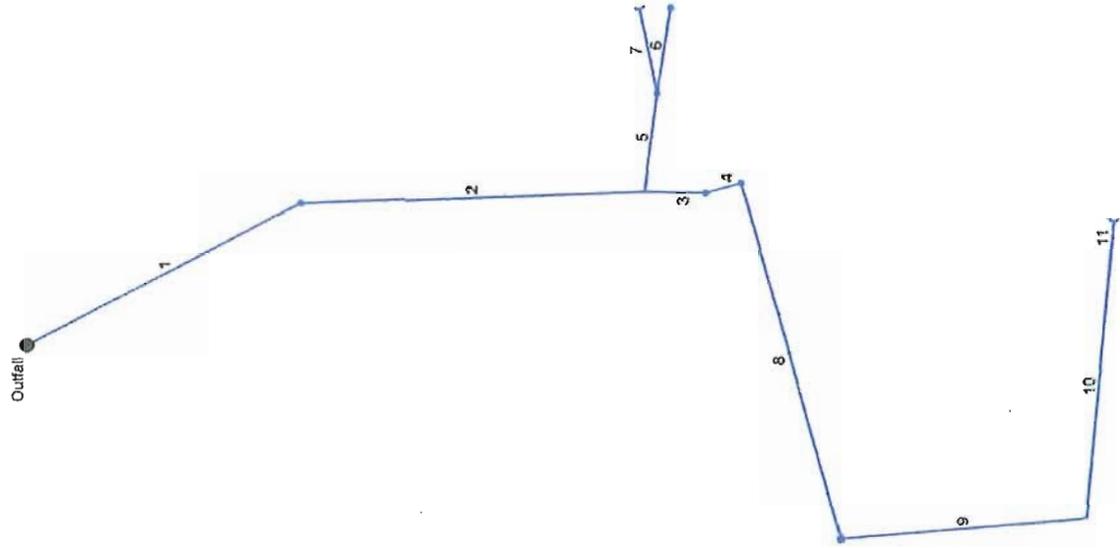


SYSTEM BETWEEN TRANSFER STATION AND RECOVERY BUILDING

The system presently receives flow from subwatersheds 8, 9, 10, half of 13 and 14. Analysis reveals that the system has capacity in excess of that required to accommodate the flow from condition b) which is the maximum of the four conditions. The system was analyzed with the addition of subwatersheds 6, 7, and 11 and it was determined that the system has the capacity to accommodate the flow for each of the four conditions. The following pages contain the system data and the hydrologic and hydraulic calculations.

Marin Sanitary Service



Project File: Pointh3 2003.stm

CONDITION a)

Number of lines: 11

Date: 07-01-2010

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data							Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Dmg area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line shape	N value (n)	J-loss coeff (K)	
1	End	250.000	62.955	DrGrt	0.00	3.23	0.63	10.0	1.70	0.20	2.20	42	Cir	0.013	0.73	9.90
2	1	280.000	25.320	None	0.00	0.00	0.00	0.0	2.20	0.18	2.70	36	Cir	0.013	0.99	12.80
3	2	50.000	3.457	DrGrt	0.00	4.30	0.60	15.0	2.70	0.40	2.90	36	Cir	0.013	0.53	7.20
4	3	30.000	-17.533	DrGrt	0.00	2.32	0.88	15.0	2.90	1.67	3.40	36	Cir	0.013	1.50	7.50
5	2	80.000	-80.000	DrGrt	0.00	0.50	0.90	10.0	4.10	1.88	5.60	15	Cir	0.013	0.59	10.90
6	5	70.000	1.600	DrGrt	0.00	2.55	0.73	15.0	5.60	2.29	7.20	15	Cir	0.013	1.00	13.00
7	5	70.000	-20.000	Hdwl	0.00	1.50	0.85	10.0	5.60	3.43	8.00	10	Cir	0.013	1.00	13.00
8	4	300.000	90.000	MH	0.00	2.90	0.46	15.0	3.40	2.87	12.00	24	Cir	0.013	0.98	17.00
9	8	200.000	-78.710	None	0.00	0.00	0.00	0.0	12.00	5.50	23.00	15	Cir	0.013	0.99	25.50
10	9	200.000	-80.000	None	0.00	0.00	0.00	0.0	23.00	8.50	40.00	15	Cir	0.013	0.15	43.50
11	10	40.000	-1.163	Hdwl	0.00	13.47	0.55	25.0	40.00	7.50	43.00	20	Cir	0.013	1.00	45.00

Marin Sanitary Service

Number of lines: 11

Date: 07-01-2010

Storm Sewer Tabulation

Station Line	To Line	Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr Total	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	250.000	3.23	30.77	0.63	2.03	18.99	10.0	28.1	1.7	32.93	44.99	3.62	42	0.20	1.70	2.20	5.00	5.21	6.00	9.90	
2	1	280.000	0.00	27.54	0.00	0.00	16.95	0.0	27.0	1.8	29.98	28.18	4.24	36	0.18	2.20	2.70	5.37	5.94	9.90	12.80	
3	2	50.000	4.30	22.99	0.60	2.58	13.36	15.0	26.7	1.8	23.74	42.18	3.36	36	0.40	2.70	2.90	6.21	6.28	12.80	7.20	
4	3	30.000	2.32	18.69	0.88	2.04	10.78	15.0	26.5	1.8	19.22	86.10	2.72	36	1.67	2.90	3.40	6.37	6.39	7.20	7.50	
5	2	80.000	0.50	4.55	0.90	0.45	3.59	10.0	15.3	2.3	8.32	8.84	6.78	15	1.88	4.10	5.60	6.21	7.54	12.80	10.90	
6	5	70.000	2.55	2.55	0.73	1.86	1.86	15.0	15.0	2.3	4.36	9.76	3.81	15	2.29	5.60	7.20	7.96	8.22	10.90	13.00	
7	5	70.000	1.50	1.50	0.85	1.28	1.28	10.0	10.0	2.8	3.62	4.05	6.63	10	3.43	5.60	8.00	7.96	9.87	10.90	13.00	
8	4	300.000	2.90	16.37	0.46	1.33	8.74	15.0	25.7	1.8	15.83	38.29	5.87	24	2.87	3.40	12.00	6.57	13.41	7.50	17.00	
9	8	200.000	0.00	13.47	0.00	0.00	7.41	0.0	25.4	1.8	13.49	15.14	11.01	15	5.50	12.00	23.00	13.41	24.23	17.00	25.50	
10	9	200.000	0.00	13.47	0.00	0.00	7.41	0.0	25.1	1.8	13.57	18.83	11.09	15	8.50	23.00	40.00	24.23	41.23	25.50	43.50	
11	10	40.000	13.47	13.47	0.55	7.41	7.41	25.0	25.0	1.8	13.59	38.09	7.48	20	7.50	40.00	43.00	41.23	44.37	43.50	45.00	

