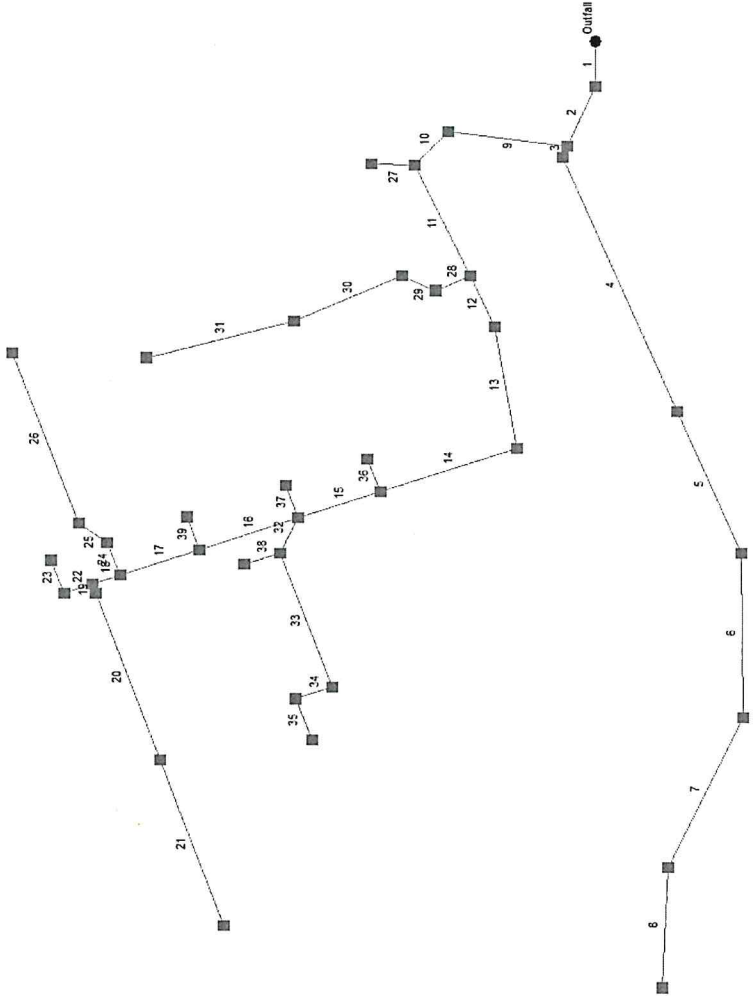


Hydraflow Plan View



Project File: 22120 - Storm - Canera Drive West.stm

No. Lines: 39

11-01-2022

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 El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	
1	End	35.0	180.0	Curb	1.16	0.00	0.00	0.0	311.10	1.49	311.62	48	Cir	0.013	0.66	321.30
2	1	51.0	22.5	Curb	0.00	0.00	0.00	0.0	311.62	0.75	312.00	48	Cir	0.013	1.46	322.25
3	2	9.0	0.0	Curb	5.91	0.00	0.00	0.0	316.20	3.33	316.50	24	Cir	0.013	1.13	322.50
4	3	214.0	-45.0	Curb	8.20	0.00	0.00	0.0	316.50	2.34	321.51	24	Cir	0.013	0.50	330.50
5	4	120.0	0.0	Curb	1.80	0.00	0.00	0.0	321.51	1.24	323.00	24	Cir	0.013	0.64	336.00
6	5	128.0	22.0	Curb	6.50	0.00	0.00	0.0	323.00	1.76	325.25	24	Cir	0.013	0.72	329.00
7	6	128.0	25.0	Curb	2.10	0.00	0.00	0.0	325.25	5.66	333.00	18	Cir	0.013	0.64	343.70
8	7	94.0	-22.0	Curb	6.10	0.00	0.00	0.0	339.90	0.53	340.40	18	Cir	0.013	1.00	343.70
9	2	85.0	75.0	Curb	0.32	0.00	0.00	0.0	312.00	2.86	314.43	48	Cir	0.013	1.27	325.85
10	9	35.0	-55.0	Curb	0.32	0.00	0.00	0.0	315.43	2.86	316.43	36	Cir	0.013	1.78	327.90
11	10	95.0	-67.0	Curb	0.32	0.00	0.00	0.0	316.43	3.08	319.36	36	Cir	0.013	1.50	328.60
12	11	43.0	0.0	Grate	0.72	0.00	0.00	0.0	319.36	1.33	319.93	36	Cir	0.013	0.50	328.95
13	12	96.0	15.0	Curb	2.36	0.00	0.00	0.0	319.93	1.41	321.28	36	Cir	0.013	1.48	329.00
14	13	103.0	80.0	Curb	1.48	0.00	0.00	0.0	321.28	1.02	322.33	36	Cir	0.013	1.50	330.15
15	14	62.0	0.0	Curb	0.20	0.00	0.00	0.0	322.33	1.00	322.95	36	Cir	0.013	1.50	330.65
16	15	74.0	0.0	Curb	0.20	0.00	0.00	0.0	322.95	0.68	323.45	36	Cir	0.013	1.50	331.20
17	16	60.0	0.0	Curb	5.70	0.00	0.00	0.0	326.85	1.92	328.00	30	Cir	0.013	1.50	332.45
18	17	21.0	0.0	Curb	0.20	0.00	0.00	0.0	328.50	1.90	328.90	24	Cir	0.013	1.50	333.20
19	18	8.0	-90.0	Curb	10.50	0.00	0.00	0.0	329.40	1.25	329.50	24	Cir	0.013	0.50	333.40
