



Detention Basin Report

PROJECT: Rockwall Centre Corners
I.H. 30 & S.H 205
Rockwall, Texas

PREPARED BY
CPH ENGINEERS, INC.

5728 LBJ Freeway
Suite 330
Dallas, Texas 75240

Phone: 972.490.1515
Fax: 972.490.1517
www.cphengineers.com



June 19, 2008

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19 June 2008



Mr. Chuck Todd, P.E.
City of Rockwall
385 S. Goliad Street
Rockwall, Texas 75087
Phone: (972) 771-7746

5728 LBJ Freeway, Suite 330
Dallas, Texas 75240
Phone: 972.490.1515
Fax: 972.490.1517

www.cphengineers.com

RE: Rockwall Centre Corners, IH35 & SH 205, City of Rockwall, Texas
Project No. CRO07006-09
KHA Grading

Dear Mr. Todd:

Please let this letter resolve a recent concern raised by Kimley Horn Associates (KHA) concerning the Mass Grading Plan, the Detention Basin, and their Costco Grading Plans.

As you are aware, our detention basin provides adequate detention volume for the 27 acres of the St Ives Rockwall Centre Corners project along with 6.56 acres of Lot 8. This volume was generated based on the Allowable Pre-Development Discharge for these properties, and the generated Post-Development Discharge if the entire property was developed and routed through the detention basin.

Though the Detention Basin was sized to provide the detention volume for the entire site, its allowable discharge is restricted to the Pre-Development runoff from that area actually being routed to the basin in the post condition, and the increase in runoff generated by developed areas on site that are not routing their runoff to the basin. The KHA plans have 0.73 acres of developed property in the southeast corner that is discharging directly into the Buffalo Creek Tributary 1. Since the basin was design with two conditions in mind, the allowable discharge from the basin is staged; first for the Rockwall Centre Corners site, and then the Rockwall Corners site plus Lot 8. Under these two scenerios, we have the following results:

Rockwall Centre Corners without Lot 8

1. Detention Required = 360,060 cf
2. Detention Provided = 425,896 cf
3. 100 yr allowable discharge = 26.79 cfs
4. 100 yr actual discharge = 26.26 cfs
5. 25 yr allowable discharge = 20.82 cfs
6. 25 yr actual discharge = 19.06 cfs
7. 10 yr allowable discharge = 18.79 cfs
8. 10 yr actual discharge = 18.01 cfs

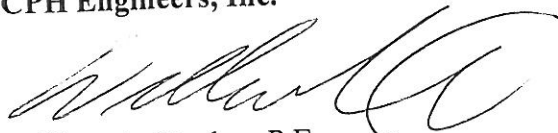
Rockwall Centre Corners with Lot 8

1. Detention Requirement = 425,896 cf
2. Detention Provided = 425,896 cf
3. 100 yr allowable discharge = 39.86 cfs
4. 100 yr actual discharge = 39.16 cfs
5. 25 yr allowable discharge = 31.14 cfs
6. 25 yr actual discharge = 28.60 cfs
7. 10 yr allowable discharge = 28.09 cfs
8. 10 yr actual discharge = 24.49 cfs

Based on how the detention basin has been sized and the outfall designed, the 0.73 acres of the future Costco site that will not be routed through the detention basin, will not have to provide detention in the post condition. Both the detention volume and allowable discharge for this area have been addressed in the detention basin and outfall.

Should you have any questions or concerns, please contact me directly.

Sincerely,
CPH Engineers, Inc.



William A. Stueber, P.E.
Sr. Vice President

Cc Troy Bathman, St. Ives Realty
David Kochalka, KHA

***St. Ives Rockwall Centre Corners
ICPR Rational Data***

0 107 100 HLM

REVISED BASED ON COSTCO PLANS PROVIDED BY KHA

MODIFIED RATIONAL METHOD DETENTION POND VOLUME

FREQUENCY=100 YRS

PROJECT: Rockwall Centre Corners

Post Development Condition

Pre-development Condition		20 minutes		10 minutes	
	C	Undeveloped	Developed		
	I (in/hr)	C	I (in/hr)	A (acres)	Q (cfs)
		0.35	8.30	10.71	0.00
		0.9			223.50
				(11.44-73)	8.20
				Un-developed	6.44
				Developed	238.14
				Area East of Det. Basin	0.0
				Southeast Prop. Corner	0.0
				Total	0.0

Allowable Peak Discharge = **35.93 cfs**

NOTE: 0.93 ACRES EAST OF DETENTION BASIN AND 0.73 ACRES OF SOUTHEAST PROP. CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED IN THE ALLOWABLE CORNER FOR SIZING THE OUTFALL STRUCTURE.

$$\text{CUMULATED} = \text{DISCOUNT} - 25.93 \text{ cfs} - 2.70 \text{ cfs} - 6.44 \text{ cfs} = 26.79 \text{ cfs}$$

Required Detention Volume:	360,060 Cubic Feet
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STORM DURATION (minute)	INTENSITY I(in/hr)	PEAK DISCHARGE Q(cfs)	INFLOW (cf)	Cntrl Rel (minutes)	OUTFLOW (cf)	STORAGE (cf)
10	9.80	229.94	137,962.44	20.00	21,580.91	116,401.53
20	8.30	194.74	233,691.48	30.00	32,341.37	201,350.12
30	6.90	161.89	291,410.46	40.00	43,121.82	248,288.64
40	5.80	136.09	326,604.96	50.00	53,902.28	272,702.69
50	5.00	117.32	351,945.00	60.00	64,682.73	287,262.27
60	4.50	105.58	380,100.60	70.00	75,463.19	304,637.42
70	4.10	96.20	404,032.86	80.00	86,243.64	317,789.22
80	3.9	91.5057	439,227.36	90	97,024.10	342,203.27
90	3.6	84.4668	456,120.72	100	107,804.55	348,316.17
100	3.4	79.7742	478,645.20	110	118,585.01	360,060.20
						Max

With a 24" weir and a 21" orifice

REVISED BASED ON COSTCO PLANS PROVIDED BY KHA

MODIFIED RATIONAL METHOD
DETENTION POND VOLUME

FREQUENCY=25YRS

WITH OUT LOT 8

PROJECT: Rockwall Phase I

Post Development Condition

Pre-development Condition

10 minutes

20 minutes

C Undeveloped 0.35
Developed 0.9

C	I(in/hr)	Q(cfs)	C	I(in/hr)	A (acres)	Un-developed
						Developed
		24.55	0.35	6.55	10.71 (11.44-.73)	
		2.13	0.35	6.55	0.93	Area East of Det. Pond
		1.67	0.35	6.55	0.73	Southeast Prop. Corner
		28.36			12.37	Total

Ex. Peak Discharge= 28.36

Check various duration storms

Allowable Peak Discharge = 28.36 cfs

NOTE:
0.93 ACRES EAST OF DETENTION BASIN AND 0.73 ACRES OF SOUTHEAST PROP.
CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED IN THE ALLOWABLE
PEAK DISCHARGE FOR SIZING THE OUTFALL STRUCTURE.

TOTAL ALLOWABLE DISCHARGE = 28.36 cfs - 2.13 cfs - 5.41 cfs = 20.82 cfs

Required Detention Volume:	300,078	Cubic Feet
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STORM DURATION (minute)	INTENSITY I(in/hr)	PEAK DISCHARGE Q(cfs)	INFLOW (cf)	Crit'd Rel (minutes)	OUTFLOW (cf)	STORAGE (cf)
10	8.24	200.23	120,139.20	20.00	17,014.94	103,124.27
20	6.55	159.17	190,998.00	30.00	25,522.40	165,475.60
30	5.50	133.65	240,570.00	40.00	34,029.87	206,540.13
40	4.70	114.21	274,104.00	50.00	42,537.34	231,566.66
50	4.00	97.20	291,600.00	60.00	51,044.81	240,555.20
60	3.50	85.05	306,180.00	70.00	59,552.27	246,627.73
70	3.25	78.98	331,695.00	80.00	68,059.74	263,635.26
80	3	72.90	349,920.00	90.00	76,567.21	273,352.79
90	2.9	70.47	380,538.00	100.00	85,074.68	295,463.33
100	2.7	65.61	393,660.00	110.00	93,582.14	300,077.86
110	2.3	55.89	368,874.00	120.00	102,089.61	266,784.39
						Max

Peak Flow 19.86 cfs < 20.82 cfs
Peak Stage 532.72 ft > 1 ft of Freeboard

REVISED BASED ON COSTCO PLANS PROVIDED BY KHA

FREQUENCY=10 YRS

MODIFIED RATIONAL METHOD
DETENTION POND VOLUME

WITH OUT LOT 8

PROJECT: Rockwall Phase I

Post Development Condition

Pre-development Condition

10 minutes

20 minutes

C	Undeveloped	0.35
	Developed	0.9
	I(in/hr)	

Q(cfs)	C	I(in/hr)	A (acres)	Un-developed
22.12	0.35	5.90	10.71	Developed
1.92	0.35	5.90	0.93	Area East of Det. Pond
1.51	0.35	5.90	0.73	Southeast Prop. Corner
25.54			12.37	Total

Area East of Det. Pond
Southeast Prop. Corner
Ex. Peak Discharge=
Check various duration storms

Allowable Peak Discharge = 25.54 cfs

NOTE:
0.93 ACRES EAST OF DETENTION BASIN AND 0.73 ACRES OF SOUTHEAST PROP. CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED IN THE ALLOWABLE PEAK DISCHARGE FOR SIZING THE OUTFALL STRUCTURE.

TOTAL ALLOWABLE DISCHARGE = 25.54 cfs - 1.92 cfs - 4.83 cfs = 18.79 cfs

Required Detention Volume:	238,296	Cubic Feet
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Q(cfs)	C	I(in/hr)	A (acres)	Post- Pre=
0.00	0.35	7.35	0.00	153.06
167.62	0.90	7.35	25.34	
6.15	0.90	7.35	0.93	
4.83	0.90	7.35	0.73	
178.61	0.90		27.00	

STORM DURATION (minute)	INTENSITY I(in/hr)	PEAK DISCHARGE Q(cfs)	INFLOW (cf)	Outflow Cntrl Rel (minutes)	STORAGE (cf)
10	7.35	178.61	107,163.00	20.00	91,836.57
20	5.90	143.37	172,044.00	30.00	149,054.36
30	4.80	116.64	209,952.00	40.00	179,299.14
40	4.10	99.63	239,112.00	50.00	200,795.93
50	3.50	85.05	255,150.00	60.00	209,170.71
60	3.00	72.90	262,440.00	70.00	208,797.50
70	2.75	66.83	280,665.00	80.00	219,359.28
80	2.55	61.97	297,432.00	90.00	228,463.07
90	2.4	58.32	314,928.00	100.00	238,295.85
100	2.2	53.46	320,760.00	110.00	236,464.64
110	2	48.60	320,760.00	120.00	228,801.42

PEAK FLOW = 18.41 cfs < 18.79 cfs
PEAK STAGE = 531.93 ft > 1 ft of Freeboard

***St. Ives Rockwall Centre Corners
ICPR Basin Summary***

Detention Basin Output Summary Data for St Ives Rockwall Corners

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
detention basin	BASE	010	12.94	531.930	535.500	-0.0050	71377	12.23	121.986	13.64	18.008
detention basin	BASE	025	12.98	532.722	535.500	0.0050	75067	12.23	138.503	13.14	19.060
detention basin	BASE	100	12.87	533.786	535.500	0.0050	80060	12.23	165.274	13.00	26.262

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St. Ives Rockwall Centre Corners
ICPR Input Data

Basins

Name: detentionBI
Group: BASE

Unit Hydrograph: Uh484
Rainfall File: Scsili
Rainfall Amount(in): 0.000
Area(ac): 25.340
Curve Number: 95.00
DCIA(%): 0.00

Node: detention basin
Type: SCS Unit Hydrograph

Peaking Factor: 484.0
Storm Duration(hrs): 24.00
Time of Conc(min): 13.50
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Status: Onsite

Nodes

Name: boundary
Group: BASE
Type: Time/Stage

Base Flow(cfs): 0.000

Init Stage(ft): 524.000
Warn Stage(ft): 535.500

Time (hrs)	Stage (ft)
0.00	524.000
1.00	524.100
2.00	524.350
3.00	524.650
4.00	525.000
5.00	525.500
6.00	525.950
7.00	526.500
8.00	527.100
9.00	527.600
10.00	528.400
11.00	529.100
12.00	529.800
12.25	530.100
12.50	530.400
12.75	530.610
13.00	530.400
14.00	529.800
15.00	529.100
16.00	528.750
17.00	528.400
18.00	527.650
19.00	527.100
20.00	526.500
21.00	525.750
22.00	525.250
23.00	524.850
24.00	524.500
25.00	524.250
26.00	524.180
27.00	524.120

Detention Basin Input Data for St Ives Rockwall Corners

28.00 524.080
 29.00 524.030
 30.00 524.000
 31.00 524.000
 32.00 524.000
 33.00 524.000
 34.00 524.000
 35.00 524.000
 36.00 524.000
 37.00 524.000
 38.00 524.000
 39.00 524.000
 40.00 524.000
 41.00 524.000
 42.00 524.000
 43.00 524.000
 44.00 524.000
 45.00 524.000
 46.00 524.000
 47.00 524.000
 48.00 524.000

Init Stage(ft): 524.500
 Warn Stage(ft): 535.500

Base Flow(cfs): 0.000

Name: detention basin
 Group: BASE
 Type: Stage/Area

Stage (ft)	Area(ac)
524.500	0.0010
525.000	0.4460
526.000	1.0460
527.000	1.1410
528.000	1.2380
529.000	1.3370
530.000	1.4370
531.000	1.5410
532.000	1.6460
533.000	1.7530
534.000	1.8610
535.000	1.9490
535.500	2.0100

Operating Tables

Name: Bottom Clip
 Type: Bottom Clip
 Function: Time vs. Depth of Clip
 Group: BASE

Time(hrs) Clip Depth(in)

Drop Structures

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Name: DB1
Group: BASE
From Node: detention basin
To Node: boundary
Length(ft): 150.00
Count: 1

UPSTREAM
Geometry: Circular
Span(in): 36.00
Rise(in): 36.00
Invert(ft): 524.500
Manning's N: 0.013000
Top Clip(in): 0.000
Bot Clip(in): 0.000

DOWNSTREAM
Circular
36.00
36.00
524.000
0.013000
0.000
0.000

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Positive
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular: Smooth tapered inlet throat

Downstream FHWA Inlet Edge Description:
Circular: Smooth tapered inlet throat

*** Weir 1 of 2 for Drop Structure DB1 ***

Count: 1
Type: Vertical: Mavis
Flow: Positive
Geometry: Circular
Span(in): 21.00
Rise(in): 21.00

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 524.500
Control Elev(ft): 524.500

TABLE

*** Weir 2 of 2 for Drop Structure DB1 ***

Count: 1
Type: Vertical: Mavis
Flow: Positive
Geometry: Rectangular
Span(in): 24.00
Rise(in): 26.88

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 532.760
Control Elev(ft): 532.760

TABLE

Weirs

Name:
Group: BASE
Flow: Both
Type: Horizontal

From Node:
To Node:
Count: 1
Geometry: Circular

Span(in): 0.00
Rise(in): 0.00
Invert(ft): 0.000
Control Elevation(ft): 0.000

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200

TABLE

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Orifice Discharge Coef: 0.600

Rating Curves

Name: Count: 1
Group: BASE To Node: Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1:	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Hydrology Simulations

Name: 010
Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\010.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 7.28

Time(hrs) Print Inc(min)

48.000 1.00

Name: 025
Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\025.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.24

Time(hrs) Print Inc(min)

48.000 1.00

Name: 100
Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\100.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 9.80

Time(hrs) Print Inc(min)

48.000 1.00

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Routing Simulations

Name: 010 Hydrology Sim: 010
 Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\010.I32
 Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000 End Time(hrs): 48.00
 Start Time(hrs): 0.000 Max Calc Time(sec): 60.0000
 Min Calc Time(sec): 0.2500 Boundary Flows:
 Boundary Stages: 010

Time(hrs)	Print Inc(min)
48.000	15.000
Group	Run
BASE	Yes

Name: 025 Hydrology Sim: 025
 Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\025.I32

Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000 End Time(hrs): 48.00
 Start Time(hrs): 0.000 Max Calc Time(sec): 60.0000
 Min Calc Time(sec): 0.2500 Boundary Flows:
 Boundary Stages: 025

Time(hrs)	Print Inc(min)
48.000	15.000
Group	Run
BASE	Yes

Name: 100 Hydrology Sim: 100
 Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\100.I32

Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

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Time Step Optimizer: 10.000
 Start Time(hrs): 0.000
 Min Calc Time(sec): 0.2500
 Boundary Stages: 100
 End Time(hrs): 48.00
 Max Calc Time(sec): 60.0000
 Boundary Flows:

Time (hrs) Print Inc (min)

 48.000 15.000

Group Run

 BASE Yes

==== Boundary Conditions

Name: 010 Node: boundary Type: Stage

Time (hrs)	Stage (ft)
0.000	524.000
1.000	524.100
2.000	524.350
3.000	524.650
4.000	525.000
5.000	525.450
6.000	525.950
7.000	526.500
8.000	527.100
9.000	527.650
10.000	528.300
11.000	528.750
12.000	529.000
12.250	529.100
12.500	529.350
12.750	529.830
13.000	529.350
14.000	529.000
15.000	528.750
16.000	528.300
17.000	527.650
18.000	527.100
19.000	526.500
20.000	525.950
21.000	525.450
22.000	525.000
23.000	524.650
24.000	524.500
25.000	524.250
26.000	524.180
27.000	524.120
28.000	524.080
29.000	524.030
30.000	524.000

Type: Stage

Node: boundary

Name: 100

Time (hrs) Stage (ft)

0.000	19.000
1.000	524.100
2.000	524.350
3.000	524.650
4.000	525.000
5.000	525.450
6.000	525.950
7.000	526.500
8.000	527.100
9.000	527.600
10.000	528.400
11.000	529.100
12.000	529.800
12.250	530.100
12.500	530.400
12.750	530.610
13.000	530.400
13.000	529.800
14.000	529.100
15.000	528.750
16.000	528.400
17.000	527.650
18.000	527.100
19.000	526.500
20.000	525.750
21.000	525.250
22.000	524.850
23.000	524.500
24.000	524.250
25.000	524.180
26.000	524.120
27.000	524.080
28.000	524.030
29.000	524.000
30.000	524.000

Type: Stage

Node: boundary

Name: 025

Time (hrs) Stage (ft)

0.000	524.000
1.000	524.100
2.000	524.350
3.000	524.650
4.000	525.000
5.000	525.450
6.000	525.950
7.000	526.500
8.000	527.100
9.000	527.650
10.000	528.400
11.000	528.750
12.000	529.400
12.250	529.650
12.500	529.750
12.750	530.000

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Detention Basin Input Data for St Ives Rockwall Corners

13.000	529.750
14.000	529.650
15.000	529.400
16.000	528.750
17.000	528.400
18.000	527.650
19.000	527.100
20.000	526.500
21.000	525.750
22.000	525.250
23.000	524.850
24.000	524.500
25.000	524.250
26.000	524.180
27.000	524.120
28.000	524.080
29.000	524.030
30.000	524.000

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***St. Ives Rockwall Centre Corners
ICPR Output Data***

Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin	BASE		0.00	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		0.26	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		0.51	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		0.76	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		1.01	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		1.26	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		1.51	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		1.76	524.529	535.500	1187	0.051	0.000	0.0	0.0
010detention basin	BASE		2.01	524.579	535.500	3125	0.210	0.016	0.0	0.0
010detention basin	BASE		2.26	524.633	535.500	5204	0.341	0.053	0.0	0.0
010detention basin	BASE		2.51	524.683	535.500	7144	0.501	0.107	0.0	0.0
010detention basin	BASE		2.76	524.721	535.500	8628	0.410	0.154	0.0	0.0
010detention basin	BASE		3.01	524.755	535.500	9938	0.668	0.186	0.0	0.0
010detention basin	BASE		3.26	524.801	535.500	11714	0.817	0.212	0.1	0.0
010detention basin	BASE		3.51	524.847	535.500	13492	0.844	0.138	0.1	0.0
010detention basin	BASE		3.76	524.901	535.500	15569	0.986	0.000	0.1	0.0
010detention basin	BASE		4.01	524.955	535.500	17682	0.998	0.000	0.1	0.0
010detention basin	BASE		4.26	525.013	535.500	19762	1.458	0.000	0.1	0.0
010detention basin	BASE		4.51	525.072	535.500	21321	1.201	0.000	0.2	0.0
010detention basin	BASE		4.76	525.122	535.500	22628	1.282	0.000	0.2	0.0
010detention basin	BASE		5.01	525.180	535.500	24137	1.729	0.000	0.2	0.0
010detention basin	BASE		5.26	525.237	535.500	25625	1.376	0.000	0.3	0.0
010detention basin	BASE		5.51	525.291	535.500	27034	1.854	0.000	0.3	0.0
010detention basin	BASE		5.76	525.352	535.500	28627	1.868	0.000	0.4	0.0
010detention basin	BASE		6.01	525.412	535.500	30190	2.062	0.000	0.4	0.0
010detention basin	BASE		6.26	525.531	535.500	31797	2.152	0.000	0.5	0.0
010detention basin	BASE		6.51	525.593	535.500	33314	2.044	0.000	0.5	0.0
010detention basin	BASE		6.76	525.656	535.500	34929	2.694	0.000	0.6	0.0
010detention basin	BASE		7.01	525.715	535.500	36570	2.222	0.000	0.6	0.0
010detention basin	BASE		7.26	525.786	535.500	38124	2.819	0.000	0.7	0.0
010detention basin	BASE		7.51	525.862	535.500	39963	3.243	0.000	0.7	0.0
010detention basin	BASE		7.75	525.956	535.500	41967	4.112	0.000	0.8	0.0
010detention basin	BASE		8.00	526.050	535.500	4408	4.897	0.000	0.9	0.0
010detention basin	BASE		8.26	526.137	535.500	45770	5.019	0.000	1.0	0.0
010detention basin	BASE		8.50	526.242	535.500	46132	5.394	0.000	1.1	0.0
010detention basin	BASE		8.76	526.348	535.500	46563	5.940	0.000	1.2	0.0
010detention basin	BASE		9.00	526.461	535.500	47004	6.122	0.000	1.4	0.0
010detention basin	BASE		9.25	526.580	535.500	47472	6.257	0.000	1.5	0.0
010detention basin	BASE		9.50	526.705	535.500	47963	6.257	0.000	1.6	0.0
010detention basin	BASE		9.75	526.843	535.500	48480	7.399	0.000	1.8	0.0
010detention basin	BASE		10.01	526.986	535.500	49054	7.143	0.000	2.0	0.0
010detention basin	BASE		10.26	527.146	535.500	49644	8.817	0.000	2.1	0.0
010detention basin	BASE		10.50	527.324	535.500	50320	9.125	0.000	2.3	0.0
010detention basin	BASE		10.75	527.530	535.500	51073	11.068	0.000	2.6	0.0
010detention basin	BASE		11.00	527.759	535.500	51940	12.791	0.000	2.9	0.0
010detention basin	BASE		11.25	528.029	535.500	52909	13.845	0.000	3.2	0.0
010detention basin	BASE		11.50	528.399	535.500	54052	18.796	0.000	3.7	0.0
010detention basin	BASE		11.75	528.791	535.500	55649	26.370	0.000	5.0	0.1
010detention basin	BASE		12.00	529.284	535.500	59478	102.056	5.886	7.3	0.3
010detention basin	BASE		12.25	530.714	535.500	66179	121.836	14.361	9.0	0.6
010detention basin	BASE		12.50	531.897	535.500	70390	44.101	16.982	9.7	1.0
010detention basin	BASE		12.75	531.927	535.500	71367	16.340	17.737	10.1	1.3
010detention basin	BASE		13.00	531.892	535.500	71207	14.131	17.924	10.4	1.7
010detention basin	BASE		13.26	531.828	535.500	70912	11.633	18.002	10.7	2.1
010detention basin	BASE		13.51	531.740	535.500	70509	10.847	18.004	10.9	2.4
010detention basin	BASE		13.76	531.642	535.500	70061	9.493	17.961	11.1	2.8
010detention basin	BASE		14.01	531.529	535.500	69547	8.541	17.786	11.3	3.2
010detention basin	BASE		14.25	531.529	535.500	69547	8.541	17.786	11.3	3.2

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin	BASE	14.50	531.411	535.500	69004	8.444	17.590	11.5	3.5
010detention basin	BASE	14.76	531.282	535.500	68416	7.238	17.364	11.7	3.9
010detention basin	BASE	15.00	531.149	535.500	67806	6.948	17.115	11.8	4.2
010detention basin	BASE	15.25	531.015	535.500	67194	6.915	17.035	12.0	4.6
010detention basin	BASE	15.51	530.870	535.500	66536	6.807	16.924	12.1	4.9
010detention basin	BASE	15.75	530.723	535.500	65870	6.655	16.793	12.2	5.3
010detention basin	BASE	16.00	530.573	535.500	65190	6.485	16.663	12.3	5.6
010detention basin	BASE	16.25	530.421	535.500	64502	6.333	16.533	12.4	6.0
010detention basin	BASE	16.50	530.258	535.500	63765	6.188	16.398	12.5	6.3
010detention basin	BASE	16.76	530.092	535.500	63011	6.043	16.266	12.6	6.7
010detention basin	BASE	17.00	529.921	535.500	62252	5.898	16.136	12.7	7.0
010detention basin	BASE	17.25	529.729	535.500	61414	5.752	16.009	12.8	7.4
010detention basin	BASE	17.50	529.536	535.500	60573	5.607	15.882	12.9	7.7
010detention basin	BASE	17.75	529.341	535.500	59725	5.462	15.755	13.0	8.0
010detention basin	BASE	18.00	529.146	535.500	58878	5.317	15.628	13.1	8.4
010detention basin	BASE	18.25	528.951	535.500	58028	5.172	15.501	13.2	8.7
010detention basin	BASE	18.50	528.745	535.500	57141	5.027	15.374	13.2	9.0
010detention basin	BASE	18.75	528.537	535.500	56242	4.882	15.247	13.2	9.3
010detention basin	BASE	19.00	528.335	535.500	55373	4.737	15.120	13.3	9.7
010detention basin	BASE	19.25	528.135	535.500	54510	4.592	14.993	13.3	10.0
010detention basin	BASE	19.50	527.930	535.500	53632	4.447	14.866	13.4	10.3
010detention basin	BASE	19.75	527.728	535.500	52780	4.302	14.739	13.4	10.6
010detention basin	BASE	20.00	527.524	535.500	51918	4.157	14.612	13.5	10.9
010detention basin	BASE	20.25	527.321	535.500	51060	4.012	14.485	13.5	11.2
010detention basin	BASE	20.50	527.126	535.500	50234	3.867	14.358	13.6	11.4
010detention basin	BASE	20.75	526.934	535.500	49428	3.722	14.231	13.6	11.7
010detention basin	BASE	21.00	526.754	535.500	48682	3.577	14.104	13.7	11.9
010detention basin	BASE	21.25	526.590	535.500	48006	3.432	13.977	13.7	12.2
010detention basin	BASE	21.50	526.455	535.500	47445	3.287	13.850	13.7	12.4
010detention basin	BASE	21.76	526.341	535.500	46973	3.142	13.723	13.8	12.5
010detention basin	BASE	22.00	526.246	535.500	46580	3.000	13.596	13.8	12.7
010detention basin	BASE	22.25	526.151	535.500	46188	2.858	13.469	13.9	12.8
010detention basin	BASE	22.51	526.060	535.500	45812	2.717	13.342	14.0	12.9
010detention basin	BASE	22.76	525.981	535.500	45435	2.576	13.215	14.0	13.1
010detention basin	BASE	23.01	525.907	535.500	45059	2.435	13.088	14.0	13.2
010detention basin	BASE	23.25	525.840	535.500	44682	2.294	12.961	14.1	13.3
010detention basin	BASE	23.51	525.774	535.500	44304	2.153	12.834	14.1	13.4
010detention basin	BASE	23.76	525.717	535.500	43927	2.012	12.707	14.1	13.5
010detention basin	BASE	24.00	525.659	535.500	43550	1.871	12.580	14.1	13.6
010detention basin	BASE	24.26	525.590	535.500	43173	1.730	12.453	14.2	13.7
010detention basin	BASE	24.51	525.505	535.500	42796	1.589	12.326	14.2	13.8
010detention basin	BASE	24.76	525.424	535.500	42419	1.448	12.200	14.2	13.9
010detention basin	BASE	25.00	525.352	535.500	42042	1.307	12.073	14.2	14.0
010detention basin	BASE	25.26	525.280	535.500	41665	1.166	11.946	14.2	14.0
010detention basin	BASE	25.51	525.213	535.500	41288	1.025	11.819	14.2	14.1
010detention basin	BASE	25.76	525.152	535.500	40911	0.884	11.692	14.2	14.1
010detention basin	BASE	26.00	525.100	535.500	40534	0.743	11.565	14.2	14.1
010detention basin	BASE	26.26	525.050	535.500	40157	0.602	11.438	14.2	14.1
010detention basin	BASE	26.51	525.005	535.500	39780	0.461	11.311	14.2	14.1
010detention basin	BASE	26.76	524.966	535.500	39403	0.320	11.184	14.2	14.1
010detention basin	BASE	27.01	524.930	535.500	39026	0.179	11.057	14.2	14.1
010detention basin	BASE	27.26	524.896	535.500	38649	0.038	10.930	14.2	14.1
010detention basin	BASE	27.51	524.865	535.500	38272	0.000	10.803	14.2	14.1
010detention basin	BASE	27.76	524.837	535.500	37895	0.000	10.676	14.2	14.1
010detention basin	BASE	28.01	524.811	535.500	37518	0.000	10.549	14.2	14.1
010detention basin	BASE	28.26	524.786	535.500	37141	0.000	10.422	14.2	14.1
010detention basin	BASE	28.51	524.764	535.500	36764	0.000	10.295	14.2	14.1
010detention basin	BASE	28.76	524.744	535.500	36387	0.000	10.168	14.2	14.1

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin		BASE	29.01	524.725	535.500	8785	0.000	0.171	14.2	14.1
010detention basin		BASE	29.26	524.709	535.500	8134	0.000	0.145	14.2	14.1
010detention basin		BASE	29.51	524.693	535.500	7538	0.000	0.123	14.2	14.1
010detention basin		BASE	29.76	524.679	535.500	6992	0.000	0.104	14.2	14.1
010detention basin		BASE	30.01	524.666	535.500	6494	0.000	0.088	14.2	14.1
010detention basin		BASE	30.26	524.655	535.500	6040	0.000	0.075	14.2	14.1
010detention basin		BASE	30.51	524.644	535.500	5626	0.000	0.064	14.2	14.1
010detention basin		BASE	30.76	524.634	535.500	5248	0.000	0.054	14.2	14.1
010detention basin		BASE	31.01	524.625	535.500	4902	0.000	0.047	14.2	14.1
010detention basin		BASE	31.26	524.617	535.500	4581	0.000	0.040	14.2	14.1
010detention basin		BASE	31.51	524.609	535.500	4286	0.000	0.035	14.2	14.1
010detention basin		BASE	31.76	524.602	535.500	4016	0.000	0.030	14.2	14.1
010detention basin		BASE	32.01	524.596	535.500	3769	0.000	0.025	14.2	14.1
010detention basin		BASE	32.26	524.590	535.500	3543	0.000	0.022	14.2	14.1
010detention basin		BASE	32.51	524.585	535.500	3339	0.000	0.019	14.2	14.1
010detention basin		BASE	32.76	524.580	535.500	3154	0.000	0.016	14.2	14.1
010detention basin		BASE	33.01	524.576	535.500	2986	0.000	0.014	14.2	14.1
010detention basin		BASE	33.26	524.572	535.500	2837	0.000	0.011	14.2	14.1
010detention basin		BASE	33.51	524.569	535.500	2705	0.000	0.010	14.2	14.1
010detention basin		BASE	33.76	524.566	535.500	2589	0.000	0.008	14.2	14.1
010detention basin		BASE	34.01	524.563	535.500	2490	0.000	0.007	14.2	14.1
010detention basin		BASE	34.26	524.561	535.500	2404	0.000	0.005	14.2	14.1
010detention basin		BASE	34.51	524.559	535.500	2330	0.000	0.005	14.2	14.1
010detention basin		BASE	34.76	524.557	535.500	2266	0.000	0.004	14.2	14.1
010detention basin		BASE	35.01	524.556	535.500	2210	0.000	0.003	14.2	14.1
010detention basin		BASE	35.26	524.554	535.500	2162	0.000	0.003	14.2	14.1
010detention basin		BASE	35.51	524.553	535.500	2120	0.000	0.002	14.2	14.1
010detention basin		BASE	35.76	524.552	535.500	2084	0.000	0.002	14.2	14.1
010detention basin		BASE	36.01	524.551	535.500	2052	0.000	0.002	14.2	14.1
010detention basin		BASE	36.26	524.550	535.500	2023	0.000	0.001	14.2	14.1
010detention basin		BASE	36.51	524.550	535.500	1999	0.000	0.001	14.2	14.1
010detention basin		BASE	36.76	524.549	535.500	1977	0.000	0.001	14.2	14.1
010detention basin		BASE	37.01	524.549	535.500	1957	0.000	0.001	14.2	14.1
010detention basin		BASE	37.26	524.549	535.500	1940	0.000	0.001	14.2	14.1
010detention basin		BASE	37.51	524.548	535.500	1924	0.000	0.001	14.2	14.1
010detention basin		BASE	37.76	524.548	535.500	1911	0.000	0.001	14.2	14.1
010detention basin		BASE	38.01	524.548	535.500	1898	0.000	0.001	14.2	14.1
010detention basin		BASE	38.26	524.547	535.500	1887	0.000	0.001	14.2	14.1
010detention basin		BASE	38.51	524.547	535.500	1877	0.000	0.000	14.2	14.1
010detention basin		BASE	38.76	524.547	535.500	1868	0.000	0.000	14.2	14.1
010detention basin		BASE	39.01	524.547	535.500	1860	0.000	0.000	14.2	14.1
010detention basin		BASE	39.26	524.547	535.500	1852	0.000	0.000	14.2	14.1
010detention basin		BASE	39.51	524.546	535.500	1845	0.000	0.000	14.2	14.1
010detention basin		BASE	39.76	524.546	535.500	1839	0.000	0.000	14.2	14.1
010detention basin		BASE	40.01	524.546	535.500	1833	0.000	0.000	14.2	14.1
010detention basin		BASE	40.26	524.546	535.500	1828	0.000	0.000	14.2	14.1
010detention basin		BASE	40.51	524.546	535.500	1823	0.000	0.000	14.2	14.1
010detention basin		BASE	40.76	524.546	535.500	1819	0.000	0.000	14.2	14.1
010detention basin		BASE	41.01	524.546	535.500	1814	0.000	0.000	14.2	14.1
010detention basin		BASE	41.26	524.546	535.500	1811	0.000	0.000	14.2	14.1
010detention basin		BASE	41.51	524.545	535.500	1807	0.000	0.000	14.2	14.1
010detention basin		BASE	41.76	524.545	535.500	1804	0.000	0.000	14.2	14.1
010detention basin		BASE	42.01	524.545	535.500	1801	0.000	0.000	14.2	14.1
010detention basin		BASE	42.26	524.545	535.500	1798	0.000	0.000	14.2	14.1
010detention basin		BASE	42.51	524.545	535.500	1795	0.000	0.000	14.2	14.1
010detention basin		BASE	42.76	524.545	535.500	1793	0.000	0.000	14.2	14.1
010detention basin		BASE	43.01	524.545	535.500	1790	0.000	0.000	14.2	14.1
010detention basin		BASE	43.26	524.545	535.500	1788	0.000	0.000	14.2	14.1

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin	BASE		43.51	524.545	535.500	1786	0.000	0.000	14.2	14.1
010detention basin	BASE		43.76	524.545	535.500	1784	0.000	0.000	14.2	14.1
010detention basin	BASE		44.01	524.545	535.500	1782	0.000	0.000	14.2	14.1
010detention basin	BASE		44.26	524.545	535.500	1781	0.000	0.000	14.2	14.1
010detention basin	BASE		44.51	524.545	535.500	1779	0.000	0.000	14.2	14.1
010detention basin	BASE		44.76	524.545	535.500	1778	0.000	0.000	14.2	14.1
010detention basin	BASE		45.01	524.545	535.500	1776	0.000	0.000	14.2	14.1
010detention basin	BASE		45.26	524.545	535.500	1775	0.000	0.000	14.2	14.1
010detention basin	BASE		45.51	524.545	535.500	1774	0.000	0.000	14.2	14.1
010detention basin	BASE		45.76	524.545	535.500	1772	0.000	0.000	14.2	14.1
010detention basin	BASE		46.01	524.545	535.500	1771	0.000	0.000	14.2	14.1
010detention basin	BASE		46.26	524.545	535.500	1770	0.000	0.000	14.2	14.1
010detention basin	BASE		46.51	524.545	535.500	1769	0.000	0.000	14.2	14.1
010detention basin	BASE		46.76	524.544	535.500	1768	0.000	0.000	14.2	14.1
010detention basin	BASE		47.01	524.544	535.500	1767	0.000	0.000	14.2	14.1
010detention basin	BASE		47.26	524.544	535.500	1766	0.000	0.000	14.2	14.1
010detention basin	BASE		47.51	524.544	535.500	1765	0.000	0.000	14.2	14.1
010detention basin	BASE		47.76	524.544	535.500	1765	0.000	0.000	14.2	14.1
010detention basin	BASE		48.00	524.544	535.500	1764	0.000	0.000	14.2	14.1
025detention basin	BASE		0.00	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE		0.26	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE		0.51	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE		0.76	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE		1.01	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE		1.26	524.500	535.500	800	0.041	0.000	0.0	0.0
025detention basin	BASE		1.51	524.520	535.500	2759	0.149	0.010	0.0	0.0
025detention basin	BASE		1.76	524.570	535.500	4835	0.373	0.047	0.0	0.0
025detention basin	BASE		2.01	524.624	535.500	7064	0.521	0.109	0.0	0.0
025detention basin	BASE		2.26	524.681	535.500	9106	0.714	0.186	0.0	0.0
025detention basin	BASE		2.51	524.734	535.500	10634	0.965	0.249	0.0	0.0
025detention basin	BASE		2.76	524.773	535.500	11970	1.097	0.297	0.1	0.0
025detention basin	BASE		3.01	524.808	535.500	13783	1.073	0.362	0.1	0.0
025detention basin	BASE		3.26	524.854	535.500	15479	1.091	0.374	0.1	0.0
025detention basin	BASE		3.51	524.898	535.500	17259	1.258	0.269	0.1	0.0
025detention basin	BASE		3.76	524.944	535.500	19418	1.260	0.000	0.2	0.0
025detention basin	BASE		4.01	525.000	535.500	21096	1.809	0.000	0.2	0.0
025detention basin	BASE		4.25	525.064	535.500	22943	1.496	0.000	0.2	0.0
025detention basin	BASE		4.51	525.135	535.500	24461	1.578	0.000	0.2	0.0
025detention basin	BASE		4.76	525.193	535.500	26090	2.104	0.000	0.3	0.0
025detention basin	BASE		5.00	525.255	535.500	27808	1.684	0.000	0.3	0.0
025detention basin	BASE		5.25	525.321	535.500	29391	2.237	0.000	0.4	0.0
025detention basin	BASE		5.51	525.381	535.500	31185	2.255	0.000	0.4	0.0
025detention basin	BASE		5.76	525.450	535.500	32839	2.469	0.000	0.5	0.0
025detention basin	BASE		6.00	525.513	535.500	34630	2.575	0.000	0.5	0.0
025detention basin	BASE		6.25	525.582	535.500	36318	2.439	0.000	0.6	0.0
025detention basin	BASE		6.51	525.646	535.500	38097	3.199	0.000	0.6	0.0
025detention basin	BASE		6.76	525.714	535.500	39825	2.651	0.000	0.7	0.0
025detention basin	BASE		7.00	525.780	535.500	41519	3.310	0.000	0.7	0.0
025detention basin	BASE		7.25	525.845	535.500	43528	3.814	0.000	0.8	0.0
025detention basin	BASE		7.51	525.922	535.500	45591	4.828	0.000	0.9	0.0
025detention basin	BASE		7.75	526.006	535.500	46032	5.746	0.000	1.0	0.0
025detention basin	BASE		8.01	526.113	535.500	46460	4.968	0.000	1.1	0.0
025detention basin	BASE		8.25	526.217	535.500	46895	5.867	0.000	1.2	0.0
025detention basin	BASE		8.51	526.322	535.500	47360	6.263	0.000	1.4	0.0
025detention basin	BASE		8.75	526.434	535.500	47884	6.894	0.000	1.5	0.0
025detention basin	BASE		9.01	526.561	535.500	48421	7.089	0.000	1.6	0.0
025detention basin	BASE		9.25	526.690	535.500					

