CAAengineers

PROFESSIONAL ENGINEERS

The Preserve at Jones Dairy South

Rolesville, NC
Wake County

Storm Drainage Calculations

August 17, 2020

Prepared for:

Preserve at Jones Dairy, LLC
10534 Arnold Palmer Lane
Raleigh, NC 27617

NORTH CAROLINA PROFESSIONAL SEAL 030913 ENGINEER KEITH P. GETTLE

8/17/20

Preserve at Jones Dairy - South

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Preserve at Jones Dairy - South

Project Address: Jones Dairy Road
Rolesville, NC

Pins: 1759-88-8240, 1759.02-88-8240, 1759.02-78-6199

Latitude: N 35° 56' 31.32"
Longitude: W 78° 27' 36.44"

Developer: Preserve at Jones Dairy, LLC
10534 Arnold Palmer Lane
Raleigh, NC 27617

Telephone: (914) 422-1847

Site Description

The project consists of a single parcel approximately 54.01 acres located on Jones Dairy Road in Rolesville, NC. The parcels are vacant and the property is zoned R & PUD. The site is in the Neuse River Basin, and the Town of Rolesville.

The parcel is located within an "Area of Minimal Flood Hazard" as noted per FEMA map 3720175900J, dated May 2, 2006.

Storm Drain Analysis:

Analysis for the pipe system is the Q10 for the HGL review, and Q2 for gutter spread per city of Rolesville standards.

Areas within the right of way along the proposed streets were evaluated.

NOAA Atlas 14, Volume 2, Version 3
Location name: Wake Forest, North Carolina, USA*
Latitude: 35.945°, Longitude: -78.4375°
Elevation: 364.52 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.403 (0.370-0.441)	0.468 (0.430-0.511)	0.533 (0.489-0.582)	0.599 (0.548-0.654)	0.666 (0.606-0.725)	0.719 (0.652-0.783)	0.766 (0.690-0.834)	0.808 (0.724-0.881)	0.854 (0.759-0.933)	0.896 (0.790-0.981)
10-min	0.644 (0.591-0.705)	0.749 (0.687-0.818)	0.854 (0.783-0.931)	0.959 (0.877-1.05)	1.06 (0.966-1.16)	1.15 (1.04-1.25)	1.22 (1.10-1.33)	1.28 (1.15-1.40)	1.35 (1.20-1.48)	1.41 (1.24-1.54)
15-min	0.806 (0.739-0.881)	0.942 (0.864-1.03)	1.08 (0.990-1.18)	1.21 (1.11-1.32)	1.35 (1.23-1.47)	1.45 (1.31-1.58)	1.54 (1.39-1.68)	1.62 (1.45-1.76)	1.70 (1.51-1.86)	1.77 (1.56-1.94)
30-min	1.10 (1.01-1.21)	1.30 (1.19-1.42)	1.54 (1.41-1.67)	1.76 (1.61-1.92)	1.99 (1.81-2.17)	2.18 (1.98-2.38)	2.36 (2.12-2.57)	2.52 (2.25-2.74)	2.71 (2.40-2.96)	2.87 (2.53-3.14)
60-min	1.38 (1.26-1.51)	1.63 (1.50-1.78)	1.97 (1.80-2.15)	2.29 (2.09-2.50)	2.65 (2.42-2.89)	2.96 (2.68-3.22)	3.25 (2.93-3.54)	3.53 (3.16-3.85)	3.88 (3.45-4.24)	4.19 (3.69-4.58)
2-hr	1.61 (1.47-1.78)	1.92 (1.75-2.10)	2.34 (2.13-2.56)	2.75 (2.49-3.01)	3.23 (2.92-3.53)	3.66 (3.29-4.00)	4.07 (3.63-4.45)	4.50 (3.99-4.91)	5.05 (4.43-5.51)	5.54 (4.82-6.06)
3-hr	1.71 (1.55-1.89)	2.04 (1.86-2.24)	2.49 (2.26-2.74)	2.95 (2.67-3.24)	3.50 (3.16-3.85)	4.00 (3.58-4.39)	4.49 (3.99-4.93)	5.01 (4.42-5.49)	5.70 (4.97-6.25)	6.34 (5.47-6.97)
6-hr	2.05 (1.87-2.27)	2.44 (2.23-2.69)	2.99 (2.72-3.29)	3.54 (3.22-3.89)	4.23 (3.82-4.63)	4.85 (4.35-5.31)	5.47 (4.87-5.98)	6.13 (5.40-6.69)	7.02 (6.11-7.66)	7.85 (6.73-8.58)
12-hr	2.42 (2.21-2.66)	2.88 (2.64-3.16)	3.54 (3.24-3.88)	4.22 (3.85-4.62)	5.07 (4.60-5.54)	5.86 (5.27-6.37)	6.65 (5.92-7.23)	7.51 (6.61-8.16)	8.69 (7.53-9.44)	9.79 (8.35-10.6)
24-hr	2.86 (2.66-3.08)	3.46 (3.22-3.73)	4.34 (4.04-4.68)	5.05 (4.68-5.43)	6.01 (5.56-6.46)	6.78 (6.25-7.29)	7.57 (6.96-8.15)	8.39 (7.69-9.04)	9.53 (8.68-10.3)	10.4 (9.46-11.3)
2-day	3.32 (3.09-3.57)	4.00 (3.73-4.30)	4.98 (4.64-5.36)	5.76 (5.35-6.20)	6.82 (6.32-7.34)	7.66 (7.08-8.24)	8.53 (7.85-9.18)	9.43 (8.64-10.2)	10.7 (9.71-11.5)	11.6 (10.5-12.6)
3-day	3.52 (3.28-3.77)	4.23 (3.95-4.54)	5.25 (4.89-5.63)	6.05 (5.63-6.49)	7.15 (6.64-7.67)	8.03 (7.43-8.61)	8.93 (8.23-9.59)	9.87 (9.05-10.6)	11.1 (10.2-12.0)	12.2 (11.0-13.1)
4-day	3.72 (3.48-3.98)	4.46 (4.17-4.77)	5.52 (5.15-5.89)	6.35 (5.92-6.78)	7.49 (6.95-8.00)	8.40 (7.78-8.98)	9.34 (8.61-9.99)	10.3 (9.47-11.0)	11.6 (10.6-12.5)	12.7 (11.5-13.6)
7-day	4.32 (4.04-4.61)	5.15 (4.83-5.50)	6.28 (5.88-6.71)	7.19 (6.71-7.67)	8.42 (7.84-8.99)	9.41 (8.74-10.0)	10.4 (9.64-11.1)	11.5 (10.6-12.3)	12.9 (11.8-13.8)	14.0 (12.8-15.1)
10-day	4.91 (4.61-5.24)	5.85 (5.48-6.23)	7.04 (6.60-7.50)	7.98 (7.47-8.50)	9.25 (8.63-9.86)	10.3 (9.54-10.9)	11.3 (10.5-12.0)	12.3 (11.4-13.2)	13.7 (12.6-14.7)	14.8 (13.6-15.9)
20-day	6.59 (6.20-7.01)	7.79 (7.33-8.28)	9.22 (8.67-9.80)	10.4 (9.73-11.0)	11.9 (11.1-12.6)	13.1 (12.2-13.9)	14.3 (13.3-15.3)	15.6 (14.5-16.6)	17.3 (16.0-18.5)	18.6 (17.1-19.9)
30-day	8.19 (7.73-8.68)	9.63 (9.09-10.2)	11.2 (10.6-11.9)	12.5 (11.7-13.2)	14.1 (13.2-15.0)	15.3 (14.4-16.3)	16.6 (15.5-17.7)	17.9 (16.7-19.0)	19.5 (18.1-20.8)	20.8 (19.3-22.2)
45-day	10.4 (9.90-11.0)	12.2 (11.6-12.9)	14.0 (13.3-14.8)	15.4 (14.6-16.2)	17.2 (16.3-18.1)	18.6 (17.5-19.6)	19.9 (18.7-21.0)	21.2 (19.9-22.5)	23.0 (21.5-24.4)	24.3 (22.7-25.8)
60-day	12.5 (11.9-13.1)	14.6 (13.9-15.4)	16.6 (15.7-17.4)	18.1 (17.1-19.0)	20.0 (18.9-21.0)	21.4 (20.3-22.6)	22.8 (21.6-24.1)	24.2 (22.8-25.5)	26.0 (24.4-27.5)	27.3 (25.6-28.9)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

2.2.2 Runoff Coefficient

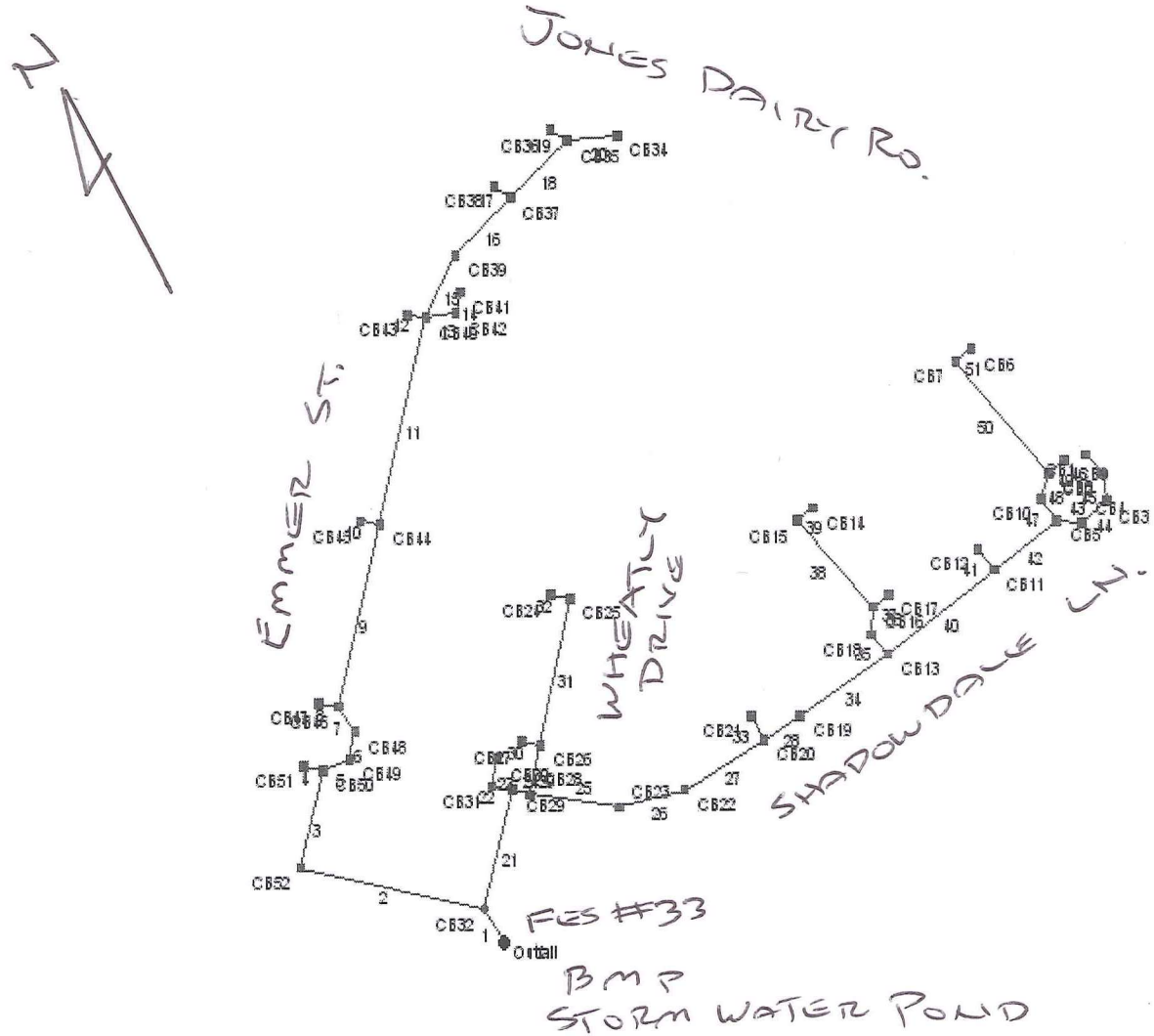
The runoff coefficient (C) is the variable of the rational method least susceptible to precise determination and requires judgment and - understanding on the part of the design engineer. While engineering judgment will always be required in the selection of runoff coefficients, typical coefficients represent the integrated effects of many drainage basin parameters. Table 2.2 gives the recommended runoff coefficients for the rational method.

Table 2.2 Recommended Runoff Coefficient Values

(Sources: North Carolina Erosion and Sediment Control Planning and Design Manual and The City of Raleigh's Storm Drainage Design Manual, 1989)

Description of Area	Runoff Coefficient, C
Woodlands	0.20 - .025
Parks, cemeteries	0.25
Playgrounds	0.35
Lawns:	
Sandy soil, flat, 2%	0.10
Sandy soil, average, 2 - 7%	0.15
Sandy soil, steep, > 7%	0.20
Clay soil, flat, 2%	0.17
Clay soil, average, 2 - 7%	0.22
Clay soil, steep, > 7%	0.35
Graded or no plant cover:	
Sandy soil, flat, 0 - 5%	0.30
Sandy soil, flat, 5 - 10%	0.40
Clayey soil, flat, 0 - 5%	0.50
Clayey soil, average, 5 - 10%	0.60
Residential:	
Single-family (R - 4)	0.50
Single-family (R - 6)	0.55
Multi-family (R - 10)	0.60
Multi-family (R - 20)	0.70
Multi-family (R - 30)	0.75
Business:	
O & I (I, II, III)	0.85
I1 & I2	0.85 – 0.95
Shopping Centers	0.85 – 0.95
Streets:	
Gravel areas	0.50
Drives, walks, and roofs	0.95
Asphalt and Concrete	0.95 – 1.00

Hydraflow Plan View



JDP - SOUTH LINE 'A'

Project file: JDP South line A Revised 070720.stm	No. Lines: 51	07-15-2020

Hydraflow Storm Sewers 2003

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)	Dns line No.
1	CB32-FES33	34.19	54 c	51.6	392.35	392.61	0.504	396.85	396.86	0.06	End
2	CB52-CB32	19.33	48 c	263.3	392.81	394.13	0.501	396.92	396.95	0.10	1
3	CB50-CB52	19.49	36 c	127.0	394.33	396.03	1.339	397.05	397.44	0.84	2
4	CB51-CB50	0.36	24 c	27.3	396.23	396.37	0.513	398.27	398.27	0.00	3
5	CB49-CB50	19.16	30 c	39.6	396.23	397.48	3.157	398.27	398.94	0.80	3
6	CB48-CB49	18.82	30 c	35.0	397.68	397.86	0.514	399.74	399.78	0.37	5
7	CB46-CB48	17.55	30 c	40.1	398.06	398.26	0.499	400.15	400.19	0.32	6
8	CB47-CB46	0.54	24 c	27.0	398.46	398.59	0.481	400.51	400.51	0.00	7
9	CB44-CB46	14.51	24 c	240.0	398.46	402.00	1.475	400.51	403.35	0.97	7
10	CB45-CB44	0.79	24 c	27.0	402.20	402.34	0.518	404.32	404.31	0.00	9
11	CB40-CB44	10.75	24 c	270.0	402.20	406.46	1.578	404.32	407.62	0.75	9
12	CB43-CB40	0.47	24 c	27.0	406.66	406.79	0.481	408.37	408.38	0.00	11
13	CB42-CB40	4.27	24 c	41.7	406.66	408.96	5.520	408.37	409.69	0.33	11
14	CB41-CB42	3.68	15 c	27.0	409.16	409.30	0.518	410.02	410.14	0.27	13
15	CB39-CB40	6.49	24 c	88.4	406.66	408.40	1.969	408.37	409.30	0.24	11
16	CB37-CB39	6.30	24 c	106.5	408.60	410.91	2.169	409.54	411.80	0.51	15
17	CB38-CB37	0.22	15 c	27.0	411.11	411.24	0.481	412.31	412.31	0.00	16
18	CB35-CB37	4.48	15 c	107.1	411.11	413.95	2.653	412.31	414.80	0.60	16
19	CB36-CB35	0.22	15 c	27.9	414.15	414.28	0.466	415.39	415.39	0.00	18
20	CB34-CB35	3.82	15 c	70.7	414.15	416.40	3.181	415.39	417.18	0.35	18
21	CB29-CB32	19.51	48 c	156.1	392.81	401.80	5.759	396.92	403.11	0.70	1
22	CB31-CB29	0.18	24 c	29.7	402.00	402.19	0.640	403.80	403.81	0.00	21
23	CB30-CB31	0.11	18 c	35.0	402.39	402.56	0.486	403.81	403.81	0.00	22
24	CB28-CB29	22.73	30 c	25.3	402.00	402.13	0.514	403.80	403.86	0.92	21
25	CB23-CB28	20.09	30 c	126.3	402.33	403.37	0.823	404.78	404.87	0.46	24

26	CB22-CB23	18.98	30 c	94.8	403.67	404.39	0.760	405.34	405.85	0.45	25
27	CB20-CB22	18.40	30 c	128.8	404.59	405.67	0.839	406.29	407.10	0.93	26
28	CB19-CB20	17.05	30 c	58.9	405.87	406.26	0.663	408.04	408.05	0.16	27
29	CB26-CB28	4.31	30 c	63.0	402.33	402.64	0.492	404.78	404.78	0.02	24
30	CB27-CB26	0.87	30 c	27.0	402.84	402.98	0.519	404.80	404.80	0.00	29
31	CB25-CB26	1.35	24 c	192.0	402.84	411.28	4.395	404.80	411.69	0.20	29
32	CB24-CB25	0.51	15 c	27.0	411.48	411.61	0.481	411.89	411.91	0.08	31

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)	Dns line No.
33	CB21-CB20	1.73	24 c	35.0	405.87	406.04	0.486	408.04	408.04	0.00	27
34	CB13-CB19	17.26	30 c	146.2	406.46	407.81	0.924	408.21	409.20	0.89	28
35	CB18-CB13	5.41	24 c	34.6	408.01	408.18	0.491	410.08	410.10	0.05	34
36	CB16-CB18	3.91	24 c	35.2	408.38	408.56	0.512	410.15	410.16	0.04	35
37	CB17-CB16	1.26	18 c	27.1	408.76	408.93	0.627	410.19	410.20	0.01	36
38	CB15-CB16	2.28	18 c	154.0	408.76	413.97	3.383	410.19	414.55	0.31	36
39	CB14-CB15	1.88	15 c	27.0	414.17	414.31	0.518	414.86	414.89	0.18	38
40	CB11-CB13	12.20	24 c	184.0	408.01	409.76	0.951	410.08	411.00	0.83	34
41	CB12-CB11	1.66	24 c	35.0	409.76	410.11	1.000	411.83	411.83	0.01	40
42	CB5-CB11	9.24	24 c	108.2	409.96	412.61	2.450	411.83	413.69	0.67	40
43	CB4-CB5	4.22	18 c	35.5	412.81	413.66	2.395	414.36	414.44	0.35	42
44	CB3-CB4	3.99	15 c	43.7	413.86	414.26	0.916	414.79	415.06	0.45	43
45	CB2-CB3	0.79	15 c	35.2	414.46	416.37	5.423	415.51	416.73	0.13	44
46	CB1-CB2	0.61	15 c	35.0	416.57	417.50	2.657	416.86	417.81	0.10	45
47	CB10-CB5	4.94	24 c	35.0	412.81	412.98	0.485	414.36	414.37	0.09	42
48	CB8-CB10	4.77	18 c	34.9	413.18	413.36	0.515	414.45	414.50	0.21	47
49	CB9-CB8	1.88	15 c	27.1	413.56	414.47	3.362	414.71	415.02	0.20	48
50	CB7-CB8	2.57	15 c	193.8	413.56	418.27	2.430	414.71	418.91	0.38	48
51	CB6-CB7	1.73	15 c	27.0	418.47	418.60	0.481	419.29	419.31	0.09	50
52	FES92-CB3	3.25	15 c	17.0	414.46	419.00	26.706	415.51	419.72	0.30	44

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Run Date: 08-26-2020

NOTES: c = circular; e = elliptical; b = box; Return period = 10 Yrs.; * Indicates surcharge condition.

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)	
1	End	51.6	-123.1	MH	0.00	0.00	0.00	5.0	392.35	0.50	392.61	54	Cir	0.013	0.75	403.50	CB32-FES33
2	1	263.3	-45.1	Comb	0.00	0.10	0.50	5.0	392.81	0.50	394.13	48	Cir	0.013	1.50	399.13	CB52-CB32
3	2	127.0	92.7	Comb	0.00	0.05	0.50	5.0	394.33	1.34	396.03	36	Cir	0.013	1.50	400.30	CB50-CB52
4	3	27.3	-93.7	Comb	0.00	0.10	0.50	5.0	396.23	0.51	396.37	24	Cir	0.013	1.00	400.37	CB51-CB50
5	3	39.6	55.1	Comb	0.00	0.15	0.50	5.0	396.23	3.16	397.48	30	Cir	0.013	1.25	403.54	CB49-CB50
6	5	35.0	-56.0	Comb	0.00	0.48	0.50	5.0	397.68	0.51	397.86	30	Cir	0.013	1.10	403.54	CB48-CB49
7	6	40.1	-50.4	Comb	0.00	1.30	0.40	5.0	398.06	0.50	398.26	30	Cir	0.013	1.10	402.76	CB46-CB48
8	7	27.0	-43.8	Comb	0.00	0.15	0.50	5.0	398.46	0.48	398.59	24	Cir	0.013	1.00	402.77	CB47-CB46
9	7	240.0	51.1	Comb	0.00	1.20	0.50	5.0	398.46	1.47	402.00	24	Cir	0.013	1.50	406.50	CB44-CB46
10	9	27.0	-96.2	Comb	0.00	0.22	0.50	5.0	402.20	0.52	402.34	24	Cir	0.013	1.00	406.50	CB45-CB44
11	9	270.0	-0.1	Comb	0.00	0.12	0.50	5.0	402.20	1.58	406.46	24	Cir	0.013	1.50	410.96	CB40-CB44
12	11	27.0	-95.5	Comb	0.00	0.13	0.50	5.0	406.66	0.48	406.79	24	Cir	0.013	1.00	410.98	CB43-CB40
13	11	41.7	68.0	Comb	0.00	0.17	0.50	5.0	406.66	5.52	408.96	24	Cir	0.013	1.25	413.46	CB42-CB40
14	13	27.0	-68.7	Comb	0.00	1.02	0.50	5.0	409.16	0.52	409.30	15	Cir	0.013	1.00	413.46	CB41-CB42
15	11	88.4	13.4	Comb	0.00	0.12	0.50	5.0	406.66	1.97	408.40	24	Cir	0.013	0.70	412.90	CB39-CB40
16	15	106.5	19.3	Comb	0.00	0.66	0.40	5.0	408.60	2.17	410.91	24	Cir	0.013	1.50	415.41	CB37-CB39
17	16	27.0	-104.8	Comb	0.00	0.06	0.50	5.0	411.11	0.48	411.24	15	Cir	0.013	1.00	415.41	CB38-CB37
18	16	107.1	1.7	Comb	0.00	0.25	0.50	5.0	411.11	2.65	413.95	15	Cir	0.013	1.50	418.45	CB35-CB37
19	18	27.9	-107.4	Comb	0.00	0.06	0.50	5.0	414.15	0.47	414.28	15	Cir	0.013	1.00	418.03	CB36-CB35
20	18	70.7	35.9	Comb	0.00	1.06	0.50	5.0	414.15	3.18	416.40	15	Cir	0.013	1.00	420.90	CB34-CB35
21	1	156.1	48.2	Comb	0.00	0.04	0.50	5.0	392.81	5.76	401.80	48	Cir	0.013	1.50	406.34	CB29-CB32

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Date: 08-26-2020

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	21	29.7	-96.0	Comb	0.00	0.04	0.50	5.0	402.00	0.64	402.19	24	Cir	0.013	1.50	406.01	CB31-CB29
23	22	35.0	93.9	Comb	0.00	0.03	0.50	5.0	402.39	0.49	402.56	18	Cir	0.013	1.00	406.01	CB30-CB31
24	21	25.3	88.0	Comb	0.00	0.14	0.50	5.0	402.00	0.51	402.13	30	Cir	0.013	1.50	406.62	CB28-CB29
25	24	126.3	-5.6	Comb	0.00	0.58	0.40	5.0	402.33	0.82	403.37	30	Cir	0.013	0.70	407.95	CB23-CB28
26	25	94.8	-20.5	Comb	0.00	0.31	0.50	5.0	403.67	0.76	404.39	30	Cir	0.013	0.70	408.89	CB22-CB23
27	26	128.8	-16.1	Comb	0.00	0.02	0.50	5.0	404.59	0.84	405.67	30	Cir	0.013	1.50	410.17	CB20-CB22
28	27	58.9	-1.1	Comb	0.00	0.06	0.50	5.0	405.87	0.66	406.26	30	Cir	0.013	0.50	410.76	CB19-CB20
29	24	63.0	-90.0	Comb	0.00	1.19	0.40	5.0	402.33	0.49	402.64	30	Cir	0.013	1.50	407.56	CB26-CB28
30	29	27.0	-92.2	Comb	0.00	0.24	0.50	5.0	402.84	0.52	402.98	30	Cir	0.013	1.00	407.56	CB27-CB26
31	29	192.0	-0.3	Comb	0.00	0.25	0.50	5.0	402.84	4.39	411.28	24	Cir	0.013	1.50	415.78	CB25-CB26
32	31	27.0	-93.4	Comb	0.00	0.14	0.50	5.0	411.48	0.48	411.61	15	Cir	0.013	1.00	0.00	CB24-CB25
33	27	35.0	-92.9	Comb	0.00	0.60	0.40	5.0	405.87	0.49	406.04	24	Cir	0.013	1.00	410.17	CB21-CB20
34	28	146.2	-2.0	Comb	0.00	0.06	0.50	5.0	406.46	0.92	407.81	30	Cir	0.013	1.50	412.31	CB13-CB19
35	34	34.6	-101.2	Comb	0.00	0.48	0.50	5.0	408.01	0.49	408.18	24	Cir	0.013	1.10	412.31	CB18-CB13
36	35	35.2	48.5	Comb	0.00	0.19	0.50	5.0	408.38	0.51	408.56	24	Cir	0.013	1.10	413.35	CB16-CB18
37	36	27.1	48.9	Comb	0.00	0.35	0.50	5.0	408.76	0.63	408.93	18	Cir	0.013	1.00	413.43	CB17-CB16
38	36	154.0	-48.9	Comb	0.00	0.12	0.50	5.0	408.76	3.38	413.97	18	Cir	0.013	1.50	418.47	CB15-CB16
39	38	27.0	99.3	Comb	0.00	0.65	0.40	5.0	414.17	0.52	414.31	15	Cir	0.013	1.00	418.47	CB14-CB15
40	34	184.0	-3.3	Comb	0.00	0.52	0.50	5.0	408.01	0.95	409.76	24	Cir	0.013	1.50	414.25	CB11-CB13
41	40	35.0	-95.5	Comb	0.00	0.46	0.50	5.0	409.76	1.00	410.11	24	Cir	0.013	1.00	414.25	CB12-CB11
42	40	108.2	0.1	Comb	0.00	0.06	0.50	5.0	409.96	2.45	412.61	24	Cir	0.013	1.50	417.10	CB5-CB11

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Date: 08-26-2020

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)	
43	42	35.5	40.6	Comb	0.00	0.08	0.50	5.0	412.81	2.40	413.66	18	Cir	0.013	1.10	420.25	CB4-CB5
44	43	43.7	-42.5	Comb	0.00	0.08	0.40	5.0	413.86	0.92	414.26	15	Cir	0.013	1.25	420.23	CB3-CB4
45	44	35.2	-59.7	Comb	0.00	0.06	0.50	5.0	414.46	5.42	416.37	15	Cir	0.013	1.10	422.87	CB2-CB3
46	45	35.0	-37.7	Comb	0.00	0.17	0.50	5.0	416.57	2.66	417.50	15	Cir	0.013	1.00	422.98	CB1-CB2
47	42	35.0	-93.6	Comb	0.00	0.06	0.50	5.0	412.81	0.49	412.98	24	Cir	0.013	1.25	417.19	CB10-CB5
48	47	34.9	58.3	Comb	0.00	0.18	0.50	5.0	413.18	0.52	413.36	18	Cir	0.013	1.25	420.08	CB8-CB10
49	48	27.1	32.9	Comb	0.00	0.65	0.40	5.0	413.56	3.36	414.47	15	Cir	0.013	1.00	420.11	CB9-CB8
50	48	193.8	-62.0	Comb	0.00	0.24	0.50	5.0	413.56	2.43	418.27	15	Cir	0.013	1.50	422.77	CB7-CB8
51	50	27.0	97.3	Comb	0.00	0.60	0.40	5.0	418.47	0.48	418.60	15	Cir	0.013	1.00	422.77	CB6-CB7
52	44	17.0	0.6	None	0.00	0.90	0.50	5.0	414.46	26.71	419.00	15	Cir	0.013	1.00	419.50	FES92-CB3

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Date: 08-26-2020

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	51.6	0.00	16.95	0.00	0.00	7.84	5.0	22.1	4.4	34.19	139.6	2.17	54	0.50	392.61	392.35	396.86	396.85	403.50	0.00	CB32-FES33
2	1	263.3	0.10	7.40	0.50	0.05	3.50	5.0	12.9	5.5	19.33	101.7	1.79	48	0.50	394.13	392.81	396.95	396.92	399.13	403.50	CB52-CB32
3	2	127.0	0.05	7.30	0.50	0.03	3.45	5.0	12.1	5.6	19.49	77.16	4.44	36	1.34	396.03	394.33	397.44	397.05	400.30	399.13	CB50-CB52
4	3	27.3	0.10	0.10	0.50	0.05	0.05	5.0	5.0	7.2	0.36	16.20	0.12	24	0.51	396.37	396.23	398.27	398.27	400.37	400.30	CB51-CB50
5	3	39.6	0.15	7.15	0.50	0.08	3.38	5.0	12.0	5.7	19.16	72.86	5.44	30	3.16	397.48	396.23	398.94	398.27	403.54	400.30	CB49-CB50
6	5	35.0	0.48	7.00	0.50	0.24	3.30	5.0	11.8	5.7	18.82	29.41	4.50	30	0.51	397.86	397.68	399.78	399.74	403.54	403.54	CB48-CB49
7	6	40.1	1.30	6.52	0.40	0.52	3.06	5.0	11.6	5.7	17.55	28.98	4.17	30	0.50	398.26	398.06	400.19	400.15	402.76	403.54	CB46-CB48
8	7	27.0	0.15	0.15	0.50	0.08	0.08	5.0	5.0	7.2	0.54	15.69	0.17	24	0.48	398.59	398.46	400.51	400.51	402.77	402.76	CB47-CB46
9	7	240.0	1.20	5.07	0.50	0.60	2.47	5.0	10.8	5.9	14.51	27.47	5.53	24	1.47	402.00	398.46	403.35	400.51	406.50	402.76	CB44-CB46
10	9	27.0	0.22	0.22	0.50	0.11	0.11	5.0	5.0	7.2	0.79	16.29	0.25	24	0.52	402.34	402.20	404.31	404.32	406.50	406.50	CB45-CB44
11	9	270.0	0.12	3.65	0.50	0.06	1.76	5.0	9.6	6.1	10.75	28.41	4.55	24	1.58	406.46	402.20	407.62	404.32	410.96	406.50	CB40-CB44
12	11	27.0	0.13	0.13	0.50	0.07	0.07	5.0	5.0	7.2	0.47	15.69	0.17	24	0.48	406.79	406.66	408.38	408.37	410.98	410.96	CB43-CB40
13	11	41.7	0.17	1.19	0.50	0.09	0.60	5.0	5.2	7.2	4.27	53.14	2.80	24	5.52	408.96	406.66	409.69	408.37	413.46	410.96	CB42-CB40
14	13	27.0	1.02	1.02	0.50	0.51	0.51	5.0	5.0	7.2	3.68	4.65	4.14	15	0.52	409.30	409.16	410.14	410.02	413.46	413.46	CB41-CB42
15	11	88.4	0.12	2.21	0.50	0.06	1.04	5.0	8.9	6.3	6.49	31.74	3.49	24	1.97	408.40	406.66	409.30	408.37	412.90	410.96	CB39-CB40
16	15	106.5	0.66	2.09	0.40	0.26	0.98	5.0	8.1	6.4	6.30	33.31	4.49	24	2.17	410.91	408.60	411.80	409.54	415.41	412.90	CB37-CB39
17	16	27.0	0.06	0.06	0.50	0.03	0.03	5.0	5.0	7.2	0.22	4.48	0.19	15	0.48	411.24	411.11	412.31	412.31	415.41	415.41	CB38-CB37
18	16	107.1	0.25	1.37	0.50	0.13	0.68	5.0	7.6	6.5	4.48	10.52	4.38	15	2.65	413.95	411.11	414.80	412.31	418.45	415.41	CB35-CB37
19	18	27.9	0.06	0.06	0.50	0.03	0.03	5.0	5.0	7.2	0.22	4.41	0.18	15	0.47	414.28	414.15	415.39	415.39	418.03	418.45	CB36-CB35
20	18	70.7	1.06	1.06	0.50	0.53	0.53	5.0	5.0	7.2	3.82	11.52	3.92	15	3.18	416.40	414.15	417.18	415.39	420.90	418.45	CB34-CB35
21	1	156.1	0.04	9.55	0.50	0.02	4.34	5.0	20.7	4.5	19.51	344.7	3.51	48	5.76	401.80	392.81	403.11	396.92	406.34	403.50	CB29-CB32

Project File: JDP South line A Revised 070720.stm

Number of lines: 52

Run Date: 08-26-2020

NOTES: Intensity = 105.70 / (Inlet time + 16.80) ^ 0.87; Return period = 10 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
22	21	29.7	0.04	0.07	0.50	0.02	0.04	5.0	14.5	5.3	0.18	18.10	0.06	24	0.64	402.19	402.00	403.81	403.80	406.01	406.34	CB31-CB29
23	22	35.0	0.03	0.03	0.50	0.02	0.02	5.0	5.0	7.2	0.11	7.32	0.07	18	0.49	402.56	402.39	403.81	403.81	406.01	406.01	CB30-CB31
24	21	25.3	0.14	9.44	0.50	0.07	4.29	5.0	14.2	5.3	22.73	29.39	6.13	30	0.51	402.13	402.00	403.86	403.80	406.62	406.34	CB28-CB29
25	24	126.3	0.58	7.48	0.40	0.23	3.42	5.0	10.8	5.9	20.09	37.21	5.31	30	0.82	403.37	402.33	404.87	404.78	407.95	406.62	CB23-CB28
26	25	94.8	0.31	6.90	0.50	0.16	3.19	5.0	10.4	5.9	18.98	35.74	5.93	30	0.76	404.39	403.67	405.85	405.34	408.89	407.95	CB22-CB23
27	26	128.8	0.02	6.59	0.50	0.01	3.04	5.0	9.8	6.1	18.40	37.56	5.75	30	0.84	405.67	404.59	407.10	406.29	410.17	408.89	CB20-CB22
28	27	58.9	0.06	5.97	0.50	0.03	2.79	5.0	9.6	6.1	17.05	33.38	4.15	30	0.66	406.26	405.87	408.05	408.04	410.76	410.17	CB19-CB20
29	24	63.0	1.19	1.82	0.40	0.48	0.79	5.0	13.3	5.5	4.31	28.77	0.92	30	0.49	402.64	402.33	404.78	404.78	407.56	406.62	CB26-CB28
30	29	27.0	0.24	0.24	0.50	0.12	0.12	5.0	5.0	7.2	0.87	29.53	0.22	30	0.52	402.98	402.84	404.80	404.80	407.56	407.56	CB27-CB26
31	29	192.0	0.25	0.39	0.50	0.13	0.20	5.0	6.1	6.9	1.35	47.42	1.66	24	4.39	411.28	402.84	411.69	404.80	415.78	407.56	CB25-CB26
32	31	27.0	0.14	0.14	0.50	0.07	0.07	5.0	5.0	7.2	0.51	4.48	1.84	15	0.48	411.61	411.48	411.91	411.89	0.00	415.78	CB24-CB25
33	27	35.0	0.60	0.60	0.40	0.24	0.24	5.0	5.0	7.2	1.73	15.76	0.55	24	0.49	406.04	405.87	408.04	408.04	410.17	410.17	CB21-CB20
34	28	146.2	0.06	5.91	0.50	0.03	2.76	5.0	8.9	6.3	17.26	39.42	5.43	30	0.92	407.81	406.46	409.20	408.21	412.31	410.76	CB13-CB19
35	34	34.6	0.48	1.79	0.50	0.24	0.83	5.0	7.7	6.5	5.41	15.86	1.73	24	0.49	408.18	408.01	410.10	410.08	412.31	412.31	CB18-CB13
36	35	35.2	0.19	1.31	0.50	0.10	0.59	5.0	7.3	6.6	3.91	16.18	1.39	24	0.51	408.56	408.38	410.16	410.15	413.35	412.31	CB16-CB18
37	36	27.1	0.35	0.35	0.50	0.18	0.18	5.0	5.0	7.2	1.26	8.32	0.76	18	0.63	408.93	408.76	410.20	410.19	413.43	413.35	CB17-CB16
38	36	154.0	0.12	0.77	0.50	0.06	0.32	5.0	5.3	7.1	2.28	19.32	2.48	18	3.38	413.97	408.76	414.55	410.19	418.47	413.35	CB15-CB16
39	38	27.0	0.65	0.65	0.40	0.26	0.26	5.0	5.0	7.2	1.88	4.65	3.06	15	0.52	414.31	414.17	414.89	414.86	418.47	418.47	CB14-CB15
40	34	184.0	0.52	4.06	0.50	0.26	1.90	5.0	8.1	6.4	12.20	22.06	4.93	24	0.95	409.76	408.01	411.00	410.08	414.25	412.31	CB11-CB13
41	40	35.0	0.46	0.46	0.50	0.23	0.23	5.0	5.0	7.2	1.66	22.62	0.55	24	1.00	410.11	409.76	411.83	411.83	414.25	414.25	CB12-CB11
42	40	108.2	0.06	3.08	0.50	0.03	1.41	5.0	7.5	6.6	9.24	35.40	4.19	24	2.45	412.61	409.96	413.69	411.83	417.10	414.25	CB5-CB11

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Run Date: 08-26-2020

NOTES: Intensity = 105.70 / (Inlet time + 16.80) ^ 0.87; Return period = 10 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
43	42	35.5	0.08	1.29	0.50	0.04	0.64	5.0	7.3	6.6	4.22	16.25	3.45	18	2.40	413.66	412.81	414.44	414.36	420.25	417.10	CB4-CB5
44	43	43.7	0.08	1.21	0.40	0.03	0.60	5.0	7.0	6.7	3.99	6.18	4.44	15	0.92	414.26	413.86	415.06	414.79	420.23	420.25	CB3-CB4
45	44	35.2	0.06	0.23	0.50	0.03	0.12	5.0	6.2	6.9	0.79	15.04	1.74	15	5.42	416.37	414.46	416.73	415.51	422.87	420.23	CB2-CB3
46	45	35.0	0.17	0.17	0.50	0.09	0.09	5.0	5.0	7.2	0.61	10.53	2.72	15	2.66	417.50	416.57	417.81	416.86	422.98	422.87	CB1-CB2
47	42	35.0	0.06	1.73	0.50	0.03	0.74	5.0	7.1	6.7	4.94	15.76	2.01	24	0.49	412.98	412.81	414.37	414.36	417.19	417.10	CB10-CB5
48	47	34.9	0.18	1.67	0.50	0.09	0.71	5.0	6.9	6.7	4.77	7.54	3.15	18	0.52	413.36	413.18	414.50	414.45	420.08	417.19	CB8-CB10
49	48	27.1	0.65	0.65	0.40	0.26	0.26	5.0	5.0	7.2	1.88	11.84	2.61	15	3.36	414.47	413.56	415.02	414.71	420.11	420.08	CB9-CB8
50	48	193.8	0.24	0.84	0.50	0.12	0.36	5.0	5.3	7.1	2.57	10.07	3.11	15	2.43	418.27	413.56	418.91	414.71	422.77	420.08	CB7-CB8
51	50	27.0	0.60	0.60	0.40	0.24	0.24	5.0	5.0	7.2	1.73	4.48	2.22	15	0.48	418.60	418.47	419.31	419.29	422.77	422.77	CB6-CB7
52	44	17.0	0.90	0.90	0.50	0.45	0.45	5.0	5.0	7.2	3.25	33.37	3.69	15	26.71	419.00	414.46	419.72	415.51	419.50	420.23	FES92-CB3

Project File: JDP South line A Revised 070720.stm

Number of lines: 52

Run Date: 08-26-2020

NOTES: Intensity = 105.70 / (Inlet time + 16.80) ^ 0.87; Return period = 10 Yrs.

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
	(in)	(cfs)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	(ft)	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)	(K)	(ft)
1	54	34.19	392.35	396.85	4.50	15.90	2.15	0.07	396.92	0.030	51.6	392.61	396.86	4.25	15.56	2.20	0.08	396.94	0.026	0.028	0.015	0.75	0.06
2	48	19.33	392.81	396.92	4.00	12.56	1.54	0.04	396.96	0.018	263	394.13	396.95	2.82	9.47	2.04	0.06	397.02	0.025	0.022	0.057	1.50	0.10
3	36	19.49	394.33	397.05	2.72	6.73	2.89	0.13	397.18	0.075	127	396.03	397.44	1.41**	3.26	5.99	0.56	397.99	0.426	0.250	n/a	1.50	0.84
4	24	0.36	396.23	398.27	2.00	3.14	0.11	0.00	398.27	0.000	27.3	396.37	398.27	1.90	3.08	0.12	0.00	398.27	0.000	0.000	0.000	1.00	0.00
5	30	19.16	396.23	398.27	2.04	4.29	4.46	0.31	398.58	0.219	39.6	397.48	398.94	1.46**	2.98	6.42	0.64	399.58	0.522	0.371	n/a	1.25	0.80
6	30	18.82	397.68	399.74	2.06	4.33	4.34	0.29	400.04	0.208	35.0	397.86	399.78	1.92	4.05	4.65	0.34	400.12	0.240	0.224	0.078	1.10	0.37
7	30	17.55	398.06	400.15	2.09	4.38	4.00	0.25	400.40	0.177	40.1	398.26	400.19	1.92	4.06	4.33	0.29	400.48	0.208	0.192	0.077	1.10	0.32
8	24	0.54	398.46	400.51	2.00	3.14	0.17	0.00	400.51	0.001	27.0	398.59	400.51	1.92	3.10	0.17	0.00	400.51	0.000	0.001	0.000	1.00	0.00
9	24	14.51	398.46	400.51	2.00	3.14	4.62	0.33	400.84	0.412	240	402.00	403.35	1.35**	2.25	6.44	0.64	403.99	0.648	0.530	n/a	1.50	0.97
10	24	0.79	402.20	404.32	2.00	3.14	0.25	0.00	404.32	0.001	27.0	402.34	404.31	1.97	3.13	0.25	0.00	404.32	0.001	0.001	0.000	1.00	0.00
11	24	10.75	402.20	404.32	2.00	3.14	3.42	0.18	404.50	0.226	270	406.46	407.62	1.16**	1.89	5.68	0.50	408.12	0.554	0.390	n/a	1.50	0.75
12	24	0.47	406.66	408.37	1.71	2.87	0.16	0.00	408.38	0.000	27.0	406.79	408.38	1.59	2.67	0.18	0.00	408.38	0.000	0.000	0.000	1.00	0.00
13	24	4.27	406.66	408.37	1.71	2.87	1.49	0.03	408.41	0.033	41.7	408.96	409.69	0.73**	1.04	4.10	0.26	409.95	0.436	0.235	n/a	1.25	0.33
14	15	3.68	409.16	410.02	0.86	0.90	4.10	0.26	410.28	0.487	27.0	409.30	410.14	0.84	0.88	4.18	0.27	410.41	0.513	0.500	0.135	1.00	0.27
15	24	6.49	406.66	408.37	1.71	2.87	2.27	0.08	408.45	0.077	88.4	408.40	409.30	0.90**	1.38	4.72	0.35	409.65	0.470	0.274	n/a	0.70	0.24
16	24	6.30	408.60	409.54	0.94	1.46	4.31	0.29	409.83	0.377	107	410.91	411.80	0.89**	1.35	4.67	0.34	412.14	0.467	0.422	n/a	1.50	0.51
17	15	0.22	411.11	412.31	1.20	1.21	0.18	0.00	412.31	0.001	27.0	411.24	412.31	1.07	1.12	0.19	0.00	412.31	0.001	0.001	0.000	1.00	0.00
18	15	4.48	411.11	412.31	1.20	1.21	3.70	0.21	412.52	0.418	107	413.95	414.80	0.85**	0.88	5.06	0.40	415.19	0.748	0.583	n/a	1.50	0.60
19	15	0.22	414.15	415.39	1.24	1.23	0.18	0.00	415.39	0.001	27.9	414.28	415.39	1.11	1.15	0.19	0.00	415.39	0.001	0.001	0.000	1.00	0.00
20	15	3.82	414.15	415.39	1.24	1.23	3.12	0.15	415.54	0.330	70.7	416.40	417.18	0.78**	0.81	4.73	0.35	417.53	0.684	0.507	n/a	1.00	0.35
21	48	19.51	392.81	396.92	4.00	12.56	1.55	0.04	396.96	0.018	156	401.80	403.11	1.31**	3.57	5.47	0.47	403.57	0.347	0.183	n/a	1.50	0.70

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Run Date: 08-26-2020

NOTES: * Normal depth assumed., ** Critical depth assumed.

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
	(in)	(cfs)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	(ft)	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)	(K)	(ft)
22	24	0.18	402.00	403.80	1.80	2.98	0.06	0.00	403.80	0.000	29.7	402.19	403.81	1.62	2.72	0.07	0.00	403.81	0.000	0.000	0.000	1.50	0.00
23	18	0.11	402.39	403.81	1.42	1.73	0.06	0.00	403.81	0.000	35.0	402.56	403.81	1.25	1.57	0.07	0.00	403.81	0.000	0.000	0.000	1.00	0.00
24	30	22.73	402.00	403.80	1.80	3.79	5.99	0.56	404.36	0.405	25.3	402.13	403.86	1.73	3.62	6.28	0.61	404.47	0.452	0.429	0.108	1.50	0.92
25	30	20.09	402.33	404.78	2.45	4.88	4.11	0.26	405.04	0.215	126	403.37	404.87	1.50	3.09	6.51	0.66	405.53	0.527	0.371	0.469	0.70	0.46
26	30	18.98	403.67	405.34	1.67	3.47	5.46	0.46	405.80	0.349	94.8	404.39	405.85	1.46**	2.97	6.40	0.64	406.48	0.520	0.435	n/a	0.70	0.45
27	30	18.40	404.59	406.29	1.70	3.56	5.17	0.42	406.71	0.310	129	405.67	407.10	1.43**	2.91	6.32	0.62	407.72	0.513	0.411	n/a	1.50	0.93
28	30	17.05	405.87	408.04	2.17	4.52	3.77	0.22	408.26	0.158	58.9	406.26	408.05	1.79	3.77	4.53	0.32	408.37	0.232	0.195	0.115	0.50	0.16
29	30	4.31	402.33	404.78	2.45	4.88	0.88	0.01	404.79	0.010	63.0	402.64	404.78	2.14	4.48	0.96	0.01	404.80	0.010	0.010	0.006	1.50	0.02
30	30	0.87	402.84	404.80	1.96	4.14	0.21	0.00	404.80	0.000	27.0	402.98	404.80	1.82	3.83	0.23	0.00	404.80	0.001	0.001	0.000	1.00	0.00
31	24	1.35	402.84	404.80	1.96	3.13	0.43	0.00	404.81	0.003	192	411.28	411.69	0.41**	0.47	2.90	0.13	411.82	0.414	0.209	n/a	1.50	0.20
32	15	0.51	411.48	411.89	0.41	0.35	1.46	0.03	411.92	0.116	27.0	411.61	411.91	0.30	0.23	2.23	0.08	411.99	0.382	0.249	0.067	1.00	0.08
33	24	1.73	405.87	408.04	2.00	3.14	0.55	0.00	408.04	0.006	35.0	406.04	408.04	2.00	3.14	0.55	0.00	408.04	0.006	0.006	0.002	1.00	0.00
34	30	17.26	406.46	408.21	1.75	3.67	4.70	0.34	408.55	0.252	146	407.81	409.20	1.39**	2.80	6.16	0.59	409.79	0.500	0.376	n/a	1.50	0.89
35	24	5.41	408.01	410.08	2.00	3.14	1.72	0.05	410.13	0.057	34.6	408.18	410.10	1.92	3.10	1.74	0.05	410.15	0.050	0.053	0.018	1.10	0.05
36	24	3.91	408.38	410.15	1.77	2.95	1.33	0.03	410.18	0.027	35.2	408.56	410.16	1.60	2.69	1.45	0.03	410.19	0.031	0.029	0.010	1.10	0.04
37	18	1.26	408.76	410.19	1.43	1.74	0.73	0.01	410.20	0.013	27.1	408.93	410.20	1.27	1.59	0.79	0.01	410.21	0.014	0.013	0.004	1.00	0.01
38	18	2.28	408.76	410.19	1.43	1.74	1.31	0.03	410.22	0.041	154	413.97	414.55	0.58**	0.63	3.65	0.21	414.75	0.481	0.261	n/a	1.50	0.31
39	15	1.88	414.17	414.86	0.69	0.69	2.72	0.11	414.97	0.247	27.0	414.31	414.89	0.58	0.55	3.40	0.18	415.07	0.447	0.347	0.094	1.00	0.18
40	24	12.20	408.01	410.08	2.00	3.14	3.88	0.23	410.32	0.291	184	409.76	411.00	1.24**	2.04	5.98	0.56	411.55	0.588	0.439	n/a	1.50	0.83
41	24	1.66	409.76	411.83	2.00	3.14	0.53	0.00	411.83	0.005	35.0	410.11	411.83	1.72	2.88	0.58	0.01	411.84	0.005	0.005	0.002	1.00	0.01
42	24	9.24	409.96	411.83	1.87	3.06	3.02	0.14	411.97	0.144	108	412.61	413.69	1.08**	1.72	5.36	0.45	414.13	0.522	0.333	n/a	1.50	0.67

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Run Date: 08-26-2020

NOTES: * Normal depth assumed., ** Critical depth assumed.

Hydraulic Grade Line Computations

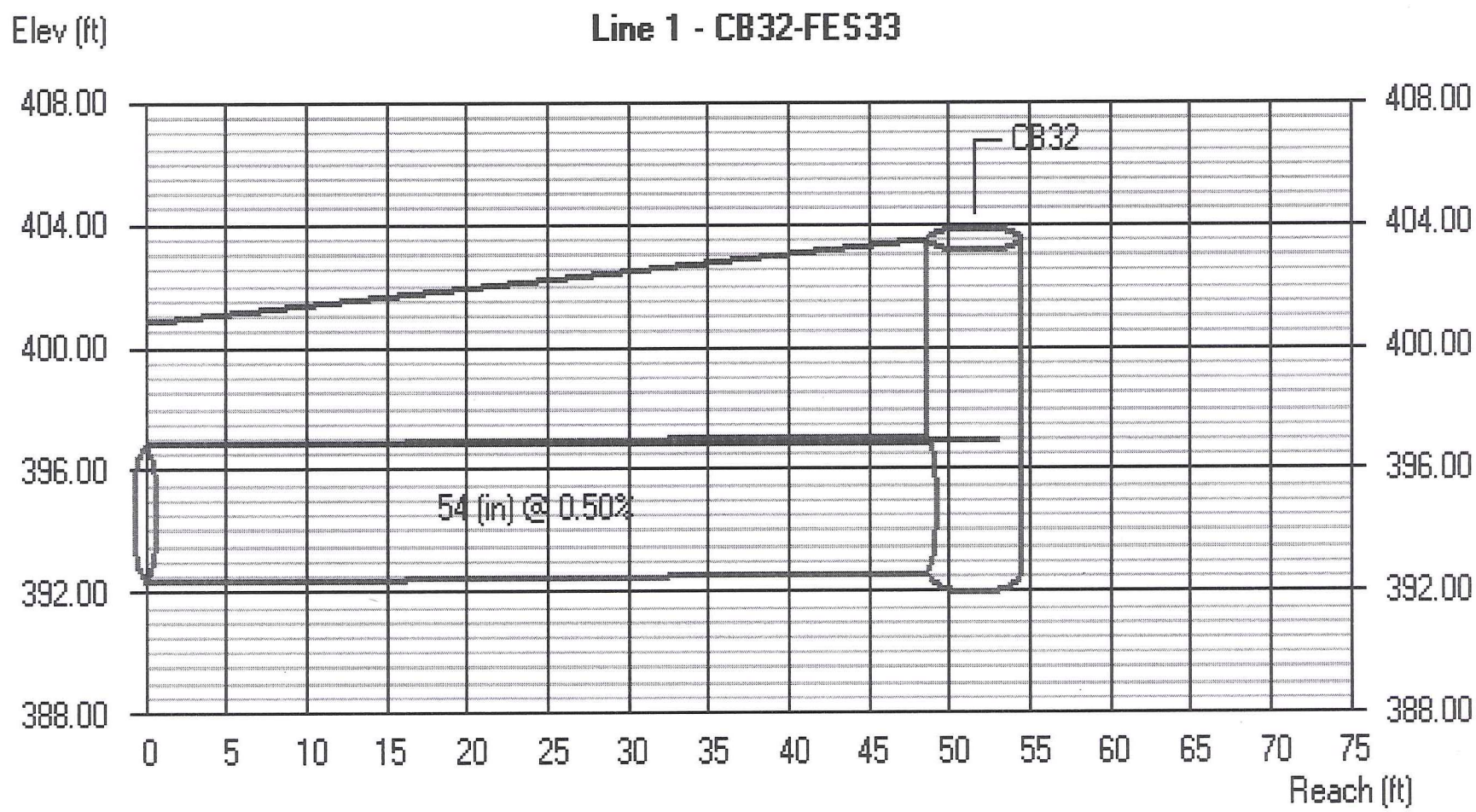
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
	(in)	(cfs)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	(ft)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)	(K)	(ft)
43	18	4.22	412.81	414.36	1.50	1.77	2.39	0.09	414.45	0.162	35.5	413.66	414.44	0.78**	0.93	4.51	0.32	414.76	0.556	0.359	n/a	1.10	0.35
44	15	3.99	413.86	414.79	0.93	0.98	4.06	0.26	415.05	0.464	43.7	414.26	415.06	0.80**	0.83	4.81	0.36	415.42	0.699	0.581	n/a	1.25	0.45
45	15	0.79	414.46	415.51	1.05	1.10	0.72	0.01	415.52	0.014	35.2	416.37	416.73	0.36**	0.29	2.75	0.12	416.84	0.479	0.247	n/a	1.10	0.13
46	15	0.61	416.57	416.86	0.29	0.21	2.90	0.13	416.99	0.688	35.0	417.50	417.81	0.31**	0.24	2.55	0.10	417.91	0.475	0.582	n/a	1.00	0.10
47	24	4.94	412.81	414.36	1.55	2.61	1.89	0.06	414.41	0.053	35.0	412.98	414.37	1.38	2.32	2.13	0.07	414.44	0.070	0.062	0.022	1.25	0.09
48	18	4.77	413.18	414.45	1.27	1.60	2.99	0.14	414.59	0.195	34.9	413.36	414.50	1.14	1.44	3.32	0.17	414.67	0.242	0.219	0.076	1.25	0.21
49	15	1.88	413.56	414.71	1.15	1.18	1.59	0.04	414.75	0.073	27.1	414.47	415.02	0.55**	0.52	3.62	0.20	415.22	0.533	0.303	n/a	1.00	0.20
50	15	2.57	413.56	414.71	1.15	1.18	2.17	0.07	414.78	0.137	194	418.27	418.91	0.64**	0.63	4.05	0.25	419.17	0.580	0.358	n/a	1.50	0.38
51	15	1.73	418.47	419.29	0.82	0.86	2.02	0.06	419.36	0.121	27.0	418.60	419.31	0.71	0.72	2.42	0.09	419.40	0.191	0.156	0.042	1.00	0.09
52	15	3.25	414.46	415.51	1.05	1.10	2.95	0.14	415.64	0.243	17.0	419.00	419.72	0.72**	0.73	4.43	0.30	420.03	0.633	0.438	n/a	1.00	0.30

Project File: JDP South line A Revised 070720.stm | Number of lines: 52 | Run Date: 08-26-2020

NOTES: * Normal depth assumed., ** Critical depth assumed.

Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

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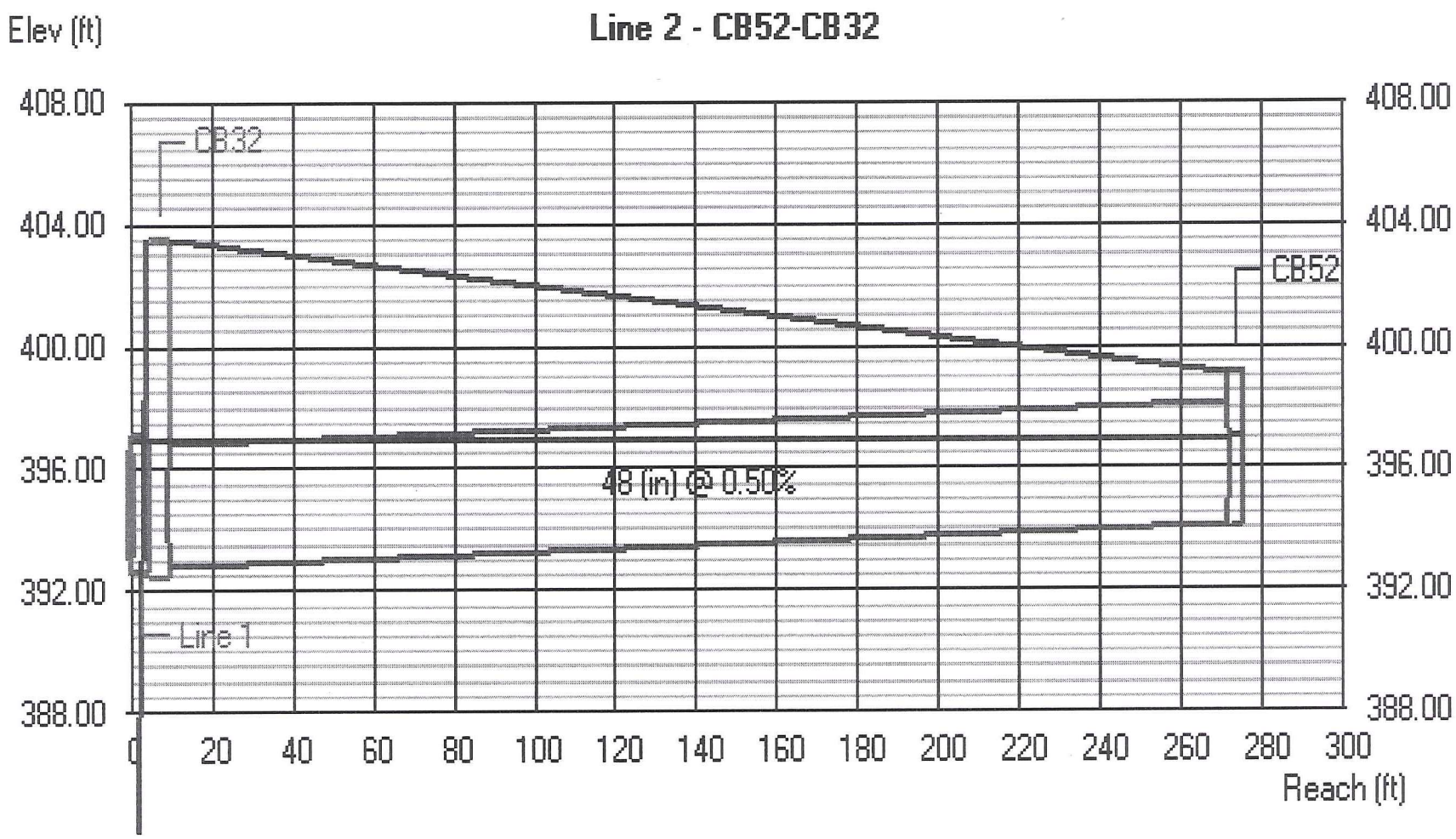

Storm Sewer Profile

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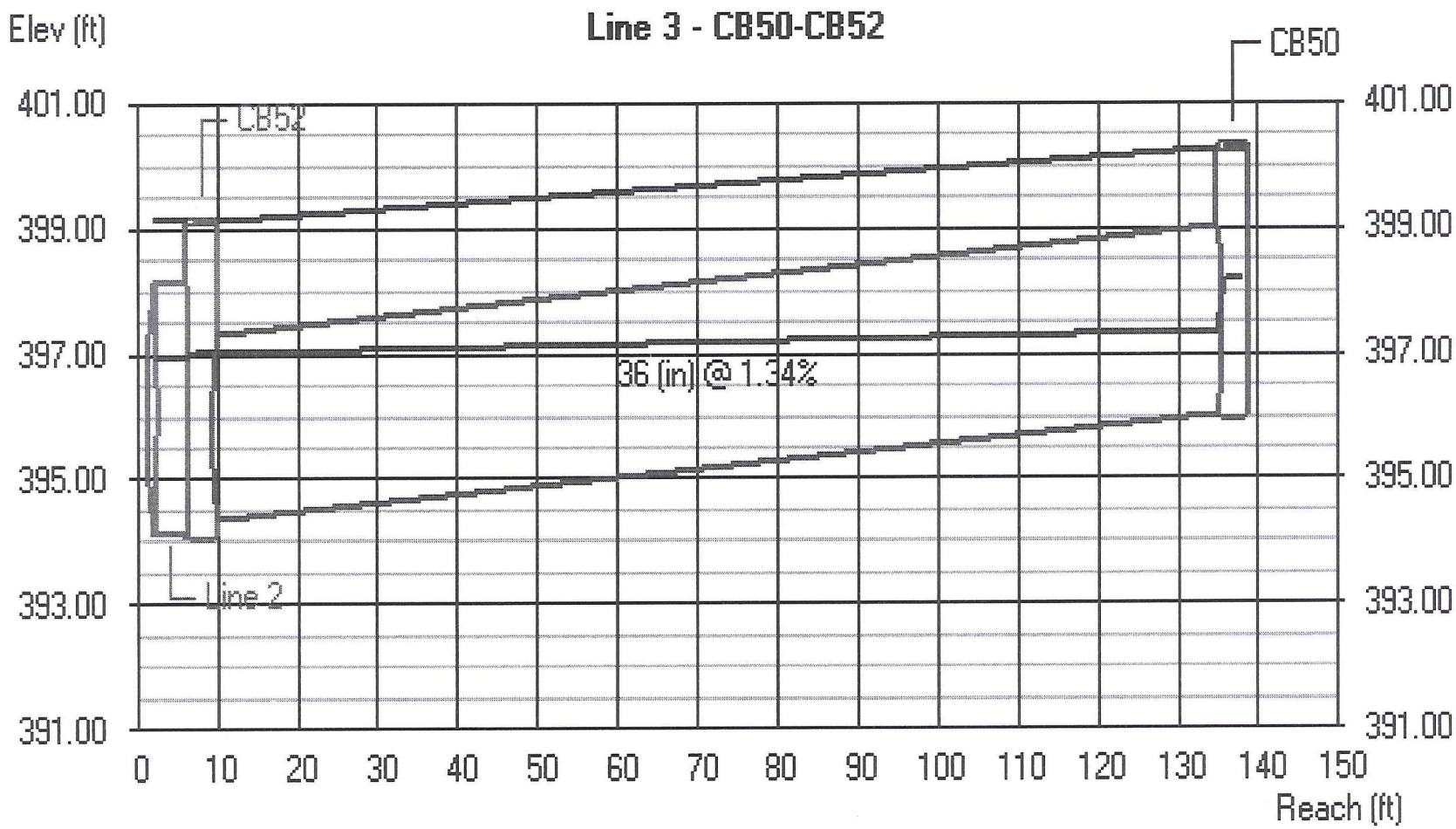

Storm Sewer Profile

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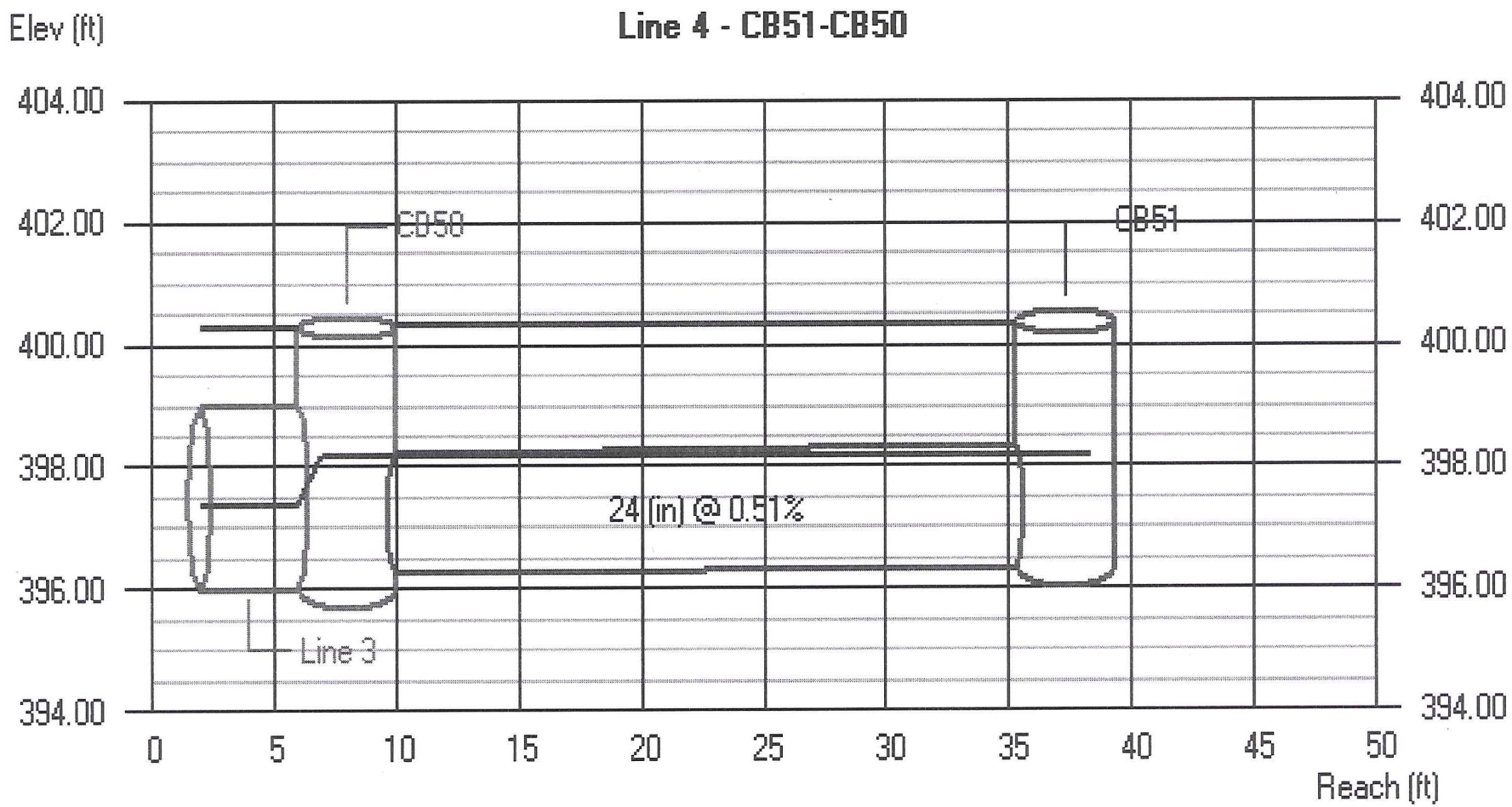

Storm Sewer Profile

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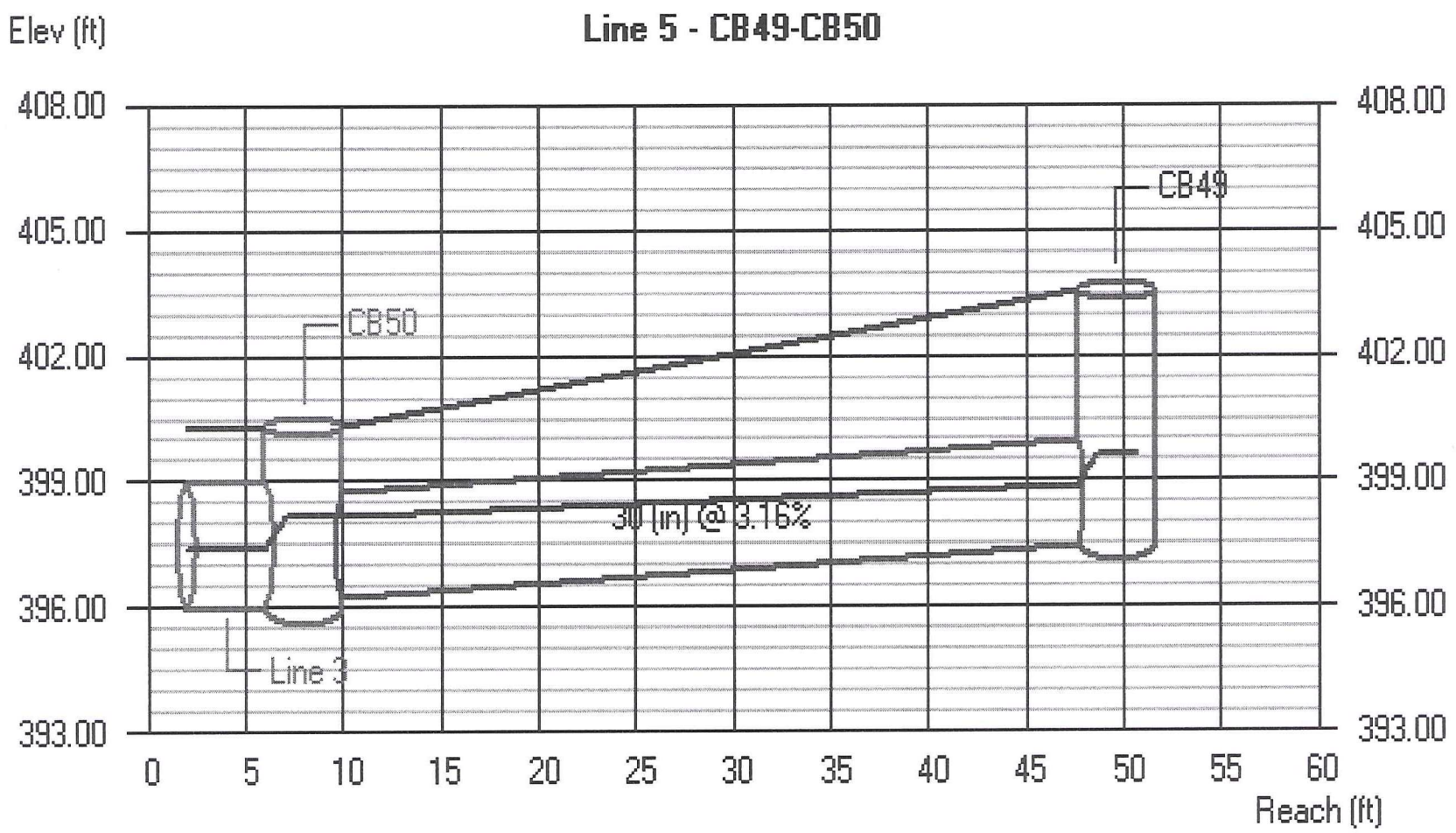

Storm Sewer Profile

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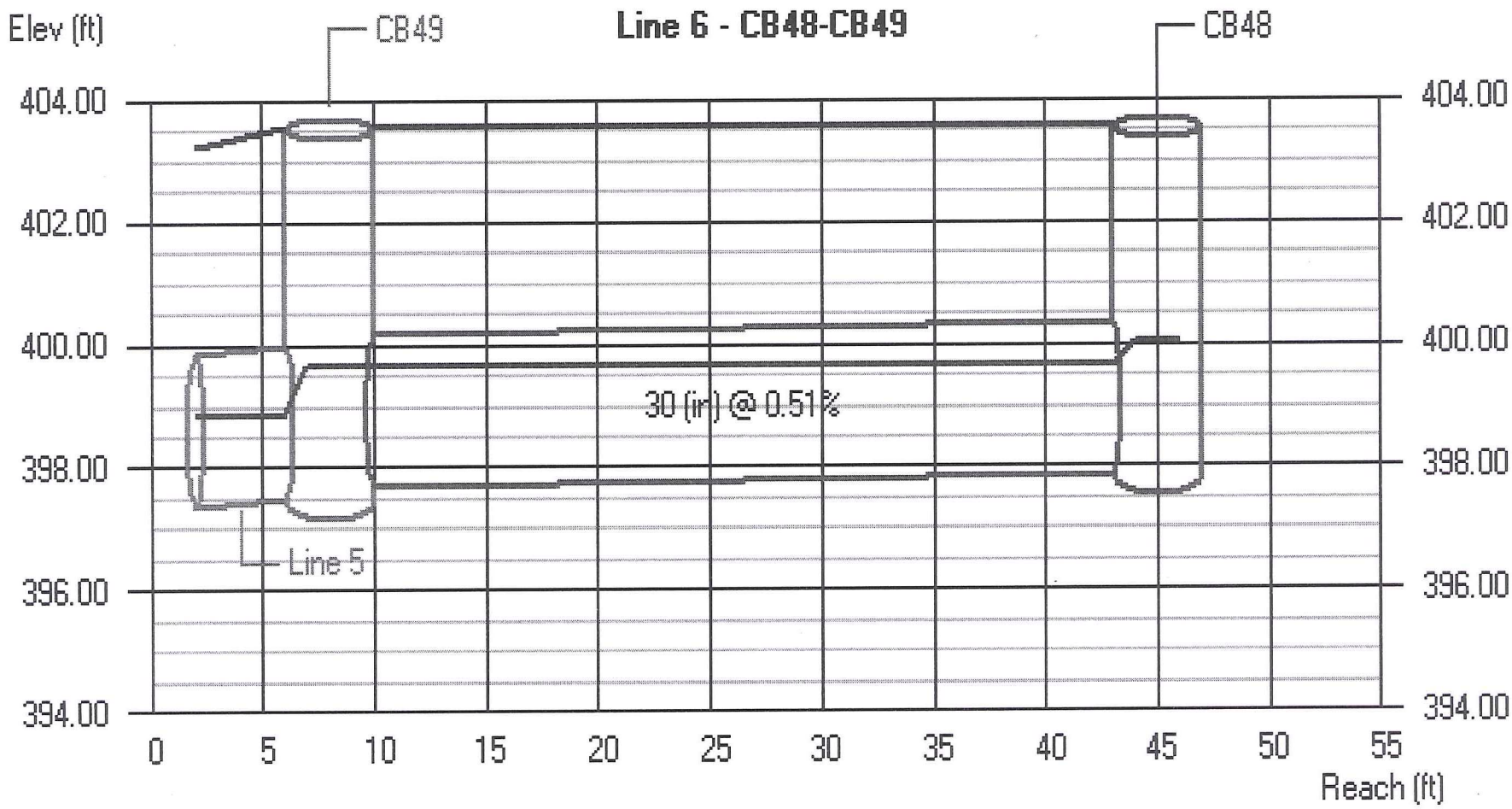

Storm Sewer Profile

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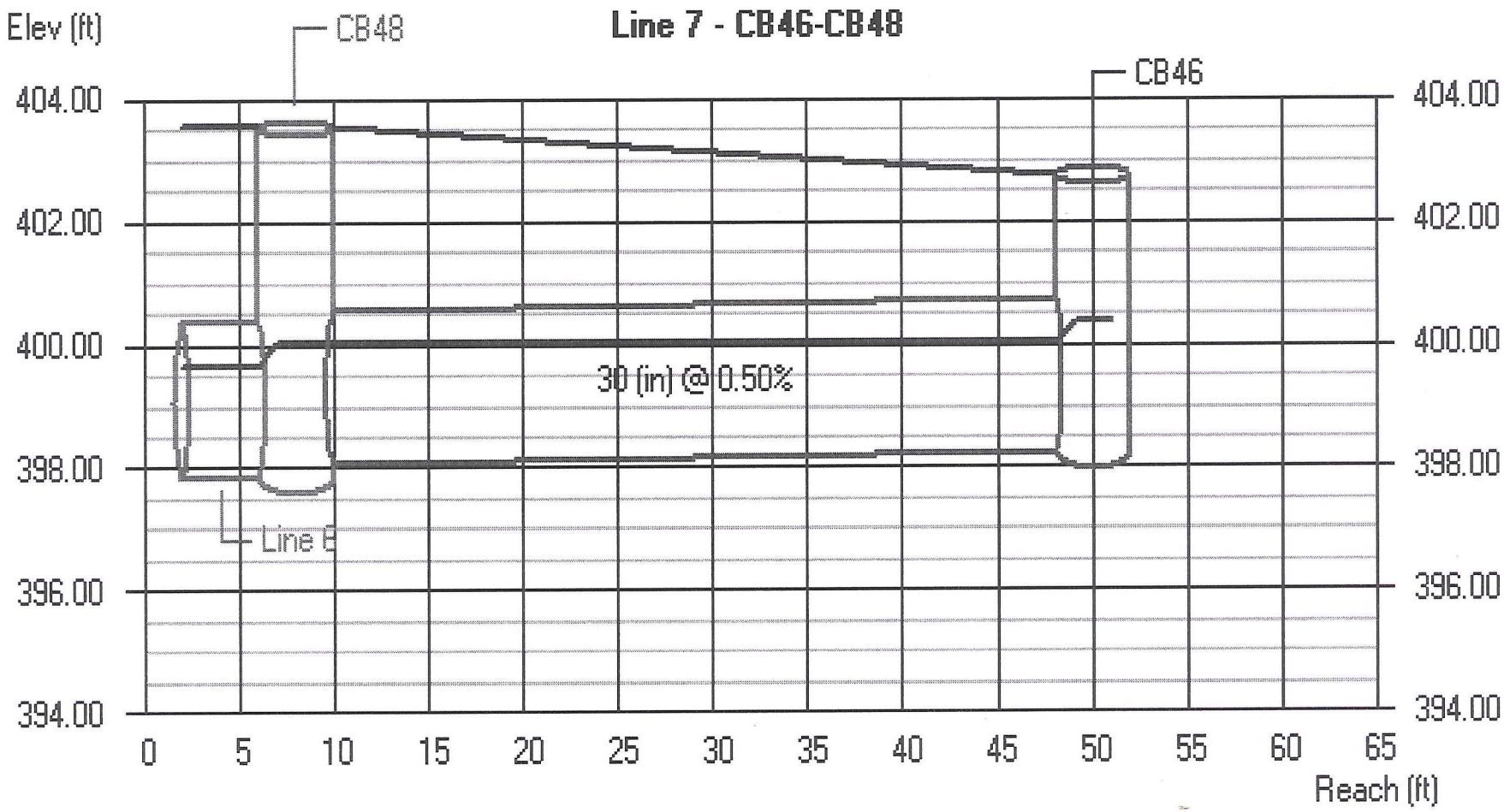