20	19	137.0	0.0	Grate	3.15	0.00	0.00	0.0	329.50	5.00	336.35	18	Cir	0.013	0.50	339.75
21	20	137.0	0.0	Grate	3.15	0.00	0.00	0.0	336.35	5.00	343.20	18	Cir	0.013	1.00	347.00

Project File: 22120 - Storm - Canera Drive West.stm

Number of lines: 39

Date: 11-01-2022

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 El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
22	18	21.0	0.0	Curb	1.65	0.00	0.00	0.0	329.40	1.86	329.79	18	Cir	0.013	1.50	335.20	
23	22	27.0	90.0	Curb	1.14	0.00	0.00	0.0	329.79	1.00	330.06	18	Cir	0.013	1.00	335.20	
24	17	27.0	90.0	Curb	0.21	0.00	0.00	0.0	329.00	1.00	329.27	18	Cir	0.013	0.94	332.45	
25	24	25.0	-35.0	Curb	6.30	0.00	0.00	0.0	329.27	1.84	329.73	18	Cir	0.013	0.94	333.52	
26	25	141.0	35.0	Grate	2.20	0.00	0.00	0.0	329.73	1.50	331.85	18	Cir	0.013	1.00	335.80	
27	10	31.0	49.0	Curb	1.57	0.00	0.00	0.0	323.55	1.00	323.86	18	Cir	0.013	1.00	327.75	
28	11	27.0	90.0	Curb	9.45	0.00	0.00	0.0	323.20	1.00	323.47	24	Cir	0.013	1.20	328.60	
29	28	26.0	50.0	Grate	3.15	0.00	0.00	0.0	323.47	1.00	323.73	24	Cir	0.013	1.20	328.30	
30	29	85.0	-50.0	Grate	3.25	0.00	0.00	0.0	323.73	1.00	324.58	24	Cir	0.013	0.50	330.40	
31	30	108.0	9.0	Grate	2.95	0.00	0.00	0.0	324.58	1.00	325.66	24	Cir	0.013	1.00	333.10	
32	15	30.0	-45.0	Curb	0.21	0.00	0.00	0.0	326.85	1.00	327.15	24	Cir	0.013	1.69	333.35	
33	32	111.0	-45.0	Curb	0.63	0.00	0.00	0.0	327.65	4.82	333.00	18	Cir	0.013	1.50	342.30	
34	33	27.0	90.0	Curb	0.00	0.00	0.00	0.0	338.00	1.00	338.27	18	Cir	0.013	1.50	342.30	
35	34	34.0	-90.0	Curb	2.00	0.00	0.00	0.0	338.27	1.00	338.61	18	Cir	0.013	1.00	344.45	
36	14	27.0	90.0	Curb	0.20	0.00	0.00	0.0	326.70	1.00	326.97	18	Cir	0.013	1.00	330.15	
37	15	27.0	90.0	Curb	0.20	0.00	0.00	0.0	326.85	1.00	327.12	24	Cir	0.013	1.00	330.65	
38	32	27.0	45.0	Curb	0.84	0.00	0.00	0.0	327.15	1.11	327.45	24	Cir	0.013	1.00	333.35	
39	16	27.0	90.0	Curb	0.20	0.00	0.00	0.0	327.85	0.52	327.99	18	Cir	0.013	1.00	331.20	

