



CDG Engineers
Architects Planners, Inc.

NOTE CALCS
SHEETS NOTED

REVISION

12/09/03

File No: 03049

Date: 09/20/03

Designed by: MWS

BELLEAU SUBSTATION - AMMANUE
STORM SEWERS



DRAINAGE AREAS

EXISTING SUBSTATION	2.53 AC.
EXPANSION AREA *	5.50 AC
DRAINAGE SWALES	1.39 AC
	<u>9.42 AC</u>

* INCLUDES AREA FOR FUTURE GROWTH AT
SOUTHWEST CORNER OF SUBSTATION.

CI FACTORS

FOR AREAS COVERED IN CURBED STONE
USE 40% IMPERVIOUS.

FOR DRAINAGE SWALE AREAS USE 5%
IMPERVIOUS. PI *

STORM	5% IMPERV	40% IMPERV
2YR 20 MIN.	1.26	1.83
15YR 20 MIN.	1.87	2.64
25YR 20 MIN.	2.31	3.25
50YR 20 MIN.	2.62	3.68
100YR 20 MIN.	2.95	4.17

* INCLUDES GROUND SATURATION FACTORS



BELLEAU SUBSTATION

ALLOWABLE FLOWS.

2 YEAR 20 MIN STORMS.

TOTAL AREA = 9.42 AC

40% imp	-	8.03 AC	x	1.83	=	14.69 cfs
5%	'	1.39 AC	x	1.26	=	1.75 cfs
						<u>16.44 cfs</u>

16.44 cfs FLOW INTO BASIN.

5.50 AC ARE NOW BEING COVERED BY CRUSHED STONE

ΔPI FROM 5% TO 40% imp.

$$(1.83 - 1.26)(5.50) = 3.13 \text{ cfs } \Delta Q$$

$$16.44 - 3.13 = 13.31 \text{ cfs ALLOWABLE FROM BASIN.}$$

15 YEAR 20 MIN. STORM

TOTAL AREA = 9.42 AC.

40% imp		8.03 AC	x	2.64	=	21.20 cfs
5% imp		1.39 AC	x	1.87	=	2.60 cfs
						<u>23.80 cfs</u>

23.80 cfs FLOW INTO BASIN.

5.50 AC ARE NOW BEING COVERED BY CRUSHED STONE.

ΔPI FROM 5% TO 40% imp

$$(2.64 - 1.87)(5.50) = 4.23 \text{ cfs } \Delta Q$$



$23.80 - 4.23 = 19.57 \text{ cfs. ALLOWABLE FROM BASIN.}$

25 YR. 20 MIN STORM

TOTAL AREA = 9.42 AC

40% imp.	8.03	$\times 3.25 =$	26.10	cfs
5% imp.	1.39	$\times 2.31 =$	3.21	cfs
			<u>29.31</u>	cfs.

29.31 cfs flow into BASIN.

ΔPI From 5% to 40% imp

$(3.25 - 2.31)(5.50) = 5.17 \text{ cfs } \Delta Q$

$29.31 - 5.17 = 24.14 \text{ cfs. ALLOWABLE FROM BASIN.}$

50 YR 20 MIN STORM.

TOTAL AREA = 9.42 AC

40% imp	8.03	$\times 3.68 =$	29.55	cfs
	1.39	$\times 2.62 =$	3.64	cfs.
			<u>33.19</u>	cfs

33.19 cfs flow into BASIN.

ΔPI From. 5% to 40% imp.

$(3.68 - 2.62)(5.50) = 5.83 \text{ cfs } \Delta Q$

$33.19 - 5.83 = 27.36 \text{ cfs. ALLOWABLE FLOW FROM BASIN.}$



100 YR 20 MIN STORM

TOTAL AREA = 9.42

40% IMP $8.03 \times 4.17 = 33.48$
 $1.37 \times 2.95 = 4.10$
 37.58 cfs.

37.58 cfs FLOW INTO BASIN.

Δ PI FROM 5% TO 40% IMP.

$(4.17 - 2.95)(5.50) = 6.71$ cfs Δ Q

$37.58 - 6.71 = 30.87$ cfs ALLOWABLE FROM BASIN.

FLOW SUMMARY

STORM FREQUENCY	TOTAL FLOW INTO BASIN CFS	TOTAL ALLOWABLE DISCHARGE CFS
2YR 20MIN	16.44	13.31
15YR 20MIN	23.8	19.57
25 YR 20 MIN	29.31	24.14
50 YR 20 MIN	33.19	27.36
100 YR 20 MIN	37.58	30.87



ORIGINAL 09/30/03

BASIN CHARACTERISTICS

VOLUME OF BASIN PER DRAWINGS WITH 4' DIA DRAINAGE STRUCTURE

ELEV	AREA PER CONTOUR SF	VOLUME BETWEEN CONTOUR CF	WEIR CF DRAINAGE STRUCTURE CF	HOR. VOL PER CONTOUR CF	TOTAL VOLUME CF
498	260	0			
499	4,085.50	2,172.75	(19.63)	2,153.12	2,153
500	5,072.50	4,579.00	(19.63)	4,559.37	4,559
501	6,104.50	5,588.50	(19.63)	5,568.87	10,128
502	7,298.50	6,701.50	(19.63)	6,681.87	16,810
503	8,510.50	7,904.50	(19.63)	7,884.87	24,695
504	9,731.50	9,121.00	(19.63)	9,101.37	33,796
505	11,924.50	10,828.00	(19.63)	10,808.37	44,605
				46,758	

FINAL BASIN DATA WITHOUT SEDIMENT STORAGE

ELEV	VOLUME BETWEEN CONTOUR CF	TOTAL VOLUME CF
498		
499	2153	2,153.00
500	4,559	6,712.00
501	5,569	12,281.00
502	6,682	18,963.00
503	7,885	26,848.00
504	9,101	35,949.00
505	10,809	46,758.00

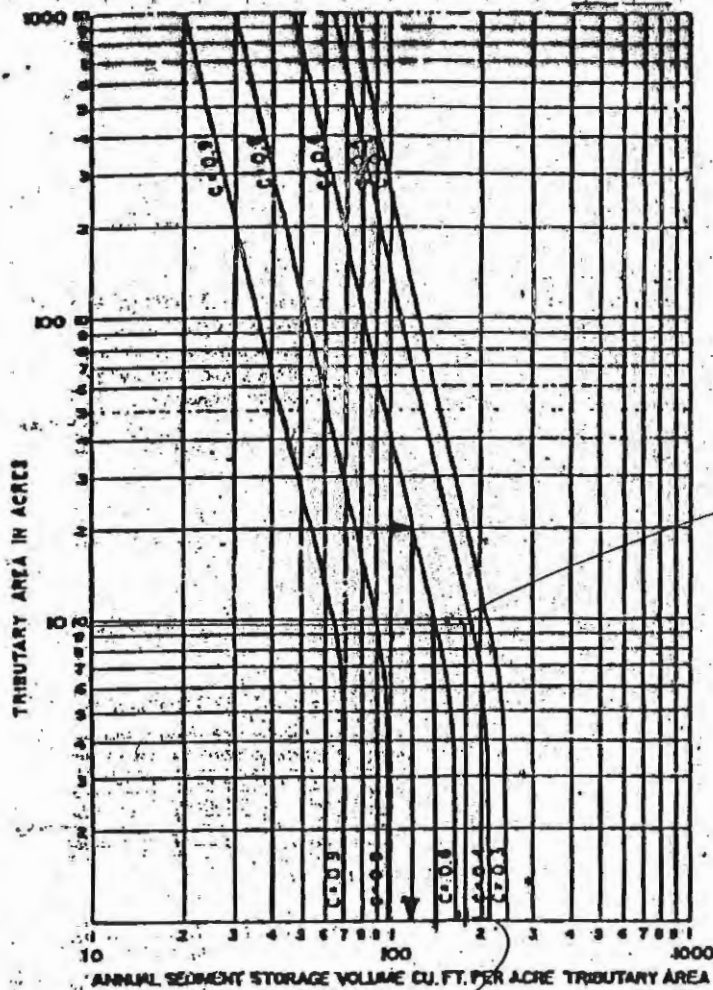
STARTING SWL ELEV OF WEIR = 498



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Sediment STORAGE

$C = 0.60$
 ~~$C = 0.51$~~ 40% IMPROV.
AREA 9.42 ACRES



ANNUAL SEDIMENT STORAGE

TOTAL STORAGE REQUIRED FOR 5 YEARS

$$\begin{aligned}
 &150 \\
 &(175)(9.42)(5) = 8242.5 \\
 &\approx 8243 \text{ CF} \\
 &7065 \text{ CF}
 \end{aligned}$$



ORIGINAL 09/30/03

BASIN DATA WITH SEDIMENT STORAGE DEFINED

BEGINNING ELEVATION OF WIER IS 498

BASIN DATA WITH SEDIMENT STORAGE DEFINED

ELEV	VOLUME BETWEEN CONTOUR CF	TOTAL VOLUME CF
498	0.00	0.00
499	2,153.00	2,153.00
500	4,559.00	6,712.00
500.06	3,684.00	7,065.00
501	5,216	12,281.00
502	6,682	18,963.00
503	7,885	26,848.00
504	9,101	35,949.00
505	10,809	46,757.63

VOL REQUIRED FOR SEDIMENT STORAGE

FINAL BASIN DATA WITH SEDIMENT STORAGE

BEGINNING ELEVATION OF WIER IS 500.06 ASSUME BASIN IS FILLED WITH SEDIMENT

ELEV	VOLUME BETWEEN CONTOUR CF	TOTAL VOLUME CF
500.06	0.00	0.00
501	5,216	5,216.00
502	6,682	11,898.00
503	7,885	19,783.00
504	9,101	28,884.00
505	10,809	39,693.00



original 09/30/03

SUMMARY OF FLOWS FROM DETENTION BASIN

WITHOUT SEDIMENT

WITH 5 YRS SEDIMENT

STORM FREQUENCY	MAX ALLOW DISCHARGE CFS	MAX DISCHARGE CFS	MAX WATER ELEV	MAX DISCHARGE CFS	MAX WATER ELEV
2YR 20 MIN	13.31	13.25	500.53	10.34	502.24
15YR 20MIN	19.57	19.19	501.26	15.55	502.95
25YR 20MIN	24.14	23.13	501.69	19.54	503.4
50YR 20MIN	27.36	26.64	502.08	22.33	503.72
100YR 20MIN	30.87	30.08	502.41	26.02	504.08

**see back of report for Hydrograph runs.*

100 year 20 min Pond overflow check

Assume weir is blocked water is at elev. ~~504.70~~ 504.50

what is ELEVATION of water flow into 48" Dia open manhole (Draw structure)

use orifice equation

$$Q = CA\sqrt{2gH}$$

Q = Flow

C = coef (use 0.6)

B = 32.2

H = HT of water over sill.