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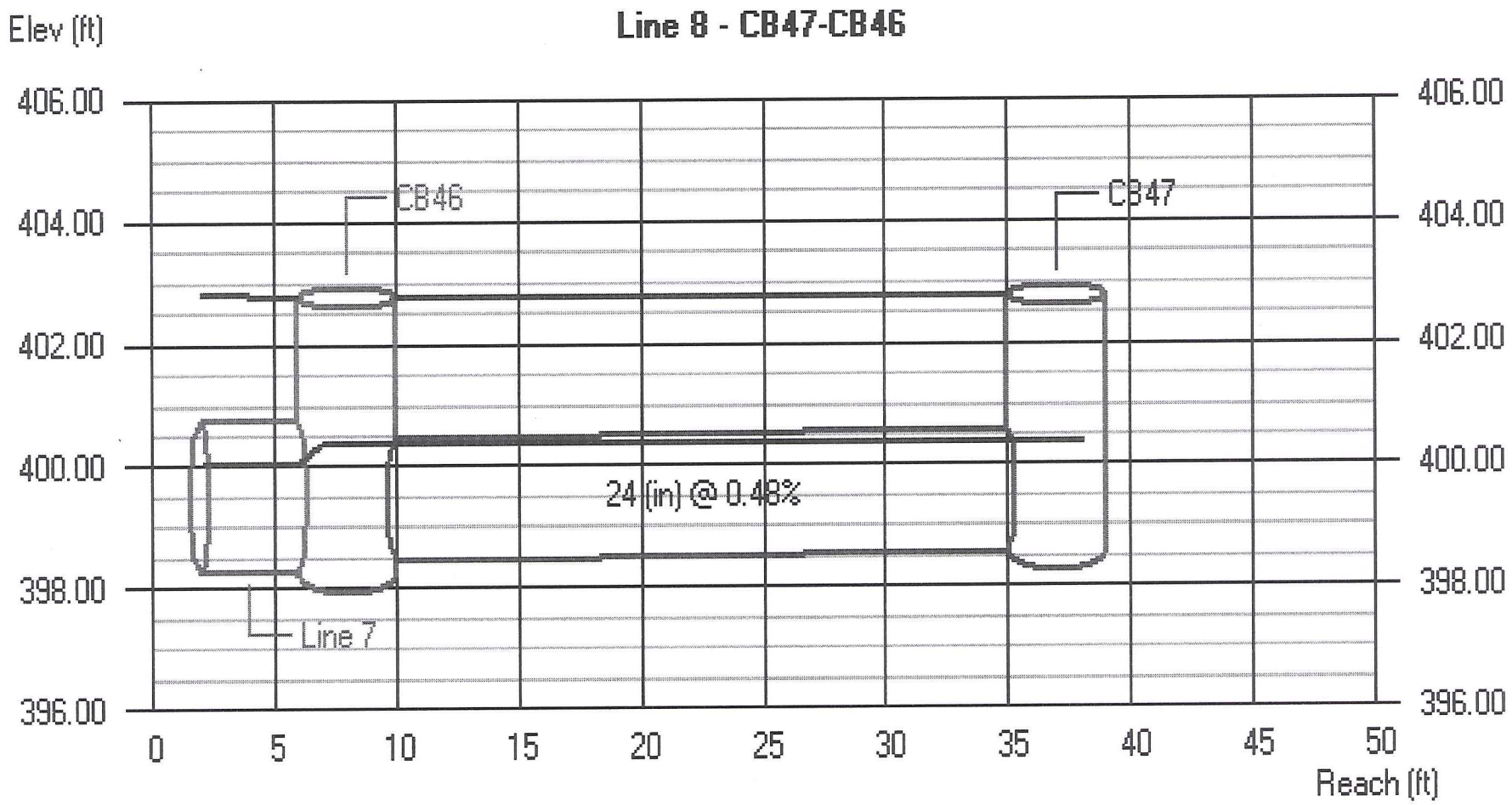

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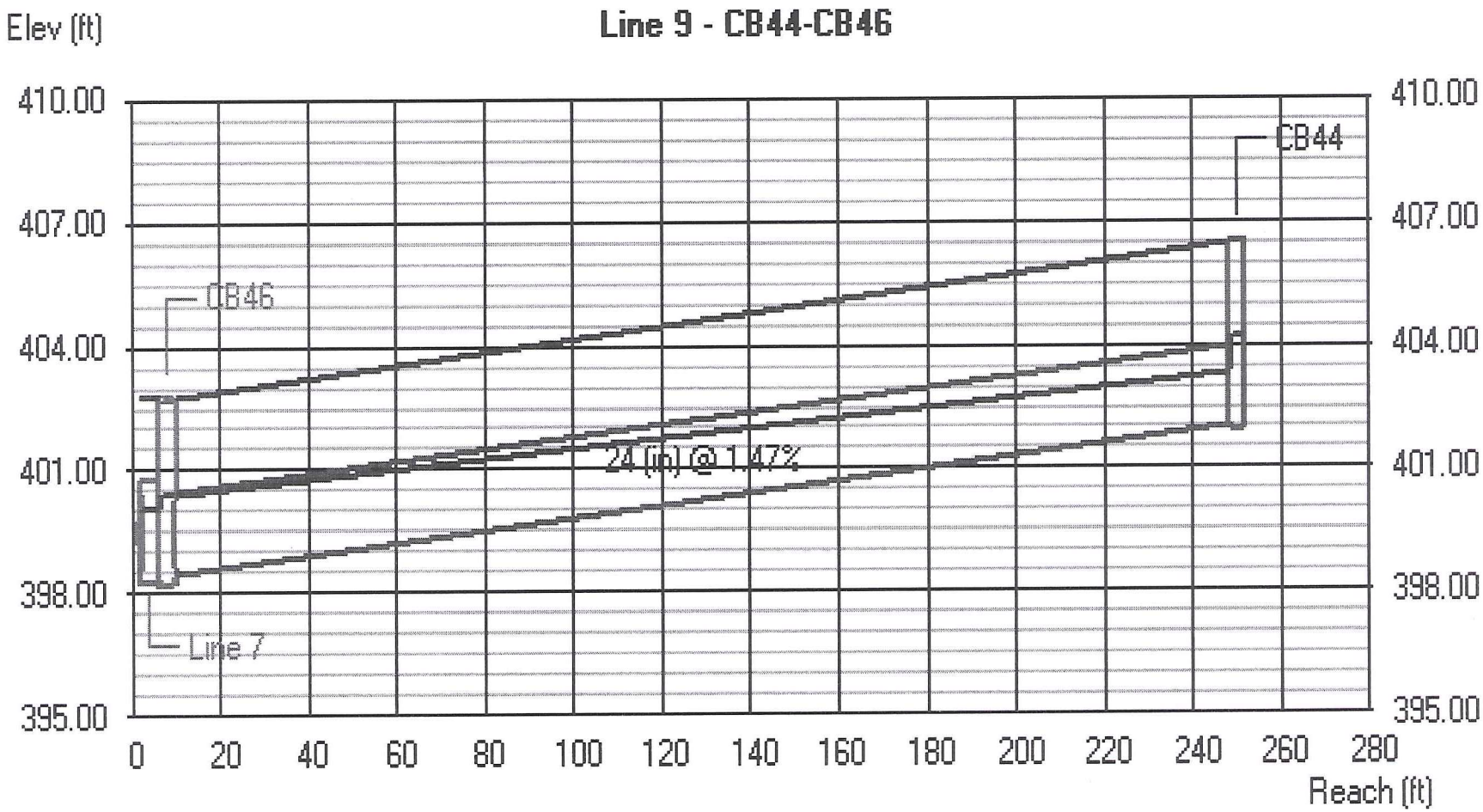

Storm Sewer Profile

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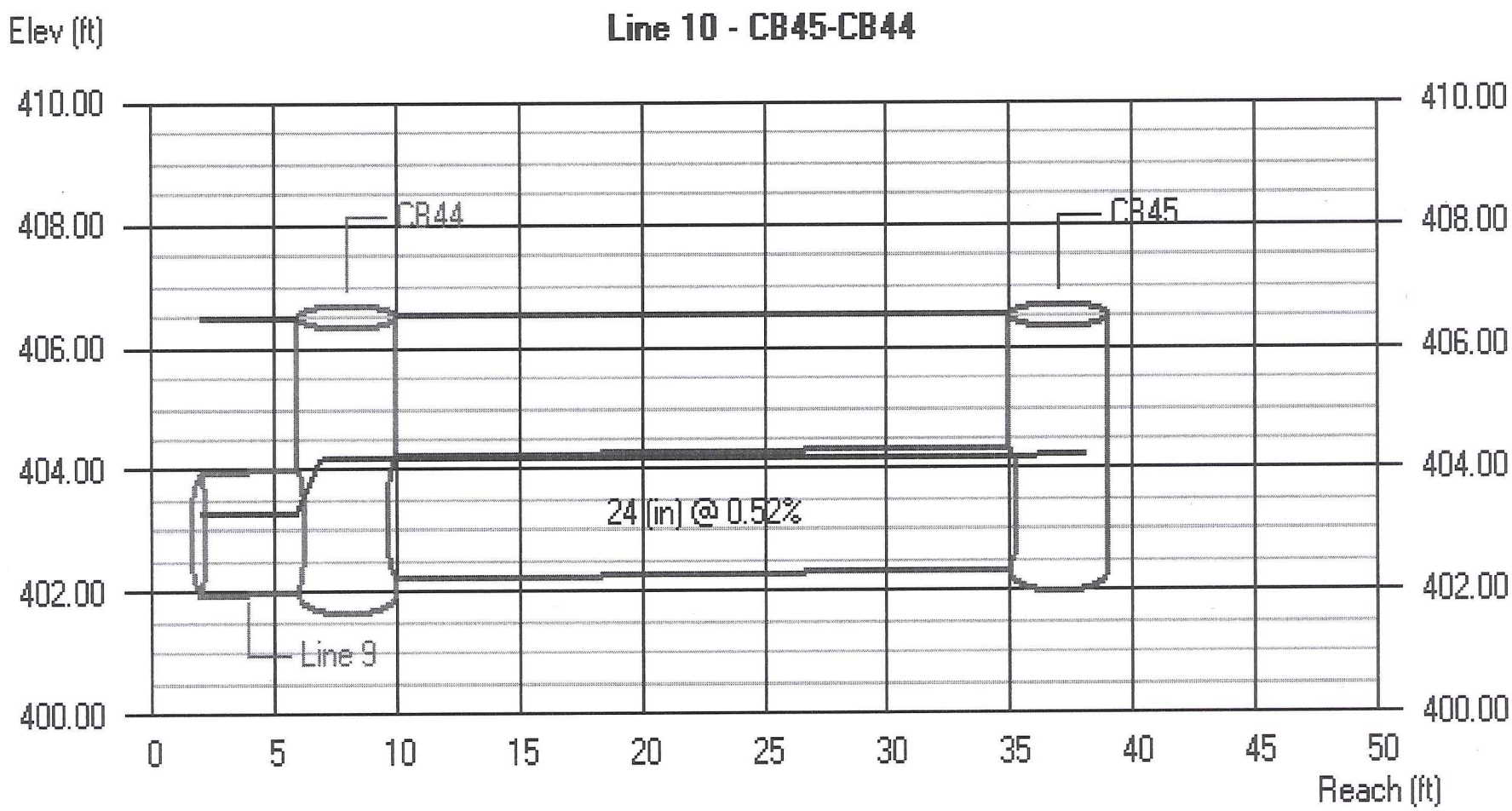

Storm Sewer Profile

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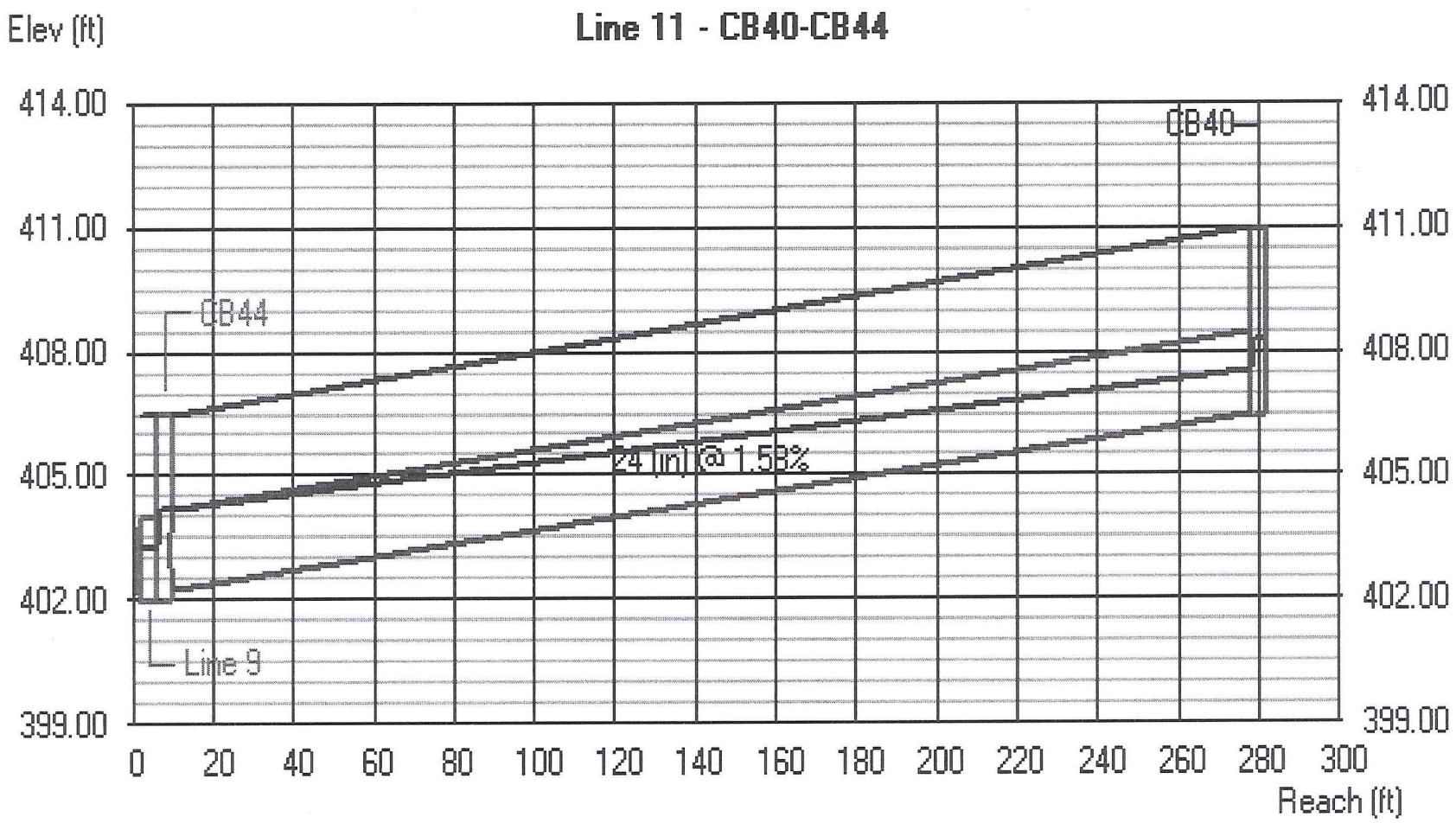

Storm Sewer Profile

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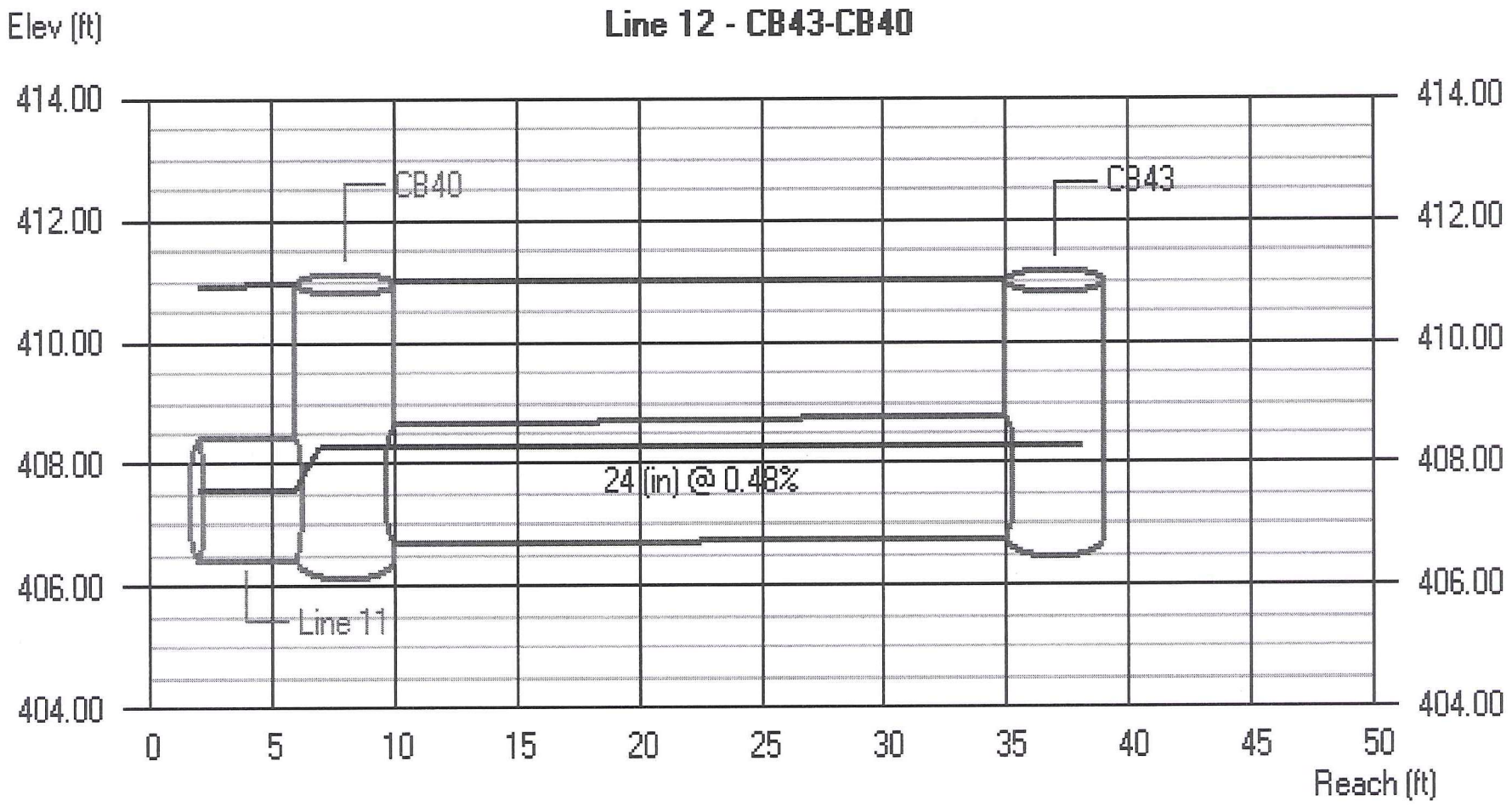

Storm Sewer Profile

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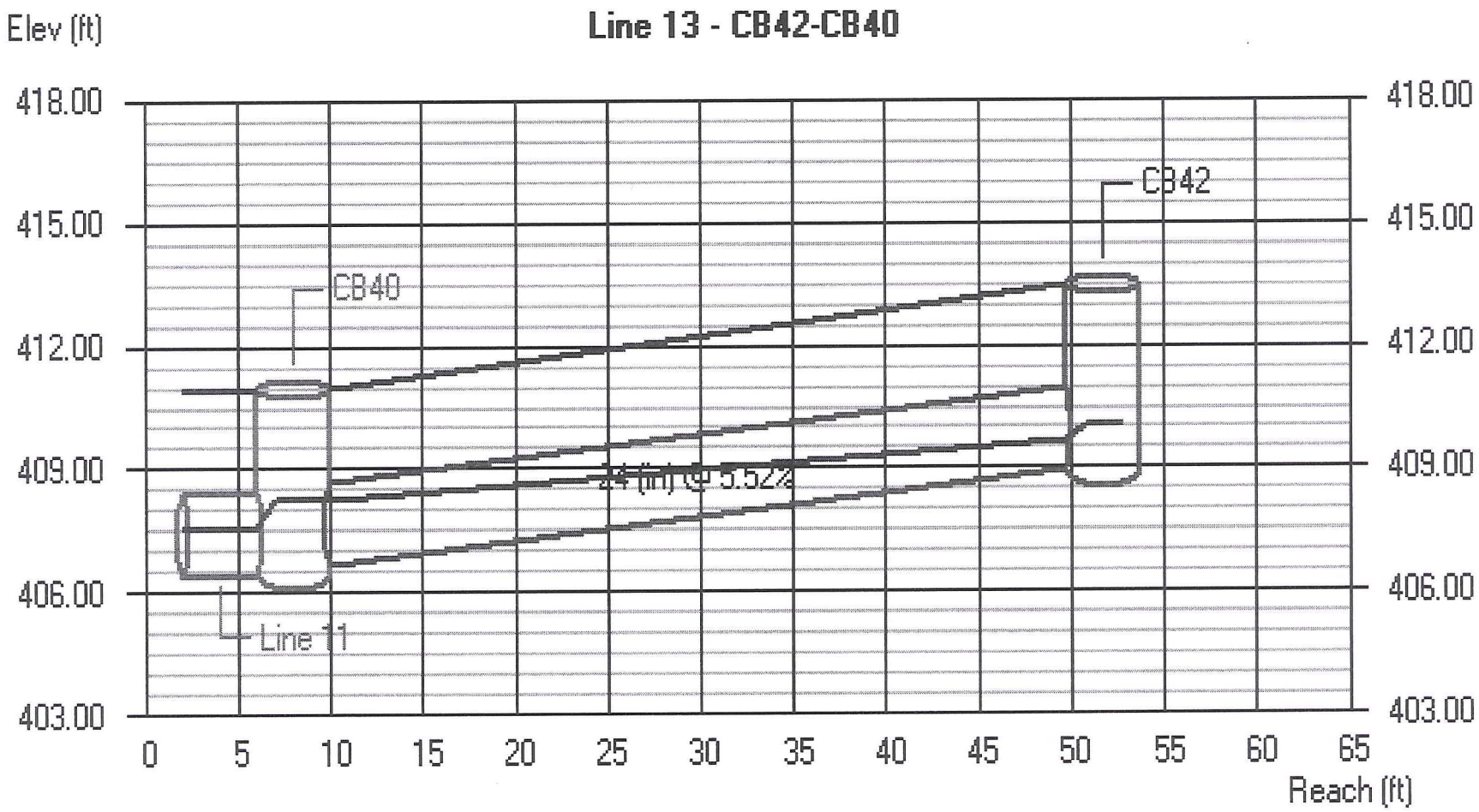

Storm Sewer Profile

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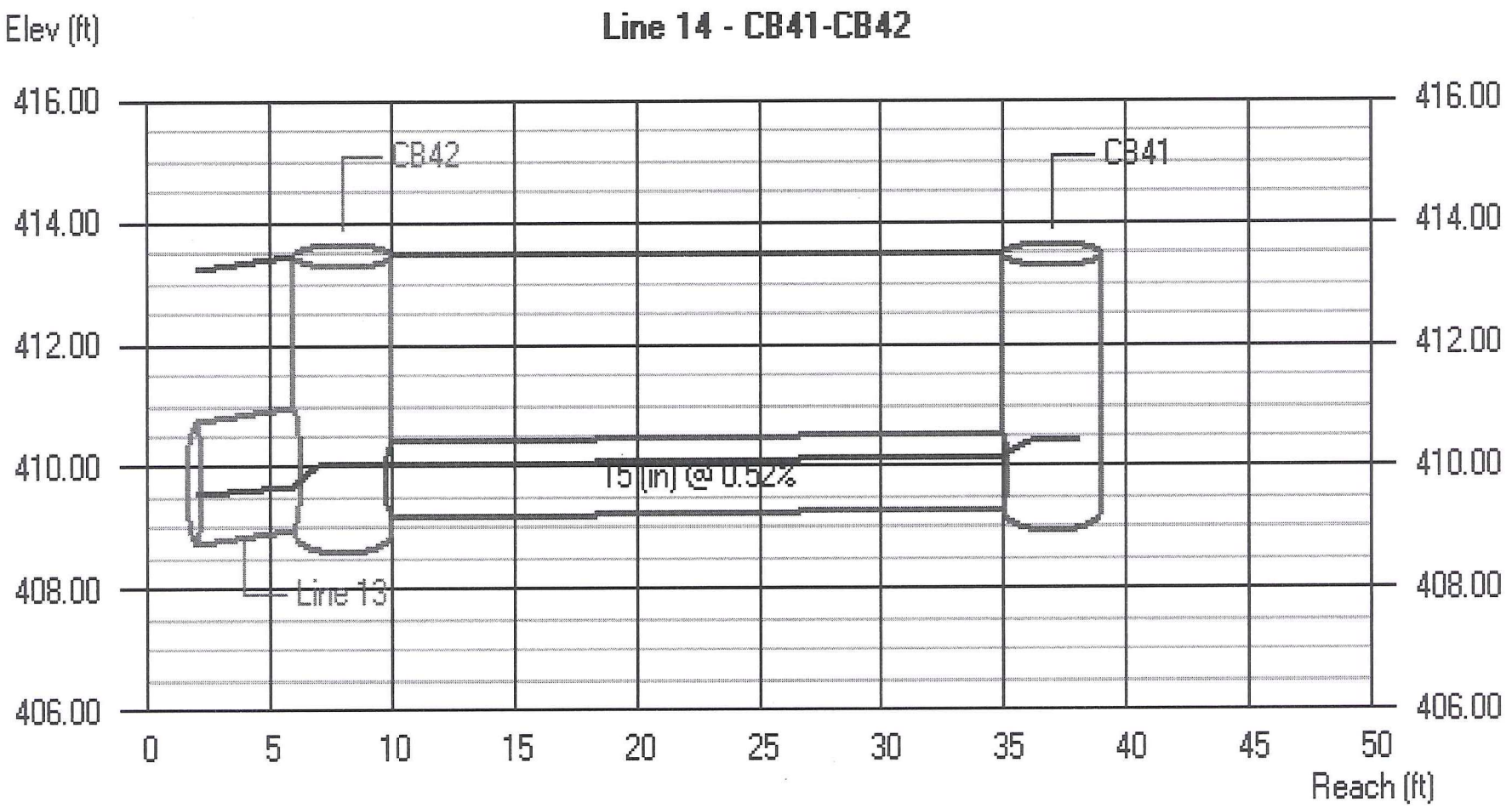

Storm Sewer Profile

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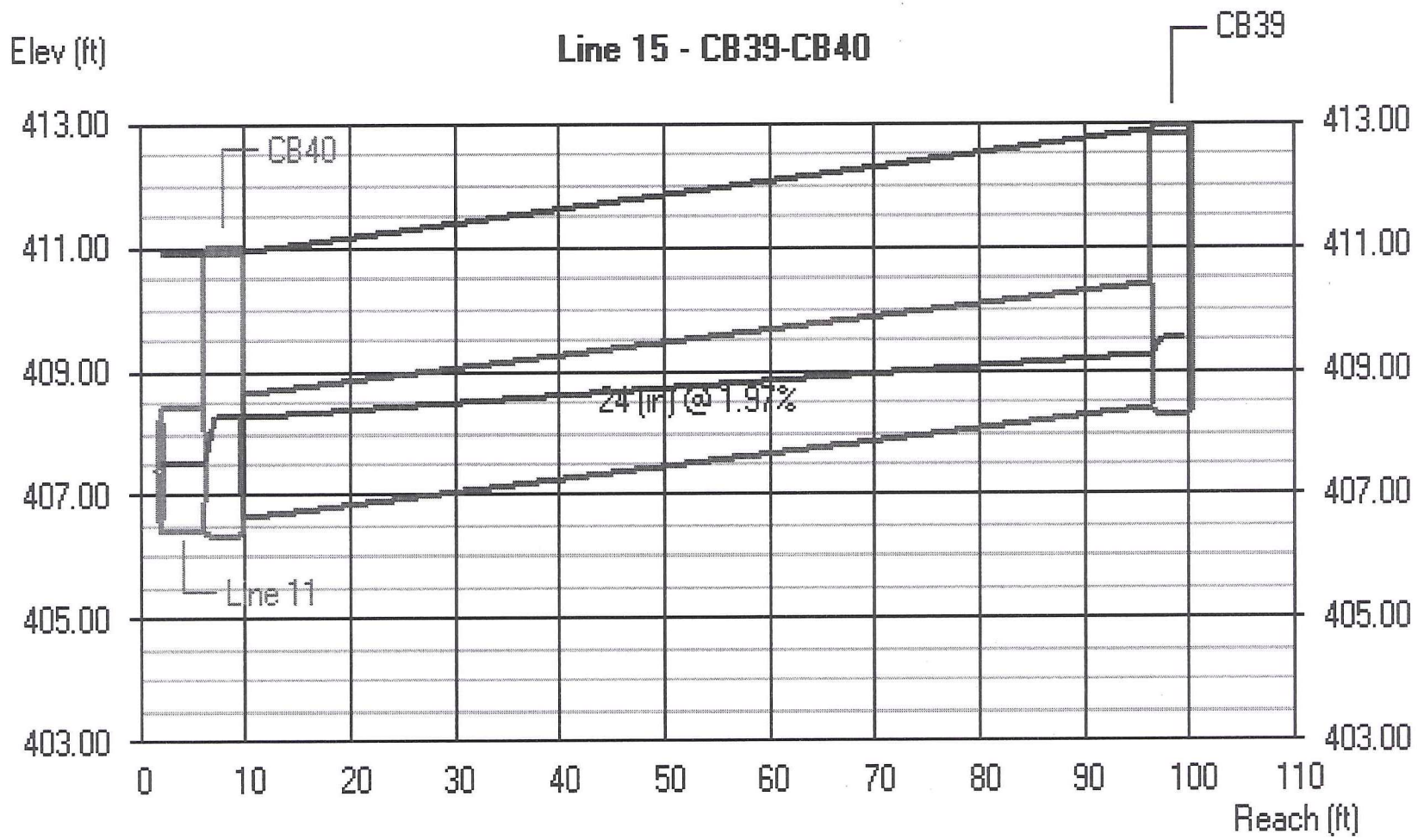

Storm Sewer Profile

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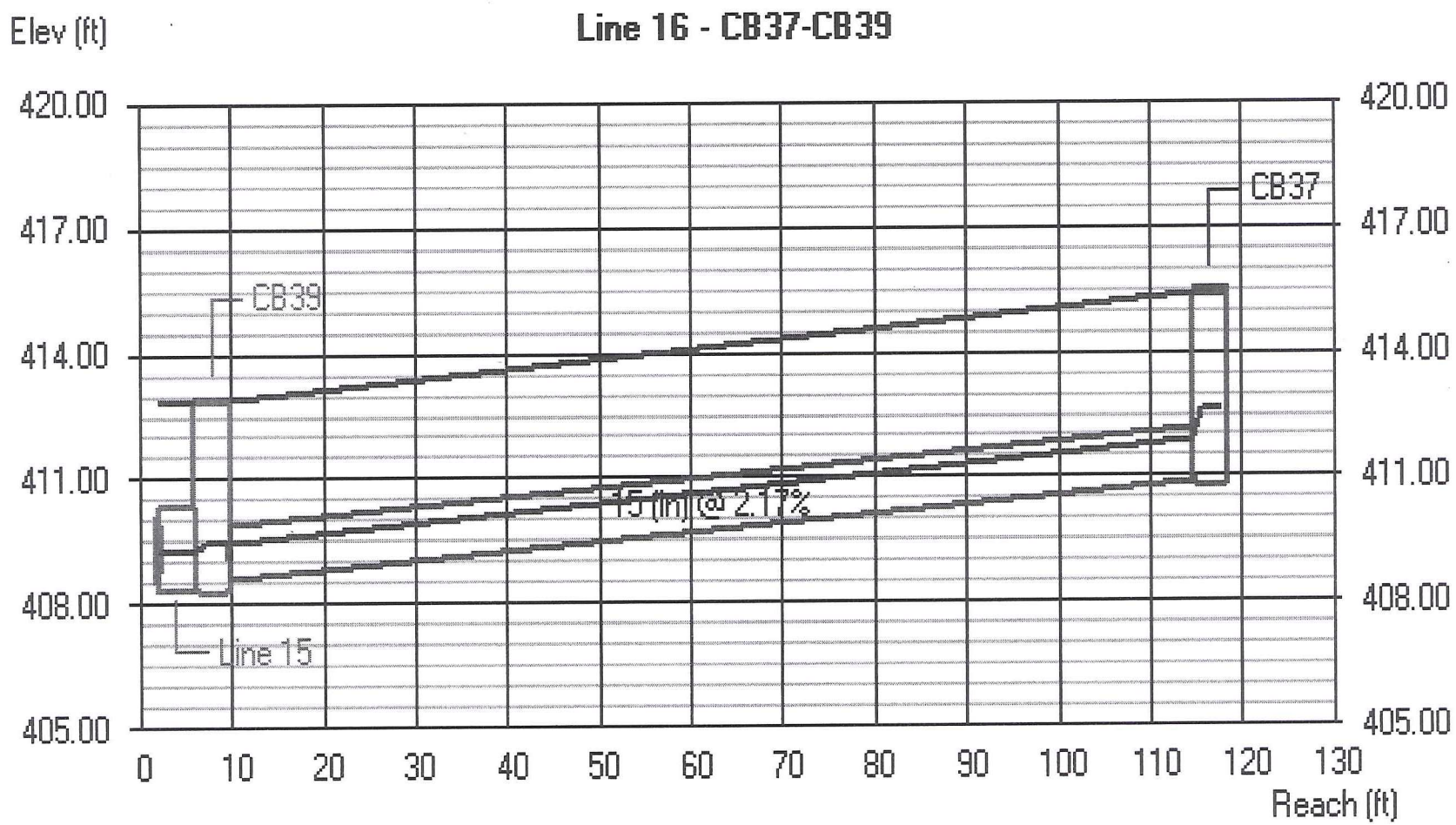

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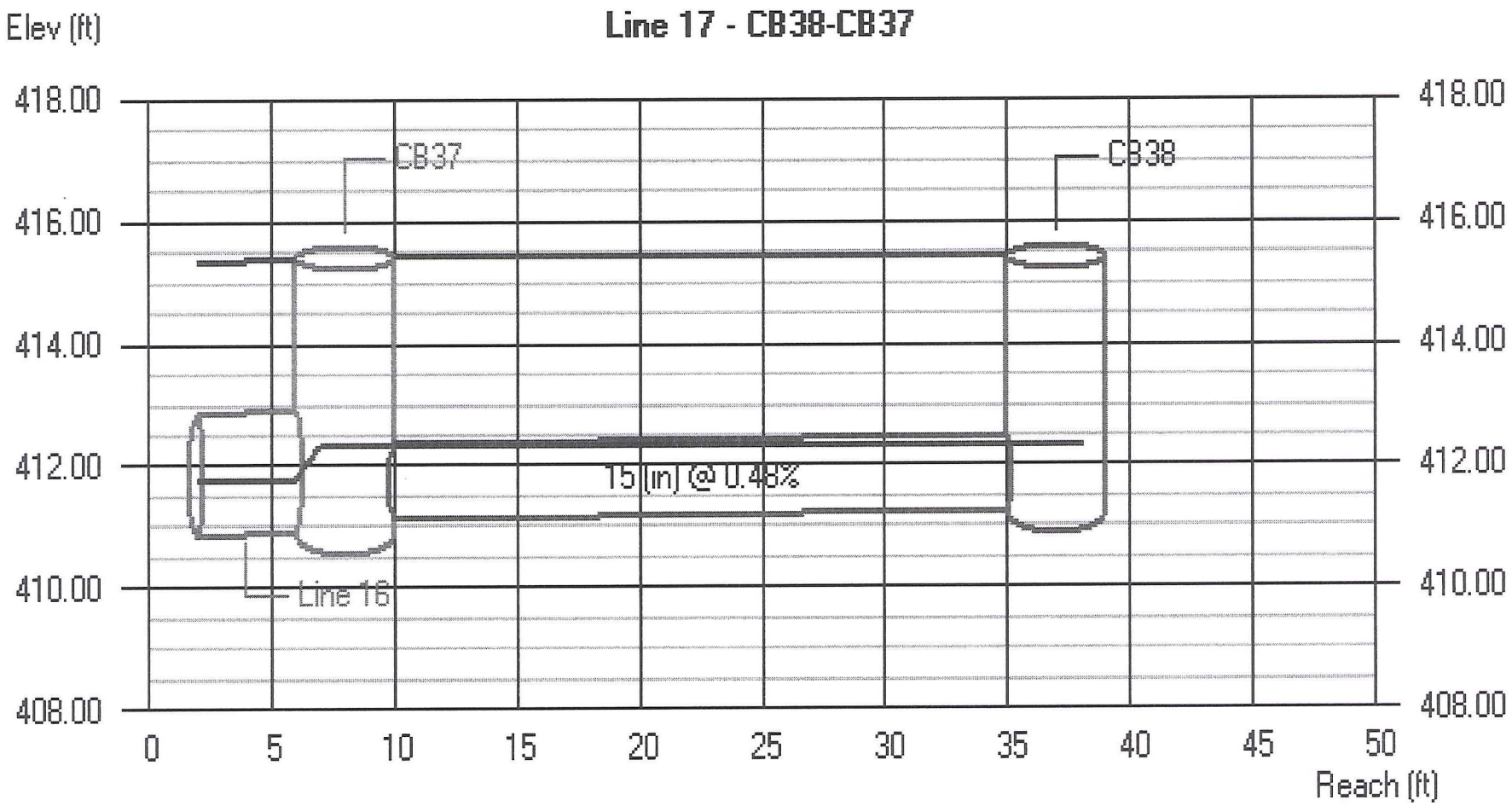
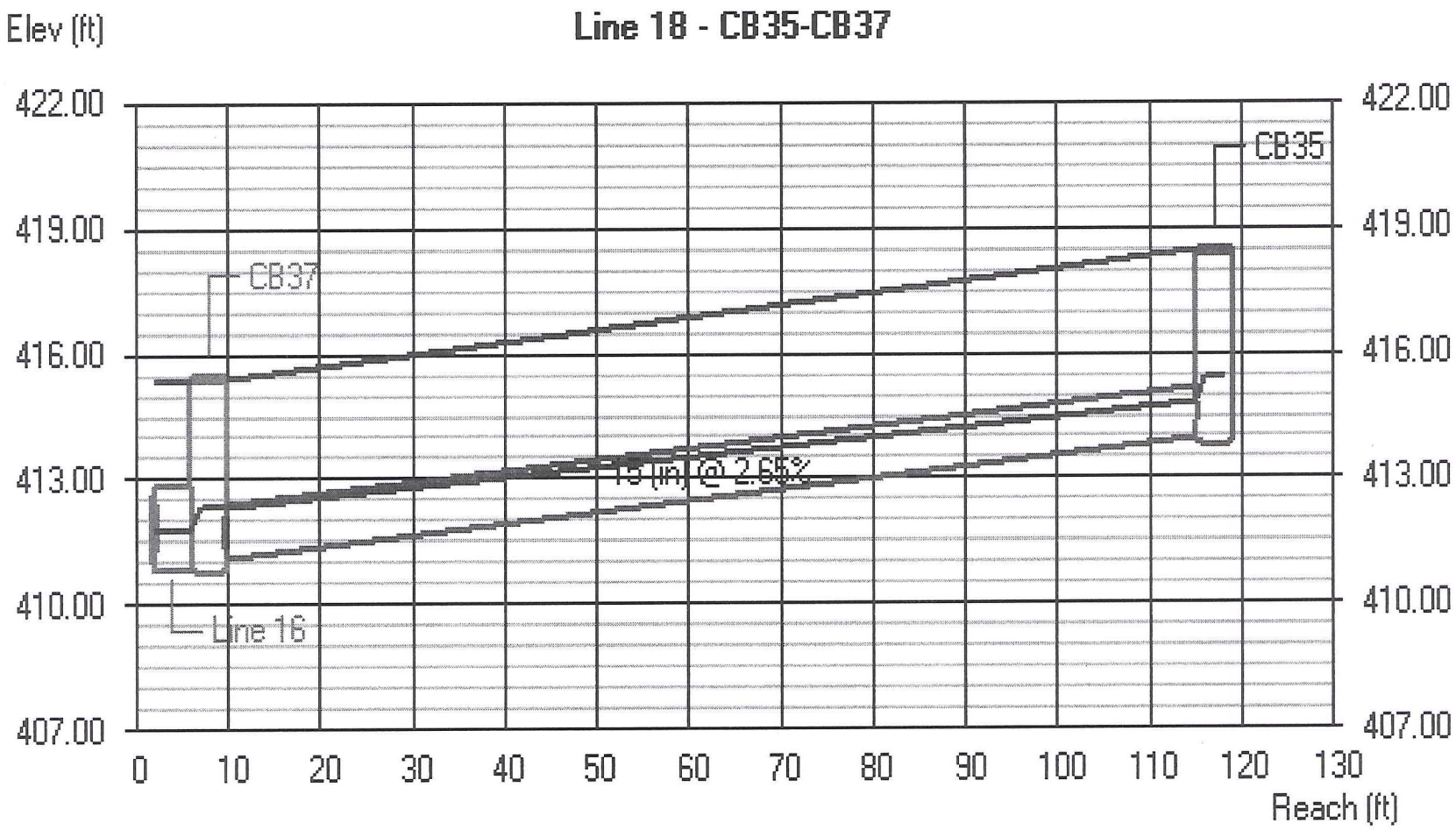


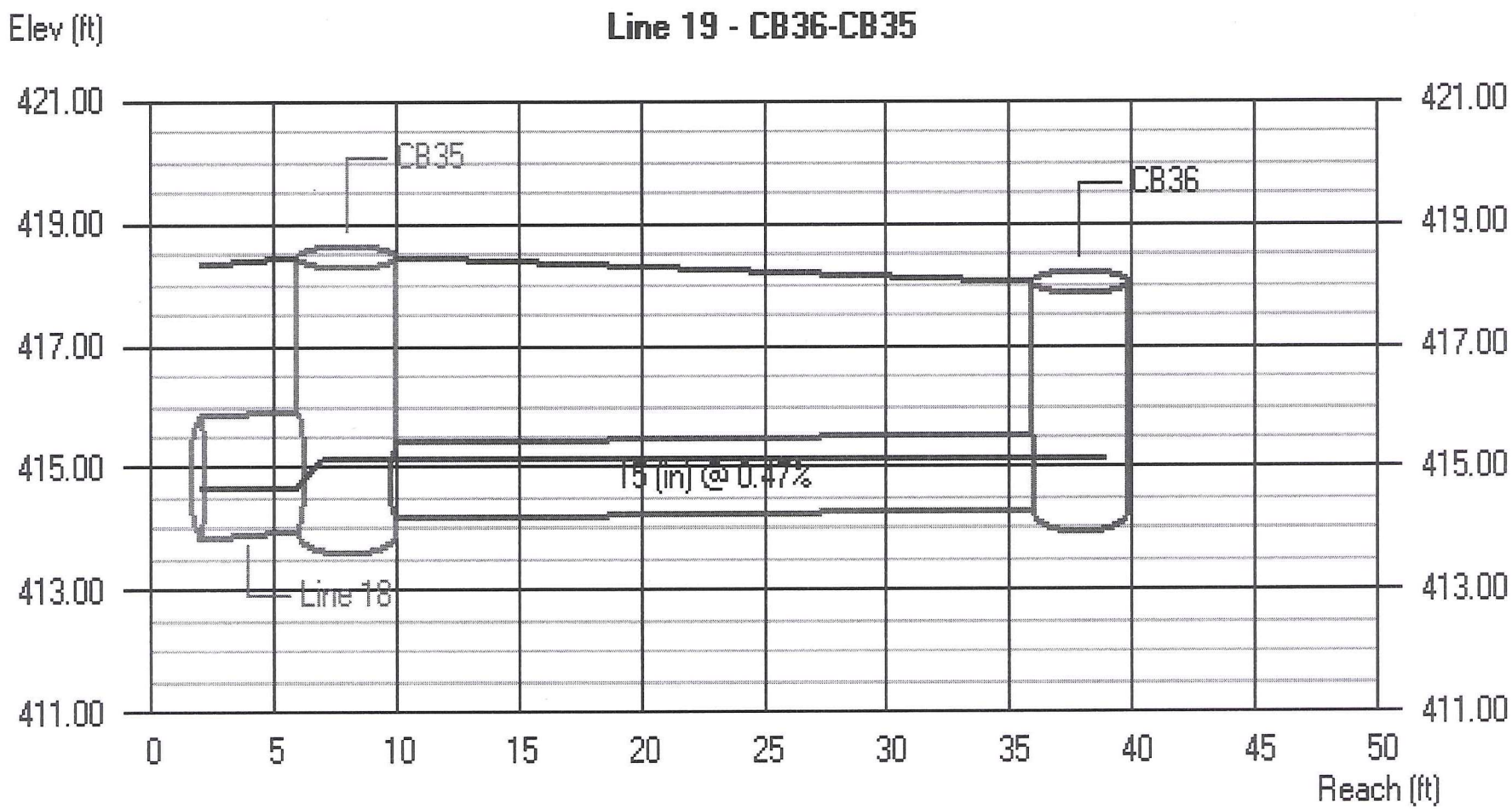
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



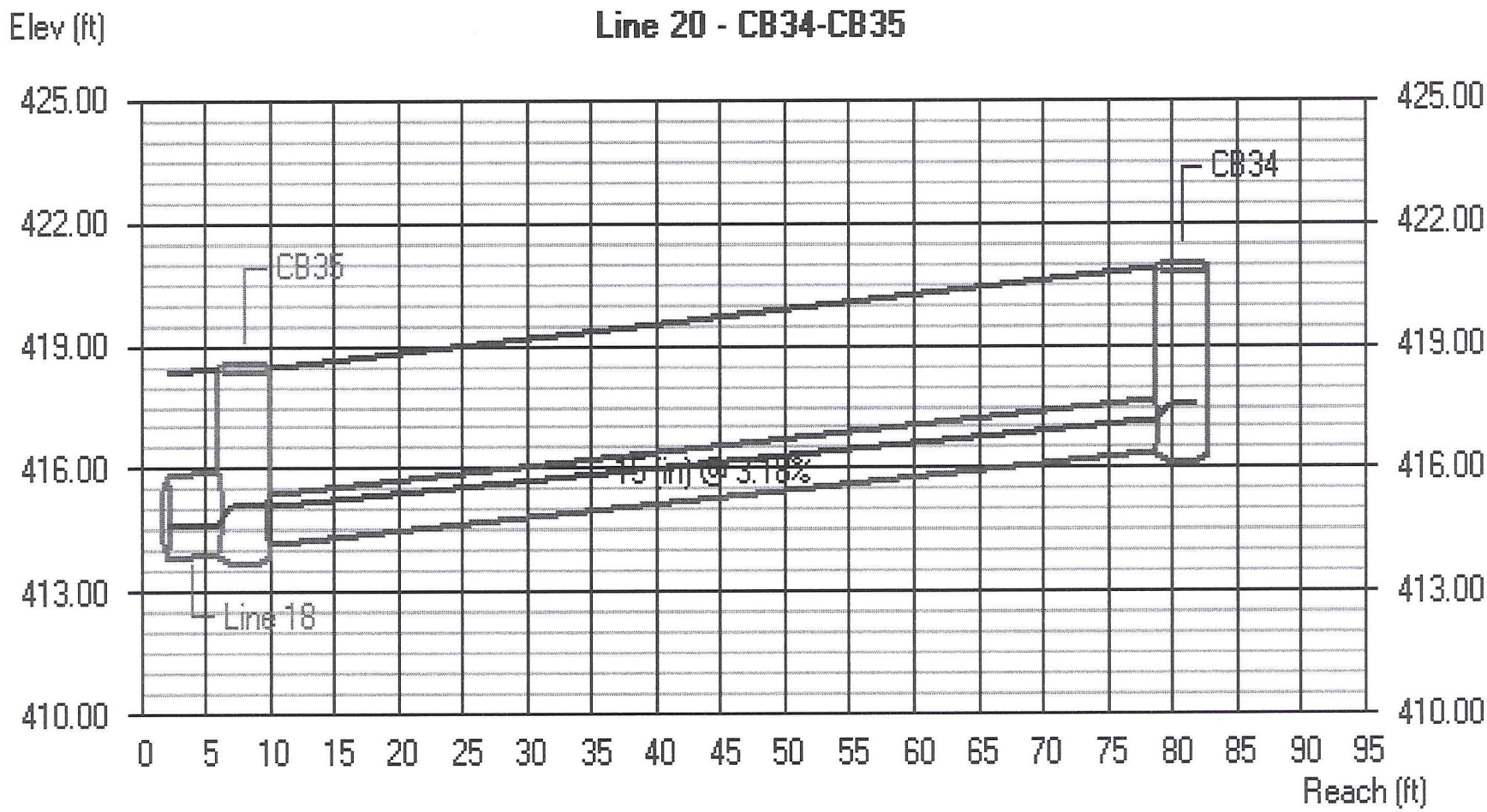
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



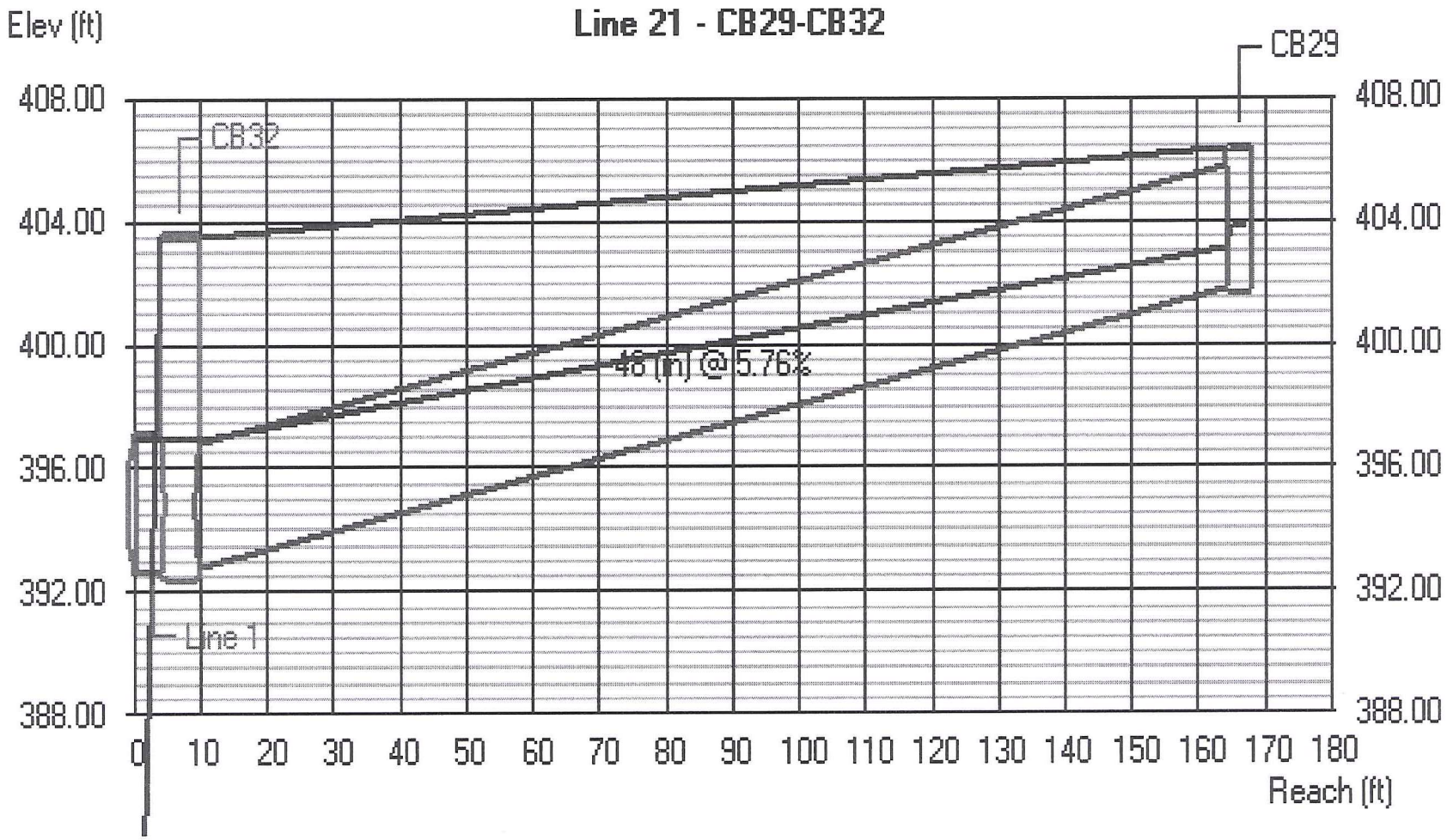
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



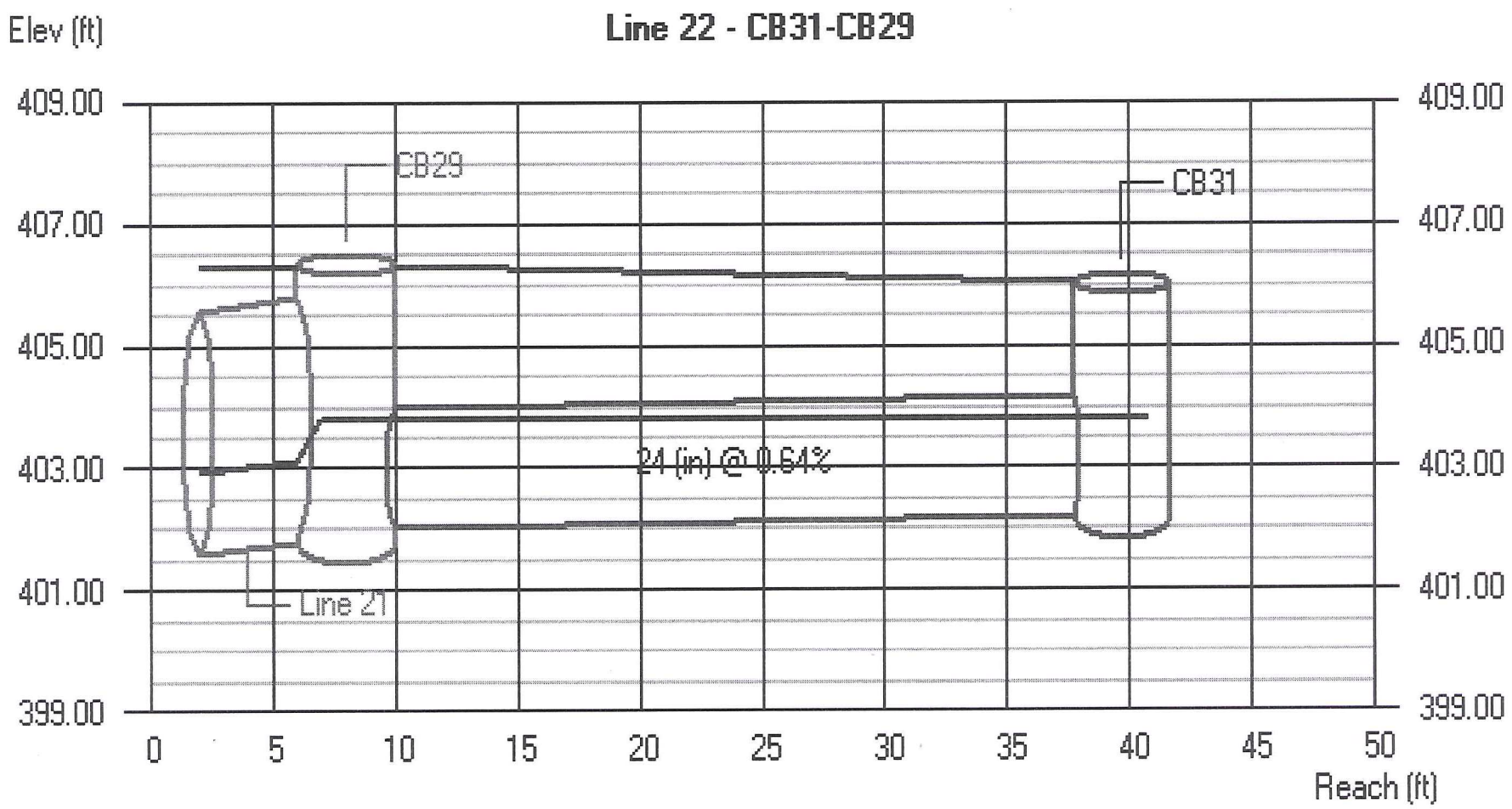
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



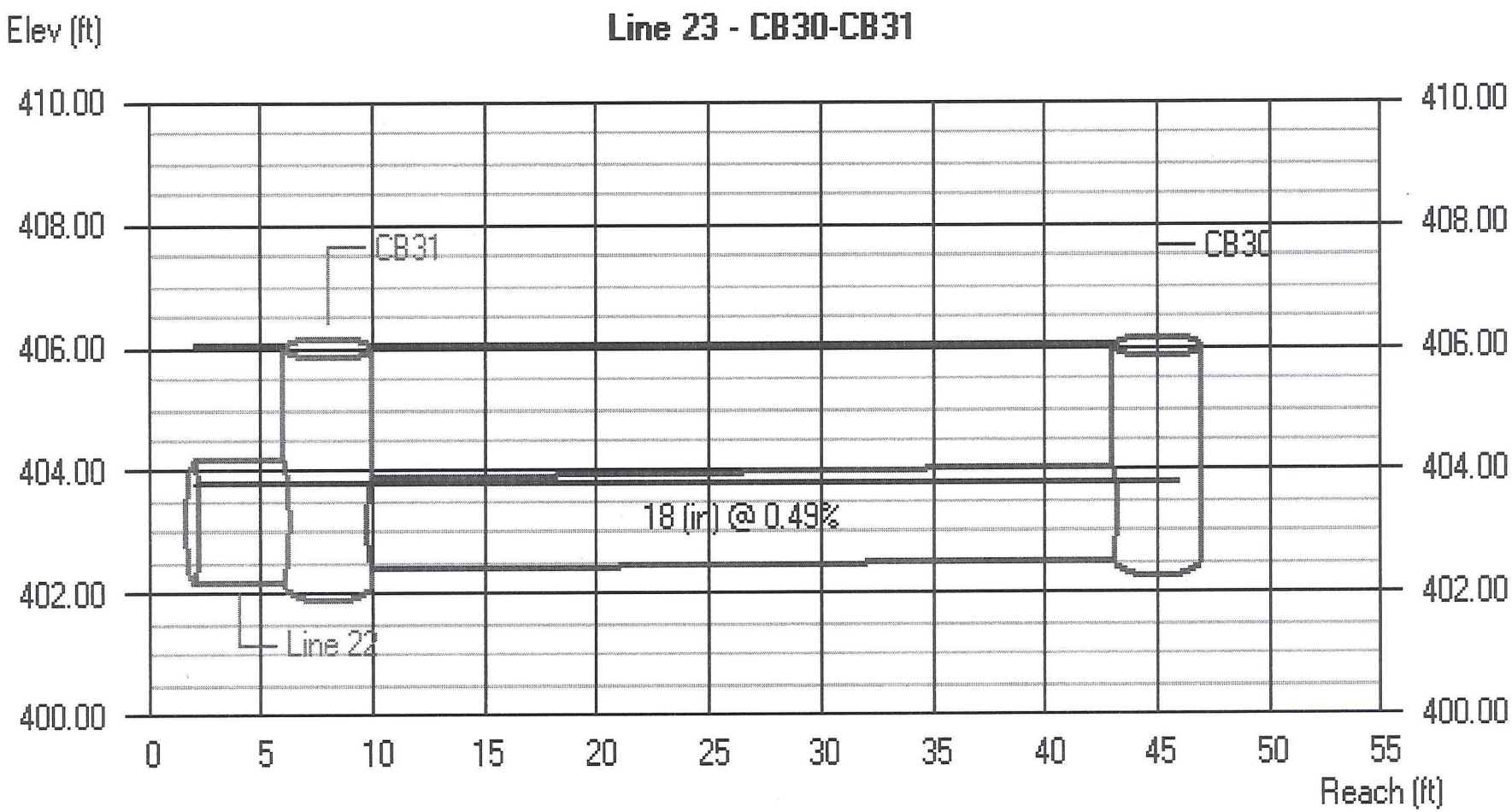
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

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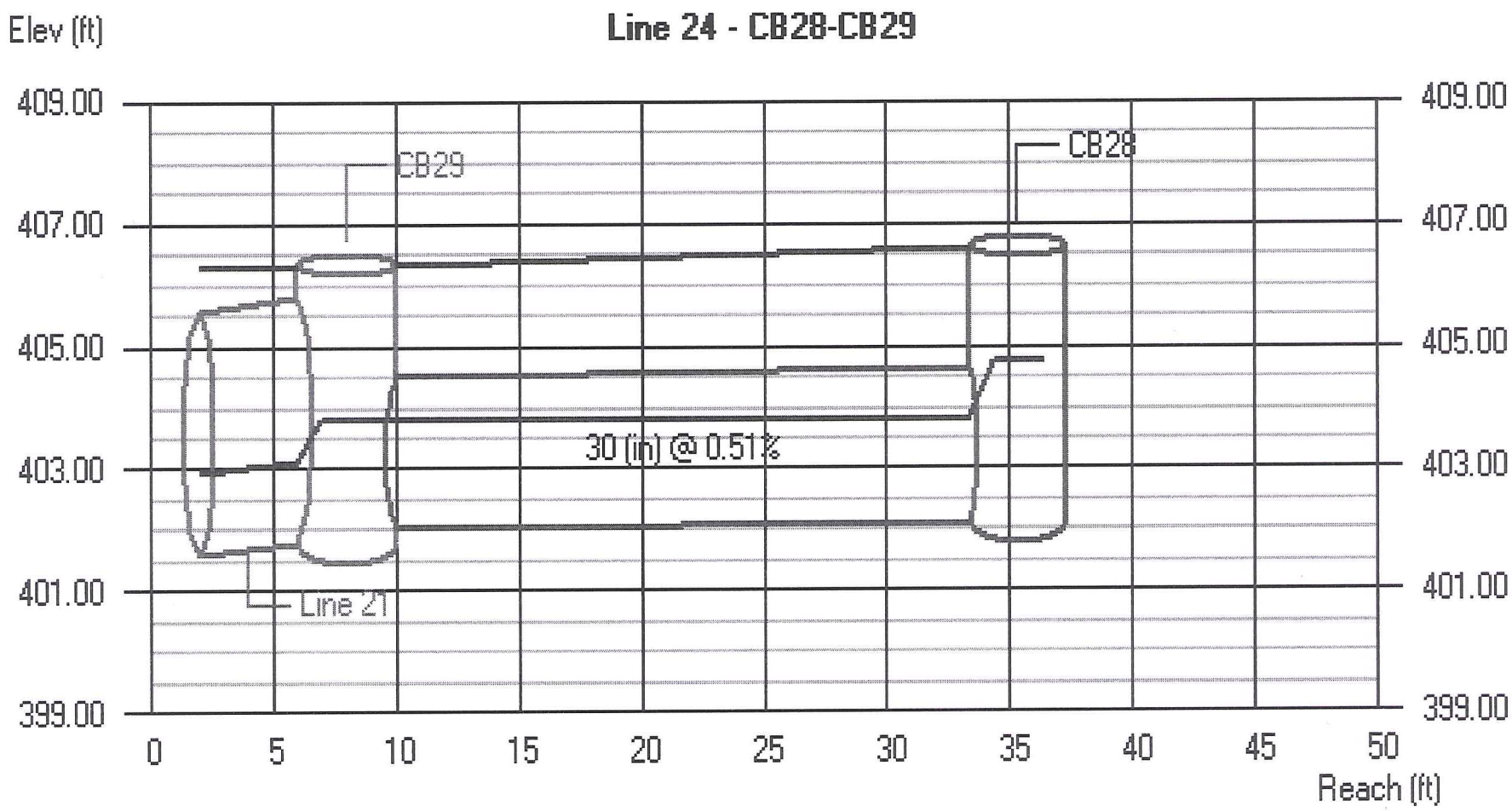
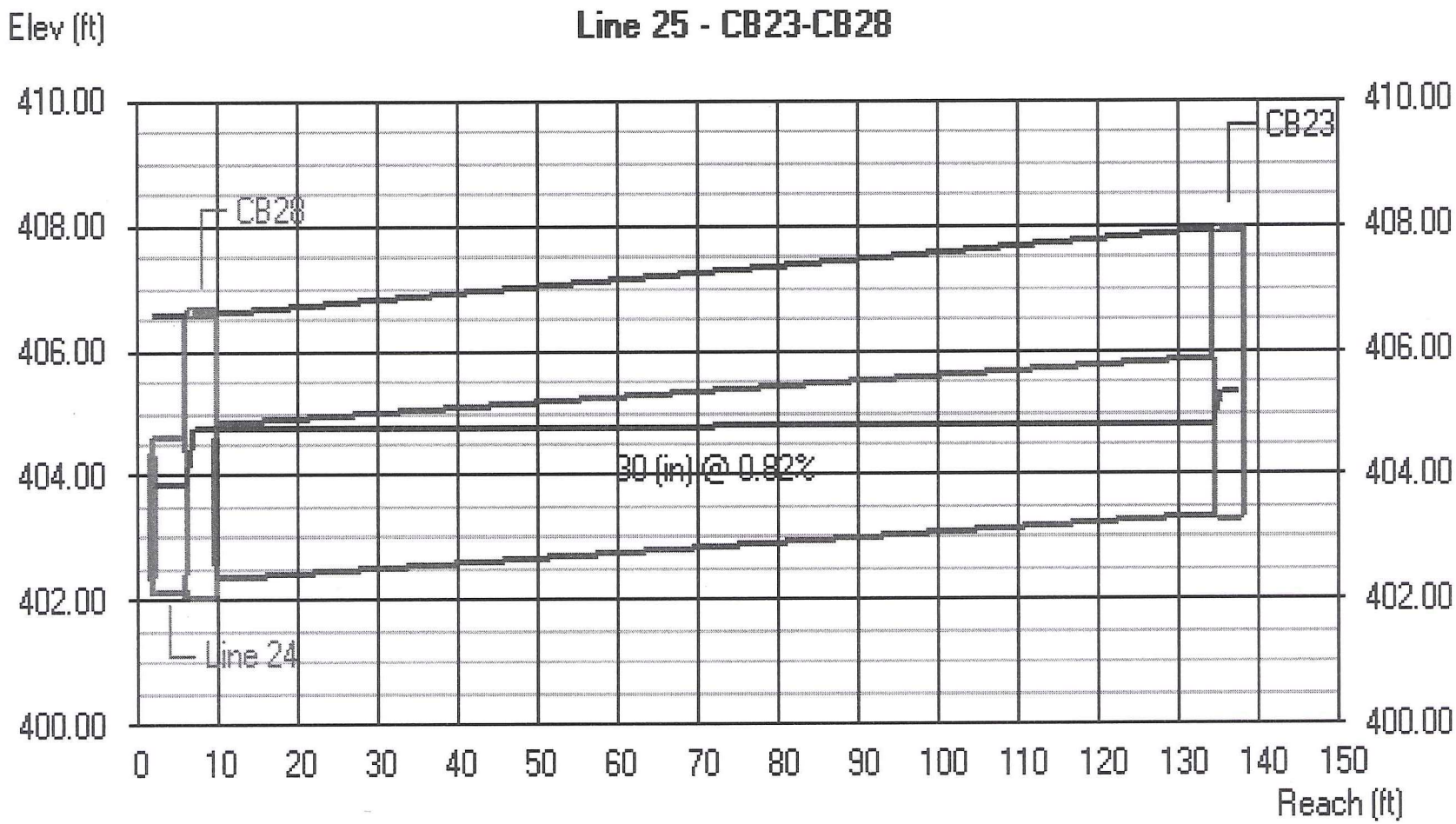


Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

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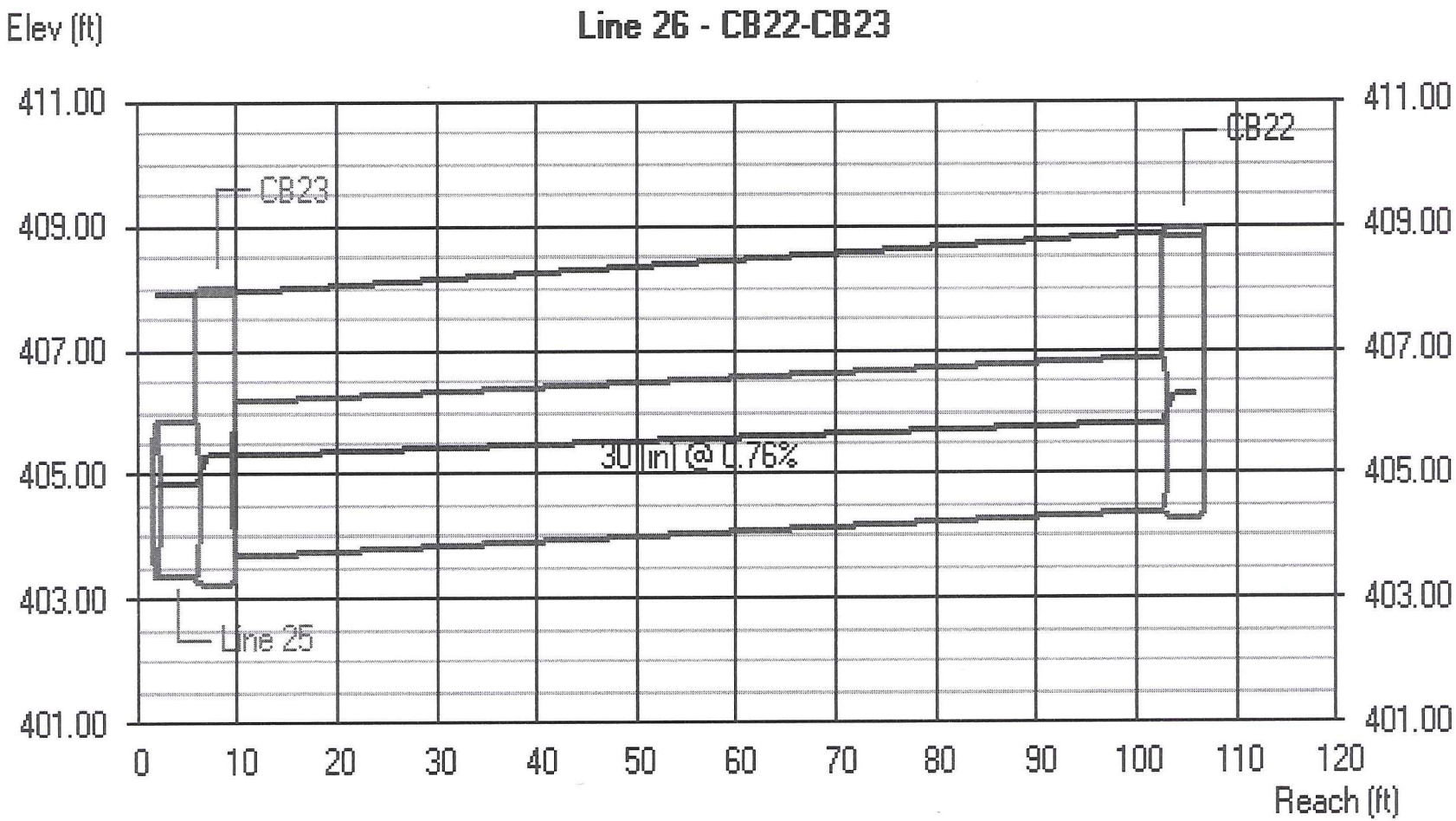

Storm Sewer Profile

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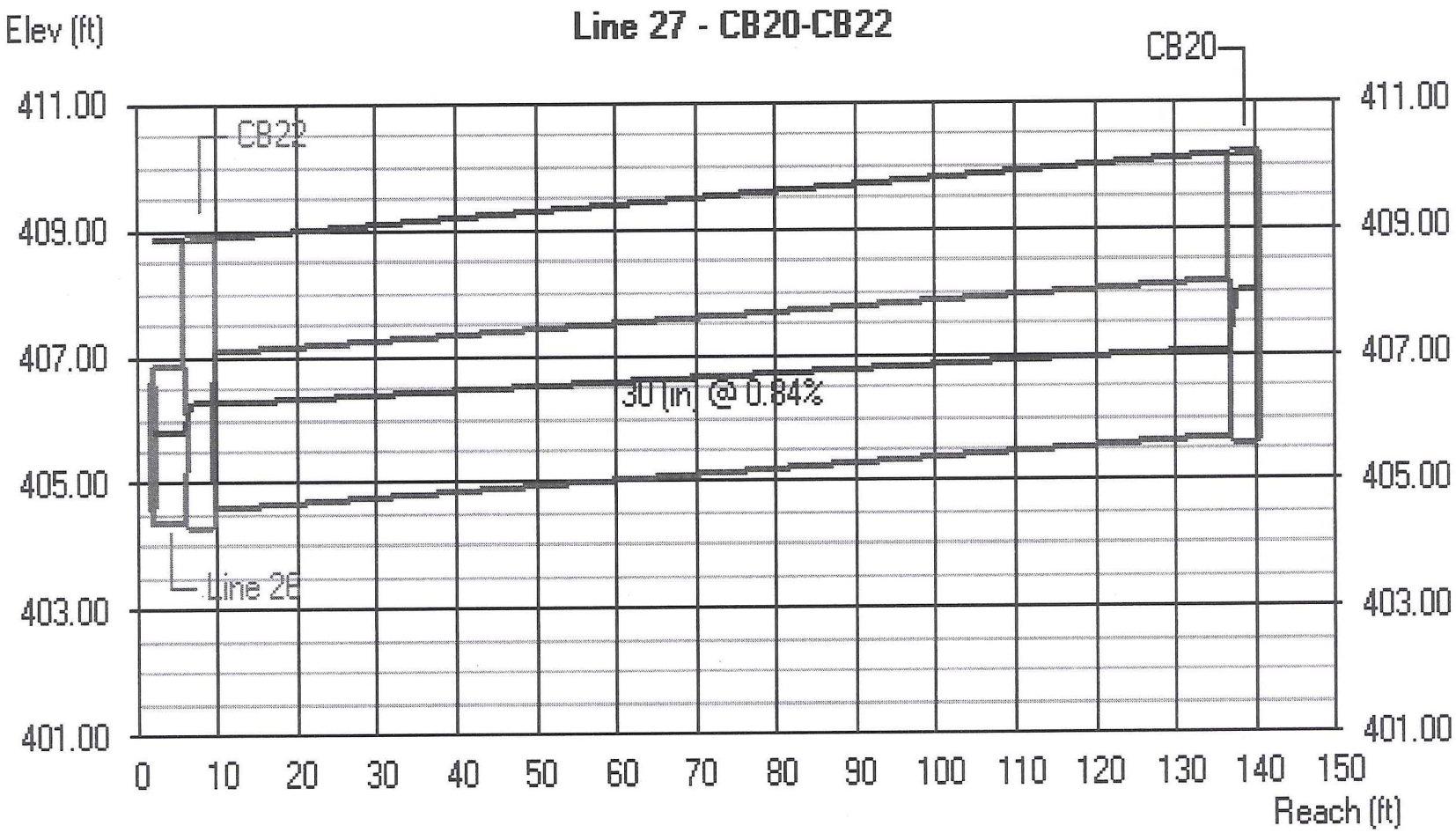

Storm Sewer Profile

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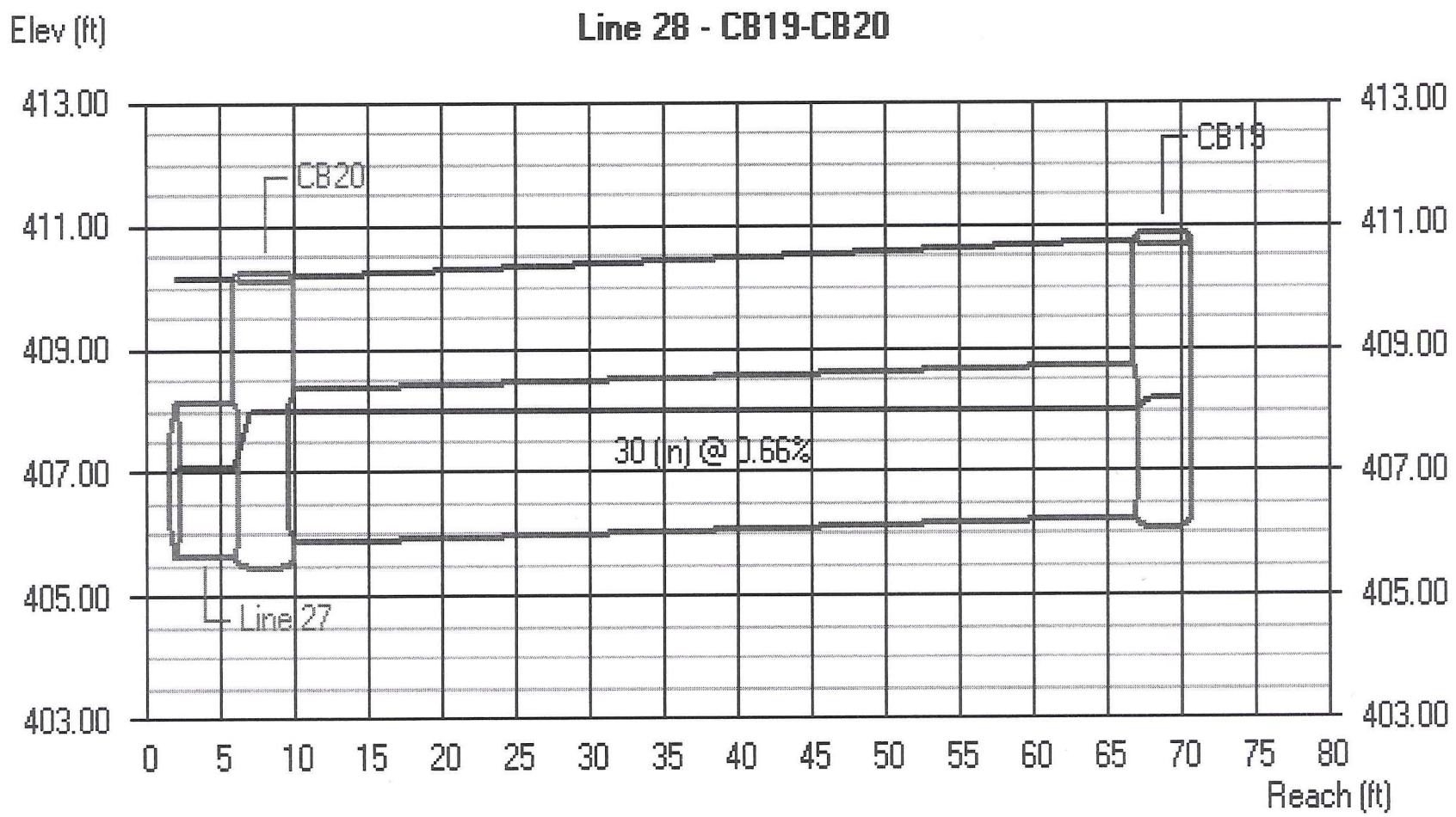

