

CITY OF ROCKWALL DETENTION BASIN DESIGN - EAST SIDE
TP 40 - 100 YEAR

GIVEN:
Area = 89.93
Prop C = 0.67
Prop Tc = 10.00 min
Max Q = 255.67 cfs

RESULT:
Maximum
Required Storage = 443,591 cf
Provided Storage = 502,800 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	10.15	0.67	10.150	89.93	0.67	10.00	255.67	611.57 cfs
10 min	9.80	0.67	9.800	89.93	0.67	10.00	255.67	590.48 cfs
15 min	9.00	0.67	9.000	89.93	0.67	10.00	255.67	542.28 cfs
20 min	8.30	0.67	8.300	89.93	0.67	10.00	255.67	500.10 cfs
30 min	6.90	0.67	6.900	89.93	0.67	10.00	255.67	415.75 cfs
40 min	5.70	0.67	5.700	89.93	0.67	10.00	255.67	343.44 cfs
50 min	5.00	0.67	5.000	89.93	0.67	10.00	255.67	301.27 cfs
60 min	4.50	0.67	4.500	89.93	0.67	10.00	255.67	271.14 cfs
120 min	2.70	0.67	2.700	89.93	0.67	10.00	255.67	162.68 cfs

CITY OF ROCKWALL DETENTION BASIN DESIGN - EAST SIDE
TP 40 - 5 YEAR

GIVEN:
Area = 89.93
Prop C = 0.67
Prop Tc = 10.00 min
Max Q = 150.94 cfs

RESULT:
Maximum
Required Storage = 265,255 cf
Provided Storage = 441,300 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	7.20	0.67	7.200	89.93	0.67	10.00	150.94	433.82 cfs
10 min	6.20	0.67	6.200	89.93	0.67	10.00	150.94	373.57 cfs
15 min	5.50	0.67	5.500	89.93	0.67	10.00	150.94	331.39 cfs
20 min	4.90	0.67	4.900	89.93	0.67	10.00	150.94	295.24 cfs
30 min	4.10	0.67	4.100	89.93	0.67	10.00	150.94	247.04 cfs
40 min	3.40	0.67	3.400	89.93	0.67	10.00	150.94	204.86 cfs
50 min	2.90	0.67	2.900	89.93	0.67	10.00	150.94	174.73 cfs
60 min	2.60	0.67	2.600	89.93	0.67	10.00	150.94	156.66 cfs
120 min	1.60	0.67	1.600	89.93	0.67	10.00	150.94	96.40 cfs

CITY OF ROCKWALL DETENTION BASIN DESIGN - EAST SIDE
TP 40 - 10 YEAR

GIVEN:
Area = 89.93
Prop C = 0.67
Prop Tc = 10.00 min
Max Q = 181.74 cfs

RESULT:
Maximum
Required Storage = 305,820 cf
Provided Storage = 460,850 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	8.20	0.67	8.200	89.93	0.67	10.00	181.74	494.08 cfs
10 min	7.10	0.67	7.100	89.93	0.67	10.00	181.74	427.80 cfs
15 min	6.50	0.67	6.500	89.93	0.67	10.00	181.74	391.65 cfs
20 min	5.90	0.67	5.900	89.93	0.67	10.00	181.74	355.49 cfs
30 min	4.70	0.67	4.700	89.93	0.67	10.00	181.74	283.19 cfs
40 min	4.00	0.67	4.000	89.93	0.67	10.00	181.74	241.01 cfs
50 min	3.40	0.67	3.400	89.93	0.67	10.00	181.74	204.86 cfs
60 min	3.10	0.67	3.100	89.93	0.67	10.00	181.74	186.78 cfs
120 min	1.80	0.67	1.800	89.93	0.67	10.00	181.74	108.46 cfs