Project File: 22120 - Storm - Canera Drive West.stm

Number of lines: 39

Date: 11-01-2022

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns line No.
1		96.54	48 c	35.0	311.10	311.62	1.486	314.01	314.53	n/a	314.53	End
2		95.38	48 c	51.0	311.62	312.00	0.745	315.15	315.12	1.87	316.99	1
3		30.61	24 c	9.0	316.20	316.50	3.333	317.49*	319.44*	1.67	321.11	2
4		24.70	24 c	214.0	316.50	321.51	2.341	321.62*	324.18*	0.48	324.66	3
5		16.50	24 c	120.0	321.51	323.00	1.242	325.19*	325.83*	0.27	326.10	4
6		14.70	24 c	128.0	323.00	325.25	1.758	326.19	326.61	n/a	327.08 j	5
7		8.20	18 c	128.0	325.75	333.00	5.664	327.39	334.09	n/a	334.09 j	6
8		6.10	18 c	94.0	339.90	340.40	0.532	340.91	341.41	0.36	341.77	7
9		64.77	48 c	85.0	312.00	314.43	2.859	317.85	317.95	0.60	318.56	2
10		64.45	36 c	35.0	315.43	316.43	2.857	318.56	319.01	n/a	319.01	9
11		62.56	36 c	95.0	316.43	319.36	3.084	319.34	321.88	n/a	321.88	10
12		43.44	36 c	43.0	319.36	319.93	1.326	322.78	322.93	0.29	323.22	11
13		42.72	36 c	96.0	319.93	321.28	1.406	323.24	323.36	n/a	323.36 j	12
14		40.36	36 c	103.0	321.28	322.33	1.019	323.89	324.35	n/a	324.35 j	13
15		38.68	36 c	62.0	322.33	322.95	1.000	324.87	324.93	n/a	324.93 j	14
16		34.60	36 c	74.0	322.95	323.45	0.676	325.51	325.50	1.05	326.55	15
17		34.20	30 c	60.0	326.85	328.00	1.917	328.25	330.50	1.13	331.63	16
18		19.79	24 c	21.0	328.50	328.90	1.905	331.77*	331.93*	0.93	332.85	17
19		16.80	24 c	8.0	329.40	329.50	1.250	333.03*	333.07*	0.22	333.29	18
20		6.30	18 c	137.0	329.50	336.35	5.000	333.54	337.31	n/a	337.31 j	19
21		3.15	18 c	137.0	336.35	343.20	5.000	337.69	343.88	n/a	343.88 j	20
22		2.79	18 c	21.0	329.40	329.79	1.857	333.43*	333.45*	0.06	333.50	18
23		1.14	18 c	27.0	329.79	330.06	1.000	333.54*	333.54*	0.01	333.55	22
24		8.71	18 c	27.0	329.00	329.27	1.000	332.01*	332.19*	0.36	332.55	17
25		8.50	18 c	25.0	329.27	329.73	1.840	332.57*	332.73*	0.34	333.07	24
26		2.20	18 c	141.0	329.73	331.85	1.504	333.40*	333.46*	0.02	333.49	25
27		1.57	18 c	31.0	323.55	323.86	1.000	323.94	324.34	n/a	324.34 j	10
28		18.80	24 c	27.0	323.20	323.47	1.000	324.59	325.09	0.89	325.98	11
29		9.35	24 c	26.0	323.47	323.73	1.000	326.58*	326.62*	0.17	326.79	28
30		6.20	24 c	85.0	323.73	324.58	1.000	326.86*	326.93*	0.03	326.96	29
31		2.95	24 c	108.0	324.58	325.66	1.000	327.01	327.01	0.03	327.04	30
32		3.68	24 c	30.0	326.85	327.15	1.000	327.40	327.83	n/a	328.23 j	15