Storm Sewer Profile

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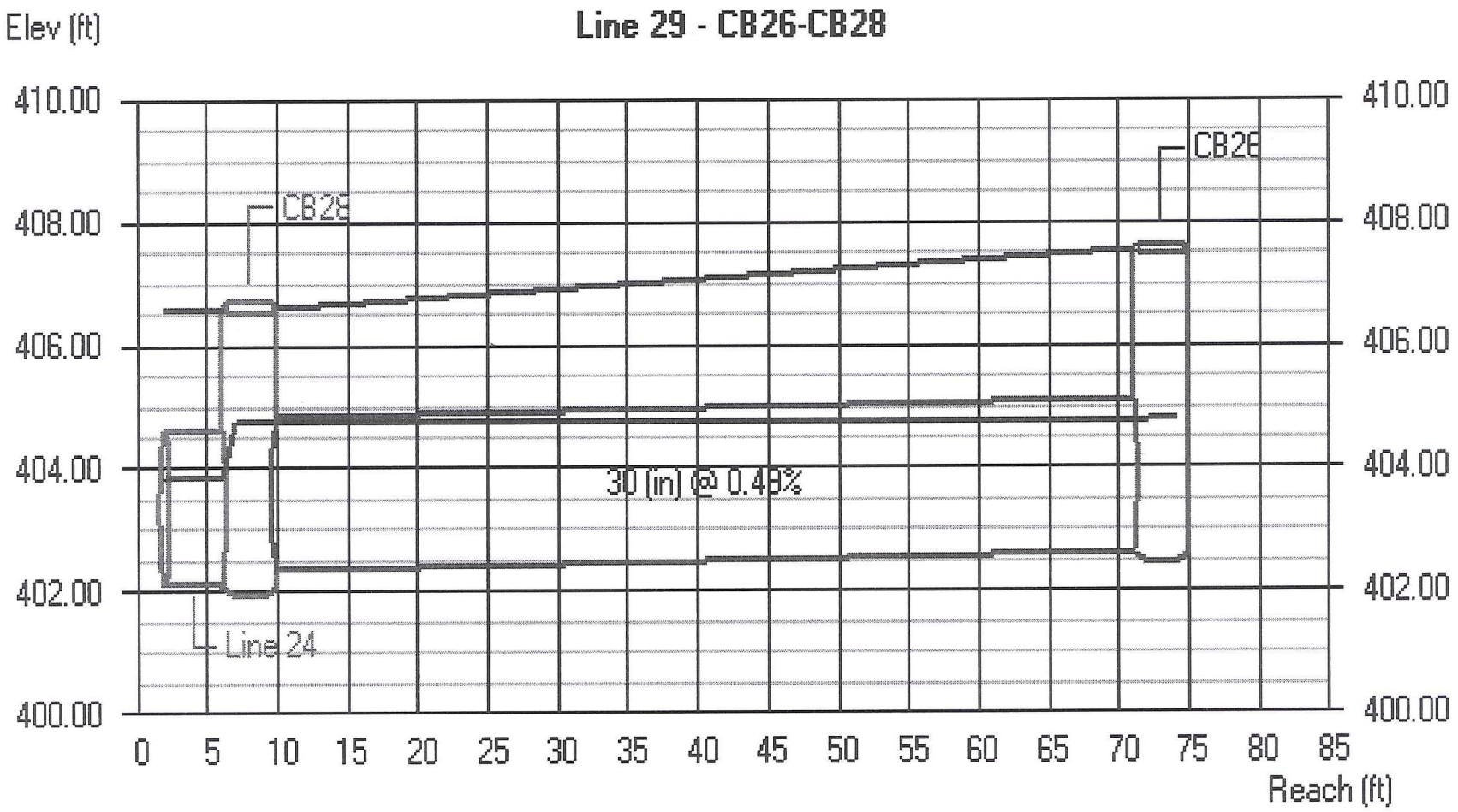

Storm Sewer Profile

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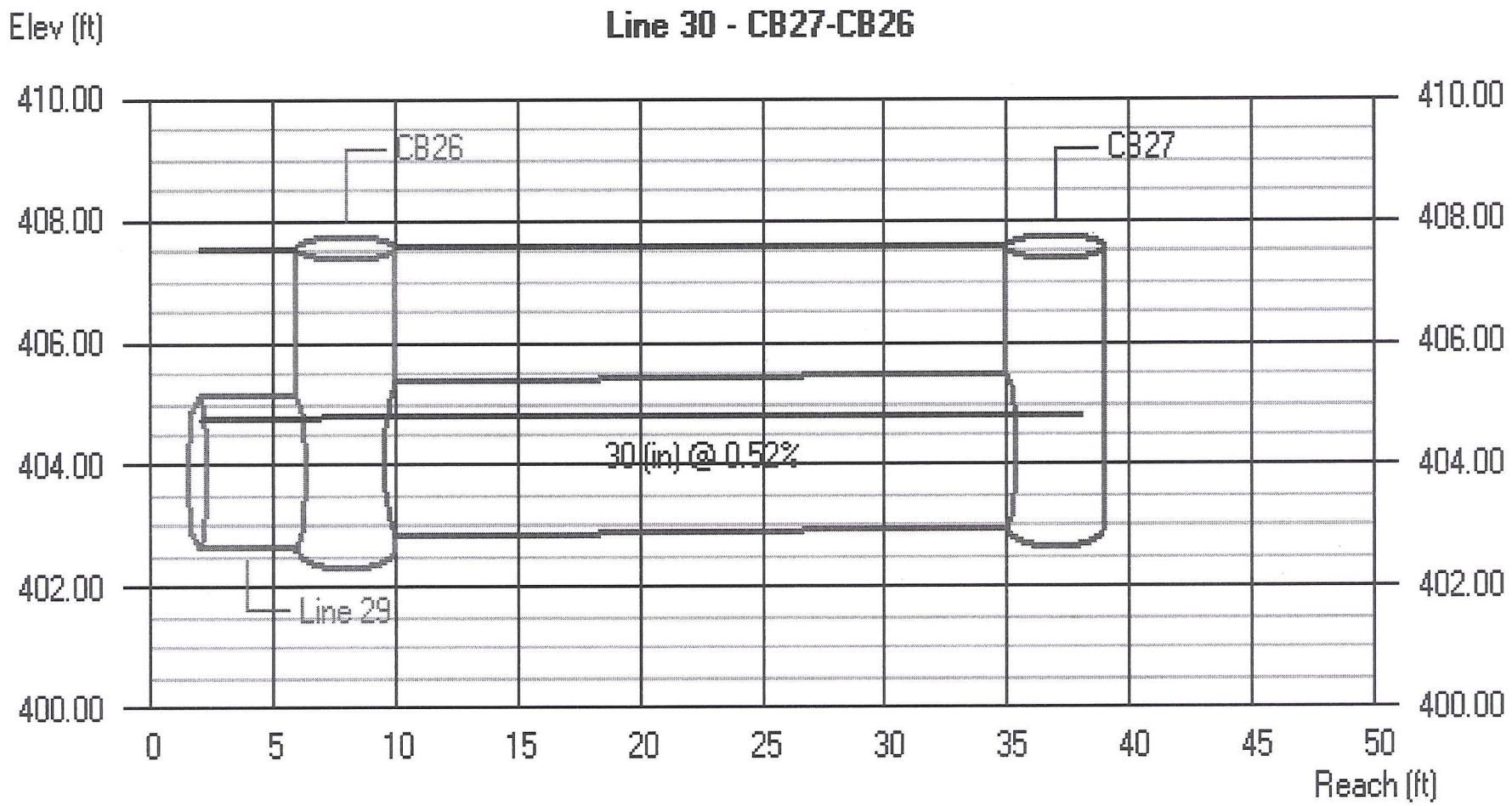

Storm Sewer Profile

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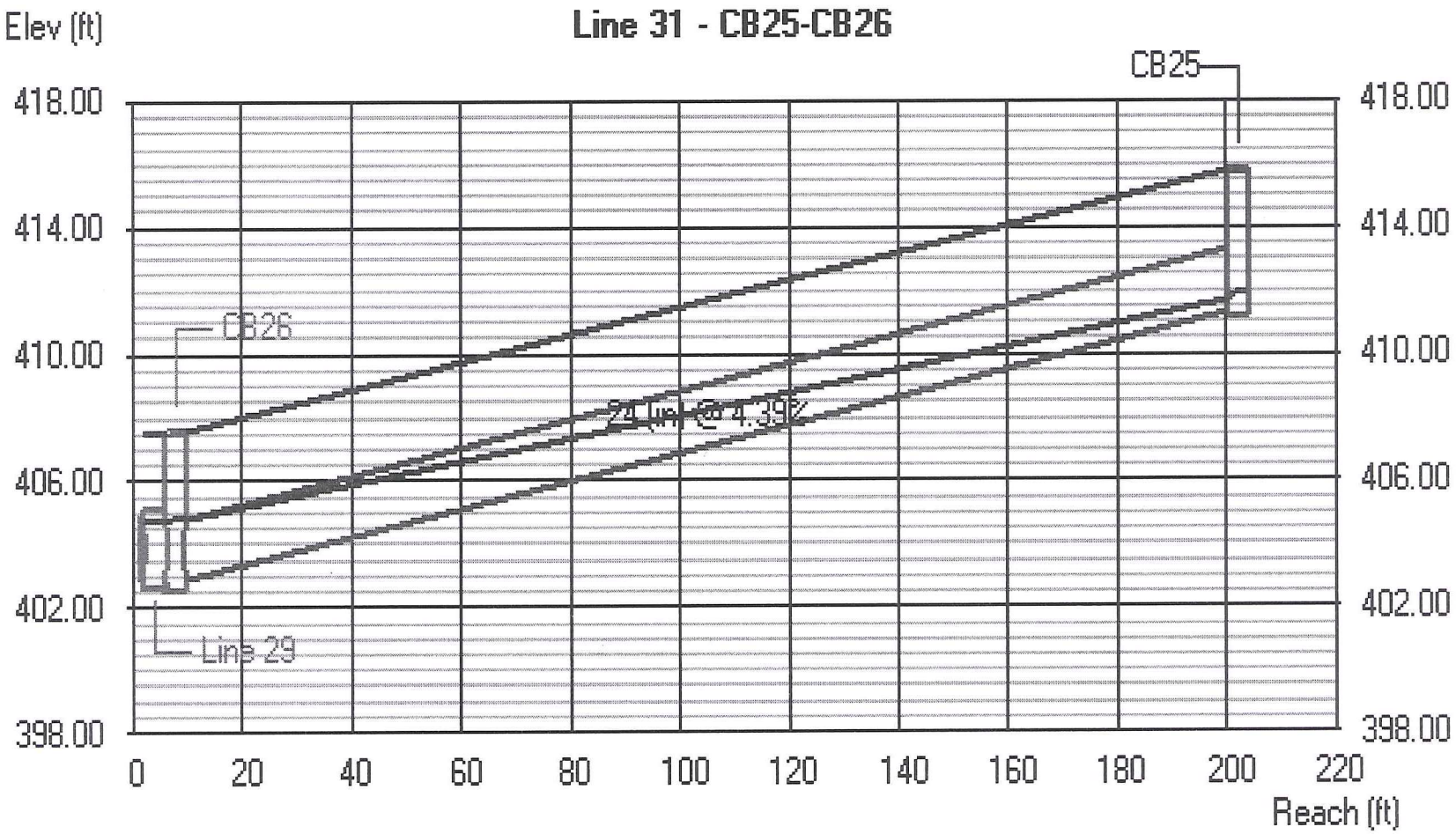
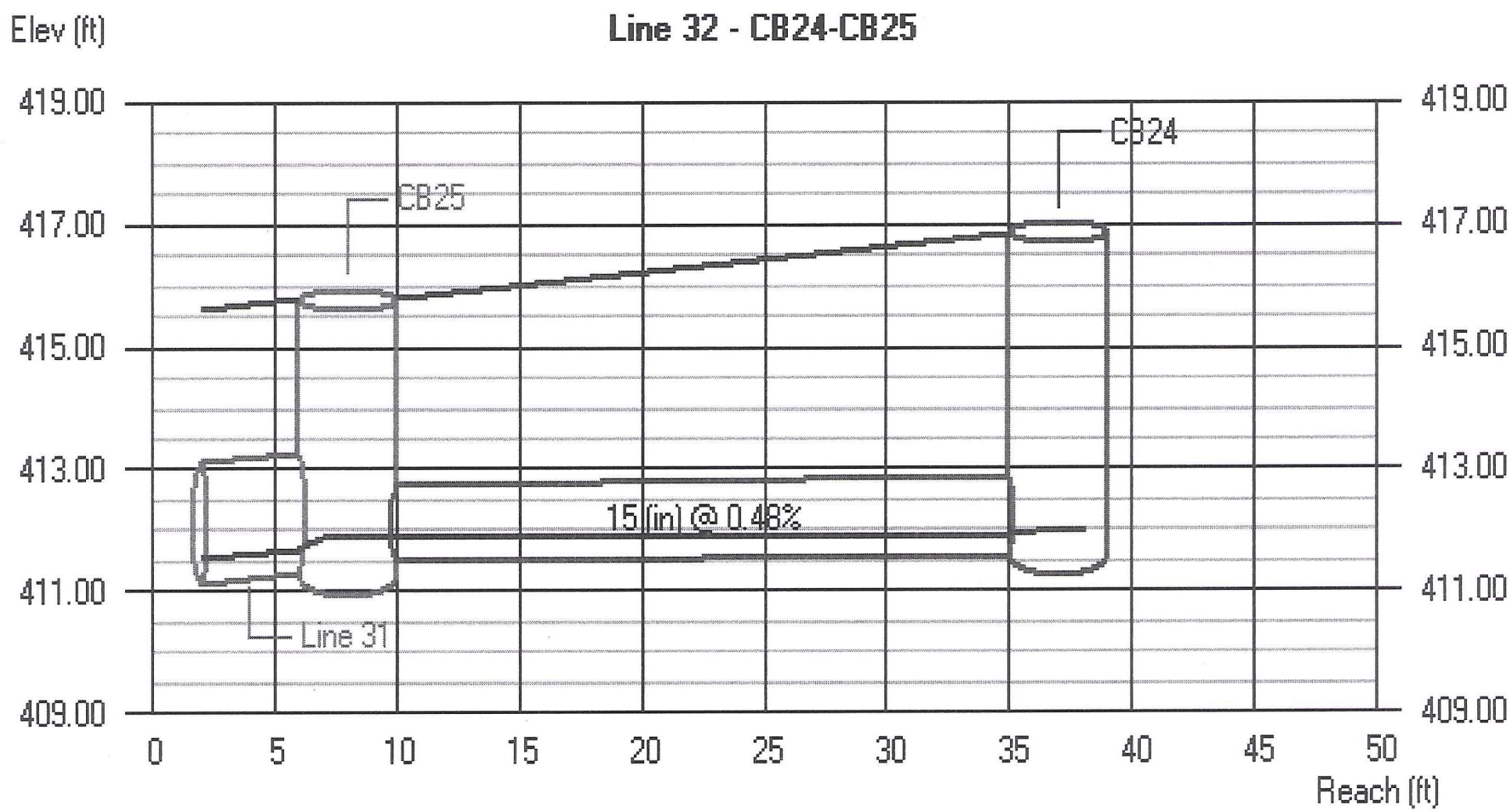


Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

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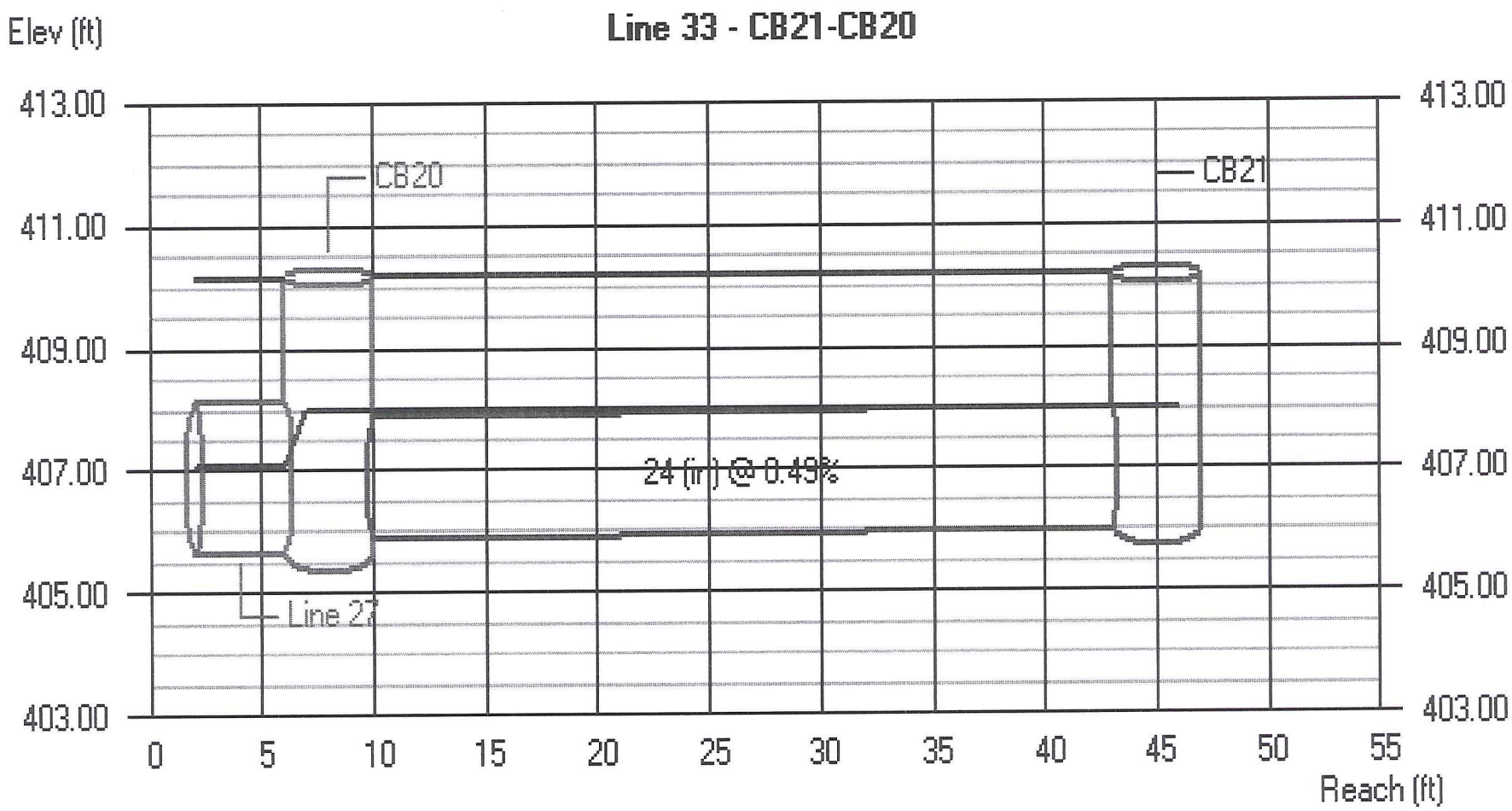

Storm Sewer Profile

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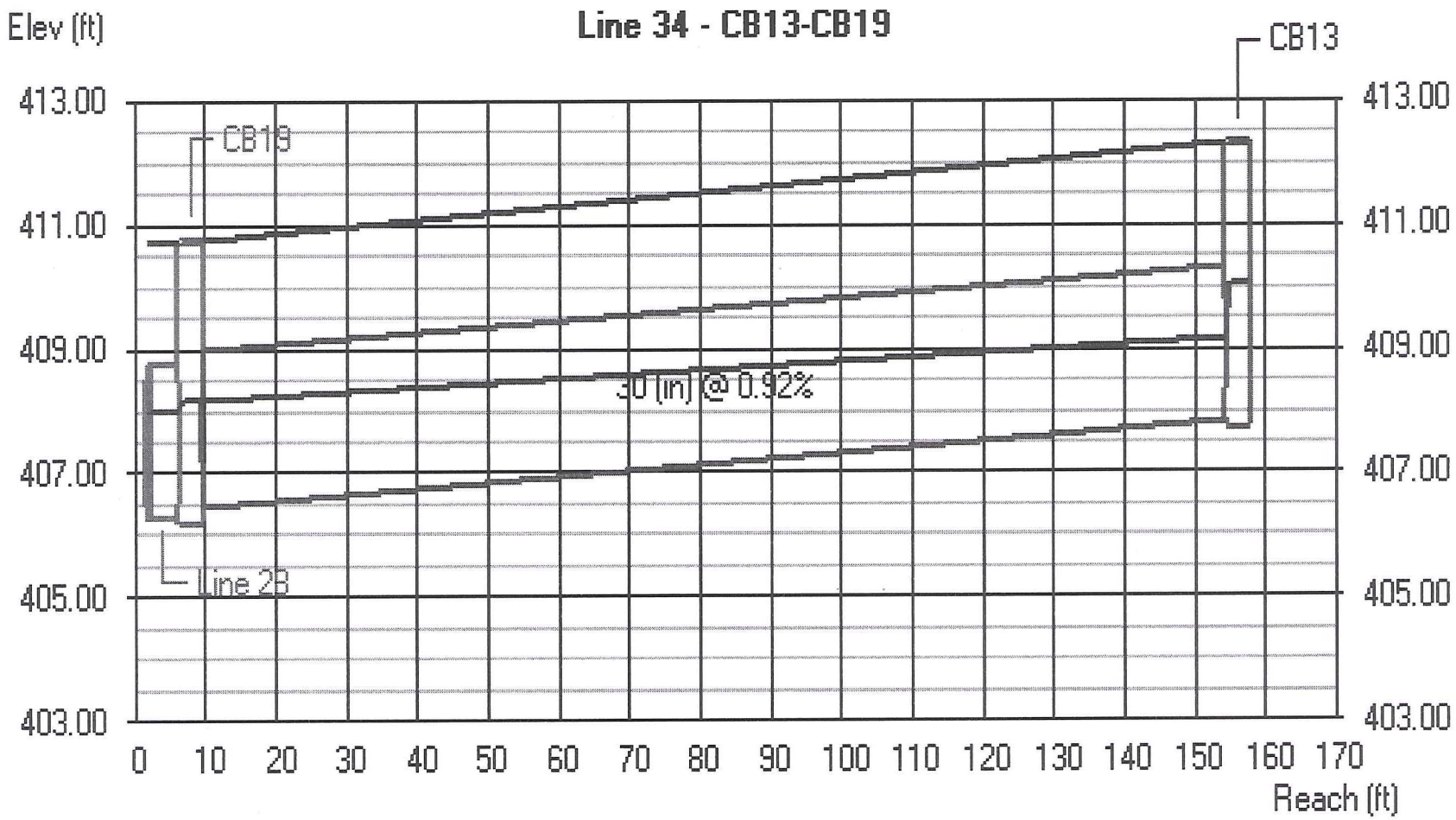

Storm Sewer Profile

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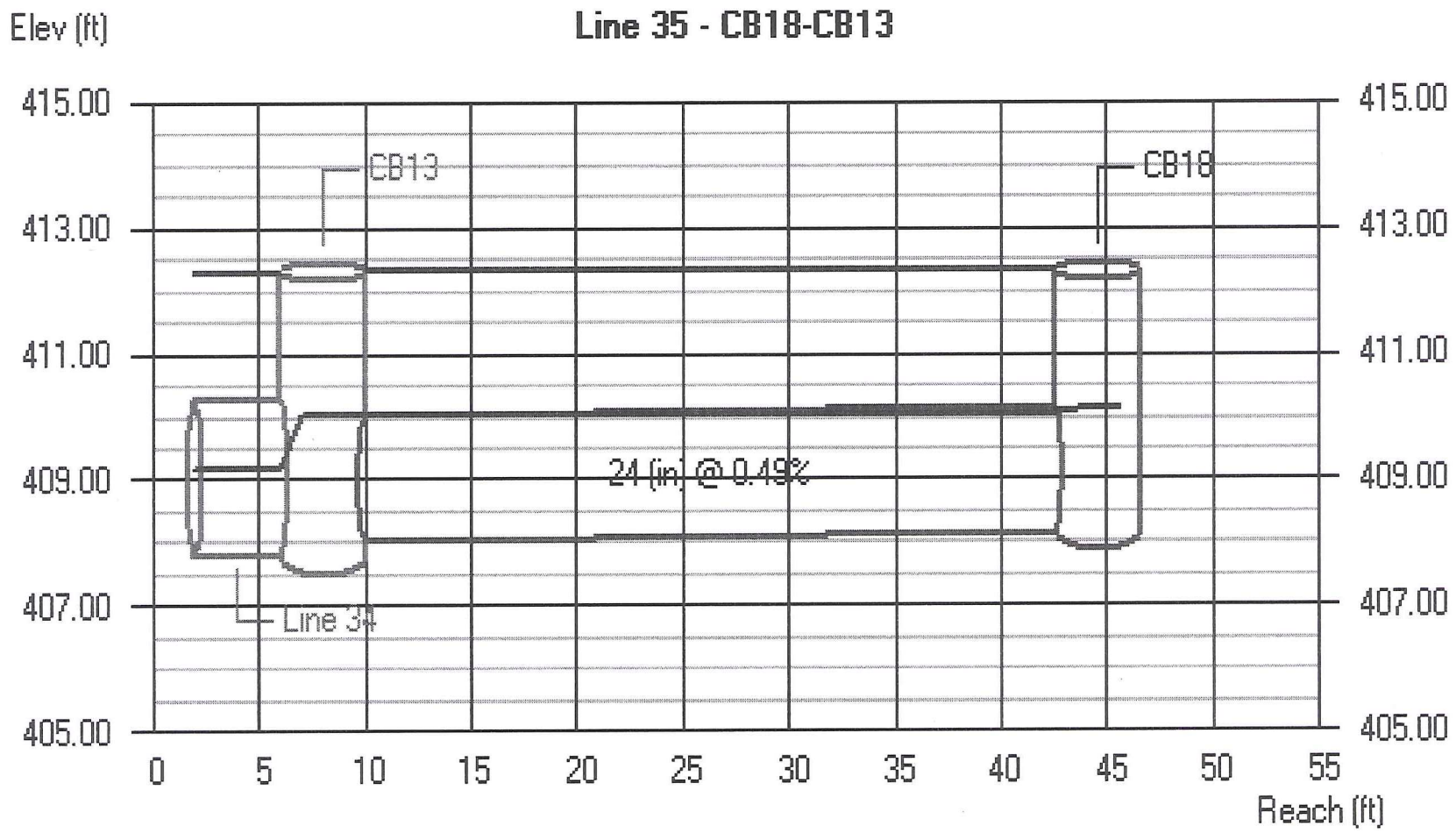

Storm Sewer Profile

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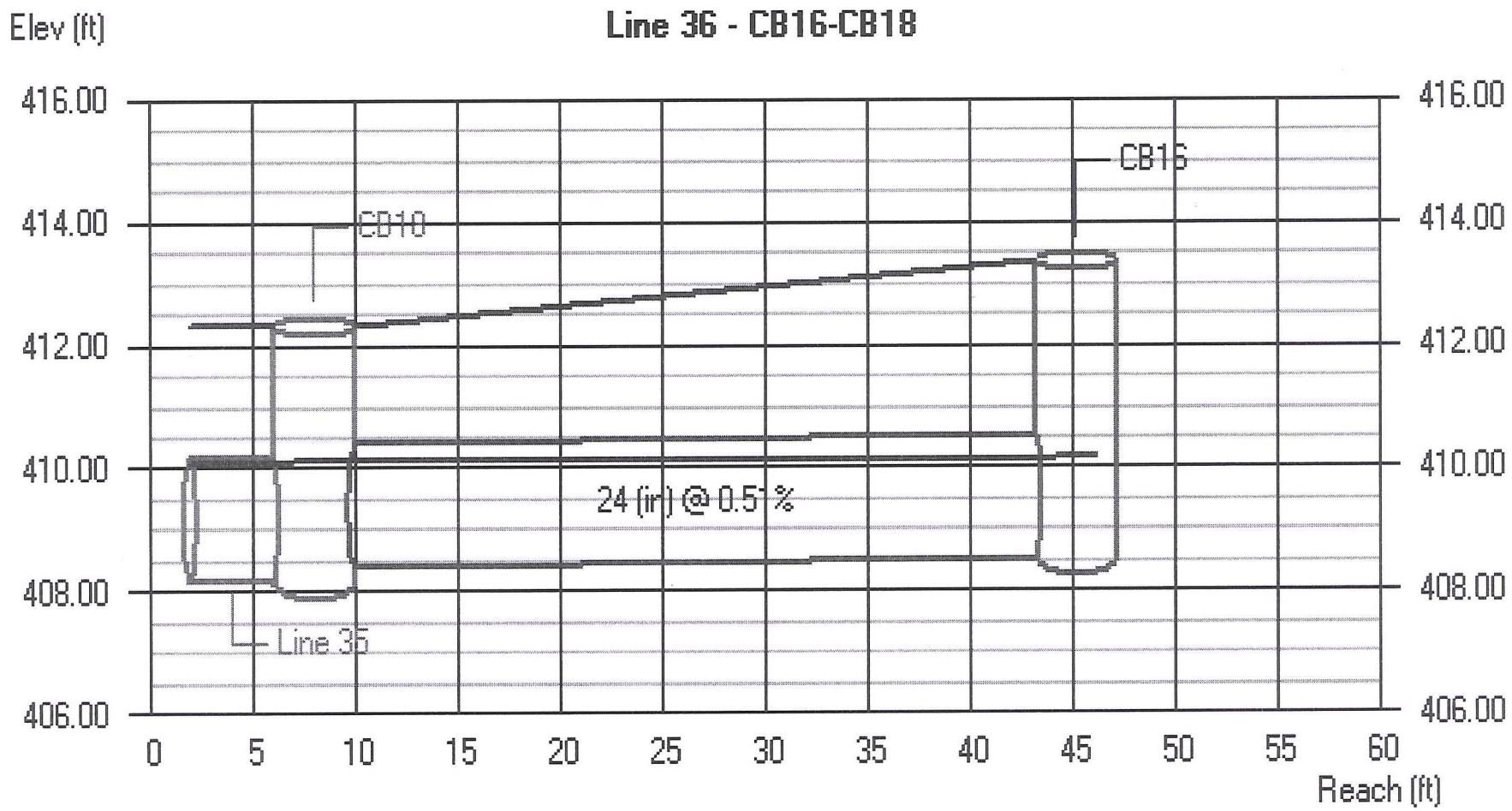
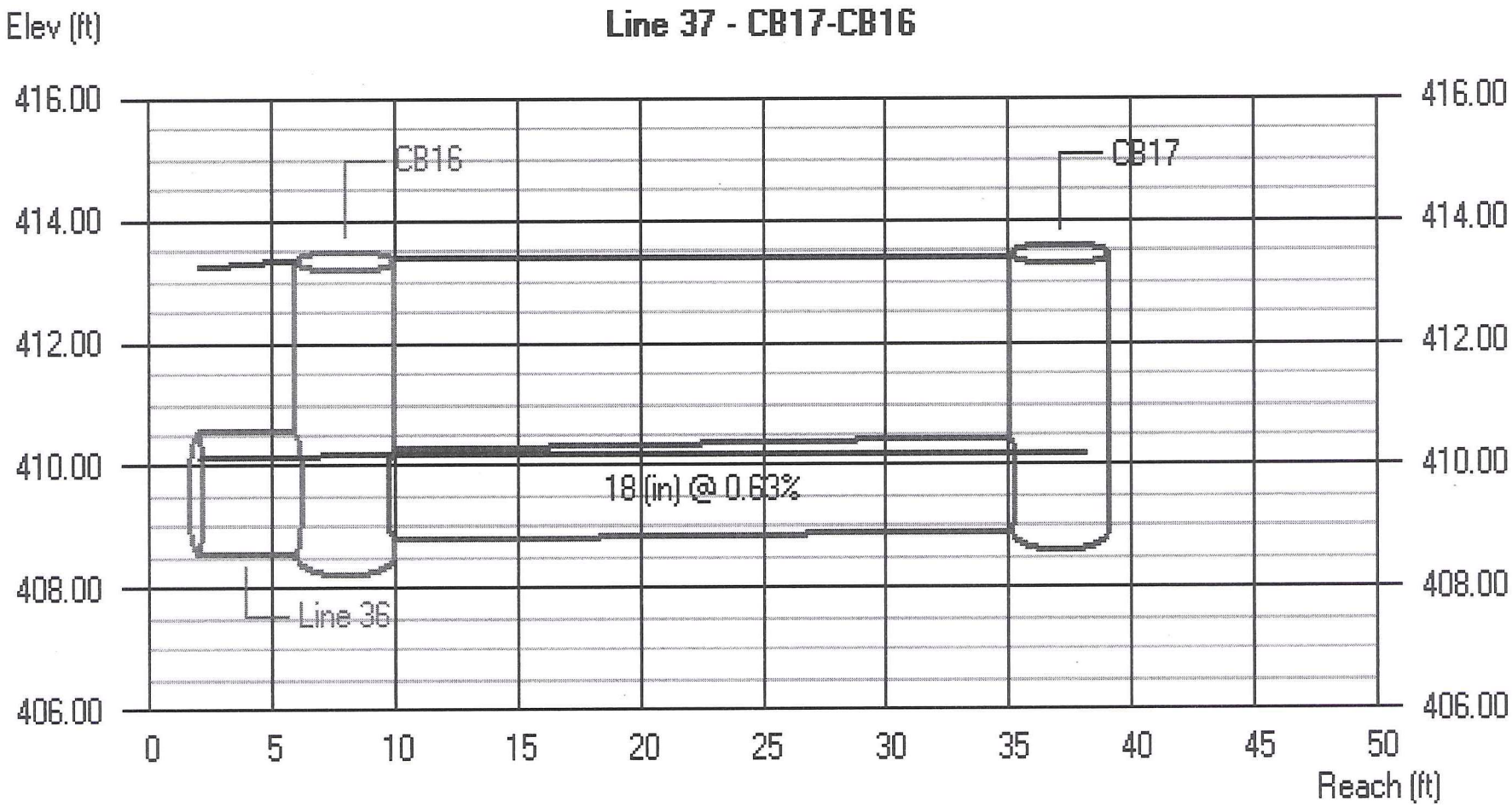


Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

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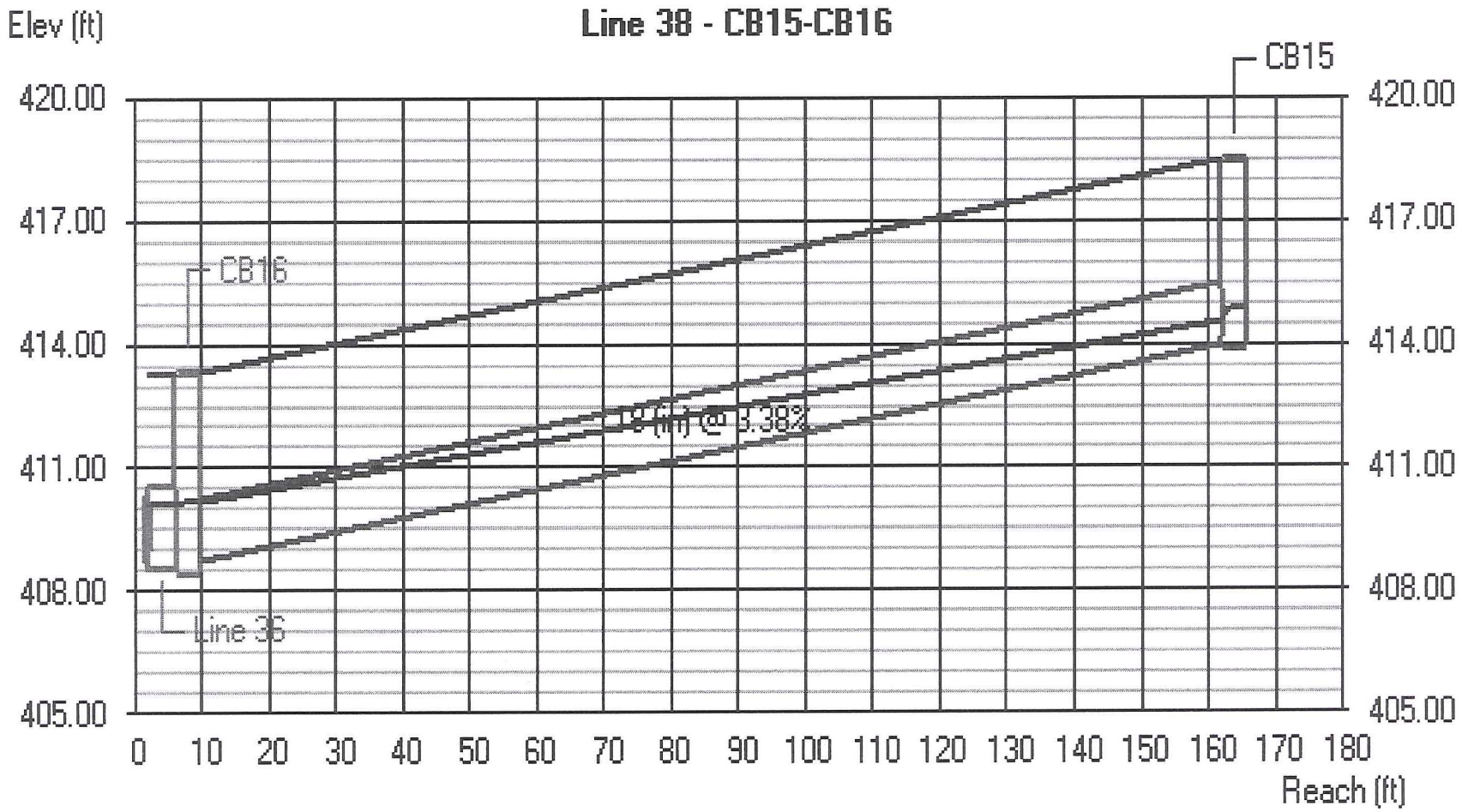

Storm Sewer Profile

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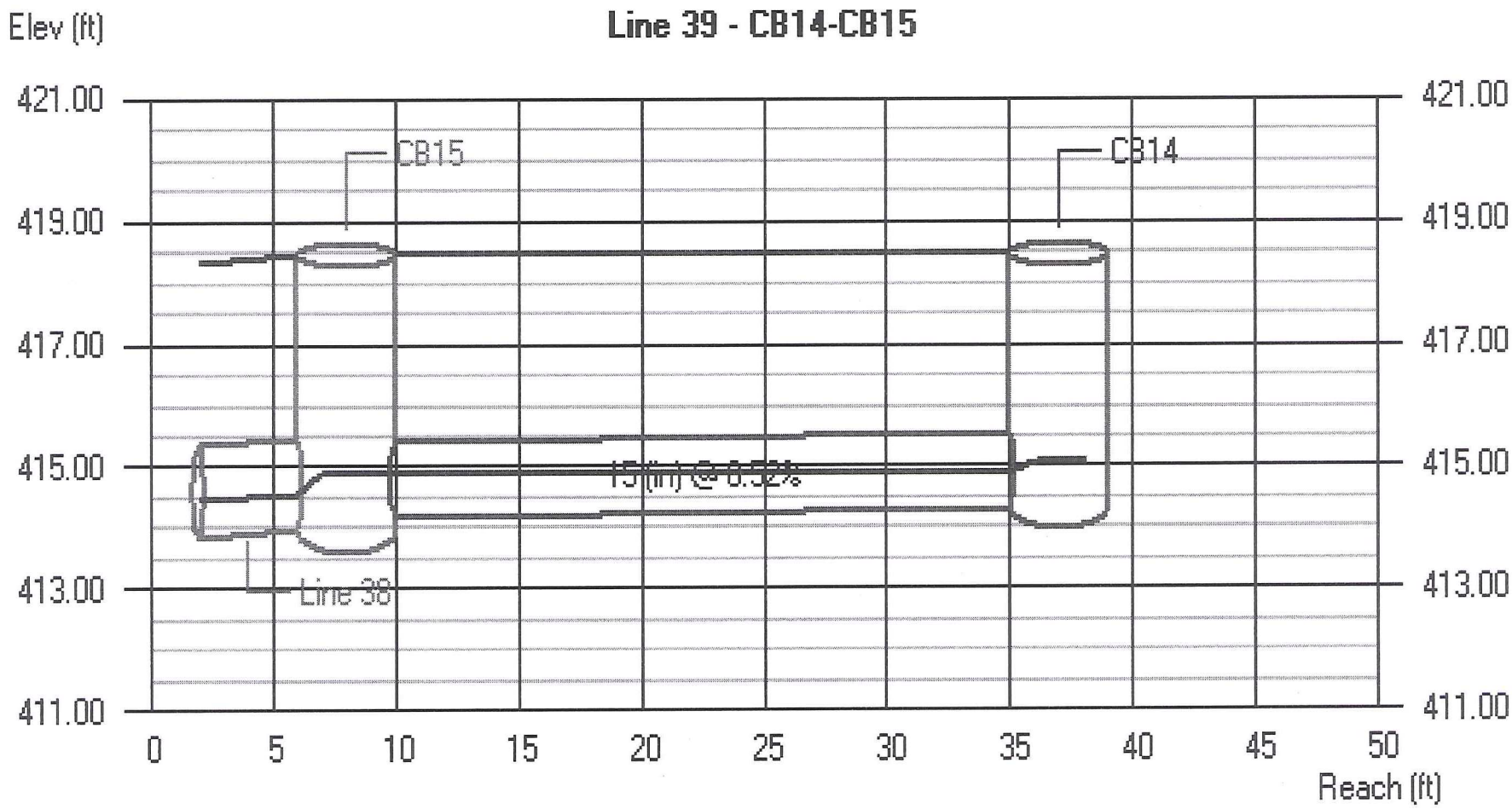

Storm Sewer Profile

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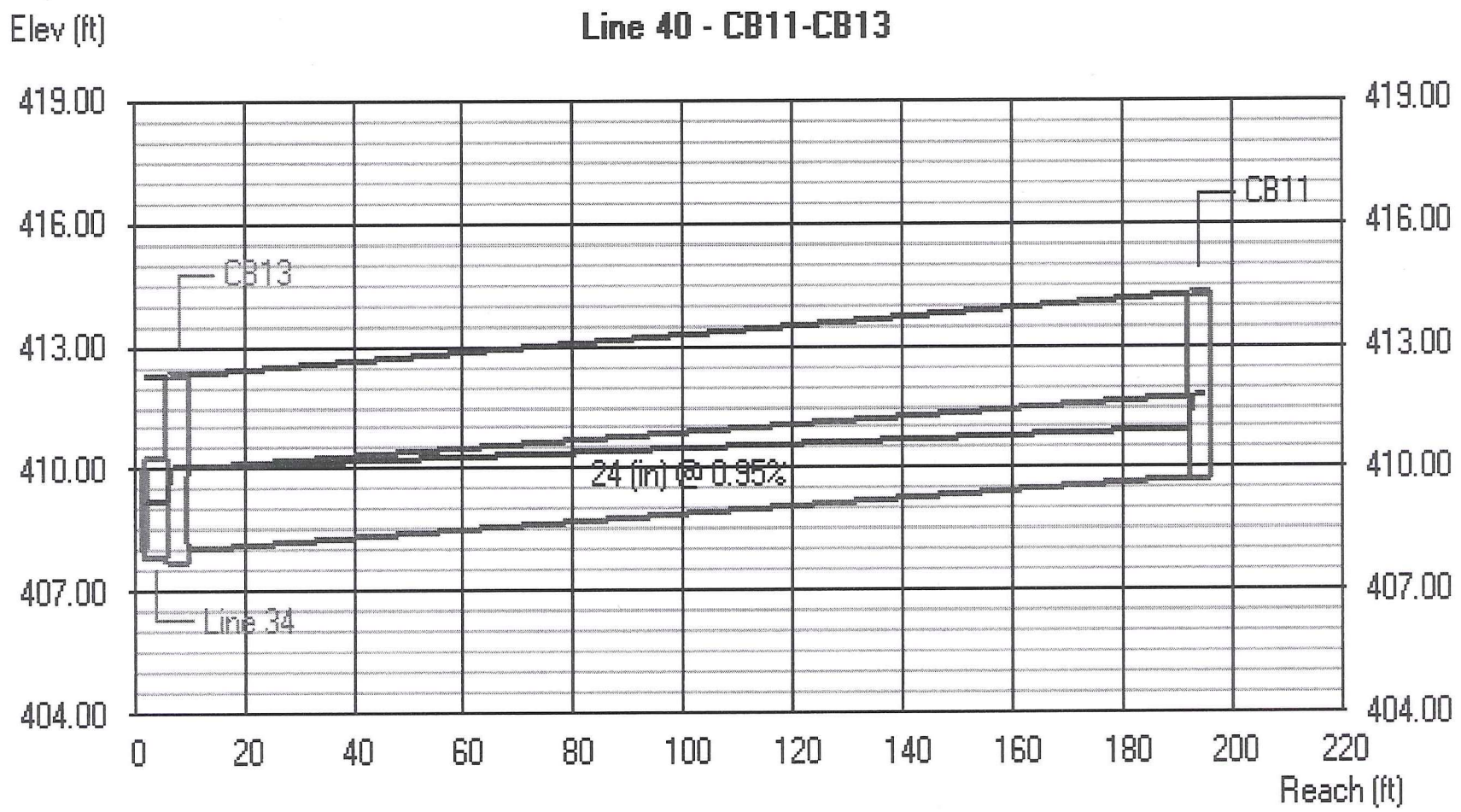

Storm Sewer Profile

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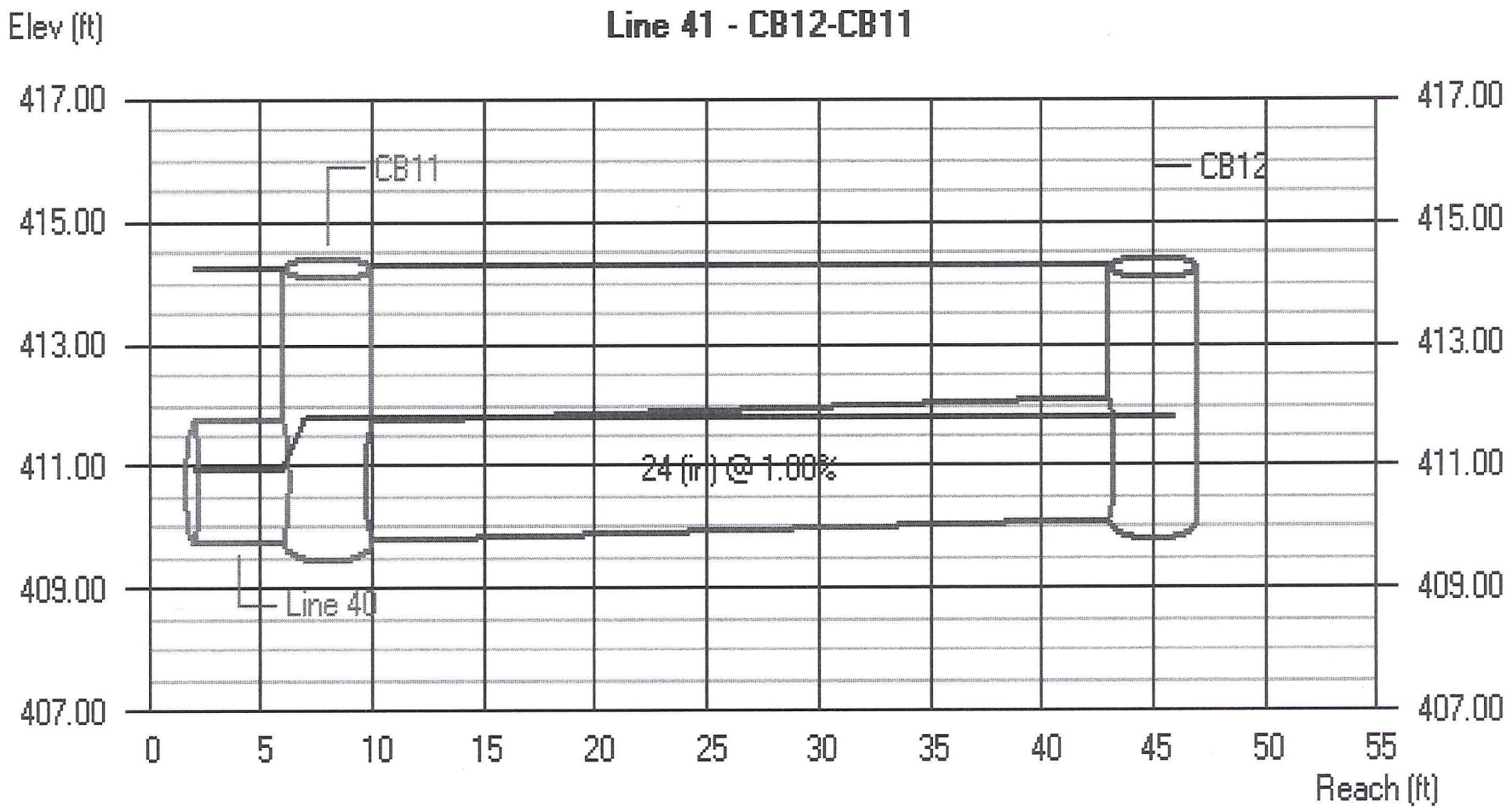
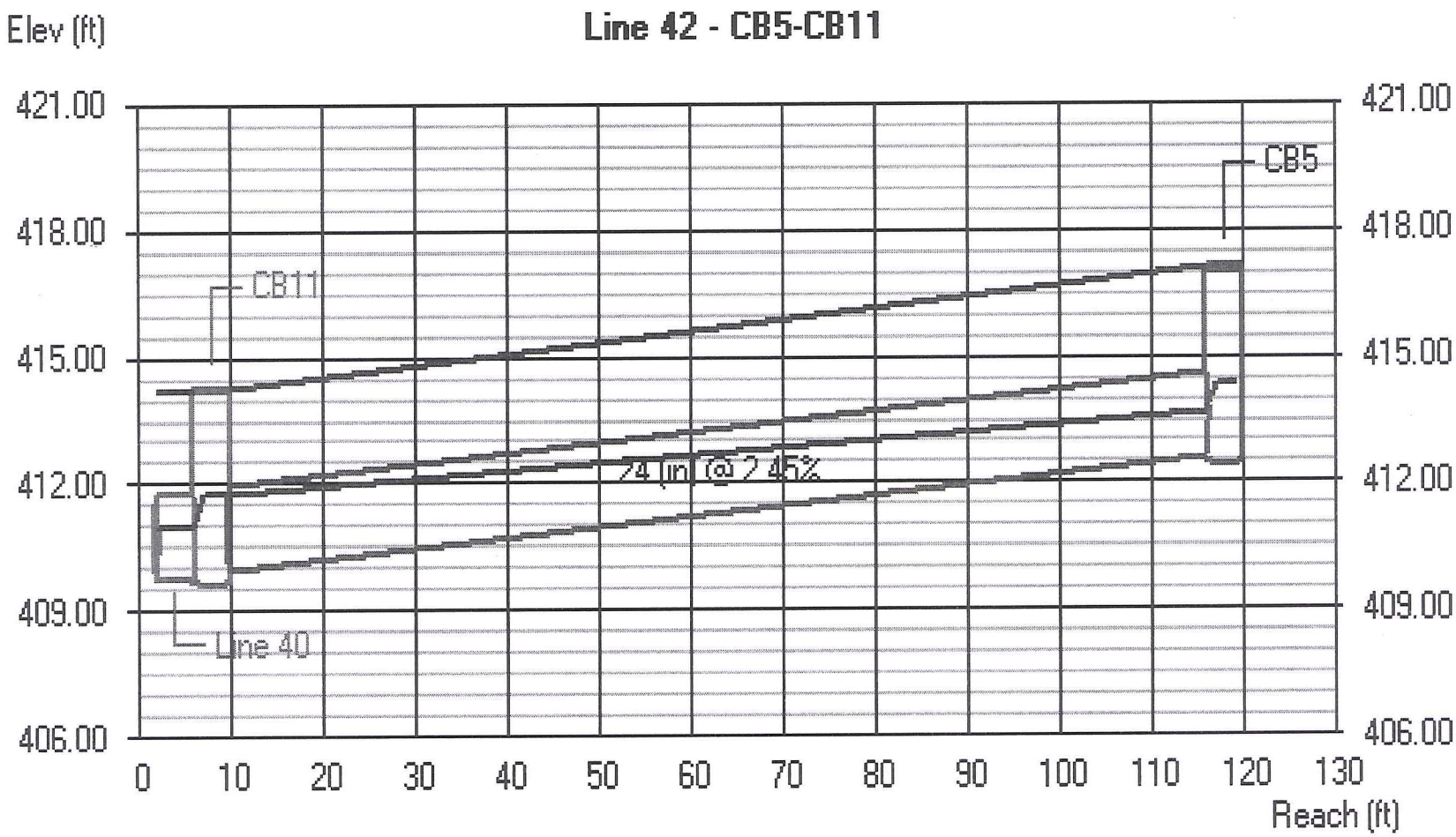


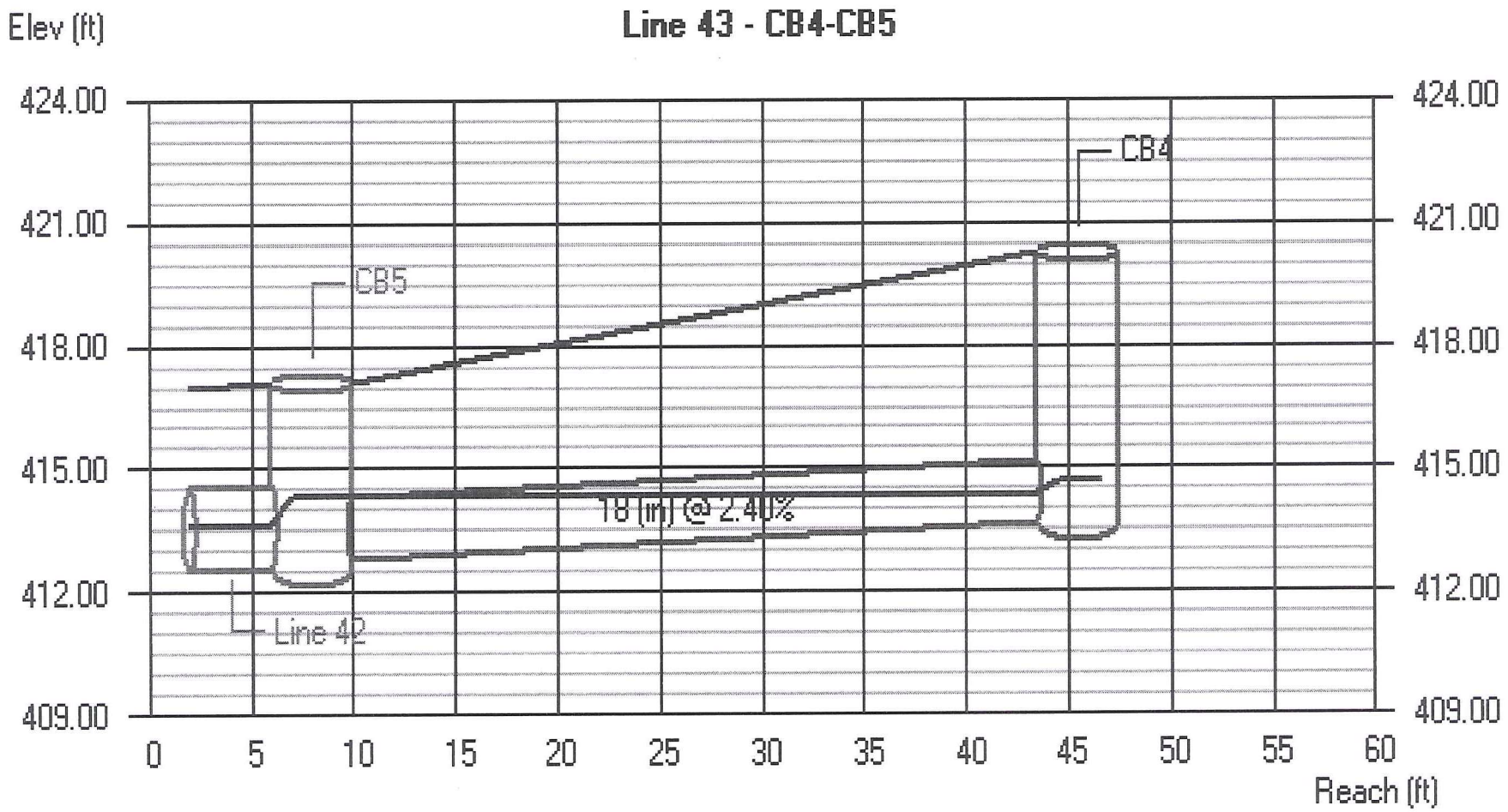
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

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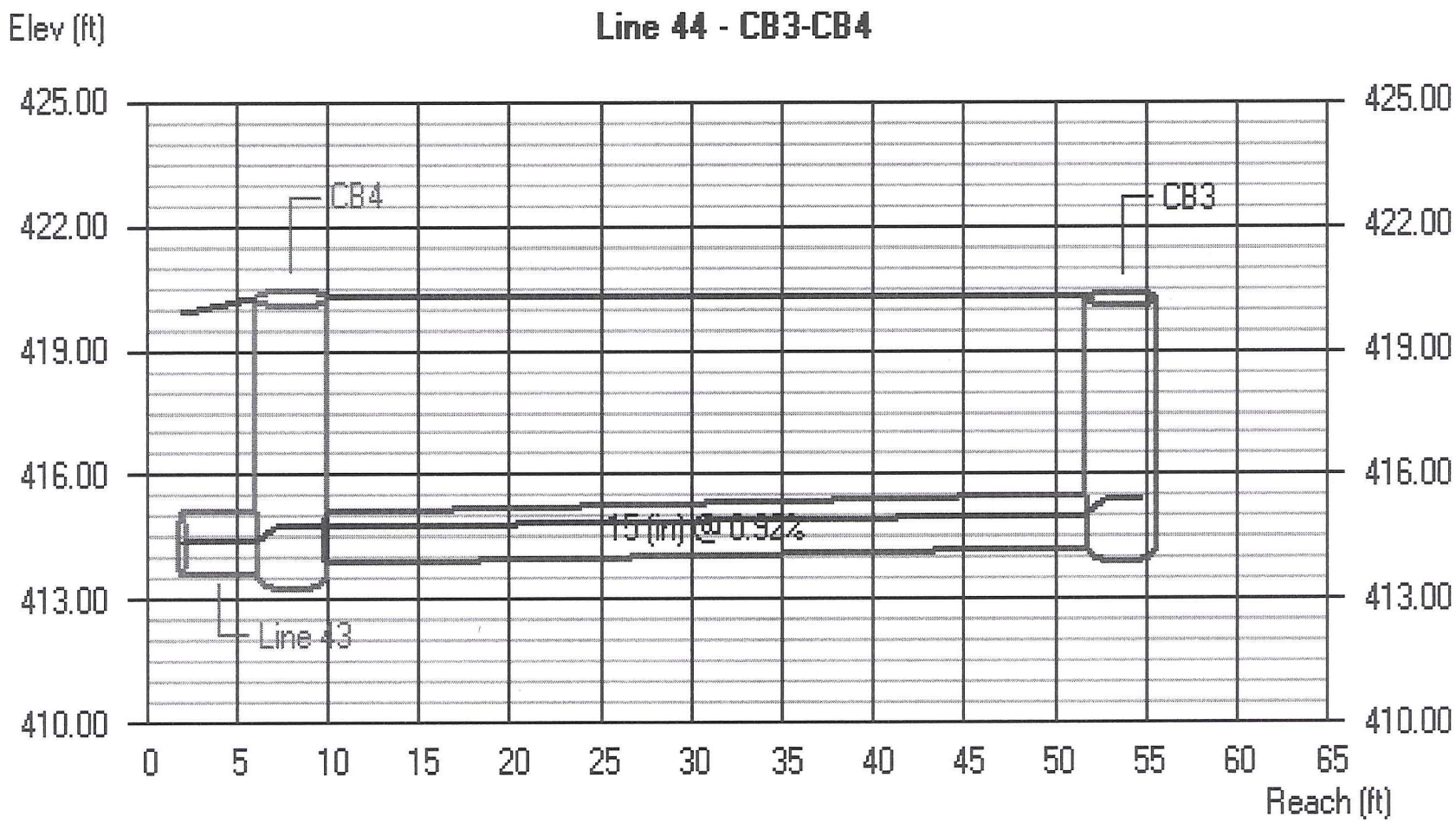

Storm Sewer Profile

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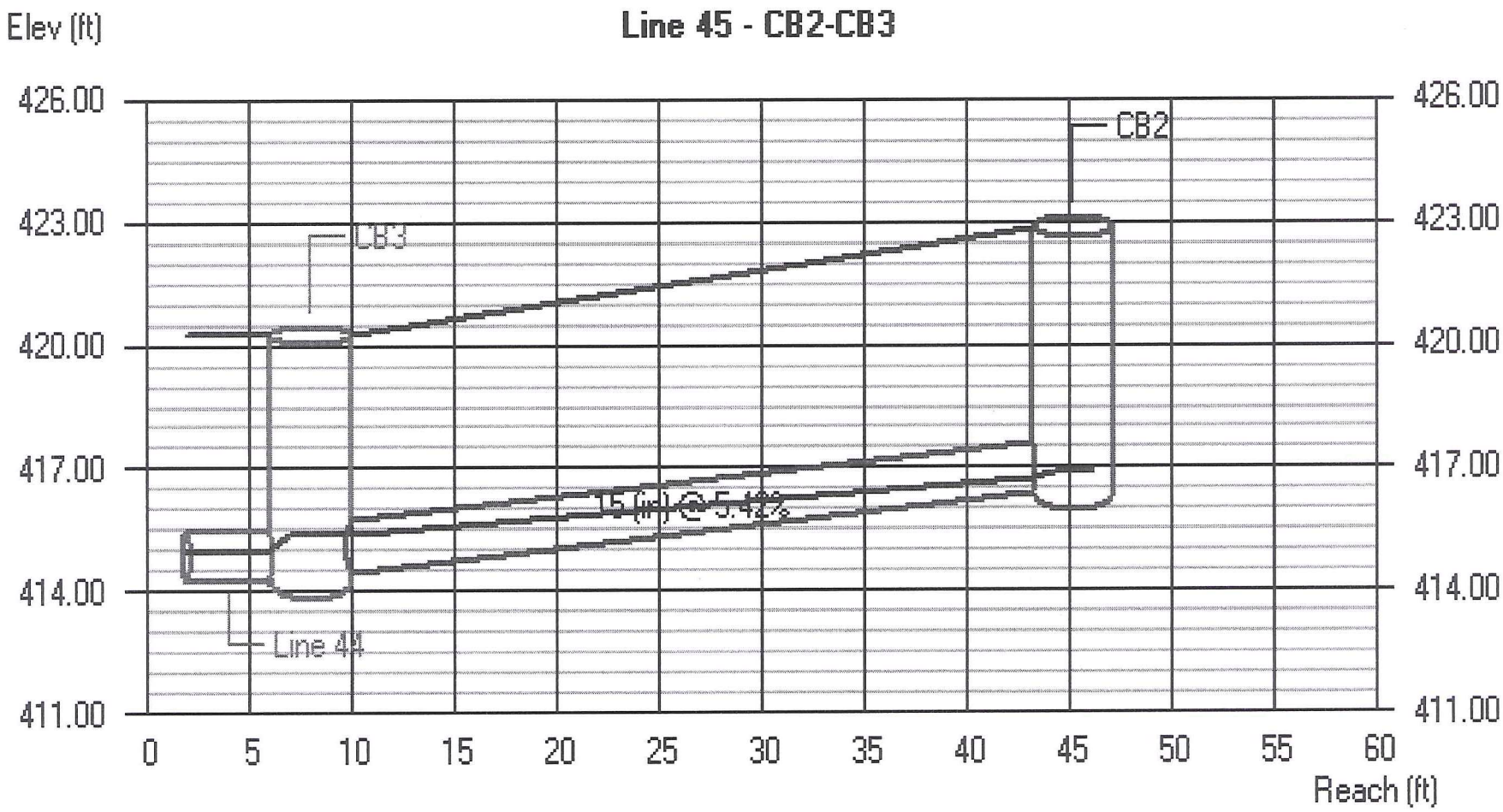

Storm Sewer Profile

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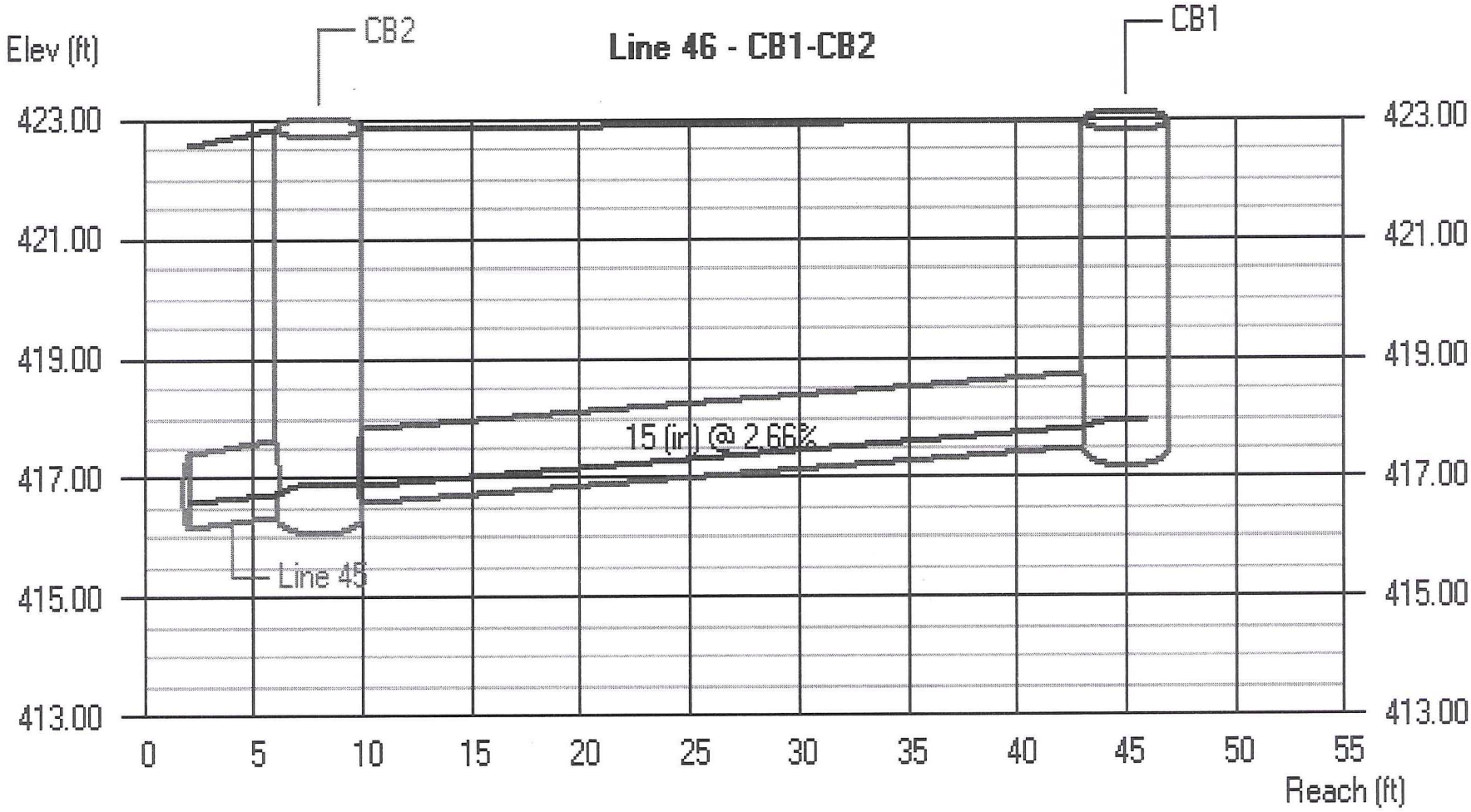

Storm Sewer Profile

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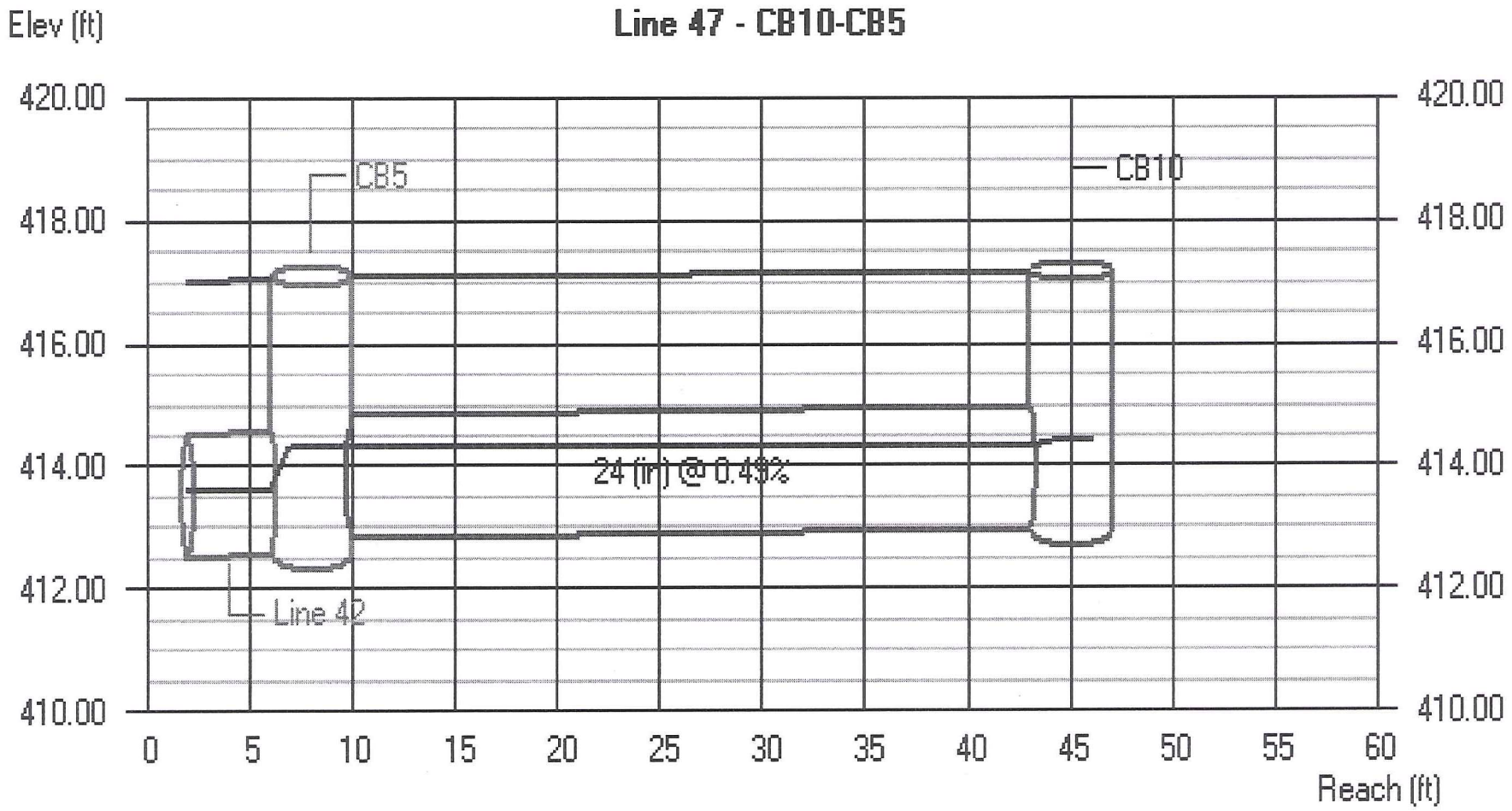
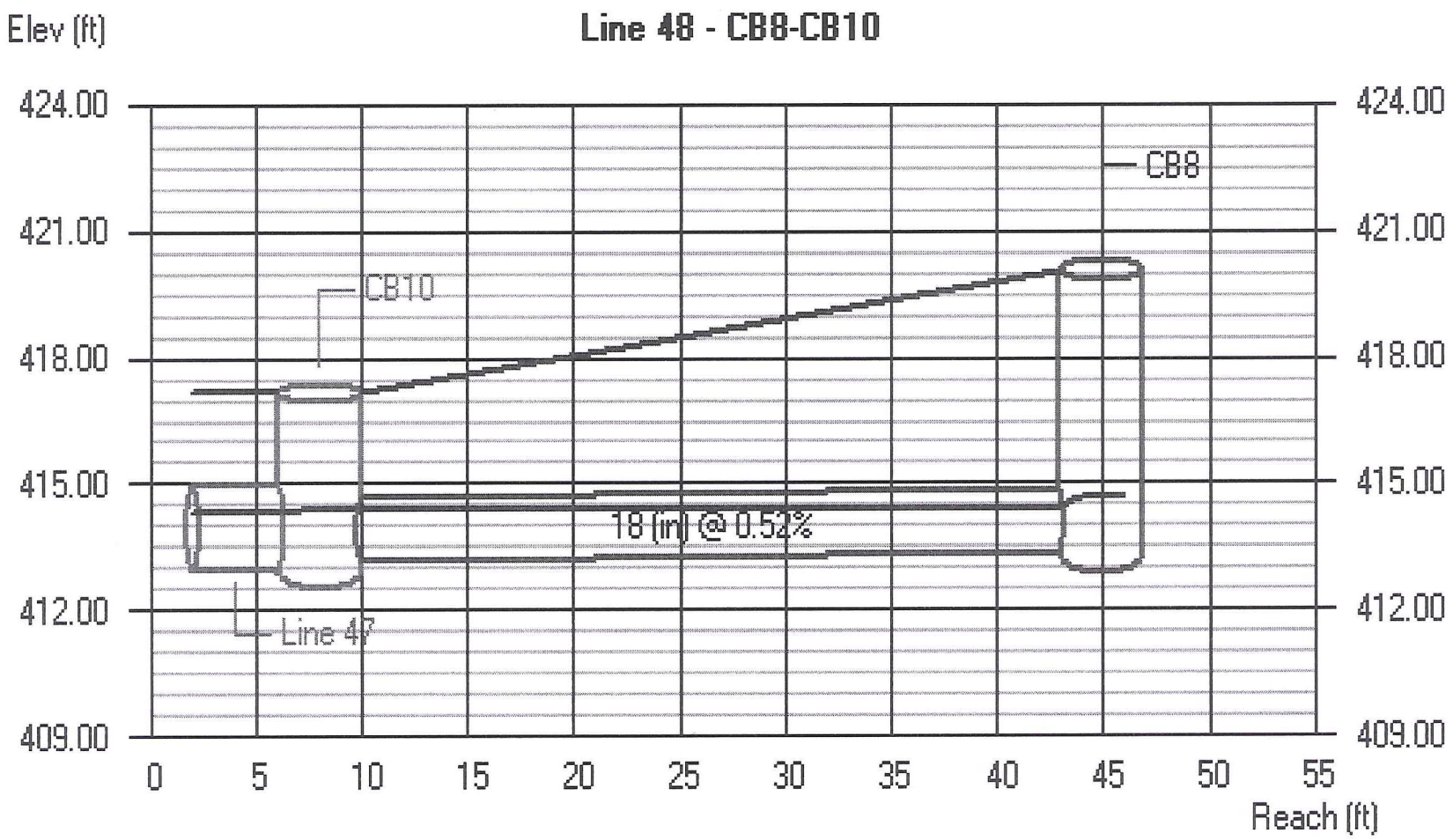


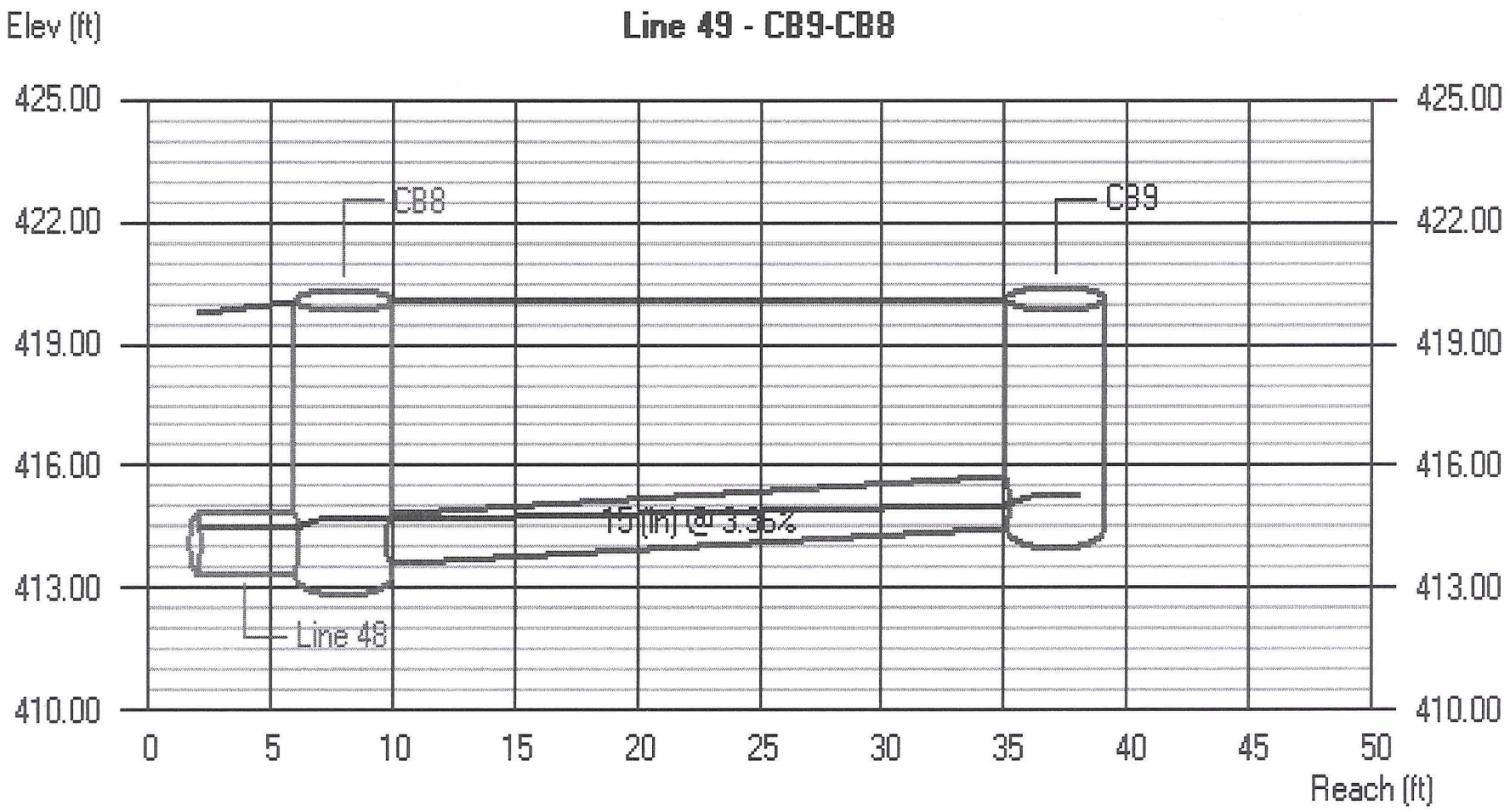
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