CITY OF ROCKWALL DETENTION BASIN DESIGN - EAST SIDE
TP 40 - 25 YEAR

GIVEN:
Area = 89.93
Prop C = 0.67
Prop Tc = 10.00 min
Max Q = 206.38 cfs

RESULT:
Maximum
Required Storage = 355,624 cf
Provided Storage = 474,750 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	9.30	0.67	9.300	89.93	0.67	10.00	206.38	560.35 cfs
10 min	8.30	0.67	8.300	89.93	0.67	10.00	206.38	500.10 cfs
15 min	7.40	0.67	7.400	89.93	0.67	10.00	206.38	445.87 cfs
20 min	6.70	0.67	6.700	89.93	0.67	10.00	206.38	403.70 cfs
30 min	5.50	0.67	5.500	89.93	0.67	10.00	206.38	331.39 cfs
40 min	4.60	0.67	4.600	89.93	0.67	10.00	206.38	277.16 cfs
50 min	4.00	0.67	4.000	89.93	0.67	10.00	206.38	241.01 cfs
60 min	3.50	0.67	3.500	89.93	0.67	10.00	206.38	210.89 cfs
120 min	2.30	0.67	2.300	89.93	0.67	10.00	206.38	138.58 cfs

CITY OF ROCKWALL DETENTION BASIN DESIGN - WEST SIDE
TP 40 - 100 YEAR

GIVEN:
Area = 139.48
Prop C = 0.46
Prop Tc = 10.00 min
Max Q = 399.61 cfs

RESULT:
Maximum
Required Storage = 317,345 cf
Provided Storage = 317,500 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	10.15	0.46	10.150	139.48	0.46	10.00	399.61	651.23 cfs
10 min	9.80	0.46	9.800	139.48	0.46	10.00	399.61	625.78 cfs
15 min	9.00	0.46	9.000	139.48	0.46	10.00	399.61	577.45 cfs
20 min	8.30	0.46	8.300	139.48	0.46	10.00	399.61	532.53 cfs
30 min	6.90	0.46	6.900	139.48	0.46	10.00	399.61	442.71 cfs
40 min	5.70	0.46	5.700	139.48	0.46	10.00	399.61	365.72 cfs
50 min	5.00	0.46	5.000	139.48	0.46	10.00	399.61	320.80 cfs
60 min	4.50	0.46	4.500	139.48	0.46	10.00	399.61	288.72 cfs
120 min	2.70	0.46	2.700	139.48	0.46	10.00	399.61	173.23 cfs

CITY OF ROCKWALL DETENTION BASIN DESIGN - WEST SIDE
TP 40 - 5 YEAR

GIVEN:
Area = 139.48
Prop C = 0.46
Prop Tc = 10.00 min
Max Q = 235.92 cfs

RESULT:
Maximum
Required Storage = 190,403 cf
Provided Storage = 279,550 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	7.20	0.46	7.200	139.48	0.46	10.00	235.92	461.96 cfs
10 min	6.20	0.46	6.200	139.48	0.46	10.00	235.92	397.80 cfs
15 min	5.50	0.46	5.500	139.48	0.46	10.00	235.92	352.88 cfs
20 min	4.90	0.46	4.900	139.48	0.46	10.00	235.92	314.39 cfs
30 min	4.10	0.46	4.100	139.48	0.46	10.00	235.92	263.06 cfs
40 min	3.40	0.46	3.400	139.48	0.46	10.00	235.92	218.15 cfs
50 min	2.90	0.46	2.900	139.48	0.46	10.00	235.92	186.07 cfs
60 min	2.60	0.46	2.600	139.48	0.46	10.00	235.92	166.82 cfs
120 min	1.60	0.46	1.600	139.48	0.46	10.00	235.92	102.66 cfs