Marin Sanitary Service

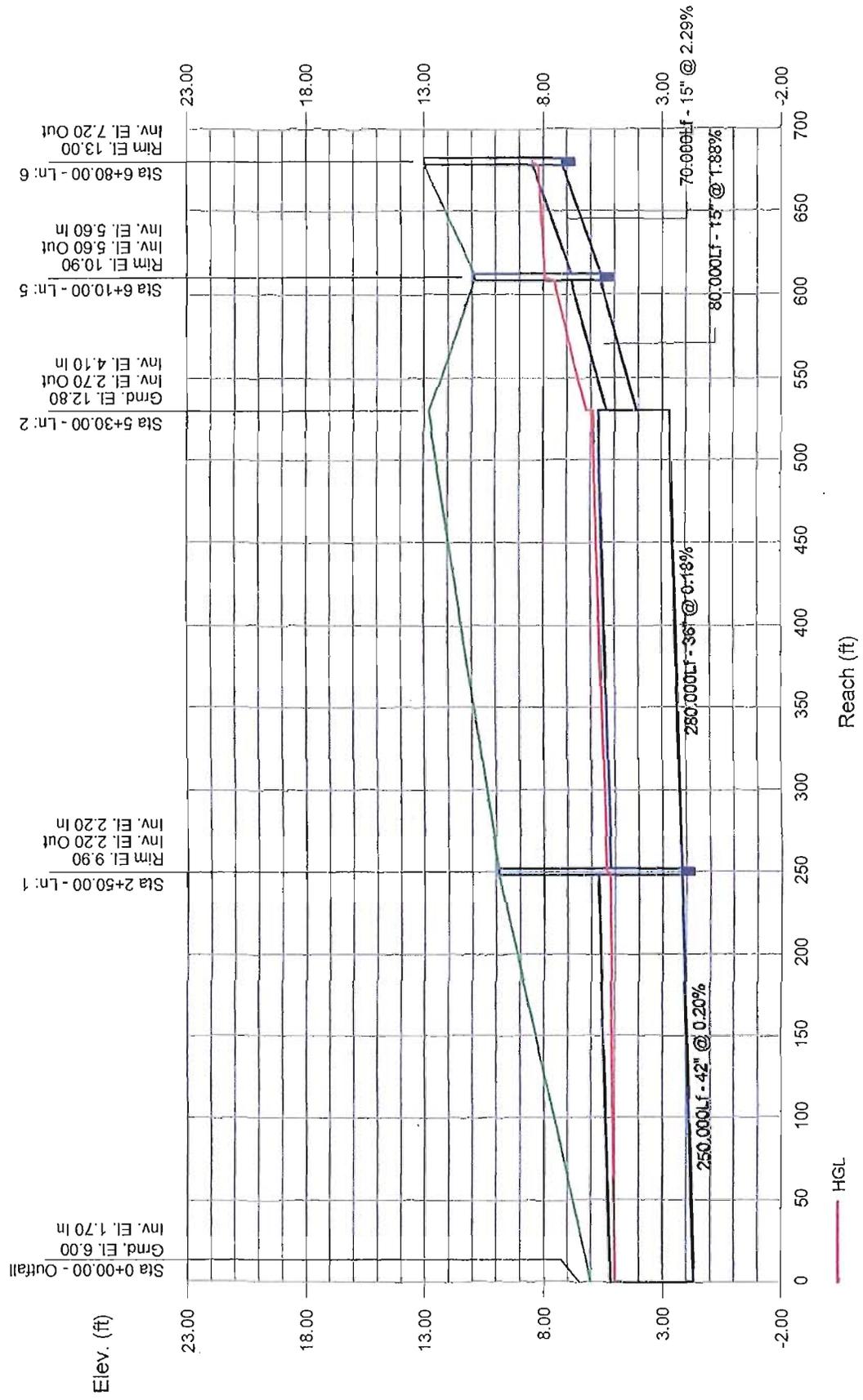
Number of lines: 11

Run Date: 07-01-2010

NOTES: Intensity = 9.01 / (Inlet time + 0.50) ^ 0.49; Return period = 100 Yrs. ; c = cir e = ellip b = box