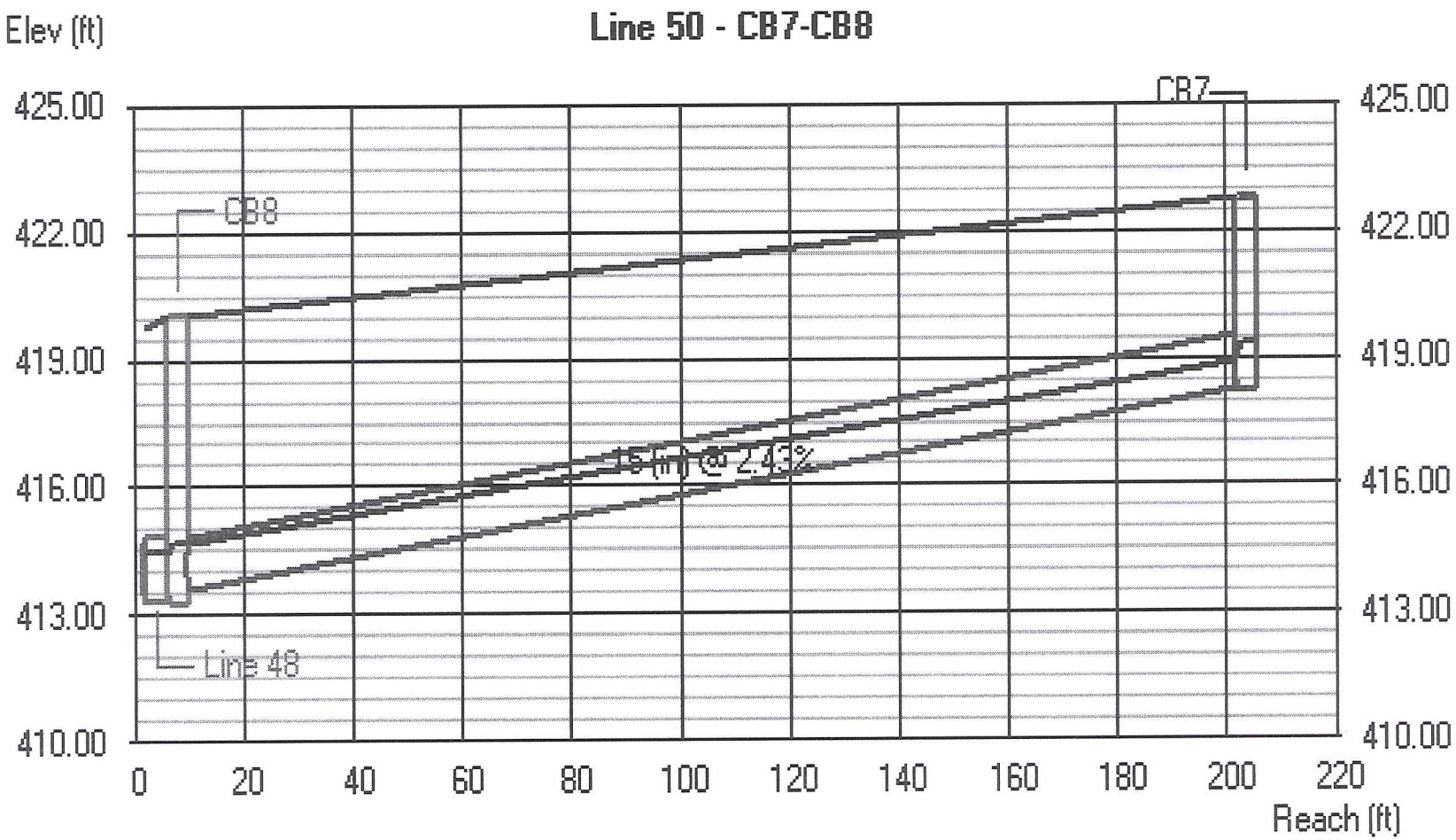
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



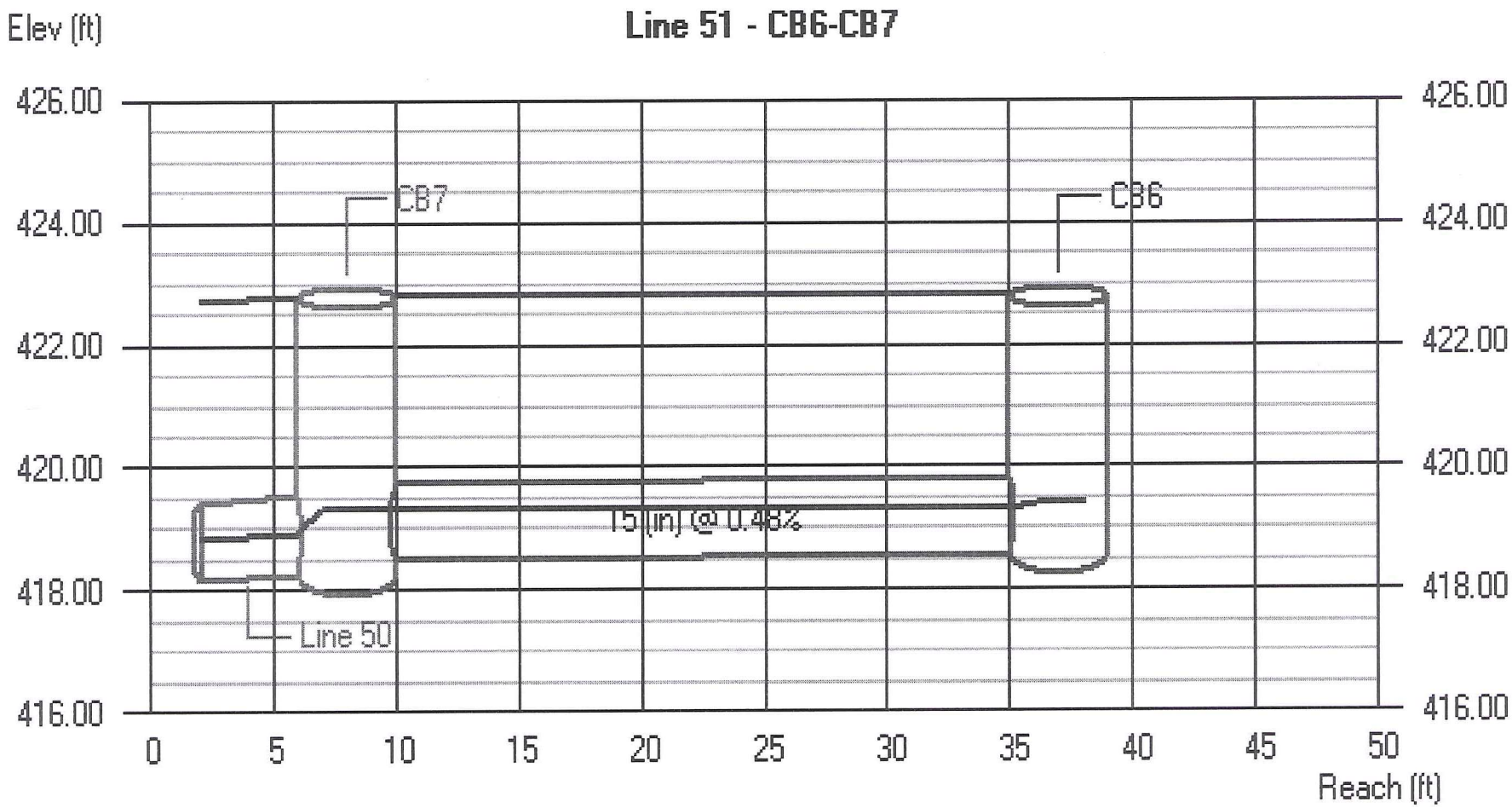
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



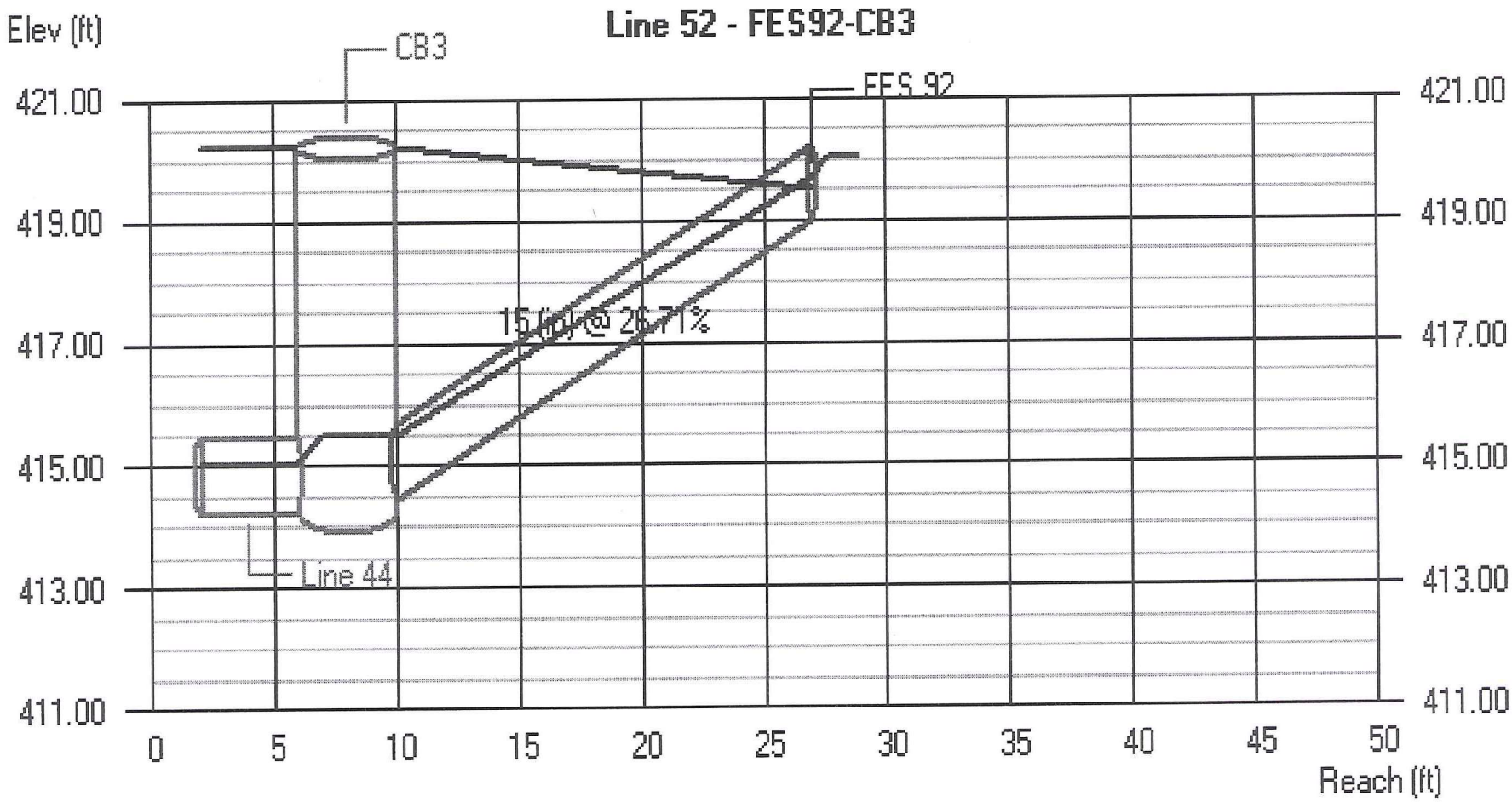
Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



Storm Sewer Profile

Proj. file: JDP South line A Revised 070720.stm



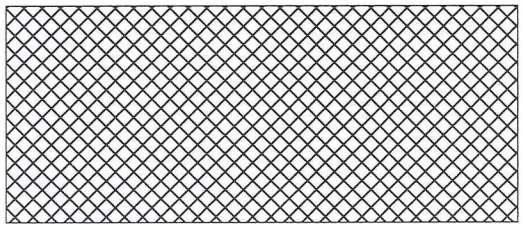
Inlet Section (Line 2 - Combination Inlet)

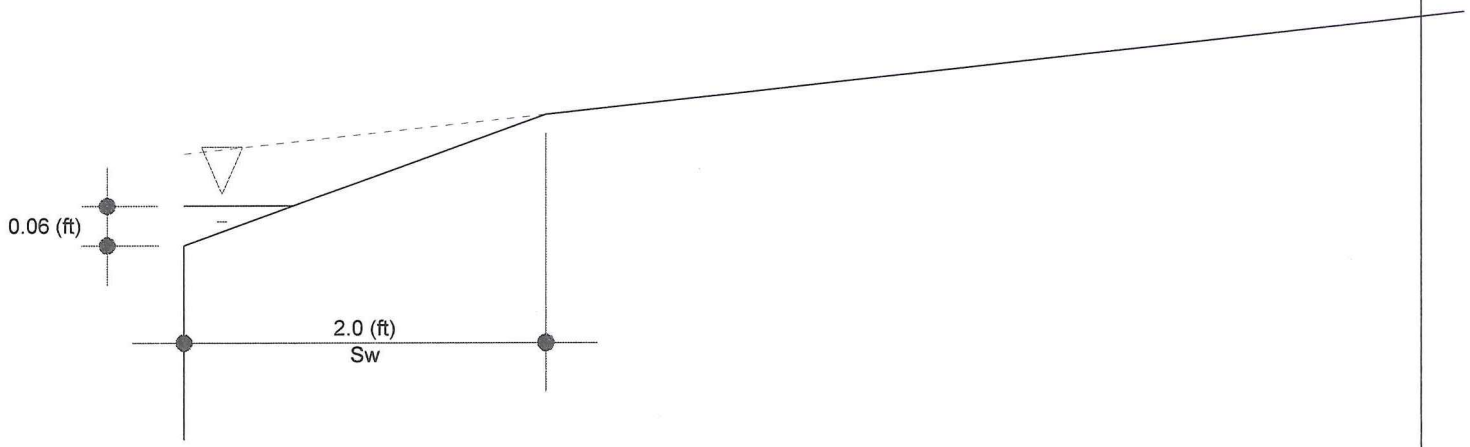
Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	0.00 (in)
Spread width, T =	0.60 (ft)





Inlet Section

CB52

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

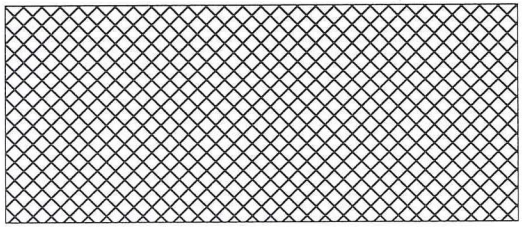
Inlet Section (Line 3 - Combination Inlet)

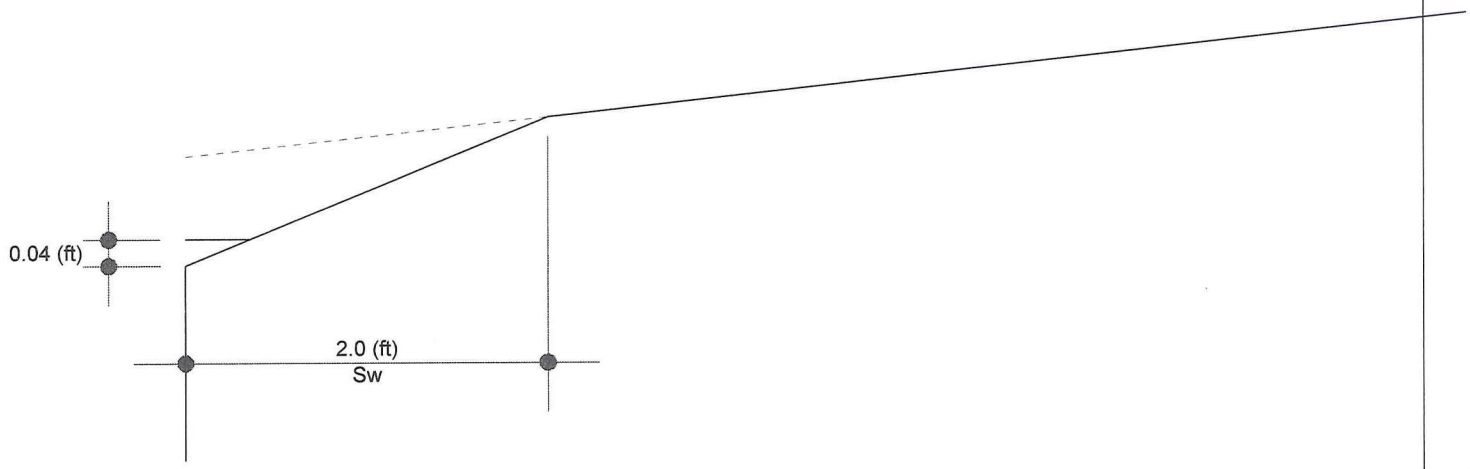
Inlet Flows

Q Catchment =	0.14 (cfs)
Q Carryover =	0.00
Q Total =	0.14
Q Captured =	0.14
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)





Inlet Section

CB50

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

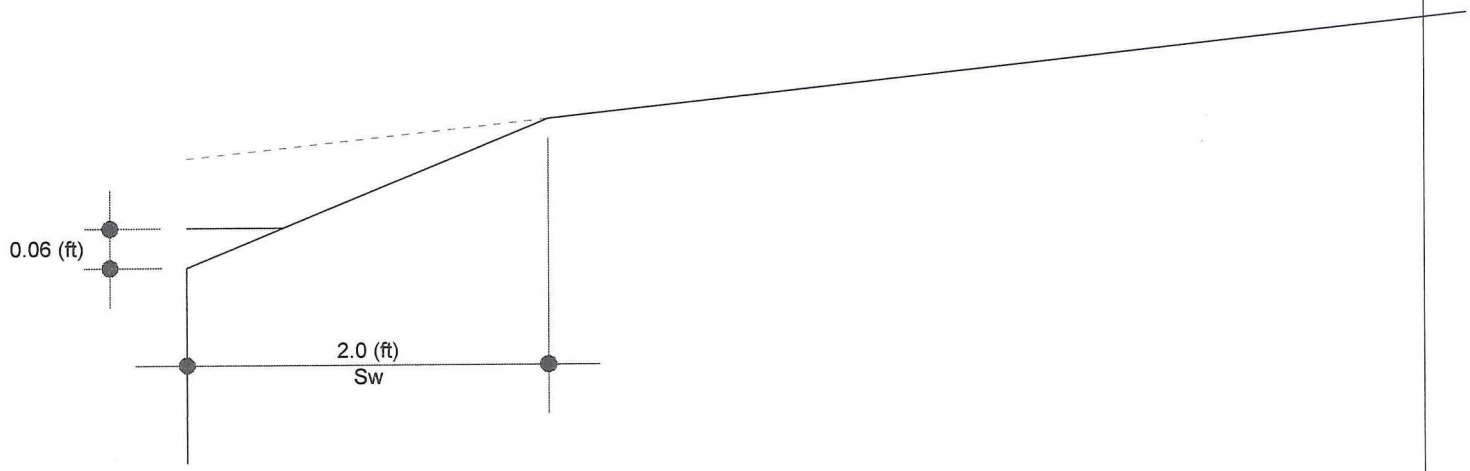
Inlet Section (Line 4 - Combination Inlet)

Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)



Inlet Section

CB51

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

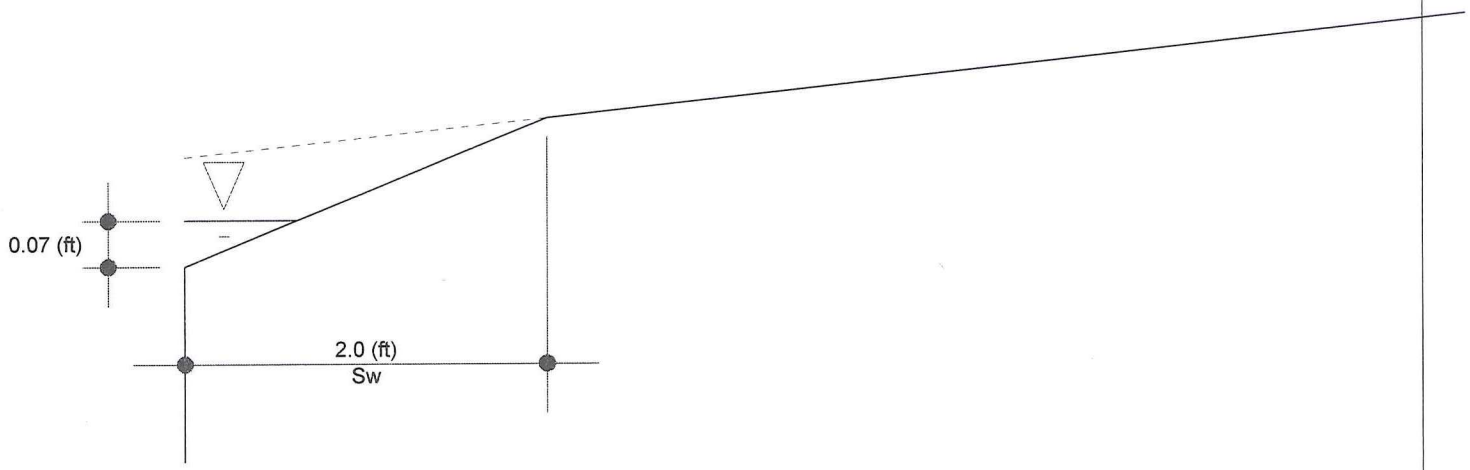
Inlet Section (Line 5 - Combination Inlet)

Inlet Flows

Q Catchment =	0.43 (cfs)
Q Carryover =	0.00
Q Total =	0.43
Q Captured =	0.43
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.62 (ft)



Inlet Section

CB49

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

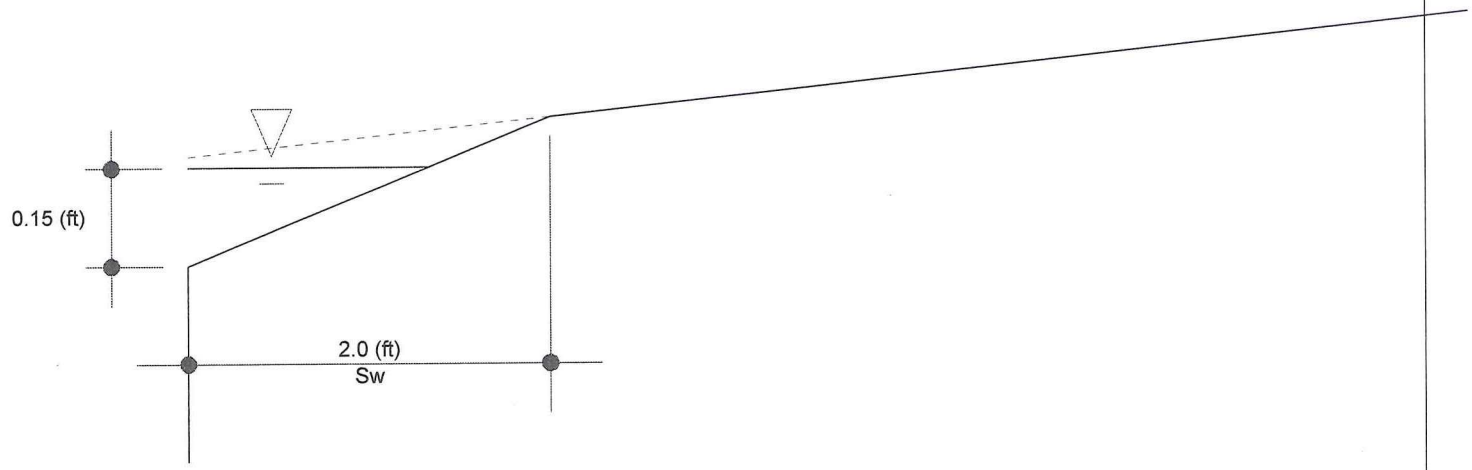
Inlet Section (Line 6 - Combination Inlet)

Inlet Flows

Q Catchment =	1.38 (cfs)
Q Carryover =	0.00
Q Total =	1.38
Q Captured =	1.38
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.32 (ft)



Inlet Section

CB48

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

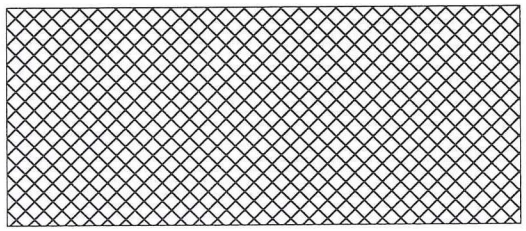
Inlet Section (Line 7 - Combination Inlet)

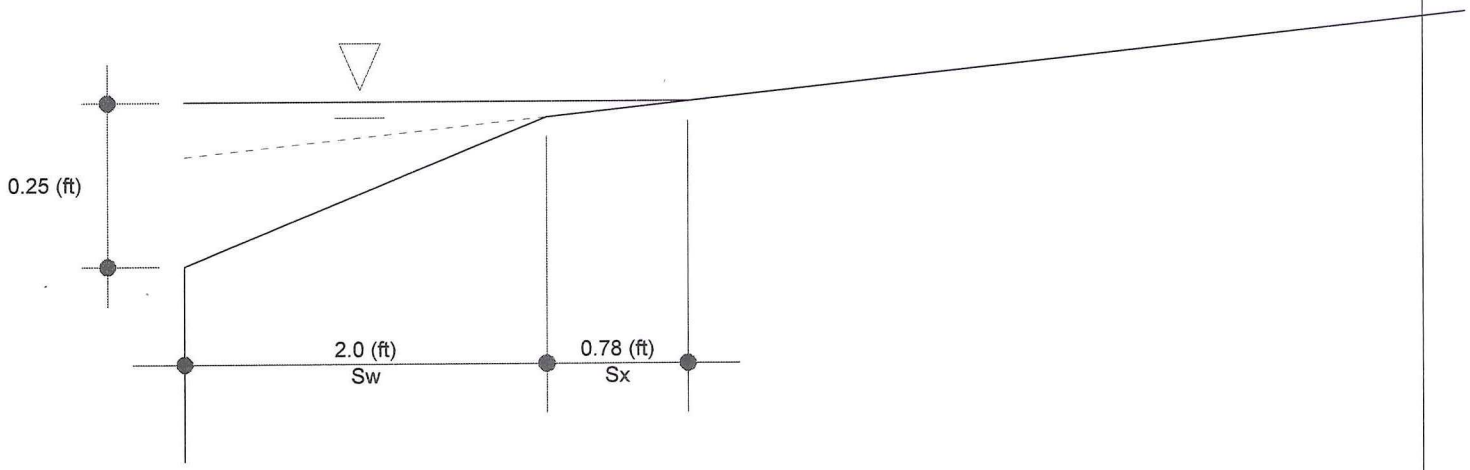
Inlet Flows

Q Catchment =	2.99 (cfs)
Q Carryover =	0.00
Q Total =	2.99
Q Captured =	2.99
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	2.78 (ft)





Inlet Section

CB46

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

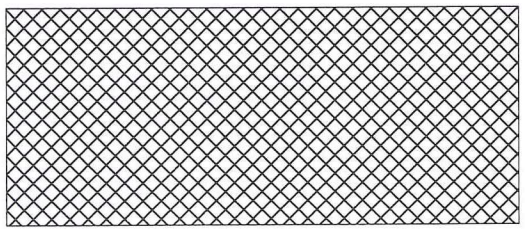
Inlet Section (Line 8 - Combination Inlet)

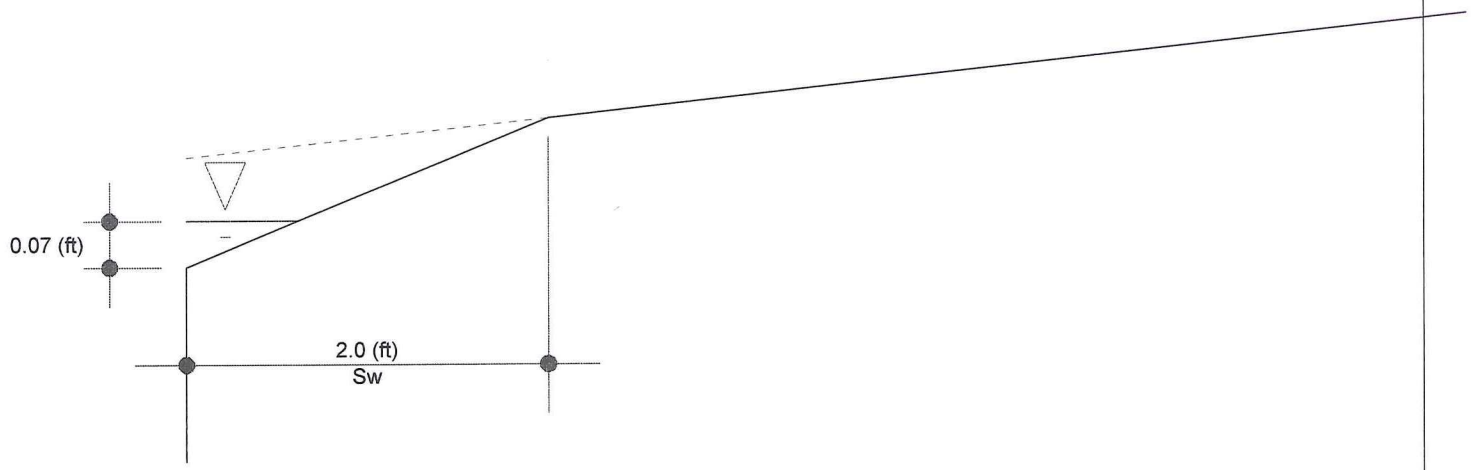
Inlet Flows

Q Catchment = 0.43 (cfs)
Q Carryover = 0.00
Q Total = 0.43
Q Captured = 0.43
Q Bypassed = 0.00

Gutter

Gutter Width = 2.00 (ft)
Gutter Slope = Sag
Cross Slope, Sw = 0.100 (ft/ft)
Cross Slope, Sx = 0.030 (ft/ft)
Loc. Depression = 2.00 (in)
Spread width, T = 0.62 (ft)





Inlet Section

CB47

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

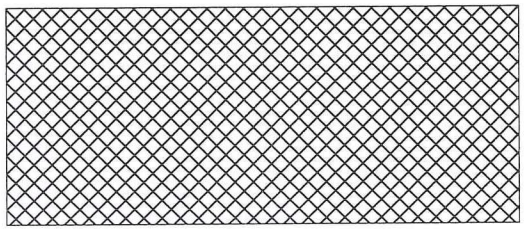
Inlet Section (Line 9 - Combination Inlet)

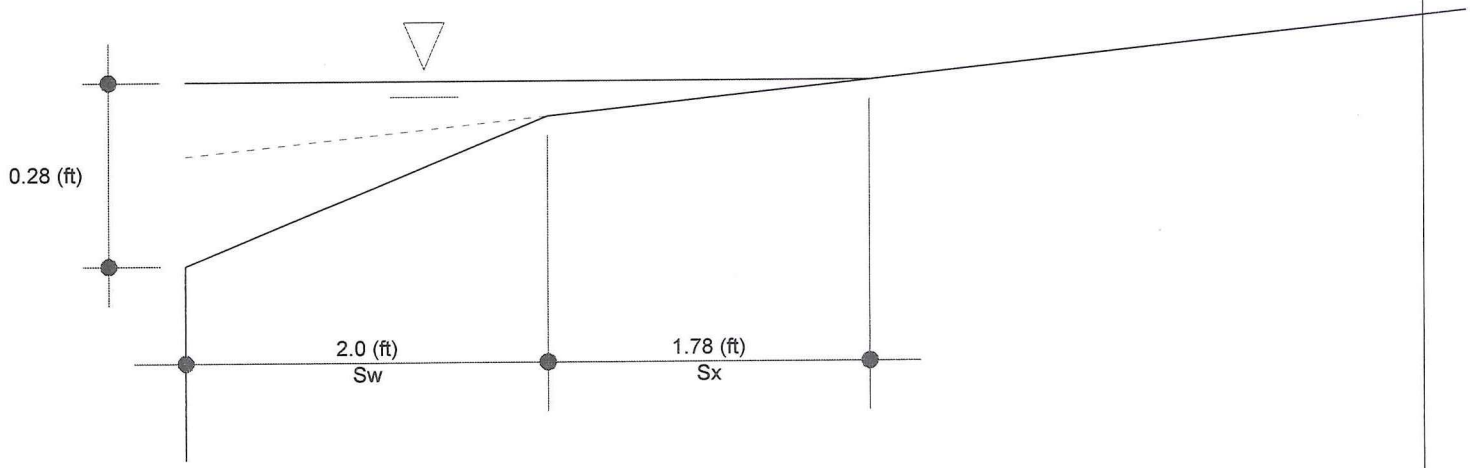
Inlet Flows

Q Catchment =	3.45 (cfs)
Q Carryover =	0.00
Q Total =	3.45
Q Captured =	3.45
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	3.78 (ft)





Inlet Section

CB44

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

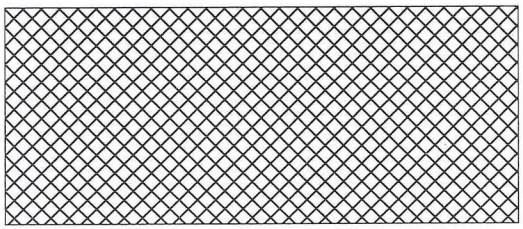
Inlet Section (Line 10 - Combination Inlet)

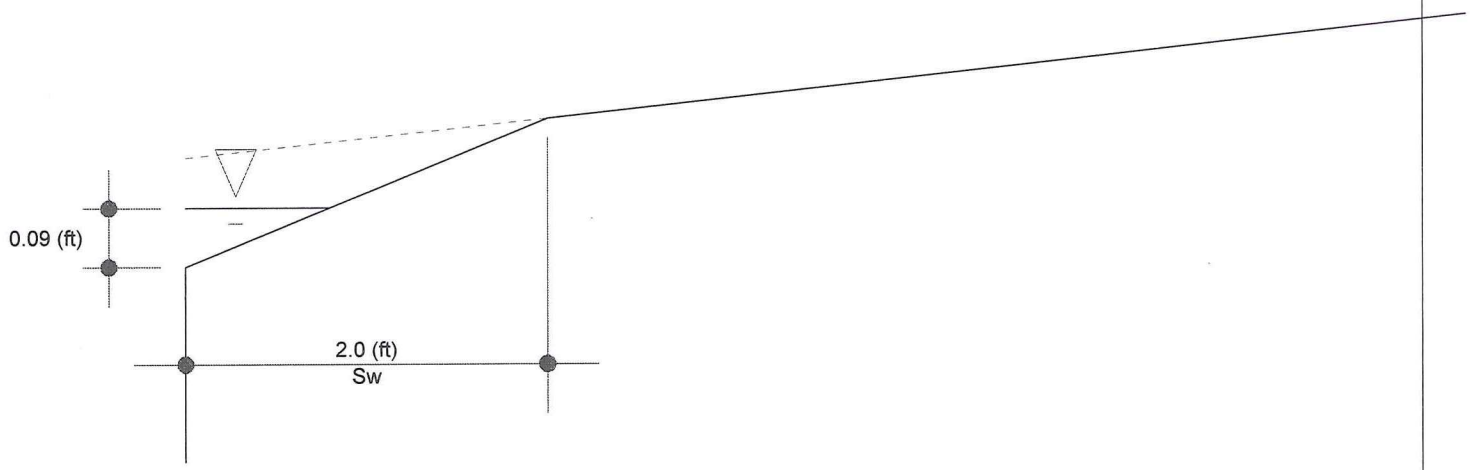
Inlet Flows

Q Catchment =	0.63 (cfs)
Q Carryover =	0.00
Q Total =	0.63
Q Captured =	0.63
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.79 (ft)





Inlet Section

CB45

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

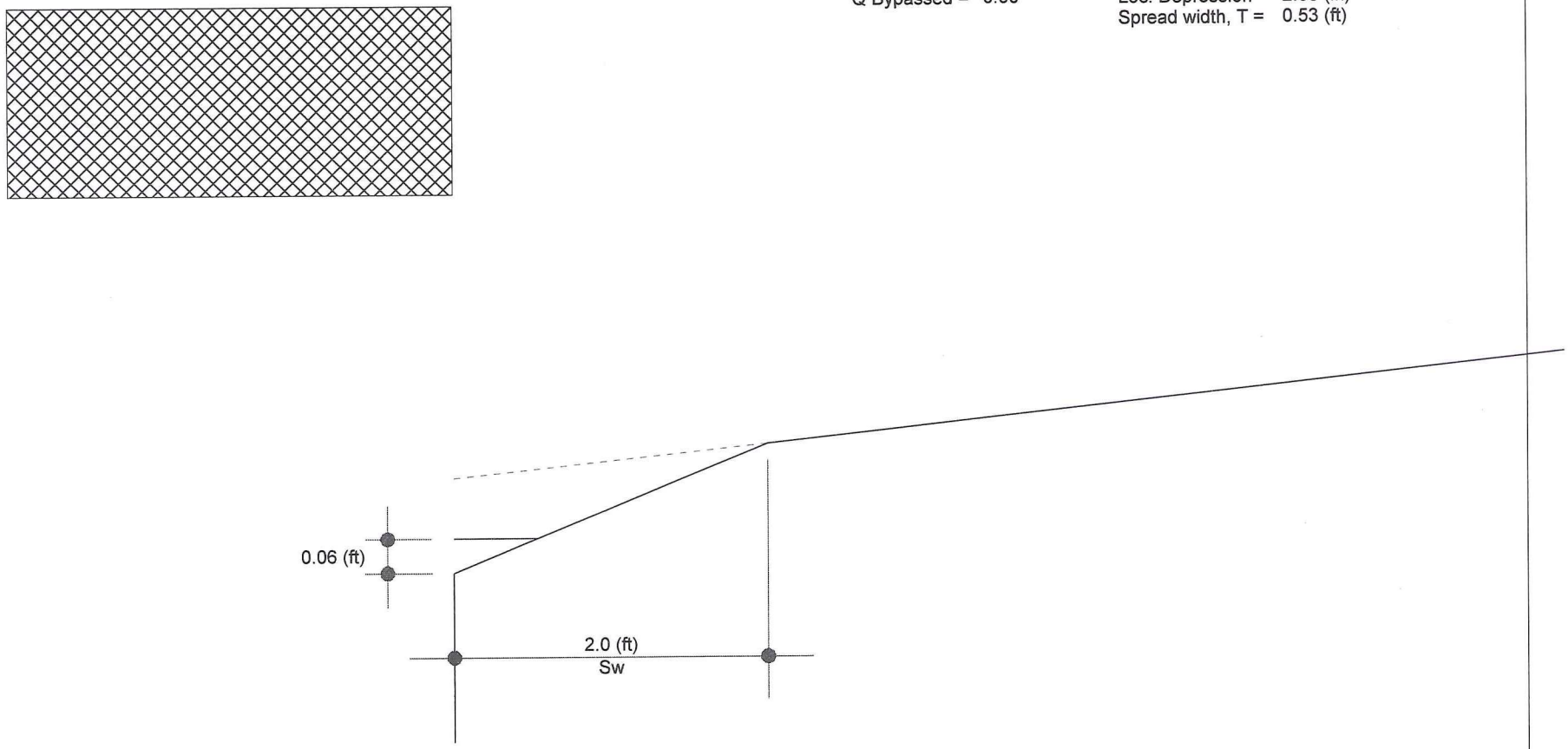
Inlet Section (Line 11 - Combination Inlet)

Inlet Flows

Q Catchment =	0.35 (cfs)
Q Carryover =	0.00
Q Total =	0.35
Q Captured =	0.35
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)



Inlet Section

CB40

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

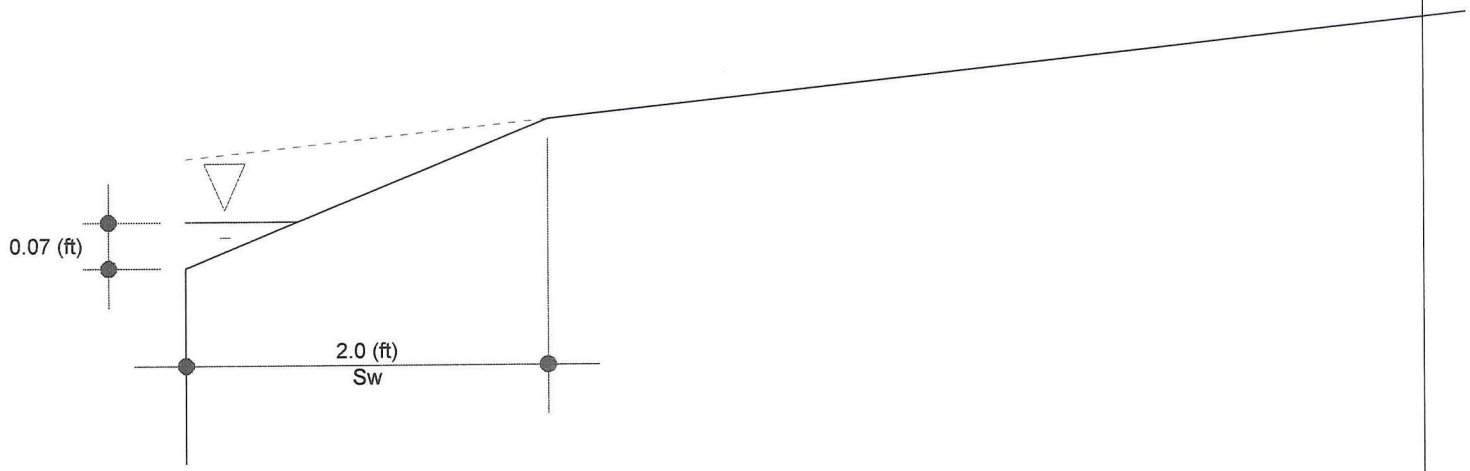
Inlet Section (Line 12 - Combination Inlet)

Inlet Flows

Q Catchment =	0.37 (cfs)
Q Carryover =	0.00
Q Total =	0.37
Q Captured =	0.37
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.62 (ft)



Inlet Section

CB43

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

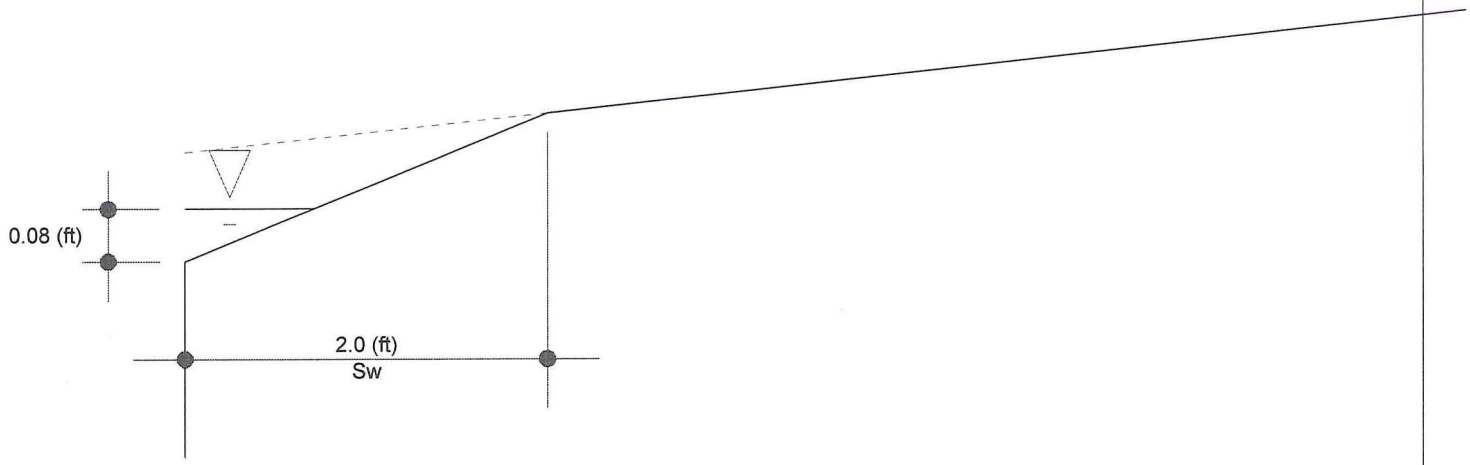
Inlet Section (Line 13 - Combination Inlet)

Inlet Flows

Q Catchment =	0.49 (cfs)
Q Carryover =	0.00
Q Total =	0.49
Q Captured =	0.49
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.71 (ft)



Inlet Section

CB42

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

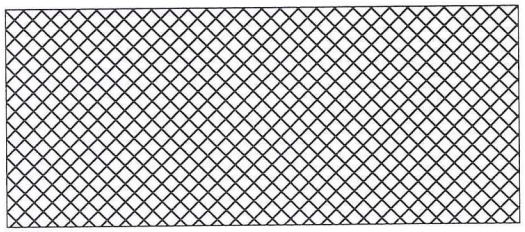
Inlet Section (Line 14 - Combination Inlet)

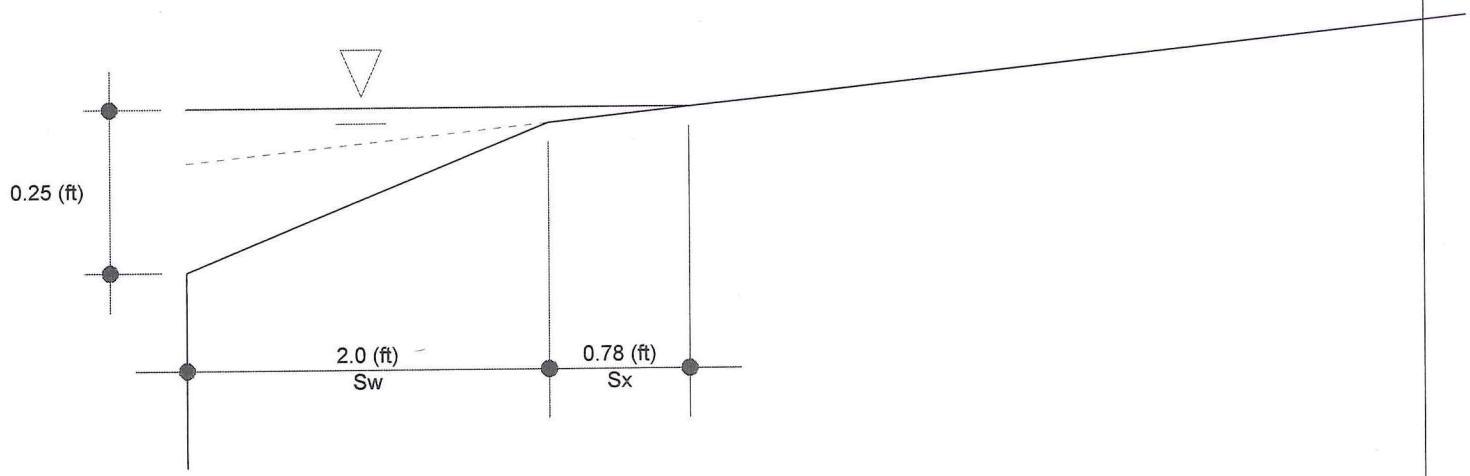
Inlet Flows

Q Catchment =	2.94 (cfs)
Q Carryover =	0.00
Q Total =	2.94
Q Captured =	2.94
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	2.78 (ft)





Inlet Section

CB41

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

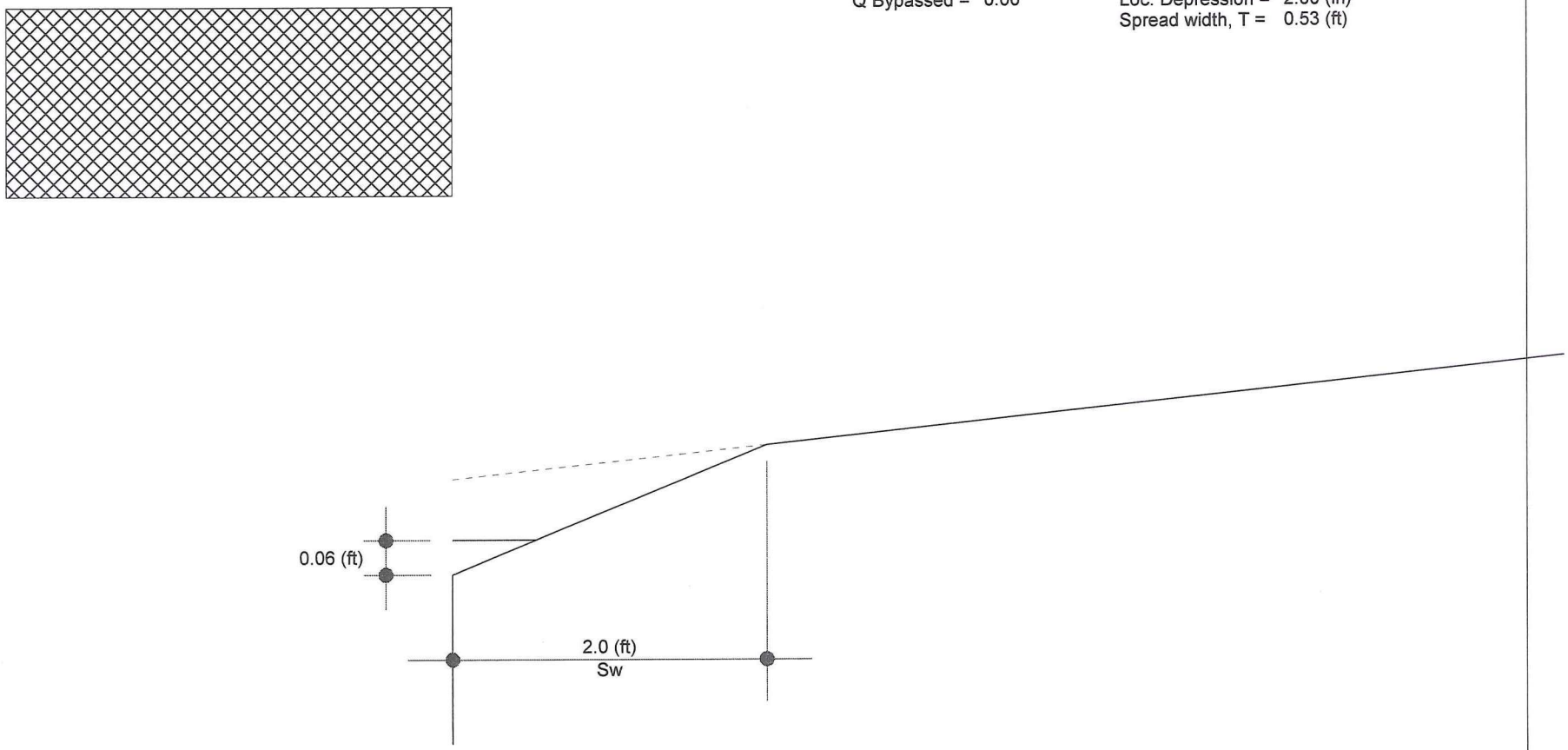
Inlet Section (Line 15 - Combination Inlet)

Inlet Flows

Q Catchment =	0.35 (cfs)
Q Carryover =	0.00
Q Total =	0.35
Q Captured =	0.35
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)



Inlet Section

CB39

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

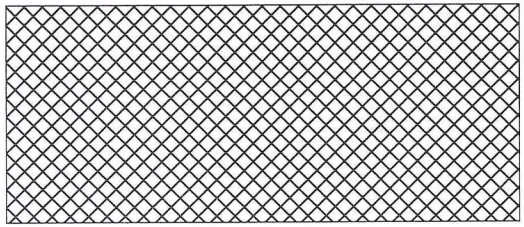
Inlet Section (Line 16 - Combination Inlet)

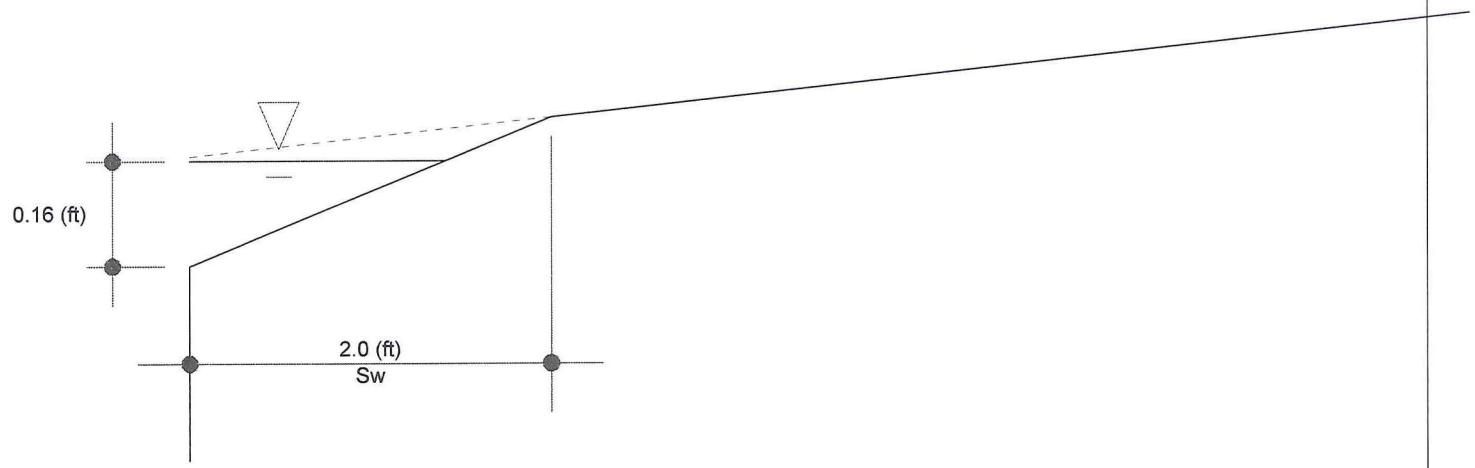
Inlet Flows

Q Catchment =	1.52 (cfs)
Q Carryover =	0.00
Q Total =	1.52
Q Captured =	1.52
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.41 (ft)





Inlet Section

CB37

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

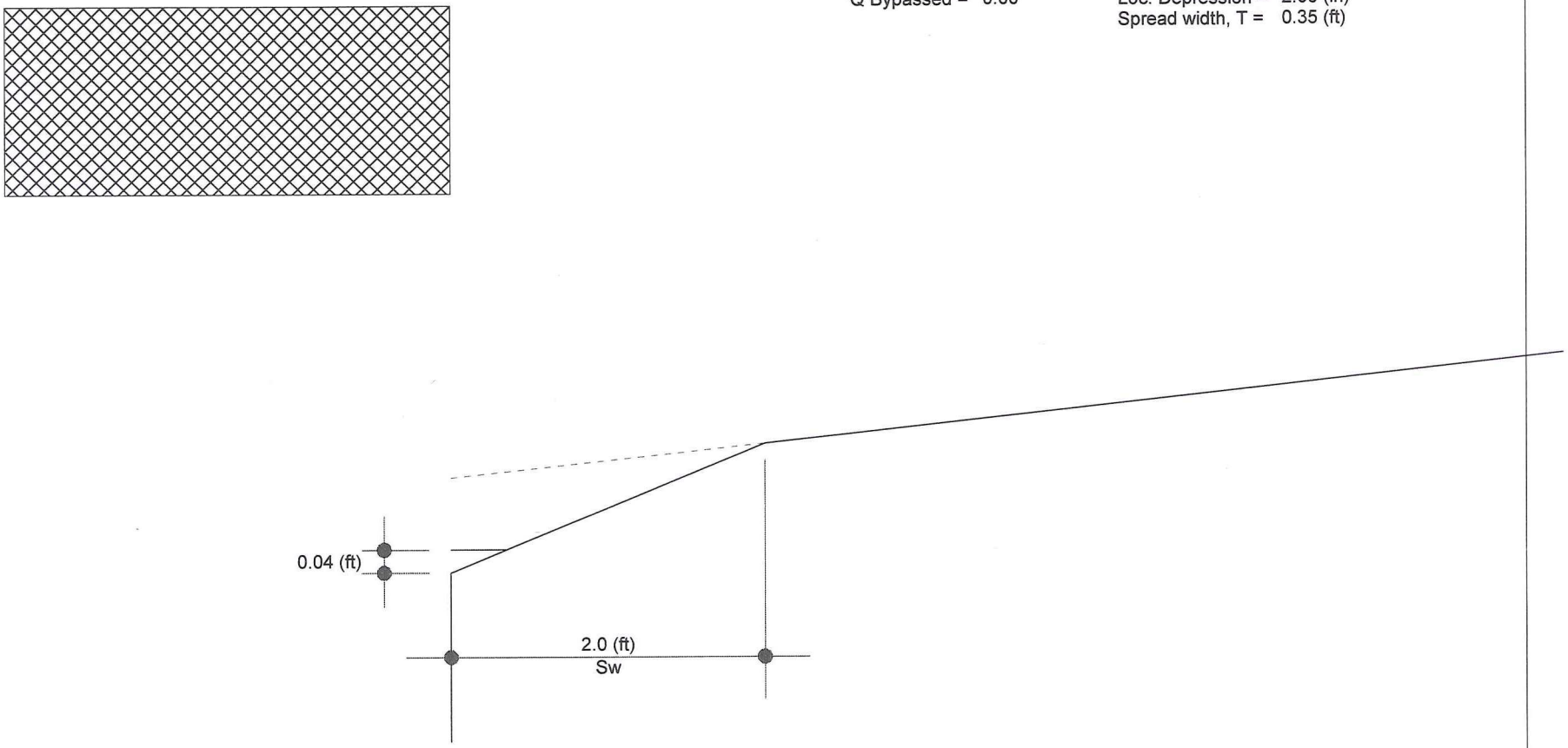
Inlet Section (Line 17 - Combination Inlet)

Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)



Inlet Section

CB38

Project file: JDP South line A Revised 070720.stm

07-15-2020

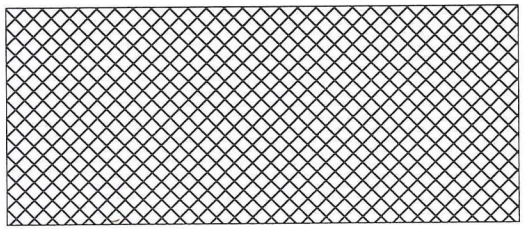
Inlet Section (Line 18 - Combination Inlet)

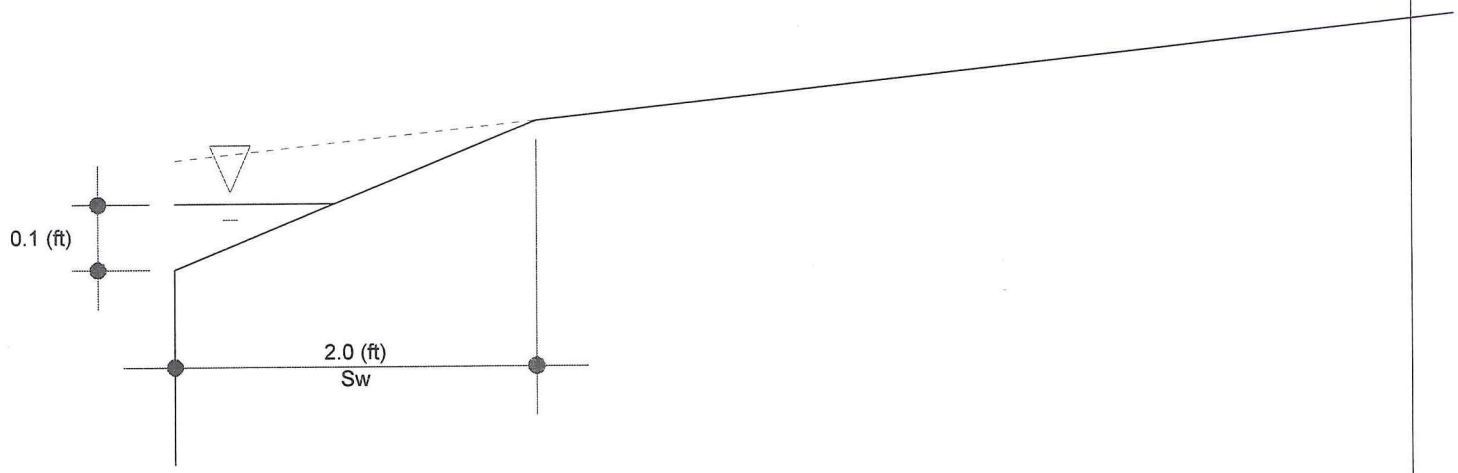
Inlet Flows

Q Catchment =	0.72 (cfs)
Q Carryover =	0.00
Q Total =	0.72
Q Captured =	0.72
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.88 (ft)





Inlet Section

CB35

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

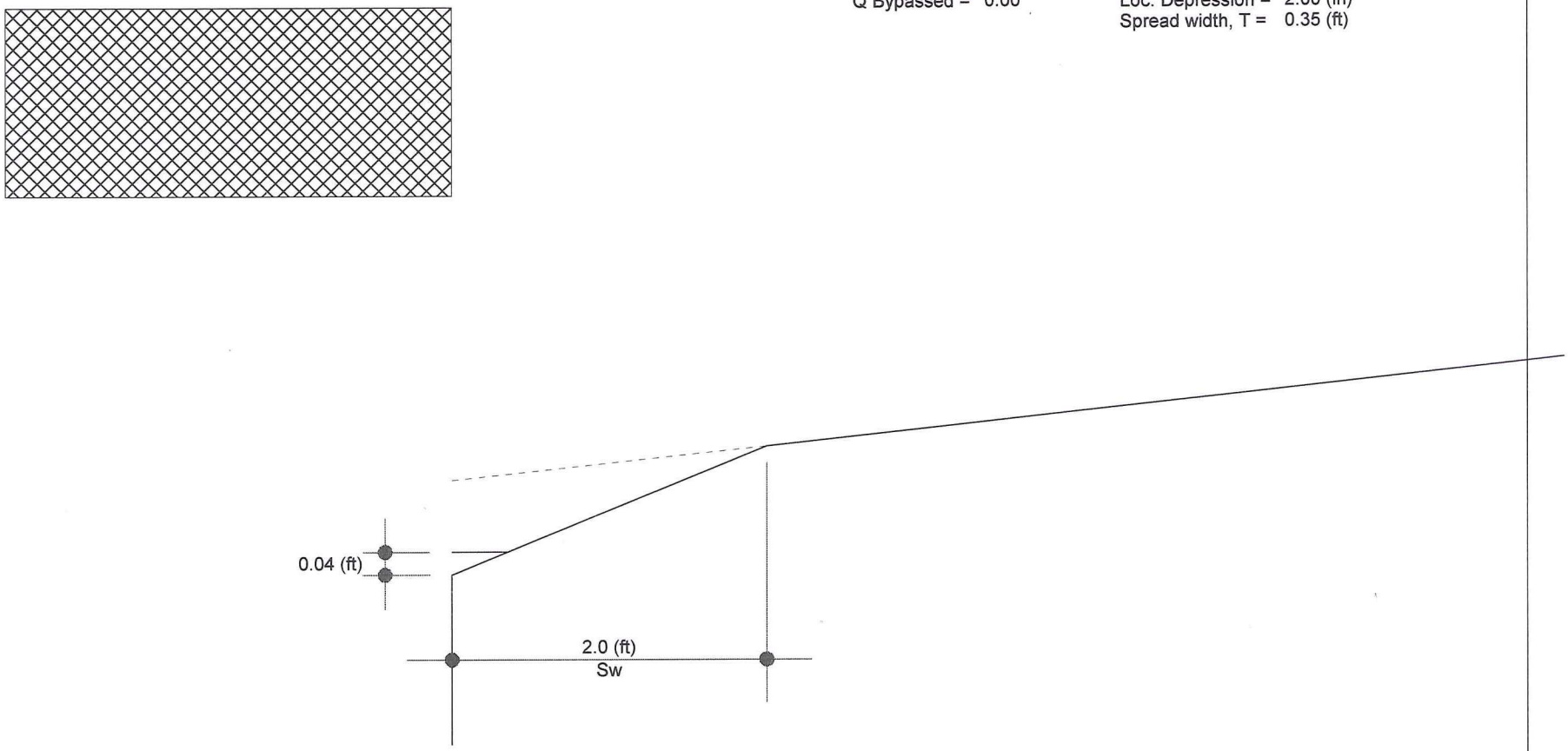
Inlet Section (Line 19 - Combination Inlet)

Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)



Inlet Section

CB36

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

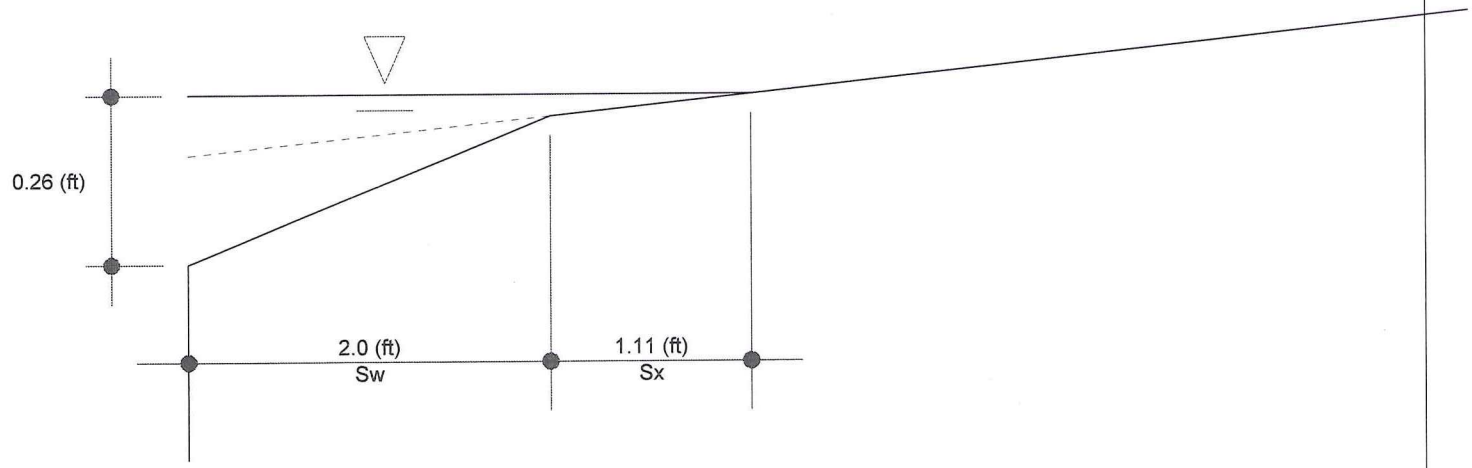
Inlet Section (Line 20 - Combination Inlet)

Inlet Flows

Q Catchment =	3.05 (cfs)
Q Carryover =	0.00
Q Total =	3.05
Q Captured =	3.05
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	3.11 (ft)



Inlet Section

CB34

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

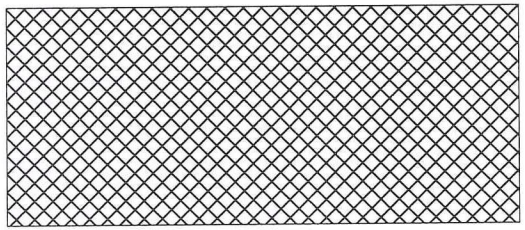
Inlet Section (Line 21 - Combination Inlet)

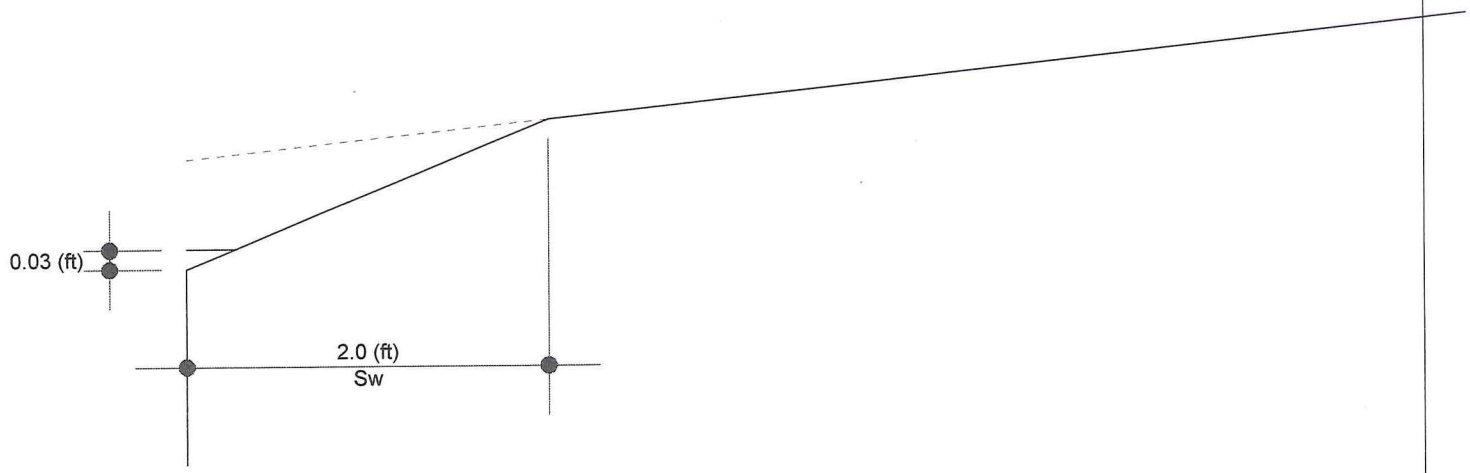
Inlet Flows

Q Catchment =	0.12 (cfs)
Q Carryover =	0.00
Q Total =	0.12
Q Captured =	0.12
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.26 (ft)





Inlet Section

CB29

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

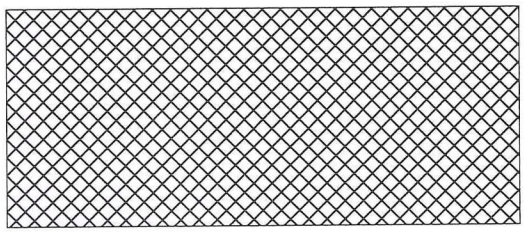
Inlet Section (Line 22 - Combination Inlet)

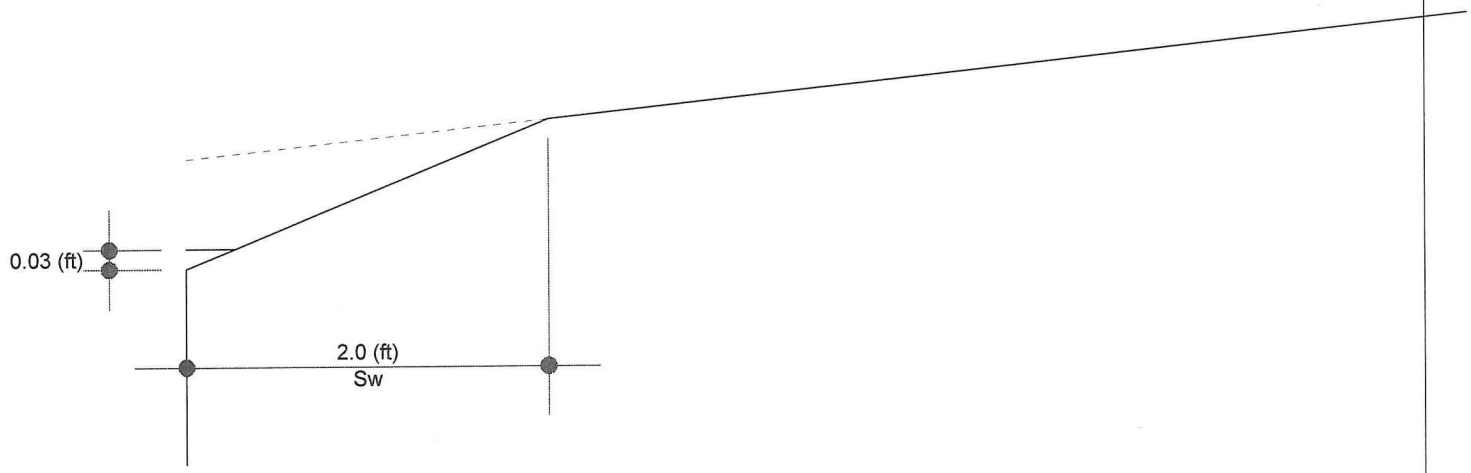
Inlet Flows

Q Catchment =	0.12 (cfs)
Q Carryover =	0.00
Q Total =	0.12
Q Captured =	0.12
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.26 (ft)





Inlet Section

CB31

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

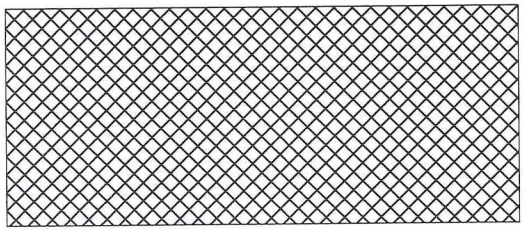
Inlet Section (Line 23 - Combination Inlet)

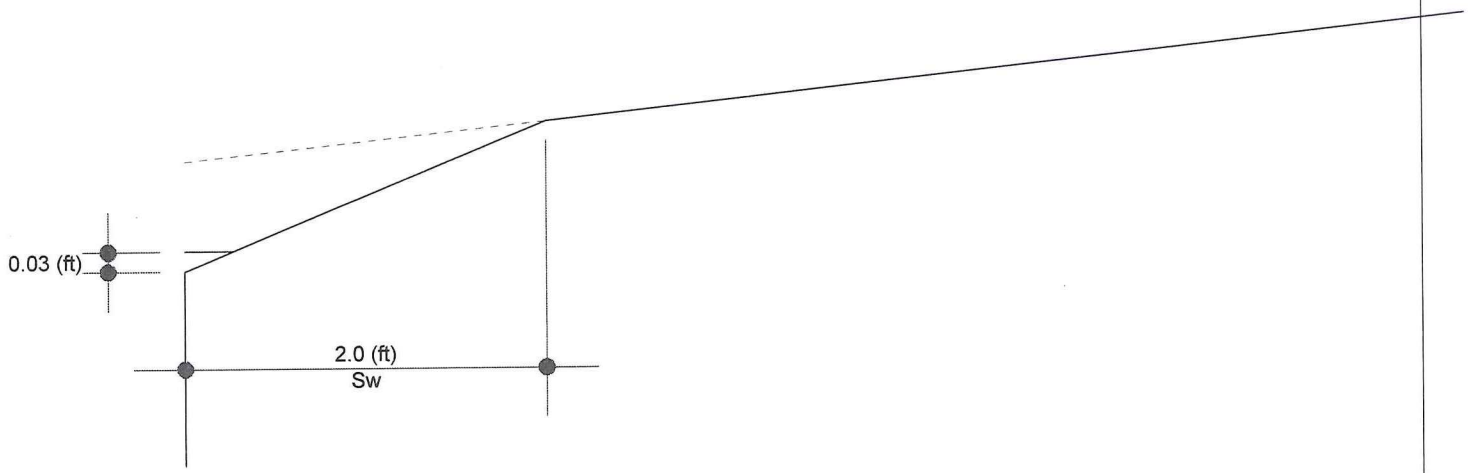
Inlet Flows

Q Catchment = 0.09 (cfs)
Q Carryover = 0.00
Q Total = 0.09
Q Captured = 0.09
Q Bypassed = 0.00

Gutter

Gutter Width = 2.00 (ft)
Gutter Slope = Sag
Cross Slope, Sw = 0.100 (ft/ft)
Cross Slope, Sx = 0.030 (ft/ft)
Loc. Depression = 2.00 (in)
Spread width, T = 0.26 (ft)





Inlet Section

CB30

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

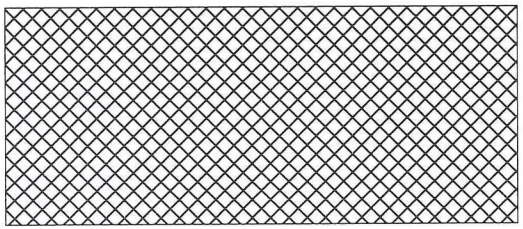
Inlet Section (Line 24 - Combination Inlet)

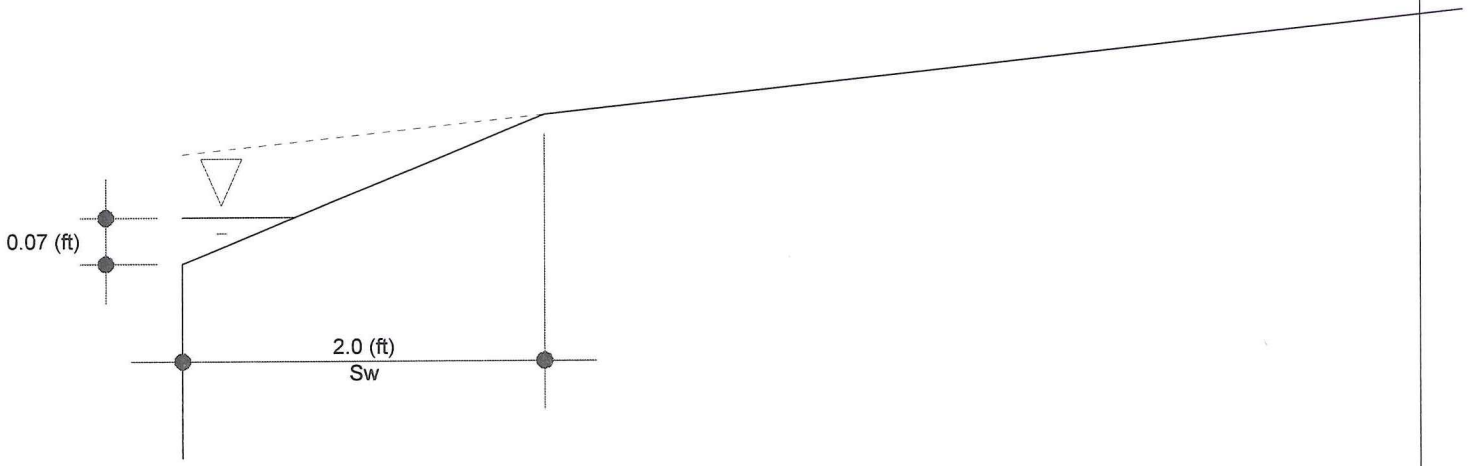
Inlet Flows

Q Catchment =	0.40 (cfs)
Q Carryover =	0.00
Q Total =	0.40
Q Captured =	0.40
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.62 (ft)