A = CROSS SECTIONAL AREA

$$Q = 37.58 \text{ cfs}$$

$$A = \left(\frac{48}{12}\right)^2 \pi = 12.56 \text{ FT}^2$$

$$C = 0.6$$



REV.
12/09/13

File No: 03049
Date: 09/26/12
Designed by: MWB
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Sheet No: 9/12

$$37.58 = (0.6)(12.56) \sqrt{2(322)H}$$

$$37.58 = 7.54 \sqrt{644H}$$

$$4.98 = \sqrt{644H}$$

$$24.84 = 644H$$

$$\frac{24.84}{644} = H$$

$$0.38'$$

$$= H$$

SILL ELEV ~~504.18~~ 504.50

HT OF WATER 0.38

~~504.50~~

504.88

ELEV OF WATER

TOP OF DAM ELEV 505.00

✓

NO OVERTOP.

PIPE HYDRAULICS

DS#1 TO FE#2

$$Q = 37.58 \text{ 100% 21 MM}$$

PIPE CAPACITY 30" RCY @ 1.0% = 41.01 CFS

ASSUME PIPE FULL $V = \frac{Q}{A} = \frac{41.01}{4.909} = 8.35 \text{ FTS}$

$$V^2/2G \quad (8.35)^2 / 2(322) = 1.08$$

HYDRAULIC GRADE $sh = \left(\frac{Q}{K_N}\right)^2 = \left(\frac{37.58}{410.1}\right)^2$
= 0.0084



$$PI = 1.87 \quad 15yr \quad 20mm$$

$$Q = PIA = (1.87)(.30) = 0.561 \text{ cfs}$$

$$PI = 2.31 \quad 25yr \quad 20mm$$

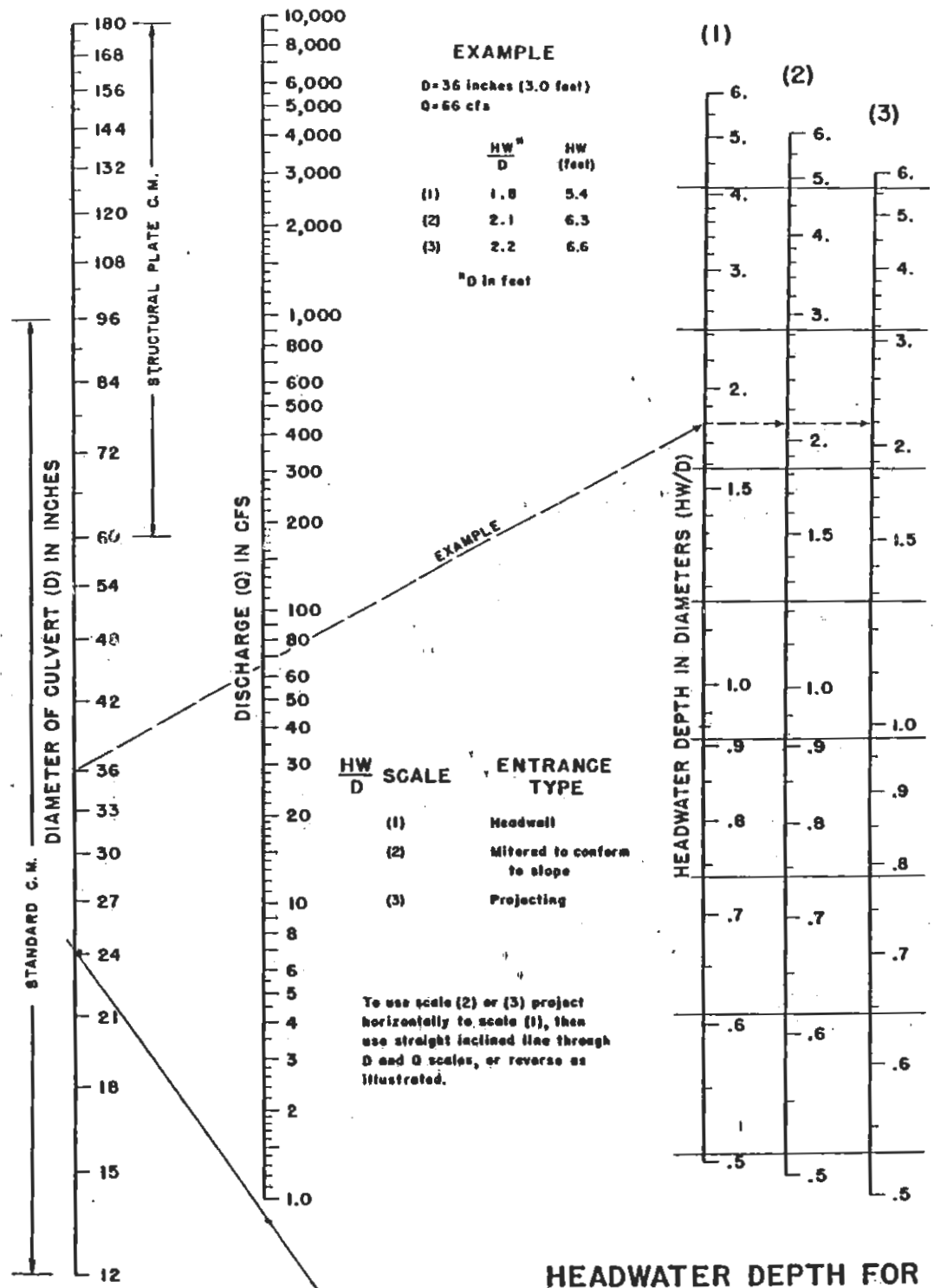
$$Q = PIA = (2.31)(.30) = 0.69 \text{ cfs}$$

$$PI = 2.95 \quad 100yr \quad 20mm$$

$$Q = PIA = (2.95)(.30) = 0.88 \text{ cfs}$$

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09/30/03
MWB
11/2

CHART 5



HEADWATER DEPTH FOR C. M. PIPE CULVERTS WITH INLET CONTROL

Not applicable.



Hydraulic Grade Line Calculation

Assume pipe full

$$V = \frac{Q}{A} = \frac{0.30}{3.14} = 0.095 \text{ (ft/s)}$$

$$\frac{V^2}{2g} = \frac{(0.095)^2}{64.4} = 0.0014$$

Hydraulic Grade $sh = \left(\frac{Q}{KW}\right)^2 \left(\frac{0.30}{102.5}\right)^2 = 0.000006$ (NEG)

DETENTION POND CALCULATIONS

09/23/03

12/09/03

BELLEAU SUBSTATION

2yr 20 min

**DETENTION POND
POND INFORMATION**

WITH 5 YEARS SEDIMENT



DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR A1 (4 SIDES OPEN) OR WEIR
WIDTH(FT)

-	0	0	500.06
	3.00	1.00	501.06
	8.49	2.00	502.06
	15.59	3.00	503.06
	24.00	4.00	504.06
	33.54	5.00	505.06
	44.09	6.00	506.06
	55.56	7.00	507.06
	67.88	8.00	508.06

DETENTION POND CALCULATIONS

2-YEAR STORM 20 MIN

BELLEAU SUBSTATION

09/23/2009

12'09/03

**DETENTION POND
POND INFORMATION**



DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR AI (4 SIDES OPEN) OR WEIR
WIDTH(FT)

-	0	0	498.00
	3.00	1.00	499.00
	8.49	2.00	500.00
	15.59	3.00	501.00
	24.00	4.00	502.00
	33.54	5.00	503.00
	44.09	6.00	504.00
	55.56	7.00	505.00
	67.88	8.00	506.00