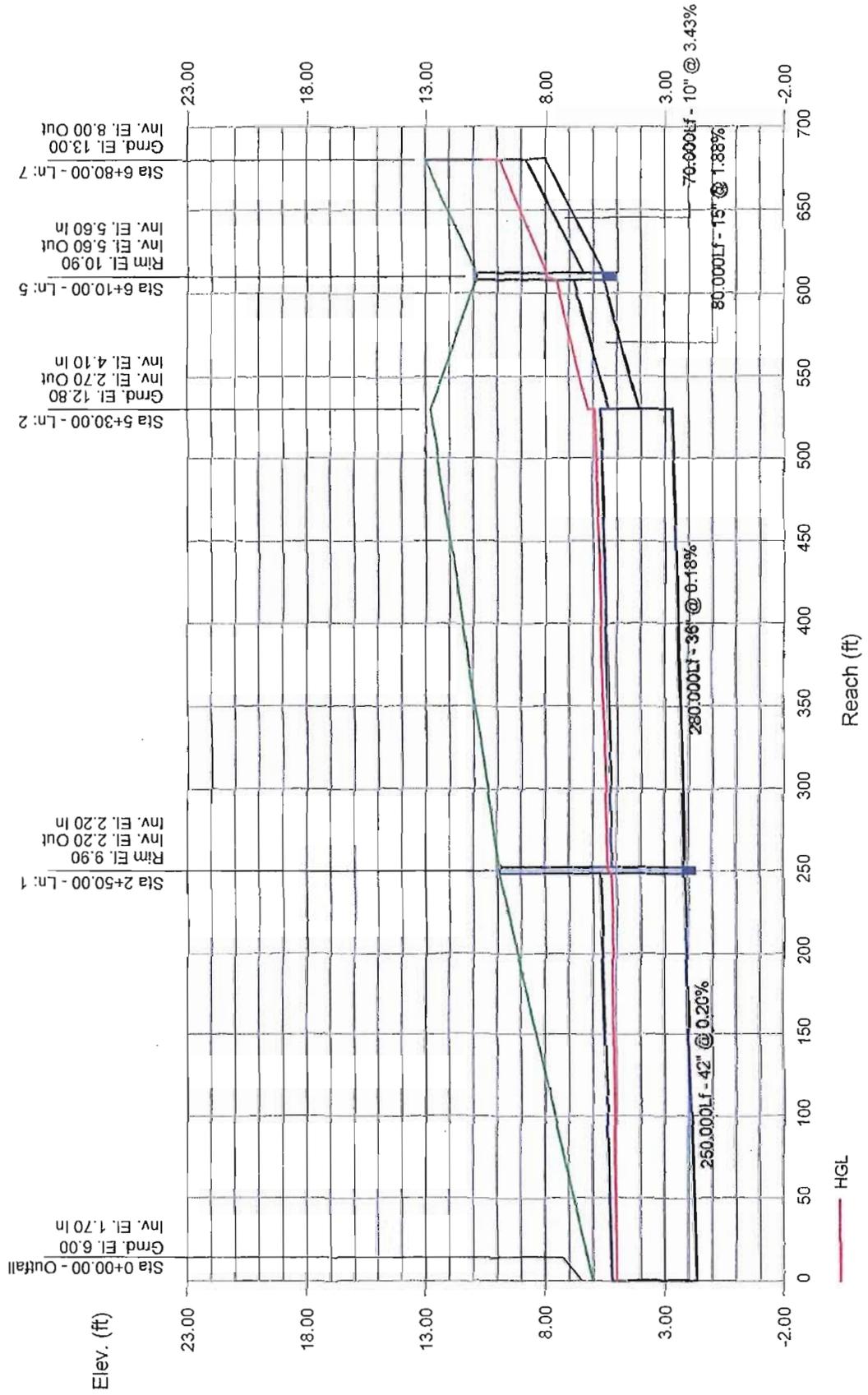
Storm Sewer Profile

Proj. file: PointH3 2003.stm



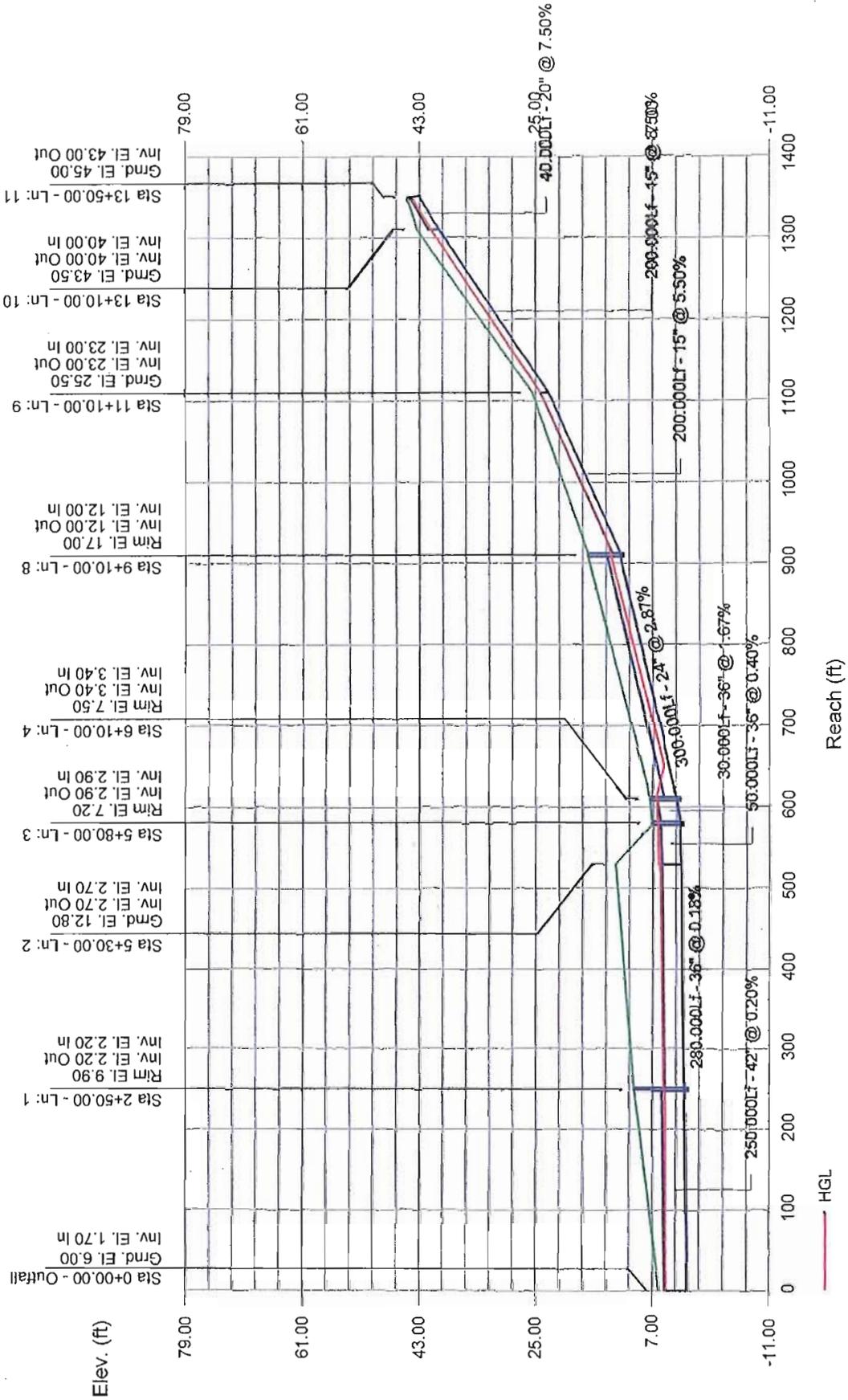
Storm Sewer Profile

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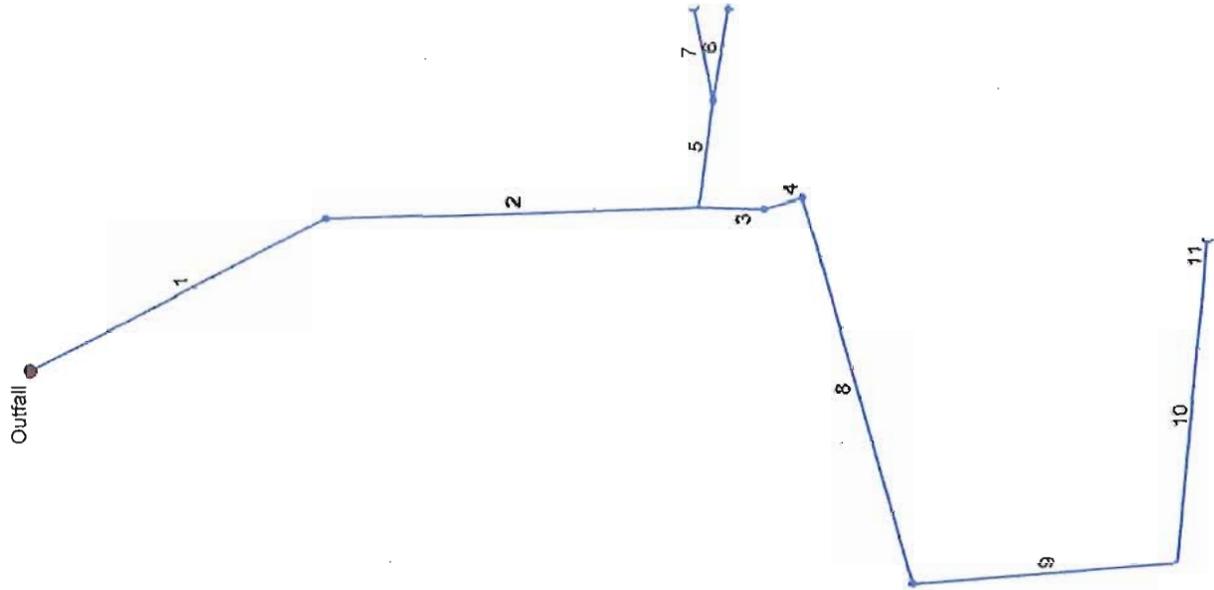


Storm Sewer Profile

Proj. file: PointH3 2003.stm



Marin Sanitary Service



Project File: PointH3.stm

Number of lines: 11

Date: 06-22-2010

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data							Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert EI Dn (ft)	Line slope (%)	Invert EI Up (ft)	Line size (in)	Line shape	N value (n)	J-loss coeff (K)	
1	End	250.000	62.955	DrGrt	0.00	3.23	0.63	10.0	1.70	0.20	2.20	42	Cir	0.013	0.73	9.90
2	1	280.000	25.320	None	0.00	0.00	0.00	0.0	2.20	0.18	2.70	36	Cir	0.013	0.99	12.80
3	2	50.000	3.457	DrGrt	0.00	4.30	0.75	15.0	2.70	0.40	2.90	36	Cir	0.013	0.53	7.20
4	3	30.000	-17.533	DrGrt	0.00	2.32	0.88	15.0	2.90	1.67	3.40	36	Cir	0.013	1.50	7.50
5	2	80.000	-80.000	DrGrt	0.00	0.50	0.90	10.0	4.10	1.88	5.60	15	Cir	0.013	0.59	10.90
6	5	70.000	1.600	DrGrt	0.00	2.55	0.73	15.0	5.60	2.29	7.20	15	Cir	0.013	1.00	13.00
7	5	70.000	-20.000	Hdwl	0.00	1.50	0.85	10.0	5.60	3.43	8.00	10	Cir	0.013	1.00	13.00
8	4	300.000	90.000	MH	0.00	2.90	0.46	15.0	3.40	2.87	12.00	24	Cir	0.013	0.98	17.00
9	8	200.000	-78.710	None	0.00	0.00	0.00	0.0	12.00	5.50	23.00	15	Cir	0.013	0.99	25.50
10	9	200.000	-80.000	None	0.00	0.00	0.00	0.0	23.00	8.50	40.00	15	Cir	0.013	0.15	43.50
11	10	40.000	-1.163	Hdwl	0.00	13.47	0.55	25.0	40.00	7.50	43.00	20	Cir	0.013	1.00	45.00

Marin Sanitary Service

Number of lines: 11

Date: 06-22-2010

Storm Sewer Tabulation

Station Line	To Line	Len (ft)	Drng Area (ac)		Rnoff coeff (C)	Area x C		Tc (min)		Rain (l) (in/hr)	Total flow (cfs)	Cap fu,l (cfs)	Vel (ft/s)	Pipe		Invert Elev (ft)		HGL Elev (ft)		Grnd / Rirm Elev (ft)		Line ID
			Incr	Total		Incr	Total	Inlet	Syst					Size (in)	Slope (%)	Dn	Up	Dn	Up	Dn	Up	
1	End	250.000	3.23	30.77	0.63	2.03	19.63	10.0	28.0	1.7	34.08	44.99	3.74	42	0.20	1.70	2.20	5.00	5.23	6.00	9.90	
2	1	280.000	0.00	27.54	0.00	0.00	17.60	0.0	27.0	1.8	31.12	28.18	4.40	36	0.18	2.20	2.70	5.40	6.01	9.90	12.80	
3	2	50.000	4.30	22.99	0.75	3.23	14.01	15.0	26.7	1.8	24.88	42.18	3.52	36	0.40	2.70	2.90	6.31	6.38	12.80	7.20	
4	3	30.000	2.32	18.69	0.88	2.04	10.78	15.0	26.5	1.8	19.22	86.10	2.72	36	1.67	2.90	3.40	6.48	6.50	7.20	7.50	
5	2	80.000	0.50	4.55	0.90	0.45	3.59	10.0	15.3	2.3	8.32	8.84	6.78	15	1.88	4.10	5.60	6.31	7.64	12.80	10.90	
6	5	70.000	2.55	2.55	0.73	1.86	1.86	15.0	15.0	2.3	4.36	9.76	3.64	15	2.29	5.60	7.20	8.06	8.34	10.90	13.00	
7	5	70.000	1.50	1.50	0.85	1.28	1.28	10.0	10.0	2.8	3.62	4.05	6.63	10	3.43	5.60	8.00	8.06	9.97	10.90	13.00	
8	4	300.000	2.90	16.37	0.46	1.33	8.74	15.0	25.7	1.8	15.83	38.29	5.87	24	2.87	3.40	12.00	6.68	13.41	7.50	17.00	
9	8	200.000	0.00	13.47	0.00	0.00	7.41	0.0	25.4	1.8	13.49	15.14	11.01	15	5.50	12.00	23.00	13.41	24.23	17.00	25.50	
10	9	200.000	0.00	13.47	0.00	0.00	7.41	0.0	25.1	1.8	13.57	18.83	11.09	15	8.50	23.00	40.00	24.23	41.23	25.50	43.50	
11	10	40.000	13.47	13.47	0.55	7.41	7.41	25.0	25.0	1.8	13.59	38.09	7.48	20	7.50	40.00	43.00	41.23	44.37	43.50	45.00	