Inlet Section

CB28

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

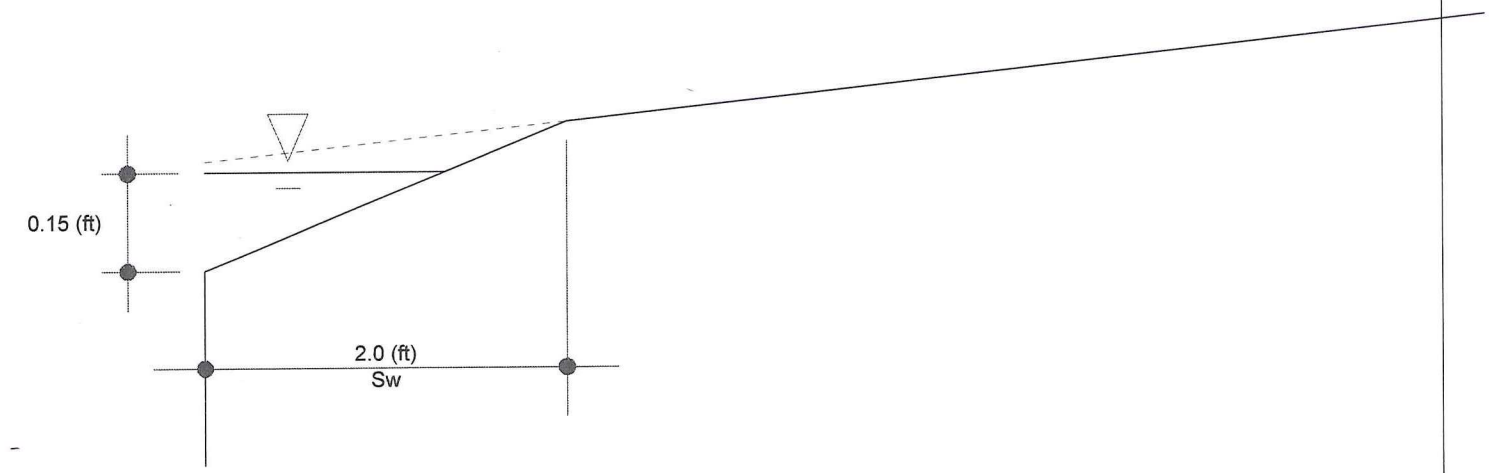
Inlet Section (Line 25 - Combination Inlet)

Inlet Flows

Q Catchment =	1.34 (cfs)
Q Carryover =	0.00
Q Total =	1.34
Q Captured =	1.34
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.32 (ft)



Inlet Section

CB23

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

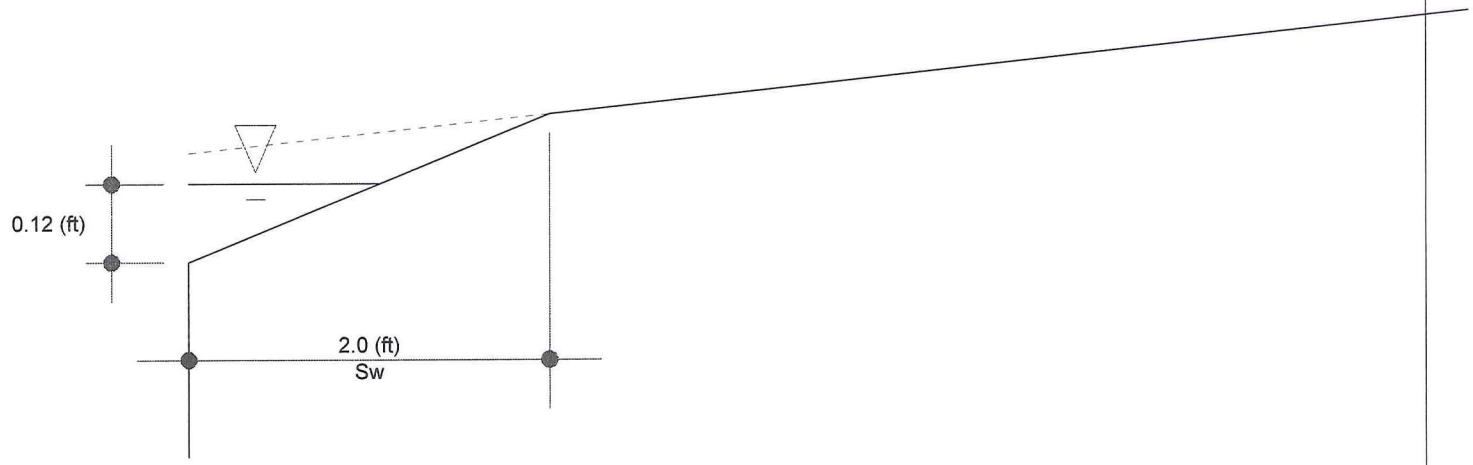
Inlet Section (Line 26 - Combination Inlet)

Inlet Flows

Q Catchment =	0.89 (cfs)
Q Carryover =	0.00
Q Total =	0.89
Q Captured =	0.89
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.06 (ft)



Inlet Section

CB22

Project file: JDP South line A Revised 070720.stm

07-15-2020

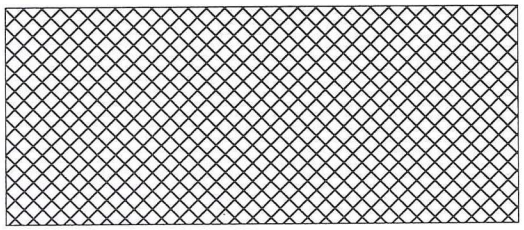
Inlet Section (Line 27 - Combination Inlet)

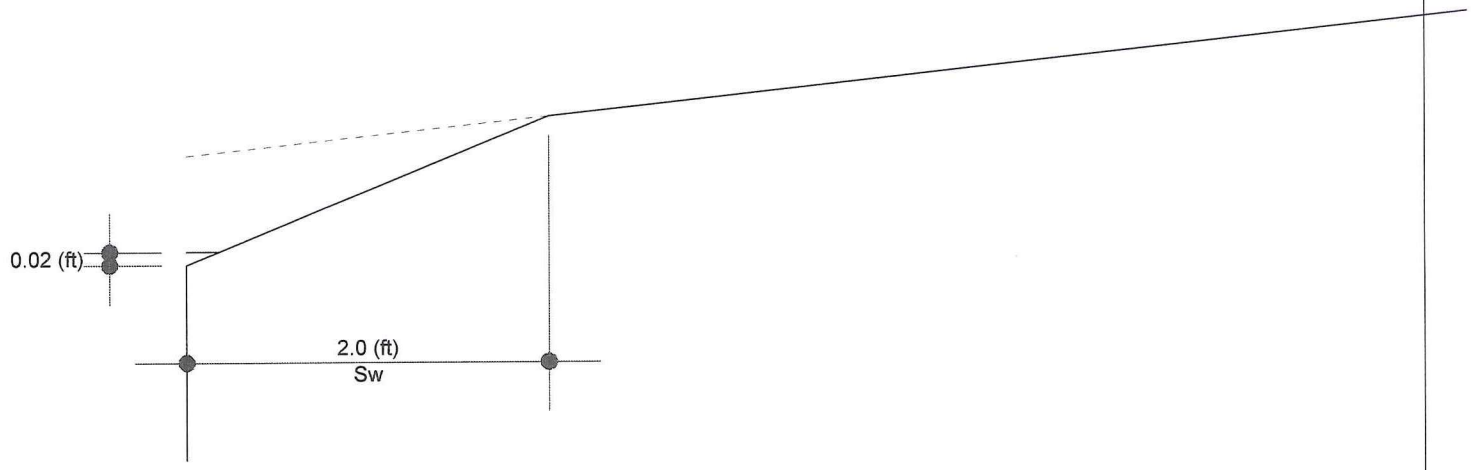
Inlet Flows

Q Catchment =	0.06 (cfs)
Q Carryover =	0.00
Q Total =	0.06
Q Captured =	0.06
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.18 (ft)





Inlet Section

CB20

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

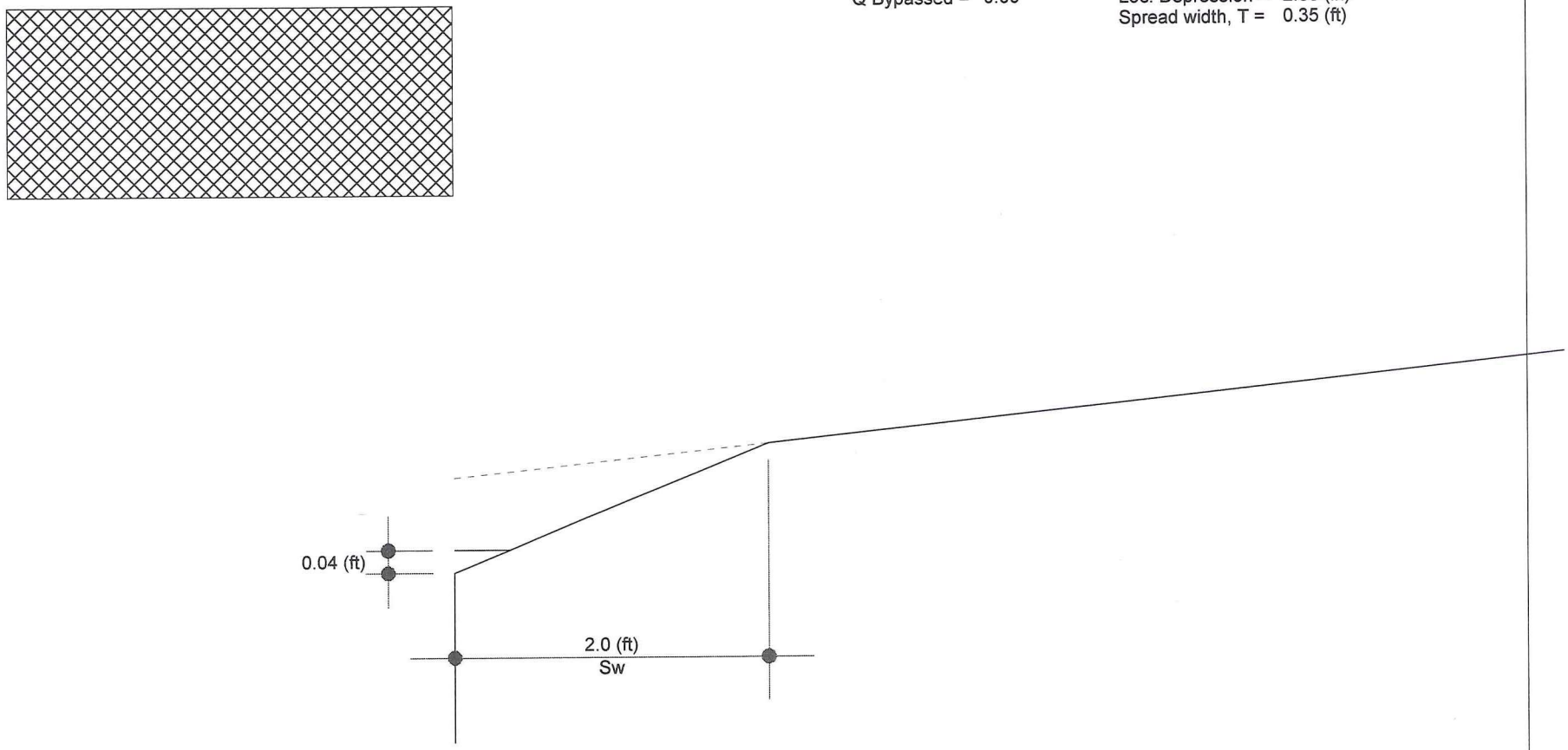
Inlet Section (Line 28 - Combination Inlet)

Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)



Inlet Section

CB19

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

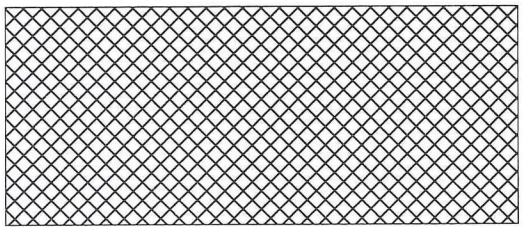
Inlet Section (Line 29 - Combination Inlet)

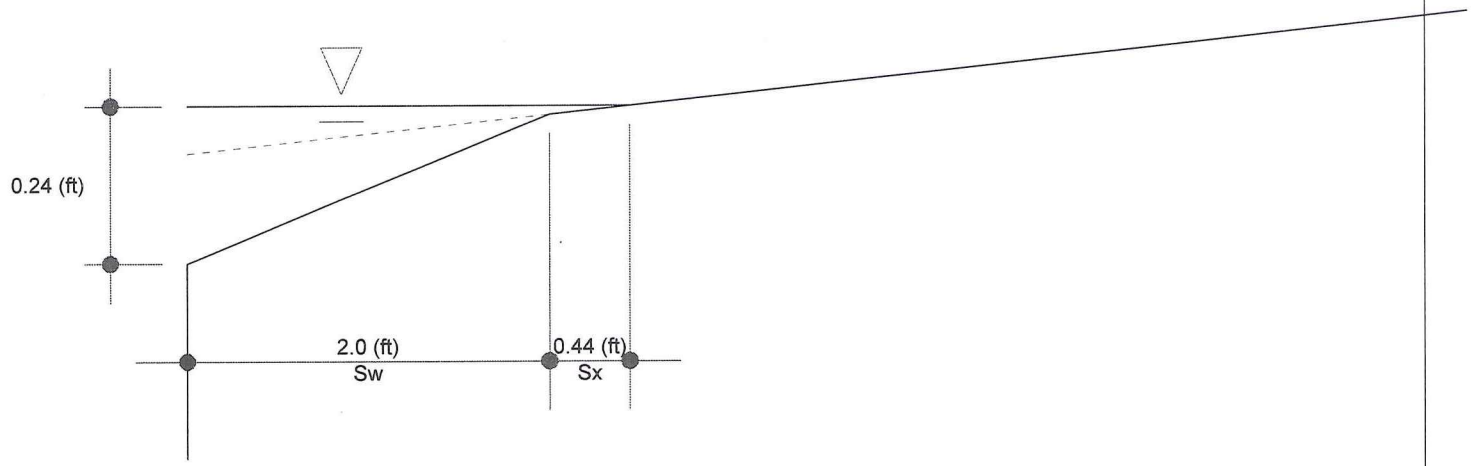
Inlet Flows

Q Catchment =	2.74 (cfs)
Q Carryover =	0.00
Q Total =	2.74
Q Captured =	2.74
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	2.44 (ft)





Inlet Section

CB26

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

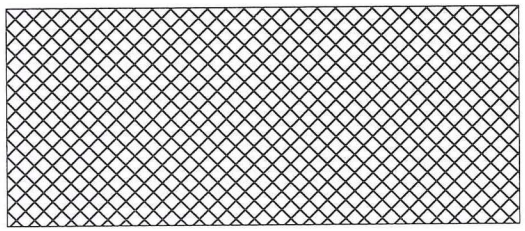
Inlet Section (Line 30 - Combination Inlet)

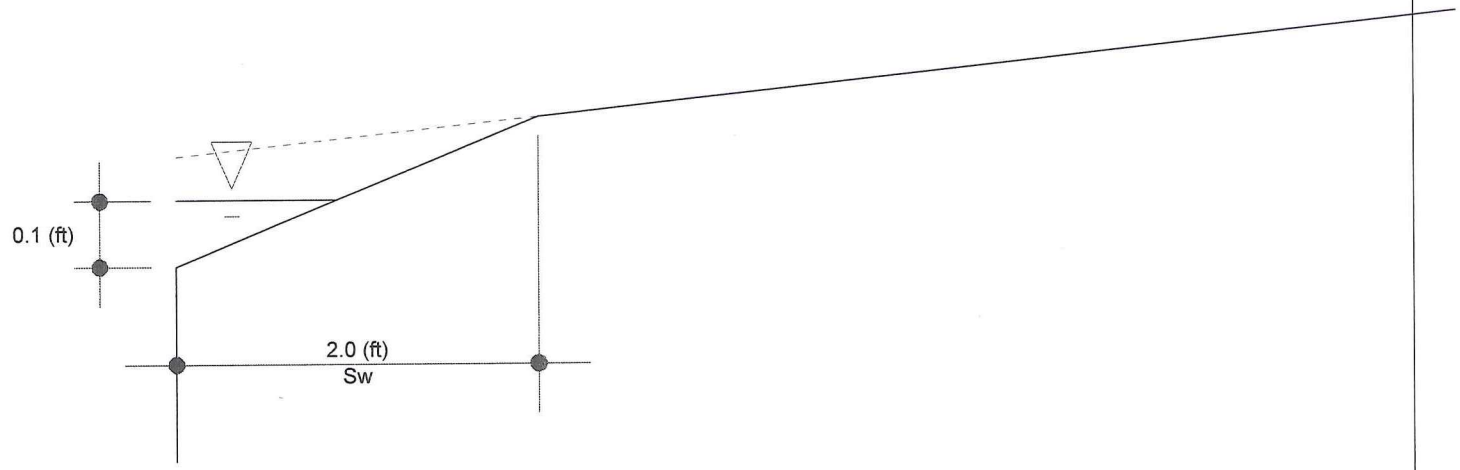
Inlet Flows

Q Catchment =	0.69 (cfs)
Q Carryover =	0.00
Q Total =	0.69
Q Captured =	0.69
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.88 (ft)





Inlet Section

CB27

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

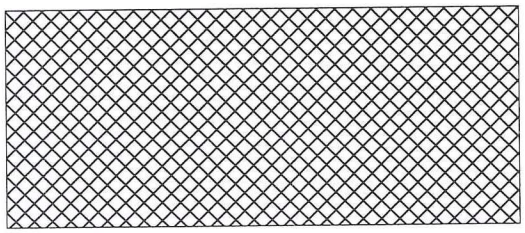
Inlet Section (Line 31 - Combination Inlet)

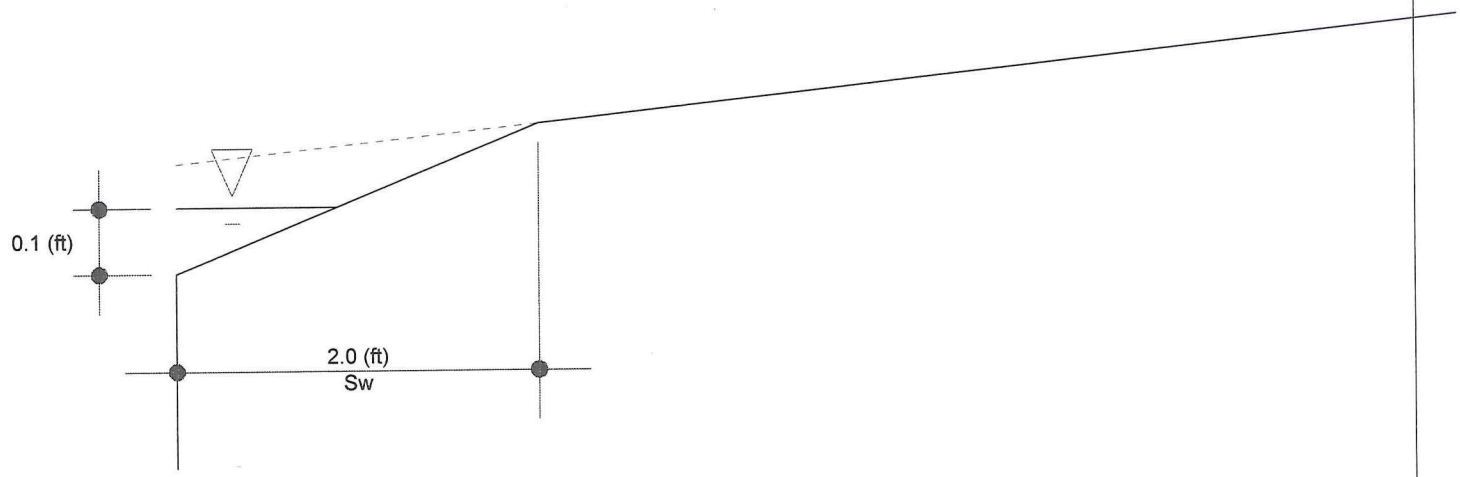
Inlet Flows

Q Catchment =	0.72 (cfs)
Q Carryover =	0.00
Q Total =	0.72
Q Captured =	0.72
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.88 (ft)





Inlet Section

CB25

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

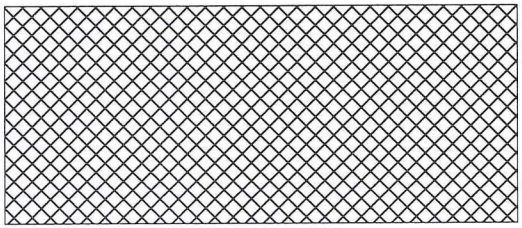
Inlet Section (Line 32 - Combination Inlet)

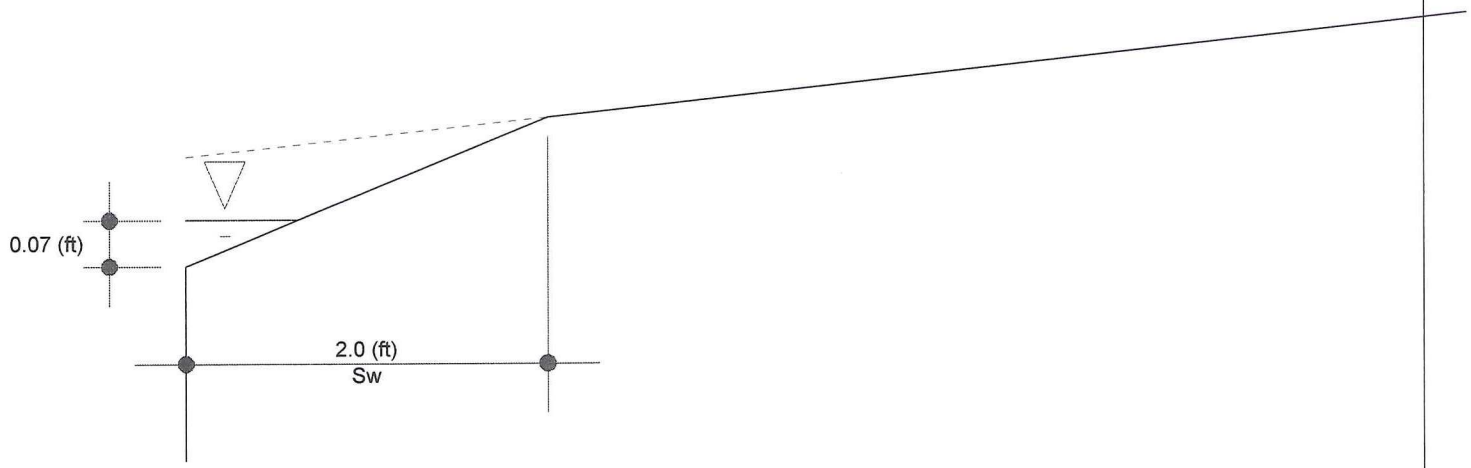
Inlet Flows

Q Catchment =	0.40 (cfs)
Q Carryover =	0.00
Q Total =	0.40
Q Captured =	0.40
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.62 (ft)





Inlet Section

CB24

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

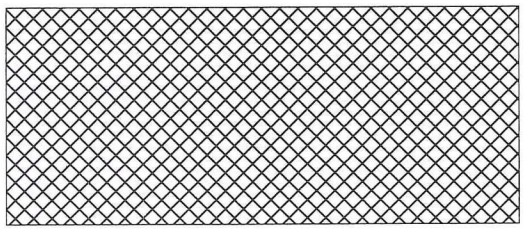
Inlet Section (Line 33 - Combination Inlet)

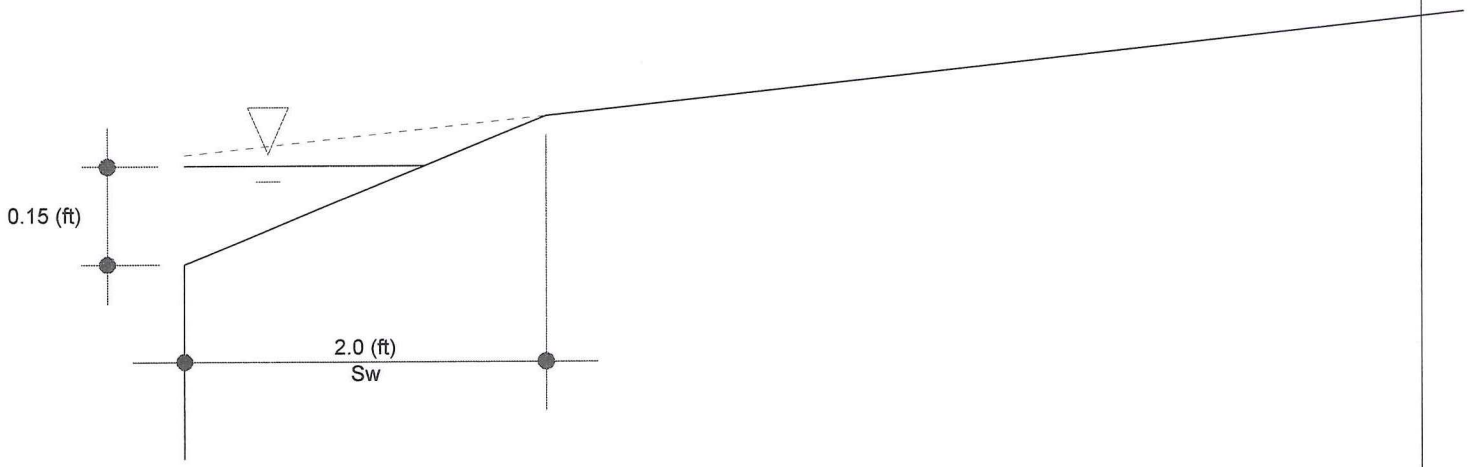
Inlet Flows

Q Catchment =	1.38 (cfs)
Q Carryover =	0.00
Q Total =	1.38
Q Captured =	1.38
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.32 (ft)





Inlet Section

CB21

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

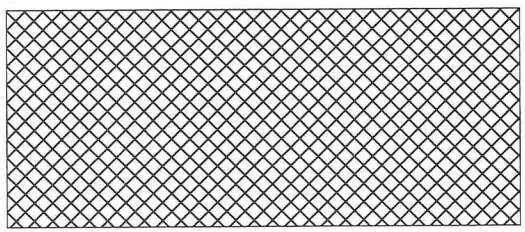
Inlet Section (Line 34 - Combination Inlet)

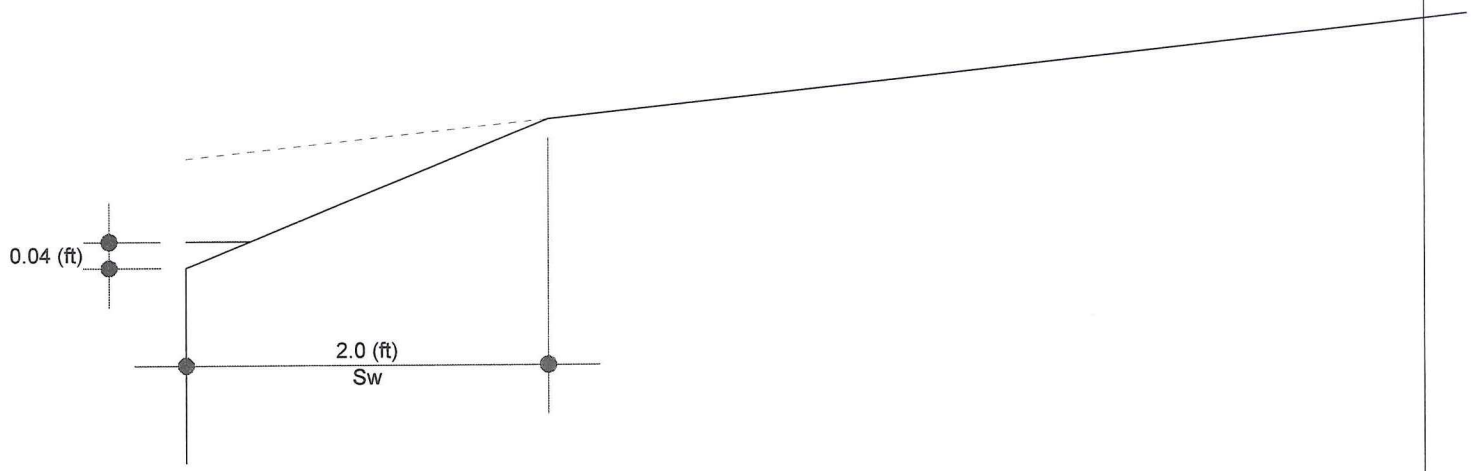
Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)





Inlet Section

CB13

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

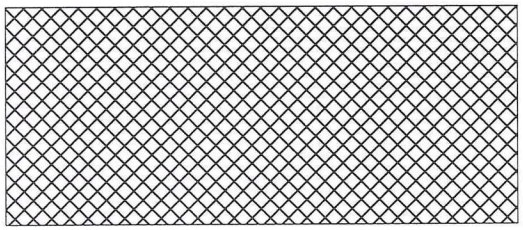
Inlet Section (Line 35 - Combination Inlet)

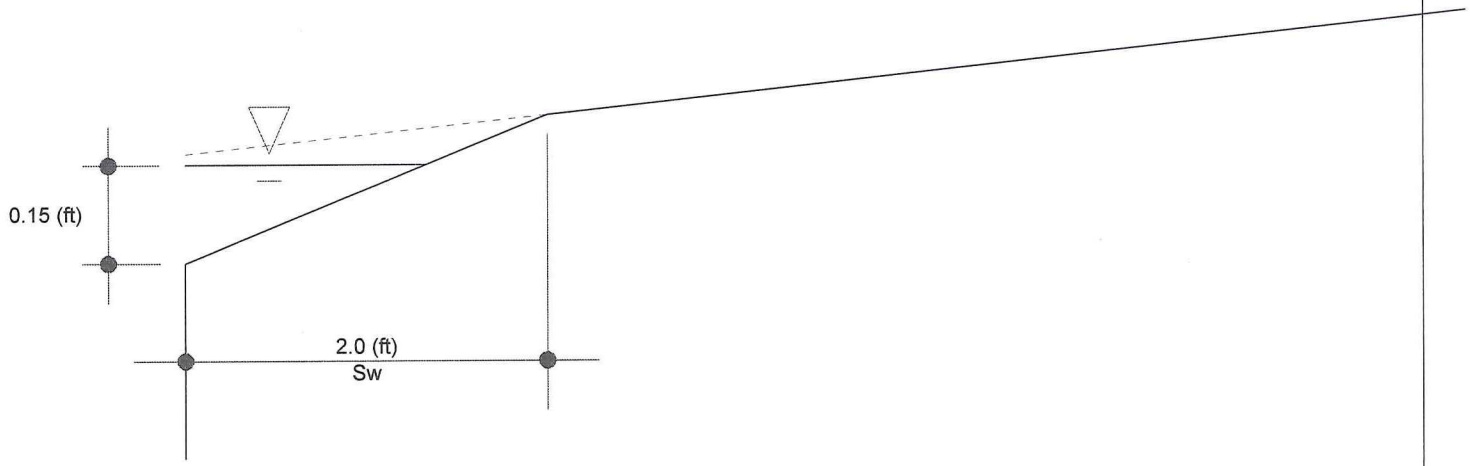
Inlet Flows

Q Catchment =	1.38 (cfs)
Q Carryover =	0.00
Q Total =	1.38
Q Captured =	1.38
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.32 (ft)





Inlet Section

CB18

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

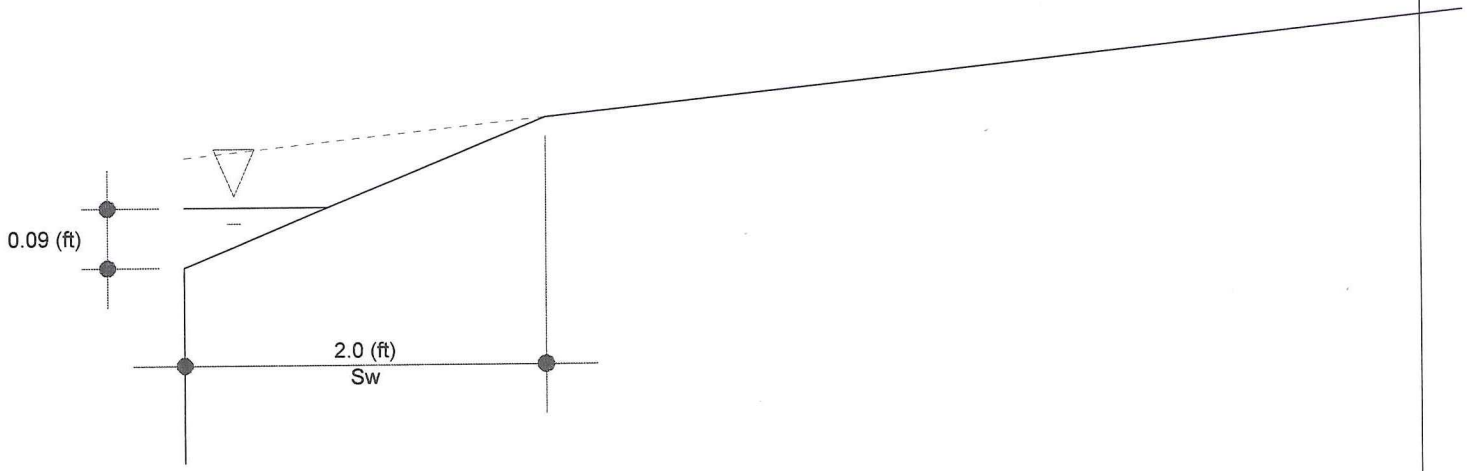
Inlet Section (Line 36 - Combination Inlet)

Inlet Flows

Q Catchment =	0.55 (cfs)
Q Carryover =	0.00
Q Total =	0.55
Q Captured =	0.55
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.79 (ft)



Inlet Section

CB16

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

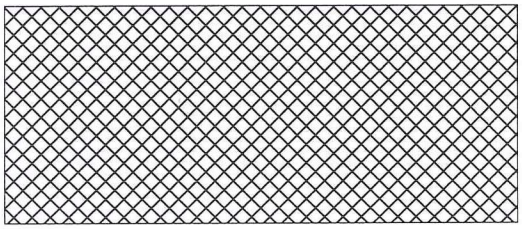
Inlet Section (Line 37 - Combination Inlet)

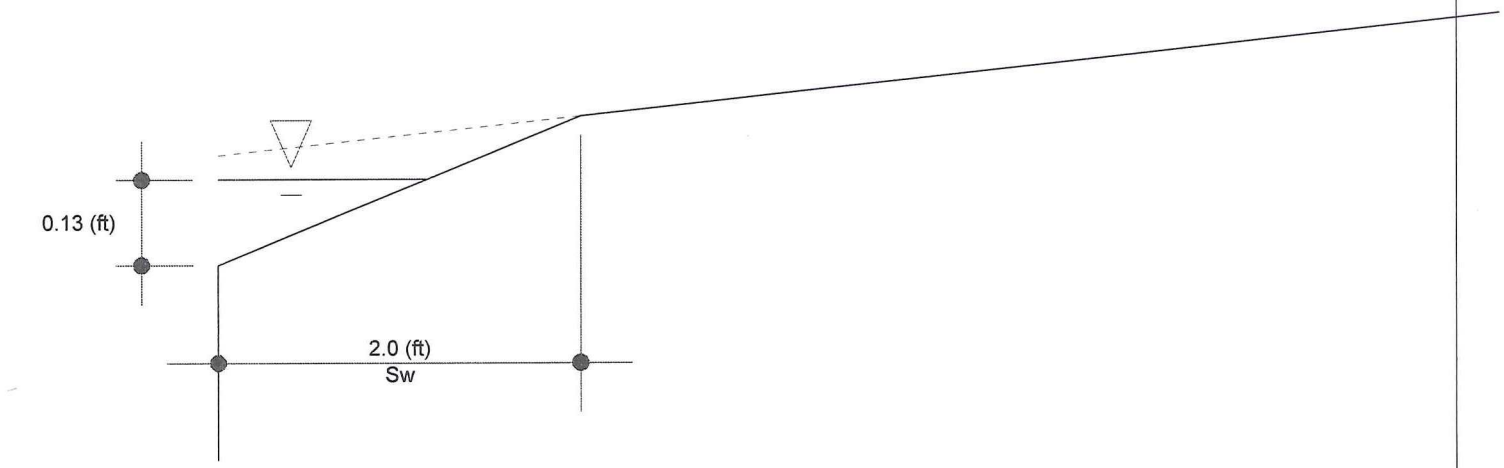
Inlet Flows

Q Catchment =	1.01 (cfs)
Q Carryover =	0.00
Q Total =	1.01
Q Captured =	1.01
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.15 (ft)





Inlet Section

CB17

Project file: JDP South line A Revised 070720.stm	07-15-2020

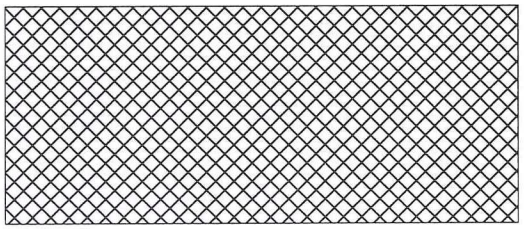
Inlet Section (Line 38 - Combination Inlet)

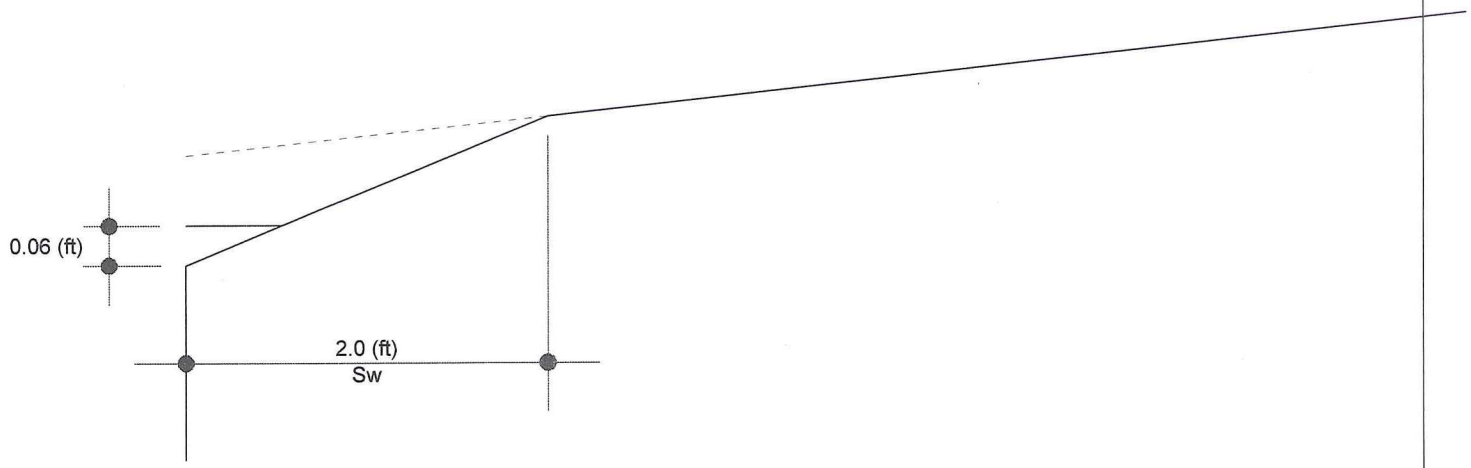
Inlet Flows

Q Catchment =	0.35 (cfs)
Q Carryover =	0.00
Q Total =	0.35
Q Captured =	0.35
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)





Inlet Section

CB15

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

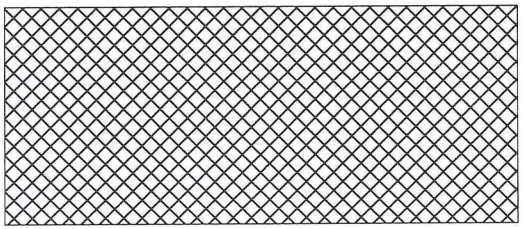
Inlet Section (Line 39 - Combination Inlet)

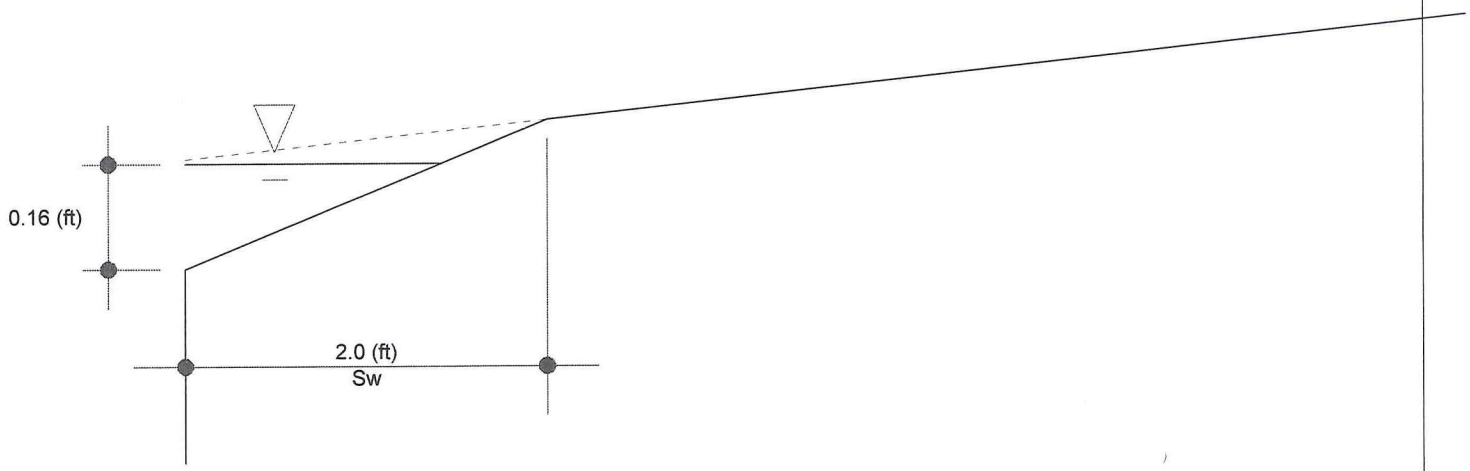
Inlet Flows

Q Catchment =	1.50 (cfs)
Q Carryover =	0.00
Q Total =	1.50
Q Captured =	1.50
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.41 (ft)





Inlet Section

CB14

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

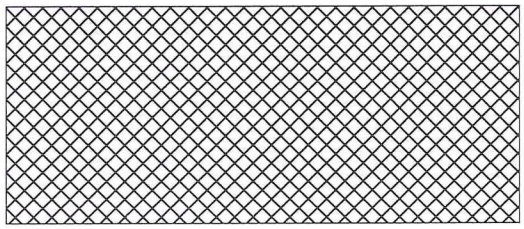
Inlet Section (Line 40 - Combination Inlet)

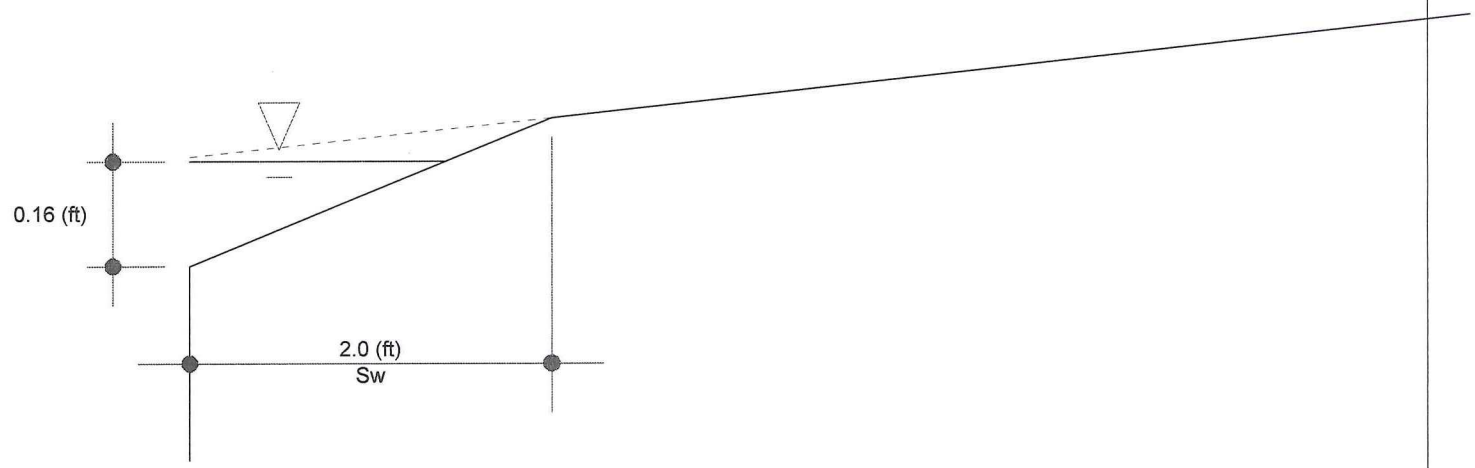
Inlet Flows

Q Catchment =	1.50 (cfs)
Q Carryover =	0.00
Q Total =	1.50
Q Captured =	1.50
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.41 (ft)





Inlet Section

CB11

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

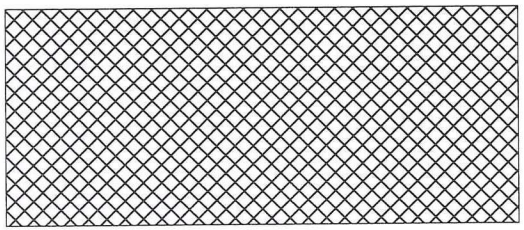
Inlet Section (Line 41 - Combination Inlet)

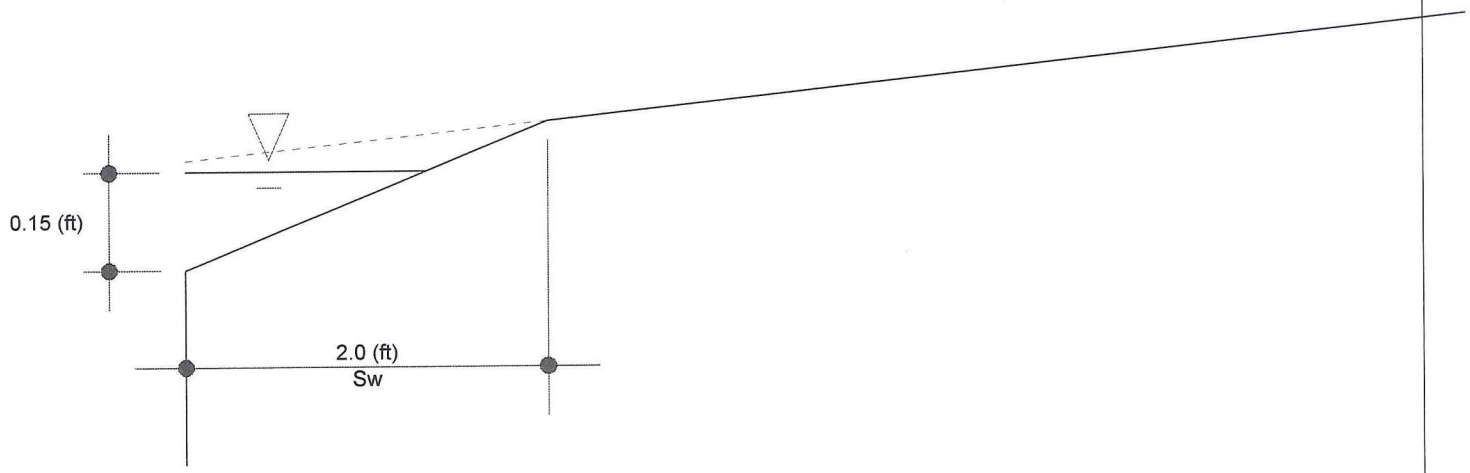
Inlet Flows

Q Catchment =	1.32 (cfs)
Q Carryover =	0.00
Q Total =	1.32
Q Captured =	1.32
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.32 (ft)





Inlet Section

CB12

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

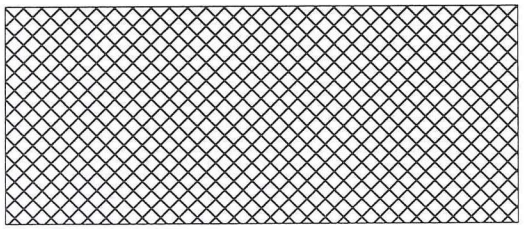
Inlet Section (Line 42 - Combination Inlet)

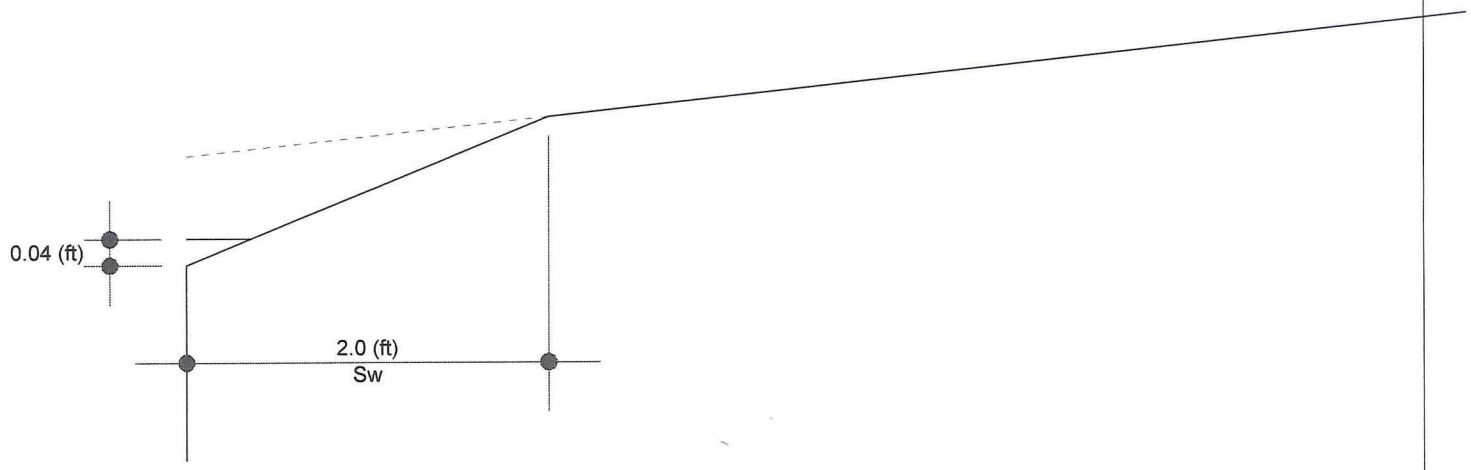
Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)





Inlet Section

CB5

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

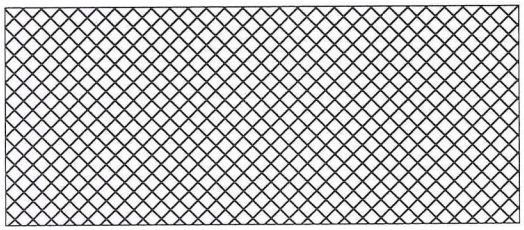
Inlet Section (Line 43 - Combination Inlet)

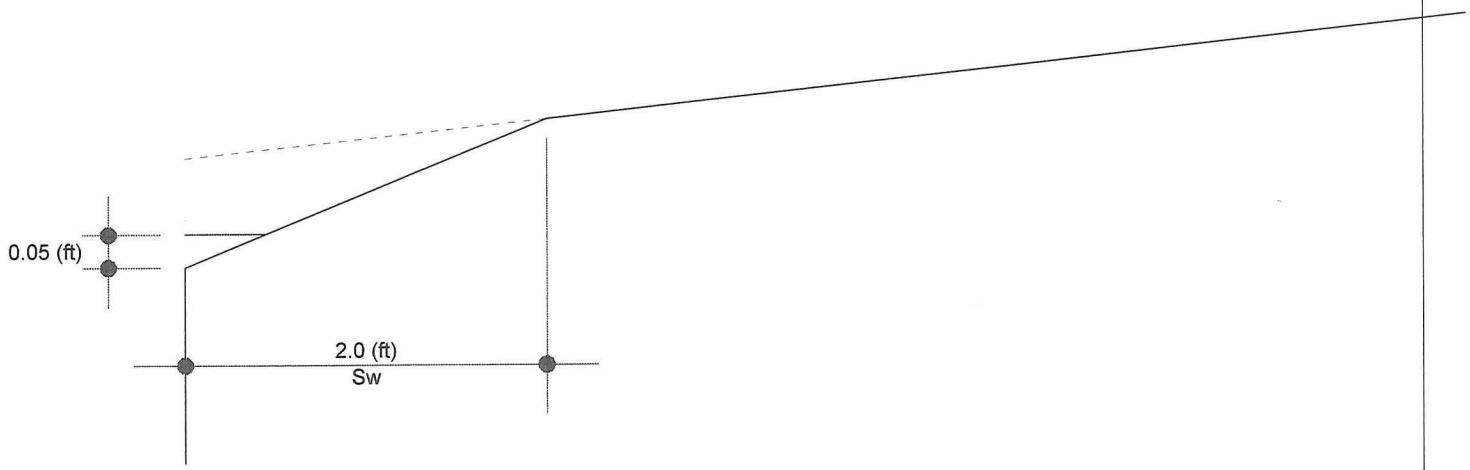
Inlet Flows

Q Catchment =	0.23 (cfs)
Q Carryover =	0.00
Q Total =	0.23
Q Captured =	0.23
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.44 (ft)





Inlet Section

CB4

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

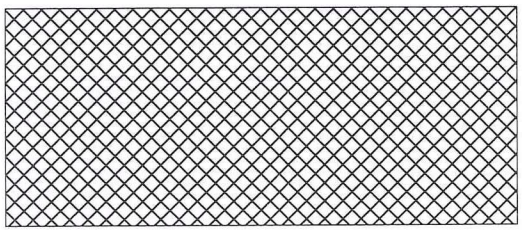
Inlet Section (Line 44 - Combination Inlet)

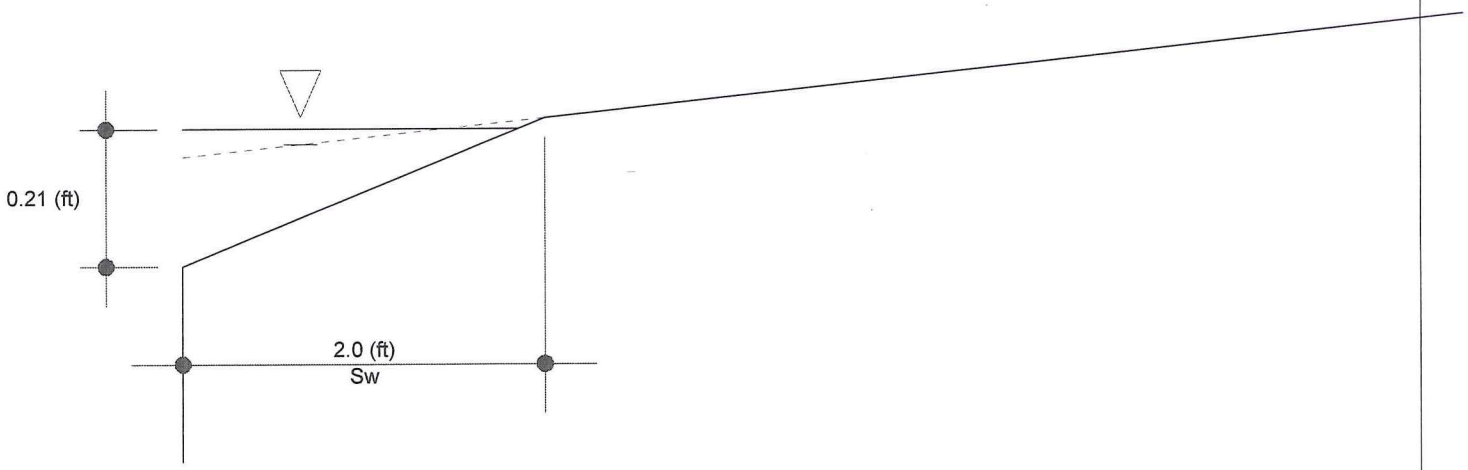
Inlet Flows

Q Catchment =	2.30 (cfs)
Q Carryover =	0.00
Q Total =	2.30
Q Captured =	2.30
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.85 (ft)





Inlet Section

CB3

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

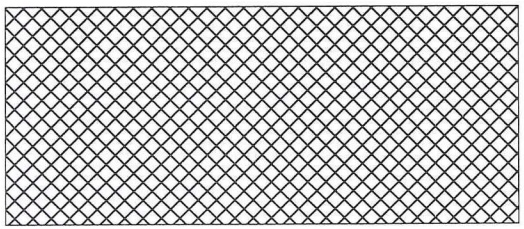
Inlet Section (Line 45 - Combination Inlet)

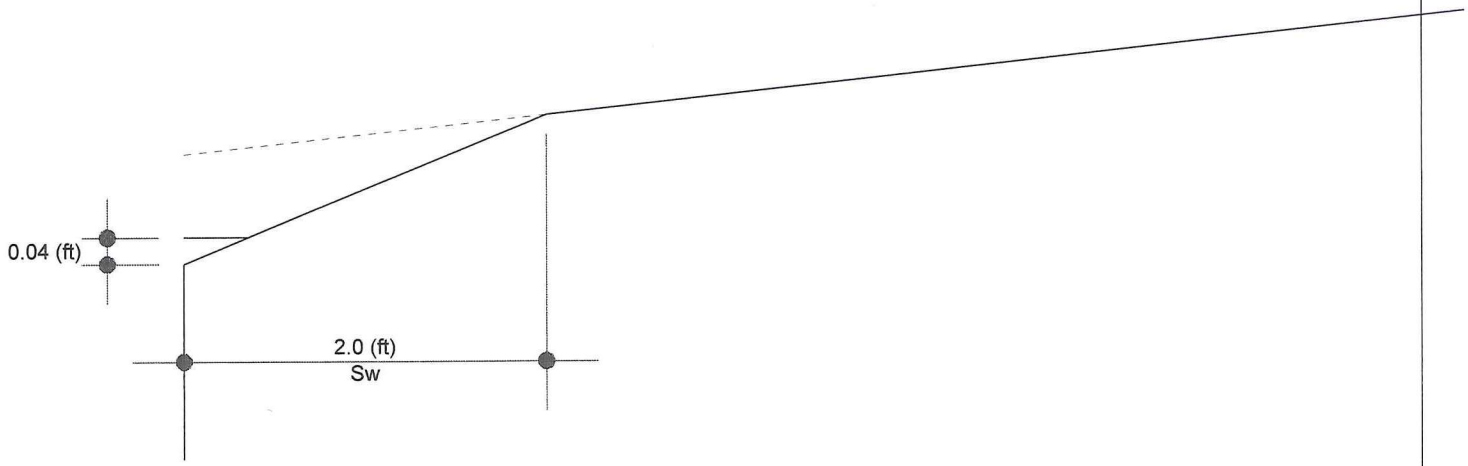
Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)





Inlet Section

CB2

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

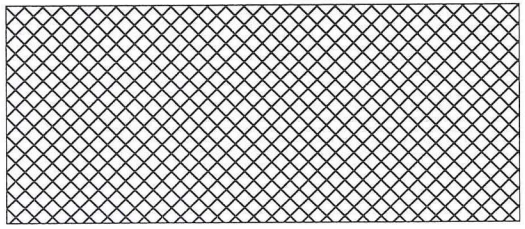
Inlet Section (Line 46 - Combination Inlet)

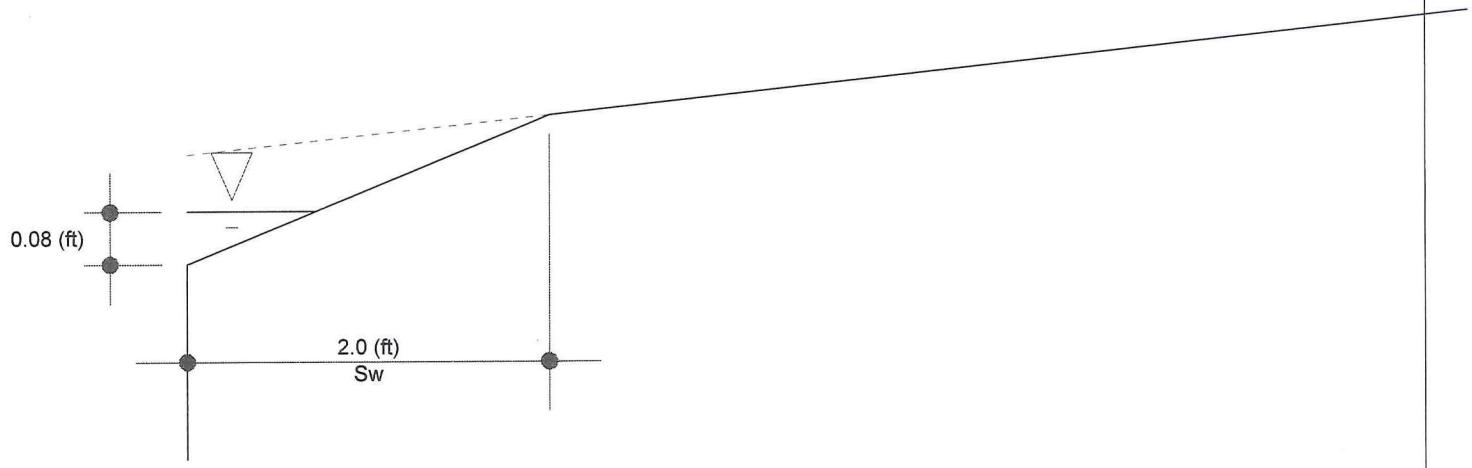
Inlet Flows

Q Catchment =	0.49 (cfs)
Q Carryover =	0.00
Q Total =	0.49
Q Captured =	0.49
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.71 (ft)





Inlet Section

CB1

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

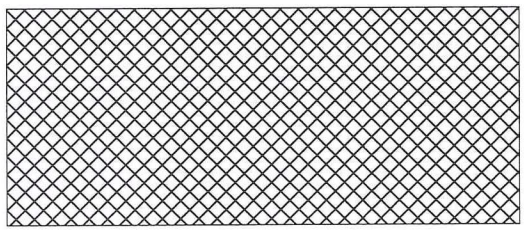
Inlet Section (Line 47 - Combination Inlet)

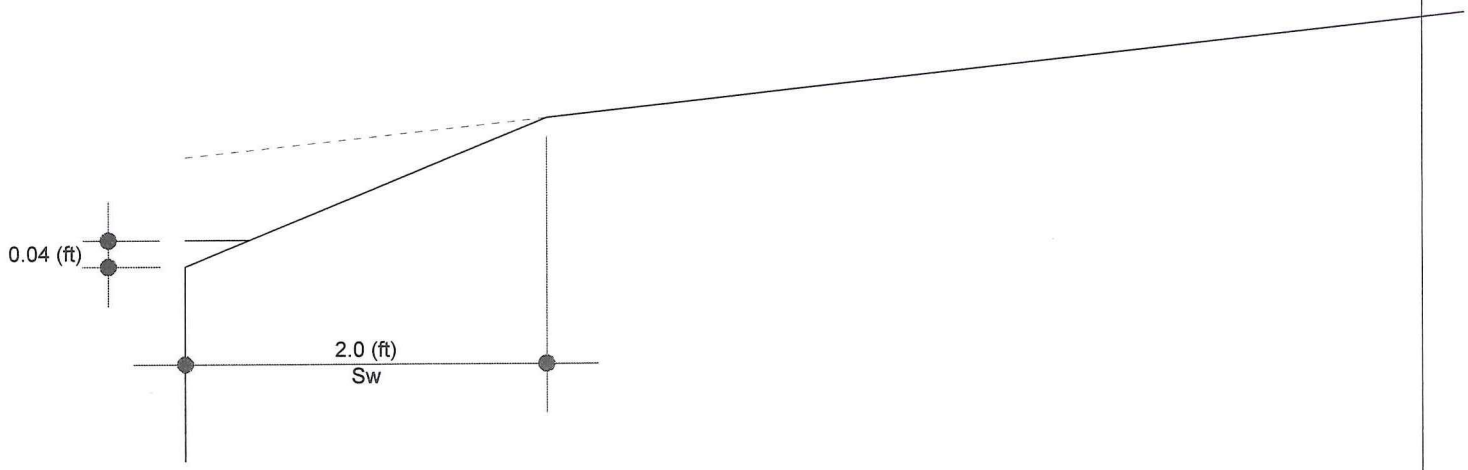
Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)





Inlet Section

CB10

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

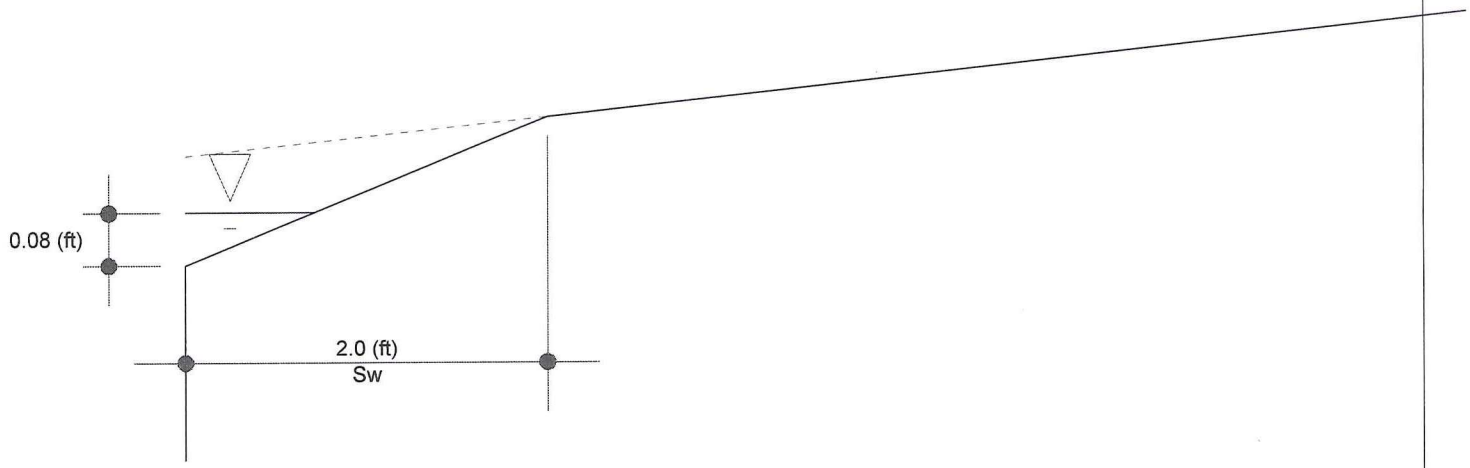
Inlet Section (Line 48 - Combination Inlet)

Inlet Flows

Q Catchment =	0.52 (cfs)
Q Carryover =	0.00
Q Total =	0.52
Q Captured =	0.52
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.71 (ft)



Inlet Section

CB8

Project file: JDP South line A Revised 070720.stm

07-15-2020

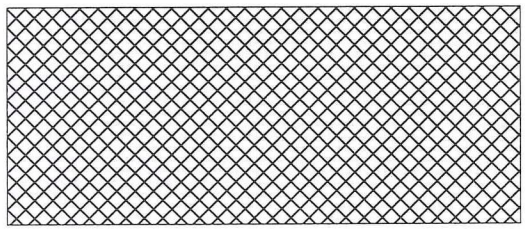
Inlet Section (Line 49 - Combination Inlet)

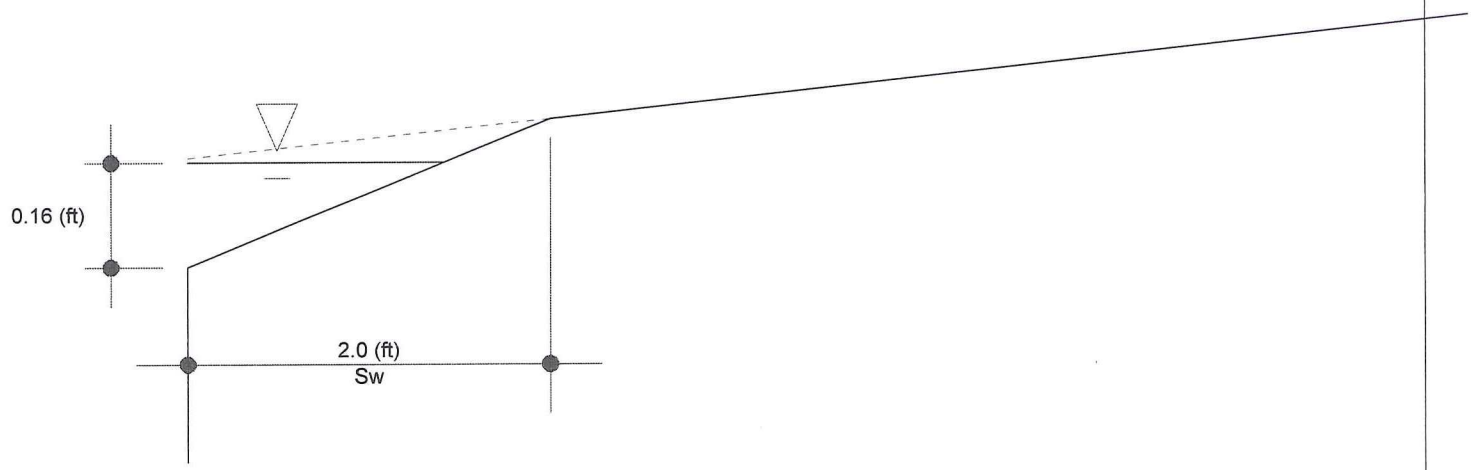
Inlet Flows

Q Catchment =	1.50 (cfs)
Q Carryover =	0.00
Q Total =	1.50
Q Captured =	1.50
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.41 (ft)





Inlet Section

CB9

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

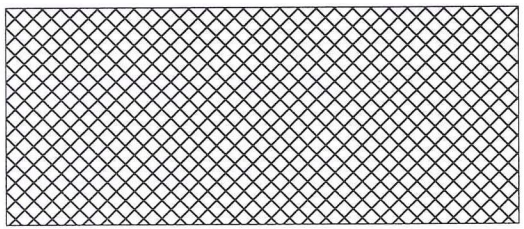
Inlet Section (Line 50 - Combination Inlet)

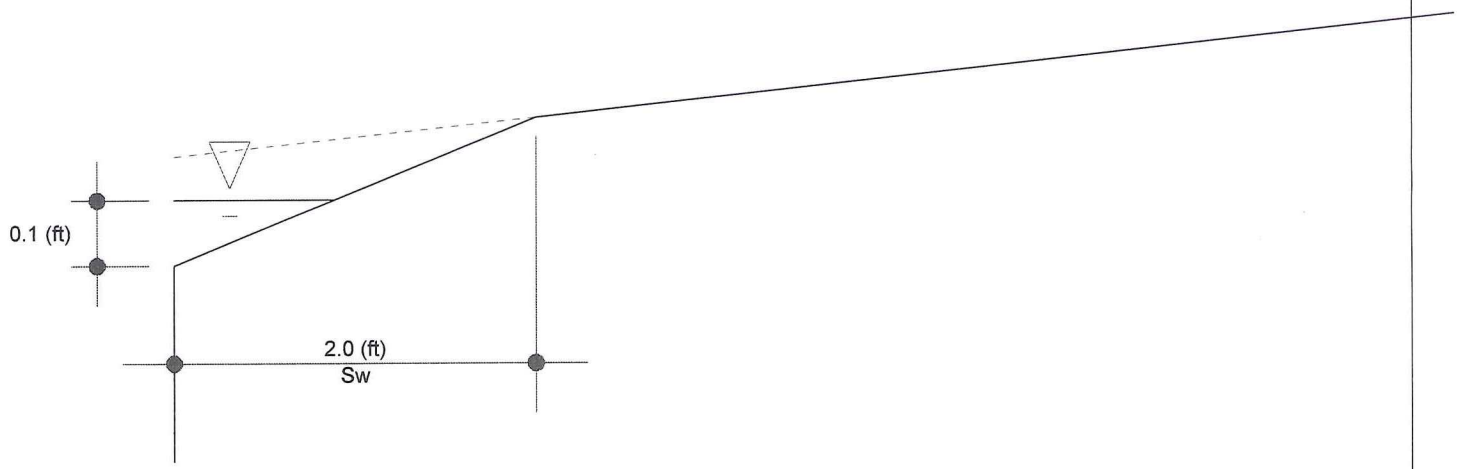
Inlet Flows

Q Catchment =	0.69 (cfs)
Q Carryover =	0.00
Q Total =	0.69
Q Captured =	0.69
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.88 (ft)





Inlet Section

CB7

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

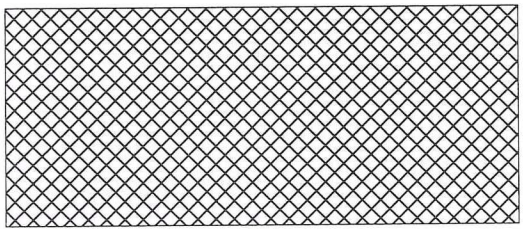
Inlet Section (Line 51 - Combination Inlet)

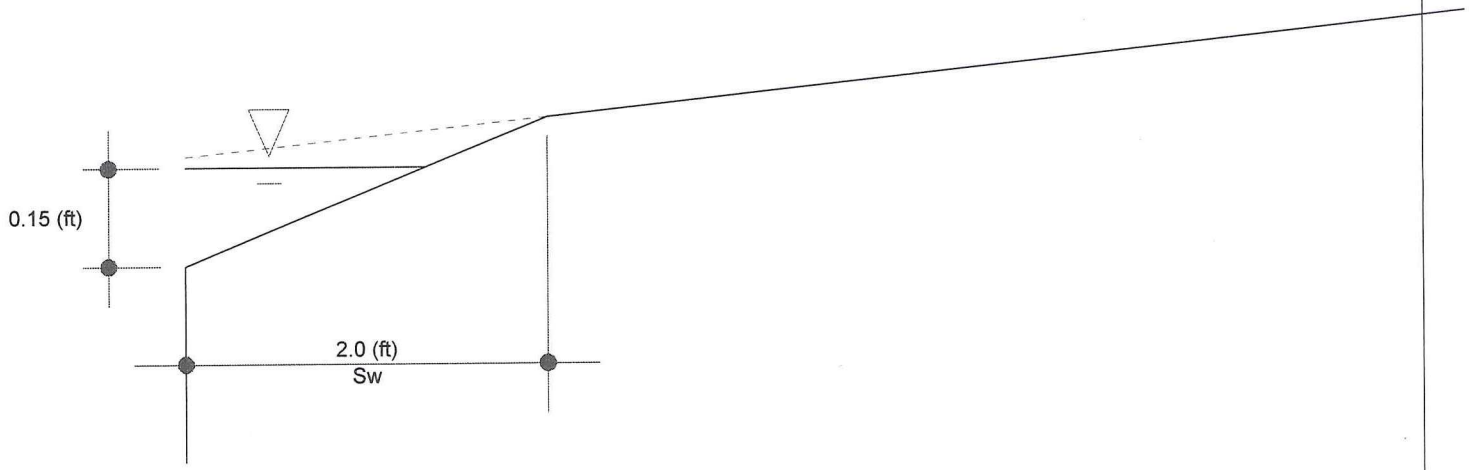
Inlet Flows

Q Catchment =	1.38 (cfs)
Q Carryover =	0.00
Q Total =	1.38
Q Captured =	1.38
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.32 (ft)





Inlet Section

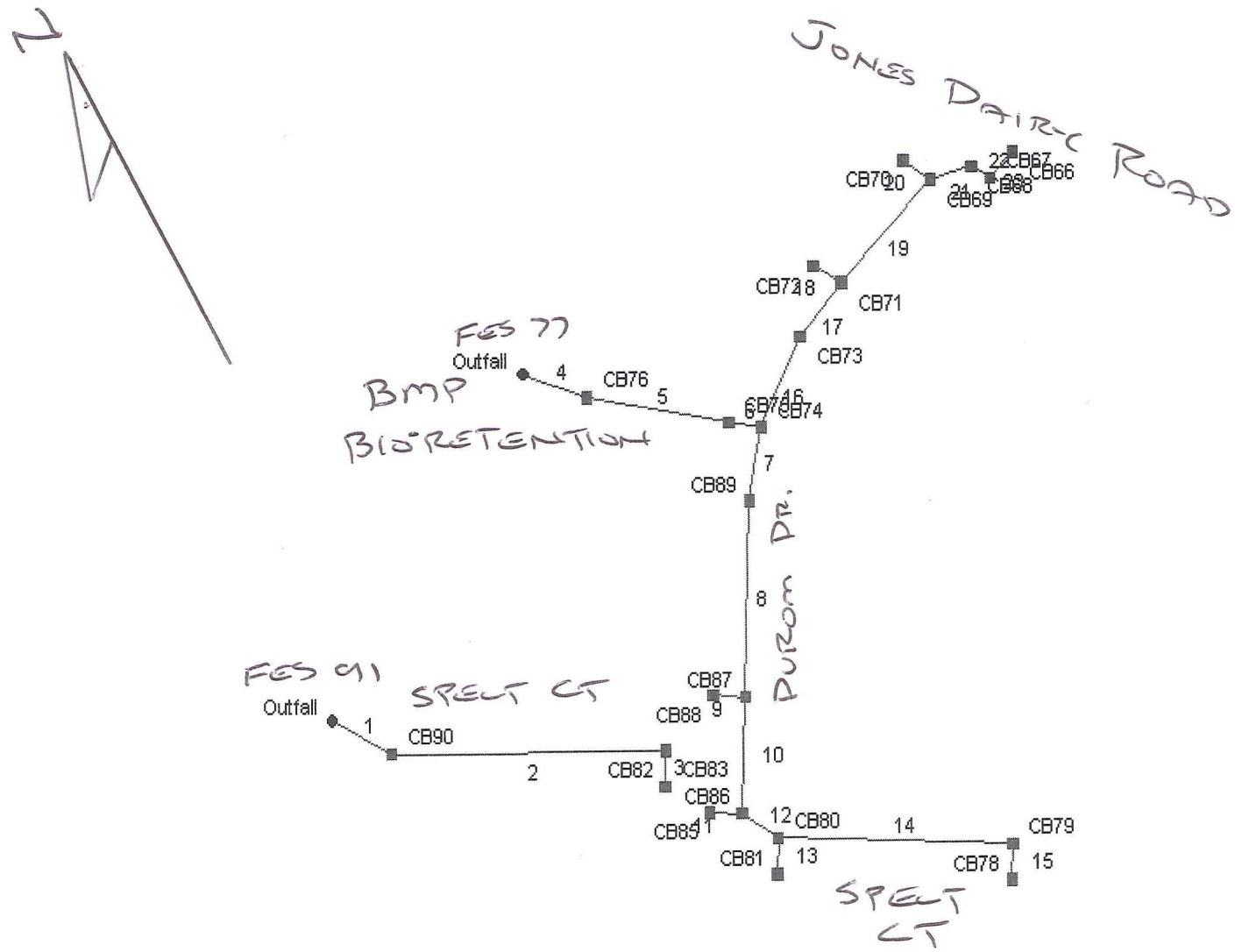
CB6

Project file: JDP South line A Revised 070720.stm

07-15-2020

Hydraflow Storm Sewers 2003

Hydraflow Plan View



JDP- SOUTH LINE 'B'