INFLOW PIPE SIZE	HYDRANT weir	CFS INCHES	STORM FREQUENCY DURATION				YEARS MIN	
0	16.44	986.4	—		0.00	0.00	0.00	498.00
2	16.44	986.4	986.40	82.47	1.37	82.47	903.93	498.42
3	16.44	986.4	1890.33	158.04	2.63	120.25	1,770.08	498.82
4	16.44	986.4	2756.48	223.57	3.73	190.80	2,565.68	499.09
5	16.44	986.4	3552.08	281.00	4.68	252.28	3,299.79	499.25
6	16.44	986.4	4286.19	334.00	5.57	307.50	3,978.70	499.40
7	16.44	986.4	4965.10	383.01	6.38	358.60	4,606.59	499.54
8	16.44	986.4	5592.99	428.34	7.14	405.67	5,187.32	499.67
9	16.44	986.4	6173.72	470.26	7.84	449.30	5,724.43	499.78
10	16.44	986.4	6710.83	509.03	8.48	489.65	6,221.18	499.89
11	16.44	986.4	7207.58	547.04	9.12	528.04	6,679.54	499.99
12	16.44	986.4	7665.94	582.12	9.70	564.58	7,101.38	500.07
13	16.44	986.4	8087.76	614.40	10.24	598.26	7,489.50	500.14
14	16.44	986.4	8475.90	644.11	10.74	629.25	7,846.84	500.20
15	16.44	986.4	8833.04	671.44	11.19	657.77	8,175.27	500.26
16	16.44	986.4	9161.87	696.59	11.61	684.01	8,477.66	500.32
17	16.44	986.4	9464.06	719.73	12.00	708.16	8,755.90	500.37
18	16.44	986.4	9742.30	741.02	12.35	730.38	9,011.92	500.41
19	16.44	986.4	9998.32	760.62	12.68	750.82	9,247.50	500.46
20	16.44	986.4	10233.90	778.65	12.98	769.63	9,464.27	500.49
21	0	0	10450.87	795.23	13.25	786.94	9,663.73	500.53
22	0	0	9663.73	735.01	12.25	765.12	8,898.61	500.39
23	0	0	8898.61	678.46	11.27	705.73	8,192.88	500.27
24	0	0	8192.88	622.45	10.37	649.45	7,543.43	500.15
25	0	0	7543.43	572.75	9.55	597.80	6,945.83	500.04
26	0	0	6945.83	527.01	8.78	549.88	6,395.95	499.93
27	0	0	6395.95	486.30	8.11	508.66	5,889.30	499.82
28	0	0	5889.30	449.73	7.50	468.01	5,421.28	499.72
29	0	0	5421.28	415.94	6.93	432.83	4,988.45	499.62
30	0	0	4988.45	384.89	6.41	400.32	4,588.13	499.53
31	0	0	4588.13	355.79	5.93	370.24	4,217.89	499.45
32	0	0	4217.89	329.07	5.48	342.43	3,875.46	499.38
33	0	0	3875.46	304.35	5.07	316.71	3,558.76	499.31
34	0	0	3558.76	281.48	4.69	292.91	3,265.84	499.24
35	0	0	3265.84	260.34	4.34	270.91	2,994.93	499.18
36	0	0	2994.93	240.78	4.01	250.56	2,744.37	499.13
37	0	0	2744.37	222.69	3.71	231.74	2,512.64	499.08
38	0	0	2512.64	205.96	3.43	214.33	2,298.31	499.03
39	0	0	2298.31	190.49	3.17	198.23	2,100.08	498.98
40	0	0	2100.08	175.58	2.93	183.03	1,917.05	498.89
41	0	0	1917.05	160.27	2.67	167.92	1,749.13	498.81
42	0	0	1749.13	146.23	2.44	153.25	1,595.87	498.74
43	0	0	1595.87	133.42	2.22	139.83	1,456.04	498.68
44	0	0	1456.04	121.73	2.03	127.58	1,328.47	498.62
45	0	0	1328.47	111.07	1.85	116.40	1,212.07	498.56
46	0	0	1212.07	101.33	1.69	106.20	1,105.87	498.51
47	0	0	1105.87	92.46	1.54	96.89	1,008.97	498.47
48	0	0	1008.97	84.35	1.41	88.41	920.57	498.43
49	0	0	920.57	76.96	1.28	80.66	839.91	498.39
50	0	0	839.91	70.22	1.17	73.59	766.32	498.36
51	0	0	766.32	64.07	1.07	67.14	699.17	498.32
52	0	0	699.17	58.45	0.97	61.26	637.91	498.30
53	0	0	637.91	53.33	0.89	55.89	582.02	498.27
54	0	0	582.02	48.66	0.81	51.00	531.03	498.25
55	0	0	531.03	44.40	0.74	46.53	484.50	498.23
56	0	0	484.50	40.51	0.68	42.45	442.05	498.21
57	0	0	442.05	36.96	0.62	38.73	403.31	498.19
58	0	0	403.31	33.72	0.56	35.34	367.98	498.17
59	0	0	367.98	30.76	0.51	32.24	335.74	498.16
60	0	0	335.74	28.07	0.47	29.42	306.32	498.14
61	0	0	306.32	25.61	0.43	26.84	279.48	498.13
62	0	0	279.48	23.37	0.39	24.49	254.99	498.12
63	0	0	254.99	21.32	0.36	22.34	232.65	498.11
64	0	0	232.65	19.45	0.32	20.38	212.27	498.10
65	0	0	212.27	17.75	0.30	18.60	193.87	498.09
66	0	0	193.87	16.19	0.27	16.97	176.70	498.08
67	0	0	176.70	14.77	0.25	15.48	161.22	498.07
68	0	0	161.22	13.48	0.22	14.13	147.09	498.07
69	0	0	147.09	12.30	0.20	12.89	134.20	498.06
70	0	0	134.20	11.22	0.19	11.76	122.44	498.06
75	0	0	122.44	10.24	0.17	10.84	112.80	498.03
78	0	0	112.80	9.45	0.15	10.10	104.82	498.02
80	0	0	104.82	8.75	0.14	9.50	97.82	498.02
85	0	0	97.82	8.12	0.13	8.92	91.77	498.01
90	0	0	91.77	7.55	0.12	8.38	86.65	498.00

DETENTION POND CALCULATIONS

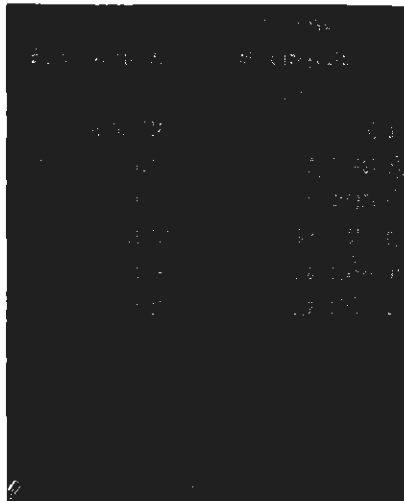
09/23/03
12'09/03

BELLEAU SUBSTATION

15yr 20 min

**DETENTION POND
POND INFORMATION**

WITH 5 YEARS SEDIMENT



DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR AI (4 SIDES OPEN) OR WEIR
WIDTH(FT)

	0	0	500.06
	3.00	1.00	501.06
	8.49	2.00	502.06
	15.59	3.00	503.06
	24.00	4.00	504.06
	33.54	5.00	505.06
	44.09	6.00	506.06
	55.56	7.00	507.06
	67.88	8.00	508.06

INFLOW PIPE SIZE	NYC PIPE SIZE	CFS INCHES	STORM FREQUENCY DURATION	15 20	YEARS MIN		
0	23.8	1428	—	0.00	0.00	0.00	500.06
1	23.8	1428	1428.00	48.32	0.77	23.16	1,404.84
2	23.8	1428	2832.84	81.89	1.53	69.11	2,763.73
3	23.8	1428	4191.73	135.97	2.27	113.93	4,077.80
4	23.8	1428	5505.80	177.01	2.95	156.49	5,349.31
5	23.8	1428	6777.31	237.15	3.95	207.08	6,570.23
6	23.8	1428	7998.23	297.29	4.95	267.22	7,731.00
7	23.8	1428	9159.00	354.46	5.91	325.88	8,833.13
8	23.8	1428	10261.13	408.75	6.81	381.60	9,879.52
9	23.8	1428	11307.52	460.29	7.67	434.52	10,873.01
10	23.8	1428	12301.01	506.19	8.44	483.24	11,817.77
11	23.8	1428	13245.77	556.39	9.27	531.29	12,714.48
12	23.8	1428	14142.48	604.86	10.08	580.63	13,561.85
13	23.8	1428	14989.85	650.66	10.84	627.76	14,362.09
14	23.8	1428	15790.08	693.82	11.57	672.29	15,117.80
15	23.8	1428	16545.80	734.76	12.25	714.34	15,831.46
16	23.8	1428	17259.46	773.34	12.89	754.05	16,505.41
17	23.8	1428	17933.41	809.76	13.50	791.55	17,141.86
18	23.8	1428	18569.86	844.16	14.07	826.96	17,742.89
19	23.8	1428	19170.89	876.65	14.61	860.41	18,310.49
20	23.8	1428	19738.49	907.33	15.12	891.99	18,846.50
21	0	0	20274.50	932.75	15.55	920.04	19,354.45
22	0	0	19354.45	886.57	14.78	909.66	18,444.79
23	0	0	18444.79	837.40	13.96	861.99	17,582.80
24	0	0	17582.80	790.81	13.18	814.11	16,768.69
25	0	0	16768.69	746.81	12.45	768.81	15,999.88
26	0	0	15999.88	705.26	11.75	726.03	15,273.85
27	0	0	15273.85	666.01	11.10	685.63	14,588.22
28	0	0	14588.22	628.95	10.48	647.48	13,940.73
29	0	0	13940.73	593.96	9.90	611.46	13,329.28
30	0	0	13329.28	560.91	9.35	577.43	12,751.84
31	0	0	12751.84	529.70	8.83	545.30	12,206.54
32	0	0	12206.54	502.25	8.37	515.97	11,690.57
33	0	0	11690.57	479.15	7.99	490.70	11,199.87
34	0	0	11199.87	454.98	7.58	467.07	10,732.80
35	0	0	10732.80	431.98	7.20	443.48	10,289.32
36	0	0	10289.32	410.14	6.84	421.06	9,868.26
37	0	0	9868.26	389.40	6.49	399.77	9,468.50
38	0	0	9468.50	369.71	6.16	379.55	9,088.94
39	0	0	9088.94	351.01	5.85	360.36	8,728.59
40	0	0	8728.59	333.26	5.55	342.14	8,386.45
41	0	0	8386.45	316.41	5.27	324.84	8,061.91
42	0	0	8061.91	300.41	5.01	308.41	7,753.20
43	0	0	7753.20	285.22	4.75	292.82	7,460.38
44	0	0	7460.38	270.80	4.51	278.01	7,182.37
45	0	0	7182.37	257.11	4.29	263.95	6,918.42
46	0	0	6918.42	244.10	4.07	250.60	6,667.82
47	0	0	6667.82	231.76	3.86	237.93	6,429.88
48	0	0	6429.88	220.04	3.67	225.90	6,203.98
49	0	0	6203.98	208.92	3.48	214.48	5,989.50
50	0	0	5989.50	198.35	3.31	203.63	5,785.87
51	0	0	5785.87	188.32	3.14	193.34	5,592.53
52	0	0	5592.53	179.34	2.99	183.83	5,408.70
53	0	0	5408.70	174.39	2.91	176.87	5,231.84
54	0	0	5231.84	169.63	2.83	172.01	5,069.83
55	0	0	5069.83	164.13	2.74	166.88	4,892.95
56	0	0	4892.95	158.72	2.65	161.43	4,731.52
57	0	0	4731.52	153.48	2.56	156.10	4,575.42
58	0	0	4575.42	148.42	2.47	150.95	4,424.46
59	0	0	4424.46	143.62	2.39	145.97	4,278.49
60	0	0	4278.49	138.79	2.31	141.16	4,137.34
61	0	0	4137.34	134.21	2.24	136.50	4,000.84
62	0	0	4000.84	129.78	2.16	132.00	3,868.84
63	0	0	3868.84	125.50	2.09	127.64	3,741.20
64	0	0	3741.20	121.36	2.02	123.43	3,617.77
65	0	0	3617.77	117.36	1.96	119.36	3,498.41
66	0	0	3498.41	113.48	1.89	115.42	3,382.99
67	0	0	3382.99	109.74	1.83	111.61	3,271.38
68	0	0	3271.38	106.12	1.77	107.93	3,163.45
69	0	0	3163.45	102.62	1.71	104.37	3,059.08
70	0	0	3059.08	99.23	1.65	100.93	2,956.16
71	0	0	2956.16	95.96	1.60	97.60	2,860.56
72	0	0	2860.56	92.79	1.55	94.38	2,766.19
73	0	0	2766.19	89.73	1.50	91.26	2,674.93
74	0	0	2674.93	86.77	1.45	88.25	2,586.67
75	0	0	2586.67	83.91	1.40	85.34	2,501.33
76	0	0	2501.33	81.14	1.35	82.52	2,418.81
77	0	0	2418.81	78.46	1.31	79.80	2,339.01
78	0	0	2339.01	75.87	1.26	77.17	2,261.84
79	0	0	2261.84	73.37	1.22	74.62	2,187.22
80	0	0	2187.22	70.95	1.18	72.16	2,115.06
85	0	0	2115.06	68.61	1.14	348.90	1,766.18
90	0	0	1766.18	57.29	0.95	314.75	1,451.40
95	0	0	1451.40	47.08	0.78	260.93	1,190.47
100	0	0	1190.47	38.62	0.64	214.25	976.22
105	0	0	976.22	31.67	0.53	175.71	800.51
110	0	0	800.51	25.97	0.43	144.09	656.42
120	0	0	656.42	21.29	0.35	236.31	420.12
143	0	0	420.12	13.63	0.23	401.60	18.52