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
025detention basin		BASE	9.50	526.821	535.500	48963	7.228	0.000	1.8	0.0
025detention basin		BASE	9.75	526.964	535.500	49555	8.538	0.000	2.0	0.0
025detention basin		BASE	10.01	527.119	535.500	50204	8.227	0.000	2.1	0.0
025detention basin		BASE	10.25	527.276	535.500	50869	10.109	0.000	2.3	0.0
025detention basin		BASE	10.50	527.460	535.500	51645	10.478	0.000	2.5	0.0
025detention basin		BASE	10.75	527.658	535.500	52481	12.682	0.000	2.8	0.0
025detention basin		BASE	11.00	527.887	535.500	53451	14.646	0.000	3.0	0.0
025detention basin		BASE	11.25	528.146	535.500	54555	15.847	0.000	3.4	0.0
025detention basin		BASE	11.50	528.442	535.500	55832	21.477	0.000	4.3	0.0
025detention basin		BASE	11.75	528.849	535.500	57587	30.051	0.000	5.8	0.1
025detention basin		BASE	12.00	529.810	535.500	61770	115.991	7.074	8.4	0.3
025detention basin		BASE	12.25	531.462	535.500	69239	138.331	18.250	10.4	0.7
025detention basin		BASE	12.50	532.481	535.500	73940	49.897	18.092	11.1	1.1
025detention basin		BASE	12.75	532.682	535.500	74879	25.969	18.043	11.6	1.4
025detention basin		BASE	13.00	532.722	535.500	75065	18.572	19.043	12.0	1.8
025detention basin		BASE	13.25	532.698	535.500	74955	16.015	18.960	12.3	2.2
025detention basin		BASE	13.51	532.645	535.500	74707	13.182	18.799	12.5	2.6
025detention basin		BASE	13.76	532.570	535.500	74358	12.301	18.605	12.8	3.0
025detention basin		BASE	14.01	532.485	535.500	73495	9.685	18.477	13.0	3.4
025detention basin		BASE	14.25	532.385	535.500	72979	9.567	18.322	13.2	3.8
025detention basin		BASE	14.51	532.163	535.500	72457	8.224	18.151	13.4	4.1
025detention basin		BASE	14.75	532.034	535.500	71859	7.875	17.942	13.5	4.5
025detention basin		BASE	15.01	531.908	535.500	71278	7.836	18.060	13.7	4.9
025detention basin		BASE	15.25	531.770	535.500	70646	6.585	18.143	13.8	5.3
025detention basin		BASE	15.51	531.625	535.500	69983	6.862	18.193	14.0	5.6
025detention basin		BASE	15.75	531.474	535.500	69295	6.444	18.235	14.1	6.0
025detention basin		BASE	16.00	531.318	535.500	68581	6.153	18.008	14.2	6.4
025detention basin		BASE	16.26	531.163	535.500	67871	5.654	17.771	14.4	6.8
025detention basin		BASE	16.50	531.003	535.500	67139	5.983	17.524	14.5	7.1
025detention basin		BASE	16.75	530.840	535.500	66403	3.998	17.256	14.6	7.5
025detention basin		BASE	17.00	530.655	535.500	65603	3.909	17.271	14.7	7.8
025detention basin		BASE	17.25	530.468	535.500	64716	3.581	17.275	14.8	8.2
025detention basin		BASE	17.50	530.277	535.500	63851	3.887	17.266	14.8	8.6
025detention basin		BASE	17.76	530.089	535.500	62999	3.584	17.253	14.9	8.9
025detention basin		BASE	18.00	529.892	535.500	62126	3.488	17.043	15.0	9.3
025detention basin		BASE	18.25	529.689	535.500	61239	2.565	16.808	15.0	9.6
025detention basin		BASE	18.50	529.482	535.500	60338	3.287	16.784	15.1	10.0
025detention basin		BASE	18.75	529.284	535.500	59477	3.216	16.568	15.2	10.3
025detention basin		BASE	19.00	529.078	535.500	58578	2.737	16.388	15.2	10.6
025detention basin		BASE	19.25	528.869	535.500	57674	2.078	16.176	15.3	11.0
025detention basin		BASE	19.50	528.662	535.500	56781	3.078	16.151	15.3	11.3
025detention basin		BASE	19.75	528.450	535.500	55869	2.729	15.951	15.3	11.6
025detention basin		BASE	20.01	528.241	535.500	54966	2.622	15.699	15.4	11.9
025detention basin		BASE	20.25	528.025	535.500	54035	2.421	15.568	15.5	12.0
025detention basin		BASE	20.50	527.809	535.500	53119	2.571	15.409	15.5	12.3
025detention basin		BASE	20.75	527.592	535.500	52202	2.420	15.225	15.6	12.6
025detention basin		BASE	21.00	527.383	535.500	51322	2.572	14.999	15.6	12.9
025detention basin		BASE	21.25	527.180	535.500	50462	2.614	14.545	15.7	13.2
025detention basin		BASE	21.50	526.987	535.500	49650	2.420	13.656	15.7	13.5
025detention basin		BASE	21.75	526.813	535.500	48927	2.573	12.645	15.8	13.8
025detention basin		BASE	22.00	526.662	535.500	48305	2.417	12.645	15.8	14.0
025detention basin		BASE	22.25	526.524	535.500	47732	1.877	10.579	15.8	14.2
025detention basin		BASE	22.50	526.402	535.500	47227	2.270	9.026	15.9	14.4
025detention basin		BASE	22.75	526.295	535.500	46787	2.451	8.079	15.9	14.6
025detention basin		BASE	23.00	526.203	535.500	46403	1.756	6.788	16.0	14.8
025detention basin		BASE	23.25	526.112	535.500	46026	1.756	6.378	16.0	14.9
025detention basin		BASE	23.51	526.033	535.500	45702	2.425	5.985	16.1	15.0
025detention basin		BASE	23.75							15.2

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
025detention basin		BASE	24.00	525.953	535.500	44343	1.720	5.538	16.2	15.3
025detention basin		BASE	24.26	525.863	535.500	41993	0.298	5.019	16.2	15.4
025detention basin		BASE	24.51	525.762	535.500	39346	0.016	4.428	16.2	15.5
025detention basin		BASE	24.75	525.665	535.500	36812	0.000	3.869	16.2	15.6
025detention basin		BASE	25.00	525.575	535.500	34451	0.000	3.364	16.2	15.7
025detention basin		BASE	25.26	525.488	535.500	32189	0.000	2.900	16.2	15.7
025detention basin		BASE	25.50	525.410	535.500	30134	0.000	2.591	16.2	15.8
025detention basin		BASE	25.75	525.336	535.500	28210	0.000	2.199	16.2	15.8
025detention basin		BASE	26.01	525.264	535.500	26325	0.000	1.698	16.2	15.9
025detention basin		BASE	26.25	525.200	535.500	24649	0.000	1.436	16.2	15.9
025detention basin		BASE	26.50	525.142	535.500	23137	0.000	1.024	16.2	16.0
025detention basin		BASE	26.75	525.089	535.500	21748	0.000	0.867	16.2	16.0
025detention basin		BASE	27.00	525.041	535.500	20487	0.000	0.737	16.2	16.0
025detention basin		BASE	27.26	524.997	535.500	19322	0.000	0.626	16.2	16.0
025detention basin		BASE	27.51	524.958	535.500	17816	0.000	0.531	16.2	16.1
025detention basin		BASE	27.76	524.923	535.500	16428	0.000	0.451	16.2	16.1
025detention basin		BASE	28.01	524.890	535.500	15151	0.000	0.384	16.2	16.1
025detention basin		BASE	28.26	524.859	535.500	13975	0.000	0.327	16.2	16.1
025detention basin		BASE	28.51	524.831	535.500	12892	0.000	0.277	16.2	16.1
025detention basin		BASE	28.76	524.806	535.500	11892	0.000	0.235	16.2	16.1
025detention basin		BASE	29.01	524.782	535.500	10971	0.000	0.197	16.2	16.1
025detention basin		BASE	29.26	524.760	535.500	10124	0.000	0.166	16.2	16.1
025detention basin		BASE	29.51	524.740	535.500	9352	0.000	0.140	16.2	16.1
025detention basin		BASE	29.76	524.722	535.500	8650	0.000	0.119	16.2	16.1
025detention basin		BASE	30.01	524.706	535.500	8011	0.000	0.101	16.2	16.1
025detention basin		BASE	30.26	524.690	535.500	7424	0.000	0.085	16.2	16.1
025detention basin		BASE	30.51	524.677	535.500	6888	0.000	0.072	16.2	16.1
025detention basin		BASE	30.76	524.664	535.500	6399	0.000	0.062	16.2	16.1
025detention basin		BASE	31.01	524.652	535.500	5954	0.000	0.053	16.2	16.1
025detention basin		BASE	31.26	524.642	535.500	5547	0.000	0.045	16.2	16.1
025detention basin		BASE	31.51	524.632	535.500	5176	0.000	0.039	16.2	16.1
025detention basin		BASE	31.76	524.624	535.500	4835	0.000	0.034	16.2	16.1
025detention basin		BASE	32.01	524.615	535.500	4520	0.000	0.029	16.2	16.1
025detention basin		BASE	32.26	524.608	535.500	4230	0.000	0.025	16.2	16.1
025detention basin		BASE	32.51	524.601	535.500	3965	0.000	0.021	16.2	16.1
025detention basin		BASE	32.76	524.595	535.500	3722	0.000	0.018	16.2	16.1
025detention basin		BASE	33.01	524.589	535.500	3501	0.000	0.015	16.2	16.1
025detention basin		BASE	33.26	524.584	535.500	3300	0.000	0.013	16.2	16.1
025detention basin		BASE	33.51	524.579	535.500	3119	0.000	0.011	16.2	16.1
025detention basin		BASE	33.76	524.575	535.500	2955	0.000	0.009	16.2	16.1
025detention basin		BASE	34.01	524.571	535.500	2809	0.000	0.008	16.2	16.1
025detention basin		BASE	34.26	524.568	535.500	2680	0.000	0.006	16.2	16.1
025detention basin		BASE	34.51	524.565	535.500	2568	0.000	0.005	16.2	16.1
025detention basin		BASE	34.76	524.563	535.500	2472	0.000	0.004	16.2	16.1
025detention basin		BASE	35.01	524.560	535.500	2388	0.000	0.004	16.2	16.1
025detention basin		BASE	35.26	524.559	535.500	2316	0.000	0.004	16.2	16.1
025detention basin		BASE	35.51	524.557	535.500	2254	0.000	0.003	16.2	16.1
025detention basin		BASE	35.76	524.556	535.500	2200	0.000	0.003	16.2	16.1
025detention basin		BASE	36.01	524.554	535.500	2153	0.000	0.002	16.2	16.1
025detention basin		BASE	36.26	524.552	535.500	2112	0.000	0.002	16.2	16.1
025detention basin		BASE	36.51	524.551	535.500	2077	0.000	0.001	16.2	16.1
025detention basin		BASE	36.76	524.550	535.500	2046	0.000	0.001	16.2	16.1
025detention basin		BASE	37.01	524.551	535.500	2018	0.000	0.001	16.2	16.1
025detention basin		BASE	37.26	524.550	535.500	1994	0.000	0.001	16.2	16.1
025detention basin		BASE	37.51	524.549	535.500	1973	0.000	0.001	16.2	16.1
025detention basin		BASE	37.76	524.549	535.500	1954	0.000	0.001	16.2	16.1
025detention basin		BASE	38.01	524.549	535.500	1937	0.000	0.001	16.2	16.1
025detention basin		BASE	38.26	524.548	535.500	1922	0.000	0.001	16.2	16.1

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
025detention basin	BASE	38.51	524.548	535.500	1908	0.000	0.001	16.2	16.1
025detention basin	BASE	38.76	524.548	535.500	1896	0.000	0.001	16.2	16.1
025detention basin	BASE	39.01	524.547	535.500	1885	0.000	0.001	16.2	16.1
025detention basin	BASE	39.26	524.547	535.500	1875	0.000	0.001	16.2	16.1
025detention basin	BASE	39.51	524.547	535.500	1866	0.000	0.000	16.2	16.1
025detention basin	BASE	39.76	524.547	535.500	1858	0.000	0.000	16.2	16.1
025detention basin	BASE	40.01	524.547	535.500	1851	0.000	0.000	16.2	16.1
025detention basin	BASE	40.26	524.546	535.500	1844	0.000	0.000	16.2	16.1
025detention basin	BASE	40.51	524.546	535.500	1838	0.000	0.000	16.2	16.1
025detention basin	BASE	40.76	524.546	535.500	1832	0.000	0.000	16.2	16.1
025detention basin	BASE	41.01	524.546	535.500	1827	0.000	0.000	16.2	16.1
025detention basin	BASE	41.26	524.546	535.500	1822	0.000	0.000	16.2	16.1
025detention basin	BASE	41.51	524.546	535.500	1818	0.000	0.000	16.2	16.1
025detention basin	BASE	41.76	524.546	535.500	1814	0.000	0.000	16.2	16.1
025detention basin	BASE	42.01	524.546	535.500	1810	0.000	0.000	16.2	16.1
025detention basin	BASE	42.26	524.545	535.500	1806	0.000	0.000	16.2	16.1
025detention basin	BASE	42.51	524.545	535.500	1803	0.000	0.000	16.2	16.1
025detention basin	BASE	42.76	524.545	535.500	1800	0.000	0.000	16.2	16.1
025detention basin	BASE	43.01	524.545	535.500	1797	0.000	0.000	16.2	16.1
025detention basin	BASE	43.26	524.545	535.500	1795	0.000	0.000	16.2	16.1
025detention basin	BASE	43.51	524.545	535.500	1792	0.000	0.000	16.2	16.1
025detention basin	BASE	43.76	524.545	535.500	1790	0.000	0.000	16.2	16.1
025detention basin	BASE	44.01	524.545	535.500	1788	0.000	0.000	16.2	16.1
025detention basin	BASE	44.26	524.545	535.500	1786	0.000	0.000	16.2	16.1
025detention basin	BASE	44.51	524.545	535.500	1784	0.000	0.000	16.2	16.1
025detention basin	BASE	44.76	524.545	535.500	1782	0.000	0.000	16.2	16.1
025detention basin	BASE	45.01	524.545	535.500	1779	0.000	0.000	16.2	16.1
025detention basin	BASE	45.26	524.545	535.500	1777	0.000	0.000	16.2	16.1
025detention basin	BASE	45.51	524.545	535.500	1776	0.000	0.000	16.2	16.1
025detention basin	BASE	45.76	524.545	535.500	1775	0.000	0.000	16.2	16.1
025detention basin	BASE	46.01	524.545	535.500	1773	0.000	0.000	16.2	16.1
025detention basin	BASE	46.26	524.545	535.500	1772	0.000	0.000	16.2	16.1
025detention basin	BASE	46.51	524.545	535.500	1771	0.000	0.000	16.2	16.1
025detention basin	BASE	46.76	524.545	535.500	1770	0.000	0.000	16.2	16.1
025detention basin	BASE	47.01	524.545	535.500	1769	0.000	0.000	16.2	16.1
025detention basin	BASE	47.26	524.544	535.500	1768	0.000	0.000	16.2	16.1
025detention basin	BASE	47.51	524.544	535.500	1767	0.000	0.000	16.2	16.1
025detention basin	BASE	47.76	524.544	535.500	1766	0.000	0.000	16.2	16.1
025detention basin	BASE	48.01	524.544	535.500	1766	0.000	0.000	16.2	16.1
025detention basin	BASE	48.02	524.544	535.500	1766	0.000	0.000	16.2	16.1
100detention basin	BASE	0.00	524.500	535.500	1113	0.000	0.000	0.0	0.0
100detention basin	BASE	0.26	524.500	535.500	1113	0.000	0.000	0.0	0.0
100detention basin	BASE	0.51	524.500	535.500	1113	0.000	0.000	0.0	0.0
100detention basin	BASE	0.76	524.500	535.500	1113	0.000	0.000	0.0	0.0
100detention basin	BASE	1.01	524.500	535.500	508	0.021	0.000	0.0	0.0
100detention basin	BASE	1.26	524.512	535.500	2811	0.225	0.011	0.0	0.0
100detention basin	BASE	1.51	524.571	535.500	5169	0.345	0.056	0.0	0.0
100detention basin	BASE	1.76	524.632	535.500	7441	0.675	0.126	0.0	0.0
100detention basin	BASE	2.01	524.691	535.500	9863	0.850	0.229	0.0	0.0
100detention basin	BASE	2.26	524.753	535.500	12054	1.095	0.342	0.0	0.0
100detention basin	BASE	2.51	524.810	535.500	13672	1.296	0.420	0.1	0.0
100detention basin	BASE	2.76	524.852	535.500	15056	1.517	0.506	0.1	0.0
100detention basin	BASE	3.01	524.887	535.500	16947	1.724	0.615	0.1	0.0
100detention basin	BASE	3.26	524.936	535.500	18645	1.917	0.689	0.2	0.1
100detention basin	BASE	3.51	524.980	535.500	20005	2.124	0.709	0.2	0.1
100detention basin	BASE	3.76	525.022	535.500	21185	2.357	0.799	0.2	0.1
100detention basin	BASE	4.01	525.067	535.500	22185	2.617	0.833	0.2	0.1

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
100detention basin	BASE		4.26	525.131	535.500	22851	2.434	0.251	0.3	0.1
100detention basin	BASE		4.50	525.210	535.500	24927	1.991	0.000	0.3	0.1
100detention basin	BASE		4.75	525.281	535.500	26764	2.072	0.000	0.4	0.1
100detention basin	BASE		5.01	525.359	535.500	28816	2.757	0.000	0.4	0.1
100detention basin	BASE		5.26	525.436	535.500	30826	2.180	0.000	0.5	0.1
100detention basin	BASE		5.50	525.503	535.500	32573	2.872	0.000	0.5	0.1
100detention basin	BASE		5.75	525.583	535.500	34653	2.894	0.000	0.6	0.1
100detention basin	BASE		6.01	525.659	535.500	36661	3.158	0.000	0.6	0.1
100detention basin	BASE		6.26	525.738	535.500	38704	3.273	0.000	0.7	0.1
100detention basin	BASE		6.50	525.807	535.500	40521	3.085	0.000	0.8	0.1
100detention basin	BASE		6.75	525.883	535.500	42519	4.020	0.000	0.8	0.1
100detention basin	BASE		7.01	525.962	535.500	44569	3.319	0.000	0.9	0.1
100detention basin	BASE		7.26	526.035	535.500	45710	4.160	0.000	1.0	0.1
100detention basin	BASE		7.50	526.120	535.500	46058	4.745	0.000	1.1	0.1
100detention basin	BASE		7.75	526.224	535.500	46490	6.003	0.000	1.2	0.1
100detention basin	BASE		8.00	526.350	535.500	47013	7.102	0.000	1.3	0.1
100detention basin	BASE		8.25	526.476	535.500	47535	6.132	0.000	1.5	0.1
100detention basin	BASE		8.51	526.602	535.500	48057	7.204	0.000	1.6	0.1
100detention basin	BASE		8.75	526.740	535.500	48628	7.684	0.000	1.8	0.1
100detention basin	BASE		9.00	526.887	535.500	49236	8.424	0.000	2.1	0.1
100detention basin	BASE		9.26	527.045	535.500	49890	8.650	0.000	2.1	0.1
100detention basin	BASE		9.50	527.198	535.500	50540	8.800	0.000	2.3	0.1
100detention basin	BASE		9.75	527.368	535.500	51257	10.379	0.000	2.5	0.1
100detention basin	BASE		10.00	527.547	535.500	52013	9.978	0.000	2.7	0.1
100detention basin	BASE		10.25	527.731	535.500	52790	12.232	0.000	2.9	0.1
100detention basin	BASE		10.50	527.945	535.500	53693	12.662	0.000	3.2	0.1
100detention basin	BASE		10.75	528.173	535.500	54673	15.285	0.000	3.5	0.1
100detention basin	BASE		11.00	528.440	535.500	55827	17.645	0.000	3.8	0.1
100detention basin	BASE		11.25	528.734	535.500	57091	19.044	0.000	4.2	0.1
100detention basin	BASE		11.50	529.075	535.500	58568	25.769	0.000	4.6	0.1
100detention basin	BASE		11.75	529.542	535.500	60601	36.037	0.000	5.3	0.1
100detention basin	BASE		12.00	530.599	535.500	65310	138.801	9.871	7.1	0.2
100detention basin	BASE		12.25	532.455	535.500	73820	165.042	16.949	10.2	0.5
100detention basin	BASE		12.50	533.584	535.500	79109	59.666	24.141	12.5	0.9
100detention basin	BASE		12.75	533.772	535.500	79992	30.873	25.616	13.5	1.4
100detention basin	BASE		13.01	533.771	535.500	79989	22.023	26.260	14.0	2.0
100detention basin	BASE		13.26	533.705	535.500	79676	19.063	25.962	14.5	2.5
100detention basin	BASE		13.50	533.616	535.500	79258	15.773	25.400	14.8	3.0
100detention basin	BASE		13.76	533.500	535.500	78715	14.664	24.631	15.1	3.5
100detention basin	BASE		14.01	533.381	535.500	78151	12.830	23.875	15.4	4.0
100detention basin	BASE		14.25	533.250	535.500	77539	11.532	23.137	15.7	4.5
100detention basin	BASE		14.50	533.119	535.500	76921	11.400	22.476	15.9	5.0
100detention basin	BASE		14.76	532.980	535.500	76269	9.772	21.909	16.1	5.5
100detention basin	BASE		15.00	532.838	535.500	75604	9.380	21.492	16.3	5.9
100detention basin	BASE		15.25	532.696	535.500	74944	9.334	21.202	16.5	6.3
100detention basin	BASE		15.50	532.546	535.500	74245	7.854	21.021	16.7	6.8
100detention basin	BASE		15.75	532.386	535.500	73499	8.174	20.812	16.9	7.2
100detention basin	BASE		16.01	532.228	535.500	72761	7.670	20.605	17.0	7.6
100detention basin	BASE		16.25	532.069	535.500	72020	7.331	20.388	17.2	8.1
100detention basin	BASE		16.50	531.901	535.500	71246	6.730	20.149	17.3	8.5
100detention basin	BASE		16.75	531.736	535.500	70494	7.122	19.910	17.5	8.9
100detention basin	BASE		17.00	531.558	535.500	69679	4.736	19.640	17.6	9.3
100detention basin	BASE		17.25	531.366	535.500	68799	4.654	19.615	17.7	9.7
100detention basin	BASE		17.50	531.166	535.500	67885	4.267	19.579	17.8	10.1
100detention basin	BASE		17.75	530.963	535.500	66957	4.626	19.533	17.9	10.5
100detention basin	BASE		18.00	530.759	535.500	66032	4.264	19.482	18.0	10.9
100detention basin	BASE		18.25	530.549	535.500	65084	4.151	19.257	18.0	11.3
100detention basin	BASE		18.50	530.337	535.500	64122	3.058	19.011	18.1	11.7