CITY OF ROCKWALL DETENTION BASIN DESIGN - WEST SIDE
TP 40 - 10 YEAR

GIVEN:
Area = 139.48
Prop C = 0.46
Prop Tc = 10.00 min
Max Q = 284.06 cfs

RESULT:
Maximum
Required Storage = 201,928 cf
Provided Storage = 290 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	8.20	0.5	8.200	139.48	0.46	10.00	284.06	526.12 cfs
10 min	7.10	0.5	7.100	139.48	0.46	10.00	284.06	455.54 cfs
15 min	6.50	0.5	6.500	139.48	0.46	10.00	284.06	417.05 cfs
20 min	5.90	0.5	5.900	139.48	0.46	10.00	284.06	378.55 cfs
30 min	4.70	0.5	4.700	139.48	0.46	10.00	284.06	301.56 cfs
40 min	4.00	0.5	4.000	139.48	0.46	10.00	284.06	256.64 cfs
50 min	3.40	0.5	3.400	139.48	0.46	10.00	284.06	218.15 cfs
60 min	3.10	0.5	3.100	139.48	0.46	10.00	284.06	198.90 cfs
120 min	1.80	0.5	1.800	139.48	0.46	10.00	284.06	115.49 cfs

CITY OF ROCKWALL DETENTION BASIN DESIGN - WEST SIDE
TP 40 - 25 YEAR

GIVEN:
Area = 139.48
Prop C = 0.46
Prop Tc = 10.00 min
Max Q = 322.58 cfs

RESULT:
Maximum
Required Storage = 248,096 cf
Provided Storage = 299,800 cf

Duration	In	Out	Q	Area	Prop C	Prop Tc	Max Q	Storage
5 min	9.30	0.46	9.300	139.48	0.46	10.00	322.58	596.70 cfs
10 min	8.30	0.46	8.300	139.48	0.46	10.00	322.58	532.53 cfs
15 min	7.40	0.46	7.400	139.48	0.46	10.00	322.58	474.79 cfs
20 min	6.70	0.46	6.700	139.48	0.46	10.00	322.58	429.88 cfs
30 min	5.50	0.46	5.500	139.48	0.46	10.00	322.58	352.88 cfs
40 min	4.60	0.46	4.600	139.48	0.46	10.00	322.58	295.14 cfs
50 min	4.00	0.46	4.000	139.48	0.46	10.00	322.58	256.64 cfs
60 min	3.50	0.46	3.500	139.48	0.46	10.00	322.58	224.56 cfs
120 min	2.30	0.46	2.300	139.48	0.46	10.00	322.58	147.57 cfs

RECORD DRAWING

THE SIGNED AND SEALED CONSTRUCTION DOCUMENT HAS BEEN REVISED TO REFLECT CONSTRUCTION RECORDS MAINTAINED AND PROVIDED BY THE CONTRACTOR FOR THIS PROJECT. THE INFORMATION SHOWN ON THIS RECORD DRAWING, WHICH WAS PROVIDED BY THE CONTRACTOR, OR OTHERS NOT ASSOCIATED WITH THE DESIGN ENGINEER, CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS. PACHECO KOCH SHALL ASSUME NO LIABILITY FOR ANY CHANGES MADE DURING CONSTRUCTION THAT WERE NOT SPECIFICALLY APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. THE SEALED CONSTRUCTION DRAWINGS ARE ON FILE AT THE OFFICES OF PACHECO KOCH.

ATTESTED BY: *[Signature]*

SIGNATURE: *[Signature]*

ENGINEER OF RECORD: CHET LEUGERS, P.E.

CONTRACTOR: MILLER-VALENTINE CONSTRUCTION

DATE REVISED: 09/18/2017

NO.	DATE	REVISION
5	09/18/2017	RECORD DRAWINGS

Pacheco Koch
7557 RAMBLER ROAD, SUITE 1400
DALLAS, TX 75231 972.235.3031
TX REG. ENGINEERING FIRM F-14439
TX REG. SURVEYING FIRM LS-10193805

DETENTION CALCULATIONS

ROCKWALL REGIONAL DETENTION POND

LOT 1, BLOCK B

ROCKWALL TECHNOLOGY PARK PHASE IV

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
CTL	RHB	AUG 2016				C3.2

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ROCKWALL REGIONAL DETENTION POND, ROCKWALL, TEXAS