DETENTION POND CALCULATIONS

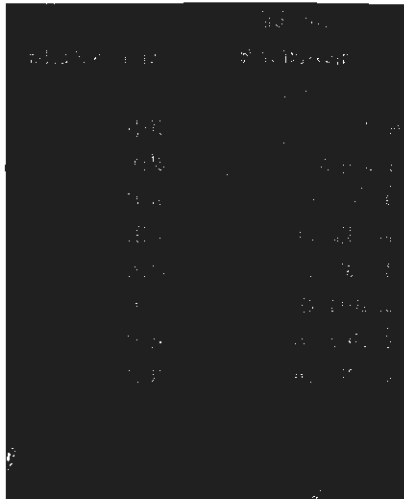
15-YEAR STORM 20 MIN

BELLEAU SUBSTATION

09/23/2009

12/09/03

DETENTION POND POND INFORMATION

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DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR AI (4 SIDES OPEN) OR WEIR
WIDTH(FT)

	0	0	498.00
	3.00	1.00	499.00
	8.49	2.00	500.00
	15.59	3.00	501.00
	24.00	4.00	502.00
	33.54	5.00	503.00
	44.09	6.00	504.00
	55.56	7.00	505.00
	67.88	8.00	506.00

INFLOW PIPE SIZE	TYPE	CFS INCHES	STORM FREQUENCY DURATION			YEARS MIN		
0	23.8	1428	—		0.00	0.00	0.00	498.00
2	23.8	1428	1428.00	119.39	1.99	119.39	1,308.61	498.61
3	23.8	1428	2736.61	222.13	3.70	170.76	2,565.85	499.09
4	23.8	1428	3993.85	312.89	5.21	267.51	3,726.34	499.35
5	23.8	1428	5154.34	396.67	6.61	354.78	4,789.56	499.58
6	23.8	1428	6227.56	474.14	7.90	435.41	5,792.15	499.80
7	23.8	1428	7220.15	548.01	9.13	511.08	6,709.08	500.00
8	23.8	1428	8137.08	618.18	10.30	583.09	7,553.99	500.15
9	23.8	1428	8981.99	682.84	11.38	650.51	8,331.48	500.29
10	23.8	1428	9759.48	742.34	12.37	712.59	9,046.89	500.42
11	23.8	1428	10474.89	797.09	13.28	769.71	9,705.18	500.54
12	23.8	1428	11133.18	847.47	14.12	822.28	10,310.90	500.65
13	23.8	1428	11738.90	893.82	14.90	870.84	10,868.26	500.76
14	23.8	1428	12296.26	936.48	15.61	915.14	11,381.12	500.84
15	23.8	1428	12809.12	976.20	16.25	955.83	11,853.29	500.92
16	23.8	1428	13281.29	1010.86	16.85	993.03	12,288.28	501.00
17	23.8	1428	13716.26	1043.71	17.40	1027.29	12,688.98	501.06
18	23.8	1428	14116.98	1073.98	17.90	1058.85	13,058.13	501.12
19	23.8	1428	14486.13	1101.86	18.36	1087.92	13,398.21	501.17
20	23.8	1428	14826.21	1127.55	18.79	1114.70	13,711.51	501.21
21	0	0	15139.51	1151.21	19.19	1139.38	14,000.13	501.26
22	0	0	14000.13	1085.15	17.75	1108.18	12,891.95	501.09
23	0	0	12891.95	981.45	16.36	1023.30	11,868.64	500.93
24	0	0	11888.64	903.76	15.06	942.60	10,928.04	500.76
25	0	0	10926.04	831.81	13.86	867.88	10,058.36	500.60
26	0	0	10058.36	765.21	12.75	798.41	9,259.85	500.46
27	0	0	9259.85	704.11	11.74	734.66	8,525.29	500.33
28	0	0	8525.29	647.89	10.80	678.00	7,849.29	500.20
29	0	0	7849.29	596.15	9.94	622.02	7,227.27	500.09
30	0	0	7227.27	548.55	9.14	572.35	6,654.92	499.99
31	0	0	6654.92	505.00	8.42	528.77	6,128.15	499.87
32	0	0	6120.15	466.97	7.78	485.98	5,642.16	499.77
33	0	0	5642.16	431.88	7.20	449.43	5,192.74	499.67
34	0	0	5192.74	399.44	6.66	415.66	4,777.07	499.58
35	0	0	4777.07	369.43	6.16	384.44	4,392.64	499.49
36	0	0	4392.64	341.88	5.69	355.56	4,037.08	499.41
37	0	0	4037.08	316.01	5.27	328.85	3,708.23	499.34
38	0	0	3708.23	292.27	4.87	304.14	3,404.09	499.27
39	0	0	3404.09	270.32	4.51	281.30	3,122.80	499.21
40	0	0	3122.80	250.01	4.17	260.16	2,862.83	499.16
41	0	0	2862.83	231.23	3.85	240.62	2,622.01	499.10
42	0	0	2622.01	213.86	3.56	222.54	2,399.47	499.05
43	0	0	2399.47	197.79	3.30	205.83	2,193.64	499.01
44	0	0	2193.64	182.93	3.05	190.36	2,003.28	498.93
45	0	0	2003.28	167.48	2.79	175.21	1,828.07	498.85
46	0	0	1828.07	152.83	2.55	160.16	1,667.91	498.77
47	0	0	1667.91	139.44	2.32	146.14	1,521.77	498.71
48	0	0	1521.77	127.23	2.12	133.34	1,388.44	498.64
49	0	0	1388.44	116.08	1.93	121.65	1,266.78	498.59
50	0	0	1266.78	105.91	1.77	110.89	1,155.79	498.54
51	0	0	1155.79	96.63	1.61	101.27	1,054.52	498.49
52	0	0	1054.52	88.16	1.47	92.40	962.13	498.45
53	0	0	962.13	80.44	1.34	84.30	877.83	498.41
54	0	0	877.83	73.39	1.22	76.91	800.91	498.37
55	0	0	800.91	66.86	1.12	70.17	730.74	498.34
56	0	0	730.74	61.09	1.02	64.03	666.71	498.31
57	0	0	666.71	55.74	0.93	58.42	608.29	498.28
58	0	0	608.29	50.86	0.85	53.30	555.00	498.26
59	0	0	555.00	46.40	0.77	48.63	506.37	498.24
60	0	0	506.37	42.33	0.71	44.37	462.00	498.21
61	0	0	462.00	38.63	0.64	40.48	421.52	498.20
62	0	0	421.52	35.24	0.59	36.93	384.59	498.18
63	0	0	384.59	32.15	0.54	33.70	350.89	498.16
64	0	0	350.89	29.34	0.49	30.74	320.15	498.15
65	0	0	320.15	26.77	0.45	28.05	292.10	498.14
66	0	0	292.10	24.42	0.41	25.59	266.50	498.12
67	0	0	266.50	22.28	0.37	23.35	243.15	498.11
68	0	0	243.15	20.33	0.34	21.30	221.85	498.10
69	0	0	221.85	18.55	0.31	19.44	202.41	498.09
70	0	0	202.41	16.92	0.28	17.73	184.67	498.09
71	0	0	184.67	15.44	0.26	16.18	168.49	498.08
72	0	0	168.49	14.09	0.23	14.76	153.73	498.07
73	0	0	153.73	12.85	0.21	13.47	140.26	498.07
74	0	0	140.26	11.73	0.20	12.29	127.97	498.06
75	0	0	127.97	10.70	0.18	11.21	116.76	498.05
76	0	0	116.76	9.76	0.16	10.23	106.53	498.05
77	0	0	106.53	8.91	0.15	9.33	97.19	498.05
80	0	0	97.19	8.13	0.14	8.55	71.65	498.03
90	0	0	71.65	5.99	0.10	70.58	1.07	498.00

DETENTION POND CALCULATIONS

09/23/03
12/09/03

BELLEAU SUBSTATION

25yr 20 min

**DETENTION POND
POND INFORMATION**

WITH 5 YEARS SEDIMENT



DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR A1 (4 SIDES OPEN) OR WEIR
WIDTH(FT)

	0	0	500.06
	3.00	1.00	501.06
	8.49	2.00	502.06
	15.59	3.00	503.06
	24.00	4.00	504.06
	33.54	5.00	505.06
	44.09	6.00	506.06
	55.56	7.00	507.06
	67.88	8.00	508.06

