ft
peak flow = 134.8833 cfs

* Route DP 12 to DP 11

Route the hydrograph in unit 5 through reach 13 to unit 4

total volume= 11.89256 acre-ft
peak flow = 134.782 cfs

* Total below DP 11

Add the hydrographs in units 4 and 3 to unit 2

total volume= 73.82978 acre-ft
peak flow = 482.5544 cfs

* Basin U

Calculate the hydrograph for basin no. 0 to unit 1

area= .1 sq. miles tc= .23 hours cn= 74

total volume= 10.89406 acre-ft
peak flow = 174.793 cfs

* Total DP 13

Add the hydrographs in units 1 and 2 to unit 3

total volume= 84.72384 acre-ft
peak flow = 623.0689 cfs

Add the hydrographs in units 3 and 7 to unit 1

total volume= 484.0673 acre-ft
peak flow = 2480.323 cfs

* Route to DP 14

Route the hydrograph in unit 1 through reach 12 to unit 2

total volume= 484.0674 acre-ft
peak flow = 2472.012 cfs

* Basin V

Calculate the hydrograph for basin no. 0 to unit 1
area= .19 sq. miles tc= .2 hours cn= 69

total volume= 16.87557 acre-ft
peak flow = 279.8638 cfs

* Total DP 14 (Basin Total)

Add the hydrographs in units 1 and 2 to unit 3

total volume= 500.9404 acre-ft
peak flow = 2490.672 cfs

End of computation 17:36:58