Project file: JDP South line B.stm	No. Lines: 23	07-15-2020

Hydraflow Storm Sewers 2003

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)	Dns line No.
1	CB90-CB91	0.92	15 c	56.0	403.00	404.02	1.822	403.38	404.40	0.09	End
2	CB83-CB90	0.52	15 c	228.3	404.22	407.53	1.450	404.49	407.82	0.14	1
3	CB82-CB83	0.22	15 c	27.0	407.73	408.30	2.111	407.96	408.49	0.06	2
4	CB76-FES77	17.02	30 c	73.9	399.80	402.46	3.601	401.18	403.84	0.29	End
5	CB75-CB76	16.21	30 c	120.0	402.66	405.18	2.099	404.13	406.53	0.28	4
6	CB74-CB75	15.38	30 c	27.0	405.38	405.65	1.000	406.81	406.96	0.81	5
7	CB89-CB74	7.32	30 c	56.0	405.85	406.69	1.501	407.77	407.65	0.14	6
8	CB87-CB89	5.99	24 c	148.1	406.89	407.98	0.736	407.79	408.85	0.49	7
9	CB88-CB87	0.07	15 c	27.0	408.18	408.32	0.519	409.34	409.34	0.00	8
10	CB86-CB87	2.92	15 c	87.6	408.18	409.21	1.176	409.34	409.89	0.42	8
11	CB85-CB86	0.07	15 c	27.0	409.21	409.34	0.481	410.31	410.32	0.00	10
12	CB80-CB86	1.92	15 c	35.3	409.21	410.09	2.496	410.31	410.64	0.26	10
13	CB81-CB80	0.22	15 c	27.0	410.29	410.42	0.481	410.90	410.90	0.00	12
14	CB79-CB80	1.37	15 c	195.7	410.29	412.82	1.293	410.90	413.29	0.25	12
15	CB78-CB79	0.29	15 c	27.0	413.02	413.15	0.481	413.54	413.54	0.01	14
16	CB73-CB74	8.23	30 c	75.5	405.85	409.61	4.979	407.77	410.57	0.25	6
17	CB71-CB73	7.44	18 c	53.1	409.81	411.71	3.575	410.81	412.75	0.75	16
18	CB72-CB71	1.26	18 c	27.0	411.91	412.05	0.518	413.50	413.51	0.01	17
19	CB69-CB71	4.91	18 c	107.7	411.91	415.88	3.688	413.50	416.73	0.53	17
20	CB70-CB69	0.25	15 c	27.0	416.08	416.68	2.221	417.26	417.26	0.00	19
21	CB68-CB69	4.92	18 c	35.5	416.08	416.26	0.507	417.26	417.31	0.24	19
22	CB67-CB68	4.91	18 c	18.1	416.46	416.55	0.499	417.55	417.58	0.34	21
23	CB66-CB67	4.62	18 c	27.0	416.75	416.88	0.481	417.92	417.95	0.18	22

Project File: JDP South line B.stm | Number of lines: 23 | Run Date: 07-15-2020

NOTES: c = circular; e = elliptical; b = box; Return period = 10 Yrs.; * Indicates surcharge condition.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	56.0	0.20	0.36	0.50	0.10	0.18	5.0	15.7	5.1	0.92	8.72	2.87	15	1.82	404.02	403.00	404.40	403.38	408.52	0.00	CB90-CB91
2	1	228.3	0.10	0.16	0.50	0.05	0.08	5.0	7.6	6.6	0.52	7.78	2.54	15	1.45	407.53	404.22	407.82	404.49	412.03	408.52	CB83-CB90
3	2	27.0	0.06	0.06	0.50	0.03	0.03	5.0	5.0	7.2	0.22	9.38	1.66	15	2.11	408.30	407.73	408.49	407.96	412.03	412.03	CB82-CB83
4	End	73.9	0.40	7.32	0.50	0.20	3.31	5.0	15.4	5.1	17.02	77.83	6.13	30	3.60	402.46	399.80	403.84	401.18	411.00	0.00	CB76-FES77
5	4	120.0	0.34	6.92	0.50	0.17	3.11	5.0	14.9	5.2	16.21	59.42	5.71	30	2.10	405.18	402.66	406.53	404.13	411.83	411.00	CB75-CB76
6	5	27.0	0.57	6.58	0.50	0.29	2.94	5.0	14.7	5.2	15.38	41.01	5.61	30	1.00	405.65	405.38	406.96	406.81	411.83	411.83	CB74-CB75
7	6	56.0	0.57	3.14	0.50	0.29	1.38	5.0	14.2	5.3	7.32	50.24	3.02	30	1.50	406.69	405.85	407.65	407.77	411.19	411.83	CB89-CB74
8	7	148.1	1.40	2.57	0.40	0.56	1.10	5.0	13.2	5.5	5.99	19.40	4.49	24	0.74	407.98	406.89	408.85	407.79	412.48	411.19	CB87-CB89
9	8	27.0	0.02	0.02	0.50	0.01	0.01	5.0	5.0	7.2	0.07	4.65	0.06	15	0.52	408.32	408.18	409.34	409.34	412.48	412.48	CB88-CB87
10	8	87.6	0.50	1.15	0.40	0.20	0.53	5.0	12.7	5.6	2.92	7.00	3.35	15	1.18	409.21	408.18	409.89	409.34	413.51	412.48	CB86-CB87
11	10	27.0	0.02	0.02	0.50	0.01	0.01	5.0	5.0	7.2	0.07	4.48	0.07	15	0.48	409.34	409.21	410.32	410.31	413.50	413.51	CB85-CB86
12	10	35.3	0.16	0.63	0.50	0.08	0.32	5.0	9.6	6.1	1.92	10.20	2.66	15	2.50	410.09	409.21	410.64	410.31	414.59	413.51	CB80-CB86
13	12	27.0	0.06	0.06	0.50	0.03	0.03	5.0	5.0	7.2	0.22	4.48	0.43	15	0.48	410.42	410.29	410.90	410.90	414.59	414.59	CB81-CB80
14	12	195.7	0.33	0.41	0.50	0.17	0.21	5.0	6.9	6.7	1.37	7.34	2.78	15	1.29	412.82	410.29	413.29	410.90	417.32	414.59	CB79-CB80
15	14	27.0	0.08	0.08	0.50	0.04	0.04	5.0	5.0	7.2	0.29	4.48	0.74	15	0.48	413.15	413.02	413.54	413.54	417.32	417.32	CB78-CB79
16	6	75.5	0.26	2.87	0.50	0.13	1.28	5.0	8.0	6.5	8.23	91.51	3.39	30	4.98	409.61	405.85	410.57	407.77	414.11	411.83	CB73-CB74
17	16	53.1	0.46	2.61	0.50	0.23	1.15	5.0	7.8	6.5	7.44	19.86	5.80	18	3.58	411.71	409.81	412.75	410.81	416.21	414.11	CB71-CB73
18	17	27.0	0.35	0.35	0.50	0.18	0.18	5.0	5.0	7.2	1.26	7.56	0.72	18	0.52	412.05	411.91	413.51	413.50	416.21	416.21	CB72-CB71
19	17	107.7	0.03	1.80	0.50	0.02	0.74	5.0	7.2	6.6	4.91	20.17	3.78	18	3.69	415.88	411.91	416.73	413.50	420.38	416.21	CB69-CB71
20	19	27.0	0.07	0.07	0.50	0.04	0.04	5.0	5.0	7.2	0.25	9.62	0.33	15	2.22	416.68	416.08	417.26	417.26	420.40	420.38	CB70-CB69
21	19	35.5	0.01	1.70	0.50	0.01	0.69	5.0	5.3	7.1	4.92	7.48	3.51	18	0.51	416.26	416.08	417.31	417.26	421.26	420.38	CB68-CB69

Project File: JDP South line B.stm

Number of lines: 23

Run Date: 07-15-2020

NOTES: Intensity = 105.70 / (Inlet time + 16.80) ^ 0.87; Return period = 10 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
22	21	18.1	0.09	1.69	0.50	0.05	0.69	5.0	5.2	7.2	4.91	7.42	3.69	18	0.50	416.55	416.46	417.58	417.55	421.24	421.26	CB67-CB68
23	22	27.0	1.60	1.60	0.40	0.64	0.64	5.0	5.0	7.2	4.62	7.29	3.28	18	0.48	416.88	416.75	417.95	417.92	421.24	421.24	CB66-CB67

Project File: JDP South line B.stm

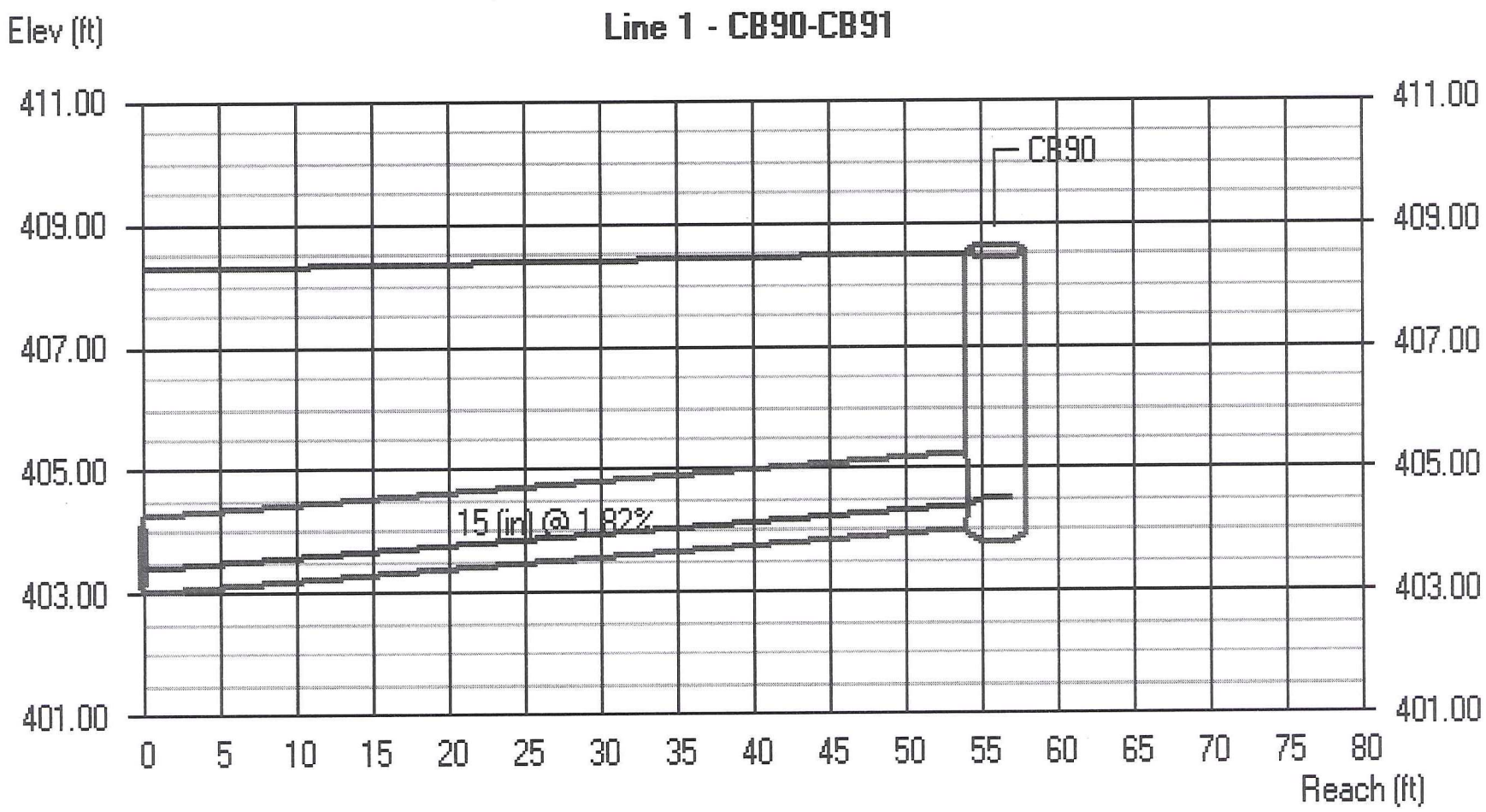
Number of lines: 23

Run Date: 07-15-2020

NOTES: Intensity = 105.70 / (Inlet time + 16.80) ^ 0.87; Return period = 10 Yrs.

Storm Sewer Profile

Proj. file: JDP South line B.stm



Storm Sewer Profile

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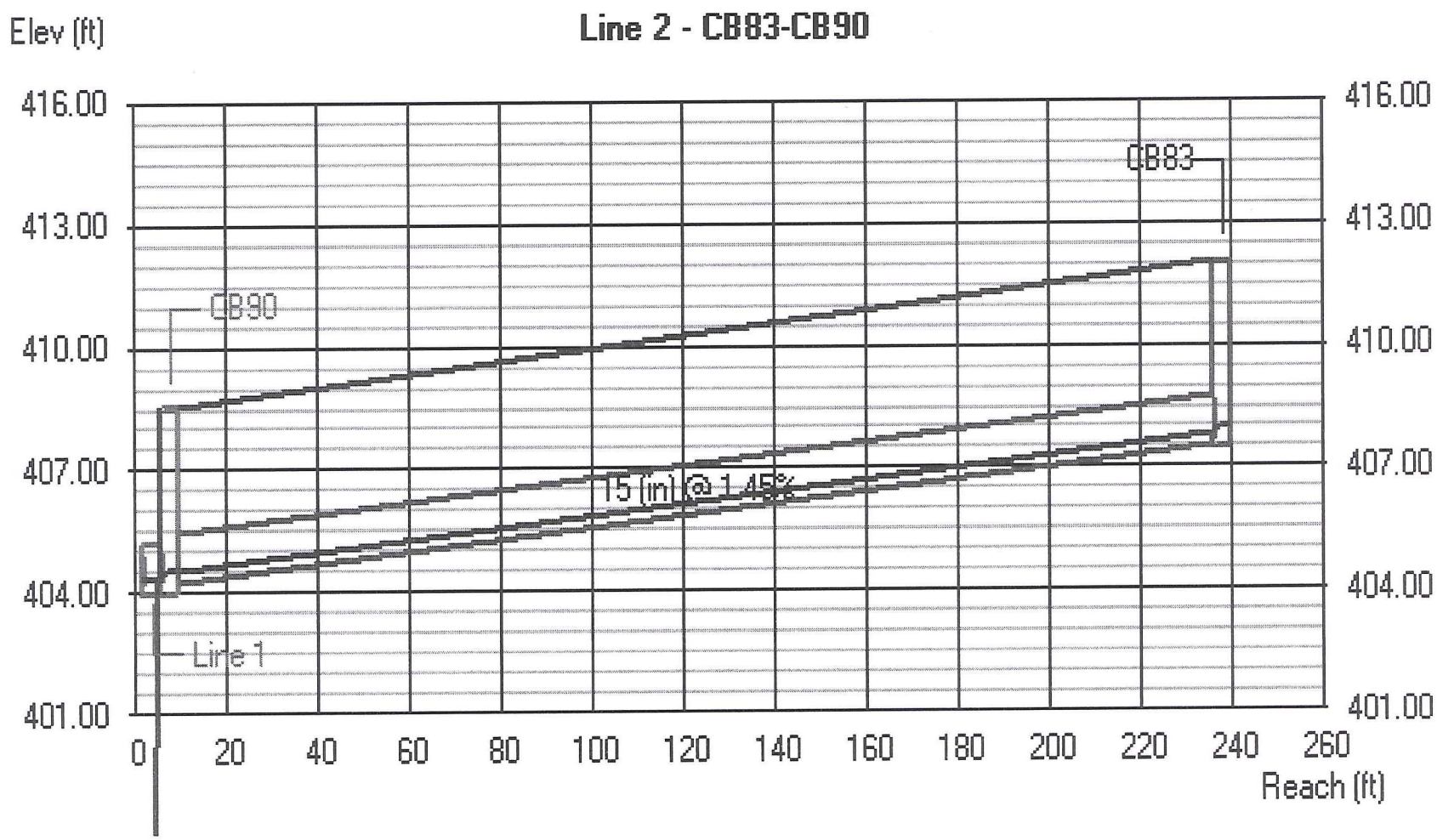

Storm Sewer Profile

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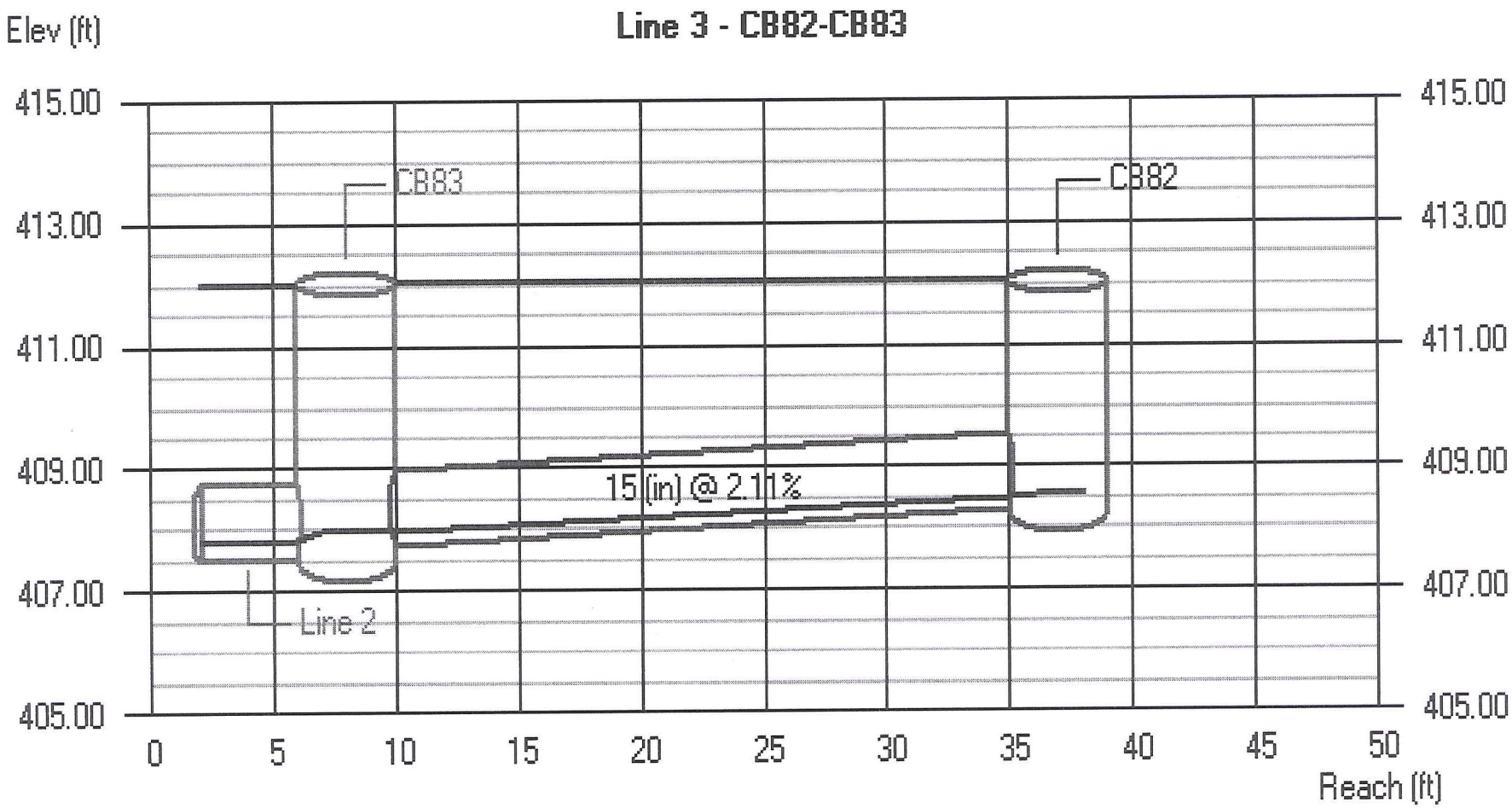

Storm Sewer Profile

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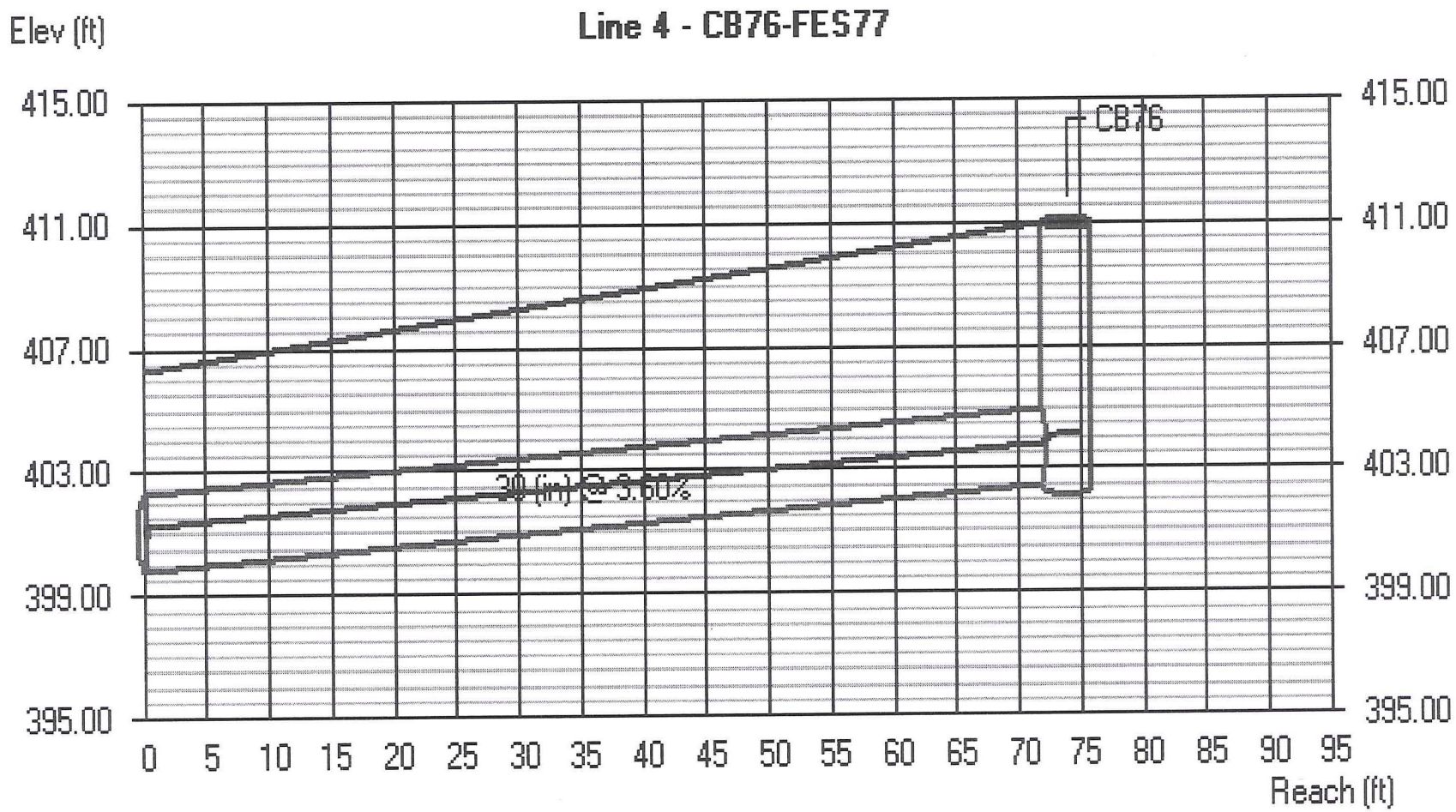

Storm Sewer Profile

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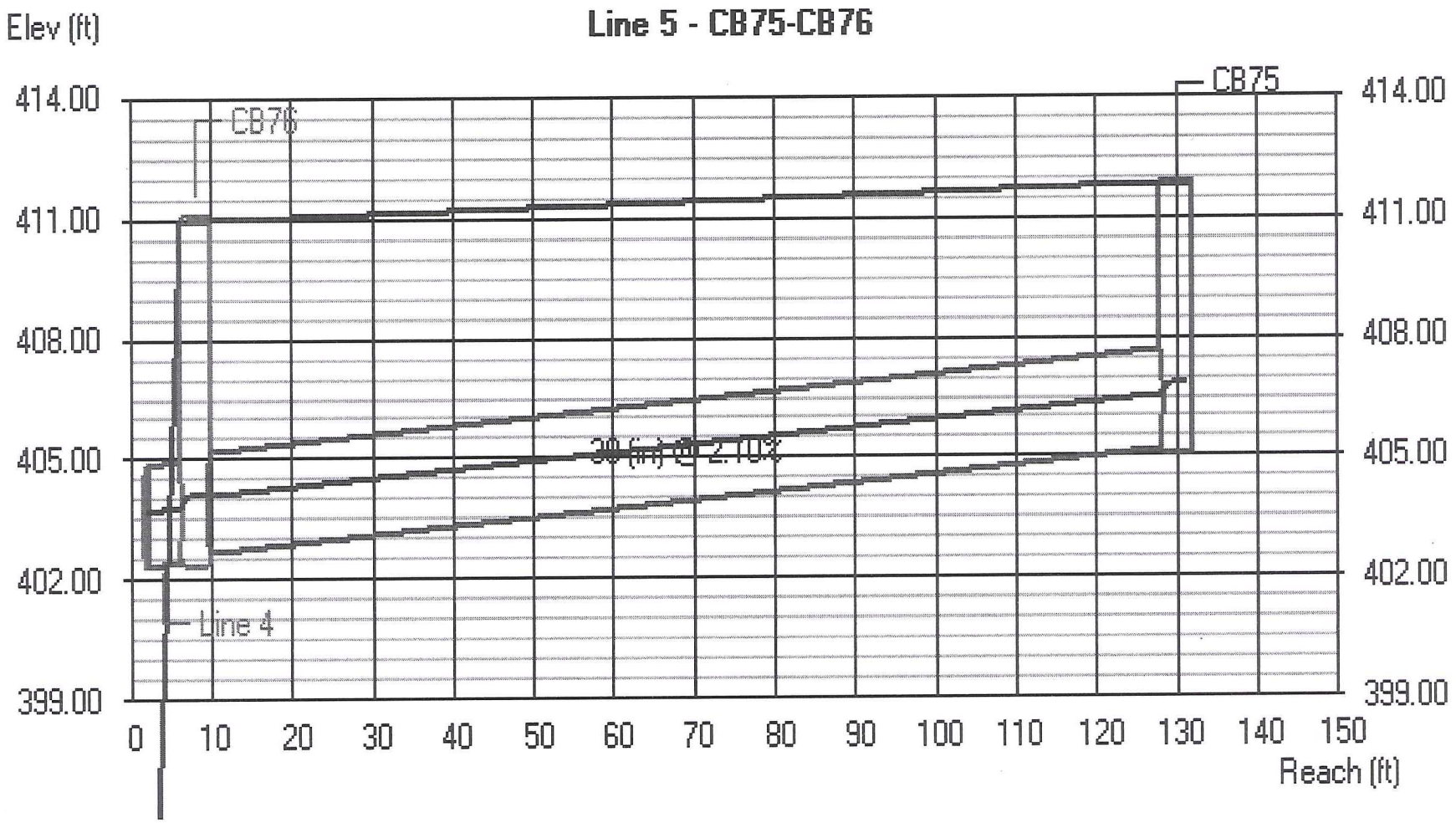

Storm Sewer Profile

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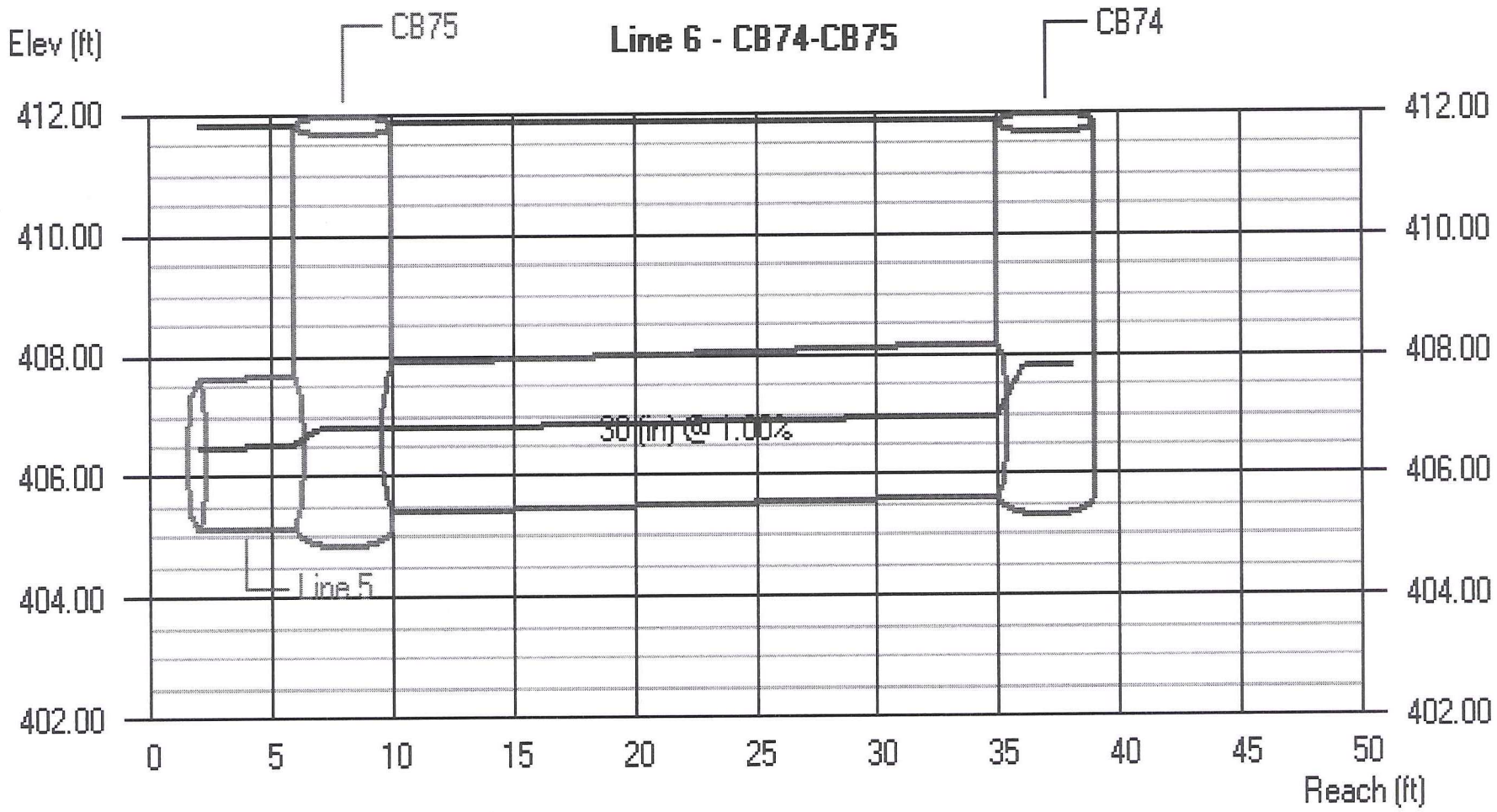

Storm Sewer Profile

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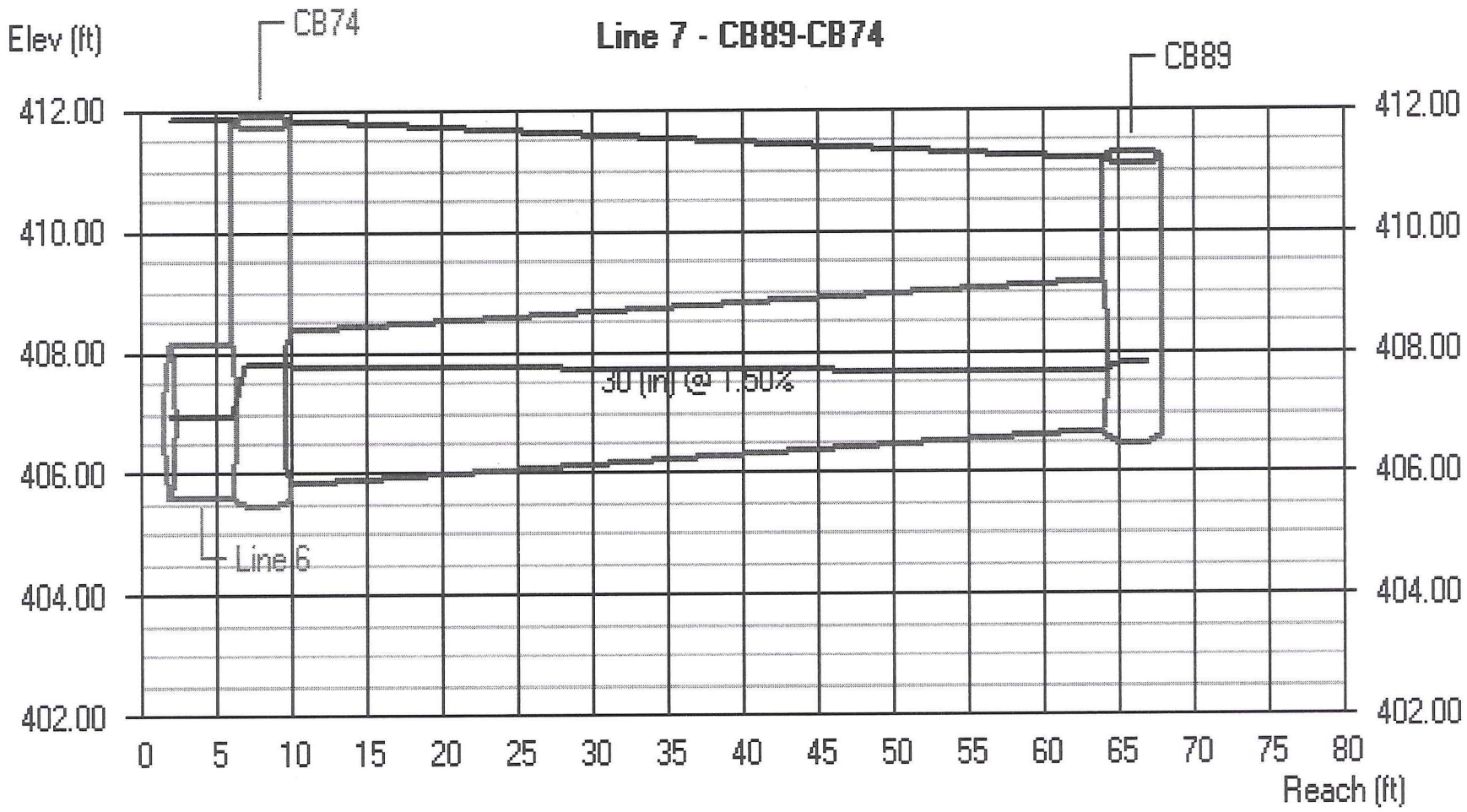
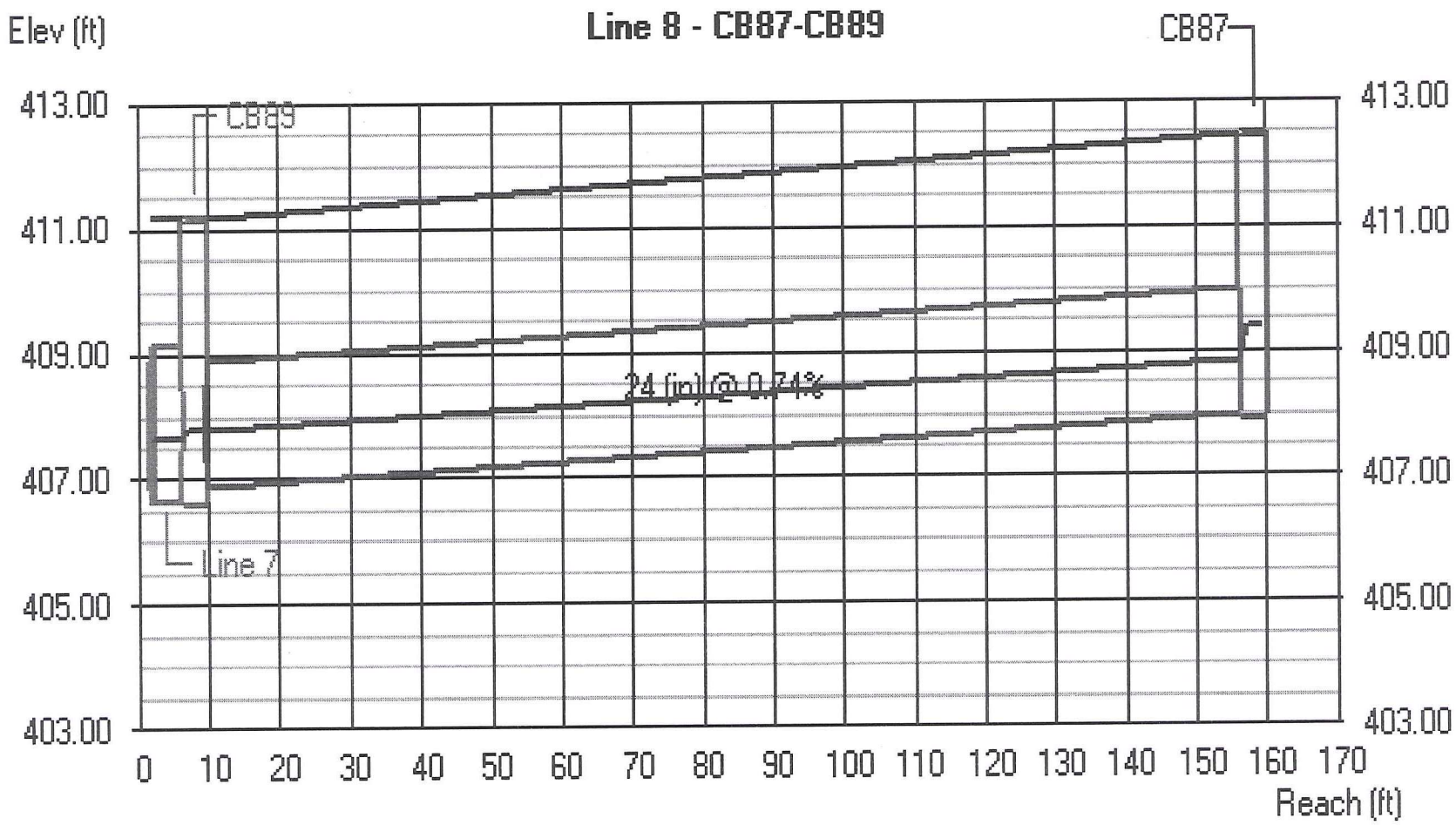


Storm Sewer Profile

Proj. file: JDP South line B.stm



Storm Sewer Profile

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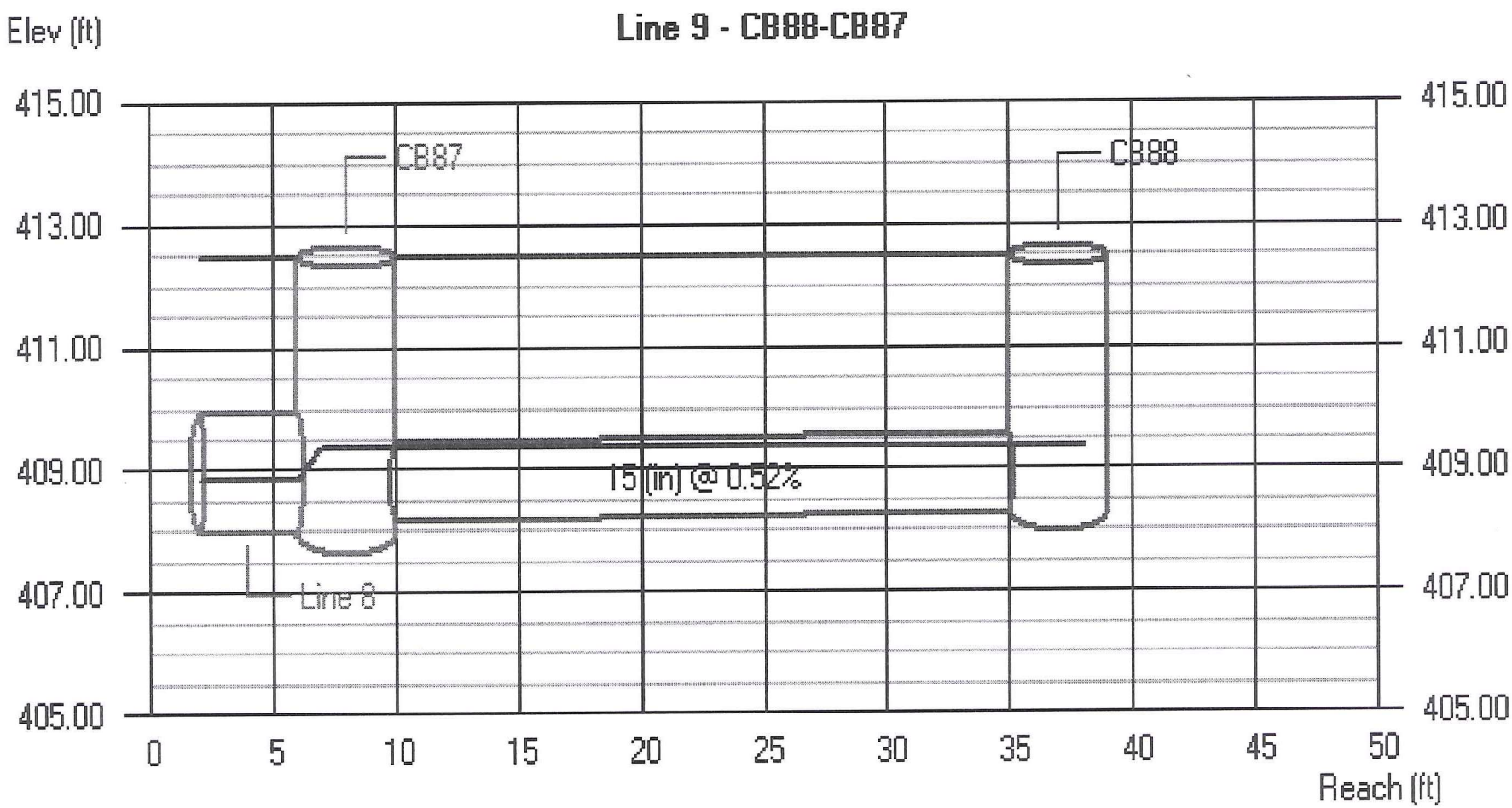

Storm Sewer Profile

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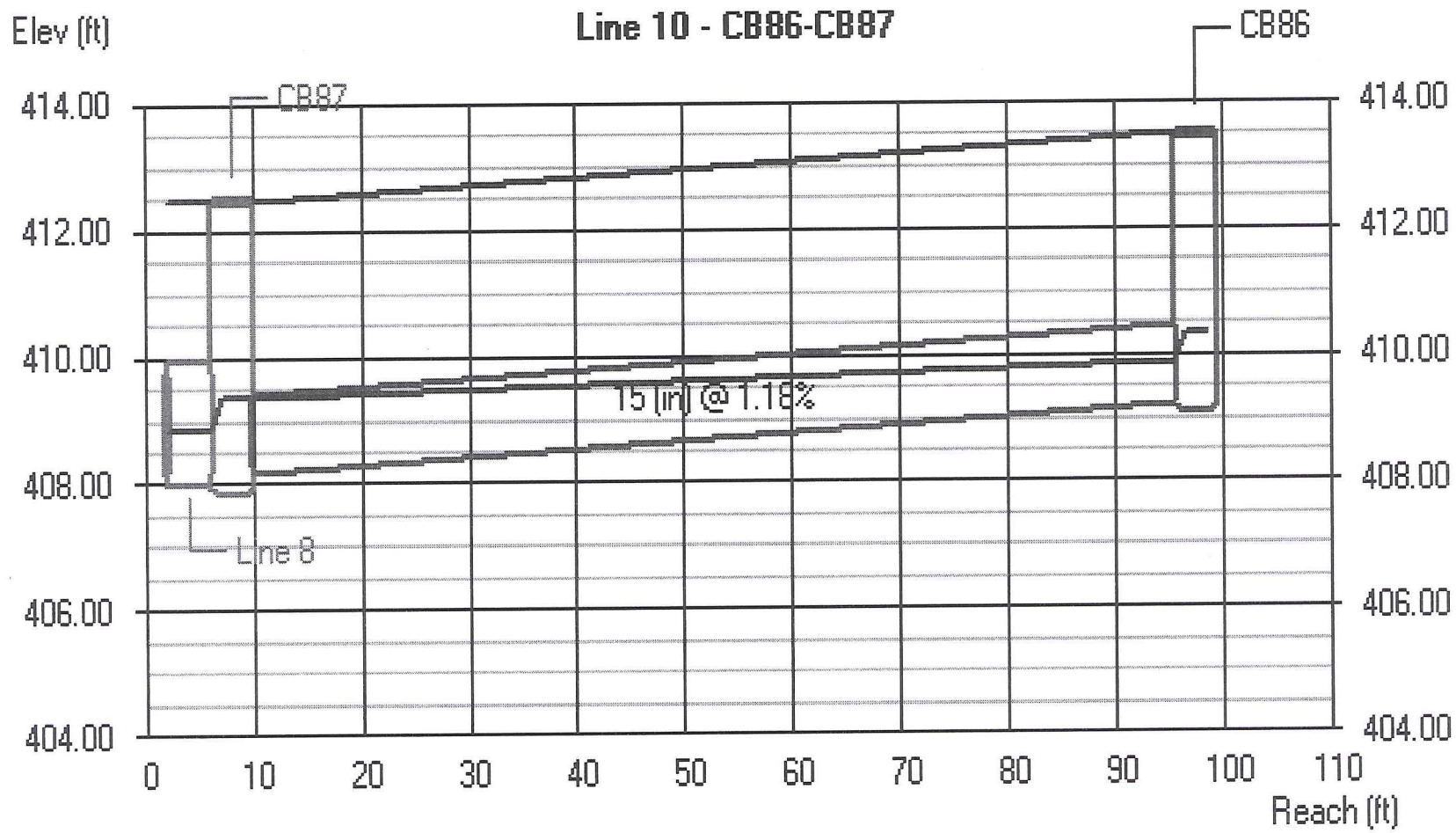

Storm Sewer Profile

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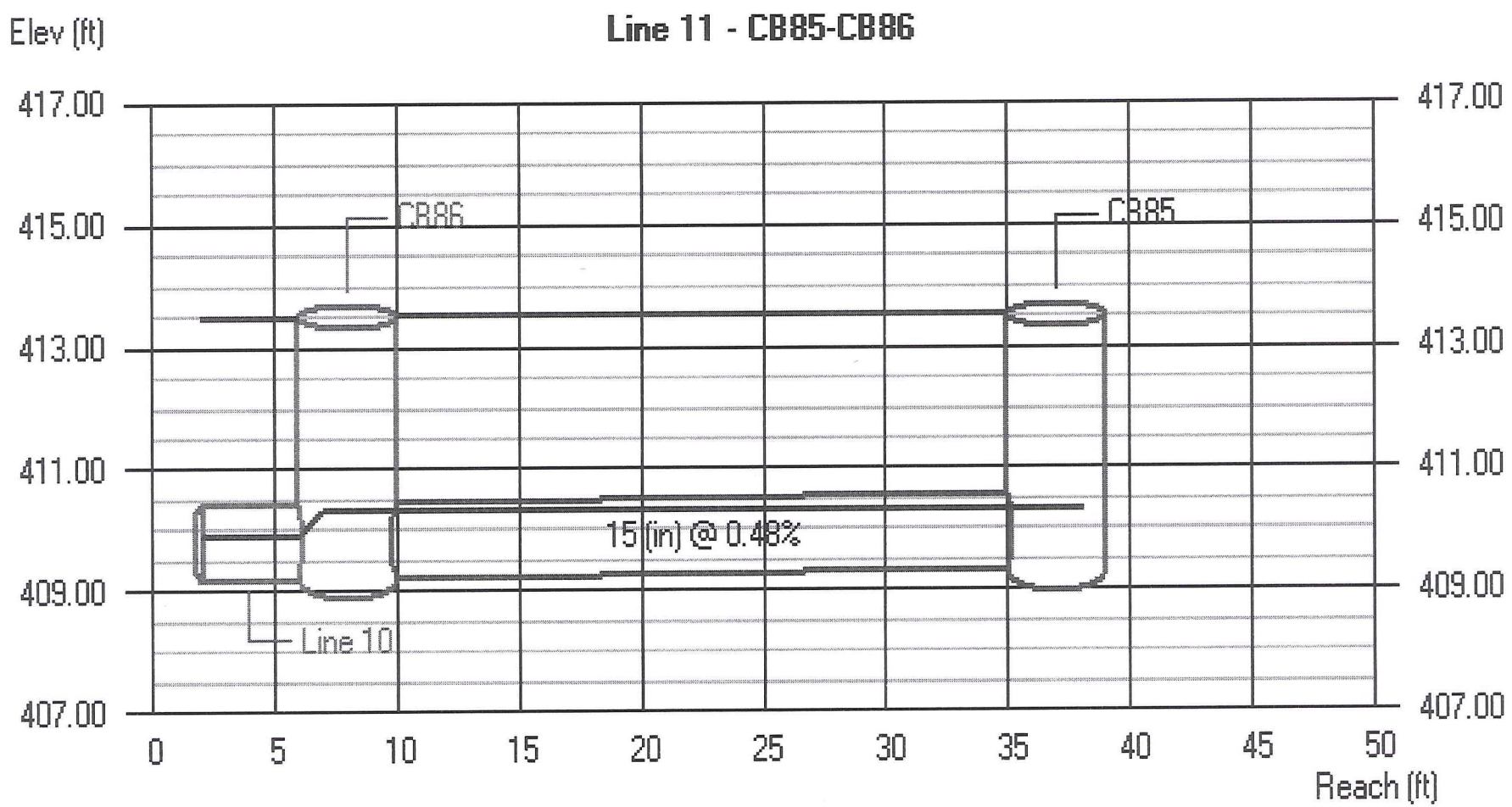
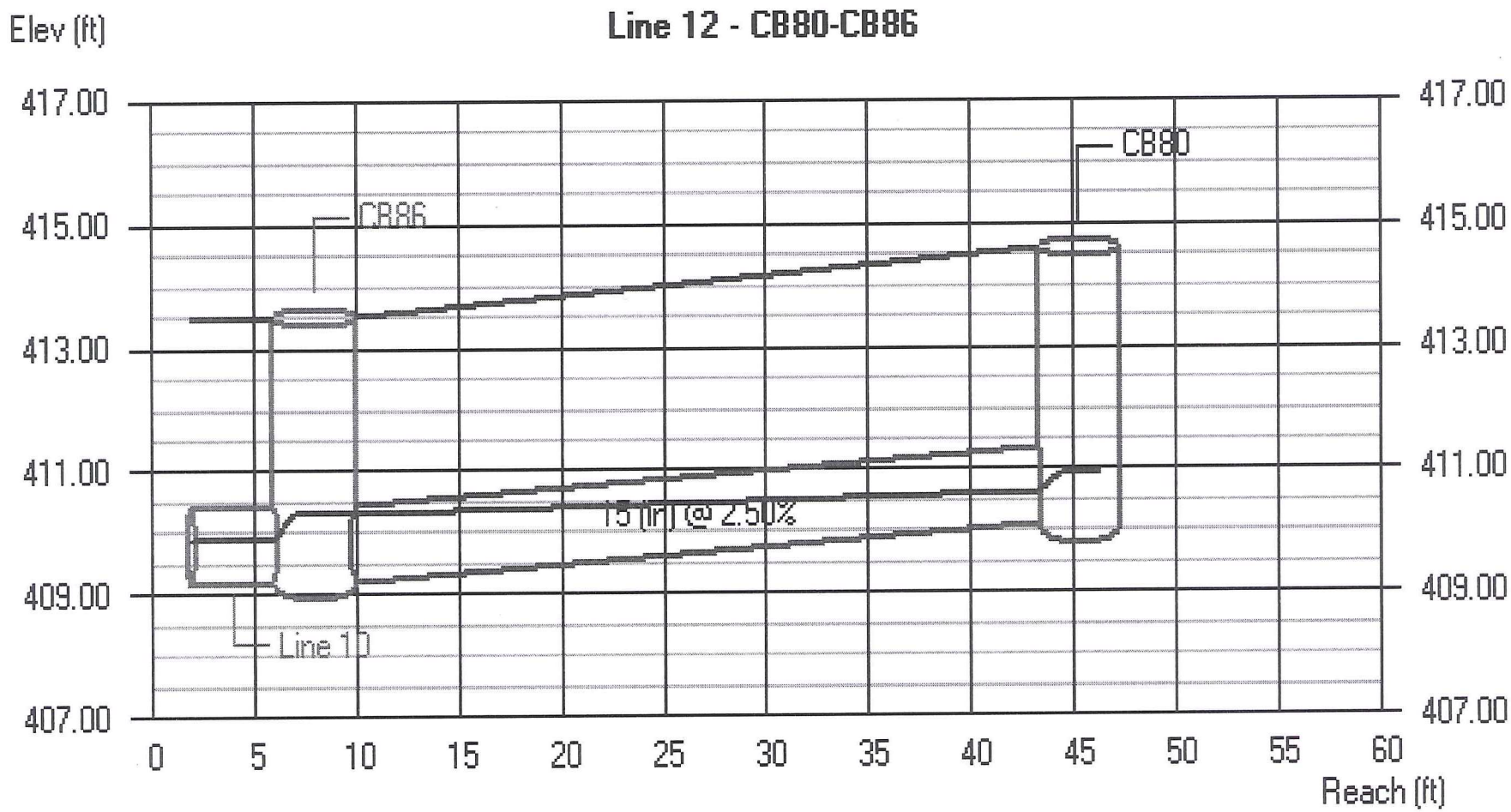