Marin Sanitary Service

CONDITION b

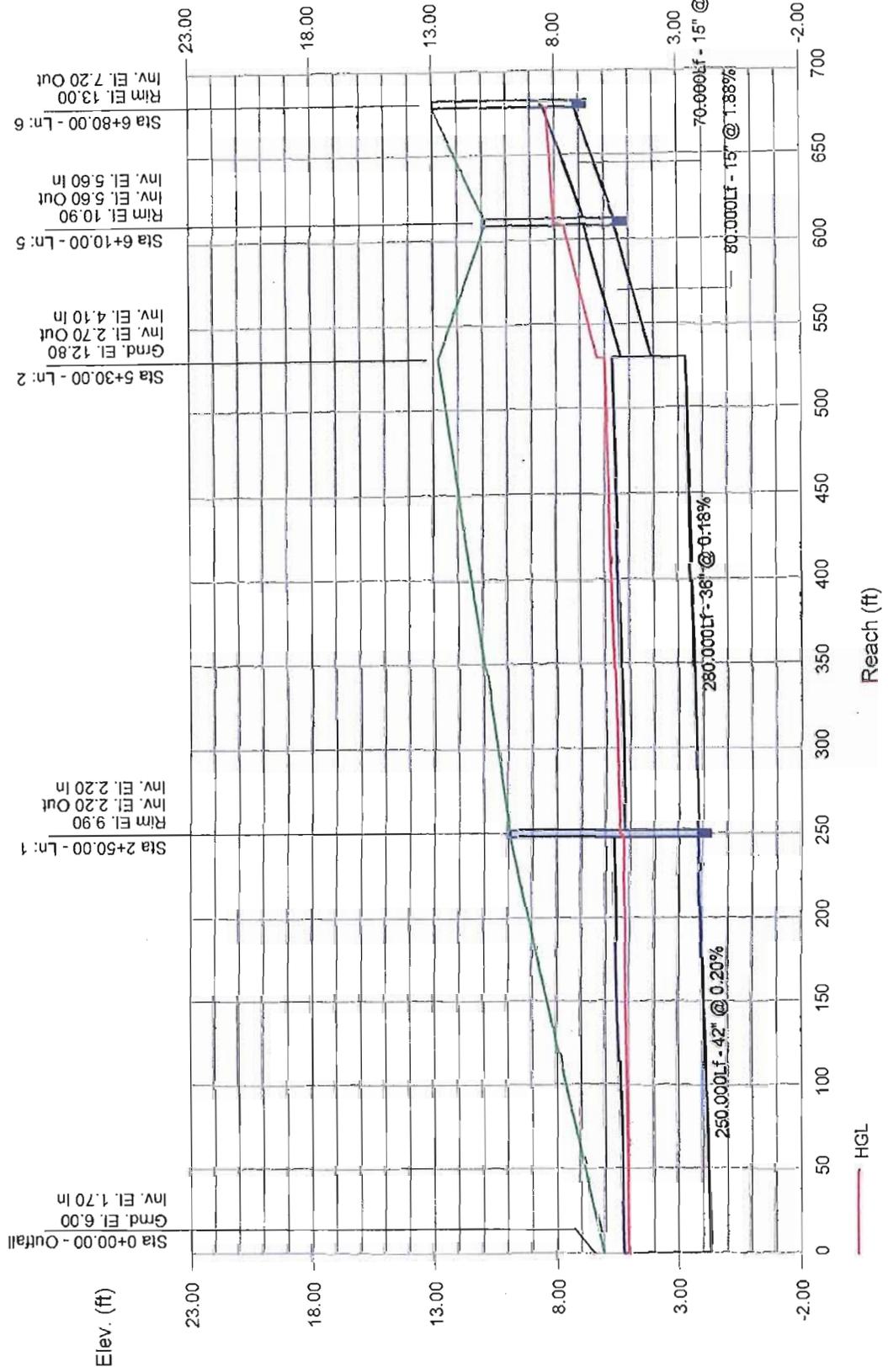
Number of lines: 11

Run Date: 06-22-2010

NOTES: Intensity = 9.01 / (Inlet time + 0.50) ^ 0.49; Return period = 100 Yrs. ; c = cir e = ellip b = box