Project File: 22120 - Storm - Canera Drive West.stm

Number of lines: 39

Run Date: 11-01-2022

NOTES: c = cir; e = ellip; b = box; Return period = 100 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns line No.
33		2.63	18 c	111.0	327.65	333.00	4.820	328.43	333.62	n/a	333.62 j	32
34		2.00	18 c	27.0	338.00	338.27	1.000	338.44	338.81	n/a	339.09 j	33
35		2.00	18 c	34.0	338.27	338.61	1.000	339.26	339.23	0.13	339.36	34
36		0.20	18 c	27.0	326.70	326.97	1.000	326.84	327.14	n/a	327.14 j	14
37		0.20	24 c	27.0	326.85	327.12	1.000	326.98	327.28	n/a	327.28 j	15
38		0.84	24 c	27.0	327.15	327.45	1.111	328.45	328.45	0.00	328.45	32
39		0.20	18 c	27.0	327.85	327.99	0.518	328.02	328.16	0.05	328.21	16

Project File: 22120 - Storm - Canera Drive West.stm

Number of lines: 39

Run Date: 11-01-2022

NOTES: c = cir; e = ellip; b = box; Return period = 100 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream						Len (ft)	Upstream						Check		JL coeff (K)	Minor loss (ft)				
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)		EGL elev (ft)	Sf (%)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)			EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)
1	48	96.54	311.10	314.01	2.91	9.79	9.86	1.51	315.52	0.584	35.0	311.62	314.53	2.91**	9.78	9.87	1.52	316.04	0.586	0.585	n/a	0.66	n/a
2	48	95.38	311.62	315.15	3.53	11.73	8.13	1.03	316.17	0.396	51.0	312.00	315.12	3.12	10.52	9.06	1.28	316.40	0.485	0.441	0.225	1.46	1.87
3	24	30.61	316.20	317.49	1.29*	2.13	14.35	3.20	320.69	3.308	9.0	316.50	319.44	2.00	3.14	9.74	1.48	320.92	1.832	2.570	0.231	1.13	1.67
4	24	24.70	316.50	321.62	2.00	3.14	7.86	0.96	322.59	1.193	214	321.51	324.18	2.00	3.14	7.86	0.96	325.14	1.193	1.193	2.553	0.50	0.48
5	24	16.50	321.51	325.19	2.00	3.14	5.25	0.43	325.62	0.532	120	323.00	325.83	2.00	3.14	5.25	0.43	326.26	0.532	0.532	0.639	0.64	0.27
6	24	14.70	323.00	326.19	2.00	3.14	4.68	0.34	326.53	0.423	128	325.25	326.61 j	1.36**	2.28	6.45	0.65	327.26	0.648	0.535	0.685	0.72	0.47
7	18	8.20	325.75	327.39	1.50	1.77	4.64	0.33	327.72	0.610	128	333.00	334.09 j	1.09**	1.38	5.94	0.55	334.64	0.786	0.698	n/a	0.64	n/a