INFLOW PIPE SIZE	WEIR	CFS INCHES	STORM FREQUENCY DURATION	STORM FREQUENCY DURATION	STORM FREQUENCY DURATION	STORM FREQUENCY DURATION	STORM FREQUENCY DURATION	YEARS MIN
0	29.31	1758.6	-	0.00	0.00	0.00	0.00	500.06
1	29.31	1758.6	1758.60	57.05	0.95	28.52	1,730.08	500.37
2	29.31	1758.6	3488.68	113.17	1.89	85.11	3,403.57	500.67
3	29.31	1758.6	5162.17	167.45	2.79	140.31	5,021.86	500.97
4	29.31	1758.6	6780.46	237.31	3.96	202.38	6,578.08	501.20
5	29.31	1758.6	8336.68	313.96	5.23	275.63	8,061.04	501.43
6	29.31	1758.6	9819.64	387.00	6.45	350.48	9,469.16	501.64
7	29.31	1758.6	11227.76	456.36	7.61	421.68	10,806.08	501.84
8	29.31	1758.6	12564.68	519.58	8.66	487.97	12,076.71	502.02
9	29.31	1758.6	13835.31	588.26	9.80	553.92	13,281.39	502.18
10	29.31	1758.6	15039.99	653.37	10.89	620.82	14,419.18	502.32
11	29.31	1758.6	16177.78	714.87	11.91	684.12	15,493.66	502.46
12	29.31	1758.6	17252.26	772.95	12.88	743.91	16,508.35	502.58
13	29.31	1758.6	18266.95	827.79	13.80	800.37	17,466.58	502.71
14	29.31	1758.6	19225.18	879.59	14.66	853.69	18,371.49	502.82
15	29.31	1758.6	20130.09	925.99	15.43	902.79	19,227.30	502.93
16	29.31	1758.6	20985.80	971.73	16.20	948.86	20,037.04	503.03
17	29.31	1758.6	21795.64	1018.64	16.94	994.18	20,801.46	503.11
18	29.31	1758.6	22560.06	1059.03	17.65	1037.83	21,522.22	503.19
19	29.31	1758.6	23280.82	1099.00	18.32	1079.01	22,201.81	503.27
20	29.31	1758.6	23960.41	1136.68	18.94	1117.84	22,842.57	503.34
21	0	0	2460.17	1172.22	19.54	1154.45	23,446.72	503.40
22	0	0	23446.72	1108.20	18.47	1140.21	22,306.52	503.28
23	0	0	22306.52	1044.97	17.42	1076.58	21,229.94	503.16
24	0	0	21229.94	985.27	16.42	1015.12	20,214.82	503.05
25	0	0	20214.82	929.96	15.50	957.61	19,257.21	502.93
26	0	0	19257.21	881.32	14.69	905.64	18,351.57	502.82
27	0	0	18351.57	832.37	13.87	856.84	17,494.73	502.71
28	0	0	17494.73	786.05	13.10	809.21	16,685.52	502.61
29	0	0	16685.52	742.31	12.37	764.18	15,921.34	502.51
30	0	0	15921.34	701.01	11.68	721.66	15,199.67	502.42
31	0	0	15199.67	662.00	11.03	681.51	14,518.17	502.33
32	0	0	14518.17	625.17	10.42	643.59	13,874.59	502.25
33	0	0	13874.58	590.38	9.84	607.77	13,266.81	502.17
34	0	0	13266.81	557.53	9.29	573.96	12,692.85	502.10
35	0	0	12692.85	526.51	8.78	542.02	12,150.83	502.03
36	0	0	12150.83	499.92	8.33	513.22	11,637.62	501.96
37	0	0	11637.62	476.54	7.94	488.23	11,149.38	501.89
38	0	0	11149.38	452.50	7.54	464.52	10,684.86	501.82
39	0	0	10684.86	429.62	7.16	441.06	10,243.80	501.75
40	0	0	10243.80	407.89	6.80	418.76	9,825.05	501.69
41	0	0	9825.05	387.27	6.45	397.58	9,427.47	501.63
42	0	0	9427.47	367.69	6.13	377.48	9,049.99	501.57
43	0	0	9049.99	349.09	5.82	358.39	8,691.60	501.52
44	0	0	8691.60	331.44	5.52	340.27	8,351.33	501.47
45	0	0	8351.33	314.68	5.24	323.06	8,028.27	501.42
46	0	0	8028.27	298.77	4.98	306.73	7,721.55	501.37
47	0	0	7721.55	283.66	4.73	291.22	7,430.33	501.33
48	0	0	7430.33	269.32	4.49	276.49	7,153.84	501.29
49	0	0	7153.84	255.70	4.26	262.51	6,891.33	501.25
50	0	0	6891.33	242.77	4.05	249.24	6,642.10	501.21
51	0	0	6642.10	230.49	3.84	236.63	6,405.47	501.18
52	0	0	6405.47	218.84	3.65	224.67	6,180.80	501.14
53	0	0	6180.80	207.77	3.46	213.31	5,967.49	501.11
54	0	0	5967.49	197.27	3.29	202.52	5,764.97	501.08
55	0	0	5764.97	187.29	3.12	192.28	5,572.69	501.05
56	0	0	5572.69	178.81	2.98	183.05	5,389.64	501.03
57	0	0	5389.64	173.88	2.90	176.34	5,213.30	501.00
58	0	0	5213.30	169.11	2.82	171.49	5,041.80	500.97
59	0	0	5041.80	163.55	2.73	166.33	4,875.47	500.94
60	0	0	4875.47	158.15	2.64	160.85	4,714.62	500.91
61	0	0	4714.62	152.94	2.55	155.54	4,559.08	500.88
62	0	0	4559.08	147.89	2.46	150.41	4,408.66	500.85
63	0	0	4408.66	143.01	2.38	145.45	4,263.21	500.83
64	0	0	4263.21	138.29	2.30	140.65	4,122.56	500.80
65	0	0	4122.56	133.73	2.23	136.01	3,986.55	500.78
66	0	0	3986.55	129.32	2.16	131.52	3,855.02	500.75
67	0	0	3855.02	125.05	2.08	127.19	3,727.84	500.73
68	0	0	3727.84	120.93	2.02	122.99	3,604.85	500.71
69	0	0	3604.85	116.94	1.95	118.93	3,485.92	500.69
70	0	0	3485.92	113.08	1.88	115.01	3,370.91	500.67
71	0	0	3370.91	109.35	1.82	111.21	3,259.70	500.65
72	0	0	3259.70	105.74	1.76	107.54	3,152.15	500.63
73	0	0	3152.15	102.25	1.70	104.00	3,048.16	500.61
74	0	0	3048.16	98.88	1.65	100.56	2,947.59	500.59
75	0	0	2947.59	95.62	1.59	97.25	2,850.35	500.57
76	0	0	2850.35	92.46	1.54	94.04	2,756.31	500.56
77	0	0	2756.31	89.41	1.49	90.94	2,665.37	500.54
78	0	0	2665.37	86.46	1.44	87.94	2,577.44	500.52
79	0	0	2577.44	83.61	1.39	85.03	2,492.40	500.51
80	0	0	2492.40	80.85	1.35	82.23	2,410.17	500.49
85	0	0	2410.17	78.18	1.30	397.58	2,012.59	500.42
90	0	0	2012.59	65.29	1.09	358.67	1,653.92	500.36
100	0	0	1653.92	53.85	0.89	594.68	1,059.24	500.25
124	0	0	1059.24	34.36	0.57	1056.13	3.10	500.06

DETENTION POND CALCULATIONS

25-YEAR STORM 20 MIN

BELLEAU SUBSTATION

09/23/2009

12/09/03

**DETENTION POND
POND INFORMATION**



DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR AI (4 SIDES OPEN) OR WEIR

WIDTH(FT)

-	0	0	498.00
	3.00	1.00	499.00
	8.49	2.00	500.00
	15.59	3.00	501.00
	24.00	4.00	502.00
	33.54	5.00	503.00
	44.09	6.00	504.00
	55.56	7.00	505.00
	67.88	8.00	506.00

INFLOW PIPE SIZE	WEIR	CFS INCHES	STORM FREQUENCY DURATION	15 20	YEARS MIN		
0	29.31	1758.6	-	0.00	0.00	0.00	498.00
2	29.31	1758.6	1758.60	147.03	2.45	147.03	498.75
3	29.31	1758.6	3370.17	287.87	4.46	207.45	499.22
4	29.31	1758.6	4921.33	379.85	6.33	323.86	499.54
5	29.31	1758.6	6356.07	483.42	8.06	431.63	499.83
6	29.31	1758.6	7683.03	583.43	9.72	533.43	500.08
7	29.31	1758.6	8908.21	677.19	11.29	630.31	500.28
8	29.31	1758.6	10036.50	783.54	12.73	720.36	500.47
9	29.31	1758.6	11074.73	842.99	14.05	803.27	500.84
10	29.31	1758.6	12030.07	916.10	15.27	879.55	500.80
11	29.31	1758.6	12909.12	982.75	16.38	949.43	500.94
12	29.31	1758.6	13718.29	1043.87	17.40	1013.31	501.06
13	29.31	1758.6	14483.59	1100.16	18.34	1072.01	501.17
14	29.31	1758.6	15150.17	1152.02	19.20	1126.09	501.26
15	29.31	1758.6	15782.69	1199.79	20.00	1175.90	501.35
16	29.31	1758.6	16365.38	1243.80	20.73	1221.80	501.43
17	29.31	1758.6	16902.19	1284.35	21.41	1264.07	501.50
18	29.31	1758.6	17396.71	1321.70	22.03	1303.02	501.57
19	29.31	1758.6	17852.29	1356.11	22.60	1338.90	501.63
20	29.31	1758.6	18271.99	1387.81	23.13	1371.96	501.69
21	0	0	18658.63	1417.01	23.62	1402.41	501.74
22	0	0	17256.22	1311.09	21.85	1364.05	501.64
23	0	0	15892.17	1208.06	20.13	1259.57	501.35
24	0	0	14632.60	1112.92	18.55	1160.49	501.18
25	0	0	13472.11	1025.27	17.09	1069.10	501.02
26	0	0	12403.01	944.52	15.74	984.90	500.85
27	0	0	11418.11	869.27	14.49	906.90	500.68
28	0	0	10511.21	799.87	13.33	834.57	500.53
29	0	0	9676.64	736.00	12.27	767.93	500.39
30	0	0	8908.71	677.23	11.29	706.61	500.27
31	0	0	8202.10	623.15	10.39	650.19	500.15
32	0	0	7551.91	573.39	9.56	598.27	500.04
33	0	0	6953.63	527.61	8.79	550.50	499.93
34	0	0	6403.13	486.82	8.11	507.21	499.82
35	0	0	5895.92	450.20	7.50	468.51	499.72
36	0	0	5427.41	416.38	6.94	433.29	499.62
37	0	0	4994.11	385.10	6.42	400.74	499.54
38	0	0	4593.37	356.17	5.94	370.64	499.45
39	0	0	4222.74	329.42	5.49	342.79	499.38
40	0	0	3879.94	304.67	5.06	317.04	499.31
41	0	0	3562.90	281.78	4.70	293.23	499.24
42	0	0	3269.67	260.61	4.34	271.20	499.19
43	0	0	2998.48	241.04	4.02	250.82	499.13
44	0	0	2747.85	222.93	3.72	231.98	499.08
45	0	0	2515.67	206.18	3.44	214.55	499.03
46	0	0	2301.12	190.89	3.18	198.44	498.98
47	0	0	2102.68	175.79	2.93	183.24	498.89
48	0	0	1919.44	160.47	2.67	168.13	498.81
49	0	0	1751.30	146.42	2.44	153.44	498.74
50	0	0	1597.86	133.59	2.23	140.00	498.68
51	0	0	1457.88	121.88	2.03	127.74	498.62
52	0	0	1330.12	111.20	1.85	116.54	498.56
53	0	0	1213.58	101.46	1.69	106.33	498.51
54	0	0	1107.25	92.57	1.54	97.02	498.47
55	0	0	1010.23	84.46	1.41	88.52	498.43
56	0	0	921.72	77.06	1.28	80.76	498.39
57	0	0	840.96	70.31	1.17	73.68	498.36
58	0	0	767.27	64.15	1.07	67.23	498.33
59	0	0	700.04	58.53	0.98	61.34	498.30
60	0	0	638.71	53.40	0.89	55.96	498.27
61	0	0	582.75	48.72	0.81	51.06	498.25
62	0	0	531.69	44.45	0.74	46.59	498.23
63	0	0	485.10	40.56	0.68	42.50	498.21
64	0	0	442.60	37.00	0.62	38.78	498.19
65	0	0	403.82	33.76	0.56	35.38	498.17
66	0	0	368.43	30.80	0.51	32.28	498.16
67	0	0	336.15	28.10	0.47	29.45	498.14
68	0	0	306.70	25.64	0.43	26.87	498.13
69	0	0	279.83	23.39	0.39	24.52	498.12
70	0	0	255.31	21.34	0.36	22.37	498.11
71	0	0	232.94	19.47	0.32	20.41	498.10
72	0	0	212.53	17.77	0.30	18.62	498.09
73	0	0	193.91	16.21	0.27	16.99	498.08
74	0	0	176.92	14.79	0.25	15.50	498.07
75	0	0	161.42	13.50	0.22	14.14	498.07
76	0	0	147.27	12.31	0.21	12.90	498.06
77	0	0	134.37	11.23	0.19	11.77	498.06
80	0	0	122.60	10.25	0.17	10.77	498.04
90	0	0	90.37	7.56	0.13	8.02	498.00