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Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af	Total Out af
100detention basin	BASE	BASE	18.75	530.116	535.500	63122	3.909	18.790	18.2	18.3	12.1
100detention basin	BASE	BASE	19.00	529.901	535.500	62164	3.828	18.760	18.3	18.3	12.5
100detention basin	BASE	BASE	19.25	529.680	535.500	61200	3.256	18.558	18.3	18.3	12.9
100detention basin	BASE	BASE	19.50	529.461	535.500	60246	3.663	18.327	18.4	18.4	13.3
100detention basin	BASE	BASE	19.75	529.238	535.500	59278	3.253	18.074	18.5	18.5	13.6
100detention basin	BASE	BASE	20.00	529.011	535.500	58288	3.122	17.791	18.6	18.6	14.0
100detention basin	BASE	BASE	20.25	528.784	535.500	57309	2.883	17.609	18.6	18.6	14.4
100detention basin	BASE	BASE	20.50	528.551	535.500	56301	3.062	17.396	18.7	18.7	14.7
100detention basin	BASE	BASE	20.75	528.321	535.500	55311	2.881	17.161	18.7	18.7	15.1
100detention basin	BASE	BASE	21.00	528.091	535.500	54318	3.062	16.886	18.8	18.8	15.4
100detention basin	BASE	BASE	21.25	527.865	535.500	53357	3.112	16.372	18.9	18.9	15.8
100detention basin	BASE	BASE	21.50	527.647	535.500	52434	2.882	15.402	18.9	18.9	16.1
100detention basin	BASE	BASE	21.75	527.432	535.500	51529	3.064	14.888	19.0	19.0	16.4
100detention basin	BASE	BASE	22.00	527.242	535.500	50723	2.878	12.325	19.0	19.0	16.7
100detention basin	BASE	BASE	22.25	527.074	535.500	50016	2.240	11.662	19.1	19.1	17.0
100detention basin	BASE	BASE	22.50	526.913	535.500	49343	2.703	11.001	19.2	19.2	17.2
100detention basin	BASE	BASE	22.75	526.762	535.500	48716	2.234	10.361	19.2	19.2	17.4
100detention basin	BASE	BASE	23.00	526.622	535.500	48136	2.920	9.750	19.3	19.3	17.6
100detention basin	BASE	BASE	23.26	526.494	535.500	47609	2.085	8.791	19.3	19.3	17.8
100detention basin	BASE	BASE	23.50	526.382	535.500	47144	2.087	7.918	19.4	19.4	18.0
100detention basin	BASE	BASE	23.76	526.285	535.500	46744	2.087	7.168	19.4	19.4	18.1
100detention basin	BASE	BASE	24.00	526.193	535.500	46360	2.048	6.743	19.5	19.5	18.3
100detention basin	BASE	BASE	24.25	526.089	535.500	45934	0.369	6.277	19.5	19.5	18.4
100detention basin	BASE	BASE	24.50	525.976	535.500	44936	0.020	5.665	19.5	19.5	18.5
100detention basin	BASE	BASE	24.75	525.864	535.500	42016	0.000	5.024	19.5	19.5	18.7
100detention basin	BASE	BASE	25.01	525.759	535.500	39259	0.000	4.408	19.5	19.5	18.8
100detention basin	BASE	BASE	25.25	525.663	535.500	36747	0.000	3.855	19.5	19.5	18.9
100detention basin	BASE	BASE	25.50	525.571	535.500	34359	0.000	3.345	19.5	19.5	18.9
100detention basin	BASE	BASE	25.76	525.485	535.500	32104	0.000	2.883	19.5	19.5	19.0
100detention basin	BASE	BASE	26.01	525.407	535.500	30054	0.000	2.574	19.5	19.5	19.1
100detention basin	BASE	BASE	26.26	525.333	535.500	28121	0.000	2.182	19.5	19.5	19.1
100detention basin	BASE	BASE	26.50	525.263	535.500	26313	0.000	2.007	19.5	19.5	19.2
100detention basin	BASE	BASE	26.76	525.197	535.500	24569	0.000	1.683	19.5	19.5	19.2
100detention basin	BASE	BASE	27.00	525.139	535.500	23065	0.000	1.424	19.5	19.5	19.2
100detention basin	BASE	BASE	27.26	525.086	535.500	21669	0.000	1.200	19.5	19.5	19.2
100detention basin	BASE	BASE	27.51	525.038	535.500	20416	0.000	1.014	19.5	19.5	19.2
100detention basin	BASE	BASE	27.75	524.997	535.500	19311	0.000	0.866	19.5	19.5	19.3
100detention basin	BASE	BASE	28.00	524.958	535.500	17806	0.000	0.736	19.5	19.5	19.3
100detention basin	BASE	BASE	28.25	524.922	535.500	16419	0.000	0.625	19.5	19.5	19.3
100detention basin	BASE	BASE	28.50	524.889	535.500	15143	0.000	0.531	19.5	19.5	19.3
100detention basin	BASE	BASE	28.75	524.859	535.500	13967	0.000	0.451	19.5	19.5	19.3
100detention basin	BASE	BASE	29.00	524.831	535.500	12885	0.000	0.383	19.5	19.5	19.3
100detention basin	BASE	BASE	29.25	524.805	535.500	11886	0.000	0.326	19.5	19.5	19.3
100detention basin	BASE	BASE	29.50	524.782	535.500	10964	0.000	0.277	19.5	19.5	19.3
100detention basin	BASE	BASE	29.75	524.760	535.500	10119	0.000	0.234	19.5	19.5	19.3
100detention basin	BASE	BASE	30.00	524.740	535.500	9347	0.000	0.197	19.5	19.5	19.4
100detention basin	BASE	BASE	30.25	524.722	535.500	8645	0.000	0.165	19.5	19.5	19.4
100detention basin	BASE	BASE	30.50	524.705	535.500	8007	0.000	0.140	19.5	19.5	19.4
100detention basin	BASE	BASE	30.75	524.690	535.500	7421	0.000	0.119	19.5	19.5	19.4
100detention basin	BASE	BASE	31.00	524.676	535.500	6885	0.000	0.101	19.5	19.5	19.4
100detention basin	BASE	BASE	31.25	524.664	535.500	6396	0.000	0.085	19.5	19.5	19.4
100detention basin	BASE	BASE	31.50	524.652	535.500	5951	0.000	0.072	19.5	19.5	19.4
100detention basin	BASE	BASE	31.75	524.642	535.500	5545	0.000	0.061	19.5	19.5	19.4
100detention basin	BASE	BASE	32.00	524.632	535.500	5174	0.000	0.053	19.5	19.5	19.4
100detention basin	BASE	BASE	32.25	524.624	535.500	4833	0.000	0.045	19.5	19.5	19.4
100detention basin	BASE	BASE	32.50	524.615	535.500	4518	0.000	0.039	19.5	19.5	19.4
100detention basin	BASE	BASE	32.75	524.608	535.500	4228	0.000	0.034	19.5	19.5	19.4
100detention basin	BASE	BASE	33.00	524.601	535.500	3963	0.000	0.029	19.5	19.5	19.4

19 June 2008

Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
100detention basin		BASE	33.25	524.595	535.500	3720	0.000	0.025	19.5	19.4
100detention basin		BASE	33.50	524.589	535.500	3499	0.000	0.021	19.5	19.4
100detention basin		BASE	33.75	524.584	535.500	3299	0.000	0.018	19.5	19.4
100detention basin		BASE	34.00	524.579	535.500	3118	0.000	0.015	19.5	19.4
100detention basin		BASE	34.25	524.575	535.500	2954	0.000	0.013	19.5	19.4
100detention basin		BASE	34.50	524.571	535.500	2808	0.000	0.011	19.5	19.4
100detention basin		BASE	34.75	524.568	535.500	2679	0.000	0.009	19.5	19.4
100detention basin		BASE	35.00	524.565	535.500	2568	0.000	0.008	19.5	19.4
100detention basin		BASE	35.25	524.563	535.500	2471	0.000	0.006	19.5	19.4
100detention basin		BASE	35.50	524.560	535.500	2388	0.000	0.005	19.5	19.4
100detention basin		BASE	35.75	524.559	535.500	2316	0.000	0.004	19.5	19.4
100detention basin		BASE	36.00	524.557	535.500	2254	0.000	0.004	19.5	19.4
100detention basin		BASE	36.25	524.556	535.500	2200	0.000	0.003	19.5	19.4
100detention basin		BASE	36.50	524.554	535.500	2153	0.000	0.003	19.5	19.4
100detention basin		BASE	36.75	524.553	535.500	2112	0.000	0.002	19.5	19.4
100detention basin		BASE	37.00	524.552	535.500	2077	0.000	0.002	19.5	19.4
100detention basin		BASE	37.25	524.552	535.500	2045	0.000	0.002	19.5	19.4
100detention basin		BASE	37.50	524.551	535.500	2018	0.000	0.001	19.5	19.4
100detention basin		BASE	37.75	524.550	535.500	1994	0.000	0.001	19.5	19.4
100detention basin		BASE	38.00	524.550	535.500	1972	0.000	0.001	19.5	19.4
100detention basin		BASE	38.25	524.549	535.500	1953	0.000	0.001	19.5	19.4
100detention basin		BASE	38.50	524.548	535.500	1937	0.000	0.001	19.5	19.4
100detention basin		BASE	38.75	524.548	535.500	1921	0.000	0.001	19.5	19.4
100detention basin		BASE	39.00	524.548	535.500	1908	0.000	0.001	19.5	19.4
100detention basin		BASE	39.25	524.547	535.500	1896	0.000	0.001	19.5	19.4
100detention basin		BASE	39.50	524.547	535.500	1885	0.000	0.001	19.5	19.4
100detention basin		BASE	39.75	524.547	535.500	1875	0.000	0.001	19.5	19.4
100detention basin		BASE	40.00	524.547	535.500	1866	0.000	0.000	19.5	19.4
100detention basin		BASE	40.25	524.547	535.500	1858	0.000	0.000	19.5	19.4
100detention basin		BASE	40.50	524.547	535.500	1851	0.000	0.000	19.5	19.4
100detention basin		BASE	40.75	524.546	535.500	1844	0.000	0.000	19.5	19.4
100detention basin		BASE	41.00	524.546	535.500	1838	0.000	0.000	19.5	19.4
100detention basin		BASE	41.25	524.546	535.500	1832	0.000	0.000	19.5	19.4
100detention basin		BASE	41.50	524.546	535.500	1827	0.000	0.000	19.5	19.4
100detention basin		BASE	41.75	524.546	535.500	1822	0.000	0.000	19.5	19.4
100detention basin		BASE	42.00	524.546	535.500	1818	0.000	0.000	19.5	19.4
100detention basin		BASE	42.25	524.546	535.500	1814	0.000	0.000	19.5	19.4
100detention basin		BASE	42.50	524.545	535.500	1810	0.000	0.000	19.5	19.4
100detention basin		BASE	42.75	524.545	535.500	1806	0.000	0.000	19.5	19.4
100detention basin		BASE	43.00	524.545	535.500	1803	0.000	0.000	19.5	19.4
100detention basin		BASE	43.25	524.545	535.500	1800	0.000	0.000	19.5	19.4
100detention basin		BASE	43.50	524.545	535.500	1797	0.000	0.000	19.5	19.4
100detention basin		BASE	43.75	524.545	535.500	1795	0.000	0.000	19.5	19.4
100detention basin		BASE	44.00	524.545	535.500	1792	0.000	0.000	19.5	19.4
100detention basin		BASE	44.25	524.545	535.500	1790	0.000	0.000	19.5	19.4
100detention basin		BASE	44.50	524.545	535.500	1788	0.000	0.000	19.5	19.4
100detention basin		BASE	44.75	524.545	535.500	1786	0.000	0.000	19.5	19.4
100detention basin		BASE	45.00	524.545	535.500	1784	0.000	0.000	19.5	19.4
100detention basin		BASE	45.25	524.545	535.500	1782	0.000	0.000	19.5	19.4
100detention basin		BASE	45.50	524.545	535.500	1780	0.000	0.000	19.5	19.4
100detention basin		BASE	45.75	524.545	535.500	1779	0.000	0.000	19.5	19.4
100detention basin		BASE	46.00	524.545	535.500	1777	0.000	0.000	19.5	19.4
100detention basin		BASE	46.25	524.545	535.500	1775	0.000	0.000	19.5	19.4
100detention basin		BASE	46.50	524.545	535.500	1773	0.000	0.000	19.5	19.4
100detention basin		BASE	46.75	524.545	535.500	1772	0.000	0.000	19.5	19.4
100detention basin		BASE	47.00	524.545	535.500	1771	0.000	0.000	19.5	19.4
100detention basin		BASE	47.25	524.545	535.500	1770	0.000	0.000	19.5	19.4
100detention basin		BASE	47.50	524.545	535.500	1770	0.000	0.000	19.5	19.4

19 June 2008

Detention Basin Output Data for St Ives Rockwall Corners

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
100detention basin		BASE	47.75	524.545	535.500	1769	0.000	0.000	19.5	19.4
100detention basin		BASE	48.00	524.544	535.500	1768	0.000	0.000	19.5	19.4
100detention basin		BASE	48.01	524.544	535.500	1768	0.000	0.000	19.5	19.4

19 June 2008

St. Ives Rockwall Centre Corners Plus Lot 8
ICPR Rational Data

REVISED BASED ON COSTCO PLANS PROVIDED BY KHA

WITH LOT 8

MODIFIED RATIONAL METHOD DETENTION POND VOLUME

FREQUENCY=100 YRS

PROJECT: Rockwall Centre Corners

Pre-development Condition

Post Development Condition

10 minutes

20 minutes

C Undeveloped 0.35
Developed 0.9

	$Q(cfs)$	C	$I(in/hr)$	A (acres)
Additional (LOT 8)	31.11	0.35	8.30	10.71
Area East of Det. Basin	13.07	0.35	8.30	4.50
North of Lot 8	2.70	0.35	8.30	0.93
Southeast Prop. Corner	3.09	0.35	8.30	1.06
	2.12	0.35	8.30	0.73
Ex. Flow	52.09			17.93
Bypass Flow	0.00	0.9	9.8	0
Allowable Peak Discharge =	52.09 cfs			
	287.18			
	0.90			
	32.56			
	235.09			

STORM DURATION (minute)	INTENSITY $I(in/hr)$	PEAK DISCHARGE $Q(cfs)$	INFLOW (cf)	Cntrl Rel (minutes)	OUTFLOW (cf)	STORAGE (cf)
10	9.80	287.18	172,307.52	20.00	31,265.48	141,052.04
20	8.30	243.22	291,867.84	30.00	46,883.21	244,984.63
30	6.90	202.20	363,955.68	40.00	62,510.95	301,444.73
40	5.80	169.96	407,911.68	50.00	78,138.69	329,772.99
50	5.00	146.52	439,560.00	60.00	93,766.43	345,793.57
60	4.50	131.87	474,724.80	70.00	109,394.17	365,330.63
70	4.10	120.15	504,614.88	80.00	125,021.90	379,592.98
80	3.9	114.2856	548,570.88	90	140,649.64	407,921.24
90	3.6	105.4944	569,669.76	100	156,277.38	413,392.38
100	3.4	99.6336	597,801.60	110	171,905.12	425,896.48
						Max

Allowable Peak Discharge =

NOTE: 0.93 ACRES EAST OF DETENTION BASIN, 1.06 ACRES NORTH OF LOT 8, AND 0.73 ACRES OF SOUTHEAST PROP. CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED IN THE ALLOWABLE PEAK DISCHARGE FOR SIZING THE OUTFALL STRUCTURE.

TOTAL ALLOWABLE DISCHARGE = 52.09 cfs - 2.70 cfs - 3.09 cfs = 6.44cfs = 39.86 cfs

Required Detention Volume: 425,896 Cubic Feet

With a 24" weir & a 23.5" ORIFICE
PEAK FLOW = 39.16 cfs < 39.86 cfs
PEAK STAGE = 534.48 ft > 1 ft of Freeboard

REVISED BASED ON COSTCO PLANS PROVIDED BY KHA

FREQUENCY=25YRS

MODIFIED RATIONAL METHOD
DETENTION POND VOLUME

WITH LOT 8

PROJECT: Rockwall Phase I

Post Development Condition

Pre-development Condition

10 minutes

20 minutes

C Undeveloped 0.35
Developed 0.9

C	I(in/hr)	Q(cfs)	C	I(in/hr)	Q(cfs)	A (acres)
Un-developed	0.35	24.55	Un-developed	0.35	24.55	10.71
Developed	0.9	10.32	Developed	0.9	10.32	4.50
Area East of Det. Basin	0.35	2.13	Area East of Det. Basin	0.35	2.13	0.93
North of Lot 8	0.35	2.43	North of Lot 8	0.35	2.43	1.06
Southeast Prop. Corner	0.35	1.67	Southeast Prop. Corner	0.35	1.67	0.73
Total			Total			17.93

Ex. Peak Discharge= 41.11
Check various duration storms

Allowable Peak Discharge =

41.11 cfs

NOTE:
0.93 ACRES EAST OF DETENTION BASIN, 1.06 ACRES NORTH OF LOT 8, AND 0.73 ACRES
OF SOUTHEAST PROP. CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED
IN THE ALLOWABLE PEAK DISCHARGE FOR SIZING THE OUTFALL STRUCTURE.

