

CHADWYCK DETENTION

Elevation (ft)	Planimeter (sq. in.)	Area (sq. ft)	A1+A2+sq(A1-A2) (sq. ft)	Volume (cu-ft)	Volume Sum (cu-ft)
522.00	24.865	0.0	0.0	0.0	0.0
524.00	32.829	32.829	85.115	56.743	56.743
526.00	40.303	40.303	189.261	72.174	128.917
528.00	49.557	49.557	334.551	99.701	228.618
530.00	58.904	58.904	462.490	168.327	396.944
532.00	70.019	70.019	573.144	268.763	665.707
534.00	81.182	81.182	656.595	351.863	1017.570
536.00	96.180	96.180	725.725	417.150	1434.720
538.00	111.677	111.677	781.496	464.991	1900.011
539.00	125.071	125.071	824.932	498.311	2398.322

Incremental volume computed by the Cori-C Method for Reservoir Volumes.
 Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq rt (Area1*Area2))
 where: EL1, EL2 = Lower and upper elevations of the increment
 Area1, Area2 = Areas computed for EL1, EL2, respectively
 Volume = Incremental volume between EL1 and EL2

CHADWYCK DETENTION
 15 YEAR
 RETURN FREQUENCY

INITIAL CONDITIONS
 Elevation = 535.00 ft
 Outflow = 0.00 cfs
 Storage = 691.596 cu-ft

INTERMEDIATE ROUTING COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	25% (cfs)	25% + 0 (cfs)
534.00	0.0	606.770	20225.6	20225.6
534.20	0.0	623.153	20771.7	20771.7
534.40	0.0	639.828	21327.4	21327.4
534.60	0.0	656.782	21892.7	21892.7
534.80	0.0	674.040	22468.0	22468.0
535.00	0.0	691.596	23053.2	23053.2
535.20	2.1	709.452	23648.4	23648.4
535.40	5.8	727.611	24253.4	24253.4
535.60	12.5	746.068	24868.9	24868.9
535.80	26.0	764.840	25494.4	25494.4
536.00	43.5	783.921	26130.6	26130.6
536.20	64.2	803.307	26776.9	26776.9
536.40	87.6	822.999	27433.1	27433.1
536.60	113.5	842.979	28099.3	28099.3
536.80	141.5	863.275	28775.8	28775.8
537.00	194.7	883.879	29462.6	29462.6
537.20	217.0	904.792	30159.7	30159.7
537.40	237.1	926.018	30867.2	30867.2
537.60	255.6	947.552	31585.0	31585.0
537.80	272.9	969.409	32313.6	32313.6
538.00	289.1	991.585	33052.8	33052.8
538.20	304.5	1,014.183	33802.8	33802.8
538.40	319.1	1,037.308	34563.6	34563.6
538.60	333.1	1,060.958	35335.2	35335.2
538.80	346.5	1,085.132	36117.7	36117.7
539.00	359.4	1,109.826	36911.1	36911.1

Time increment (t) = 1.0 min

INFLW HYDROGRAPH

TIME (min)	INFLW (cfs)	ROUTING COMPUTATIONS
1.0	342.74	23053.2
2.0	342.74	23733.4
3.0	342.74	24403.8
4.0	342.74	25055.5
5.0	342.74	25677.2
6.0	342.74	26264.0
7.0	342.74	26813.6
8.0	342.74	27325.3
9.0	342.74	27798.9
10.0	342.74	28235.0
11.0	342.74	28637.7
12.0	342.74	29010.8
13.0	342.74	29357.3
14.0	342.74	29680.4
15.0	342.74	29983.4
16.0	342.74	30259.1
17.0	342.74	30509.6
18.0	342.74	30735.4
19.0	342.74	30931.1
20.0	342.74	31091.8
21.0	0.00	31225.4
22.0	0.00	31336.9
23.0	0.00	31424.1
24.0	0.00	31488.3
25.0	0.00	31531.9
26.0	0.00	31558.0
27.0	0.00	31568.5
28.0	0.00	31564.9
29.0	0.00	31548.1
30.0	0.00	31519.1
31.0	0.00	31478.5
32.0	0.00	31426.8