DETENTION POND CALCULATIONS

09/23/03
12/09/03

BELLEAU SUBSTATION

50yr 20 min

**DETENTION POND
POND INFORMATION**

WITH 5 YEARS SEDIMENT



DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR AI (4 SIDES OPEN) OR WEIR

WIDTH(FT)

-	0	0	500.06
	3.00	1.00	501.06
	8.49	2.00	502.06
	15.59	3.00	503.06
	24.00	4.00	504.06
	33.54	5.00	505.06
	44.09	6.00	506.06
	55.56	7.00	507.06
	67.88	8.00	508.06

INFLOW PIPE SIZE	WEIR	CFS INCHES	STORM FREQUENCY DURATION	WEIR	WEIR	YEARS MIN	YEARS MIN
0	33.19	1991.4	-		0.00	0.00	500.06
1	33.19	1991.4	1991.40	64.60	1.09	32.30	1,959.10
2	33.19	1991.4	3950.50	128.15	2.14	96.37	3,854.13
3	33.19	1991.4	5845.53	191.26	3.19	159.70	5,685.82
4	33.19	1991.4	7677.22	281.48	4.69	236.37	7,440.85
5	33.19	1991.4	9432.25	367.92	6.13	324.70	9,107.55
6	33.19	1991.4	11098.95	450.01	7.50	408.97	10,689.99
7	33.19	1991.4	12681.39	525.99	8.76	487.95	12,193.44
8	33.19	1991.4	14184.84	607.15	10.12	566.52	13,618.32
9	33.19	1991.4	15609.72	684.17	11.40	645.66	14,964.06
10	33.19	1991.4	16955.46	758.91	12.62	720.54	16,234.92
11	33.19	1991.4	18225.32	825.60	13.76	791.25	17,435.07
12	33.19	1991.4	19426.47	890.47	14.84	858.03	18,568.44
13	33.19	1991.4	20569.84	948.11	15.80	919.29	19,640.55
14	33.19	1991.4	21631.95	1007.56	16.79	977.83	20,654.12
15	33.19	1991.4	22645.52	1063.77	17.73	1035.66	21,609.86
16	33.19	1991.4	23601.26	1116.77	18.61	1090.27	22,510.99
17	33.19	1991.4	24502.39	1166.74	19.45	1141.75	23,360.64
18	33.19	1991.4	25352.04	1213.88	20.23	1190.30	24,161.75
19	33.19	1991.4	26153.15	1258.28	20.97	1238.07	24,917.08
20	33.19	1991.4	26908.48	1300.17	21.67	1279.22	25,629.25
21	0	0	27620.65	1339.66	22.33	1319.91	26,300.74
22	0	0	28300.74	1266.46	21.11	1303.06	24,997.68
23	0	0	24997.68	1194.20	19.90	1230.33	23,767.34
24	0	0	23767.34	1125.96	18.77	1160.09	22,607.25
25	0	0	22607.25	1061.64	17.69	1093.81	21,513.44
26	0	0	21513.44	1000.99	16.68	1031.32	20,482.13
27	0	0	20482.13	943.80	15.73	972.39	19,509.74
28	0	0	19509.74	894.97	14.82	919.38	18,590.38
29	0	0	18590.36	845.27	14.09	870.12	17,720.24
30	0	0	17720.24	798.24	13.30	821.76	16,898.48
31	0	0	16898.48	753.83	12.56	776.03	16,122.45
32	0	0	16122.45	711.88	11.86	732.85	15,389.59
33	0	0	15389.59	672.27	11.20	692.07	14,697.52
34	0	0	14697.52	634.86	10.58	653.57	14,043.96
35	0	0	14043.96	599.54	9.99	617.20	13,426.75
36	0	0	13426.75	566.18	9.44	582.86	12,843.90
37	0	0	12843.90	534.67	8.91	550.42	12,293.47
38	0	0	12293.47	505.88	8.43	520.27	11,773.20
39	0	0	11773.20	483.22	8.05	494.55	11,278.85
40	0	0	11278.85	458.96	7.65	471.04	10,807.61
41	0	0	10807.61	435.68	7.26	447.26	10,360.34
42	0	0	10360.34	413.63	6.89	424.65	9,935.69
43	0	0	9935.69	392.72	6.55	403.18	9,532.52
44	0	0	9532.52	372.86	6.21	382.79	9,149.73
45	0	0	9149.73	354.01	5.90	363.43	8,786.30
46	0	0	8786.30	336.11	5.60	345.06	8,441.24
47	0	0	8441.24	319.11	5.32	327.61	8,113.63
48	0	0	8113.63	302.97	5.05	311.04	7,802.59
49	0	0	7802.59	287.65	4.79	295.31	7,507.28
50	0	0	7507.28	273.11	4.55	280.38	7,226.90
51	0	0	7226.90	259.30	4.32	266.20	6,960.69
52	0	0	6960.69	246.19	4.10	252.74	6,707.95
53	0	0	6707.95	233.74	3.90	239.96	6,467.99
54	0	0	6467.99	221.92	3.70	227.83	6,240.16
55	0	0	6240.16	210.70	3.51	216.31	6,023.85
56	0	0	6023.85	200.04	3.33	205.37	5,818.48
57	0	0	5818.48	189.93	3.17	194.99	5,623.50
58	0	0	5623.50	180.32	3.01	185.13	5,438.37
59	0	0	5438.37	175.19	2.92	177.76	5,260.61
60	0	0	5260.61	170.40	2.84	172.80	5,087.82
61	0	0	5087.82	165.04	2.75	167.72	4,920.10
62	0	0	4920.10	159.60	2.66	162.32	4,757.77
63	0	0	4757.77	154.34	2.57	156.97	4,600.81
64	0	0	4600.81	149.24	2.49	151.79	4,449.02
65	0	0	4449.02	144.32	2.41	146.78	4,302.23
66	0	0	4302.23	139.56	2.33	141.94	4,160.30
67	0	0	4160.30	134.95	2.25	137.26	4,023.04
68	0	0	4023.04	130.50	2.18	132.73	3,890.31
69	0	0	3890.31	126.20	2.10	128.35	3,761.96
70	0	0	3761.96	122.03	2.03	124.11	3,637.85
71	0	0	3637.85	118.01	1.97	120.02	3,517.83
72	0	0	3517.83	114.11	1.90	116.06	3,401.77
73	0	0	3401.77	110.35	1.84	112.23	3,289.54
74	0	0	3289.54	106.71	1.78	108.53	3,181.01
75	0	0	3181.01	103.19	1.72	104.95	3,076.06
76	0	0	3076.06	99.78	1.66	101.49	2,974.57
77	0	0	2974.57	96.49	1.61	98.14	2,876.44
78	0	0	2876.44	93.31	1.56	94.90	2,781.54
79	0	0	2781.54	90.23	1.50	91.77	2,689.77
80	0	0	2689.77	87.25	1.45	88.74	2,601.03
85	0	0	2601.03	84.37	1.41	85.87	2,517.96
90	0	0	2171.96	70.46	1.17	387.07	1,784.89
95	0	0	1784.89	57.90	0.96	320.89	1,464.00
100	0	0	1464.00	47.49	0.79	263.47	1,200.53
105	0	0	1200.53	38.94	0.65	216.08	984.44
110	0	0	984.44	31.93	0.53	177.19	807.25
120	0	0	807.25	26.19	0.44	149.60	516.65
143	0	0	516.65	16.76	0.28	493.87	22.78

DETENTION POND CALCULATIONS

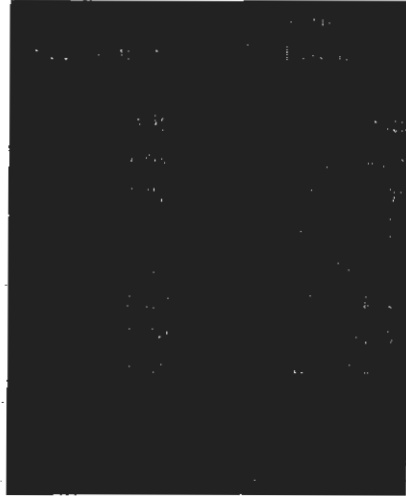
50-YEAR STORM 20 MIN

BELLEAU SUBSTATION

09/23/2009

12/09/03

**DETENTION POND
POND INFORMATION**



DISCHARGE ORIFICE CHARACTERISTICS

**F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR AI (4 SIDES OPEN) OR WEIR**

WIDTH(FT)

	0	0	498.00
	3.00	1.00	499.00
	8.49	2.00	500.00
	15.59	3.00	501.00
	24.00	4.00	502.00
	33.54	5.00	503.00
	44.09	6.00	504.00
	55.56	7.00	505.00
	67.88	8.00	506.00