TOTAL ALLOWABLE DISCHARGE = 41.11 cfs - 2.13 cfs - 2.43 cfs - 5.41 cfs = 31.14 cfs

Required Detention Volume: 339,065 Cubic Feet

PEAK FLOW = 28.6 cfs < 31.14 cfs
PEAK STAGE = 533.42 ft > 1 ft of Freeboard

Post- Pre= 200.36

STORM DURATION (minute)	INTENSITY I(in/hr)	PEAK DISCHARGE Q(cfs)	INFLOW (cf)	Cntrl Rel (minutes)	OUTFLOW (cf)	STORAGE (cf)
10	8.24	241.46	144,878.98	20.00	24,665.47	120,213.51
20	6.55	191.94	230,329.44	30.00	36,998.20	193,331.24
30	5.50	161.17	290,109.60	40.00	49,330.93	240,778.67
40	4.70	137.73	330,549.12	50.00	61,663.67	268,885.46
50	4.00	117.22	351,648.00	60.00	73,996.40	277,651.60
60	3.50	102.56	369,230.40	70.00	86,329.13	282,901.27
70	3.25	95.24	399,999.60	80.00	98,661.86	301,337.74
80	3	87.91	421,977.60	90.00	110,994.60	310,983.00
90	2.9	84.98	458,900.64	100.00	123,327.33	335,573.31
100	2.7	79.12	474,724.80	110.00	135,660.06	339,064.74
110	2.3	67.40	444,834.72	120.00	147,992.80	296,841.92
						Max

MODIFIED RATIONAL METHOD
DETENTION POND VOLUME

FREQUENCY=10 YRS

PROJECT: Rockwall Phase I

Pre-development Condition

Post Development Condition

WITH LOT 8

10 minutes

20 minutes

C Undeveloped 0.35
Developed 0.9

$I(in/hr)$	$Q(cfs)$	C	$I(in/hr)$	A (acres)	$Q(cfs)$	C	$I(in/hr)$	A (acres)
	22.12	0.35	5.90	10.71	0.00	0.35	7.35	29.84 (30.57 - 0.73)
Additional	9.29	0.35	5.90	4.50	197.39	0.90	7.35	0.93
Area East of Det. Basin	1.92	0.35	5.90	0.93	6.15	0.90	7.35	1.06
North of Lot 8	2.19	0.35	5.90	1.06	7.01	0.90	7.35	0.73
Southeast Prop. Corner	1.51	0.35	5.90	0.73	4.83	0.90	7.35	
Ex. Peak Discharge=	37.03			17.93	215.38	0.90		32.56
Bypass Flow	0.00	0.9	7.28	0				
Allowable Peak Discharge =								178.35

STORM DURATION (minute)	INTENSITY $I(in/hr)$	PEAK DISCHARGE $Q(cfs)$	INFLOW (cf)	OUTFLOW (cf)	STORAGE (cf)
10	7.35	215.38	129,230.64	22,217.75	107,012.89
20	5.90	172.89	207,472.32	33,326.62	174,145.70
30	4.80	140.66	253,186.56	44,435.50	208,751.06
40	4.10	120.15	288,351.36	55,544.37	232,806.99
50	3.50	102.56	307,692.00	66,653.24	241,038.76
60	3.00	87.91	316,483.20	77,762.12	238,721.08
70	2.75	80.59	338,461.20	88,870.99	249,590.21
80	2.55	74.73	358,680.96	99,979.87	258,701.09
90	2.4	70.33	379,779.84	111,088.74	268,691.10
100	2.2	64.47	386,812.80	122,197.61	284,615.19
110	2	58.61	386,812.80	133,306.49	253,506.31
					Max

Required Detention Volume: 268,691 Cubic Feet

NOTE: 0.93 ACRES EAST OF DETENTION BASIN, 1.06 ACRES NORTH OF LOT 8, AND 0.73 ACRES OF SOUTHEAST PROP. CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED IN THE ALLOWABLE PEAK DISCHARGE FOR SIZING THE OUTFALL STRUCTURE.

TOTAL ALLOWABLE DISCHARGE = 37.03 cfs - 1.92 cfs - 2.19 cfs - 4.93 cfs = 28.09 cfs

PEAK FLOW = 24.49 cfs < 28.09 cfs
PEAK STAGE = 532.62 ft > 1 ft of Freeboard

***St. Ives Rockwall Centre Corners Plus Lot 8
ICPR Basin Summary***

Detention Basin Output Summary Data for St Ives Rockwall Corners and Lot 8

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Max Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
detention basin	BASE	010	12.86	532.617	535.500	0.0050	74575	12.23	143.651	13.17	24.489
detention basin	BASE	025	12.81	533.416	535.500	0.0050	78319	12.23	163.097	13.00	28.602
detention basin	BASE	100	12.71	534.476	535.500	0.0050	82891	12.23	194.621	12.65	39.159

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St. Ives Rockwall Centre Corners Plus Lot 8
ICPR Input Data

Basins

Name: detentionBl
Group: BASE

Node: detention basin
Type: SCS Unit Hydrograph

Status: Onsite

Unit Hydrograph: Uh484
Rainfall File: Scslii
Rainfall Amount(in): 0.000
Area(ac): 29.840
Curve Number: 95.00
DCIA(%): 0.00

Peaking Factor: 484.0
Storm Duration(hrs): 24.00
Time of Conc(min): 13.50
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Nodes

Name: boundary
Group: BASE
Type: Time/Stage

Base Flow(cfs): 0.000

Init Stage(ft): 524.000
Warn Stage(ft): 535.500

Time (hrs)	Stage(ft)
0.00	524.000
1.00	524.100
2.00	524.350
3.00	524.650
4.00	525.000
5.00	525.500
6.00	525.950
7.00	526.500
8.00	527.100
9.00	527.600
10.00	528.400
11.00	529.100
12.00	529.800
12.25	530.100
12.50	530.400
12.75	530.610
13.00	530.400
14.00	529.800
15.00	529.100
16.00	528.750
17.00	528.400
18.00	527.650
19.00	527.100
20.00	526.500
21.00	525.750
22.00	525.250
23.00	524.850
24.00	524.500
25.00	524.250
26.00	524.180
27.00	524.120

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28.00	524.080
29.00	524.030
30.00	524.000
31.00	524.000
32.00	524.000
33.00	524.000
34.00	524.000
35.00	524.000
36.00	524.000
37.00	524.000
38.00	524.000
39.00	524.000
40.00	524.000
41.00	524.000
42.00	524.000
43.00	524.000
44.00	524.000
45.00	524.000
46.00	524.000
47.00	524.000
48.00	524.000

Init Stage(ft): 524.500
Warn Stage(ft): 535.500

Base Flow(cfs): 0.000

Name: detention basin
Group: BASE
Type: Stage/Area

Stage(ft)	Area(ac)
524.500	0.0010
525.000	0.4460
526.000	1.0460
527.000	1.1410
528.000	1.2380
529.000	1.3370
530.000	1.4370
531.000	1.5410
532.000	1.6460
533.000	1.7530
534.000	1.8610
535.000	1.9490

Group: BASE

Name:
Type: Bottom Clip
Function: Time vs. Depth of Clip

Time(hrs) Clip Depth(in)

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Name: DB1
Group: BASE

From Node: detention basin
To Node: boundary

Length(ft): 150.00
Count: 1

UPSTREAM
Geometry: Circular
Span(in): 36.00
Rise(in): 36.00
Invert(ft): 524.500
Manning's N: 0.013000
Top Clip(in): 0.000
Bot Clip(in): 0.000

DOWNSTREAM
Geometry: Circular
Span(in): 36.00
Rise(in): 36.00
Invert(ft): 524.500
Manning's N: 0.013000
Top Clip(in): 0.000
Bot Clip(in): 0.000

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Positive
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular: Smooth tapered inlet throat

Downstream FHWA Inlet Edge Description:
Circular: Smooth tapered inlet throat

*** Weir 1 of 2 for Drop Structure DB1 ***

TABLE

Count: 1
Type: Vertical: Mavis
Flow: Positive
Geometry: Circular
Span(in): 23.50
Rise(in): 23.50

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600

Invert(ft): 524.500
Control Elev(ft): 524.500

*** Weir 2 of 2 for Drop Structure DB1 ***

TABLE

Count: 1
Type: Vertical: Mavis
Flow: Positive
Geometry: Rectangular
Span(in): 24.00
Rise(in): 26.88

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600

Invert(ft): 532.760
Control Elev(ft): 532.760

Weirs

Name:
Group: BASE
Flow: Both
Type: Horizontal

From Node:
To Node:
Count: 1
Geometry: Circular

Span(in): 0.00
Rise(in): 0.00
Invert(ft): 0.000
Control Elevation(ft): 0.000

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Rating Curves

Name:	Group: BASE	From Node:		ELEV ON (ft)	ELEV OFF (ft)	Count: 1
		To Node:				
TABLE						
#1:				0.000	0.000	Flow: Both
#2:				0.000	0.000	
#3:				0.000	0.000	
#4:				0.000	0.000	

Hydrology Simulations

Name: 010
Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\010.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 7.28

Time(hrs) Print Inc(min)

48.000 1.00

Name: 025
Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\025.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.24

Time(hrs) Print Inc(min)

48.000 1.00

Name: 100
Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\100.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 9.80

Time(hrs) Print Inc(min)

48.000 1.00

Routing Simulations

Name: 010 Hydrology Sim: 010
 Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\010.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000 End Time(hrs): 48.00
 Start Time(hrs): 0.000 Max Calc Time(sec): 60.0000
 Min Calc Time(sec): 0.2500 Boundary Flows:
 Boundary Stages: 010

Time(hrs)	Print Inc(min)
48.000	15.000

Group	Run
BASE	Yes

Name: 025 Hydrology Sim: 025
 Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\025.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000 End Time(hrs): 48.00
 Start Time(hrs): 0.000 Max Calc Time(sec): 60.0000
 Min Calc Time(sec): 0.2500 Boundary Flows:
 Boundary Stages: 025

Time(hrs)	Print Inc(min)
48.000	15.000

Group	Run
BASE	Yes

Name: 100 Hydrology Sim: 100
 Filename: J:\S13217 St.Ives Rockwall\Modeling\ICPR\100.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000

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Start Time(hrs): 0.000
 Min Calc Time(sec): 0.2500
 Boundary Stages: 100
 End Time(hrs): 48.00
 Max Calc Time(sec): 60.0000
 Boundary Flows:

Time(hrs) Print Inc(min)

48.000 15.000

Group Run

BASE Yes

Boundary Conditions

Name: 010 Node: boundary Type: Stage

Time (hrs) Stage (ft)

0.000 524.000
 1.000 524.100
 2.000 524.350
 3.000 524.650
 4.000 525.000
 5.000 525.450
 6.000 525.950
 7.000 526.500
 8.000 527.100
 9.000 527.650
 10.000 528.300
 11.000 528.750
 12.000 529.000
 12.250 529.100
 12.500 529.350
 12.750 529.830
 13.000 529.350
 14.000 529.000
 15.000 528.750
 16.000 528.300
 17.000 527.650
 18.000 527.100
 19.000 526.500
 20.000 525.950
 21.000 525.450
 22.000 525.000
 23.000 524.650
 24.000 524.500
 25.000 524.250
 26.000 524.180
 27.000 524.120
 28.000 524.080
 29.000 524.030
 30.000 524.000

Name: 100 Node: boundary Type: Stage

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Time (hrs)	Stage (ft)
0.000	19.000
1.000	524.100
2.000	524.350
3.000	524.650
4.000	525.000
5.000	525.450
6.000	525.950
7.000	526.500
8.000	527.100
9.000	527.600
10.000	528.400
11.000	529.100
12.000	529.800
12.250	530.100
12.500	530.400
12.750	530.610
13.000	530.400
14.000	529.800
15.000	529.100
16.000	528.750
17.000	528.400
18.000	527.650
19.000	527.100
20.000	526.500
21.000	525.750
22.000	525.250
23.000	524.850
24.000	524.500
25.000	524.250
26.000	524.180
27.000	524.120
28.000	524.080
29.000	524.030
30.000	524.000

Name: 025 Node: boundary Type: Stage

Time (hrs)	Stage (ft)
0.000	524.000
1.000	524.100
2.000	524.350
3.000	524.650
4.000	525.000
5.000	525.450
6.000	525.950
7.000	526.500
8.000	527.100
9.000	527.650
10.000	528.400
11.000	528.750
12.000	529.400
12.250	529.650
12.500	529.750
12.750	530.000
13.000	529.750

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Detention Basin Input Summary Data for St Ives Rockwall Corners and Lot 8

14.000	529.650
15.000	529.400
16.000	528.750
17.000	528.400
18.000	527.650
19.000	527.100
20.000	526.500
21.000	525.750
22.000	525.250
23.000	524.850
24.000	524.500
25.000	524.250
26.000	524.180
27.000	524.120
28.000	524.080
29.000	524.030
30.000	524.000

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***St. Ives Rockwall Centre Corners Plus Lot 8
ICPR Output Data***

Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Group	Node	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin	BASE		0.00	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		0.26	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		0.51	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		0.76	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		1.01	524.500	535.500	113	0.000	0.000	0.0	0.0
010detention basin	BASE		1.26	524.500	535.500	113	0.001	0.000	0.0	0.0
010detention basin	BASE		1.51	524.500	535.500	113	0.001	0.000	0.0	0.0
010detention basin	BASE		1.76	524.532	535.500	1288	0.060	0.000	0.0	0.0
010detention basin	BASE		2.01	524.586	535.500	3392	0.247	0.019	0.0	0.0
010detention basin	BASE		2.26	524.644	535.500	5637	0.401	0.066	0.0	0.0
010detention basin	BASE		2.51	524.698	535.500	7727	0.590	0.131	0.0	0.0
010detention basin	BASE		2.76	524.739	535.500	9309	0.483	0.192	0.0	0.0
010detention basin	BASE		3.01	524.775	535.500	10703	0.787	0.233	0.0	0.0
010detention basin	BASE		3.26	524.823	535.500	12579	0.962	0.285	0.1	0.0
010detention basin	BASE		3.51	524.870	535.500	14381	0.994	0.266	0.1	0.0
010detention basin	BASE		3.76	524.922	535.500	16389	1.161	0.061	0.1	0.0
010detention basin	BASE		4.01	524.982	535.500	18713	1.175	0.000	0.1	0.0
010detention basin	BASE		4.26	525.046	535.500	20637	1.171	0.000	0.2	0.0
010detention basin	BASE		4.50	525.111	535.500	22330	1.421	0.000	0.2	0.0
010detention basin	BASE		4.76	525.168	535.500	23813	1.505	0.000	0.2	0.0
010detention basin	BASE		5.01	525.233	535.500	25510	2.032	0.000	0.3	0.0
010detention basin	BASE		5.25	525.294	535.500	27113	1.628	0.000	0.3	0.0
010detention basin	BASE		5.50	525.354	535.500	28679	2.166	0.000	0.4	0.0
010detention basin	BASE		5.76	525.422	535.500	30467	2.200	0.000	0.4	0.0
010detention basin	BASE		6.01	525.489	535.500	32213	2.426	0.000	0.5	0.0
010detention basin	BASE		6.25	525.554	535.500	33913	2.532	0.000	0.5	0.0
010detention basin	BASE		6.50	525.619	535.500	35612	2.406	0.000	0.6	0.0
010detention basin	BASE		6.76	525.688	535.500	37398	3.163	0.000	0.6	0.0
010detention basin	BASE		7.01	525.758	535.500	39231	2.621	0.000	0.7	0.0
010detention basin	BASE		7.25	525.820	535.500	40854	3.289	0.000	0.8	0.0
010detention basin	BASE		7.50	525.898	535.500	42886	3.805	0.000	0.9	0.0
010detention basin	BASE		7.76	525.986	535.500	45197	4.853	0.000	1.0	0.0
010detention basin	BASE		8.00	526.089	535.500	45932	5.768	0.000	1.1	0.0
010detention basin	BASE		8.26	526.198	535.500	46382	5.003	0.000	1.2	0.0
010detention basin	BASE		8.50	526.299	535.500	46802	5.912	0.000	1.3	0.0
010detention basin	BASE		8.75	526.416	535.500	47286	6.344	0.000	1.5	0.0
010detention basin	BASE		9.01	526.545	535.500	47818	6.999	0.000	1.6	0.0
010detention basin	BASE		9.25	526.677	535.500	48365	7.212	0.000	1.8	0.0
010detention basin	BASE		9.50	526.810	535.500	48917	7.367	0.000	1.9	0.0
010detention basin	BASE		9.76	526.957	535.500	49526	8.722	0.000	2.1	0.0
010detention basin	BASE		10.00	527.111	535.500	50171	8.415	0.000	2.3	0.0
010detention basin	BASE		10.25	527.277	535.500	50871	10.364	0.000	2.5	0.0
010detention basin	BASE		10.50	527.465	535.500	51666	10.748	0.000	2.8	0.0
010detention basin	BASE		10.75	527.663	535.500	52504	13.000	0.000	3.1	0.0
010detention basin	BASE		11.00	527.903	535.500	53518	15.067	0.000	3.4	0.0
010detention basin	BASE		11.25	528.164	535.500	54634	16.303	0.000	3.8	0.0
010detention basin	BASE		11.50	528.473	535.500	55969	22.164	0.000	4.3	0.0
010detention basin	BASE		11.75	528.890	535.500	57765	31.014	0.000	5.9	0.2
010detention basin	BASE		12.00	529.817	535.500	61797	120.137	0.000	12.264	0.5
010detention basin	BASE		12.25	531.459	535.500	69223	143.479	0.000	20.844	8.6
010detention basin	BASE		12.50	532.449	535.500	73794	151.783	0.000	23.890	10.6
010detention basin	BASE		12.75	532.606	535.500	74524	166.916	0.000	26.633	11.4
010detention basin	BASE		13.00	532.595	535.500	74474	19.245	0.000	24.457	11.9
010detention basin	BASE		13.26	532.513	535.500	74089	16.642	0.000	24.483	12.3
010detention basin	BASE		13.50	532.403	535.500	73579	13.740	0.000	24.392	12.6
010detention basin	BASE		13.75	532.268	535.500	72949	12.800	0.000	24.208	12.9
010detention basin	BASE		14.00	532.117	535.500	72247	11.204	0.000	23.969	13.1
010detention basin	BASE		14.26	531.951	535.500	71474	10.055	0.000	23.567	13.3