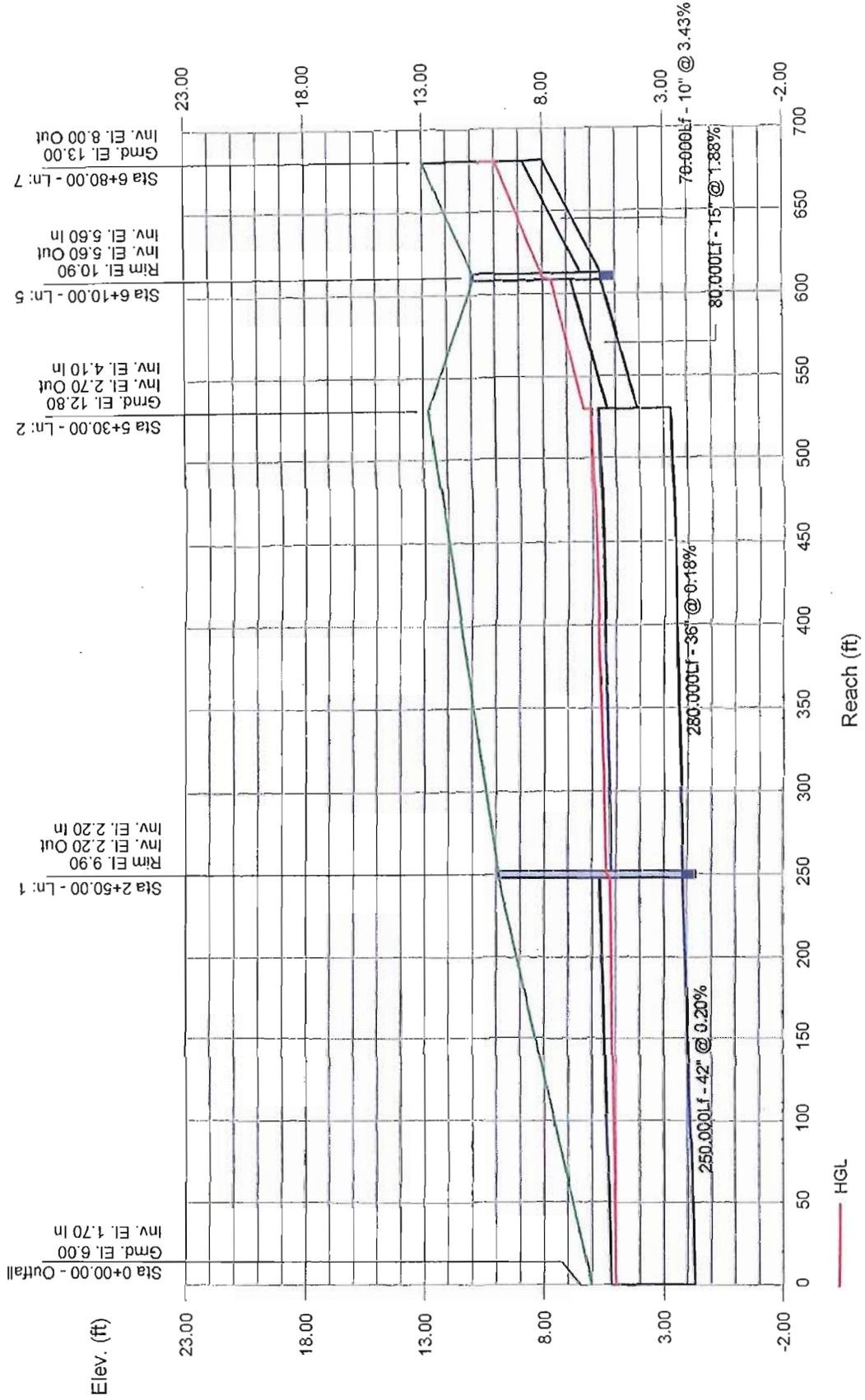
Storm Sewer Profile

Proj. file: PointH3.stm



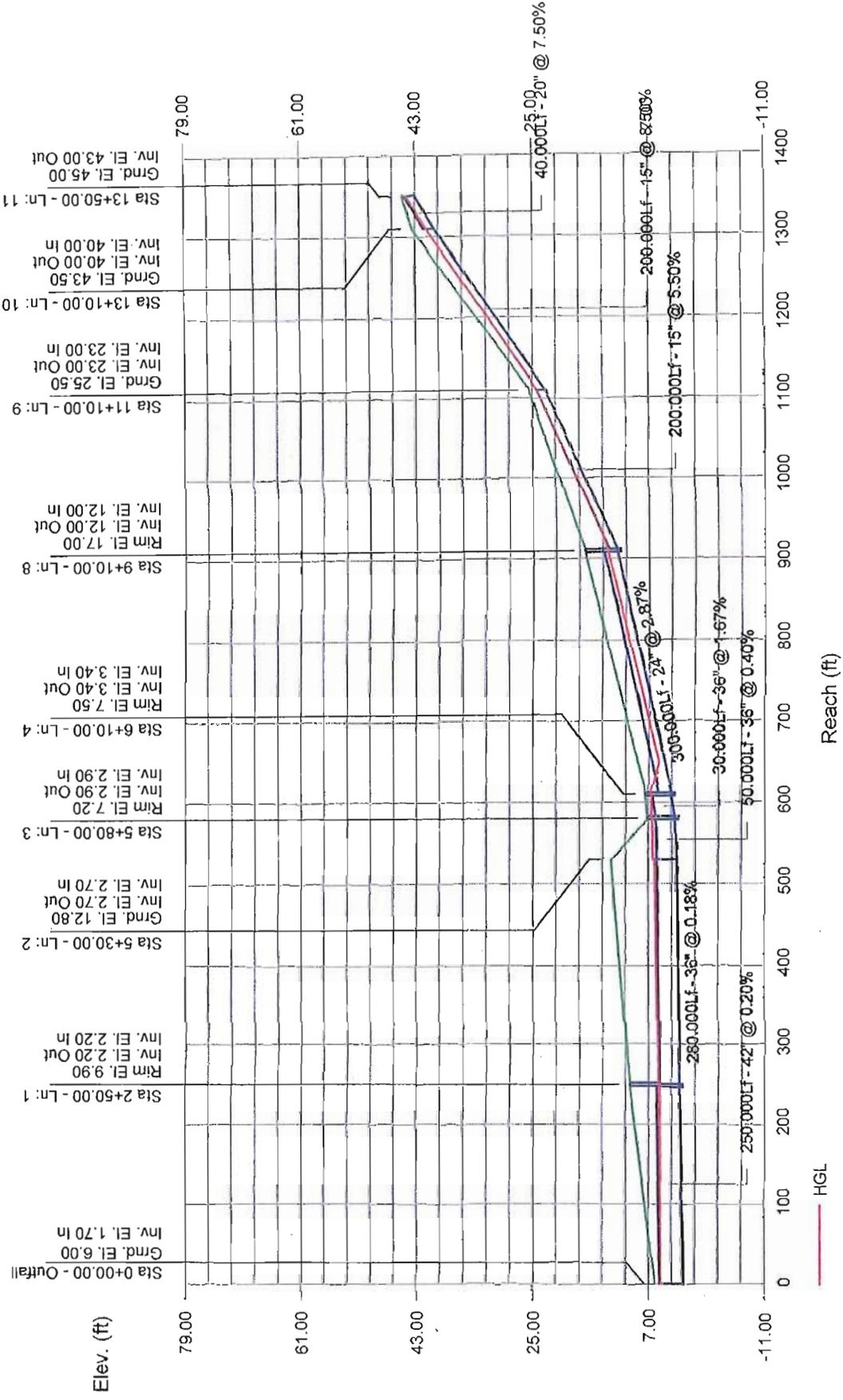
Storm Sewer Profile

Proj. file: PointH3.stm

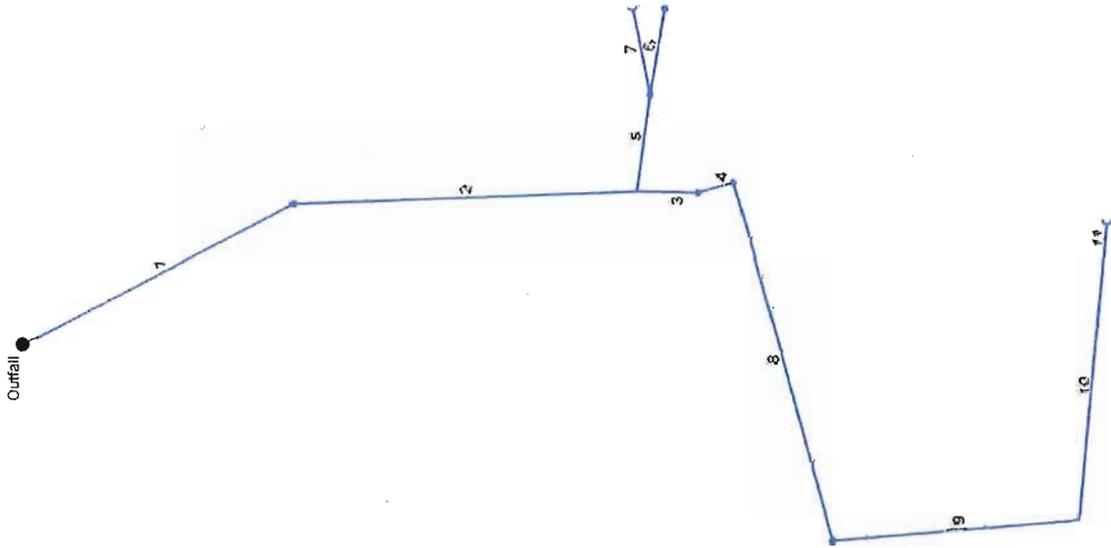


Storm Sewer Profile

Proj. file: PointH3.stm



Marin Sanitary Service



Project File: PointH3before 2003.stm

ADDITION 6)

Number of lines: 11

Date: 07-01-2010

Storm Sewer Inventory Report

Line No.	Alignment			Flow Data				Physical Data						Line ID		
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Dmg area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line shape		N value (n)	J-loss coeff (K)
1	End	250.000	62.955	DrGrt	0.00	3.23	0.63	10.0	1.70	0.20	2.20	42	Cir	0.013	0.73	9.90
2	1	280.000	25.320	None	0.00	0.00	0.00	0.0	2.20	0.18	2.70	36	Cir	0.013	0.99	12.80
3	2	50.000	3.457	DrGrt	0.00	4.30	0.60	15.0	2.70	0.40	2.90	36	Cir	0.013	0.53	7.20
4	3	30.000	-17.533	DrGrt	0.00	2.32	0.88	15.0	2.90	1.67	3.40	36	Cir	0.013	1.50	7.50
5	2	80.000	-80.000	DrGrt	0.00	0.50	0.90	10.0	4.10	1.88	5.60	15	Cir	0.013	0.59	10.90
6	5	70.000	1.600	DrGrt	0.00	2.55	0.55	15.0	5.60	2.29	7.20	15	Cir	0.013	1.00	13.00
7	5	70.000	-20.000	Hdwl	0.00	1.50	0.85	10.0	5.60	3.43	8.00	10	Cir	0.013	1.00	13.00
8	4	300.000	90.000	MH	0.00	2.90	0.46	15.0	3.40	2.87	12.00	24	Cir	0.013	0.98	17.00
9	8	200.000	-78.710	None	0.00	0.00	0.00	0.0	12.00	5.50	23.00	15	Cir	0.013	0.99	25.50
10	9	200.000	-80.000	None	0.00	0.00	0.00	0.0	23.00	8.50	40.00	15	Cir	0.013	0.15	43.50
11	10	40.000	-1.163	Hdwl	0.00	13.47	0.40	25.0	40.00	7.50	43.00	20	Cir	0.013	1.00	45.00

Marin Sanitary Service

Number of lines: 11

Date: 07-01-2010

Storm Sewer Tabulation

Station Line	To Line	Len (ft)	Drng Area (ac)		Rnoff coeff (C)	Area x C		Tc (min)		Rain (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev (ft)		HGL Elev (ft)		Grnd / Rim Elev (ft)		Line ID
			Incr	Total		Incr	Total	Inlet	Syst					Size (in)	Slope (%)	Dn	Up	Dn	Up	Dn	Up	
1	End	250.000	3.23	30.77	0.63	2.03	16.51	10.0	28.8	1.7	28.30	44.99	3.14	42	0.20	1.70	2.20	5.00	5.16	6.00	9.90	
2	1	280.000	0.00	27.54	0.00	0.00	14.47	0.0	27.5	1.8	25.37	28.18	3.59	36	0.18	2.20	2.70	5.28	5.67	9.90	12.80	
3	2	50.000	4.30	22.99	0.60	2.58	11.34	15.0	27.2	1.8	19.99	42.18	2.83	36	0.40	2.70	2.90	5.86	5.90	12.80	7.20	
4	3	30.000	2.32	18.69	0.88	2.04	8.76	15.0	26.9	1.8	15.51	86.10	2.30	36	1.67	2.90	3.40	5.97	5.97	7.20	7.50	
5	2	80.000	0.50	4.55	0.90	0.45	3.13	10.0	15.3	2.3	7.25	8.84	5.97	15	1.88	4.10	5.60	5.86	6.78	12.80	10.90	
6	5	70.000	2.55	2.55	0.55	1.40	1.40	15.0	15.0	2.3	3.29	9.76	3.56	15	2.29	5.60	7.20	7.12	7.93	10.90	13.00	
7	5	70.000	1.50	1.50	0.85	1.28	1.28	10.0	10.0	2.8	3.62	4.05	6.63	10	3.43	5.60	8.00	7.12	9.03	10.90	13.00	
8	4	300.000	2.90	16.37	0.46	1.33	6.72	15.0	25.9	1.8	12.12	38.29	4.91	24	2.87	3.40	12.00	6.10	13.23	7.50	17.00	
9	8	200.000	0.00	13.47	0.00	0.00	5.39	0.0	25.5	1.8	9.79	15.14	8.08	15	5.50	12.00	23.00	13.23	24.18	17.00	25.50	
10	9	200.000	0.00	13.47	0.00	0.00	5.39	0.0	25.1	1.8	9.86	18.83	8.21	15	8.50	23.00	40.00	24.18	41.18	25.50	43.50	
11	10	40.000	13.47	13.47	0.40	5.39	5.39	25.0	25.0	1.8	9.88	38.09	6.01	20	7.50	40.00	43.00	41.18	44.17	43.50	45.00	