SUMMARY OF ROUTING COMPUTATIONS
 Starting Pond V.S. Elevation = 535.00 ft

Summary of Peak Outflow and Peak Elevation
 Peak Inflow = 342.74 cfs
 Peak Outflow = 244.55 cfs
 Peak Elevation = 537.48 ft

Summary of Approximate Peak Storage
 Initial Storage = 691.596 cu-ft
 Peak Storage From Storm = 243.992 cu-ft
 Total Storage in Pond = 935.588 cu-ft

CHADWYCK DETENTION

COMPOSITE OUTFLOW SUMMARY

Elevation (ft)	Q (cfs)	Contributing Structures
534.00	0.0	
534.20	0.0	
534.40	0.0	
534.60	0.0	
534.80	0.0	
535.00	0.0	
535.20	2.1	1
535.40	5.8	1
535.60	12.5	2+1
535.80	26.0	2+1
536.00	43.5	2+1
536.20	64.2	2+1
536.40	87.6	2+1
536.60	113.5	2+1
536.80	141.5	2+1
537.00	194.7	5+4
537.20	217.0	5+4
537.40	237.1	5+4
537.60	255.6	5+4
537.80	272.9	5+4
538.00	289.1	5+4
538.20	304.5	5+4
538.40	319.1	5+4
538.60	333.1	5+4
538.80	346.5	5+4
539.00	359.4	5+4

Incremental volume computed by the Cori-C Method for Reservoir Volumes.
 Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq rt (Area1*Area2))
 where: EL1, EL2 = Lower and upper elevations of the increment
 Area1, Area2 = Areas computed for EL1, EL2, respectively
 Volume = Incremental volume between EL1 and EL2

CHADWYCK DETENTION
 15 YEAR
 RETURN FREQUENCY

INITIAL CONDITIONS
 Elevation = 535.00 ft
 Outflow = 0.00 cfs
 Storage = 691.596 cu-ft

INTERMEDIATE ROUTING COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	25% (cfs)	25% + 0 (cfs)
534.00	0.0	606.770	20225.6	20225.6
534.20	0.0	623.153	20771.7	20771.7
534.40	0.0	639.828	21327.4	21327.4
534.60	0.0	656.782	21892.7	21892.7
534.80	0.0	674.040	22468.0	22468.0
535.00	0.0	691.596	23053.2	23053.2
535.20	2.1	709.452	23648.4	23648.4
535.40	5.8	727.611	24253.4	24253.4
535.60	12.5	746.068	24868.9	24868.9
535.80	26.0	764.840	25494.4	25494.4
536.00	43.5	783.921	26130.6	26130.6
536.20	64.2	803.307	26776.9	26776.9
536.40	87.6	822.999	27433.1	27433.1
536.60	113.5	842.979	28099.3	28099.3
536.80	141.5	863.275	28775.8	28775.8
537.00	194.7	883.879	29462.6	29462.6
537.20	217.0	904.792	30159.7	30159.7
537.40	237.1	926.018	30867.2	30867.2
537.60	255.6	947.552	31585.0	31585.0
537.80	272.9	969.409	32313.6	32313.6
538.00	289.1	991.585	33052.8	33052.8
538.20	304.5	1,014.183	33802.8	33802.8
538.40	319.1	1,037.308	34563.6	34563.6
538.60	333.1	1,060.958	35335.2	35335.2
538.80	346.5	1,085.132	36117.7	36117.7
539.00	359.4	1,109.826	36911.1	36911.1