8	18	6.10	339.90	340.91	1.01*	1.27	4.80	0.36	341.27	0.529	94.0	340.40	341.41	1.01	1.27	4.82	0.36	341.77	0.533	0.531	0.499	1.00	0.36
9	48	64.77	312.00	317.85	4.00	12.56	5.16	0.41	318.26	0.203	85.0	314.43	317.95	3.52	11.72	5.53	0.47	318.43	0.183	0.193	0.164	1.27	0.60
10	36	64.45	315.43	318.56	3.00	6.47	9.12	1.29	319.85	0.934	35.0	316.43	319.01	2.58**	6.47	9.96	1.54	320.55	0.865	0.899	n/a	1.78	n/a
11	36	62.56	316.43	319.34	2.91	7.00	8.93	1.24	320.58	0.773	95.0	319.36	321.88	2.52**	6.34	9.87	1.51	323.39	0.843	0.808	n/a	1.50	n/a
12	36	43.44	319.36	322.78	3.00	7.07	6.15	0.59	323.36	0.424	43.0	319.93	322.93	3.00	7.07	6.15	0.59	323.52	0.420	0.422	0.182	0.50	0.29
13	36	42.72	319.93	323.24	3.00	7.07	6.04	0.57	323.81	0.410	96.0	321.28	323.36 j	2.08**	5.24	8.15	1.03	324.40	0.598	0.504	n/a	1.48	n/a
14	36	40.36	321.28	323.89	2.61	6.53	6.18	0.59	324.48	0.334	103	322.33	324.35 j	2.02**	5.08	7.95	0.98	325.34	0.576	0.455	n/a	1.50	1.47
15	36	38.68	322.33	324.87	2.54	6.39	6.06	0.57	325.44	0.318	62.0	322.95	324.93 j	1.98**	4.96	7.80	0.95	325.88	0.561	0.440	n/a	1.50	n/a
16	36	34.60	322.95	325.51	2.56	6.42	5.39	0.45	325.96	0.252	74.0	323.45	325.50	2.05	5.16	6.71	0.70	326.20	0.408	0.330	0.244	1.50	1.05
17	30	34.20	326.85	328.25	1.40*	2.84	12.04	2.25	330.51	1.892	60.0	328.00	330.50	2.50	4.91	6.97	0.75	331.25	0.676	1.284	0.770	1.50	1.13
18	24	19.79	328.50	331.77	2.00	3.14	6.30	0.62	332.38	0.766	21.0	328.90	331.93	2.00	3.14	6.30	0.62	332.55	0.766	0.766	0.161	1.50	0.93
19	24	16.80	329.40	333.03	2.00	3.14	5.35	0.44	333.47	0.552	8.0	329.50	333.07	2.00	3.14	5.35	0.44	333.51	0.552	0.552	0.044	0.50	0.22
20	18	6.30	329.50	333.54	1.50	1.77	3.57	0.20	333.74	0.360	137	336.35	337.31 j	0.96**	1.19	5.29	0.43	337.74	0.662	0.511	n/a	0.50	0.22
21	18	3.15	336.35	337.69	1.34	1.67	1.89	0.06	337.75	0.080	137	343.20	343.88 j	0.68**	0.77	4.07	0.26	344.13	0.512	0.296	n/a	1.00	n/a

Project File: 22120 - Storm - Canera Drive West.stm

Number of lines: 39

Run Date: 11-01-2022

Notes: * Normal depth assumed.; ** Critical depth.; j-Line contains hyd. jump.