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin	BASE		14.50	531.784	535.500	70711	9.943	23.152	13.6	4.9
010detention basin	BASE		14.75	531.608	535.500	69905	8.535	22.697	13.7	5.4
010detention basin	BASE		15.00	531.425	535.500	69072	8.183	22.207	13.9	5.8
010detention basin	BASE		15.25	531.242	535.500	68235	8.142	21.914	14.1	6.3
010detention basin	BASE		15.50	531.053	535.500	67366	8.843	21.589	14.2	6.8
010detention basin	BASE		15.75	530.861	535.500	66495	7.129	21.239	14.4	7.2
010detention basin	BASE		16.00	530.668	535.500	65620	6.698	20.890	14.5	7.6
010detention basin	BASE		16.25	530.470	535.500	64723	6.396	20.736	14.7	8.1
010detention basin	BASE		16.50	530.265	535.500	63798	5.873	20.554	14.8	8.5
010detention basin	BASE		16.76	530.059	535.500	62862	6.217	20.360	14.9	8.9
010detention basin	BASE		17.00	529.845	535.500	61922	4.139	20.119	15.0	9.3
010detention basin	BASE		17.25	529.613	535.500	60910	4.062	19.678	15.1	9.7
010detention basin	BASE		17.50	529.383	535.500	59906	3.723	19.236	15.2	10.1
010detention basin	BASE		17.75	529.150	535.500	58894	4.036	19.244	15.3	10.5
010detention basin	BASE		18.00	528.915	535.500	57871	3.722	18.780	15.4	10.9
010detention basin	BASE		18.25	528.681	535.500	56866	3.624	18.388	15.4	11.3
010detention basin	BASE		18.50	528.443	535.500	55837	2.668	17.929	15.5	11.7
010detention basin	BASE		18.75	528.204	535.500	54806	3.410	17.433	15.5	12.1
010detention basin	BASE		19.00	527.972	535.500	53811	3.340	16.966	15.6	12.4
010detention basin	BASE		19.25	527.744	535.500	52847	2.843	16.411	15.7	12.8
010detention basin	BASE		19.50	527.519	535.500	51895	3.199	15.847	15.7	13.1
010detention basin	BASE		19.75	527.301	535.500	50974	2.840	15.300	15.8	13.4
010detention basin	BASE		20.00	527.084	535.500	50056	2.726	14.726	15.9	13.7
010detention basin	BASE		20.25	526.867	535.500	49153	2.515	14.060	16.0	14.0
010detention basin	BASE		20.50	526.672	535.500	48344	2.672	12.273	16.0	14.3
010detention basin	BASE		20.75	526.511	535.500	47677	2.515	10.039	16.0	14.5
010detention basin	BASE		21.01	526.377	535.500	47125	2.674	9.089	16.1	14.7
010detention basin	BASE		21.26	526.262	535.500	46649	2.716	8.288	16.1	14.9
010detention basin	BASE		21.50	526.164	535.500	46243	2.515	7.383	16.2	15.1
010detention basin	BASE		21.75	526.075	535.500	45874	2.675	6.799	16.2	15.2
010detention basin	BASE		22.00	525.998	535.500	45516	2.513	6.291	16.3	15.3
010detention basin	BASE		22.26	525.920	535.500	44374	1.948	5.760	16.3	15.5
010detention basin	BASE		22.51	525.849	535.500	41612	2.364	5.283	16.4	15.6
010detention basin	BASE		22.75	525.787	535.500	39990	1.954	4.881	16.4	15.7
010detention basin	BASE		23.01	525.728	535.500	38446	2.555	4.496	16.5	15.8
010detention basin	BASE		23.26	525.676	535.500	37108	1.810	4.168	16.5	15.9
010detention basin	BASE		23.52	525.629	535.500	35869	2.536	3.874	16.6	16.0
010detention basin	BASE		23.77	525.589	535.500	34834	1.804	3.634	16.6	16.1
010detention basin	BASE		24.02	525.544	535.500	33641	1.778	3.365	16.7	16.1
010detention basin	BASE		24.26	525.487	535.500	32150	0.305	3.041	16.7	16.2
010detention basin	BASE		24.51	525.406	535.500	30032	0.015	2.670	16.7	16.2
010detention basin	BASE		24.75	525.333	535.500	28118	0.000	2.271	16.7	16.3
010detention basin	BASE		25.01	525.257	535.500	26157	0.000	2.090	16.7	16.3
010detention basin	BASE		25.26	525.189	535.500	24355	0.000	1.735	16.7	16.4
010detention basin	BASE		25.51	525.127	535.500	22749	0.000	1.444	16.7	16.4
010detention basin	BASE		25.75	525.075	535.500	21389	0.000	1.216	16.7	16.4
010detention basin	BASE		26.01	525.026	535.500	20108	0.000	1.018	16.7	16.5
010detention basin	BASE		26.27	524.981	535.500	18696	0.000	0.851	16.7	16.5
010detention basin	BASE		26.52	524.942	535.500	17173	0.000	0.716	16.7	16.5
010detention basin	BASE		26.77	524.906	535.500	15778	0.000	0.603	16.7	16.5
010detention basin	BASE		27.02	524.873	535.500	14500	0.000	0.507	16.7	16.5
010detention basin	BASE		27.27	524.843	535.500	13332	0.000	0.427	16.7	16.5
010detention basin	BASE		27.52	524.815	535.500	12258	0.000	0.361	16.7	16.5
010detention basin	BASE		27.77	524.790	535.500	11271	0.000	0.305	16.7	16.5
010detention basin	BASE		28.02	524.766	535.500	10368	0.000	0.256	16.7	16.5
010detention basin	BASE		28.27	524.745	535.500	9545	0.000	0.214	16.7	16.6
010detention basin	BASE		28.52	524.726	535.500	8799	0.000	0.179	16.7	16.6
010detention basin	BASE		28.77	524.708	535.500	8124	0.000	0.149	16.7	16.6

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft ²	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin	BASE		29.02	524.693	535.500	7511	0.000	0.125	16.7	16.6
010detention basin	BASE		29.27	524.678	535.500	6955	0.000	0.105	16.7	16.6
010detention basin	BASE		29.52	524.665	535.500	6452	0.000	0.088	16.7	16.6
010detention basin	BASE		29.77	524.654	535.500	5995	0.000	0.075	16.7	16.6
010detention basin	BASE		30.02	524.643	535.500	5578	0.000	0.064	16.7	16.6
010detention basin	BASE		30.27	524.633	535.500	5195	0.000	0.055	16.7	16.6
010detention basin	BASE		30.52	524.624	535.500	4843	0.000	0.047	16.7	16.6
010detention basin	BASE		30.77	524.615	535.500	4521	0.000	0.040	16.7	16.6
010detention basin	BASE		31.02	524.608	535.500	4227	0.000	0.034	16.7	16.6
010detention basin	BASE		31.27	524.601	535.500	3960	0.000	0.029	16.7	16.6
010detention basin	BASE		31.52	524.595	535.500	3719	0.000	0.024	16.7	16.6
010detention basin	BASE		31.77	524.589	535.500	3503	0.000	0.021	16.7	16.6
010detention basin	BASE		32.02	524.584	535.500	3309	0.000	0.017	16.7	16.6
010detention basin	BASE		32.27	524.580	535.500	3137	0.000	0.015	16.7	16.6
010detention basin	BASE		32.52	524.576	535.500	2985	0.000	0.012	16.7	16.6
010detention basin	BASE		32.77	524.573	535.500	2855	0.000	0.010	16.7	16.6
010detention basin	BASE		33.02	524.570	535.500	2743	0.000	0.008	16.7	16.6
010detention basin	BASE		33.27	524.567	535.500	2647	0.000	0.007	16.7	16.6
010detention basin	BASE		33.52	524.565	535.500	2565	0.000	0.006	16.7	16.6
010detention basin	BASE		33.77	524.563	535.500	2494	0.000	0.005	16.7	16.6
010detention basin	BASE		34.02	524.562	535.500	2434	0.000	0.004	16.7	16.6
010detention basin	BASE		34.27	524.560	535.500	2382	0.000	0.003	16.7	16.6
010detention basin	BASE		34.52	524.559	535.500	2336	0.000	0.002	16.7	16.6
010detention basin	BASE		34.77	524.558	535.500	2297	0.000	0.002	16.7	16.6
010detention basin	BASE		35.02	524.557	535.500	2263	0.000	0.002	16.7	16.6
010detention basin	BASE		35.27	524.556	535.500	2233	0.000	0.002	16.7	16.6
010detention basin	BASE		35.52	524.556	535.500	2207	0.000	0.001	16.7	16.6
010detention basin	BASE		35.77	524.555	535.500	2184	0.000	0.001	16.7	16.6
010detention basin	BASE		36.02	524.555	535.500	2164	0.000	0.001	16.7	16.6
010detention basin	BASE		36.27	524.554	535.500	2146	0.000	0.001	16.7	16.6
010detention basin	BASE		36.52	524.554	535.500	2130	0.000	0.001	16.7	16.6
010detention basin	BASE		36.77	524.553	535.500	2115	0.000	0.001	16.7	16.6
010detention basin	BASE		37.02	524.553	535.500	2102	0.000	0.001	16.7	16.6
010detention basin	BASE		37.27	524.553	535.500	2091	0.000	0.001	16.7	16.6
010detention basin	BASE		37.52	524.553	535.500	2081	0.000	0.001	16.7	16.6
010detention basin	BASE		37.77	524.552	535.500	2071	0.000	0.000	16.7	16.6
010detention basin	BASE		38.02	524.552	535.500	2063	0.000	0.000	16.7	16.6
010detention basin	BASE		38.27	524.552	535.500	2055	0.000	0.000	16.7	16.6
010detention basin	BASE		38.52	524.552	535.500	2048	0.000	0.000	16.7	16.6
010detention basin	BASE		38.77	524.552	535.500	2042	0.000	0.000	16.7	16.6
010detention basin	BASE		39.02	524.551	535.500	2036	0.000	0.000	16.7	16.6
010detention basin	BASE		39.27	524.551	535.500	2030	0.000	0.000	16.7	16.6
010detention basin	BASE		39.52	524.551	535.500	2025	0.000	0.000	16.7	16.6
010detention basin	BASE		39.77	524.551	535.500	2021	0.000	0.000	16.7	16.6
010detention basin	BASE		40.02	524.551	535.500	2017	0.000	0.000	16.7	16.6
010detention basin	BASE		40.27	524.551	535.500	2013	0.000	0.000	16.7	16.6
010detention basin	BASE		40.52	524.551	535.500	2009	0.000	0.000	16.7	16.6
010detention basin	BASE		40.77	524.551	535.500	2006	0.000	0.000	16.7	16.6
010detention basin	BASE		41.02	524.551	535.500	2003	0.000	0.000	16.7	16.6
010detention basin	BASE		41.27	524.550	535.500	2000	0.000	0.000	16.7	16.6
010detention basin	BASE		41.52	524.550	535.500	1997	0.000	0.000	16.7	16.6
010detention basin	BASE		41.77	524.550	535.500	1995	0.000	0.000	16.7	16.6
010detention basin	BASE		42.02	524.550	535.500	1992	0.000	0.000	16.7	16.6
010detention basin	BASE		42.27	524.550	535.500	1990	0.000	0.000	16.7	16.6
010detention basin	BASE		42.52	524.550	535.500	1988	0.000	0.000	16.7	16.6
010detention basin	BASE		42.77	524.550	535.500	1986	0.000	0.000	16.7	16.6
010detention basin	BASE		43.02	524.550	535.500	1984	0.000	0.000	16.7	16.6
010detention basin	BASE		43.27	524.550	535.500	1983	0.000	0.000	16.7	16.6

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010detention basin	BASE	43.52	524.550	535.500	1981	0.000	0.000	16.7	16.6
010detention basin	BASE	43.77	524.550	535.500	1980	0.000	0.000	16.7	16.6
010detention basin	BASE	44.02	524.550	535.500	1978	0.000	0.000	16.7	16.6
010detention basin	BASE	44.27	524.550	535.500	1977	0.000	0.000	16.7	16.6
010detention basin	BASE	44.52	524.550	535.500	1975	0.000	0.000	16.7	16.6
010detention basin	BASE	44.77	524.550	535.500	1974	0.000	0.000	16.7	16.6
010detention basin	BASE	45.02	524.550	535.500	1973	0.000	0.000	16.7	16.6
010detention basin	BASE	45.27	524.550	535.500	1972	0.000	0.000	16.7	16.6
010detention basin	BASE	45.52	524.550	535.500	1971	0.000	0.000	16.7	16.6
010detention basin	BASE	45.77	524.550	535.500	1970	0.000	0.000	16.7	16.6
010detention basin	BASE	46.02	524.550	535.500	1969	0.000	0.000	16.7	16.6
010detention basin	BASE	46.27	524.550	535.500	1968	0.000	0.000	16.7	16.6
010detention basin	BASE	46.52	524.550	535.500	1967	0.000	0.000	16.7	16.6
010detention basin	BASE	46.77	524.550	535.500	1966	0.000	0.000	16.7	16.6
010detention basin	BASE	47.02	524.550	535.500	1966	0.000	0.000	16.7	16.6
010detention basin	BASE	47.27	524.550	535.500	1965	0.000	0.000	16.7	16.6
010detention basin	BASE	47.52	524.550	535.500	1964	0.000	0.000	16.7	16.6
010detention basin	BASE	47.77	524.550	535.500	1964	0.000	0.000	16.7	16.6
010detention basin	BASE	48.01	524.550	535.500	1963	0.000	0.000	16.7	16.6
025detention basin	BASE	0.00	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE	0.26	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE	0.51	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE	0.76	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE	1.01	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE	1.26	524.500	535.500	113	0.000	0.000	0.0	0.0
025detention basin	BASE	1.51	524.521	535.500	868	0.049	0.000	0.0	0.0
025detention basin	BASE	1.76	524.576	535.500	2996	0.176	0.012	0.0	0.0
025detention basin	BASE	2.01	524.634	535.500	5240	0.439	0.058	0.0	0.0
025detention basin	BASE	2.26	524.696	535.500	7643	0.841	0.134	0.0	0.0
025detention basin	BASE	2.51	524.753	535.500	9833	0.841	0.230	0.0	0.0
025detention basin	BASE	2.76	524.795	535.500	11466	0.665	0.304	0.1	0.0
025detention basin	BASE	3.01	524.831	535.500	12883	1.056	0.370	0.1	0.0
025detention basin	BASE	3.26	524.881	535.500	14805	1.263	0.458	0.1	0.0
025detention basin	BASE	3.51	524.926	535.500	16566	1.285	0.506	0.1	0.0
025detention basin	BASE	3.76	524.972	535.500	18332	1.482	0.469	0.1	0.0
025detention basin	BASE	4.01	525.023	535.500	20027	1.484	0.255	0.2	0.1
025detention basin	BASE	4.25	525.093	535.500	21851	2.124	0.000	0.2	0.1
025detention basin	BASE	4.50	525.173	535.500	23947	1.764	0.000	0.3	0.1
025detention basin	BASE	4.76	525.238	535.500	25654	1.856	0.000	0.3	0.1
025detention basin	BASE	5.01	525.312	535.500	27586	2.490	0.000	0.3	0.1
025detention basin	BASE	5.25	525.381	535.500	29395	1.985	0.000	0.4	0.1
025detention basin	BASE	5.50	525.448	535.500	31150	2.628	0.000	0.4	0.1
025detention basin	BASE	5.76	525.525	535.500	33140	2.655	0.000	0.5	0.1
025detention basin	BASE	6.01	525.599	535.500	35074	2.916	0.000	0.5	0.1
025detention basin	BASE	6.25	525.670	535.500	36946	3.032	0.000	0.6	0.1
025detention basin	BASE	6.50	525.742	535.500	38810	2.871	0.000	0.7	0.1
025detention basin	BASE	6.76	525.816	535.500	40762	3.762	0.000	0.7	0.1
025detention basin	BASE	7.01	525.893	535.500	42758	3.108	0.000	0.8	0.1
025detention basin	BASE	7.25	525.960	535.500	44522	3.888	0.000	0.9	0.1
025detention basin	BASE	7.50	526.045	535.500	45749	4.486	0.000	1.0	0.1
025detention basin	BASE	7.76	526.145	535.500	46162	5.703	0.000	1.1	0.1
025detention basin	BASE	8.00	526.265	535.500	46658	6.760	0.000	1.2	0.1
025detention basin	BASE	8.25	526.386	535.500	47160	5.853	0.000	1.3	0.1
025detention basin	BASE	8.51	526.507	535.500	47663	6.903	0.000	1.5	0.1
025detention basin	BASE	8.76	526.641	535.500	48216	7.380	0.000	1.6	0.1
025detention basin	BASE	9.00	526.782	535.500	48802	8.111	0.000	1.8	0.1
025detention basin	BASE	9.26	526.935	535.500	49434	8.349	0.000	1.9	0.1

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
025detention basin		BASE	9.50	527.085	535.500	50062	8.511	0.000	2.1	0.1
025detention basin		BASE	9.75	527.251	535.500	50763	10.058	0.000	2.3	0.1
025detention basin		BASE	10.01	527.428	535.500	51511	9.688	0.000	2.5	0.1
025detention basin		BASE	10.25	527.608	535.500	52271	11.904	0.000	2.7	0.1
025detention basin		BASE	10.50	527.818	535.500	53159	12.339	0.000	3.0	0.1
025detention basin		BASE	10.75	528.041	535.500	54104	14.906	0.000	3.3	0.1
025detention basin		BASE	11.00	528.310	535.500	55264	17.265	0.000	3.6	0.1
025detention basin		BASE	11.25	528.599	535.500	56509	18.655	0.000	4.0	0.1
025detention basin		BASE	11.50	528.935	535.500	57958	25.265	0.000	4.4	0.1
025detention basin		BASE	11.75	529.372	535.500	59862	35.337	4.975	5.0	0.1
025detention basin		BASE	12.00	530.368	535.500	64262	136.645	13.350	6.8	0.3
025detention basin		BASE	12.25	532.173	535.500	72506	162.893	21.559	9.9	0.7
025detention basin		BASE	12.50	533.260	535.500	77586	58.797	27.395	12.2	1.2
025detention basin		BASE	12.76	533.413	535.500	78305	30.390	28.029	13.1	1.7
025detention basin		BASE	13.01	533.381	535.500	78153	21.766	28.583	13.7	2.3
025detention basin		BASE	13.25	533.290	535.500	77727	18.917	27.775	14.1	2.9
025detention basin		BASE	13.51	533.171	535.500	77165	15.538	26.754	14.5	3.5
025detention basin		BASE	13.76	533.040	535.500	76549	14.497	25.724	14.8	4.0
025detention basin		BASE	14.00	532.904	535.500	75915	12.696	24.795	15.0	4.5
025detention basin		BASE	14.25	532.757	535.500	75226	11.403	24.166	15.3	5.0
025detention basin		BASE	14.51	532.602	535.500	74507	11.267	23.816	15.5	5.5
025detention basin		BASE	14.75	532.446	535.500	73779	9.684	23.447	15.7	6.0
025detention basin		BASE	15.00	532.275	535.500	72981	9.274	23.024	15.9	6.5
025detention basin		BASE	15.26	532.102	535.500	72177	9.226	22.991	16.1	7.0
025detention basin		BASE	15.50	531.924	535.500	71350	7.759	22.918	16.3	7.5
025detention basin		BASE	15.75	531.732	535.500	70473	8.083	22.803	16.5	7.9
025detention basin		BASE	16.00	531.544	535.500	69614	7.592	22.689	16.6	8.4
025detention basin		BASE	16.25	531.347	535.500	68714	7.250	22.243	16.8	8.9
025detention basin		BASE	16.50	531.148	535.500	67802	6.657	21.777	16.9	9.3
025detention basin		BASE	16.75	530.950	535.500	66899	7.045	21.305	17.1	9.8
025detention basin		BASE	17.01	530.745	535.500	65971	4.679	20.803	17.2	10.2
025detention basin		BASE	17.25	530.526	535.500	64979	4.603	20.649	17.3	10.6
025detention basin		BASE	17.50	530.300	535.500	63955	4.219	20.480	17.4	11.0
025detention basin		BASE	17.75	530.073	535.500	62928	4.574	20.301	17.5	11.5
025detention basin		BASE	18.00	529.847	535.500	61930	4.221	20.120	17.6	11.9
025detention basin		BASE	18.25	529.613	535.500	60911	4.106	19.682	17.6	12.3
025detention basin		BASE	18.50	529.378	535.500	59885	3.021	19.216	17.7	12.7
025detention basin		BASE	18.75	529.138	535.500	58841	3.865	19.186	17.8	13.1
025detention basin		BASE	19.00	528.906	535.500	57836	3.787	18.728	17.9	13.5
025detention basin		BASE	19.25	528.668	535.500	56807	3.221	18.321	17.9	13.9
025detention basin		BASE	19.50	528.433	535.500	55796	3.625	17.881	18.0	14.2
025detention basin		BASE	19.75	528.203	535.500	54805	3.216	17.435	18.1	14.6
025detention basin		BASE	20.00	527.971	535.500	53806	3.088	16.951	18.1	15.0
025detention basin		BASE	20.25	527.739	535.500	52823	2.851	16.649	18.2	15.3
025detention basin		BASE	20.50	527.502	535.500	51823	3.028	16.316	18.3	15.7
025detention basin		BASE	20.75	527.272	535.500	50850	2.850	15.968	18.3	16.0
025detention basin		BASE	21.00	527.043	535.500	49884	3.028	15.467	18.4	16.3
025detention basin		BASE	21.25	526.827	535.500	48986	3.078	14.269	18.5	16.6
025detention basin		BASE	21.50	526.636	535.500	48197	2.849	11.875	18.5	16.9
025detention basin		BASE	21.75	526.487	535.500	47579	3.030	9.944	18.6	17.1
025detention basin		BASE	22.00	526.366	535.500	47077	2.846	8.556	18.6	17.3
025detention basin		BASE	22.25	526.257	535.500	46626	2.214	7.949	18.7	17.5
025detention basin		BASE	22.51	526.154	535.500	46201	2.678	7.322	18.7	17.6
025detention basin		BASE	22.75	526.066	535.500	45836	2.209	6.733	18.8	17.8
025detention basin		BASE	23.00	525.988	535.500	45248	2.886	6.213	18.8	17.9
025detention basin		BASE	23.25	525.917	535.500	43407	2.064	5.748	18.9	18.0
025detention basin		BASE	23.51	525.849	535.500	41629	2.861	5.291	18.9	18.2
025detention basin		BASE	23.76	525.792	535.500	40119	2.051	4.901	19.0	18.3