Time increment (t) = 1.0 min

INFLW HYDROGRAPH

TIME (min)	INFLW (cfs)	ROUTING COMPUTATIONS
1.0	423.25	23053.2
2.0	423.25	23890.4
3.0	423.25	24717.0
4.0	423.25	25529.2
5.0	423.25	26325.9
6.0	423.25	27103.9
7.0	423.25	27867.5
8.0	423.25	28620.9
9.0	423.25	29359.4
10.0	423.25	30088.2
11.0	423.25	30802.8
12.0	423.25	31507.5
13.0	423.25	32207.0
14.0	423.25	32896.1
15.0	423.25	33579.4
16.0	423.25	34252.5
17.0	423.25	34919.9
18.0	423.25	35576.2
19.0	423.25	36226.9
20.0	423.25	36866.6
21.0	0.00	37499.9
22.0	0.00	38120.4
23.0	0.00	38732.7
24.0	0.00	39330.4
25.0	0.00	39918.1
26.0	0.00	40489.4
27.0	0.00	41047.9
28.0	0.00	41597.2
29.0	0.00	42131.1
30.0	0.00	42653.2
31.0	0.00	43167.1
32.0	0.00	43675.4

SUMMARY OF ROUTING COMPUTATIONS
 Starting Pond V.S. Elevation = 535.00 ft

Summary of Peak Outflow and Peak Elevation
 Peak Inflow = 423.25 cfs
 Peak Outflow = 286.46 cfs
 Peak Elevation = 537.97 ft

Summary of Approximate Peak Storage
 Initial Storage = 691.596 cu-ft
 Peak Storage From Storm = 286.382 cu-ft
 Total Storage in Pond = 977.978 cu-ft

CHADWYCK DETENTION

SYSTEM CONNECTIVITY

Structure	No.	O Table	D Table
DRIFCE	5	->	3
DRIFCE	4	+	5
WEIR-VR	2	->	2
WEIR-VR	1	+	2

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CHADWYCK DETENTION
 15 YEAR
 RETURN FREQUENCY

INITIAL CONDITIONS
 Elevation = 535.00 ft
 Outflow = 0.00 cfs
 Storage = 691.596 cu-ft

INTERMEDIATE ROUTING COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	25% (cfs)	25% + 0 (cfs)
534.00	0.0	606.770	20225.6	20225.6
534.20	0.0	623.153	20771.7	20771.7
534.40	0.0	639.828	21327.4	21327.4
534.60	0.0	656.782	21892.7	21892.7
534.80	0.0	674.040	22468.0	22468.0
535.00	0.0	691.596	23053.2	23053.2
535.20	2.1	709.452	23648.4	23648.4
535.40	5.8	727.611	24253.4	24253.4
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536.00	43.5	783.921	26130.6	26130.6
536.20	64.2	803.307	26776.9	26776.9
536.40	87.6	822.999	27433.1	27433.1
536.60	113.5	842.979	28099.3	28099.3
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538.60	333.1	1,060.958	35335.2	35335.2
538.80	346.5	1,085.132	36117.7	36117.7
539.00	359.4	1,109.826	36911.1	36911.1

Time increment (t) = 1.0 min

INFLW HYDROGRAPH

TIME (min)	INFLW (cfs)	ROUTING COMPUTATIONS
1.0	541.39	23053.2
2.0	541.39	24125.8
3.0	541.39	25169.9
4.0	541.39	26169.7
5.0	541.39	27243.5
6.0	541.39	28294.3
7.0	541.39	29329.0
8.0	541.39	30346.6
9.0	541.39	31346.6
10.0	541.39	32329.1
11.0	541.39	33294.1
12.0	541.39	34241.6
13.0	541.39	35171.6
14.0	541.39	36085.1
15.0	541.39	36982.0
16.0	541.39	37862.3
17.0	541.39	38726.0
18.0	541.39	39573.1
19.0	541.39	40403.6
20.0	541.39	41217.5
21.0	0.00	42014.8
22.0	0.00	42795.5
23.0	0.00	43559.6
24.0	0.00	44307.1
25.0	0.00	45038.0
26.0	0.00	45753.3
27.0	0.00	46454.0
28.0	0.00	47141.