INFLOW PIPE SIZE	HY. GRAPH weir	CFS INCHES	STORM FREQUENCY DURATION				20 20	YEARS MIN
0	33.19	1991.4	--			0.00	0.00	498.00
2	33.19	1991.4	1991.40	166.49	2.77	166.49	1,824.91	498.85
3	33.19	1991.4	3816.31	300.08	5.00	233.28	3,583.03	499.31
4	33.19	1991.4	5574.43	426.99	7.12	363.54	5,210.89	499.67
5	33.19	1991.4	7202.29	546.64	9.11	486.82	6,715.48	500.00
6	33.19	1991.4	8706.88	661.78	11.03	604.21	8,102.67	500.25
7	33.19	1991.4	10094.07	767.94	12.80	714.86	9,379.20	500.48
8	33.19	1991.4	11370.60	865.64	14.43	816.79	10,553.81	500.69
9	33.19	1991.4	12545.21	955.26	15.92	910.45	11,634.76	500.88
10	33.19	1991.4	13626.16	1036.91	17.28	996.09	12,630.08	501.05
11	33.19	1991.4	14621.48	1112.08	18.53	1074.50	13,546.98	501.19
12	33.19	1991.4	15538.38	1181.34	19.69	1146.71	14,391.67	501.32
13	33.19	1991.4	16383.07	1245.14	20.75	1213.24	15,169.83	501.43
14	33.19	1991.4	17161.23	1303.91	21.73	1274.52	15,886.71	501.54
15	33.19	1991.4	17878.11	1358.06	22.63	1330.99	16,547.12	501.64
16	33.19	1991.4	18538.52	1407.94	23.47	1383.00	17,155.52	501.73
17	33.19	1991.4	19146.92	1453.35	24.22	1430.65	17,716.28	501.81
18	33.19	1991.4	19707.68	1494.06	24.90	1473.71	18,233.97	501.89
19	33.19	1991.4	20225.37	1531.65	25.53	1512.86	18,712.51	501.96
20	33.19	1991.4	20703.91	1566.39	26.11	1549.02	19,154.89	502.02
21	0	0	21146.29	1598.51	26.64	1582.45	19,563.84	502.08
22	0	0	19563.84	1483.62	24.73	1541.07	18,022.77	501.86
23	0	0	18022.77	1368.98	22.82	1426.30	16,596.47	501.65
24	0	0	16596.47	1261.26	21.02	1315.12	15,281.35	501.45
25	0	0	15281.35	1161.92	19.37	1211.59	14,069.76	501.27
26	0	0	14069.76	1070.41	17.84	1116.17	12,953.59	501.10
27	0	0	12953.59	986.11	16.44	1028.26	11,925.33	500.94
28	0	0	11925.33	908.09	15.13	947.10	10,978.23	500.77
29	0	0	10978.23	835.61	13.93	871.85	10,106.39	500.61
30	0	0	10106.39	768.89	12.81	802.25	9,304.14	500.47
31	0	0	9304.14	707.49	11.79	738.19	8,565.95	500.33
32	0	0	8565.95	651.00	10.85	679.24	7,886.71	500.21
33	0	0	7886.71	599.02	9.98	625.01	7,261.70	500.10
34	0	0	7261.70	551.18	9.19	575.10	6,686.60	499.99
35	0	0	6686.60	507.28	8.45	529.23	6,157.36	499.88
36	0	0	6157.36	469.08	7.82	488.18	5,669.18	499.77
37	0	0	5669.18	433.84	7.23	451.46	5,217.73	499.67
38	0	0	5217.73	401.24	6.69	417.54	4,800.19	499.58
39	0	0	4800.19	371.10	6.19	386.17	4,414.01	499.50
40	0	0	4414.01	343.22	5.72	357.16	4,056.85	499.42
41	0	0	4056.85	317.44	5.29	330.33	3,726.52	499.35
42	0	0	3726.52	293.59	4.89	305.52	3,421.00	499.28
43	0	0	3421.00	271.54	4.53	282.57	3,138.44	499.22
44	0	0	3138.44	251.14	4.19	261.34	2,877.10	499.16
45	0	0	2877.10	232.27	3.87	241.71	2,635.39	499.11
46	0	0	2635.39	214.82	3.58	223.55	2,411.84	499.06
47	0	0	2411.84	198.69	3.31	206.76	2,205.09	499.01
48	0	0	2205.09	183.76	3.06	191.22	2,013.87	498.94
49	0	0	2013.87	168.37	2.81	176.06	1,837.80	498.85
50	0	0	1837.80	153.65	2.56	161.01	1,676.79	498.78
51	0	0	1676.79	140.19	2.34	146.92	1,529.88	498.71
52	0	0	1529.88	127.90	2.13	134.05	1,395.83	498.65
53	0	0	1395.83	116.70	1.94	122.30	1,273.53	498.59
54	0	0	1273.53	106.47	1.77	111.58	1,161.94	498.54
55	0	0	1161.94	97.14	1.62	101.81	1,060.14	498.49
56	0	0	1060.14	88.63	1.48	92.89	967.25	498.45
57	0	0	967.25	80.87	1.35	84.75	882.50	498.41
58	0	0	882.50	73.78	1.23	77.32	805.18	498.37

59	0	0	805.18	67.32	1.12	70.55	734.63	498.34
60	0	0	734.63	61.42	1.02	64.37	670.26	498.31
61	0	0	670.26	56.04	0.93	58.73	611.53	498.28
62	0	0	611.53	51.13	0.85	53.58	557.95	498.26
63	0	0	557.95	46.65	0.78	48.89	509.06	498.24
64	0	0	509.06	42.56	0.71	44.60	464.46	498.22
65	0	0	464.46	38.83	0.65	40.70	423.77	498.20
66	0	0	423.77	35.43	0.59	37.13	386.64	498.18
67	0	0	386.64	32.32	0.54	33.88	352.76	498.16
68	0	0	352.76	29.49	0.49	30.91	321.85	498.15
69	0	0	321.85	26.91	0.45	28.20	293.65	498.14
70	0	0	293.65	24.55	0.41	25.73	267.92	498.12
71	0	0	267.92	22.40	0.37	23.47	244.45	498.11
72	0	0	244.45	20.44	0.34	21.42	223.03	498.10
73	0	0	223.03	18.65	0.31	19.54	203.49	498.09
74	0	0	203.49	17.01	0.28	17.83	185.66	498.09
75	0	0	185.66	15.52	0.26	16.27	169.39	498.08
76	0	0	169.39	14.16	0.24	14.84	154.55	498.07
77	0	0	154.55	12.92	0.22	13.54	141.01	498.07
80	0	0	141.01	11.79	0.20	37.06	103.94	498.05
90	0	0	103.94	8.69	0.14	102.39	1.55	498.00

DETENTION POND CALCULATIONS

100-YEAR STORM 20 MIN

BELLEAU SUBSTATION

09/23/2009
12/09/03

**DETENTION POND
POND INFORMATION**



DISCHARGE ORIFICE CHARACTERISTICS

F.L. ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR AI (4 SIDES OPEN) OR WEIR
WIDTH(FT)

	0	0	498.00
	3.00	1.00	499.00
	8.49	2.00	500.00
	15.59	3.00	501.00
	24.00	4.00	502.00
	33.54	5.00	503.00
	44.09	6.00	504.00
	55.56	7.00	505.00
	67.88	8.00	506.00

INFLOW PIPE SIZE	HYDROGRAPH weir	CFS INCHES	STORM FREQUENCY DURATION		100 20	YEARS MIN	
0	37.58	2254.8	--		0.00	0.00	498.00
2	37.58	2254.8	2254.80	187.35	3.12	187.35	498.96
3	37.58	2254.8	4322.25	336.60	5.61	261.97	499.42
4	37.58	2254.8	6315.08	480.46	8.01	408.53	499.82
5	37.58	2254.8	8161.35	620.03	10.33	550.25	500.16
6	37.58	2254.8	9865.90	750.48	12.51	685.26	500.44
7	37.58	2254.8	11435.44	870.60	14.51	810.54	500.70
8	37.58	2254.8	12879.70	980.53	16.34	925.56	500.94
9	37.58	2254.8	14208.94	1080.92	18.02	1030.73	501.13
10	37.58	2254.8	15433.01	1173.38	19.56	1127.15	501.30
11	37.58	2254.8	16560.66	1258.55	20.98	1215.97	501.46
12	37.58	2254.8	17599.49	1337.01	22.28	1297.78	501.60
13	37.58	2254.8	18556.51	1409.30	23.49	1373.16	501.73
14	37.58	2254.8	19438.16	1474.50	24.57	1441.90	501.86
15	37.58	2254.8	20251.06	1533.51	25.56	1504.01	501.97
16	37.58	2254.8	21001.85	1588.02	26.47	1560.77	502.06
17	37.58	2254.8	21695.88	1638.41	27.31	1613.22	502.14
18	37.58	2254.8	22337.47	1684.99	28.08	1661.70	502.22
19	37.58	2254.8	22930.57	1728.05	28.80	1706.52	502.29
20	37.58	2254.8	23478.85	1767.86	29.46	1747.95	502.35
21	0	0	23985.69	1804.65	30.08	1786.26	502.41
22	0	0	22199.44	1674.97	27.92	1739.81	502.19
23	0	0	20459.63	1548.66	25.81	1611.81	501.98
24	0	0	18847.81	1431.30	23.85	1489.98	501.76
25	0	0	17357.83	1318.76	21.98	1375.03	501.55
26	0	0	15982.80	1214.91	20.25	1266.83	501.36
27	0	0	14715.97	1119.22	18.65	1167.06	501.19
28	0	0	13548.91	1031.07	17.18	1075.15	501.03
29	0	0	12473.76	949.87	15.83	990.47	500.86
30	0	0	11483.29	874.26	14.57	912.06	500.69
31	0	0	10571.23	804.46	13.41	839.36	500.54
32	0	0	9731.87	740.22	12.34	772.34	500.40
33	0	0	8959.52	681.12	11.35	710.67	500.28
34	0	0	8248.85	626.73	10.45	653.92	500.16
35	0	0	7594.93	576.69	9.61	601.71	500.05
36	0	0	6993.22	530.64	8.84	553.66	499.94
37	0	0	6439.56	489.45	8.16	510.04	499.83
38	0	0	5929.51	452.63	7.54	471.04	499.73
39	0	0	5458.48	418.62	6.98	435.63	499.63
40	0	0	5022.85	387.18	6.45	402.90	499.54
41	0	0	4619.95	358.09	5.97	372.63	499.46
42	0	0	4247.32	331.19	5.52	344.64	499.38
43	0	0	3902.68	306.31	5.11	318.75	499.31
44	0	0	3583.93	283.30	4.72	294.80	499.25
45	0	0	3289.12	262.02	4.37	272.66	499.19
46	0	0	3016.46	242.33	4.04	252.18	499.13
47	0	0	2764.29	224.13	3.74	233.23	499.08
48	0	0	2531.06	207.29	3.45	215.71	499.04
49	0	0	2315.34	191.72	3.20	199.51	498.98
50	0	0	2115.84	176.89	2.95	184.31	498.90
51	0	0	1931.53	161.48	2.69	169.19	498.82
52	0	0	1762.34	147.34	2.46	154.41	498.75
53	0	0	1607.93	134.43	2.24	140.88	498.68
54	0	0	1467.05	122.65	2.04	128.54	498.62
55	0	0	1338.51	111.90	1.87	117.28	498.57
56	0	0	1221.23	102.10	1.70	107.00	498.52
57	0	0	1114.23	93.15	1.55	97.63	498.47
58	0	0	1016.60	84.99	1.42	89.07	498.43