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream						Len (ft)	Upstream						Check		JL coeff (K)	Minor loss (ft)				
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)		EGL elev (ft)	Sf (%)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)			EGL elev (ft)	Sf (%)	Ave Sf (%)	Energy loss (ft)
22	18	2.79	329.40	333.43	1.50	1.77	1.58	0.04	333.47	0.071	21.0	329.79	333.45	1.50	1.77	1.58	0.04	333.49	0.071	0.071	0.015	1.50	0.06
23	18	1.14	329.79	333.54	1.50	1.77	0.65	0.01	333.54	0.012	27.0	330.06	333.54	1.50	1.77	0.65	0.01	333.55	0.012	0.012	0.003	1.00	0.01
24	18	8.71	329.00	332.01	1.50	1.77	4.93	0.38	332.38	0.688	27.0	329.27	332.19	1.50	1.77	4.93	0.38	332.57	0.688	0.688	0.186	0.94	0.36
25	18	8.50	329.27	332.57	1.50	1.77	4.81	0.36	332.93	0.655	25.0	329.73	332.73	1.50	1.77	4.81	0.36	333.09	0.655	0.655	0.164	0.94	0.34
26	18	2.20	329.73	333.40	1.50	1.77	1.25	0.02	333.43	0.044	141	331.85	333.46	1.50	1.77	1.24	0.02	333.49	0.044	0.044	0.062	1.00	0.02
27	18	1.57	323.55	323.94	0.39*	0.37	4.25	0.28	324.22	0.988	31.0	323.86	324.34 j	0.48**	0.49	3.24	0.16	324.50	0.461	0.725	n/a	1.00	n/a
28	24	18.80	323.20	324.59	1.39*	2.34	8.05	1.01	325.60	0.998	27.0	323.47	325.09	1.62	2.73	6.89	0.74	325.83	0.705	0.852	0.230	1.20	0.89
29	24	9.35	323.47	326.58	2.00	3.14	2.98	0.14	326.72	0.171	26.0	323.73	326.62	2.00	3.14	2.98	0.14	326.76	0.171	0.171	0.044	1.20	0.17
30	24	6.20	323.73	326.86	2.00	3.14	1.97	0.06	326.93	0.075	85.0	324.58	326.93	2.00	3.14	1.97	0.06	326.99	0.075	0.075	0.064	0.50	0.03
31	24	2.95	324.58	327.01	2.00	3.14	0.94	0.01	327.02	0.017	108	325.66	327.01	1.35	2.26	1.30	0.03	327.04	0.026	0.022	0.023	1.00	0.03
32	24	3.68	326.85	327.40	0.55*	0.70	5.29	0.43	327.83	0.994	30.0	327.15	327.83 j	0.68**	0.95	3.87	0.23	328.07	0.418	0.706	0.212	1.69	0.39
33	18	2.63	327.65	328.43	0.78	0.92	2.84	0.13	328.55	0.222	111	333.00	333.62 j	0.62**	0.69	3.82	0.23	333.85	0.493	0.358	n/a	1.50	n/a
34	18	2.00	338.00	338.44	0.44*	0.44	4.58	0.33	338.77	1.000	27.0	338.27	338.81 j	0.54**	0.58	3.46	0.19	339.00	0.461	0.730	0.197	1.50	0.28
35	18	2.00	338.27	339.26	0.99	1.24	1.62	0.04	339.30	0.061	34.0	338.61	339.23	0.62	0.68	2.92	0.13	339.36	0.290	0.175	0.060	1.00	0.13
36	18	0.20	326.70	326.84	0.14*	0.09	2.31	0.08	326.93	0.990	27.0	326.97	327.14 j	0.17**	0.11	1.80	0.05	327.19	0.484	0.737	n/a	1.00	n/a
37	24	0.20	326.85	326.98	0.13*	0.09	2.19	0.07	327.06	0.955	27.0	327.12	327.28 j	0.16**	0.12	1.72	0.05	327.32	0.480	0.718	n/a	1.00	n/a
38	24	0.84	327.15	328.45	1.30	2.16	0.39	0.00	328.45	0.002	27.0	327.45	328.45	1.00	1.57	0.54	0.00	328.45	0.006	0.004	0.001	1.00	0.00
39	18	0.20	327.85	328.02	0.17*	0.11	1.82	0.05	328.07	0.503	27.0	327.99	328.16	0.17**	0.11	1.76	0.05	328.21	0.457	0.480	0.130	1.00	0.05