Marin Sanitary Service

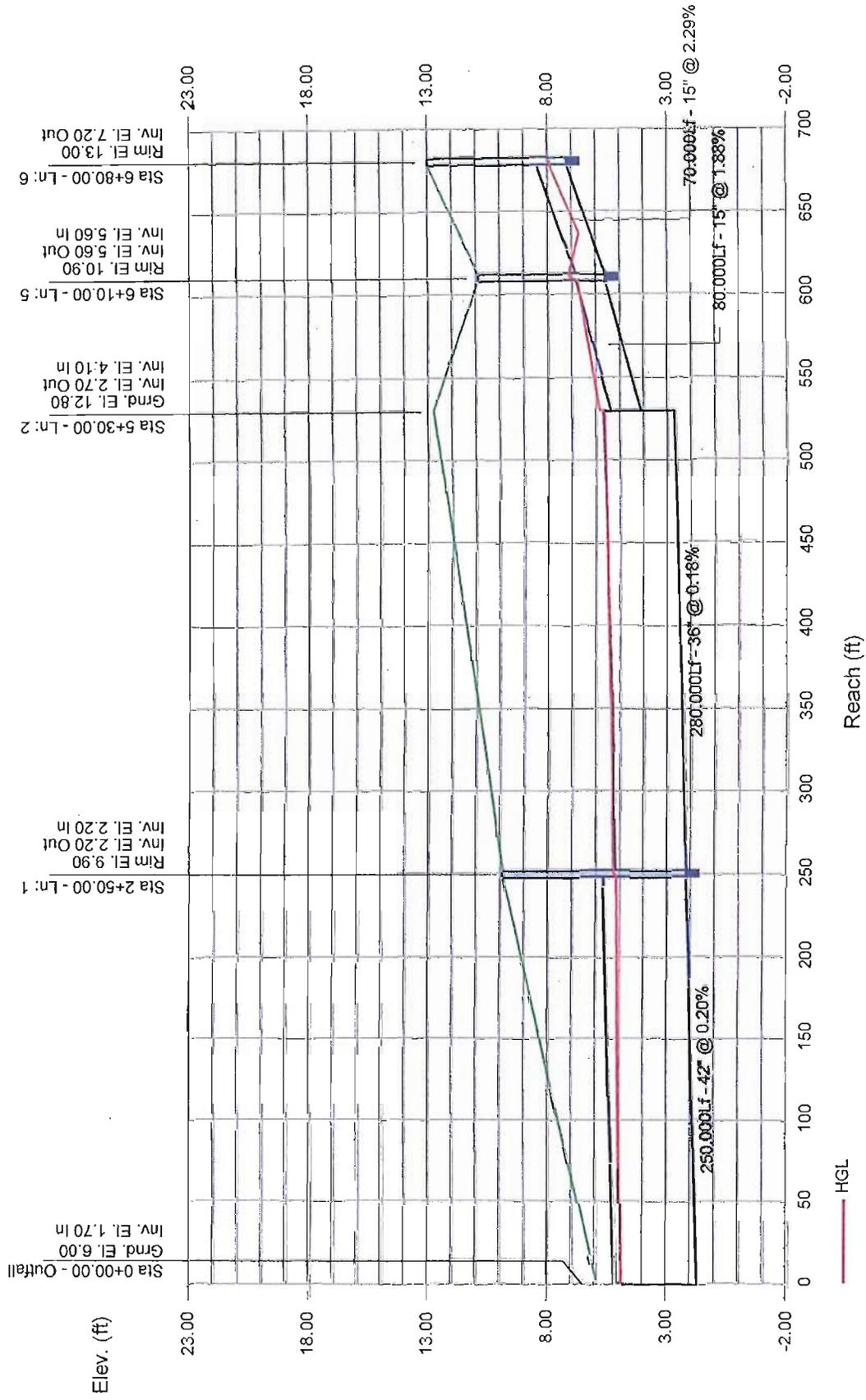
Number of lines: 11

Run Date: 07-01-2010

NOTES: Intensity = 9.01 / (inlet time + 0.50) ^ 0.49; Return period = 100 Yrs. ; c = cir e = ell; p b = box