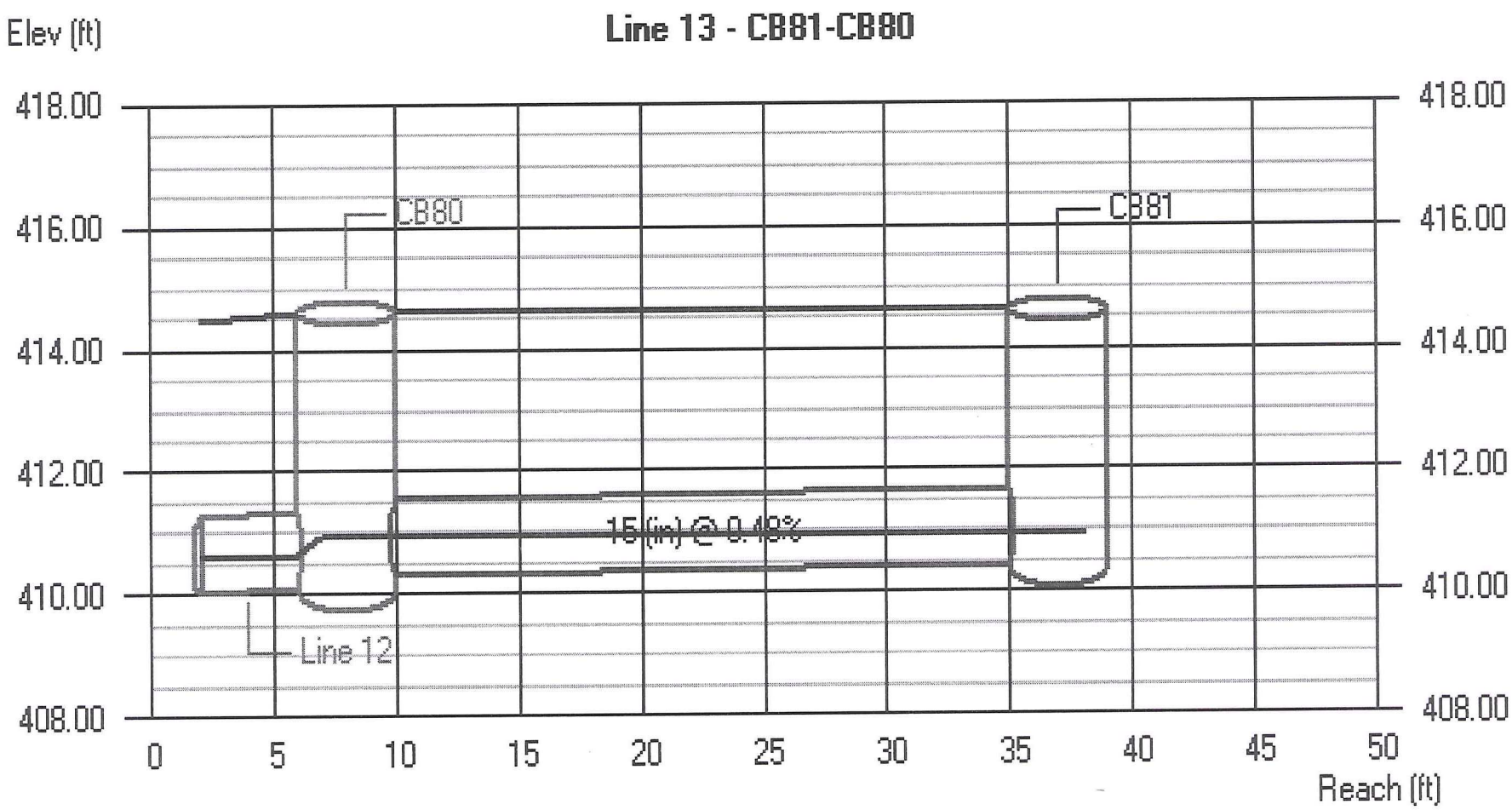
Storm Sewer Profile

Proj. file: JDP South line B.stm



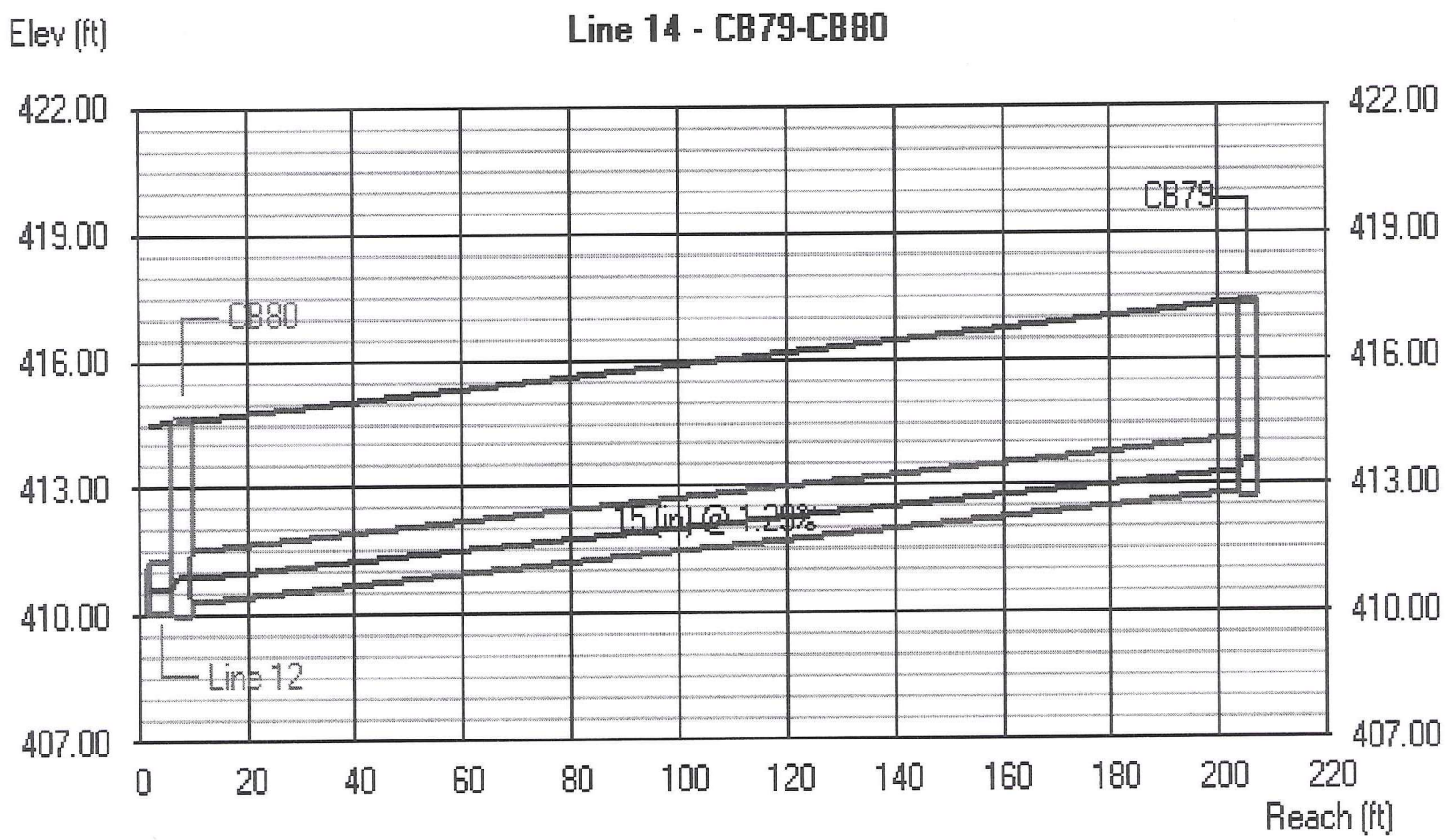
Storm Sewer Profile

Proj. file: JDP South line B.stm



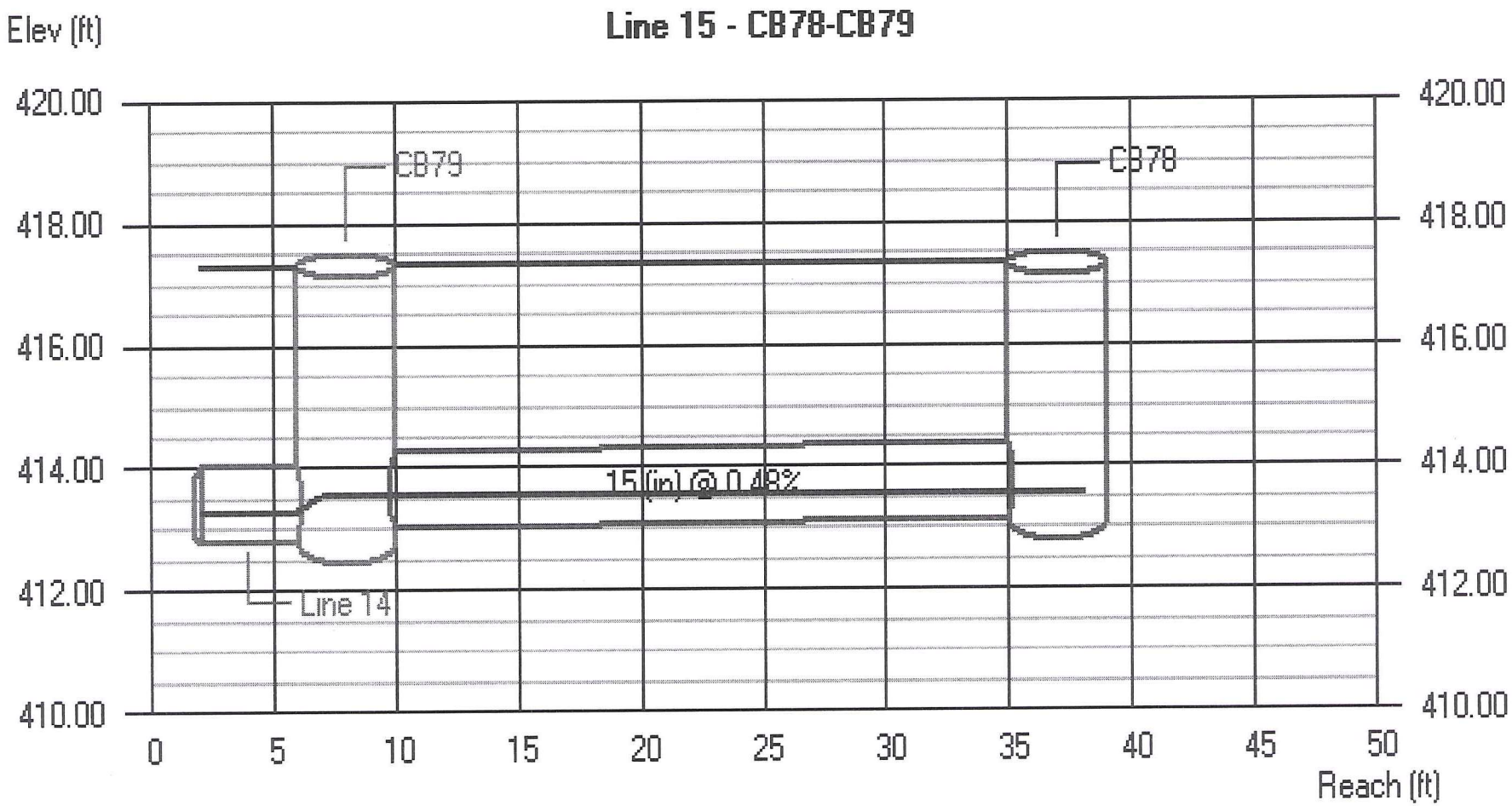
Storm Sewer Profile

Proj. file: JDP South line B.stm



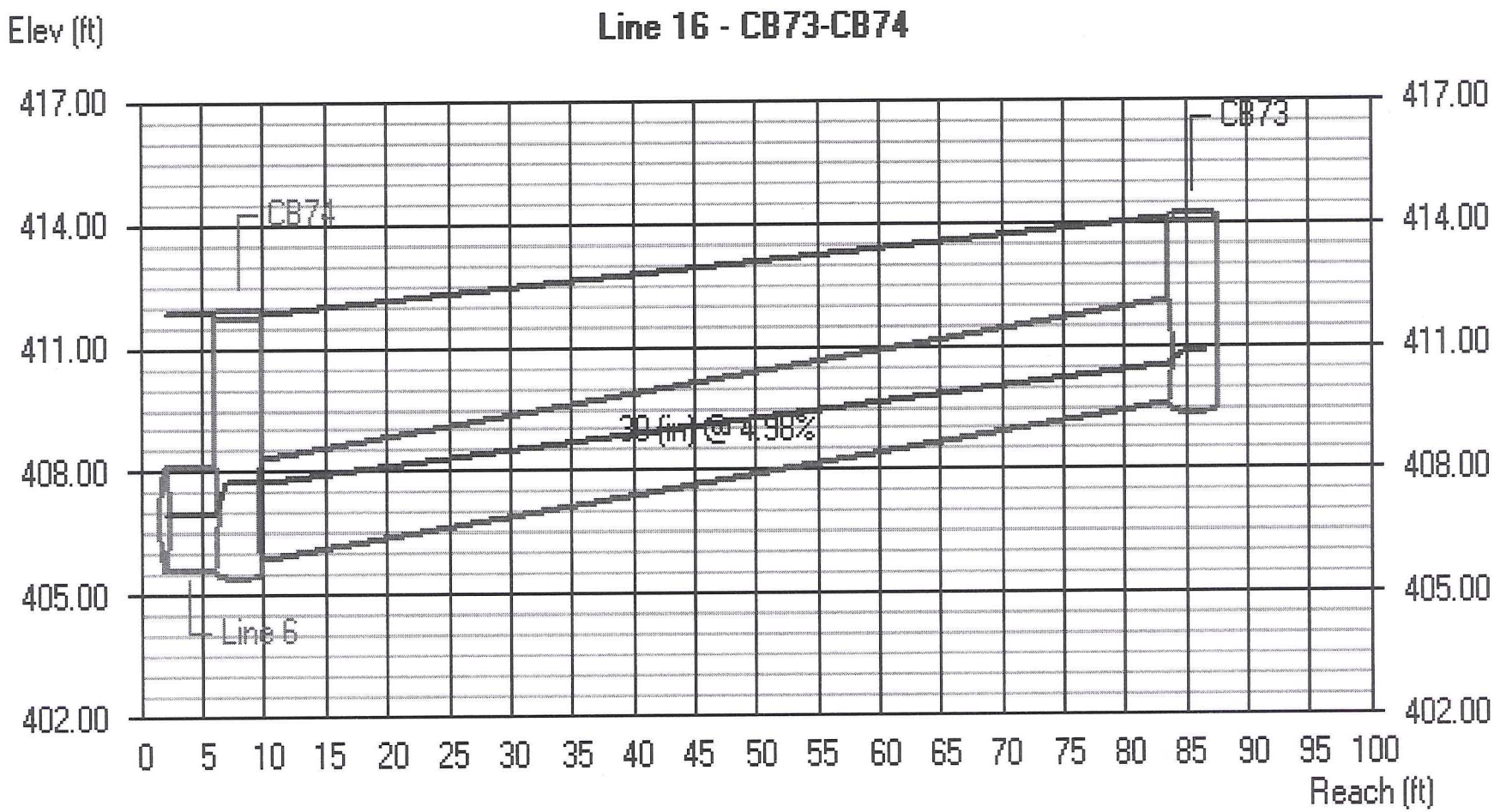
Storm Sewer Profile

Proj. file: JDP South line B.stm



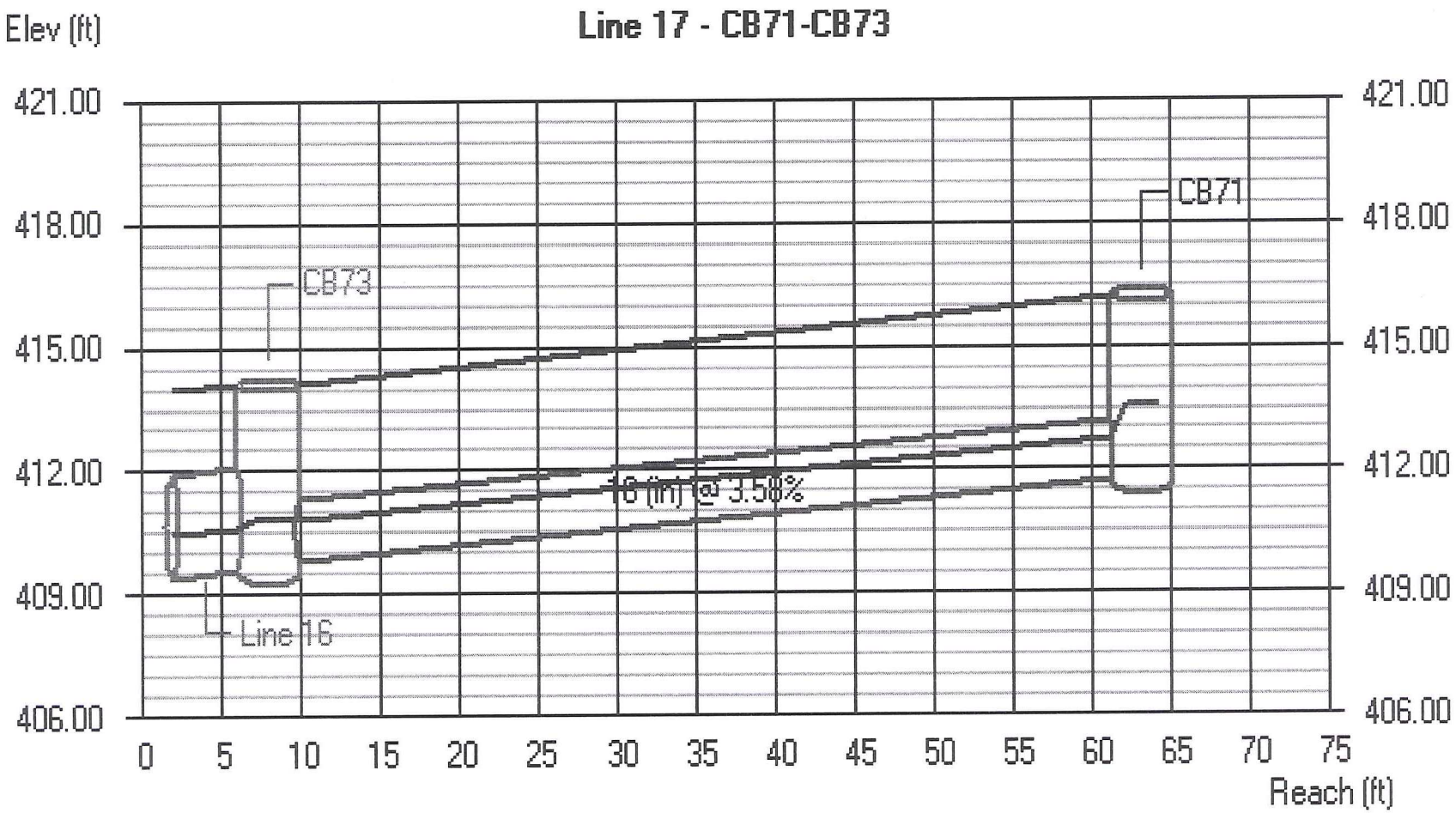
Storm Sewer Profile

Proj. file: JDP South line B.stm



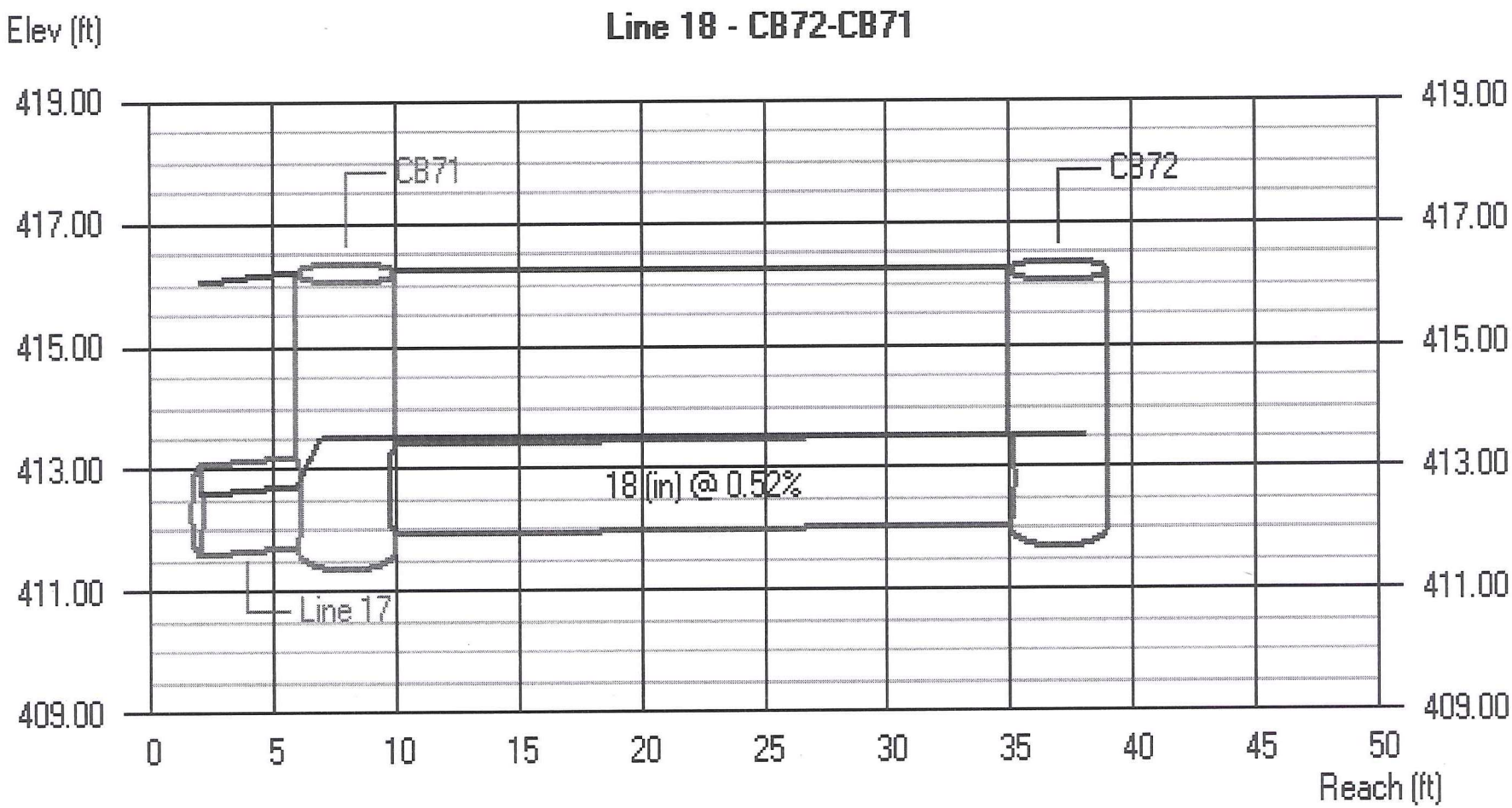
Storm Sewer Profile

Proj. file: JDP South line B.stm



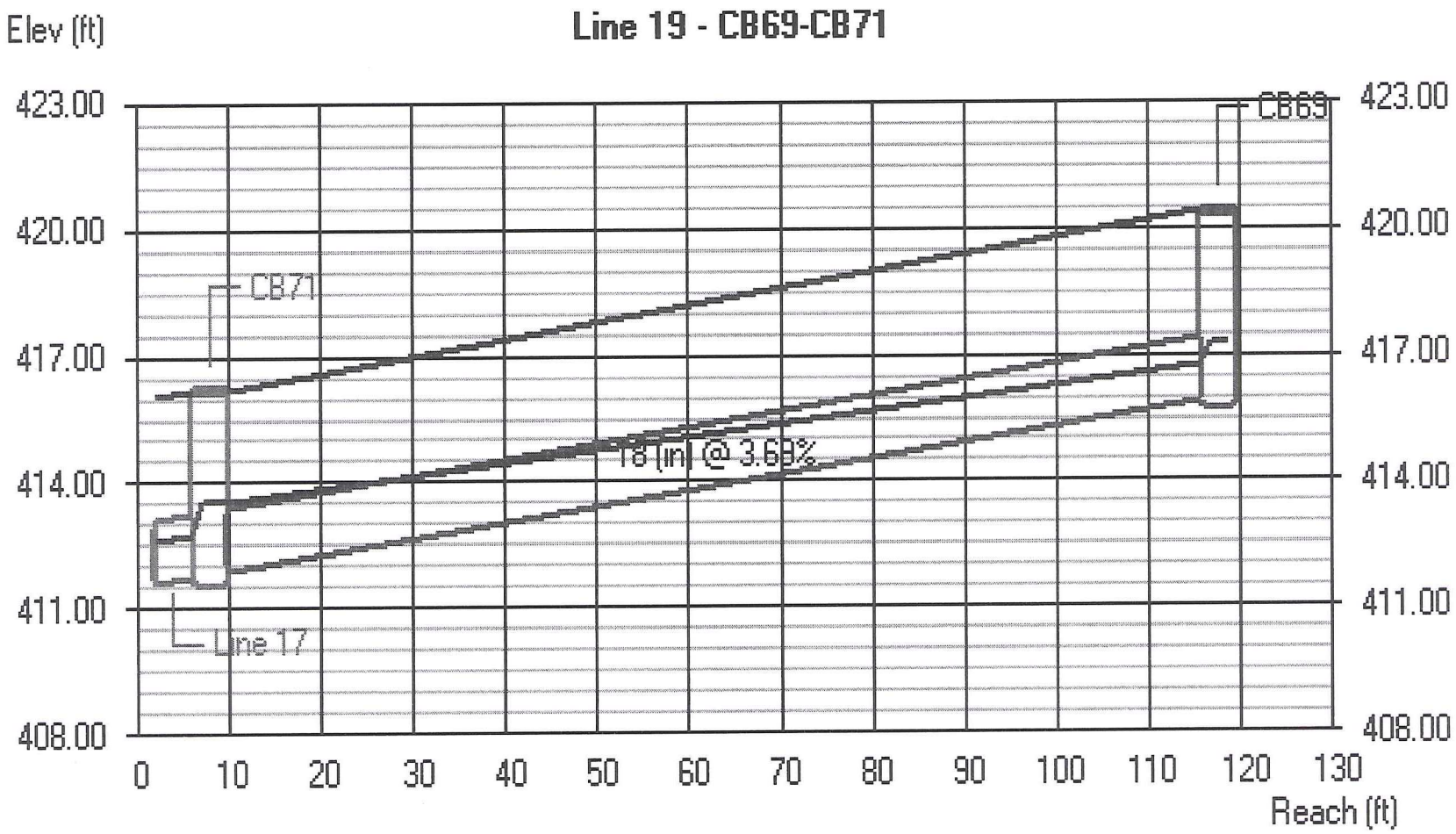
Storm Sewer Profile

Proj. file: JDP South line B.stm



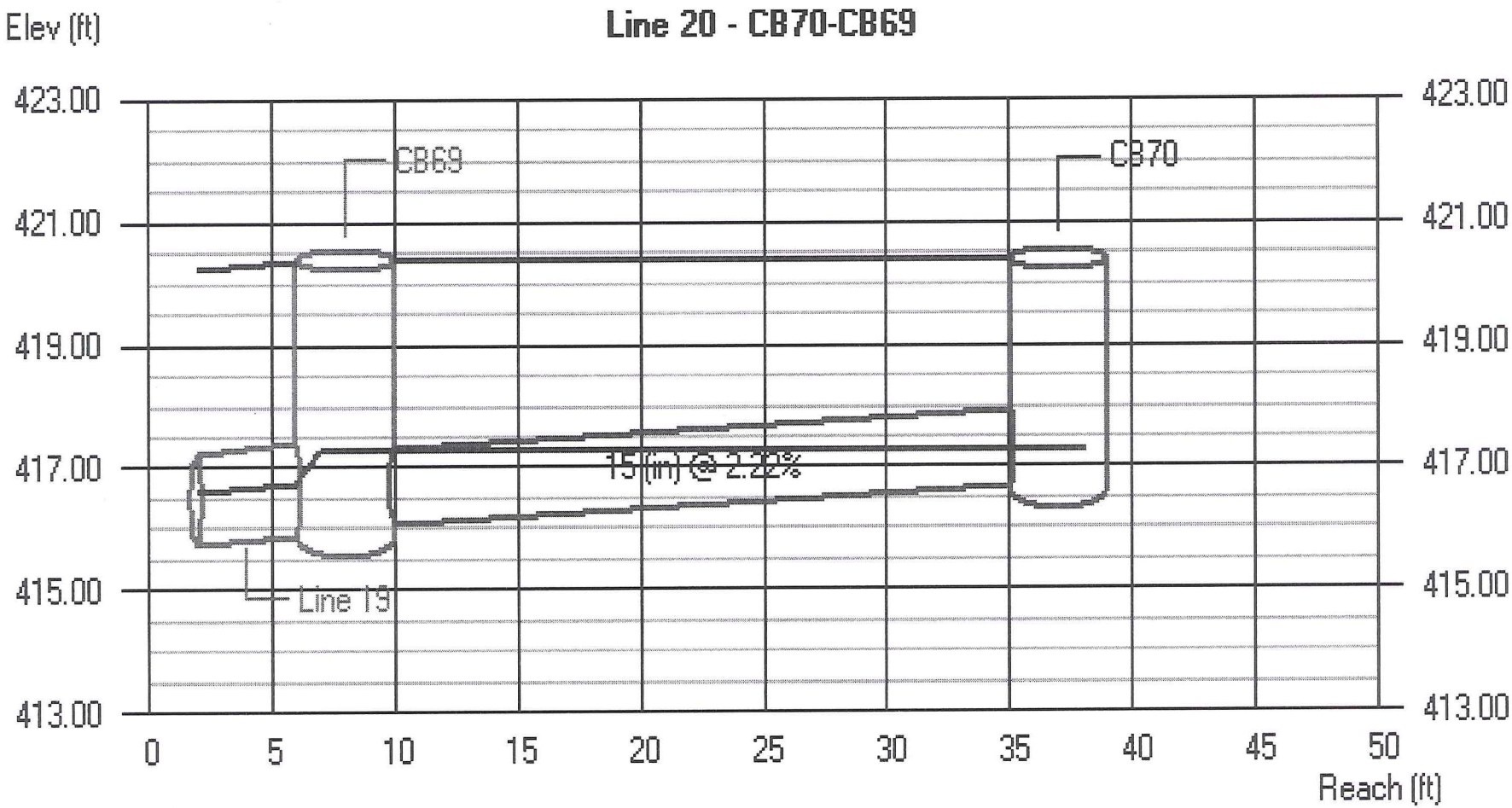
Storm Sewer Profile

Proj. file: JDP South line B.stm



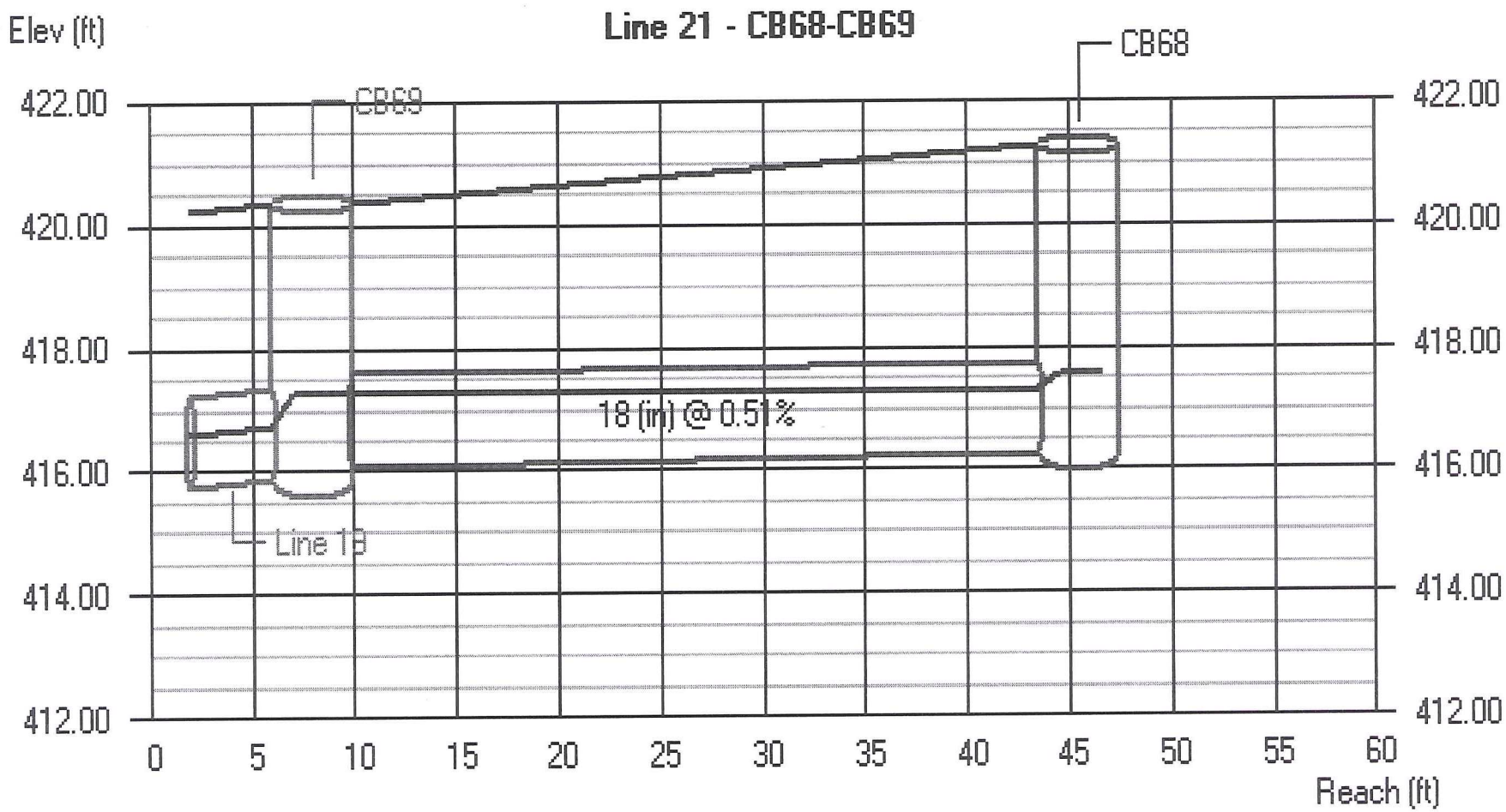
Storm Sewer Profile

Proj. file: JDP South line B.stm



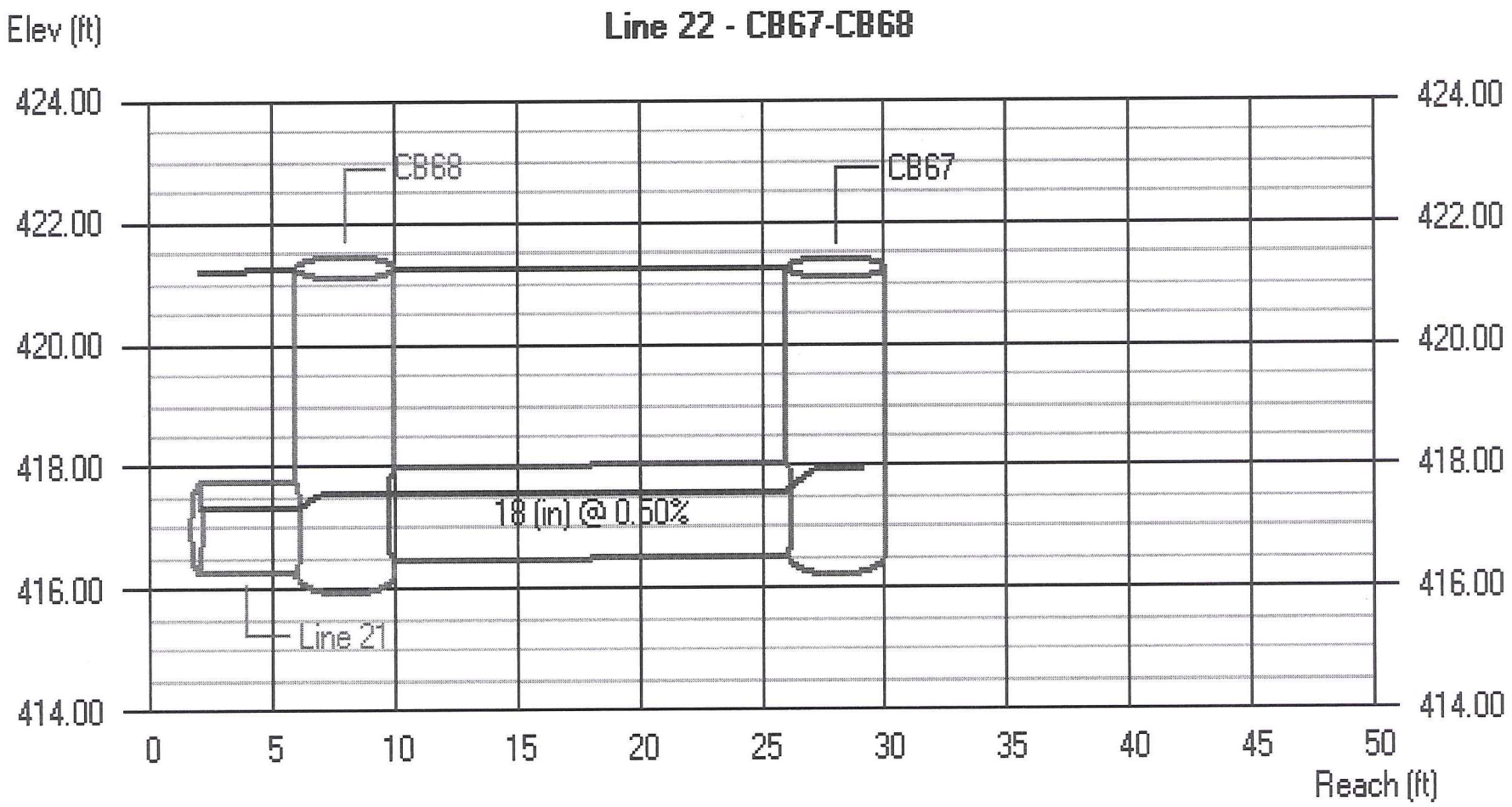
Storm Sewer Profile

Proj. file: JDP South line B.stm



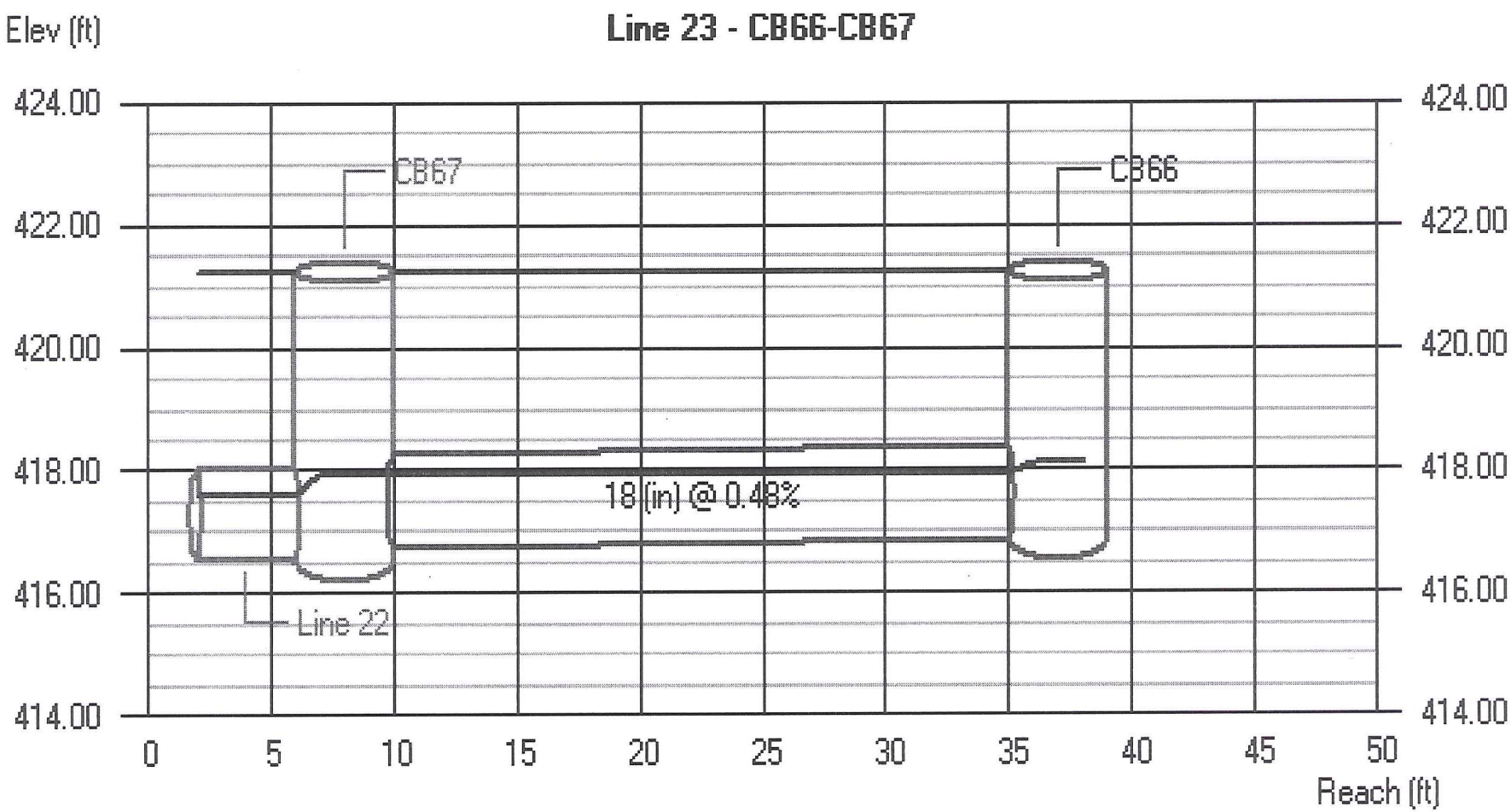
Storm Sewer Profile

Proj. file: JDP South line B.stm



Storm Sewer Profile

Proj. file: JDP South line B.stm



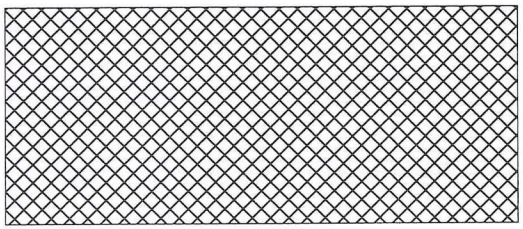
Inlet Section (Line 1 - Combination Inlet)

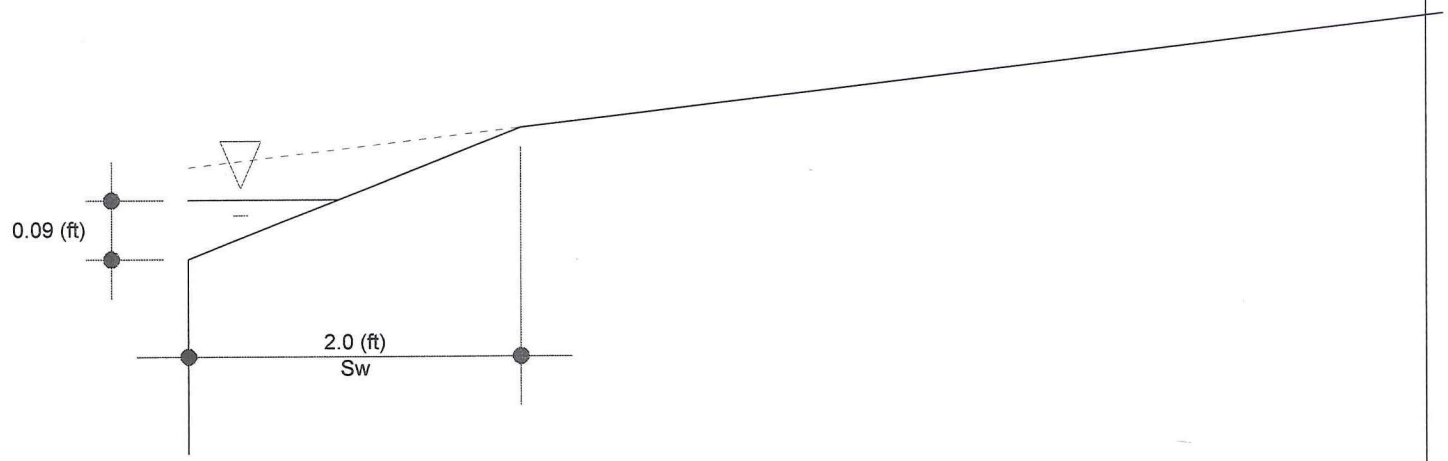
Inlet Flows

Q Catchment =	0.58 (cfs)
Q Carryover =	0.00
Q Total =	0.58
Q Captured =	0.58
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	0.00 (in)
Spread width, T =	0.90 (ft)





Inlet Section

CB90

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

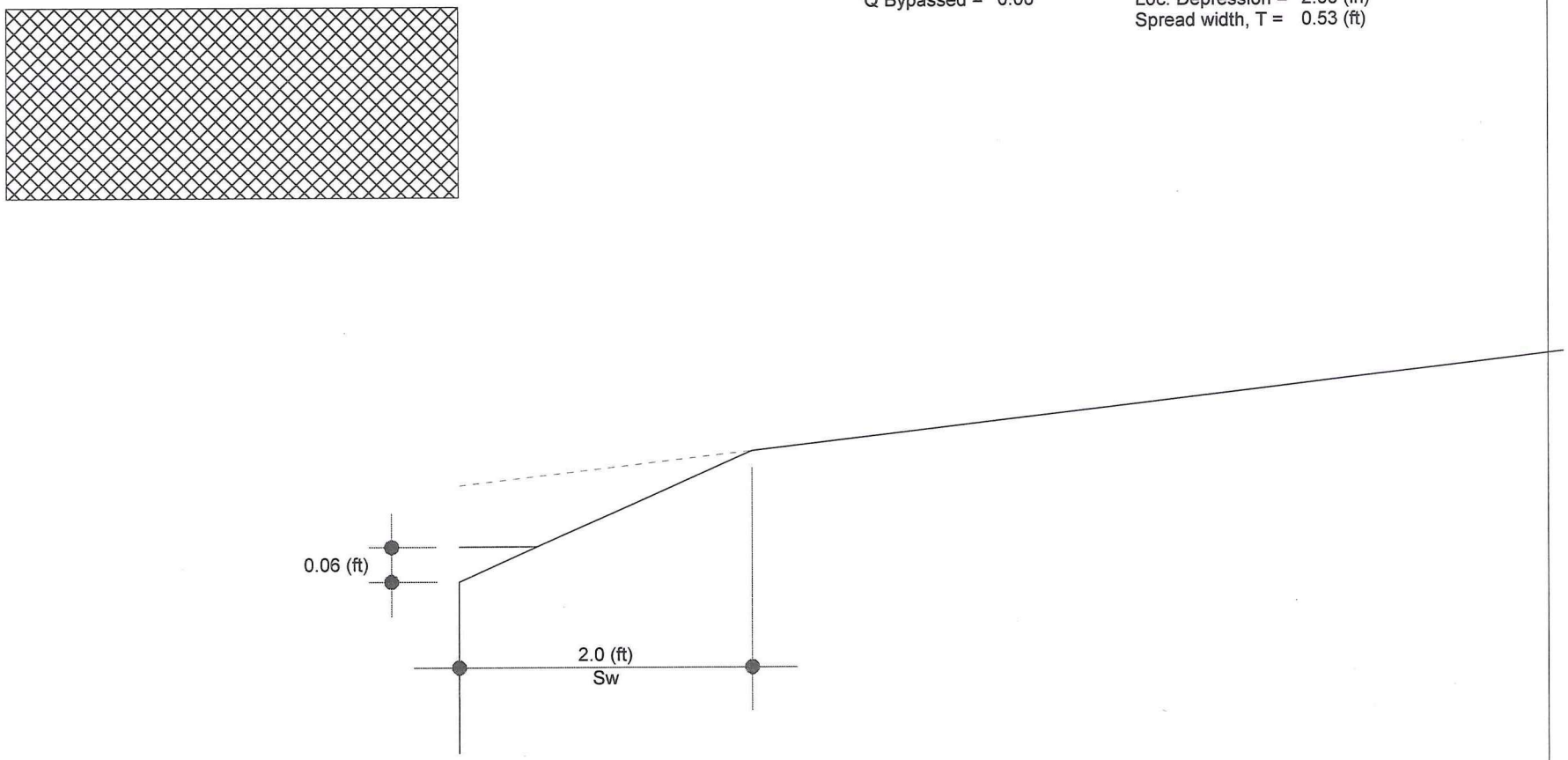
Inlet Section (Line 2 - Combination Inlet)

Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)



Inlet Section

CB83

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

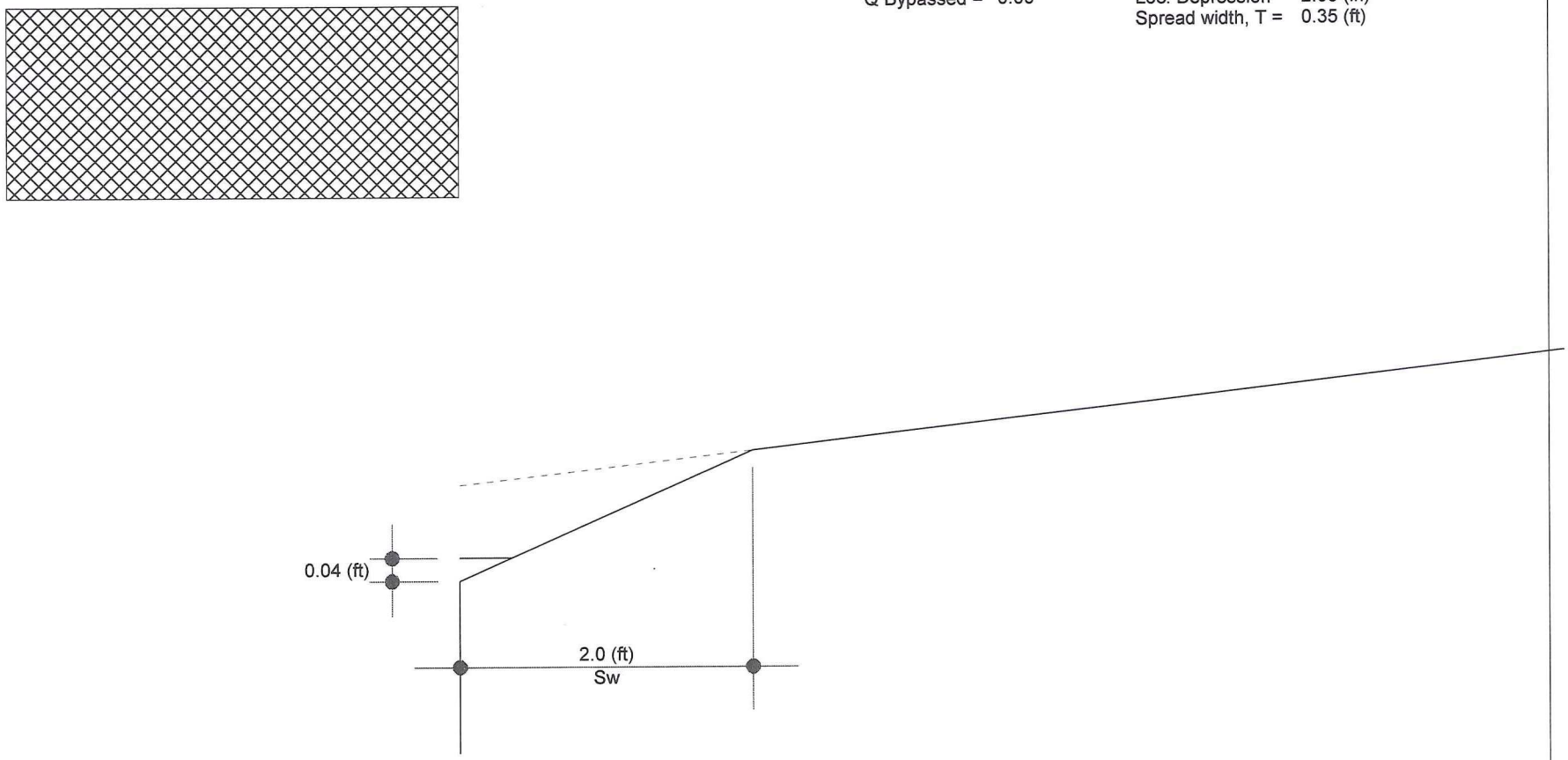
Inlet Section (Line 3 - Combination Inlet)

Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)



Inlet Section

CB82

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

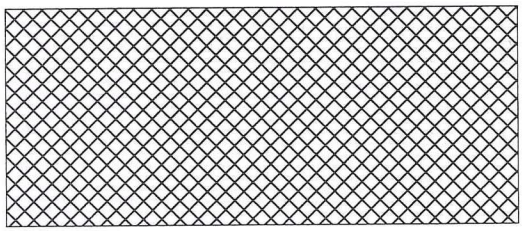
Inlet Section (Line 4 - Combination Inlet)

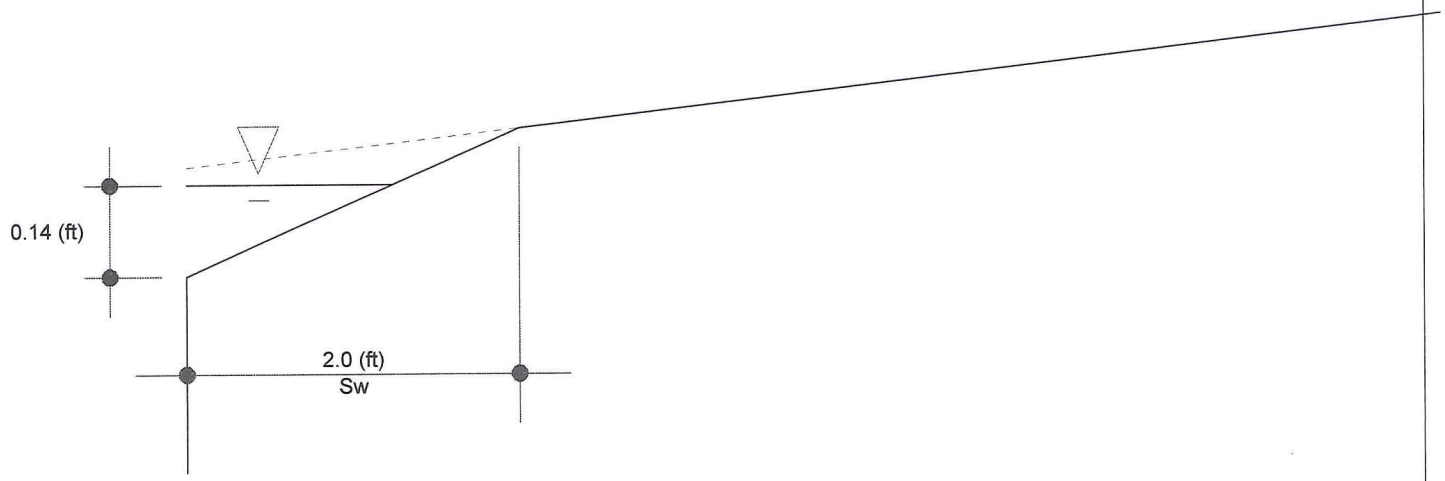
Inlet Flows

Q Catchment =	1.15 (cfs)
Q Carryover =	0.00
Q Total =	1.15
Q Captured =	1.15
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.24 (ft)





Inlet Section

CB76

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

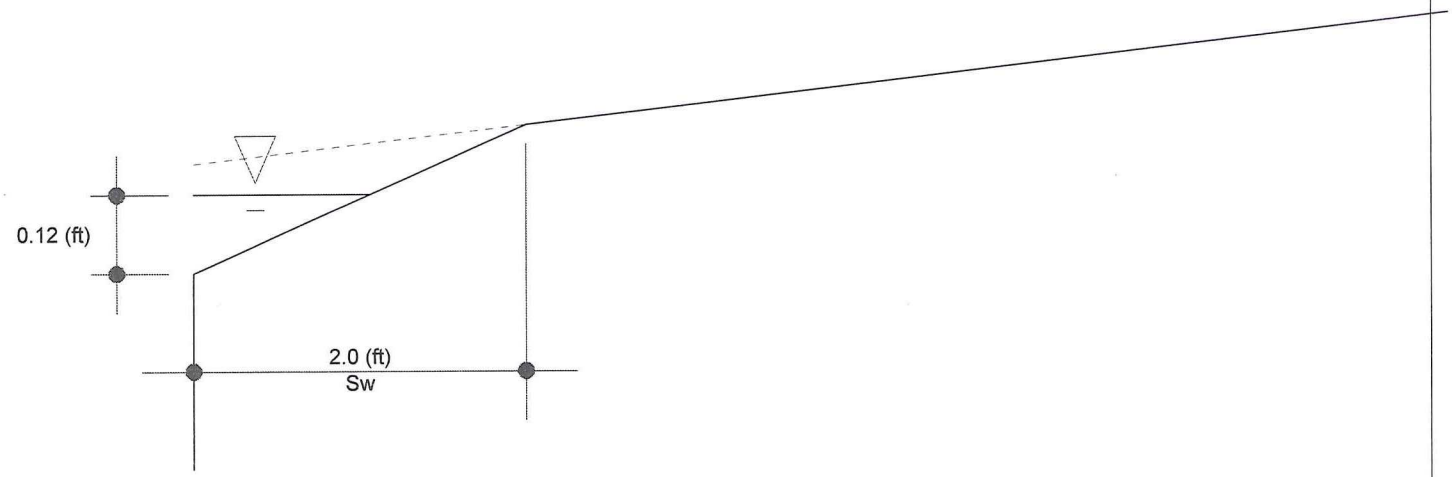
Inlet Section (Line 5 - Combination Inlet)

Inlet Flows

Q Catchment =	0.98 (cfs)
Q Carryover =	0.00
Q Total =	0.98
Q Captured =	0.98
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.06 (ft)



Inlet Section

CB75

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

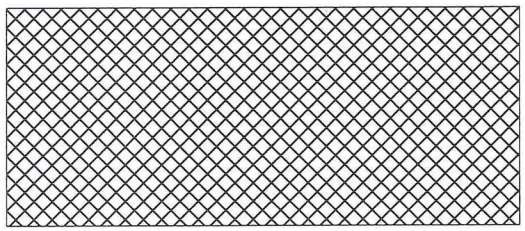
Inlet Section (Line 5 - Combination Inlet)

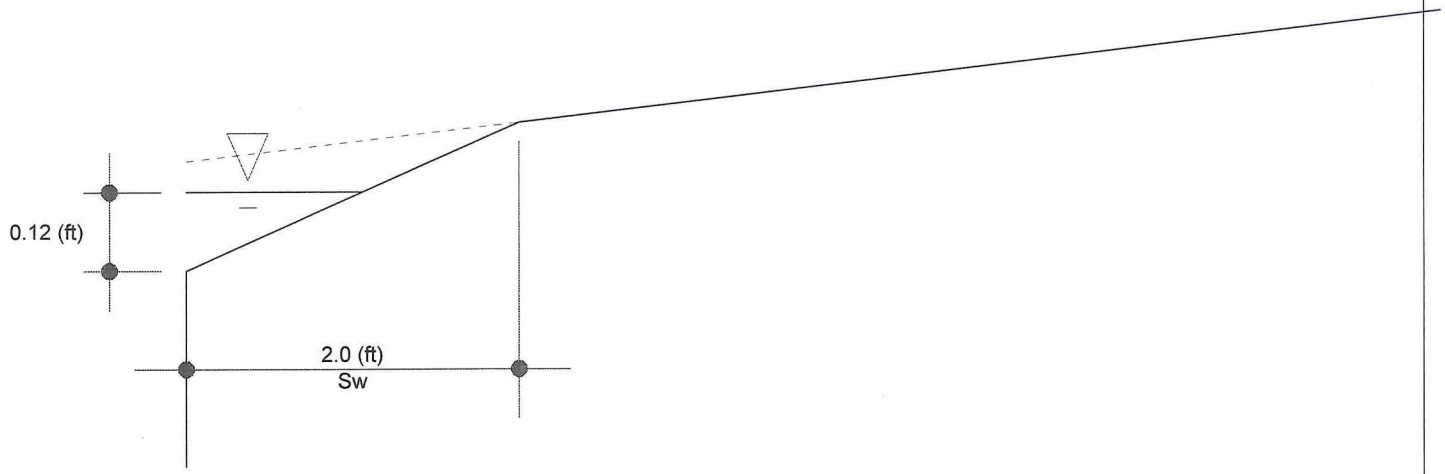
Inlet Flows

Q Catchment =	0.98 (cfs)
Q Carryover =	0.00
Q Total =	0.98
Q Captured =	0.98
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.06 (ft)





Inlet Section

CB75

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

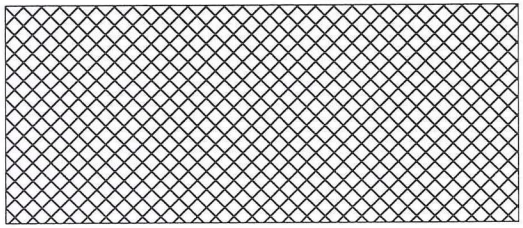
Inlet Section (Line 6 - Combination Inlet)

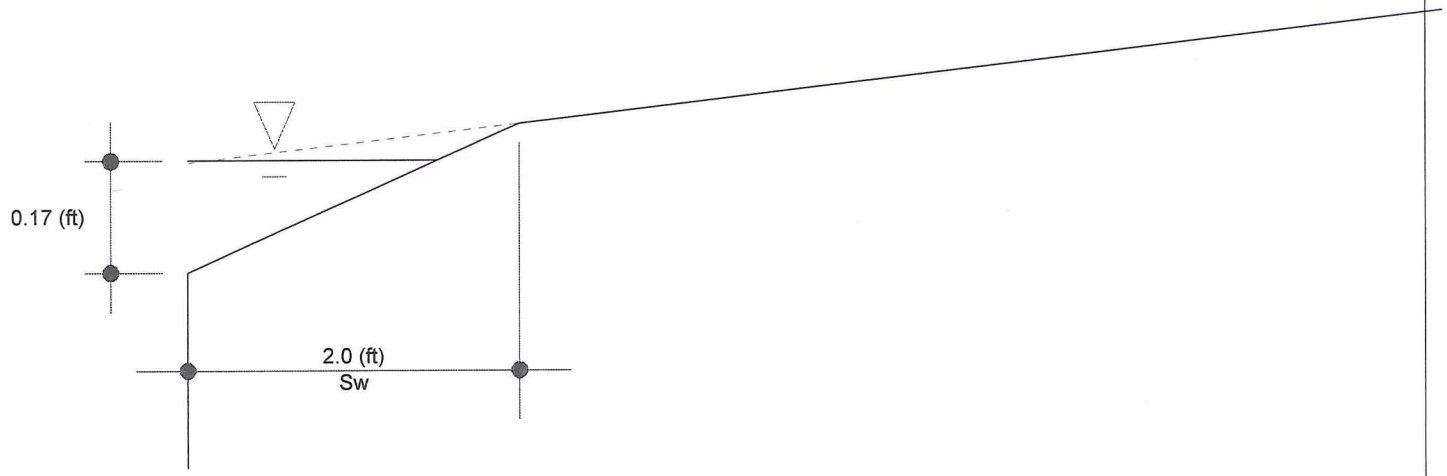
Inlet Flows

Q Catchment =	1.64 (cfs)
Q Carryover =	0.00
Q Total =	1.64
Q Captured =	1.64
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.50 (ft)





Inlet Section

CB74

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

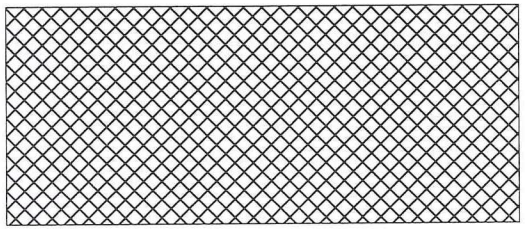
Inlet Section (Line 7 - Combination Inlet)

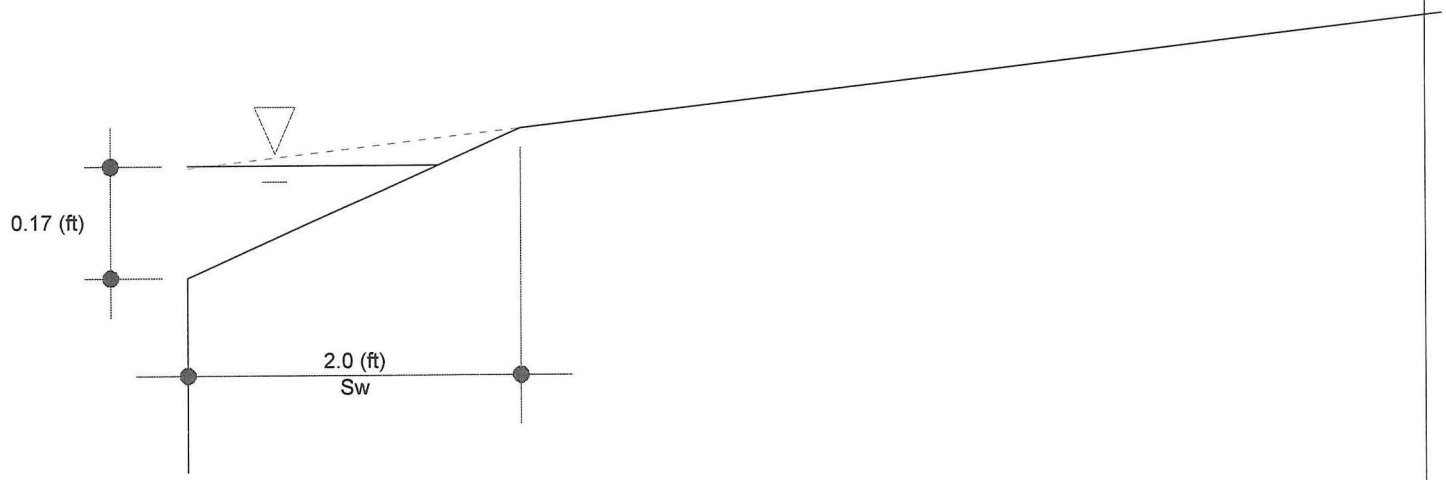
Inlet Flows

Q Catchment =	1.64 (cfs)
Q Carryover =	0.00
Q Total =	1.64
Q Captured =	1.64
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.50 (ft)





Inlet Section

CB89

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

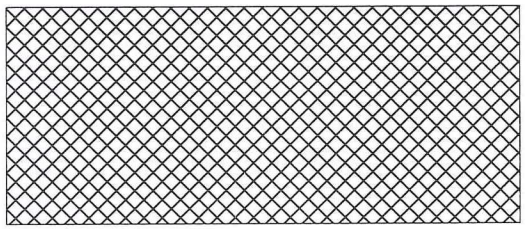
Inlet Section (Line 8 - Combination Inlet)

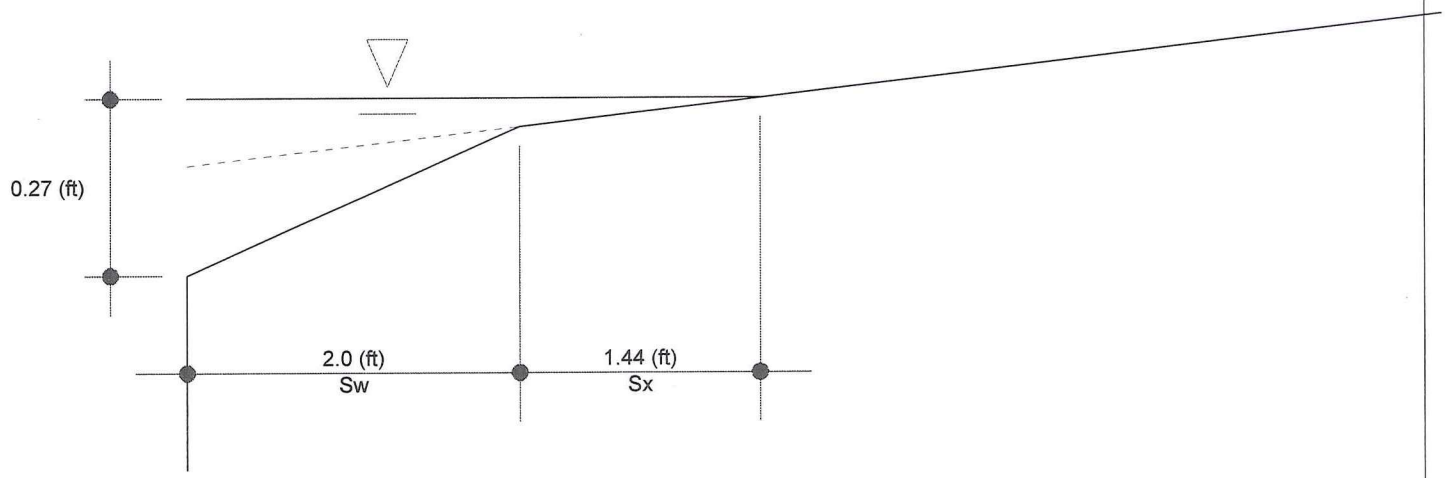
Inlet Flows

Q Catchment =	3.22 (cfs)
Q Carryover =	0.00
Q Total =	3.22
Q Captured =	3.22
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	3.44 (ft)





Inlet Section

CB87

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

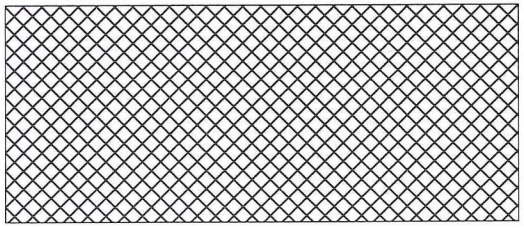
Inlet Section (Line 9 - Combination Inlet)

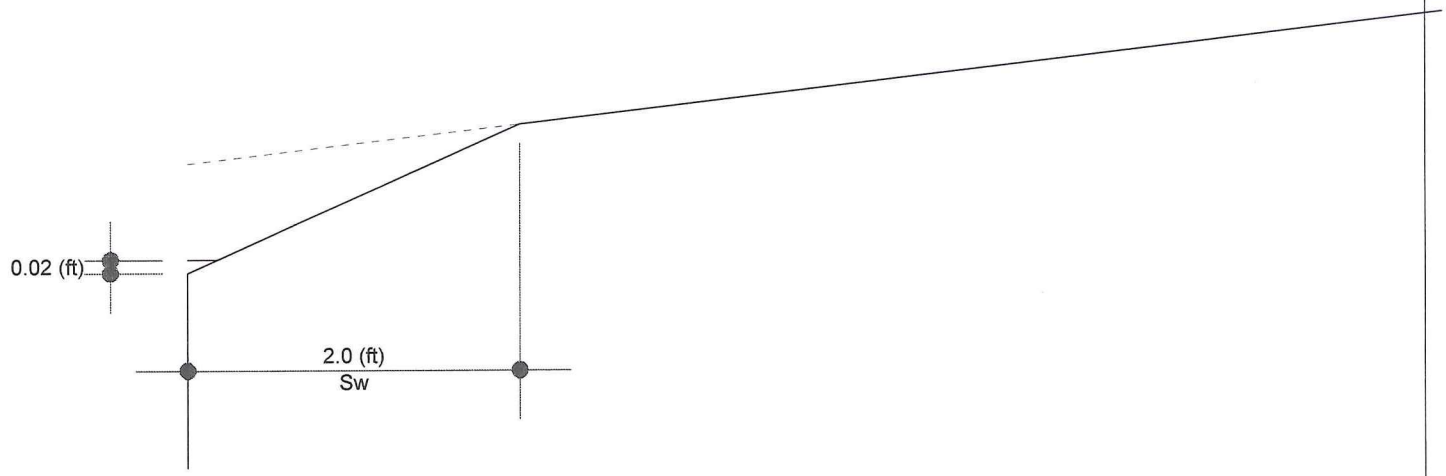
Inlet Flows

Q Catchment =	0.06 (cfs)
Q Carryover =	0.00
Q Total =	0.06
Q Captured =	0.06
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.18 (ft)





Inlet Section

CB88

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

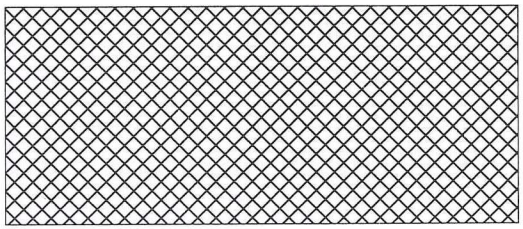
Inlet Section (Line 10 - Combination Inlet)

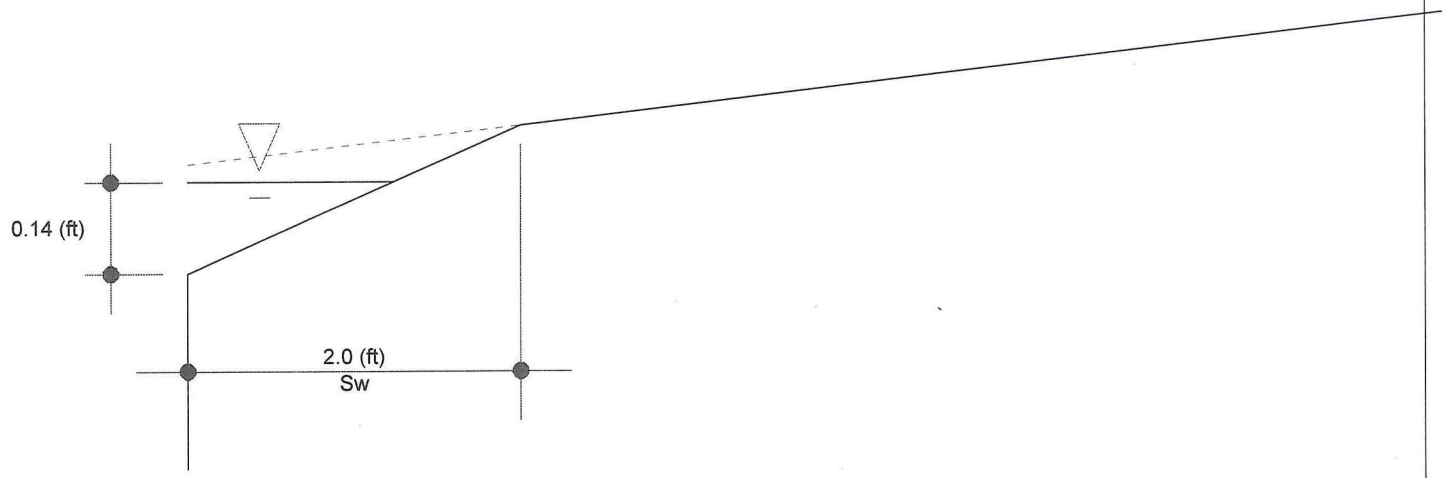
Inlet Flows

Q Catchment =	1.15 (cfs)
Q Carryover =	0.00
Q Total =	1.15
Q Captured =	1.15
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.24 (ft)





Inlet Section

CB86

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

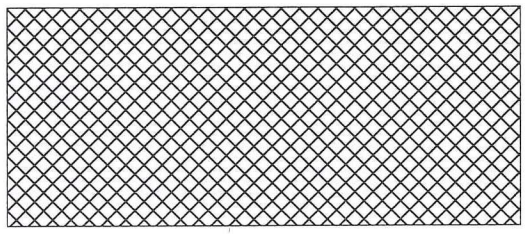
Inlet Section (Line 11 - Combination Inlet)

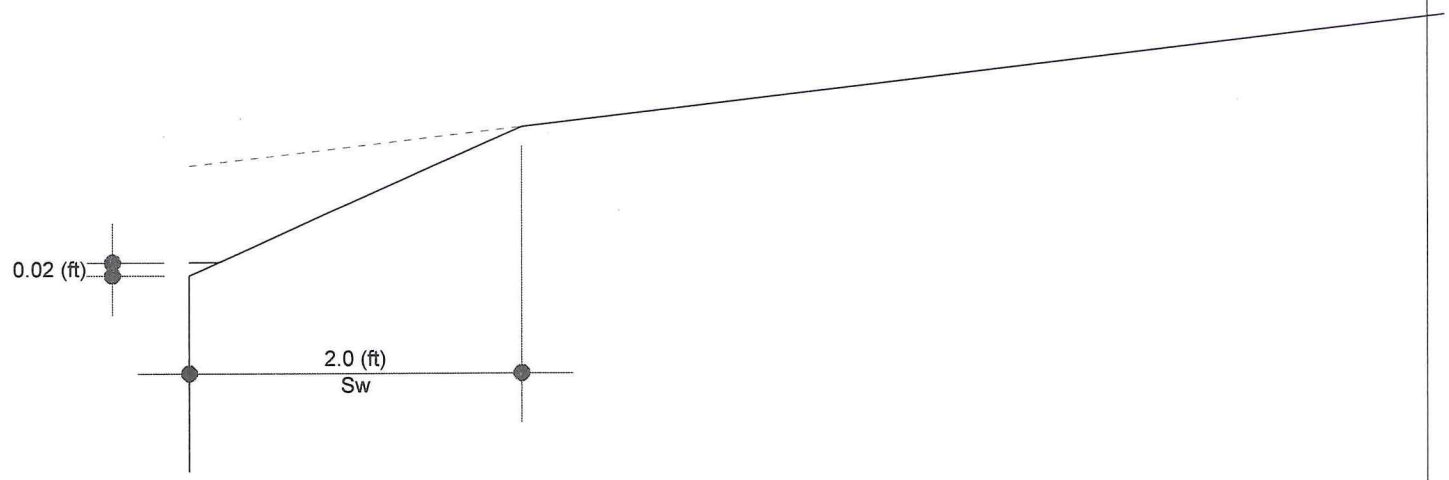
Inlet Flows

Q Catchment =	0.06 (cfs)
Q Carryover =	0.00
Q Total =	0.06
Q Captured =	0.06
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.18 (ft)





Inlet Section

CB85

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

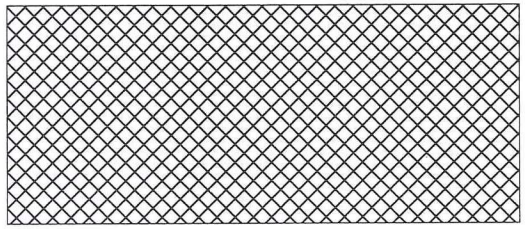
Inlet Section (Line 12 - Combination Inlet)

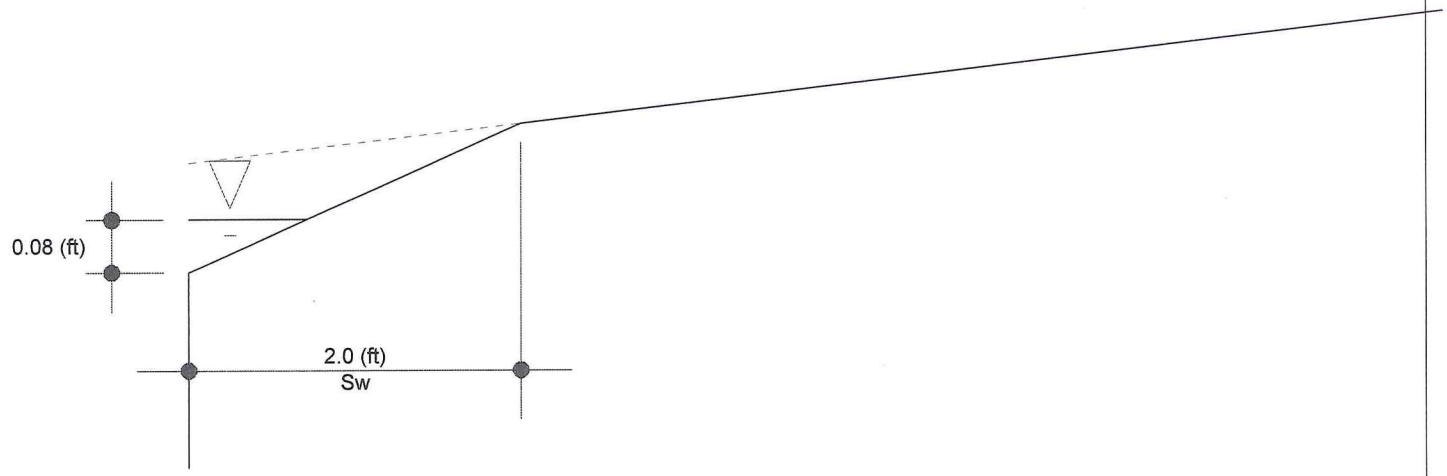
Inlet Flows

Q Catchment =	0.46 (cfs)
Q Carryover =	0.00
Q Total =	0.46
Q Captured =	0.46
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.71 (ft)





Inlet Section

CB80

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

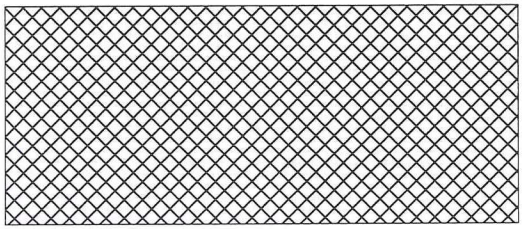
Inlet Section (Line 13 - Combination Inlet)

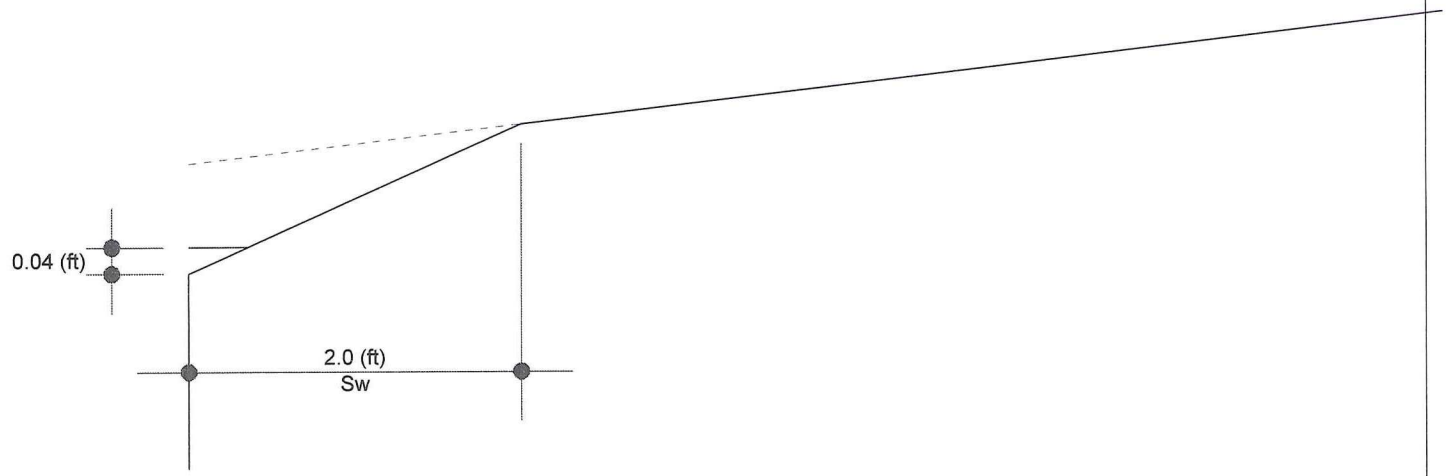
Inlet Flows

Q Catchment =	0.17 (cfs)
Q Carryover =	0.00
Q Total =	0.17
Q Captured =	0.17
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.35 (ft)





Inlet Section

CB81

Project file: JDP South line B.stm

07-15-2020

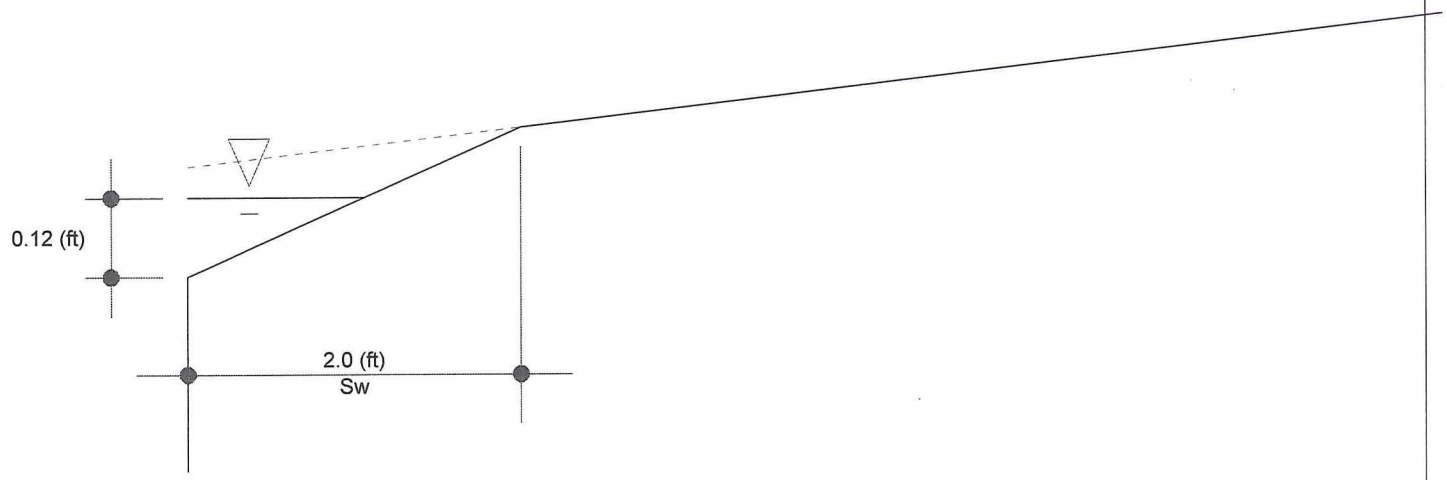
Inlet Section (Line 14 - Combination Inlet)

Inlet Flows

Q Catchment =	0.95 (cfs)
Q Carryover =	0.00
Q Total =	0.95
Q Captured =	0.95
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.06 (ft)



Inlet Section

CB79

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

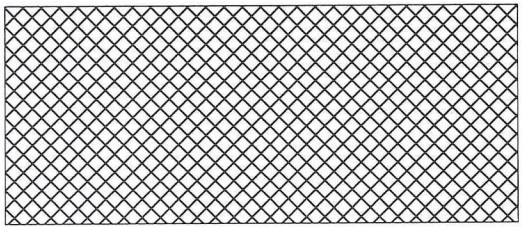
Inlet Section (Line 15 - Combination Inlet)

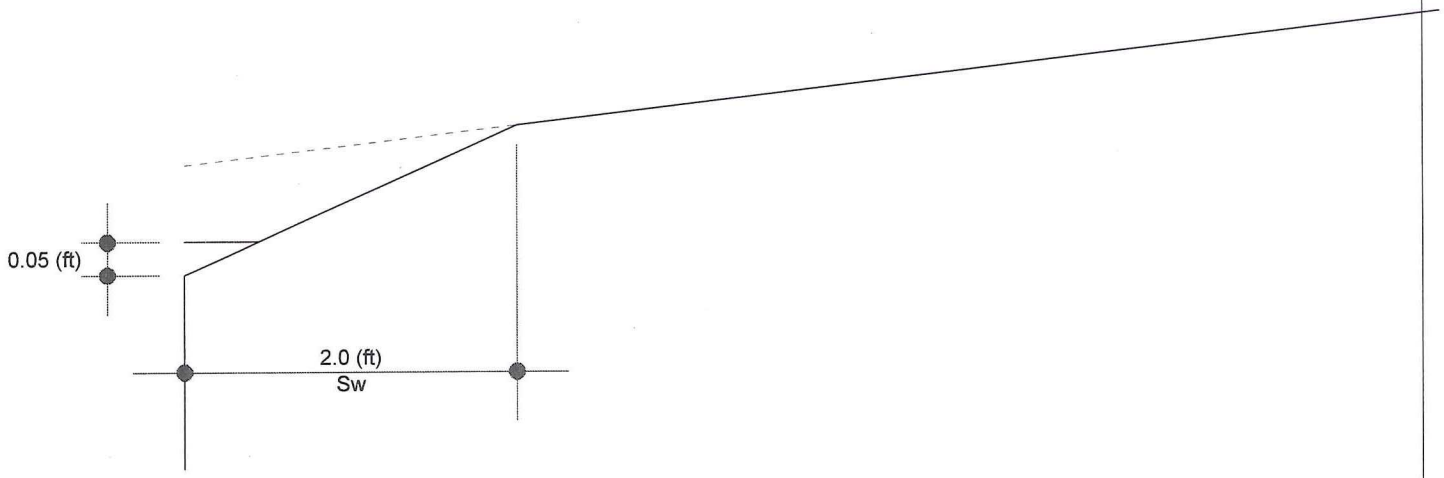
Inlet Flows

Q Catchment =	0.23 (cfs)
Q Carryover =	0.00
Q Total =	0.23
Q Captured =	0.23
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.44 (ft)





Inlet Section

CB78

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

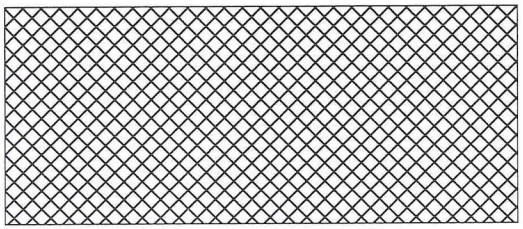
Inlet Section (Line 16 - Combination Inlet)

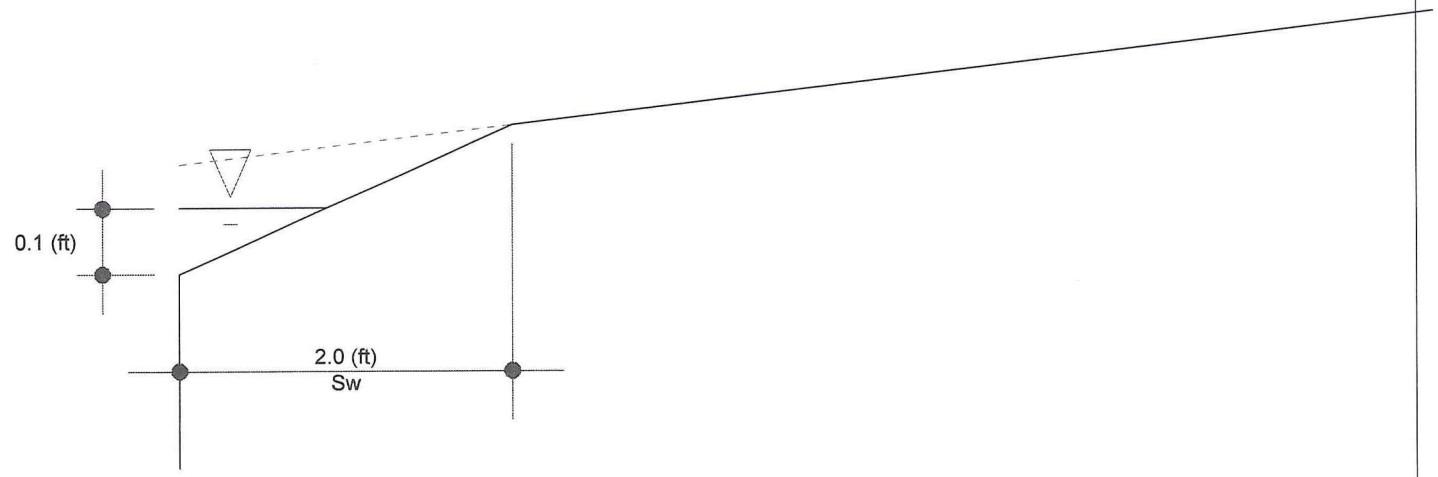
Inlet Flows

Q Catchment =	0.75 (cfs)
Q Carryover =	0.00
Q Total =	0.75
Q Captured =	0.75
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.88 (ft)





Inlet Section

CB73

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

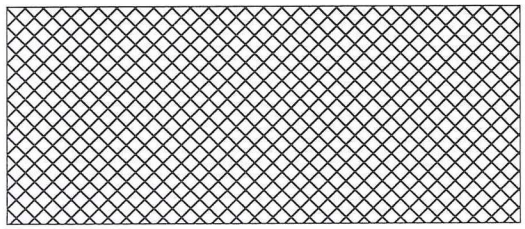
Inlet Section (Line 17 - Combination Inlet)

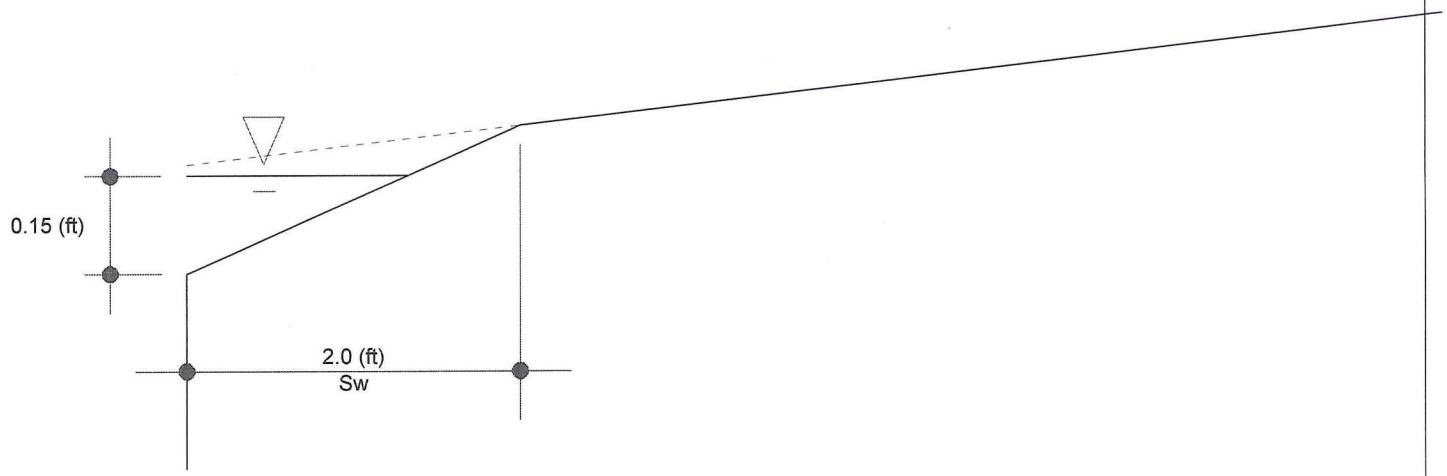
Inlet Flows

Q Catchment =	1.32 (cfs)
Q Carryover =	0.00
Q Total =	1.32
Q Captured =	1.32
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.32 (ft)





Inlet Section

CB71

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

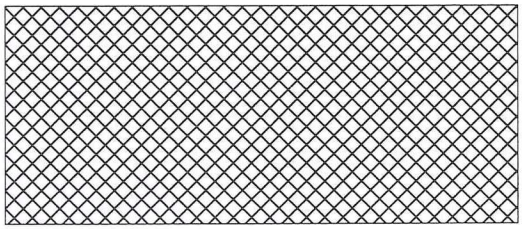
Inlet Section (Line 18 - Combination Inlet)

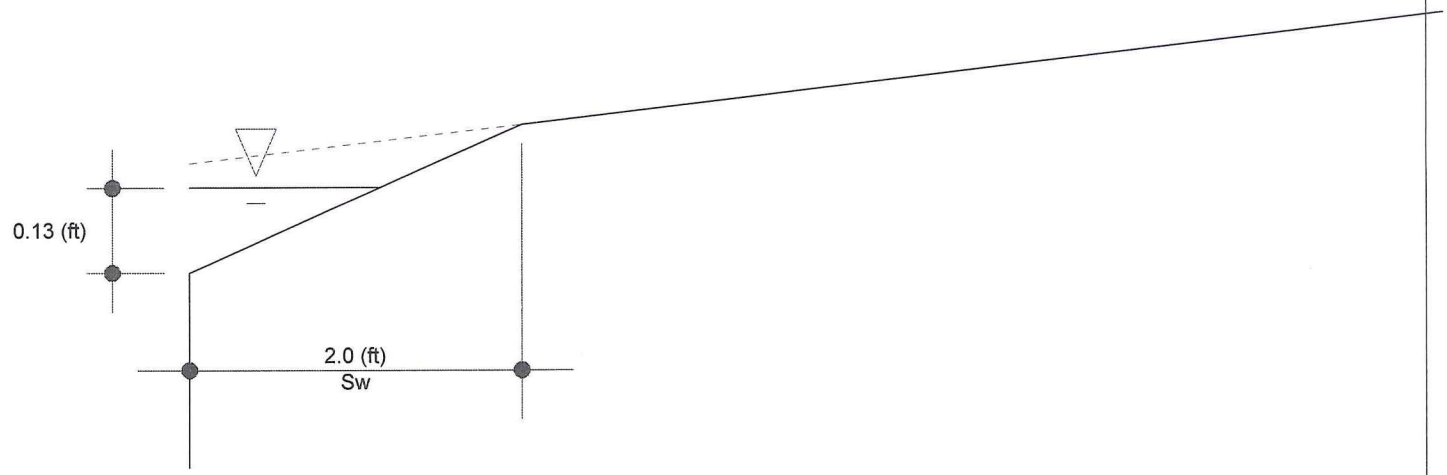
Inlet Flows

Q Catchment =	1.01 (cfs)
Q Carryover =	0.00
Q Total =	1.01
Q Captured =	1.01
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	1.15 (ft)





Inlet Section

CB72

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

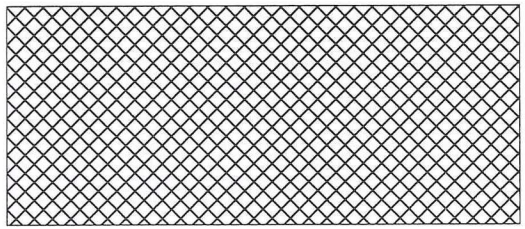
Inlet Section (Line 19 - Combination Inlet)

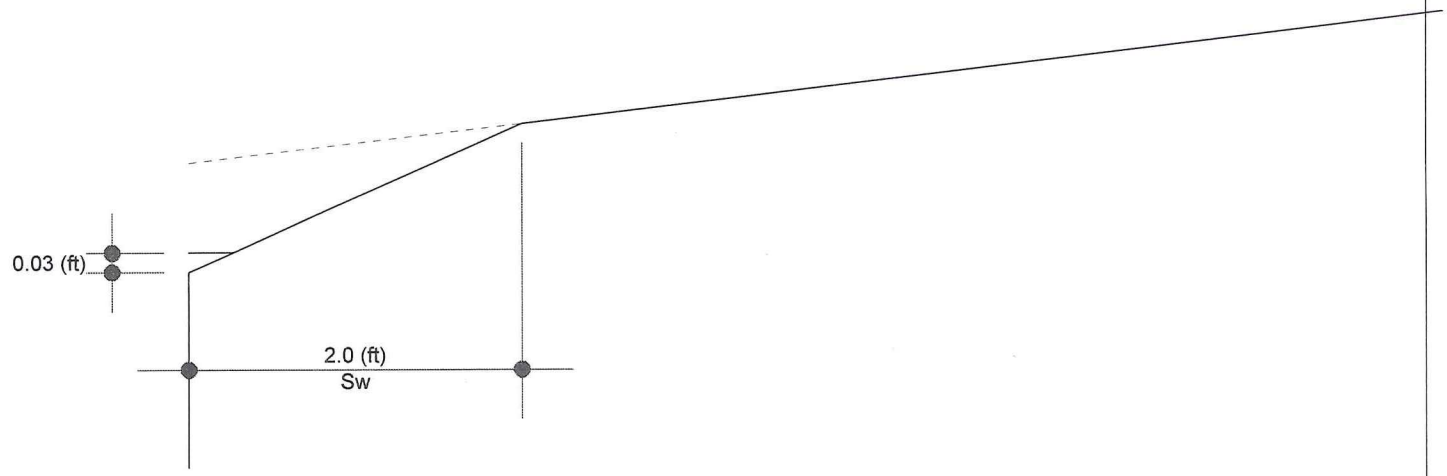
Inlet Flows

Q Catchment =	0.09 (cfs)
Q Carryover =	0.00
Q Total =	0.09
Q Captured =	0.09
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.26 (ft)





Inlet Section

CB69

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

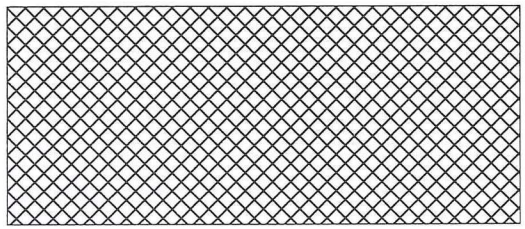
Inlet Section (Line 20 - Combination Inlet)

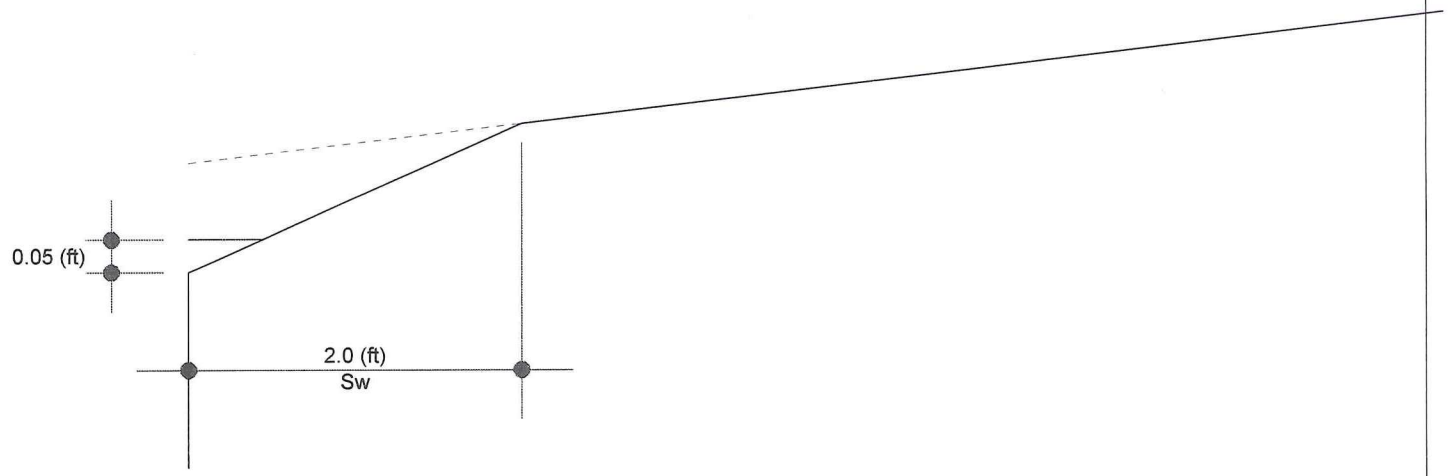
Inlet Flows

Q Catchment =	0.20 (cfs)
Q Carryover =	0.00
Q Total =	0.20
Q Captured =	0.20
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.44 (ft)