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
025detention basin		BASE	24.00	525.732	535.500	38563	2.025	4.515	19.0	18.4
025detention basin		BASE	24.26	525.659	535.500	36644	0.358	4.053	19.1	18.4
025detention basin		BASE	24.51	525.565	535.500	34185	0.017	3.487	19.1	18.5
025detention basin		BASE	24.76	525.478	535.500	31927	0.000	2.994	19.1	18.6
025detention basin		BASE	25.00	525.398	535.500	29818	0.000	2.623	19.1	18.6
025detention basin		BASE	25.26	525.320	535.500	27801	0.000	2.207	19.1	18.7
025detention basin		BASE	25.50	525.248	535.500	25904	0.000	2.038	19.1	18.7
025detention basin		BASE	25.76	525.179	535.500	24113	0.000	1.690	19.1	18.8
025detention basin		BASE	26.00	525.121	535.500	22580	0.000	1.415	19.1	18.8
025detention basin		BASE	26.26	525.066	535.500	21154	0.000	1.179	19.1	18.8
025detention basin		BASE	26.51	525.018	535.500	19898	0.000	0.988	19.1	18.9
025detention basin		BASE	26.75	524.977	535.500	18542	0.000	0.837	19.1	18.9
025detention basin		BASE	27.00	524.938	535.500	17032	0.000	0.704	19.1	18.9
025detention basin		BASE	27.25	524.903	535.500	15648	0.000	0.593	19.1	18.9
025detention basin		BASE	27.50	524.870	535.500	14382	0.000	0.498	19.1	18.9
025detention basin		BASE	27.75	524.840	535.500	13223	0.000	0.420	19.1	18.9
025detention basin		BASE	28.00	524.812	535.500	12158	0.000	0.355	19.1	18.9
025detention basin		BASE	28.25	524.787	535.500	11179	0.000	0.300	19.1	18.9
025detention basin		BASE	28.50	524.764	535.500	10284	0.000	0.252	19.1	19.0
025detention basin		BASE	28.75	524.743	535.500	9469	0.000	0.210	19.1	19.0
025detention basin		BASE	29.00	524.724	535.500	8730	0.000	0.176	19.1	19.0
025detention basin		BASE	29.25	524.707	535.500	8061	0.000	0.147	19.1	19.0
025detention basin		BASE	29.50	524.691	535.500	7454	0.000	0.123	19.1	19.0
025detention basin		BASE	29.75	524.677	535.500	6904	0.000	0.103	19.1	19.0
025detention basin		BASE	30.00	524.664	535.500	6406	0.000	0.087	19.1	19.0
025detention basin		BASE	30.25	524.652	535.500	5953	0.000	0.074	19.1	19.0
025detention basin		BASE	30.50	524.642	535.500	5539	0.000	0.063	19.1	19.0
025detention basin		BASE	30.75	524.632	535.500	5159	0.000	0.054	19.1	19.0
025detention basin		BASE	31.00	524.623	535.500	4810	0.000	0.046	19.1	19.0
025detention basin		BASE	31.25	524.615	535.500	4491	0.000	0.039	19.1	19.0
025detention basin		BASE	31.50	524.607	535.500	4200	0.000	0.033	19.1	19.0
025detention basin		BASE	31.75	524.600	535.500	3936	0.000	0.028	19.1	19.0
025detention basin		BASE	32.00	524.594	535.500	3697	0.000	0.024	19.1	19.0
025detention basin		BASE	32.25	524.589	535.500	3483	0.000	0.020	19.1	19.0
025detention basin		BASE	32.50	524.584	535.500	3291	0.000	0.017	19.1	19.0
025detention basin		BASE	32.75	524.579	535.500	3121	0.000	0.014	19.1	19.0
025detention basin		BASE	33.00	524.576	535.500	2972	0.000	0.012	19.1	19.0
025detention basin		BASE	33.25	524.572	535.500	2843	0.000	0.010	19.1	19.0
025detention basin		BASE	33.50	524.569	535.500	2733	0.000	0.008	19.1	19.0
025detention basin		BASE	33.75	524.567	535.500	2638	0.000	0.007	19.1	19.0
025detention basin		BASE	34.00	524.565	535.500	2557	0.000	0.005	19.1	19.0
025detention basin		BASE	34.25	524.563	535.500	2488	0.000	0.005	19.1	19.0
025detention basin		BASE	34.50	524.562	535.500	2428	0.000	0.004	19.1	19.0
025detention basin		BASE	34.75	524.560	535.500	2377	0.000	0.003	19.1	19.0
025detention basin		BASE	35.00	524.559	535.500	2332	0.000	0.003	19.1	19.0
025detention basin		BASE	35.25	524.558	535.500	2294	0.000	0.002	19.1	19.0
025detention basin		BASE	35.50	524.557	535.500	2260	0.000	0.002	19.1	19.0
025detention basin		BASE	35.75	524.556	535.500	2230	0.000	0.002	19.1	19.0
025detention basin		BASE	36.00	524.556	535.500	2205	0.000	0.002	19.1	19.0
025detention basin		BASE	36.25	524.555	535.500	2182	0.000	0.001	19.1	19.0
025detention basin		BASE	36.50	524.555	535.500	2162	0.000	0.001	19.1	19.0
025detention basin		BASE	36.75	524.554	535.500	2144	0.000	0.001	19.1	19.0
025detention basin		BASE	37.00	524.554	535.500	2128	0.000	0.001	19.1	19.0
025detention basin		BASE	37.25	524.553	535.500	2114	0.000	0.001	19.1	19.0
025detention basin		BASE	37.50	524.553	535.500	2101	0.000	0.001	19.1	19.0
025detention basin		BASE	37.75	524.553	535.500	2090	0.000	0.001	19.1	19.0
025detention basin		BASE	38.00	524.553	535.500	2080	0.000	0.001	19.1	19.0
025detention basin		BASE	38.25	524.552	535.500	2070	0.000	0.001	19.1	19.0

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
025detention basin	BASE		38.50	524.552	535.500	2062	0.000	0.000	19.1	19.0
025detention basin	BASE		38.75	524.552	535.500	2054	0.000	0.000	19.1	19.0
025detention basin	BASE		39.00	524.552	535.500	2047	0.000	0.000	19.1	19.0
025detention basin	BASE		39.25	524.552	535.500	2041	0.000	0.000	19.1	19.0
025detention basin	BASE		39.50	524.551	535.500	2035	0.000	0.000	19.1	19.0
025detention basin	BASE		39.75	524.551	535.500	2030	0.000	0.000	19.1	19.0
025detention basin	BASE		40.00	524.551	535.500	2025	0.000	0.000	19.1	19.0
025detention basin	BASE		40.25	524.551	535.500	2020	0.000	0.000	19.1	19.0
025detention basin	BASE		40.50	524.551	535.500	2016	0.000	0.000	19.1	19.0
025detention basin	BASE		40.75	524.551	535.500	2012	0.000	0.000	19.1	19.0
025detention basin	BASE		41.00	524.551	535.500	2009	0.000	0.000	19.1	19.0
025detention basin	BASE		41.25	524.551	535.500	2006	0.000	0.000	19.1	19.0
025detention basin	BASE		41.50	524.551	535.500	2002	0.000	0.000	19.1	19.0
025detention basin	BASE		41.75	524.550	535.500	2000	0.000	0.000	19.1	19.0
025detention basin	BASE		42.00	524.550	535.500	1997	0.000	0.000	19.1	19.0
025detention basin	BASE		42.25	524.550	535.500	1994	0.000	0.000	19.1	19.0
025detention basin	BASE		42.50	524.550	535.500	1992	0.000	0.000	19.1	19.0
025detention basin	BASE		42.75	524.550	535.500	1990	0.000	0.000	19.1	19.0
025detention basin	BASE		43.00	524.550	535.500	1988	0.000	0.000	19.1	19.0
025detention basin	BASE		43.25	524.550	535.500	1986	0.000	0.000	19.1	19.0
025detention basin	BASE		43.50	524.550	535.500	1984	0.000	0.000	19.1	19.0
025detention basin	BASE		43.75	524.550	535.500	1982	0.000	0.000	19.1	19.0
025detention basin	BASE		44.00	524.550	535.500	1981	0.000	0.000	19.1	19.0
025detention basin	BASE		44.25	524.550	535.500	1979	0.000	0.000	19.1	19.0
025detention basin	BASE		44.50	524.550	535.500	1978	0.000	0.000	19.1	19.0
025detention basin	BASE		44.75	524.550	535.500	1977	0.000	0.000	19.1	19.0
025detention basin	BASE		45.00	524.550	535.500	1975	0.000	0.000	19.1	19.0
025detention basin	BASE		45.25	524.550	535.500	1974	0.000	0.000	19.1	19.0
025detention basin	BASE		45.50	524.550	535.500	1973	0.000	0.000	19.1	19.0
025detention basin	BASE		45.75	524.550	535.500	1972	0.000	0.000	19.1	19.0
025detention basin	BASE		46.00	524.550	535.500	1971	0.000	0.000	19.1	19.0
025detention basin	BASE		46.25	524.550	535.500	1970	0.000	0.000	19.1	19.0
025detention basin	BASE		46.50	524.550	535.500	1969	0.000	0.000	19.1	19.0
025detention basin	BASE		46.75	524.550	535.500	1968	0.000	0.000	19.1	19.0
025detention basin	BASE		47.00	524.550	535.500	1967	0.000	0.000	19.1	19.0
025detention basin	BASE		47.25	524.550	535.500	1966	0.000	0.000	19.1	19.0
025detention basin	BASE		47.50	524.550	535.500	1966	0.000	0.000	19.1	19.0
025detention basin	BASE		47.75	524.550	535.500	1965	0.000	0.000	19.1	19.0
025detention basin	BASE		48.00	524.550	535.500	1964	0.000	0.000	19.1	19.0
025detention basin	BASE		48.01	524.550	535.500	1964	0.000	0.000	19.1	19.0
100detention basin	BASE		0.00	524.500	535.500	113	0.000	0.000	0.0	0.0
100detention basin	BASE		0.26	524.500	535.500	113	0.000	0.000	0.0	0.0
100detention basin	BASE		0.51	524.500	535.500	113	0.000	0.000	0.0	0.0
100detention basin	BASE		0.76	524.500	535.500	113	0.000	0.000	0.0	0.0
100detention basin	BASE		1.01	524.500	535.500	113	0.000	0.000	0.0	0.0
100detention basin	BASE		1.26	524.513	535.500	552	0.024	0.000	0.0	0.0
100detention basin	BASE		1.50	524.575	535.500	2932	0.253	0.011	0.0	0.0
100detention basin	BASE		1.76	524.642	535.500	5537	0.404	0.067	0.0	0.0
100detention basin	BASE		2.01	524.705	535.500	8006	0.790	0.153	0.0	0.0
100detention basin	BASE		2.25	524.770	535.500	10519	0.990	0.275	0.0	0.0
100detention basin	BASE		2.50	524.832	535.500	12901	1.280	0.412	0.1	0.0
100detention basin	BASE		2.76	524.878	535.500	14688	0.991	0.501	0.1	0.0
100detention basin	BASE		3.00	524.915	535.500	16130	1.508	0.601	0.1	0.0
100detention basin	BASE		3.25	524.967	535.500	18155	1.780	0.752	0.1	0.0
100detention basin	BASE		3.50	525.013	535.500	19775	1.784	0.870	0.2	0.1
100detention basin	BASE		3.75	525.057	535.500	20917	2.023	0.934	0.2	0.1
100detention basin	BASE		4.00	525.102	535.500	22102	2.007	0.936	0.3	0.1

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
100detention basin	BASE		4.26	525.164	535.500	23702	2.859	0.731	0.3	0.1
100detention basin	BASE		4.51	525.241	535.500	25729	2.332	0.269	0.4	0.1
100detention basin	BASE		4.75	525.315	535.500	27673	2.437	0.000	0.4	0.1
100detention basin	BASE		5.00	525.403	535.500	29966	3.238	0.000	0.5	0.1
100detention basin	BASE		5.26	525.491	535.500	32267	2.570	0.000	0.5	0.1
100detention basin	BASE		5.50	525.568	535.500	34271	3.387	0.000	0.6	0.1
100detention basin	BASE		5.76	525.658	535.500	36618	3.407	0.000	0.7	0.1
100detention basin	BASE		6.00	525.741	535.500	38782	3.716	0.000	0.7	0.1
100detention basin	BASE		6.26	525.828	535.500	41076	3.854	0.000	0.8	0.1
100detention basin	BASE		6.51	525.907	535.500	43132	3.633	0.000	0.9	0.1
100detention basin	BASE		6.75	525.989	535.500	45272	4.727	0.000	1.0	0.1
100detention basin	BASE		7.01	526.078	535.500	45886	3.909	0.000	1.1	0.1
100detention basin	BASE		7.25	526.160	535.500	46225	4.870	0.000	1.2	0.1
100detention basin	BASE		7.51	526.244	535.500	46657	5.601	0.000	1.3	0.1
100detention basin	BASE		7.75	526.381	535.500	47139	7.056	0.000	1.4	0.1
100detention basin	BASE		8.00	526.528	535.500	47748	8.360	0.000	1.6	0.1
100detention basin	BASE		8.25	526.677	535.500	48366	7.215	0.000	1.7	0.1
100detention basin	BASE		8.50	526.817	535.500	48944	8.457	0.000	1.9	0.1
100detention basin	BASE		8.75	526.979	535.500	49616	9.046	0.000	2.1	0.1
100detention basin	BASE		9.01	527.151	535.500	50340	9.925	0.000	2.3	0.1
100detention basin	BASE		9.25	527.327	535.500	51084	10.184	0.000	2.5	0.1
100detention basin	BASE		9.50	527.509	535.500	51851	10.365	0.000	2.7	0.1
100detention basin	BASE		9.75	527.700	535.500	52659	12.214	0.000	2.9	0.1
100detention basin	BASE		10.00	527.906	535.500	53530	11.751	0.000	3.2	0.1
100detention basin	BASE		10.25	528.118	535.500	54437	14.414	0.000	3.4	0.1
100detention basin	BASE		10.50	528.360	535.500	55479	14.910	0.000	3.7	0.1
100detention basin	BASE		10.75	528.622	535.500	56612	18.014	0.000	4.1	0.1
100detention basin	BASE		11.00	528.926	535.500	57919	20.783	0.000	4.5	0.1
100detention basin	BASE		11.25	529.260	535.500	59374	22.442	0.000	4.9	0.1
100detention basin	BASE		11.50	529.602	535.500	60862	30.389	5.262	5.5	0.2
100detention basin	BASE		11.75	530.026	535.500	62711	42.346	8.588	6.2	0.3
100detention basin	BASE		12.00	531.143	535.500	67779	163.400	15.727	8.3	0.6
100detention basin	BASE		12.25	533.189	535.500	77249	194.359	25.414	12.0	1.0
100detention basin	BASE		12.50	534.364	535.500	82460	70.046	38.137	14.8	1.7
100detention basin	BASE		12.75	534.473	535.500	82879	36.284	38.916	15.9	2.5
100detention basin	BASE		13.01	534.383	535.500	82532	25.940	38.407	16.5	3.3
100detention basin	BASE		13.25	534.237	535.500	81975	22.552	36.975	17.0	4.0
100detention basin	BASE		13.50	534.066	535.500	81318	18.572	35.303	17.4	4.8
100detention basin	BASE		13.75	533.881	535.500	80504	17.280	33.502	17.8	5.5
100detention basin	BASE		14.00	533.696	535.500	79634	15.125	31.824	18.2	6.2
100detention basin	BASE		14.25	533.504	535.500	78733	13.578	30.310	18.5	6.8
100detention basin	BASE		14.50	533.321	535.500	77871	13.425	29.041	18.7	7.4
100detention basin	BASE		14.75	533.135	535.500	76997	11.532	27.948	19.0	8.0
100detention basin	BASE		15.00	532.943	535.500	76096	11.046	27.048	19.2	8.6
100detention basin	BASE		15.25	532.757	535.500	75227	10.990	26.270	19.4	9.1
100detention basin	BASE		15.51	532.564	535.500	74328	9.235	25.900	19.7	9.7
100detention basin	BASE		15.75	532.368	535.500	73414	9.623	25.505	19.9	10.2
100detention basin	BASE		16.00	532.170	535.500	72494	9.039	25.106	20.0	10.7
100detention basin	BASE		16.25	531.969	535.500	71556	8.631	24.685	20.2	11.2
100detention basin	BASE		16.50	531.763	535.500	70615	7.925	24.241	20.4	11.8
100detention basin	BASE		16.75	531.562	535.500	69696	8.387	23.800	20.6	12.2
100detention basin	BASE		17.00	531.349	535.500	68723	5.605	23.311	20.7	12.7
100detention basin	BASE		17.25	531.111	535.500	67632	5.482	23.119	20.8	13.2
100detention basin	BASE		17.50	530.874	535.500	66554	5.023	22.919	20.9	13.7
100detention basin	BASE		17.75	530.634	535.500	65470	5.447	22.706	21.0	14.2
100detention basin	BASE		18.00	530.396	535.500	64388	5.025	22.493	21.2	14.6
100detention basin	BASE		18.25	530.148	535.500	63265	4.889	22.045	21.3	15.1
100detention basin	BASE		18.50	529.897	535.500	62147	3.596	21.564	21.3	15.5

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
100detention basin	BASE	18.75	529.643	535.500	535.500	61042	4.604	21.571	21.4	16.0
100detention basin	BASE	19.00	529.396	535.500	535.500	59963	4.509	21.105	21.5	16.4
100detention basin	BASE	19.25	529.144	535.500	535.500	58867	3.840	20.680	21.6	16.9
100detention basin	BASE	19.50	528.887	535.500	535.500	57752	4.317	20.201	21.7	17.3
100detention basin	BASE	19.75	528.639	535.500	535.500	56683	3.829	19.716	21.8	17.7
100detention basin	BASE	20.00	528.388	535.500	535.500	55600	3.677	19.189	21.9	18.1
100detention basin	BASE	20.25	528.136	535.500	535.500	54514	3.394	18.813	21.9	18.5
100detention basin	BASE	20.50	527.880	535.500	535.500	53421	3.606	18.401	22.0	18.9
100detention basin	BASE	20.75	527.632	535.500	535.500	52371	3.393	17.974	22.1	19.2
100detention basin	BASE	21.00	527.385	535.500	535.500	51331	3.605	17.338	22.1	19.6
100detention basin	BASE	21.25	527.152	535.500	535.500	50345	3.665	16.402	22.2	20.0
100detention basin	BASE	21.50	526.931	535.500	535.500	49415	3.394	15.459	22.3	20.3
100detention basin	BASE	21.75	526.728	535.500	535.500	48578	3.608	13.408	22.4	20.6
100detention basin	BASE	22.00	526.574	535.500	535.500	47941	3.389	9.920	22.4	20.8
100detention basin	BASE	22.25	526.455	535.500	535.500	47445	2.636	8.878	22.5	21.0
100detention basin	BASE	22.51	526.342	535.500	535.500	46980	3.189	8.434	22.6	21.2
100detention basin	BASE	22.75	526.244	535.500	535.500	46575	2.635	7.874	22.6	21.4
100detention basin	BASE	23.00	526.155	535.500	535.500	46203	3.434	7.310	22.7	21.5
100detention basin	BASE	23.26	526.074	535.500	535.500	45869	2.453	6.790	22.7	21.7
100detention basin	BASE	23.51	526.000	535.500	535.500	45552	3.407	6.299	22.8	21.8
100detention basin	BASE	23.75	525.939	535.500	535.500	43980	2.466	5.882	22.9	21.9
100detention basin	BASE	24.01	525.870	535.500	535.500	42172	2.407	5.415	22.9	22.1
100detention basin	BASE	24.26	525.789	535.500	535.500	40040	0.411	4.878	22.9	22.2
100detention basin	BASE	24.51	525.688	535.500	535.500	37405	0.022	4.234	22.9	22.3
100detention basin	BASE	24.75	525.592	535.500	535.500	34894	0.000	3.647	22.9	22.3
100detention basin	BASE	25.01	525.499	535.500	535.500	32480	0.000	3.112	22.9	22.4
100detention basin	BASE	25.25	525.417	535.500	535.500	30337	0.000	2.736	22.9	22.5
100detention basin	BASE	25.51	525.338	535.500	535.500	28270	0.000	2.301	22.9	22.5
100detention basin	BASE	25.75	525.266	535.500	535.500	26367	0.000	2.133	22.9	22.6
100detention basin	BASE	26.01	525.195	535.500	535.500	24525	0.000	1.767	22.9	22.6
100detention basin	BASE	26.25	525.135	535.500	535.500	22949	0.000	1.479	22.9	22.6
100detention basin	BASE	26.51	525.079	535.500	535.500	21482	0.000	1.231	22.9	22.7
100detention basin	BASE	26.75	525.032	535.500	535.500	20254	0.000	1.040	22.9	22.7
100detention basin	BASE	27.00	524.987	535.500	535.500	18934	0.000	0.873	22.9	22.7
100detention basin	BASE	27.25	524.947	535.500	535.500	17392	0.000	0.735	22.9	22.7
100detention basin	BASE	27.50	524.911	535.500	535.500	15978	0.000	0.619	22.9	22.7
100detention basin	BASE	27.75	524.878	535.500	535.500	14683	0.000	0.520	22.9	22.7
100detention basin	BASE	28.00	524.847	535.500	535.500	13499	0.000	0.438	22.9	22.8
100detention basin	BASE	28.25	524.819	535.500	535.500	12412	0.000	0.370	22.9	22.8
100detention basin	BASE	28.50	524.793	535.500	535.500	11412	0.000	0.313	22.9	22.8
100detention basin	BASE	28.75	524.770	535.500	535.500	10497	0.000	0.263	22.9	22.8
100detention basin	BASE	29.00	524.748	535.500	535.500	9662	0.000	0.219	22.9	22.8
100detention basin	BASE	29.25	524.729	535.500	535.500	8906	0.000	0.184	22.9	22.8
100detention basin	BASE	29.50	524.711	535.500	535.500	8220	0.000	0.153	22.9	22.8
100detention basin	BASE	29.75	524.695	535.500	535.500	7598	0.000	0.129	22.9	22.8
100detention basin	BASE	30.00	524.680	535.500	535.500	7034	0.000	0.108	22.9	22.8
100detention basin	BASE	30.25	524.667	535.500	535.500	6524	0.000	0.091	22.9	22.8
100detention basin	BASE	30.50	524.655	535.500	535.500	6060	0.000	0.077	22.9	22.8
100detention basin	BASE	30.75	524.644	535.500	535.500	5638	0.000	0.065	22.9	22.8
100detention basin	BASE	31.00	524.634	535.500	535.500	5250	0.000	0.056	22.9	22.8
100detention basin	BASE	31.25	524.625	535.500	535.500	4893	0.000	0.048	22.9	22.8
100detention basin	BASE	31.50	524.617	535.500	535.500	4567	0.000	0.041	22.9	22.8
100detention basin	BASE	31.75	524.609	535.500	535.500	4269	0.000	0.035	22.9	22.8
100detention basin	BASE	32.00	524.602	535.500	535.500	3998	0.000	0.029	22.9	22.8
100detention basin	BASE	32.25	524.596	535.500	535.500	3754	0.000	0.025	22.9	22.8
100detention basin	BASE	32.50	524.590	535.500	535.500	3534	0.000	0.021	22.9	22.8
100detention basin	BASE	32.75	524.585	535.500	535.500	3336	0.000	0.018	22.9	22.8
100detention basin	BASE	33.00	524.580	535.500	535.500	3161	0.000	0.015	22.9	22.8