59	0	0	927.53	77.55	1.29	81.27	846.26	498.39
60	0	0	846.26	70.75	1.18	74.15	772.11	498.36
61	0	0	772.11	64.55	1.08	67.65	704.46	498.33
62	0	0	704.46	58.90	0.98	61.72	642.73	498.30
63	0	0	642.73	53.74	0.90	56.32	586.42	498.27
64	0	0	586.42	49.03	0.82	51.38	535.04	498.25
65	0	0	535.04	44.73	0.75	46.88	488.16	498.23
66	0	0	488.16	40.81	0.68	42.77	445.39	498.21
67	0	0	445.39	37.24	0.62	39.02	406.36	498.19
68	0	0	406.36	33.97	0.57	35.60	370.76	498.17
69	0	0	370.76	31.00	0.52	32.49	338.27	498.16
70	0	0	338.27	28.28	0.47	29.64	308.63	498.14
71	0	0	308.63	25.80	0.43	27.04	281.59	498.13
72	0	0	281.59	23.54	0.39	24.67	256.92	498.12
73	0	0	256.92	21.48	0.36	22.51	234.41	498.11
74	0	0	234.41	19.60	0.33	20.54	213.87	498.10
75	0	0	213.87	17.88	0.30	18.74	195.13	498.09
76	0	0	195.13	16.31	0.27	17.10	178.03	498.08
77	0	0	178.03	14.88	0.25	15.60	162.43	498.08
78	0	0	162.43	13.58	0.23	14.20	149.74	498.06
79	0	0	149.74	12.40	0.21	13.00	137.74	498.05
80	0	0	137.74	11.35	0.19	12.00	126.49	498.04
81	0	0	126.49	10.42	0.18	11.10	115.89	498.03
82	0	0	115.89	9.60	0.17	10.30	105.99	498.02
83	0	0	105.99	8.88	0.16	9.60	96.79	498.01
84	0	0	96.79	8.25	0.15	9.00	88.29	498.00
85	0	0	88.29	7.70	0.14	8.50	80.49	498.00
86	0	0	80.49	7.22	0.13	8.10	73.39	498.00
87	0	0	73.39	6.80	0.12	7.80	66.89	498.00
88	0	0	66.89	6.43	0.11	7.50	60.99	498.00
89	0	0	60.99	6.11	0.10	7.20	55.69	498.00
90	0	0	55.69	5.83	0.09	7.00	50.89	498.00

DETENTION POND CALCULATIONS

100YR 20 MIN

09/23/03

12/09/03

BELLEAU SUBSTATION

**DETENTION POND
POND INFORMATION**

WITH 5 YEARS SEDIMENT



DISCHARGE ORIFICE CHARACTERISTICS

F L ELEVATION OF DISCHARGE PIPE OR SILL
PIPE SIZE (INCHES) OR A1 (4 SIDES OPEN) OR WEIR
WIDTH(FT)

	0	0	500.06
	3.00	1.00	501.06
	8.49	2.00	502.06
	15.59	3.00	503.06
	24.00	4.00	504.06
	33.54	5.00	505.06
	44.09	6.00	506.06
	55.56	7.00	507.06
	67.88	8.00	508.06

INFLOW PIPE SIZE	HYDROGRAPH weir	CFS INCHES	STORM FREQUENCY	DURATION	HYDROGRAPH weir	YEARS MIN	
0	37.58	2254.8	-	0.00	0.00	0.00	500.06
1	37.58	2254.8	2254.80	73.14	1.22	36.57	2,218.23
2	37.58	2254.8	4473.03	145.10	2.42	109.12	4,363.91
3	37.58	2254.8	6618.71	229.34	3.82	187.22	6,431.49
4	37.58	2254.8	8686.29	331.18	5.52	280.26	8,406.03
5	37.58	2254.8	10660.83	428.43	7.14	379.81	10,281.02
6	37.58	2254.8	12535.82	518.02	8.63	473.23	12,062.59
7	37.58	2254.8	14317.39	614.32	10.24	566.17	13,751.22
8	37.58	2254.8	16006.02	705.59	11.76	659.95	15,346.07
9	37.58	2254.8	17600.87	791.79	13.20	748.69	16,852.18
10	37.58	2254.8	19106.98	873.20	14.55	832.49	18,274.49
11	37.58	2254.8	20529.29	946.41	15.77	909.80	19,619.49
12	37.58	2254.8	21874.29	1021.00	17.02	983.70	20,890.58
13	37.58	2254.8	23145.38	1091.49	18.19	1056.24	22,089.14
14	37.58	2254.8	24343.94	1157.95	19.30	1124.72	23,219.22
15	37.58	2254.8	25474.02	1220.62	20.34	1189.29	24,284.74
16	37.58	2254.8	26539.54	1279.71	21.33	1250.16	25,289.37
17	37.58	2254.8	27544.17	1335.42	22.26	1307.56	26,236.61
18	37.58	2254.8	28491.41	1387.95	23.13	1361.68	27,129.73
19	37.58	2254.8	29384.53	1442.34	24.04	1415.15	27,969.38
20	37.58	2254.8	30224.18	1503.90	25.06	1473.12	28,761.06
21	0	0	31005.86	1561.20	26.02	1532.55	29,473.31
22	0	0	29473.31	1448.85	24.15	1505.03	27,968.28
23	0	0	27968.28	1358.94	22.65	1403.90	26,564.39
24	0	0	26564.39	1281.09	21.35	1320.01	25,244.38
25	0	0	25244.38	1207.88	20.13	1244.48	23,999.89
26	0	0	23999.89	1138.87	18.98	1173.38	22,826.51
27	0	0	22826.51	1073.80	17.90	1106.34	21,720.18
28	0	0	21720.18	1012.45	16.87	1043.13	20,877.05
29	0	0	20677.05	954.61	15.91	983.53	19,693.52
30	0	0	19693.52	904.90	15.08	929.75	18,763.77
31	0	0	18763.77	854.65	14.24	879.77	17,884.00
32	0	0	17884.00	807.09	13.45	830.87	17,053.13
33	0	0	17053.13	762.18	12.70	784.64	16,268.49
34	0	0	16268.49	719.77	12.00	740.98	15,527.51
35	0	0	15527.51	679.72	11.33	699.75	14,827.76
36	0	0	14827.76	641.90	10.70	660.81	14,166.95
37	0	0	14166.95	606.18	10.10	624.04	13,542.90
38	0	0	13542.90	572.45	9.54	589.32	12,953.59
39	0	0	12953.59	540.60	9.01	556.53	12,397.06
40	0	0	12397.06	510.52	8.51	525.56	11,871.50
41	0	0	11871.50	488.06	8.13	499.29	11,372.21
42	0	0	11372.21	463.47	7.72	475.77	10,896.44
43	0	0	10896.44	440.04	7.33	451.76	10,444.68
44	0	0	10444.68	417.79	6.96	428.91	10,015.77
45	0	0	10015.77	396.68	6.61	407.22	9,608.54
46	0	0	9608.54	376.60	6.28	386.63	9,221.91
47	0	0	9221.91	357.56	5.96	367.08	8,854.83
48	0	0	8854.83	339.48	5.66	348.52	8,506.31
49	0	0	8506.31	322.31	5.37	330.90	8,175.41
50	0	0	8175.41	306.02	5.10	314.17	7,861.24
51	0	0	7861.24	290.54	4.84	298.28	7,562.96
52	0	0	7562.96	275.85	4.60	283.20	7,279.77
53	0	0	7279.77	261.90	4.37	268.88	7,010.89
54	0	0	7010.89	248.66	4.14	255.28	6,755.61
55	0	0	6755.61	236.09	3.93	242.37	6,513.24
56	0	0	6513.24	224.15	3.74	230.12	6,283.12
57	0	0	6283.12	212.81	3.55	218.48	6,064.84
58	0	0	6064.84	202.05	3.37	207.43	5,857.21
59	0	0	5857.21	191.84	3.20	196.94	5,660.27
60	0	0	5660.27	182.13	3.04	186.99	5,473.28
61	0	0	5473.28	176.13	2.94	179.13	5,294.15
62	0	0	5294.15	171.31	2.86	173.72	5,120.43
63	0	0	5120.43	166.10	2.77	168.70	4,951.73
64	0	0	4951.73	160.63	2.68	163.36	4,788.36
65	0	0	4788.36	155.33	2.59	157.98	4,630.39
66	0	0	4630.39	150.20	2.50	152.77	4,477.62
67	0	0	4477.62	145.25	2.42	147.73	4,329.89
68	0	0	4329.89	140.46	2.34	142.85	4,187.04
69	0	0	4187.04	135.82	2.26	138.14	4,048.90
70	0	0	4048.90	131.34	2.19	133.58	3,915.32
71	0	0	3915.32	127.01	2.12	129.17	3,786.15
72	0	0	3786.15	122.82	2.05	124.91	3,661.23
73	0	0	3661.23	118.77	1.98	120.79	3,540.44
74	0	0	3540.44	114.85	1.91	116.81	3,423.64
75	0	0	3423.64	111.06	1.85	112.95	3,310.68
76	0	0	3310.68	107.39	1.79	109.23	3,201.46
77	0	0	3201.46	103.85	1.73	105.62	3,095.84
78	0	0	3095.84	100.42	1.67	102.14	2,993.70
79	0	0	2993.70	97.11	1.62	98.77	2,894.93
80	0	0	2894.93	93.91	1.57	95.51	2,799.42
85	0	0	2799.42	90.81	1.51	91.79	2,707.63
90	0	0	2707.63	87.83	1.26	87.60	2,621.03
95	0	0	2621.03	84.91	1.04	83.36	2,539.67
100	0	0	2539.67	81.11	0.85	79.17	2,463.10
105	0	0	2463.10	77.41	0.70	75.07	2,391.53
110	0	0	2391.53	73.77	0.57	71.07	2,324.82
120	0	0	2324.82	68.18	0.47	67.17	2,262.06
143	0	0	2262.06	62.04	0.30	63.54	2,204.06