Project File: 22120 - Storm - Canera Drive West.stm

Number of lines: 39

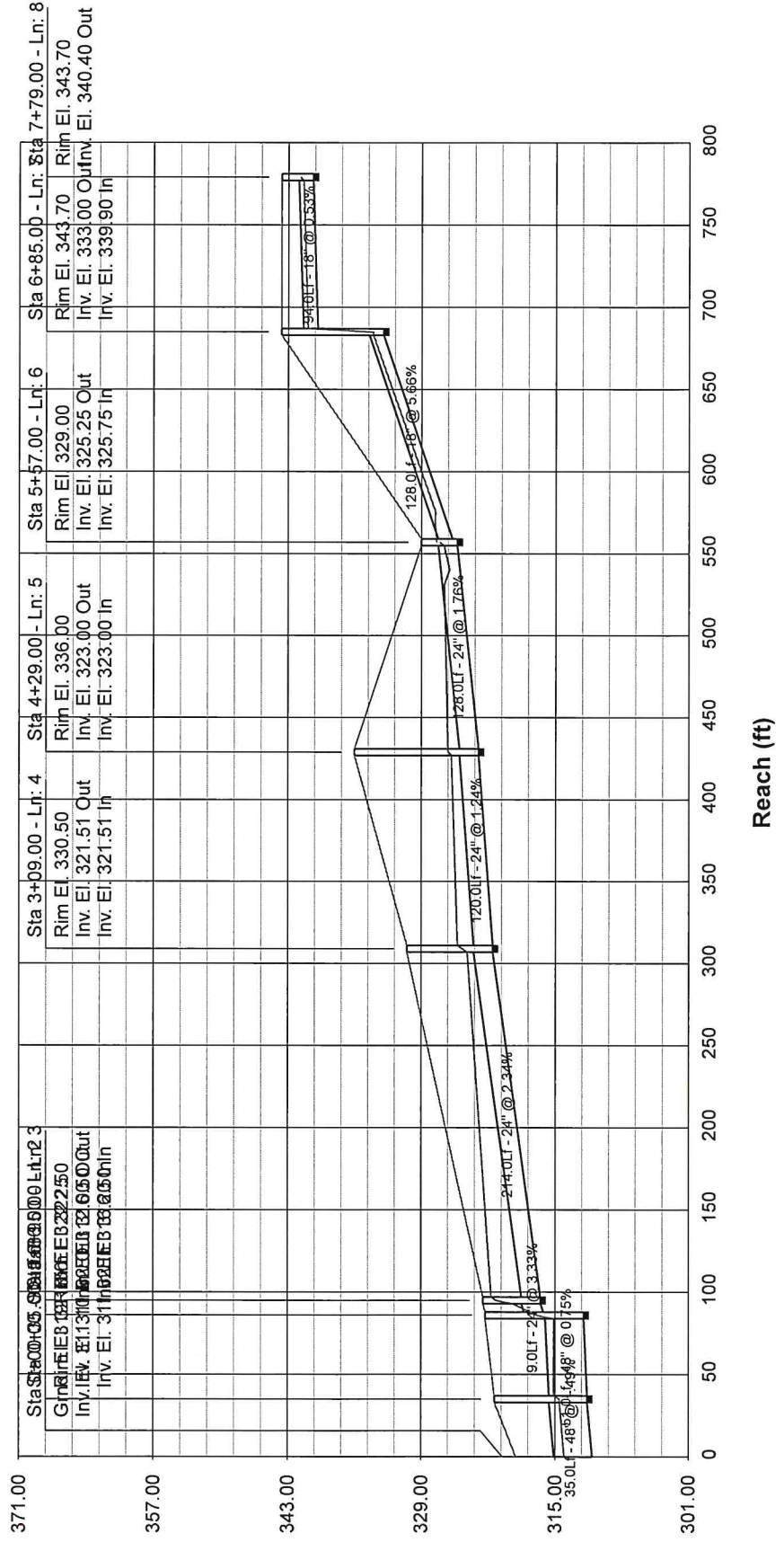
Run Date: 11-01-2022

Notes: * Normal depth assumed.; ** Critical depth.; j-Line contains hyd. jump.

Storm Sewer Profile

Proj. file: 22120 - Storm - Canera Drive West.stm

Elev. (ft)



Storm Sewer Profile

Proj. file: 22120 - Storm - Canera Drive West.stm