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
100detention basin		BASE	33.25	524.576	535.500	3007	0.000	0.012	22.9	22.8
100detention basin		BASE	33.50	524.573	535.500	2873	0.000	0.010	22.9	22.8
100detention basin		BASE	33.75	524.570	535.500	2758	0.000	0.008	22.9	22.8
100detention basin		BASE	34.00	524.567	535.500	2660	0.000	0.007	22.9	22.8
100detention basin		BASE	34.25	524.565	535.500	2576	0.000	0.006	22.9	22.8
100detention basin		BASE	34.50	524.563	535.500	2504	0.000	0.005	22.9	22.8
100detention basin		BASE	34.75	524.562	535.500	2442	0.000	0.004	22.9	22.8
100detention basin		BASE	35.00	524.560	535.500	2389	0.000	0.003	22.9	22.8
100detention basin		BASE	35.25	524.559	535.500	2343	0.000	0.003	22.9	22.8
100detention basin		BASE	35.50	524.558	535.500	2303	0.000	0.002	22.9	22.8
100detention basin		BASE	35.75	524.557	535.500	2268	0.000	0.002	22.9	22.8
100detention basin		BASE	36.00	524.557	535.500	2237	0.000	0.002	22.9	22.8
100detention basin		BASE	36.25	524.556	535.500	2211	0.000	0.002	22.9	22.8
100detention basin		BASE	36.50	524.555	535.500	2187	0.000	0.001	22.9	22.8
100detention basin		BASE	36.75	524.555	535.500	2167	0.000	0.001	22.9	22.8
100detention basin		BASE	37.00	524.554	535.500	2148	0.000	0.001	22.9	22.8
100detention basin		BASE	37.25	524.554	535.500	2132	0.000	0.001	22.9	22.8
100detention basin		BASE	37.50	524.553	535.500	2117	0.000	0.001	22.9	22.8
100detention basin		BASE	37.75	524.553	535.500	2104	0.000	0.001	22.9	22.8
100detention basin		BASE	38.00	524.553	535.500	2093	0.000	0.001	22.9	22.8
100detention basin		BASE	38.25	524.553	535.500	2082	0.000	0.001	22.9	22.8
100detention basin		BASE	38.50	524.552	535.500	2073	0.000	0.001	22.9	22.8
100detention basin		BASE	38.75	524.552	535.500	2064	0.000	0.000	22.9	22.8
100detention basin		BASE	39.00	524.552	535.500	2056	0.000	0.000	22.9	22.8
100detention basin		BASE	39.25	524.552	535.500	2049	0.000	0.000	22.9	22.8
100detention basin		BASE	39.50	524.552	535.500	2042	0.000	0.000	22.9	22.8
100detention basin		BASE	39.75	524.551	535.500	2037	0.000	0.000	22.9	22.8
100detention basin		BASE	40.00	524.551	535.500	2031	0.000	0.000	22.9	22.8
100detention basin		BASE	40.25	524.551	535.500	2026	0.000	0.000	22.9	22.8
100detention basin		BASE	40.50	524.551	535.500	2022	0.000	0.000	22.9	22.8
100detention basin		BASE	40.75	524.551	535.500	2017	0.000	0.000	22.9	22.8
100detention basin		BASE	41.00	524.551	535.500	2013	0.000	0.000	22.9	22.8
100detention basin		BASE	41.25	524.551	535.500	2010	0.000	0.000	22.9	22.8
100detention basin		BASE	41.50	524.551	535.500	2006	0.000	0.000	22.9	22.8
100detention basin		BASE	41.75	524.551	535.500	2003	0.000	0.000	22.9	22.8
100detention basin		BASE	42.00	524.550	535.500	2000	0.000	0.000	22.9	22.8
100detention basin		BASE	42.25	524.550	535.500	1998	0.000	0.000	22.9	22.8
100detention basin		BASE	42.50	524.550	535.500	1995	0.000	0.000	22.9	22.8
100detention basin		BASE	42.75	524.550	535.500	1993	0.000	0.000	22.9	22.8
100detention basin		BASE	43.00	524.550	535.500	1990	0.000	0.000	22.9	22.8
100detention basin		BASE	43.25	524.550	535.500	1988	0.000	0.000	22.9	22.8
100detention basin		BASE	43.50	524.550	535.500	1986	0.000	0.000	22.9	22.8
100detention basin		BASE	43.75	524.550	535.500	1985	0.000	0.000	22.9	22.8
100detention basin		BASE	44.00	524.550	535.500	1983	0.000	0.000	22.9	22.8
100detention basin		BASE	44.25	524.550	535.500	1981	0.000	0.000	22.9	22.8
100detention basin		BASE	44.50	524.550	535.500	1980	0.000	0.000	22.9	22.8
100detention basin		BASE	44.75	524.550	535.500	1978	0.000	0.000	22.9	22.8
100detention basin		BASE	45.00	524.550	535.500	1977	0.000	0.000	22.9	22.8
100detention basin		BASE	45.25	524.550	535.500	1976	0.000	0.000	22.9	22.8
100detention basin		BASE	45.50	524.550	535.500	1974	0.000	0.000	22.9	22.8
100detention basin		BASE	45.75	524.550	535.500	1973	0.000	0.000	22.9	22.8
100detention basin		BASE	46.00	524.550	535.500	1972	0.000	0.000	22.9	22.8
100detention basin		BASE	46.25	524.550	535.500	1971	0.000	0.000	22.9	22.8
100detention basin		BASE	46.50	524.550	535.500	1970	0.000	0.000	22.9	22.8
100detention basin		BASE	46.75	524.550	535.500	1969	0.000	0.000	22.9	22.8
100detention basin		BASE	47.00	524.550	535.500	1968	0.000	0.000	22.9	22.8
100detention basin		BASE	47.25	524.550	535.500	1967	0.000	0.000	22.9	22.8
100detention basin		BASE	47.50	524.550	535.500	1967	0.000	0.000	22.9	22.8

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Detention Basin Output Data for St Ives Rockwall Corners and Lot 8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
100detention basin		BASE	47.75	524.550	535.500	1966	0.000	0.000	22.9	22.8
100detention basin		BASE	48.00	524.550	535.500	1965	0.000	0.000	22.9	22.8
100detention basin		BASE	48.01	524.550	535.500	1965	0.000	0.000	22.9	22.8

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H:\05232008 - 8:35AM - DRAWING SCALE 3/16" = 1' - 0" - 1/2" = 1' - 0" - 1/4" = 1' - 0" - 1/8" = 1' - 0" - 1/16" = 1' - 0" - 1/32" = 1' - 0" - 1/64" = 1' - 0" - 1/128" = 1' - 0" - 1/256" = 1' - 0" - 1/512" = 1' - 0" - 1/1024" = 1' - 0" - 1/2048" = 1' - 0" - 1/4096" = 1' - 0" - 1/8192" = 1' - 0" - 1/16384" = 1' - 0" - 1/32768" = 1' - 0" - 1/65536" = 1' - 0" - 1/131072" = 1' - 0" - 1/262144" = 1' - 0" - 1/524288" = 1' - 0" - 1/1048576" = 1' - 0" - 1/2097152" = 1' - 0" - 1/4194304" = 1' - 0" - 1/8388608" = 1' - 0" - 1/16777216" = 1' - 0" - 1/33554432" = 1' - 0" - 1/67108864" = 1' - 0" - 1/134217728" = 1' - 0" - 1/268435456" = 1' - 0" - 1/536870912" = 1' - 0" - 1/1073741824" = 1' - 0" - 1/2147483648" = 1' - 0" - 1/4294967296" = 1' - 0" - 1/8589934592" = 1' - 0" - 1/17179869184" = 1' - 0" - 1/34359738368" = 1' - 0" - 1/68719476736" = 1' - 0" - 1/137438953472" = 1' - 0" - 1/274877906944" = 1' - 0" - 1/549755813888" = 1' - 0" - 1/1099511627776" = 1' - 0" - 1/2199023255552" = 1' - 0" - 1/4398046511104" = 1' - 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MODIFIED RATIONAL METHOD
DETENTION POND VOLUME

FREQUENCY=100 YRS

PROJECT: Rockwall Centre Corners

Pre-development Condition

Post Development Condition

20 minutes.

10 minutes

C	Undeveloped	0.35
	Developed	0.9
	$I(\ln/hr)$	

	<u>Q(cfs)</u>	<u>C</u>	<u>I(in/hr)</u>	<u>A</u> <u>(acres)</u>
	31.11	0.35	8.30	10.71
Additional(LOT8)	13.07	0.35	8.30	4.50
Area East of Det. Basin	2.70	0.35	8.30	0.93
North of Lot 8	3.09	0.35	8.30	1.06
Southeast Prop. Corner	2.12	0.35	8.30	0.73

	<u>Q(cfs)</u>	<u>C</u>	<u>I(in/hr)</u>	<u>A</u> <u>(acres)</u>
Un-develop	0.00	0.35	9.80	0.00
Developed	263.19	0.90	9.80	29.84 (30.57 - 0.73)
Area East of Det Pond	8.20	0.90	9.80	0.93
North of Lot 8	9.35	0.90	9.80	1.06
Southeast Prop. Corner	6.44	0.90	9.80	0.73

Ex. Flow	52.09
Bypass Flow	0.00

Total	287.18	0.90	32.56	Post-Pre=	235.09
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Allowable Peak Discharge = **52.09 cfs**

NOTE:

0.93 ACRES EAST OF DETENTION BASIN, 1.06 ACRES NORTH OF LOT 8, AND 0.73 ACRES OF SOUTHEAST PROP. CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED IN THE ALLOWABLE PEAK DISCHARGE FOR SIZING THE OUTFALL STRUCTURE.

TOTAL ALLOWABLE DISCHARGE = 52.09 cfs - 2.70 cfs - 3.09 cfs - 6.44cfs = 39.86 cfs

Required Detention Volume: 425,896 Cubic Feet

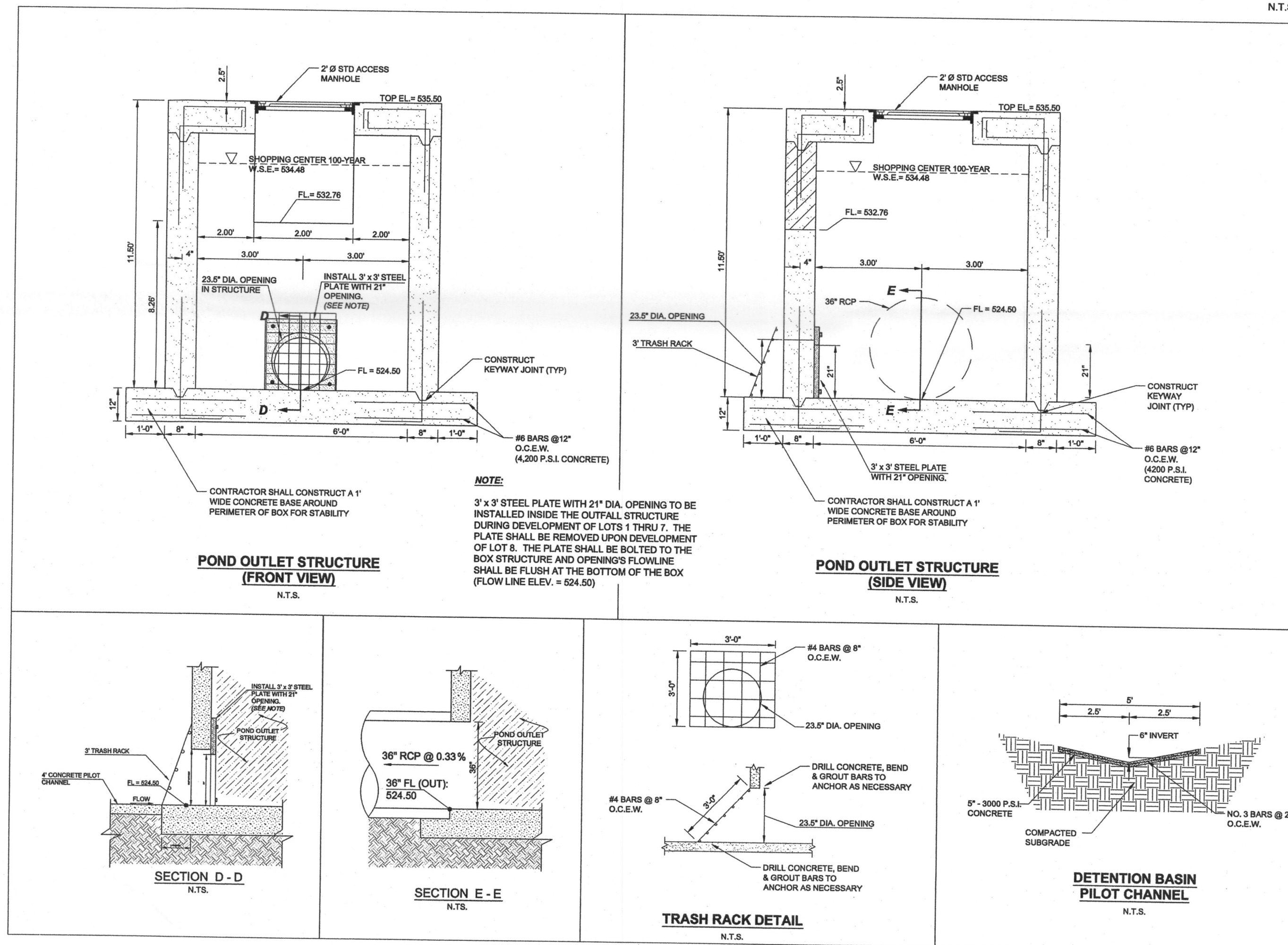
Elevation	Area	Ave. Area	Depth	Volume	Cum. Volume	Area (acres)
525.0	19,433.37					
526.0	45,552.26	32,493	1.0	32,493	32,493	1.046
527.0	49,690.11	34,562	1.0	34,562	67,055	1.141
528.0	53,908.30	51,799	1.0	51,799	118,854	1.238
529.0	58,230.48	56,069	1.0	56,069	174,923	1.337
530.0	62,615.16	60,423	1.0	60,423	235,346	1.437
531.0	67,113.06	64,864	1.0	64,864	300,210	1.541
531.86	-	-	-	-	360,060	-
532.0	71,698.00	69,406	1.0	69,406	369,616	1.646
532.76	-	-	-	-	425,896	-
533.0	76,354.07	74,026	1.0	74,026	443,642	1.753
534.0	81,058.47	78,706	1.0	78,706	522,348	1.861
535.0	84,895.55	82,977	1.0	82,977	605,325	1.949

DETENTION VOLUME MET
WEIR ELEVATION

<i>Frequency</i>	<i>Q allowable</i>	<i>Q actual</i>
10YR	28.09	39.16
25YR	31.14	28.60
100YR	39.86	24.48

NOTE:

DETAILED DRAINAGE CALCULATIONS ARE INCLUDED IN THE DRAINAGE REPORT, PREPARED BY CPH ENGINEERS, INC.



A circular professional engineer seal for the State of Texas. The outer ring contains the text "STATE OF TEXAS" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by stars. The center of the seal features a five-pointed star above the name "WILLIAM A. STUEBER" and the license number "90486". The seal is stamped over a document with handwritten text.

THE SEAL APPEARING ON THIS DOCUMENT WAS
AUTHORIZED BY WILLIAM A. STUEBER, P.E. 90436
ON 06/23/2008. ALTERATION OF A SEALED
DOCUMENT TO THE RESPONSIBLE ENGINEER IS
AN OFFENSE UNDER THE TEXAS ENGINEERING
PRACTICE ACT.

NOTICE
THE SIZE OF THIS PLAN MAY HAVE BEEN SLIGHTLY
ALTERED BY REPRODUCTION PROCESSES, THIS MUST
BE CONSIDERED WHEN SCALING ANY REPRODUCED
PLAN FOR THE PURPOSE OF COLLECTING DATA.



**5728 LBJ Freeway
Suite 330
Dallas, Texas 75240
Phone: 972.490.1515
Fax: 972.490.1517**

**Certificate of
Authorization No. F4830
© 2008**

Engineers
Surveyors
Architects
Planners

Landscape Architects
Environmental Scientists
Construction
Management
Design/Build

REG-#: 90436

△	06/10/08	REVISED PER COSTCO ENGINEERING PLANS	W.A.S.
△	06/03/08	REVISED PER CITY COMMENTS 05/29/08	W.A.S.
△	05/23/08	NO CHANGES TO THIS SHEET	W.A.S.
△	05/19/08	NO CHANGES TO THIS SHEET	W.A.S.
△	05/06/08	NO CHANGES TO THIS SHEET	W.A.S.
△	03/07/08	NO CHANGES TO THIS SHEET	W.A.S.
△	01/29/08	NO CHANGES TO THIS SHEET	W.A.S.
△	12/05/07	REVISED PER CITY COMMENTS 11/26/07	W.A.S.
△	11/15/07	REVISED PER CITY COMMENTS 11/05/07	W.A.S.
△	10/31/07	REVISED PER CITY COMMENTS 10/22/07	W.A.S.
△	10/19/07	REVISED PER CLIENTS NEW SITE LAYOUT	W.A.S.
No.	Date	Revision	By

Designed by:	HMH
Drawn by:	HMH
Checked by:	WAS
Approved by:	WAS
Scale:	N.T.S.
Date:	10/19/200
Job No.:	S13217
File:	DAM II

DRAINAGE CALCULATIONS (INC. LOT 8)

ROCKWALL CENTRE CORNERS
INTERSTATE HIGHWAY 30 AND S.H. 205
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

Sheet No.

3 OF 3

HHOSSEINY - 06/23/2008 - 9:22AM - DRAWING SCALE: 96
J:\S13217 ST.IVES ROCKWALL \DWG\DESIGN\S13217 - DAM PH-I\LOT8.DWG