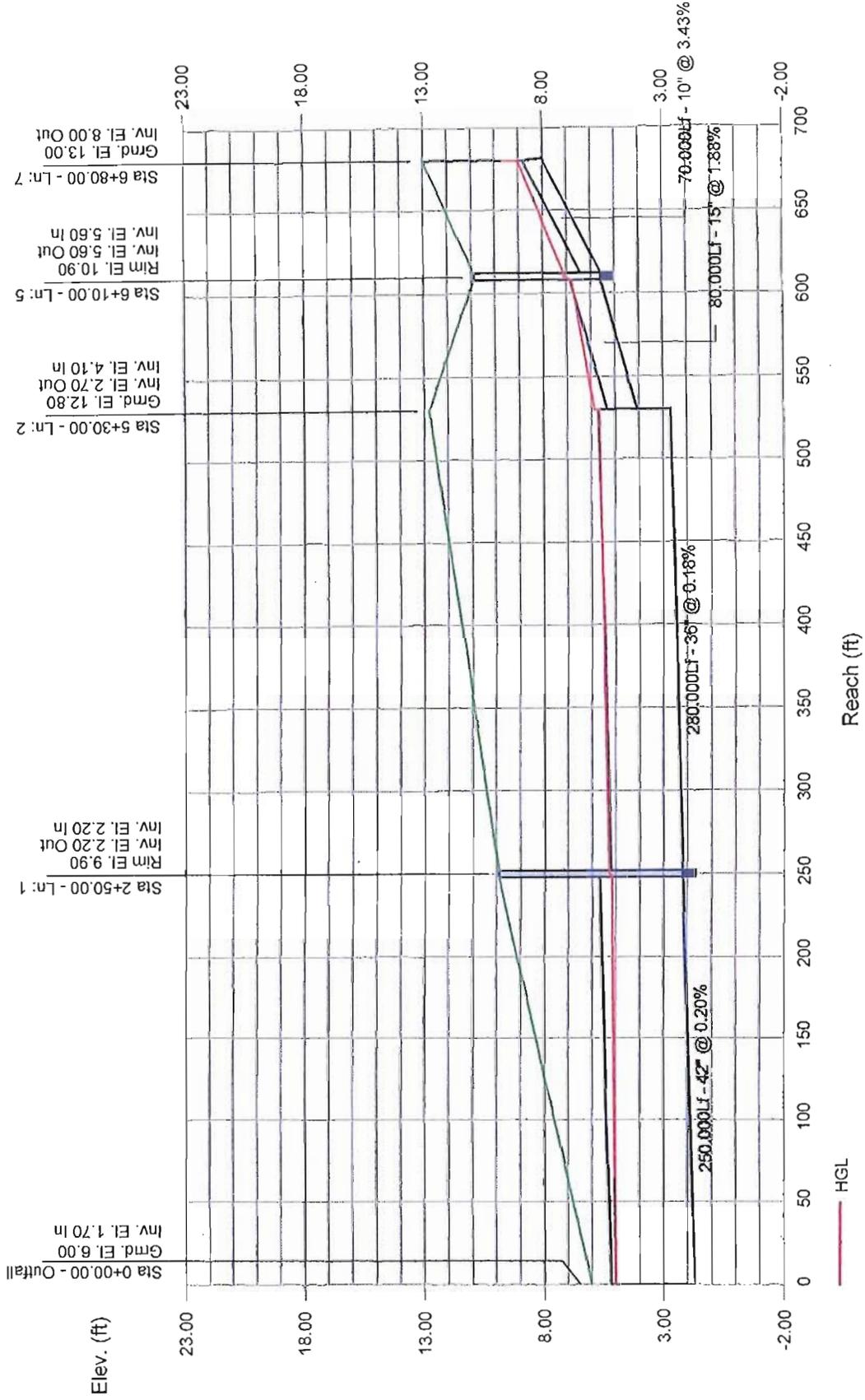
Storm Sewer Profile

Proj. file: PointH3before 2003.stm



Storm Sewer Profile

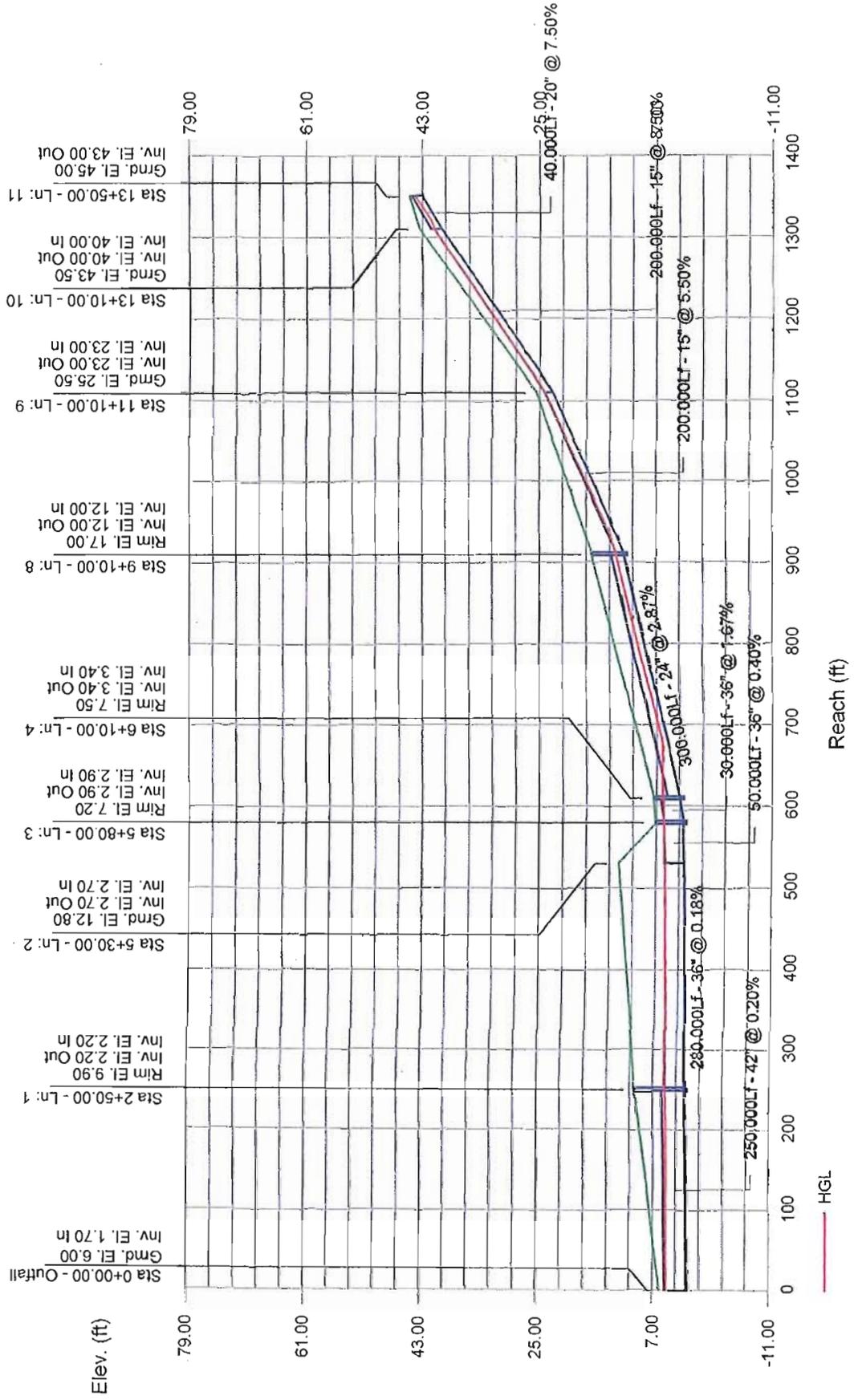
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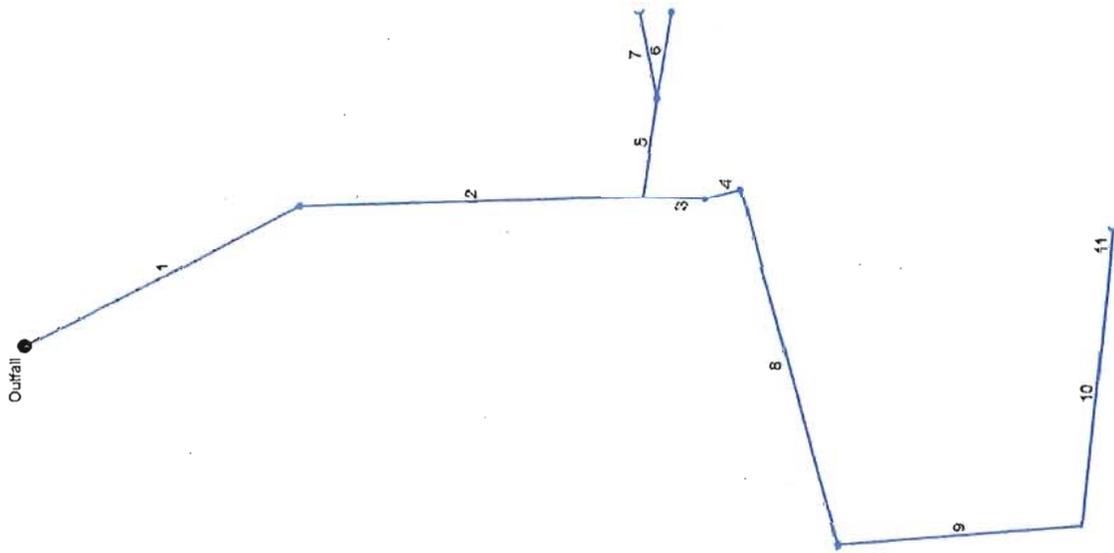
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Storm Sewer Profile

Proj. file: PointH3before 2003.stm



Marin Sanitary Service



Project File: PointH3before.stm

COMPLETION

Number of lines: 11

Date: 06-30-2010

Storm Sewer Inventory Report

Line No.	Alignment			Flow Data				Physical Data						Line ID		
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Dmg area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line shape		N value (n)	J-loss coeff (K)
1	End	250.000	62.955	DrGrt	0.00	3.23	0.63	10.0	1.70	0.20	2.20	42	Cir	0.013	0.73	9.90
2	1	280.000	25.320	None	0.00	0.00	0.00	0.0	2.20	0.18	2.70	36	Cir	0.013	0.99	12.80
3	2	50.000	3.457	DrGrt	0.00	4.30	0.75	15.0	2.70	0.40	2.90	36	Cir	0.013	0.53	7.20
4	3	30.000	-17.533	DrGrt	0.00	2.32	0.88	15.0	2.90	1.67	3.40	36	Cir	0.013	1.50	7.50
5	2	80.000	-80.000	DrGrt	0.00	0.50	0.90	10.0	4.10	1.88	5.60	15	Cir	0.013	0.59	10.90
6	5	70.000	1.600	DrGrt	0.00	2.55	0.55	15.0	5.60	2.29	7.20	15	Cir	0.013	1.00	13.00
7	5	70.000	-20.000	Hdwl	0.00	1.50	0.85	10.0	5.60	3.43	8.00	10	Cir	0.013	1.00	13.00
8	4	300.000	90.000	MH	0.00	2.90	0.46	15.0	3.40	2.87	12.00	24	Cir	0.013	0.98	17.00
9	8	200.000	-78.710	None	0.00	0.00	0.00	0.0	12.00	5.50	23.00	15	Cir	0.013	0.99	25.50
10	9	200.000	-80.000	None	0.00	0.00	0.00	0.0	23.00	8.50	40.00	15	Cir	0.013	0.15	43.50
11	10	40.000	-1.163	Hdwl	0.00	13.47	0.40	25.0	40.00	7.50	43.00	20	Cir	0.013	1.00	45.00

Marin Sanitary Service

Number of lines: 11

Date: 06-30-2010

Storm Sewer Tabulation

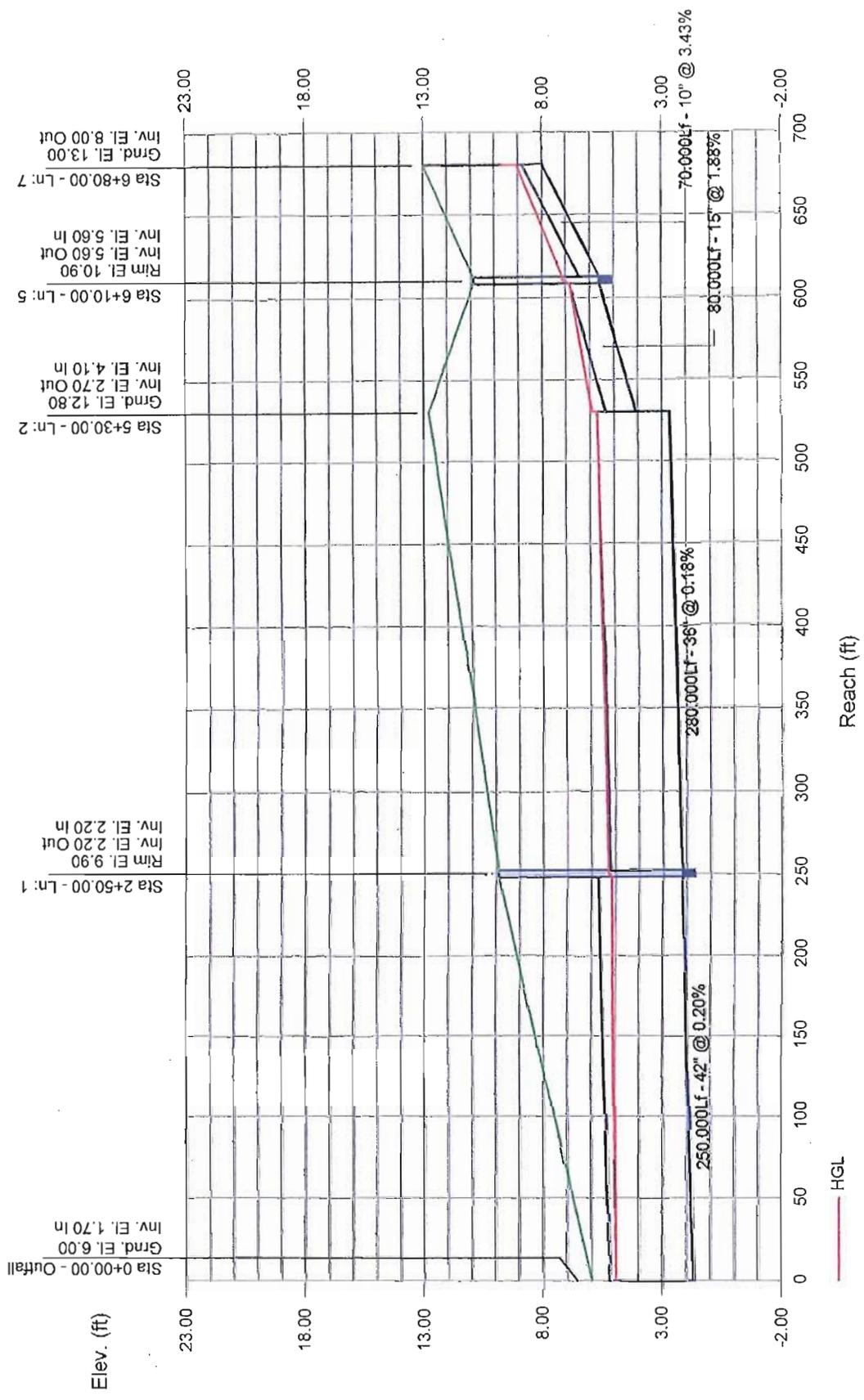
Station Line	Len (ft)	Drng Area (ac)		Rnoff coeff (C)	Area x C		Tc (min)		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev (ft)		HGL Elev (ft)		Grnd / Rim Elev (ft)		Line ID
		Incr	Total		Inlet	Syst	Size (in)	Slope (%)					Dn	Up	Dn	Up	Dn	Up			
1	End	250.000	3.23	30.77	0.63	17.15	10.0	28.7	1.7	29.44	44.99	3.26	42	0.20	1.70	2.20	5.00	5.17	6.00	9.90	
2	1	280.000	0.00	27.54	0.00	15.12	0.0	27.4	1.8	26.51	28.18	3.75	36	0.18	2.20	2.70	5.30	5.70	9.90	12.80	
3	2	50.000	4.30	22.99	0.75	11.99	15.0	27.2	1.8	21.13	42.18	2.99	36	0.40	2.70	2.90	5.91	5.96	12.80	7.20	
4	3	30.000	2.32	18.69	0.88	8.76	15.0	26.9	1.8	15.51	86.10	2.27	36	1.67	2.90	3.40	6.04	6.04	7.20	7.50	
5	2	80.000	0.50	4.55	0.90	3.13	10.0	15.3	2.3	7.25	8.84	5.93	15	1.88	4.10	5.60	5.91	6.82	12.80	10.90	
6	5	70.000	2.55	2.55	0.55	1.40	15.0	15.0	2.3	3.29	9.76	3.56	15	2.29	5.60	7.20	7.15	7.93	10.90	13.00	
7	5	70.000	1.50	1.50	0.85	1.28	10.0	10.0	2.8	3.62	4.05	6.63	10	3.43	5.60	8.00	7.15	9.06	10.90	13.00	
8	4	300.000	2.90	16.37	0.46	6.72	15.0	25.9	1.8	12.12	38.29	4.91	24	2.87	3.40	12.00	6.17	13.23	7.50	17.00	
9	8	200.000	0.00	13.47	0.00	5.39	0.0	25.5	1.8	9.79	15.14	8.08	15	5.50	12.00	23.00	13.23	24.18	17.00	25.50	
10	9	200.000	0.00	13.47	0.00	5.39	0.0	25.1	1.8	9.86	18.83	8.21	15	8.50	23.00	40.00	24.18	41.18	25.50	43.50	
11	10	40.000	13.47	13.47	0.40	5.39	25.0	25.0	1.8	9.88	38.09	6.01	20	7.50	40.00	43.00	41.18	44.17	43.50	45.00	

Marin Sanitary Service Number of lines: 11 Run Date: 06-30-2010

NOTES: Intensity = 9.01 / (Inlet time + 0.50) ^ 0.49; Return period = 100 Yrs. ; c = cir e = ellip b = box

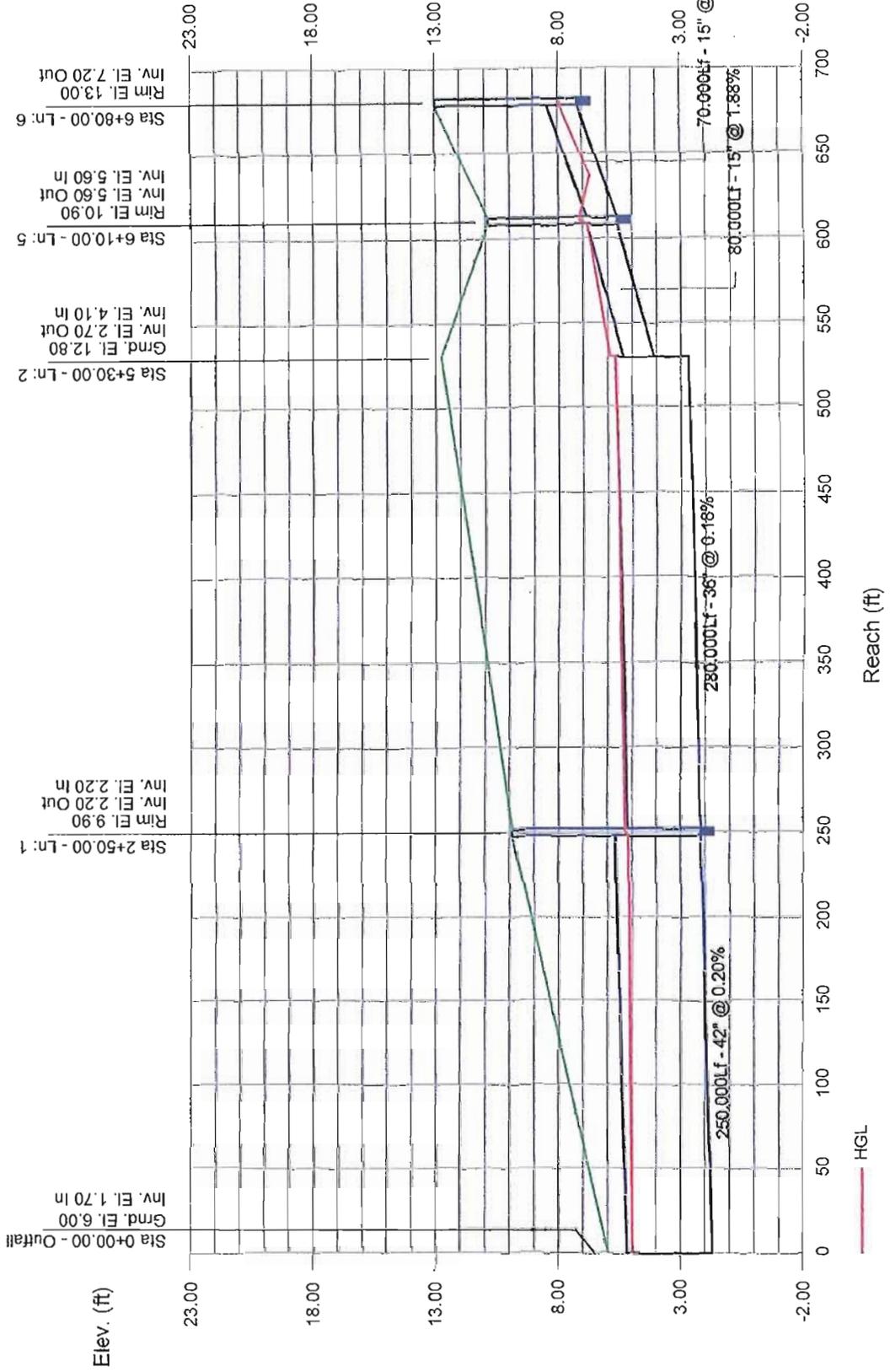
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Storm Sewer Profile



Storm Sewer Profile

Proj. file: Pointh3before.stm



Storm Sewer Profile

Proj. file: PointH3before.stm