Inlet Section

CB70

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

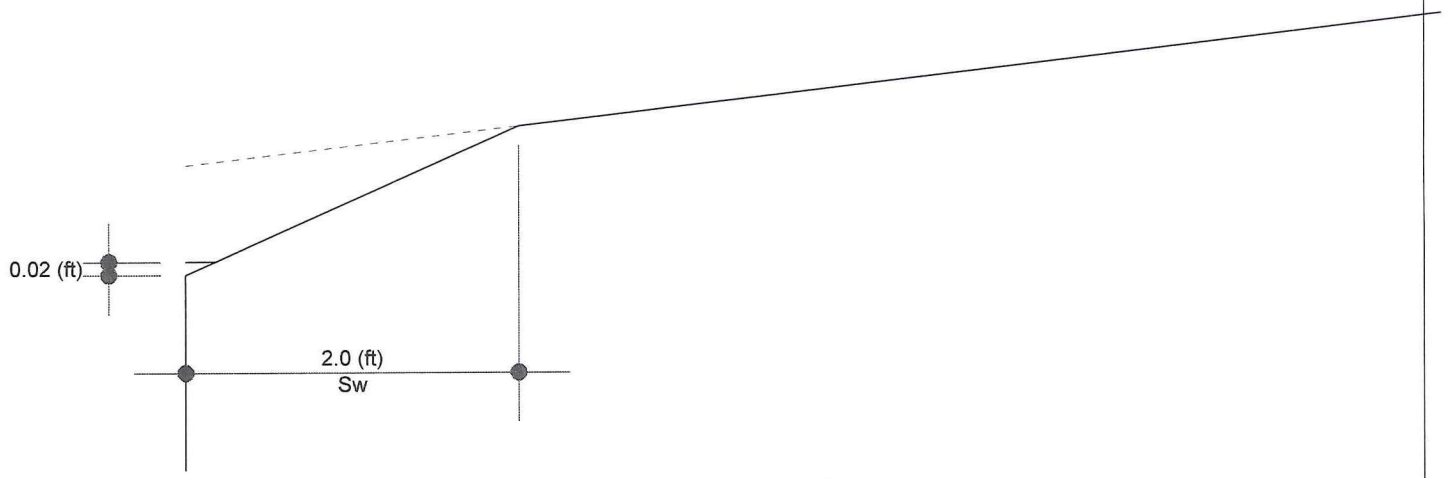
Inlet Section (Line 21 - Combination Inlet)

Inlet Flows

Q Catchment =	0.03 (cfs)
Q Carryover =	0.00
Q Total =	0.03
Q Captured =	0.03
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.18 (ft)



Inlet Section

CB68

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

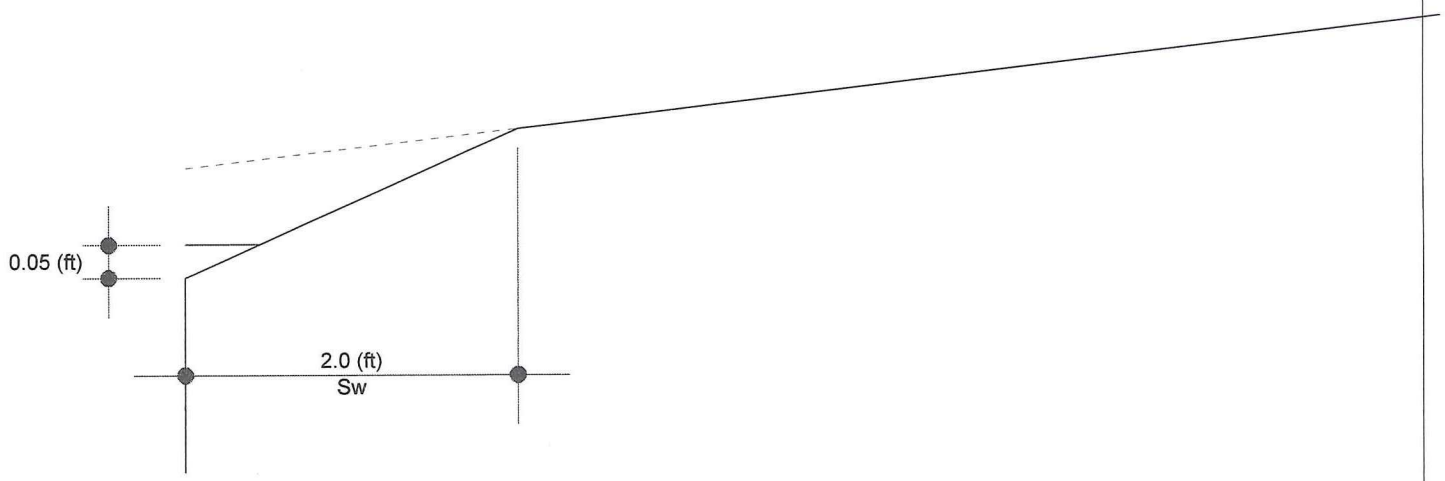
Inlet Section (Line 22 - Combination Inlet)

Inlet Flows

Q Catchment =	0.26 (cfs)
Q Carryover =	0.00
Q Total =	0.26
Q Captured =	0.26
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.44 (ft)



Inlet Section

CB67

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

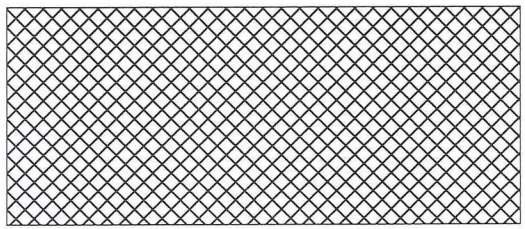
Inlet Section (Line 23 - Combination Inlet)

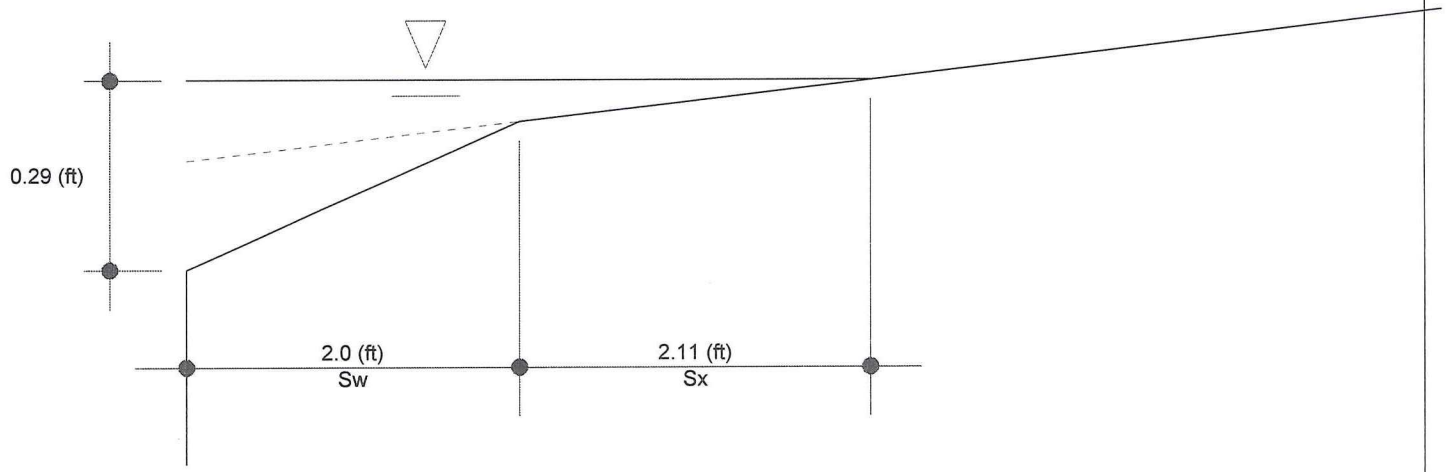
Inlet Flows

Q Catchment =	3.68 (cfs)
Q Carryover =	0.00
Q Total =	3.68
Q Captured =	3.68
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	4.11 (ft)





Inlet Section

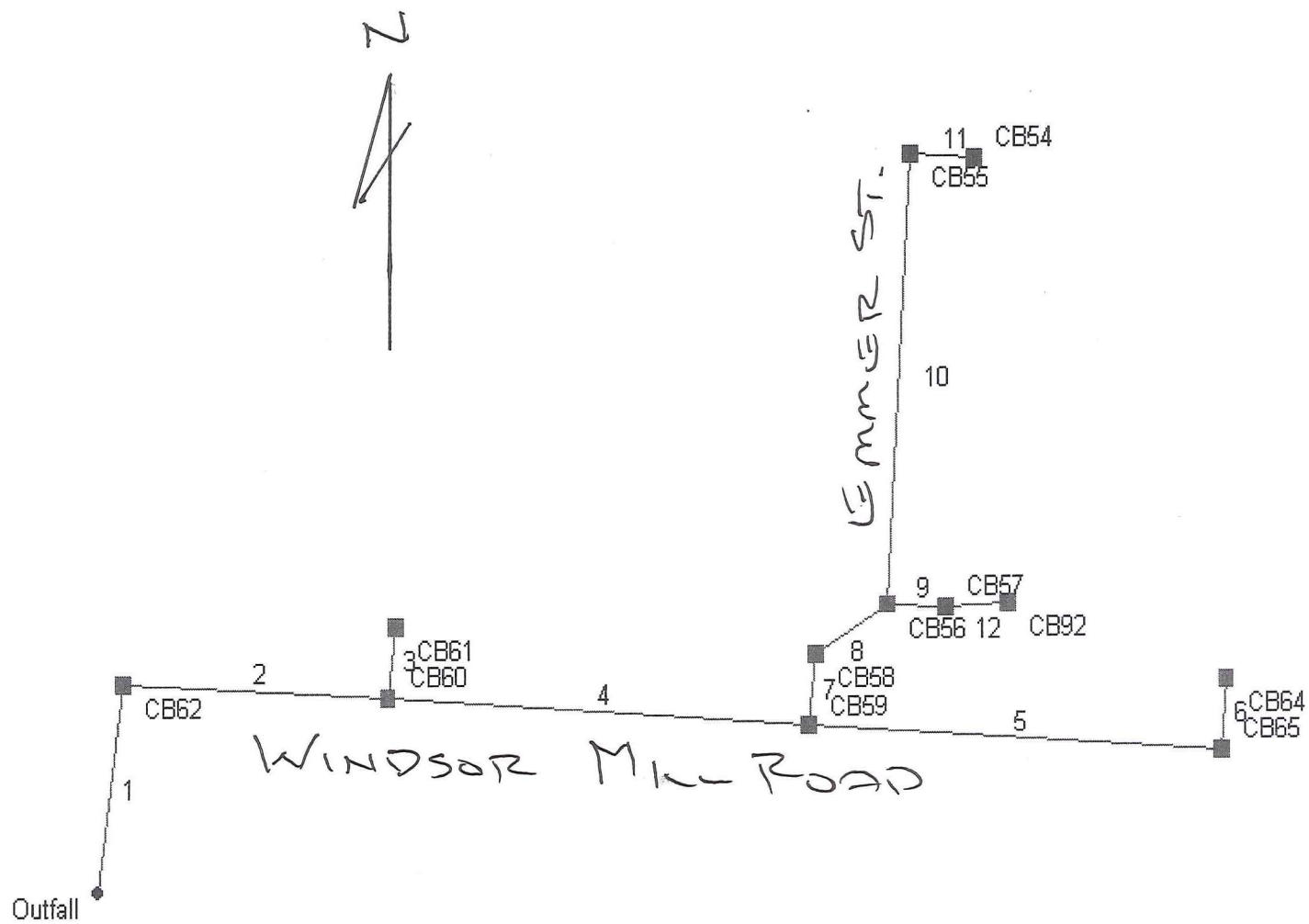
CB66

Project file: JDP South line B.stm

07-15-2020

Hydraflow Storm Sewers 2003

Hydraflow Plan View



Project file: JDP South line C.stm	No. Lines: 12	08-26-2020

Hydraflow Storm Sewers 2003

JDP- SOUTH LINE 'C'

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)	
1	End	79.6	-82.2	Comb	0.00	0.20	0.50	5.0	374.80	3.74	377.78	24	Cir	0.013	1.50	389.46	CB62-FES63
2	1	111.1	84.8	Comb	0.00	0.10	0.50	5.0	377.98	0.50	378.54	24	Cir	0.013	1.50	390.65	CB60-CB62
3	2	27.0	-85.7	Comb	0.00	0.10	0.50	5.0	378.74	28.70	386.49	15	Cir	0.013	1.00	390.65	CB61-CB60
4	2	176.8	1.0	Comb	0.00	0.10	0.50	5.0	378.74	0.50	379.62	24	Cir	0.013	1.50	391.93	CB59-CB60
5	4	173.0	-0.4	Comb	0.00	0.15	0.50	5.0	387.63	0.61	388.69	15	Cir	0.013	1.50	393.19	CB65-CB59
6	5	27.0	-88.5	Comb	0.00	0.15	0.50	5.0	388.89	0.59	389.05	15	Cir	0.013	1.00	393.19	CB64-CB65
7	4	27.0	-87.6	Comb	0.00	0.12	0.50	5.0	379.82	0.52	379.96	24	Cir	0.013	1.10	391.93	CB58-CB59
8	7	35.6	52.1	Comb	0.00	0.10	0.50	5.0	380.16	0.48	380.33	24	Cir	0.013	1.25	392.54	CB56-CB58
9	8	24.6	34.2	Comb	0.00	0.10	0.50	5.0	380.53	0.57	380.67	24	Cir	0.013	0.50	392.52	CB57-CB56
10	8	170.8	-54.8	Comb	0.00	0.20	0.50	5.0	380.53	6.44	391.52	15	Cir	0.013	1.50	395.94	CB55-CB56
11	10	27.0	90.3	Comb	0.00	0.10	0.50	5.0	391.72	0.93	391.97	15	Cir	0.013	1.00	395.94	CB54-CB55
12	9	26.0	-4.9	DrGrt	0.00	1.54	0.50	7.0	380.87	0.50	381.00	24	Cir	0.013	1.00	384.00	CB92-CB57

Project File: JDP South line C.stm | Number of lines: 12 | Date: 08-26-2020

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)	Dns line No.
1	CB62-FES63	8.37	24 c	79.6	374.80	377.78	3.742	375.82	378.80	0.62	End
2	CB60-CB62	7.97	24 c	111.1	377.98	378.54	0.504	379.43	379.56	0.57	1
3	CB61-CB60	0.36	15 c	27.0	378.74	386.49	28.704	380.13	386.73	0.07	2
4	CB59-CB60	7.65	24 c	176.8	378.74	379.62	0.498	380.13	380.60	0.58	2
5	CB65-CB59	1.04	15 c	173.0	387.63	388.69	0.613	388.02	389.10	0.21	4
6	CB64-CB65	0.54	15 c	27.0	388.89	389.05	0.592	389.31	389.35	0.09	5
7	CB58-CB59	6.50	24 c	27.0	379.82	379.96	0.518	381.18	381.19	0.18	4
8	CB56-CB58	6.19	24 c	35.6	380.16	380.33	0.477	381.37	381.38	0.27	7
9	CB57-CB56	5.43	24 c	24.6	380.53	380.67	0.569	381.65	381.64	0.10	8
10	CB55-CB56	1.02	15 c	170.8	380.53	391.52	6.436	381.65	391.92	0.21	8
11	CB54-CB55	0.36	15 c	27.0	391.72	391.97	0.926	392.13	392.21	0.07	10
12	CB92-CB57	5.15	24 c	26.0	380.87	381.00	0.499	381.74	381.81	0.29	9

Project File: JDP South line C.stm | Number of lines: 12 | Run Date: 08-26-2020

NOTES: c = circular; e = elliptical; b = box; Return period = 10 Yrs.; * Indicates surcharge condition.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	79.6	0.20	2.96	0.50	0.10	1.48	5.0	12.0	5.7	8.37	43.75	5.17	24	3.74	377.78	374.80	378.80	375.82	389.46	0.00	CB62-FES63
2	1	111.1	0.10	2.76	0.50	0.05	1.38	5.0	11.4	5.8	7.97	16.06	4.11	24	0.50	378.54	377.98	379.56	379.43	390.65	389.46	CB60-CB62
3	2	27.0	0.10	0.10	0.50	0.05	0.05	5.0	5.0	7.2	0.36	34.60	1.24	15	28.70	386.49	378.74	386.73	380.13	390.65	390.65	CB61-CB60
4	2	176.8	0.10	2.56	0.50	0.05	1.28	5.0	10.3	6.0	7.65	15.96	4.14	24	0.50	379.62	378.74	380.60	380.13	391.93	390.65	CB59-CB60
5	4	173.0	0.15	0.30	0.50	0.08	0.15	5.0	6.0	6.9	1.04	5.05	3.10	15	0.61	388.69	387.63	389.10	388.02	393.19	391.93	CB65-CB59
6	5	27.0	0.15	0.15	0.50	0.08	0.08	5.0	5.0	7.2	0.54	4.97	1.97	15	0.59	389.05	388.89	389.35	389.31	393.19	393.19	CB64-CB65
7	4	27.0	0.12	2.16	0.50	0.06	1.08	5.0	10.1	6.0	6.50	16.29	3.03	24	0.52	379.96	379.82	381.19	381.18	391.93	391.93	CB58-CB59
8	7	35.6	0.10	2.04	0.50	0.05	1.02	5.0	9.8	6.1	6.19	15.62	3.41	24	0.48	380.33	380.16	381.38	381.37	392.54	391.93	CB56-CB58
9	8	24.6	0.10	1.64	0.50	0.05	0.82	5.0	7.3	6.6	5.43	17.06	3.30	24	0.57	380.67	380.53	381.64	381.65	392.52	392.54	CB57-CB56
10	8	170.8	0.20	0.30	0.50	0.10	0.15	5.0	6.5	6.8	1.02	16.38	1.93	15	6.44	391.52	380.53	391.92	381.65	395.94	392.54	CB55-CB56
11	10	27.0	0.10	0.10	0.50	0.05	0.05	5.0	5.0	7.2	0.36	6.21	1.61	15	0.93	391.97	391.72	392.21	392.13	395.94	395.94	CB54-CB55
12	9	26.0	1.54	1.54	0.50	0.77	0.77	7.0	7.0	6.7	5.15	15.98	4.13	24	0.50	381.00	380.87	381.81	381.74	384.00	392.52	CB92-CB57

Project File: JDP South line C.stm

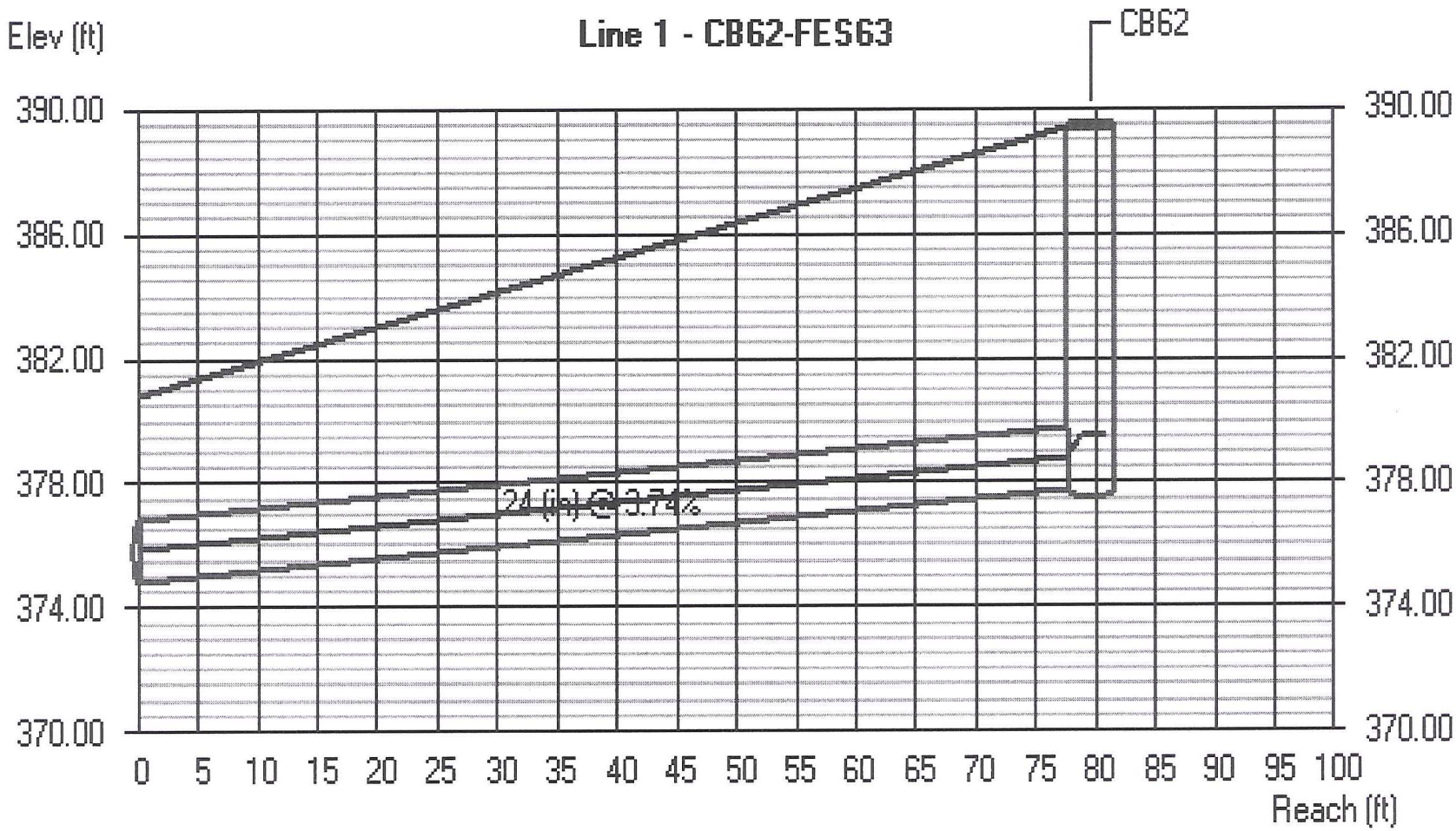
Number of lines: 12

Run Date: 08-26-2020

NOTES: Intensity = 105.70 / (Inlet time + 16.80) ^ 0.87; Return period = 10 Yrs.

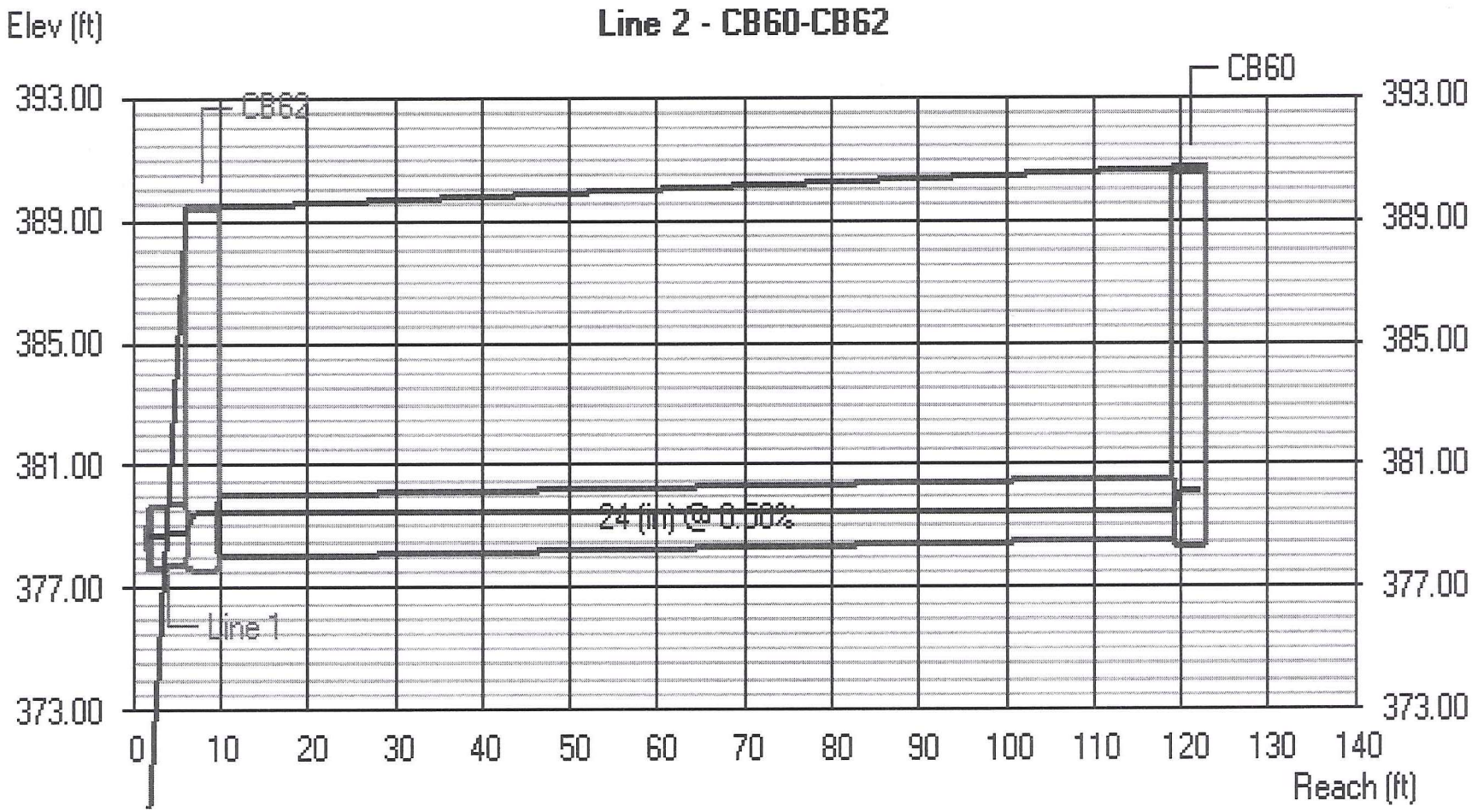
Storm Sewer Profile

Proj. file: JDP South line C.stm



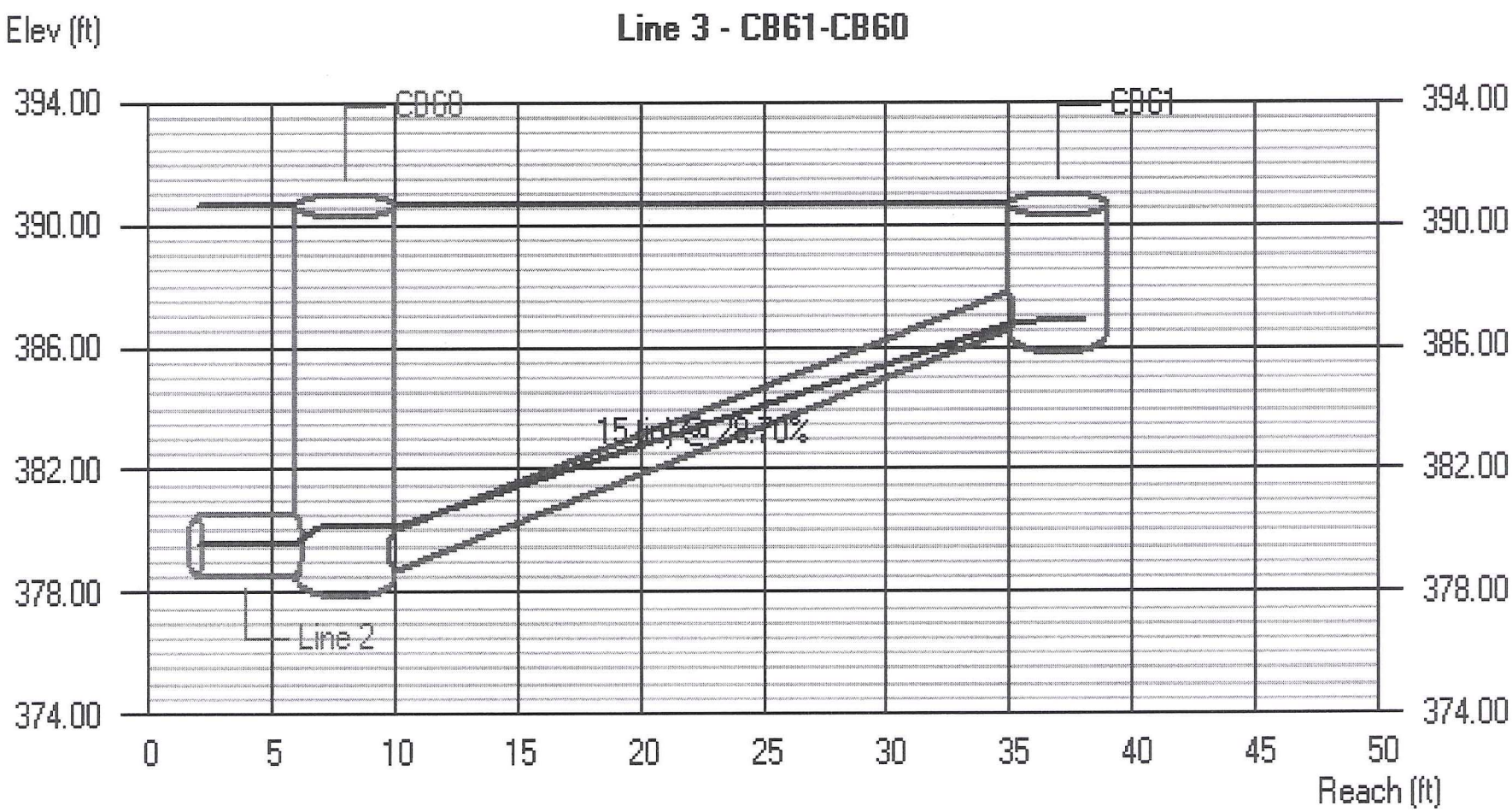
Storm Sewer Profile

Proj. file: JDP South line C.stm



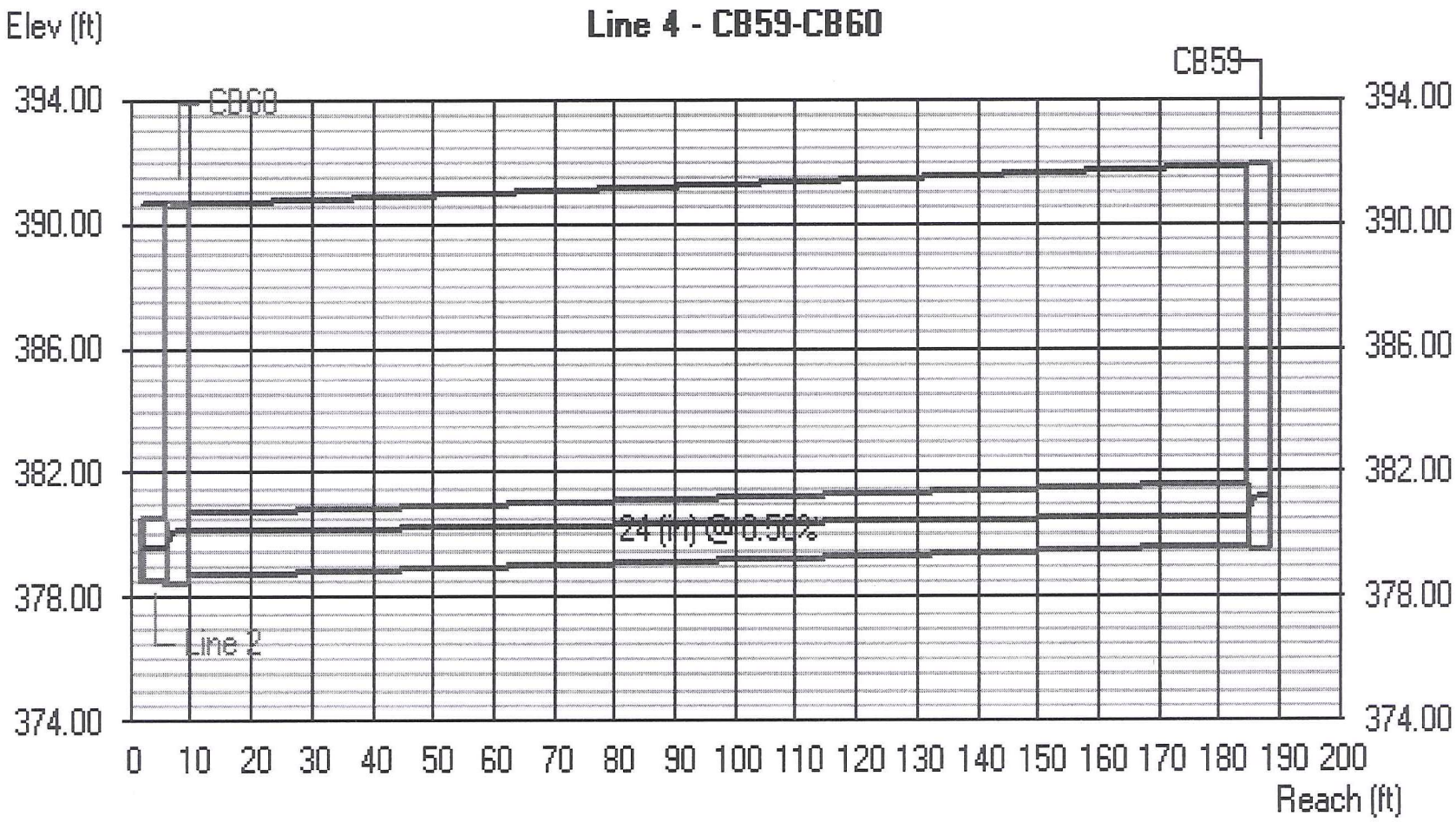
Storm Sewer Profile

Proj. file: JDP South line C.stm



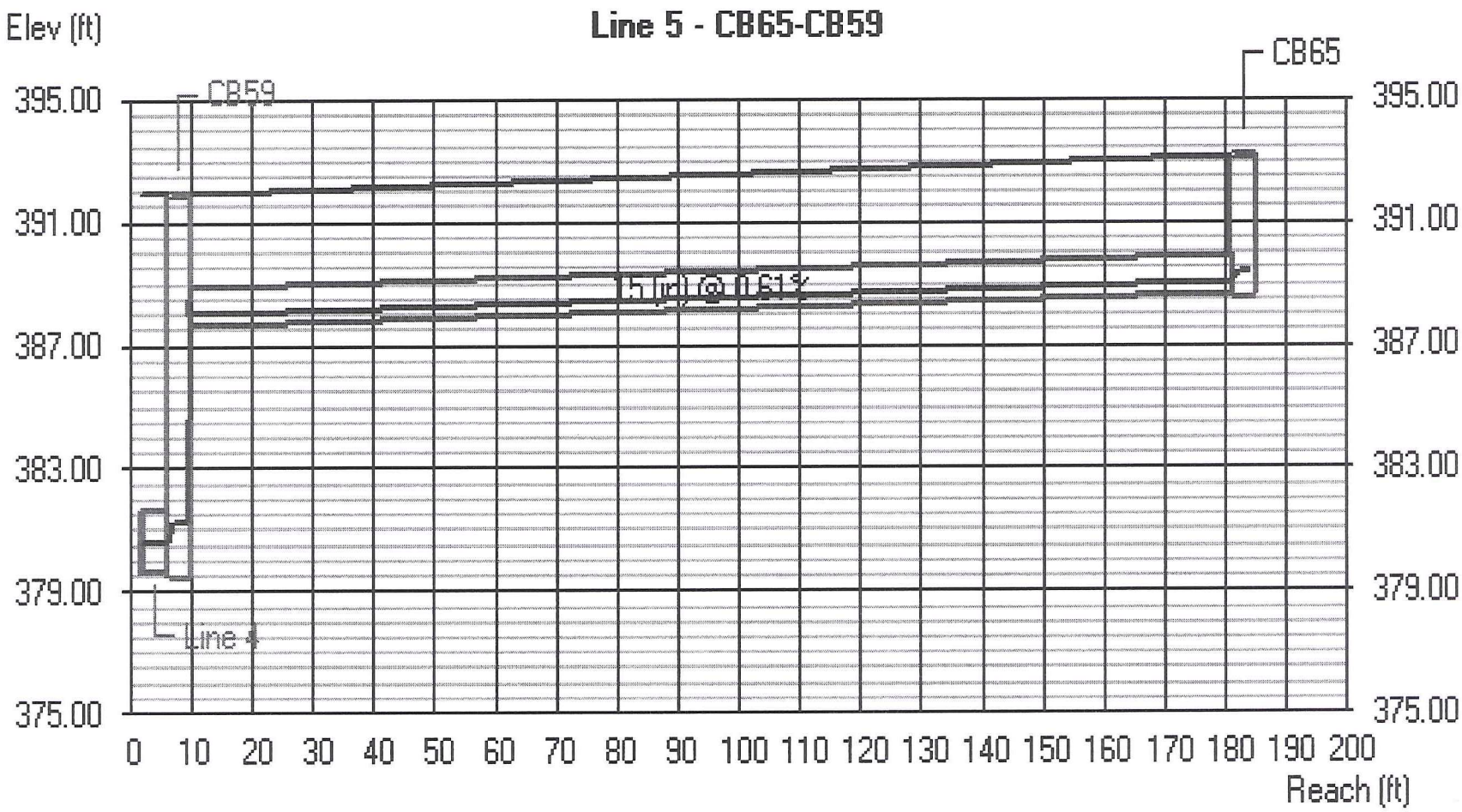
Storm Sewer Profile

Proj. file: JDP South line C.stm



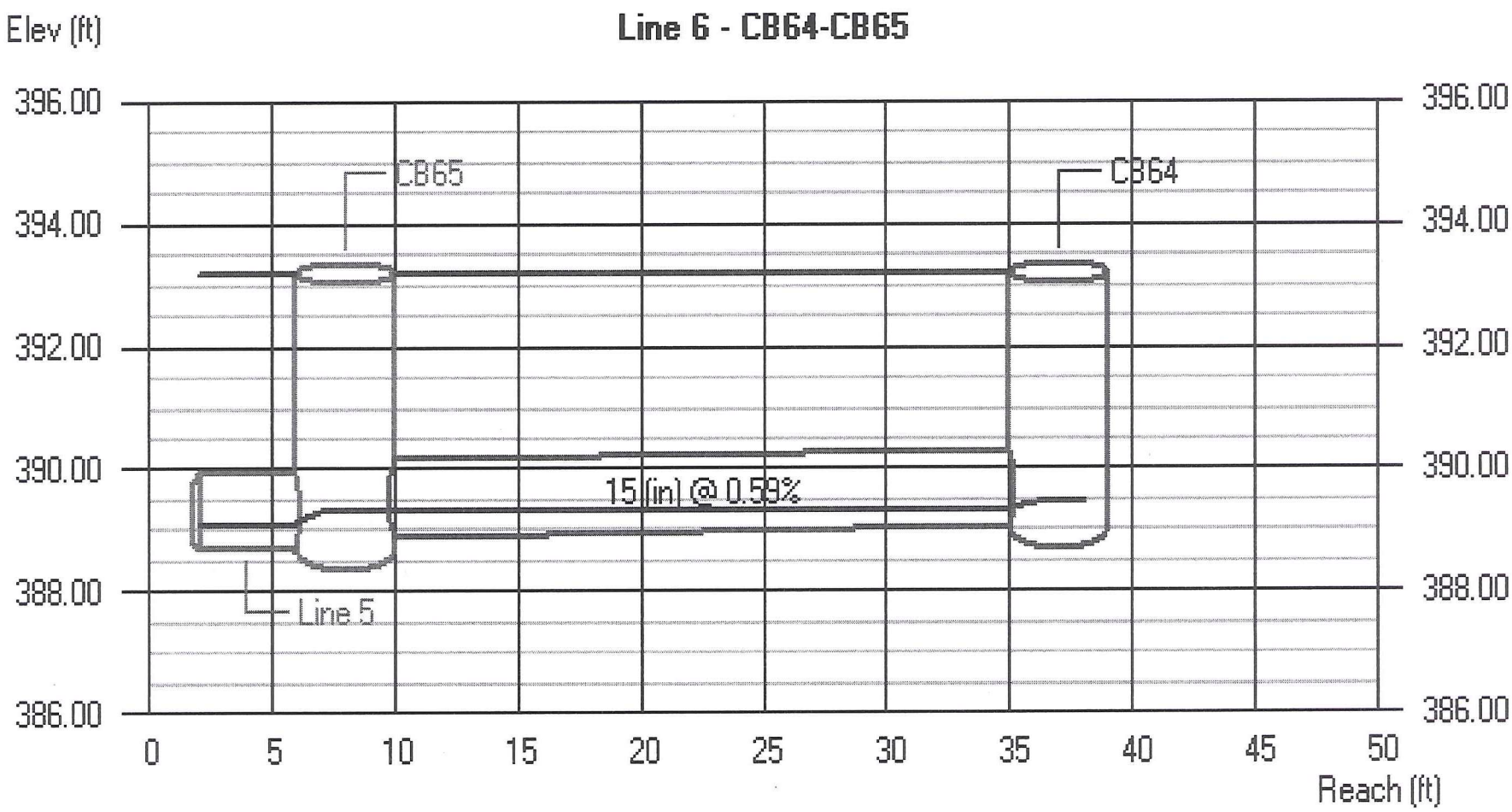
Storm Sewer Profile

Proj. file: JDP South line C.stm



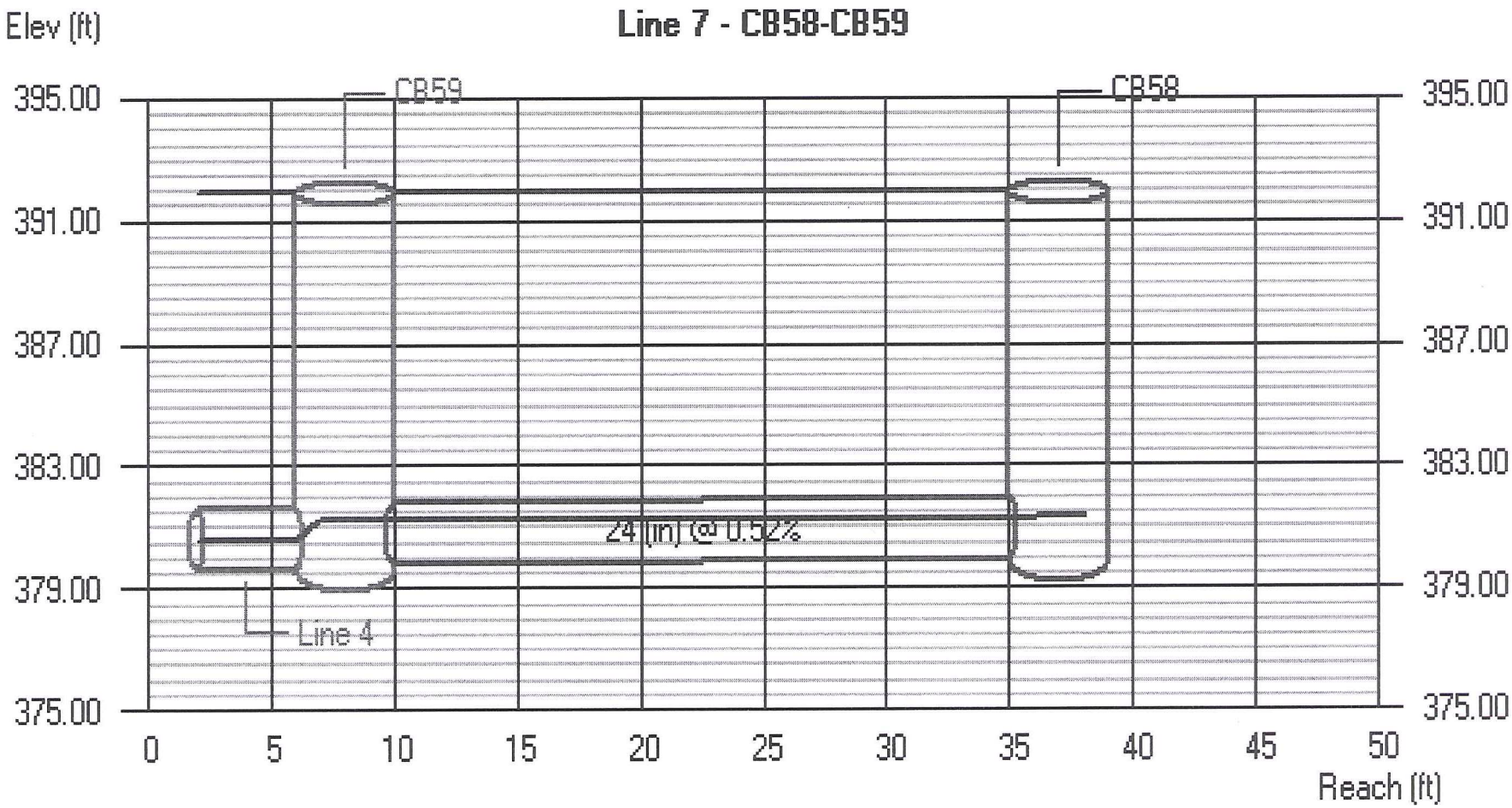
Storm Sewer Profile

Proj. file: JDP South line C.stm



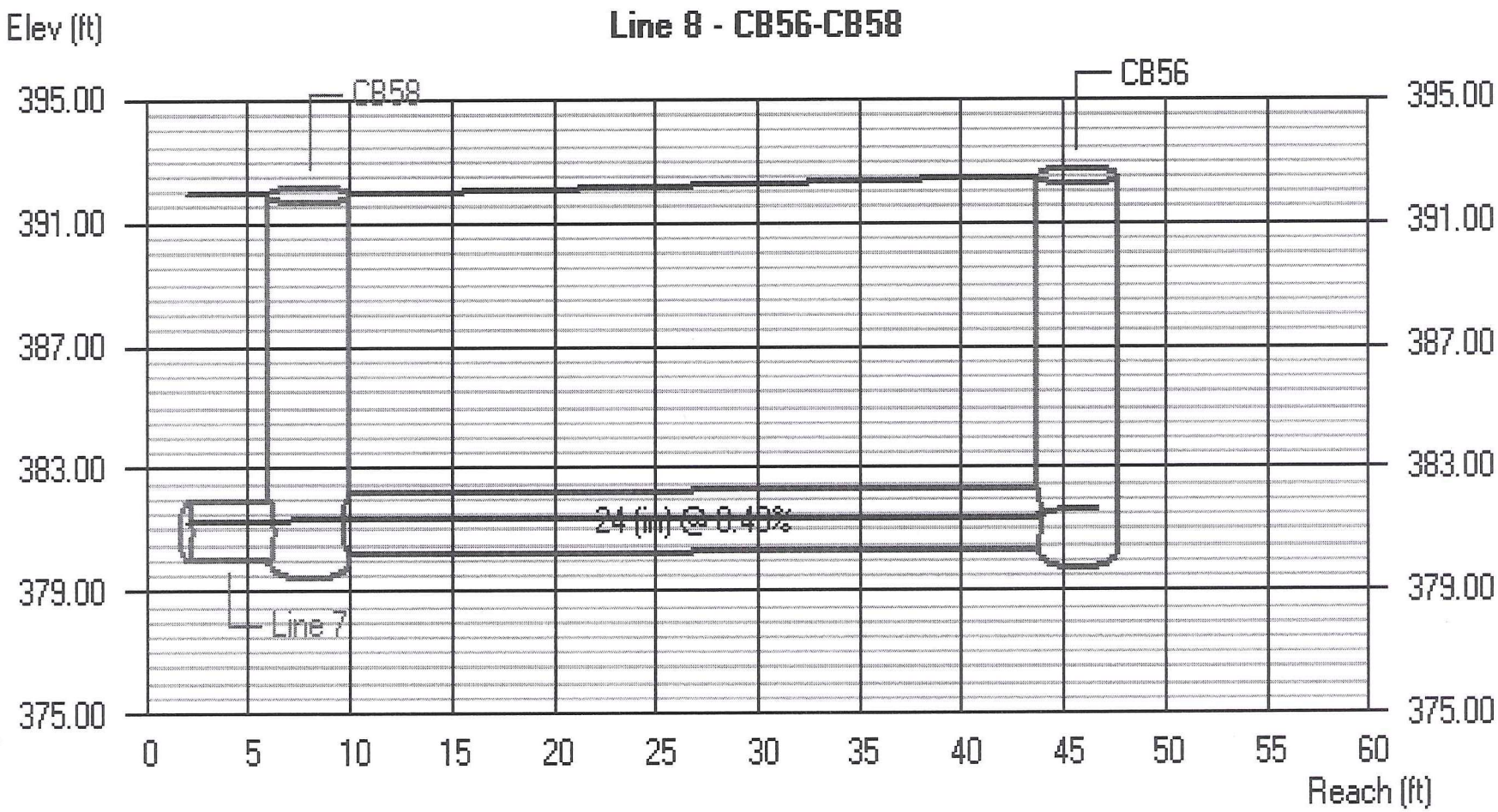
Storm Sewer Profile

Proj. file: JDP South line C.stm



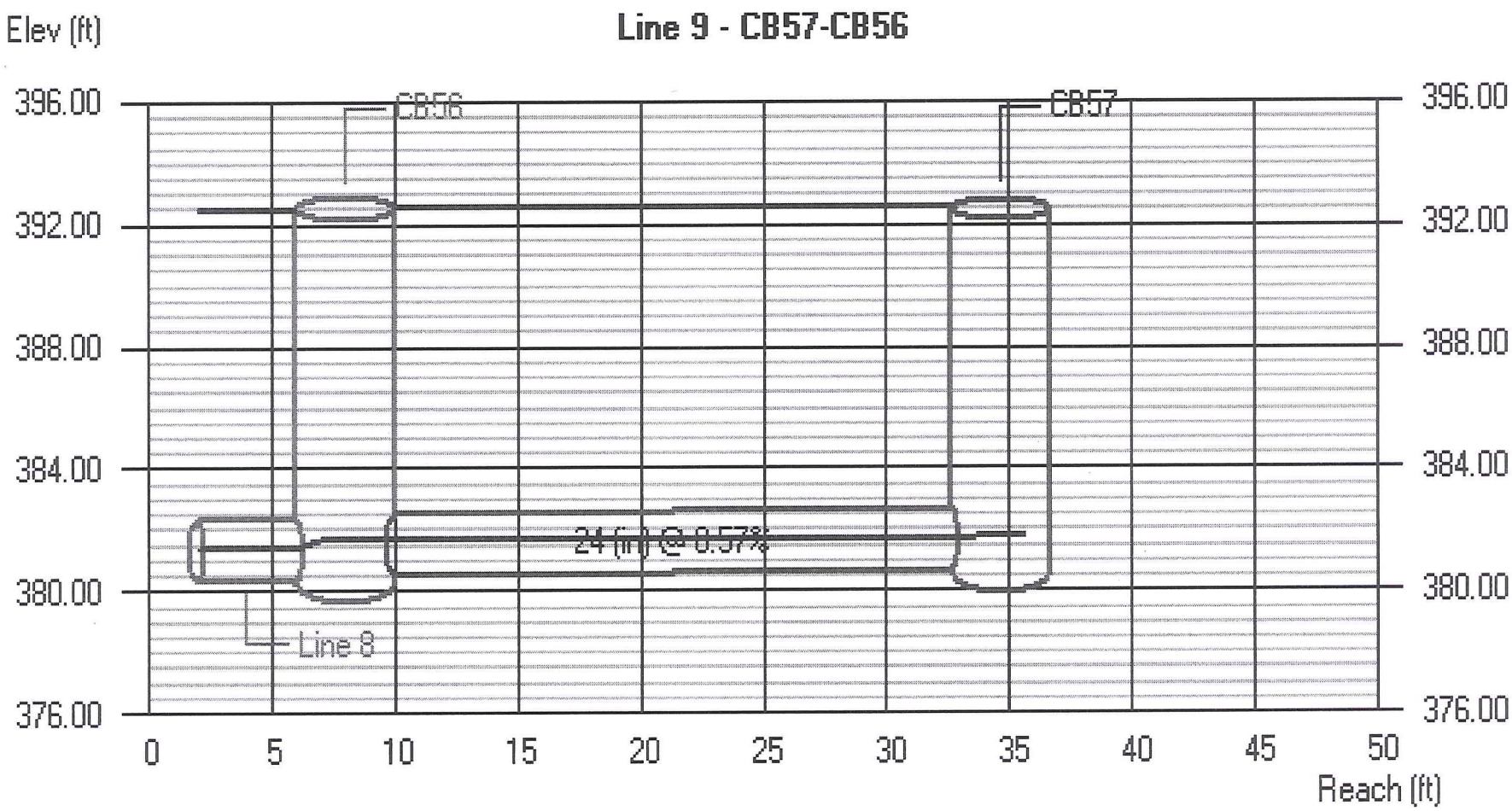
Storm Sewer Profile

Proj. file: JDP South line C.stm



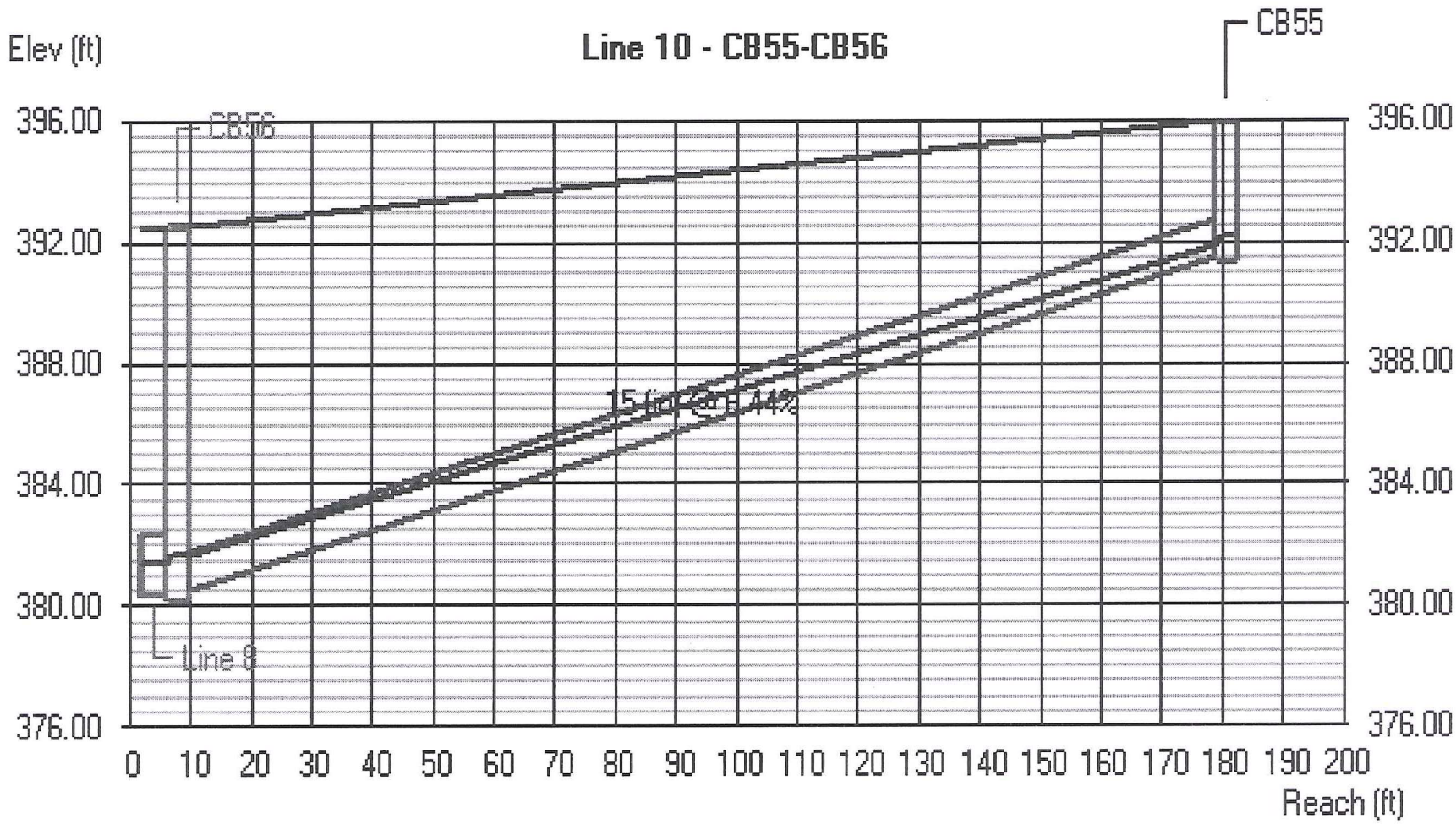
Storm Sewer Profile

Proj. file: JDP South line C.stm



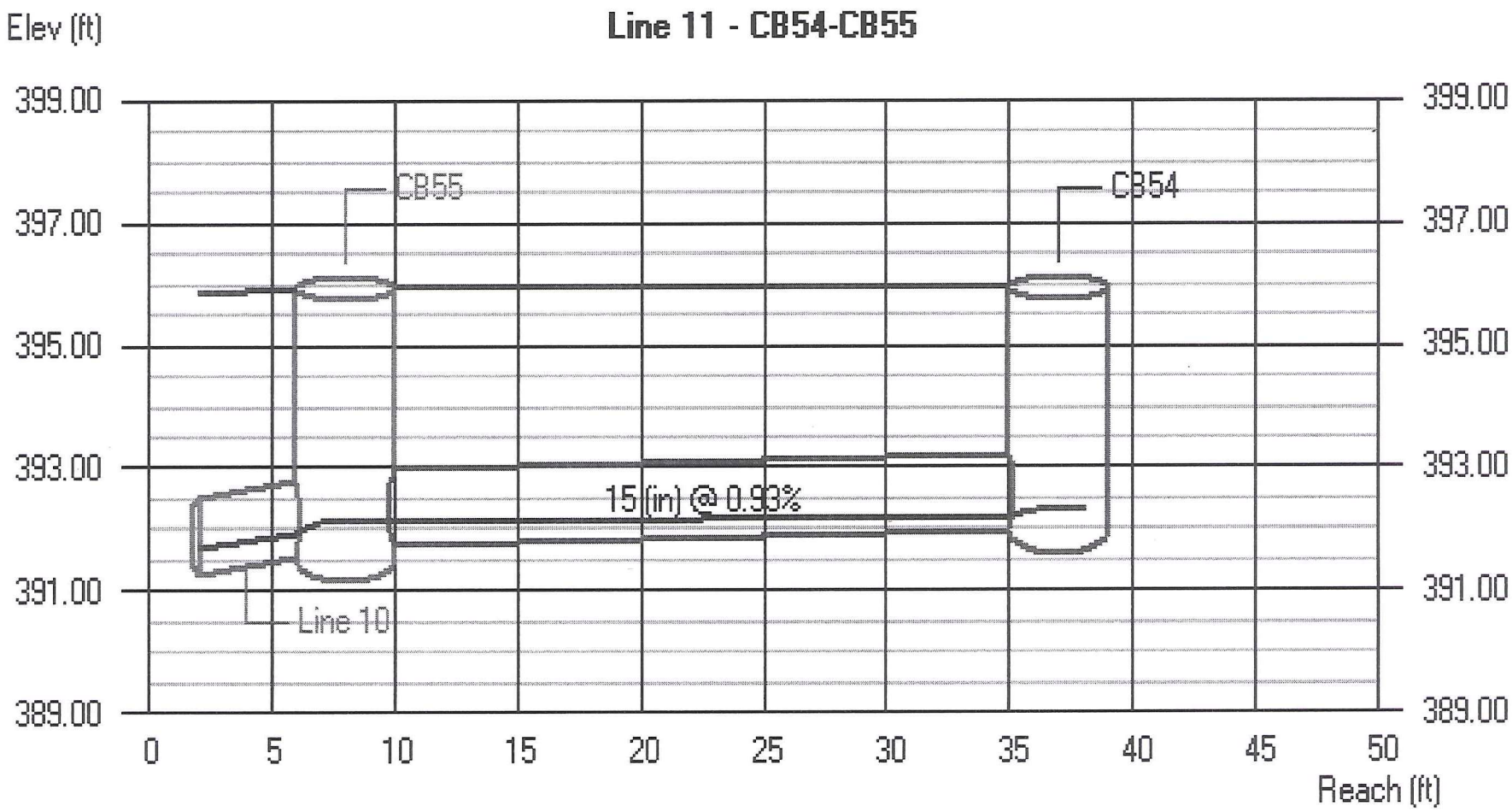
Storm Sewer Profile

Proj. file: JDP South line C.stm



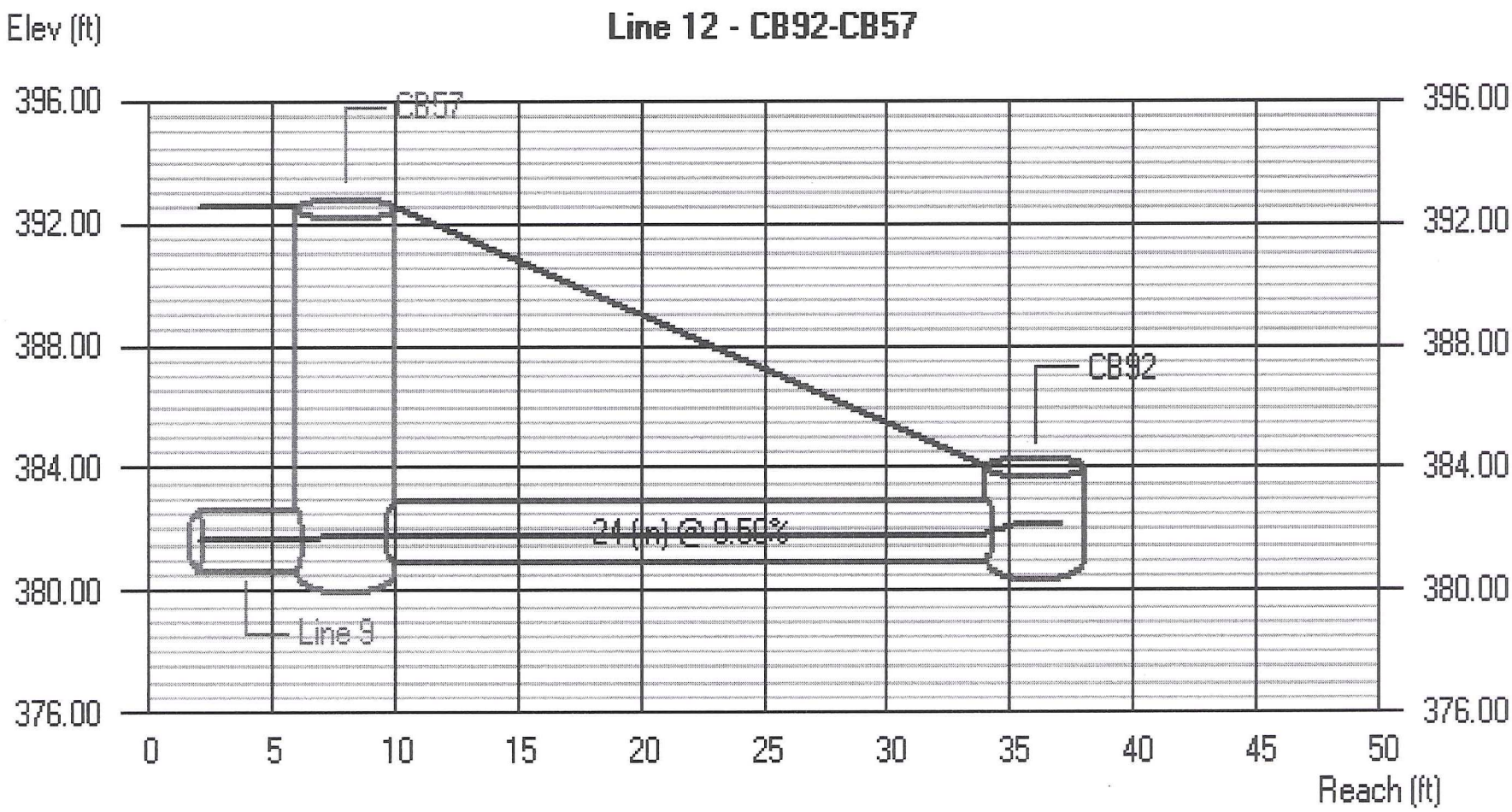
Storm Sewer Profile

Proj. file: JDP South line C.stm



Storm Sewer Profile

Proj. file: JDP South line C.stm



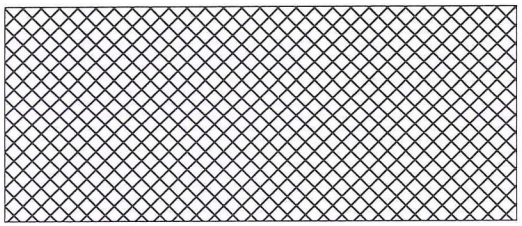
Inlet Section (Line 1 - Combination Inlet)

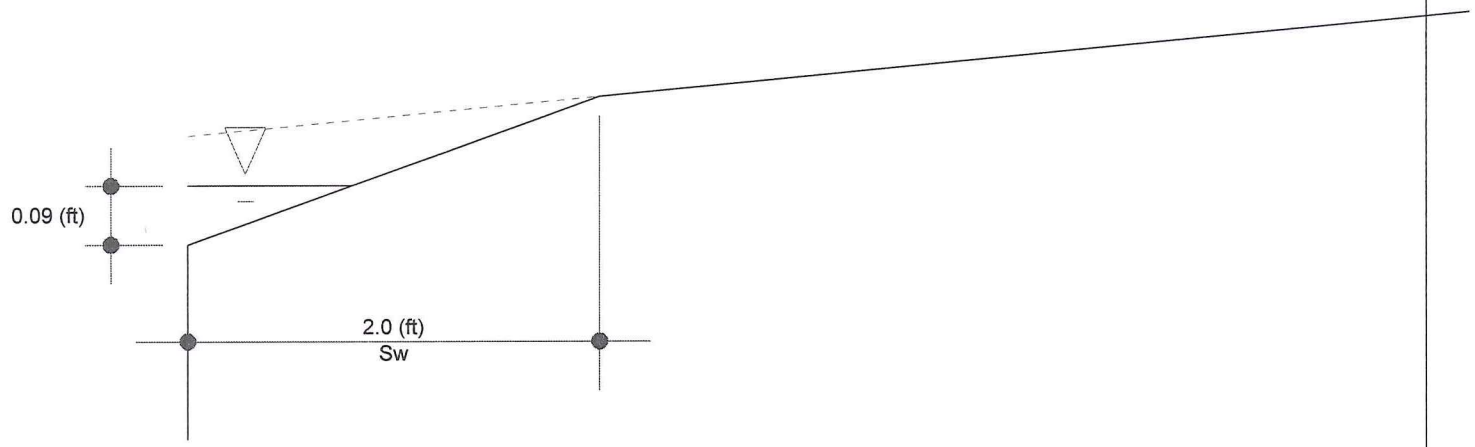
Inlet Flows

Q Catchment =	0.58 (cfs)
Q Carryover =	0.00
Q Total =	0.58
Q Captured =	0.58
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.79 (ft)





Inlet Section

CB62

Project file: JDP South line C.stm	08-26-2020

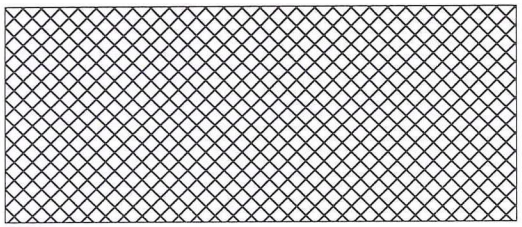
Inlet Section (Line 2 - Combination Inlet)

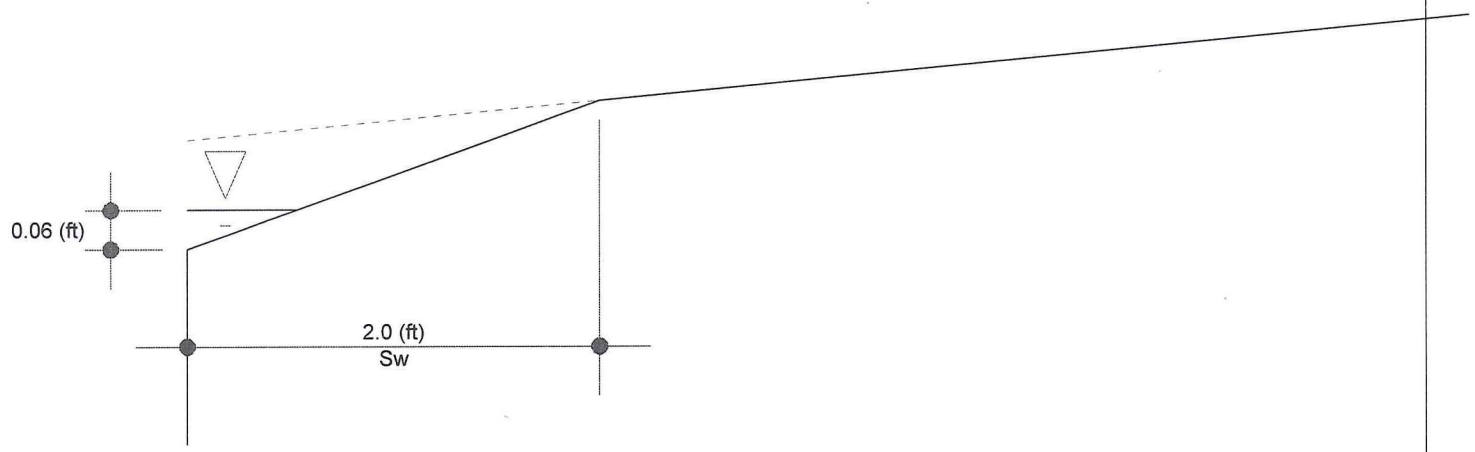
Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)





Inlet Section

CB60

Project file: JDP South line C.stm

08-26-2020

Hydraflow Storm Sewers 2003

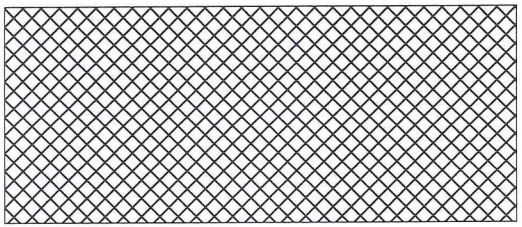
Inlet Section (Line 3 - Combination Inlet)

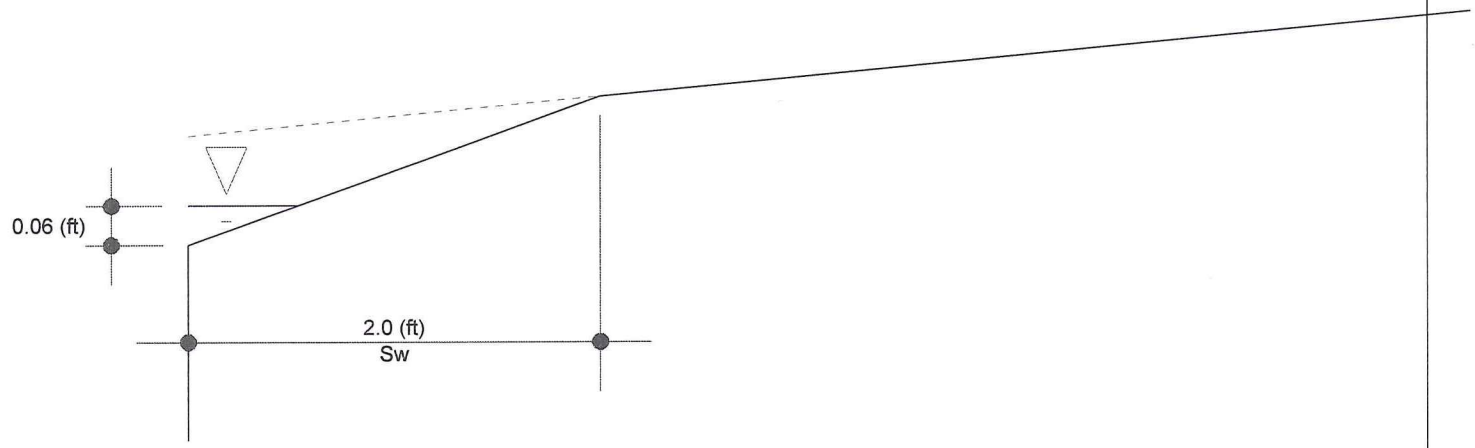
Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)





Inlet Section

CB61

Project file: JDP South line C.stm

08-26-2020

Hydraflow Storm Sewers 2003

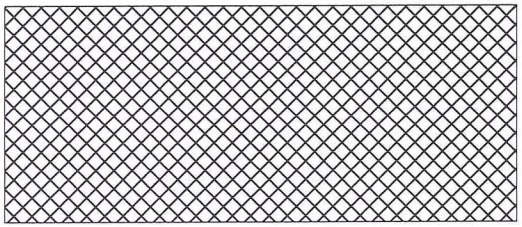
Inlet Section (Line 4 - Combination Inlet)

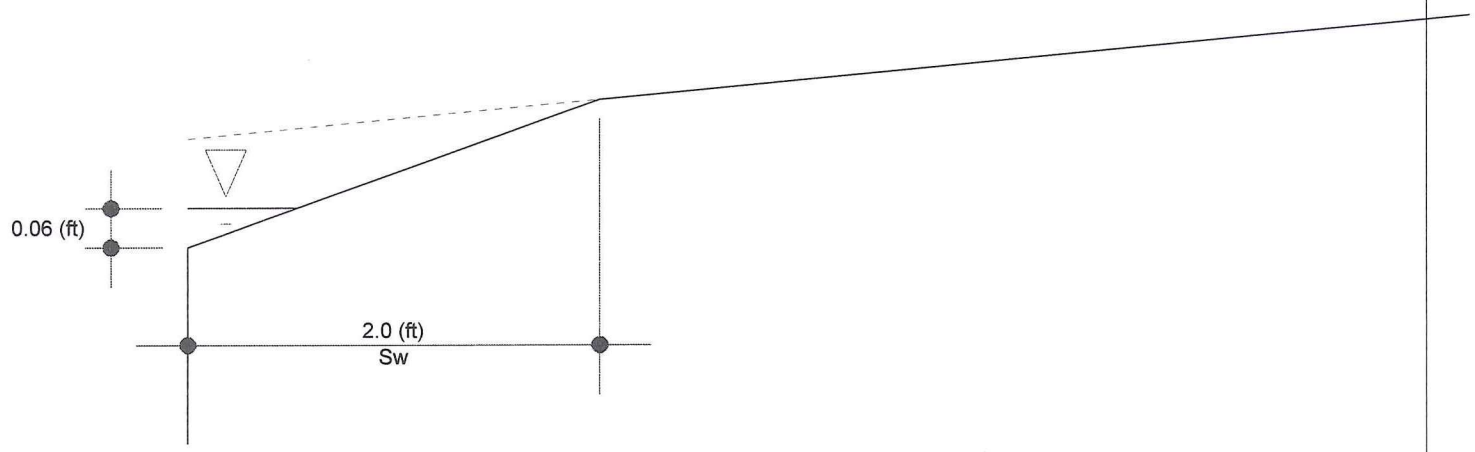
Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)





Inlet Section

CB59

Project file: JDP South line C.stm

08-26-2020

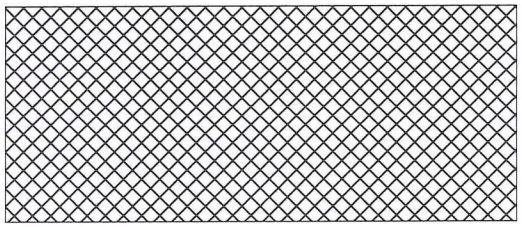
Inlet Section (Line 5 - Combination Inlet)

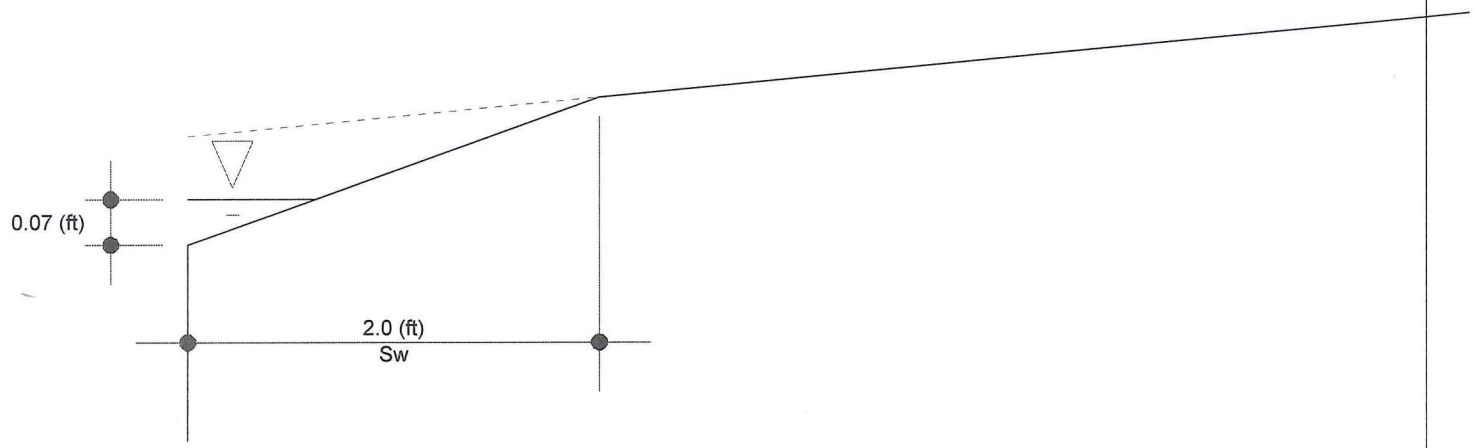
Inlet Flows

Q Catchment =	0.43 (cfs)
Q Carryover =	0.00
Q Total =	0.43
Q Captured =	0.43
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.62 (ft)





Inlet Section

CB65

Project file: JDP South line C.stm

08-26-2020

Hydraflow Storm Sewers 2003

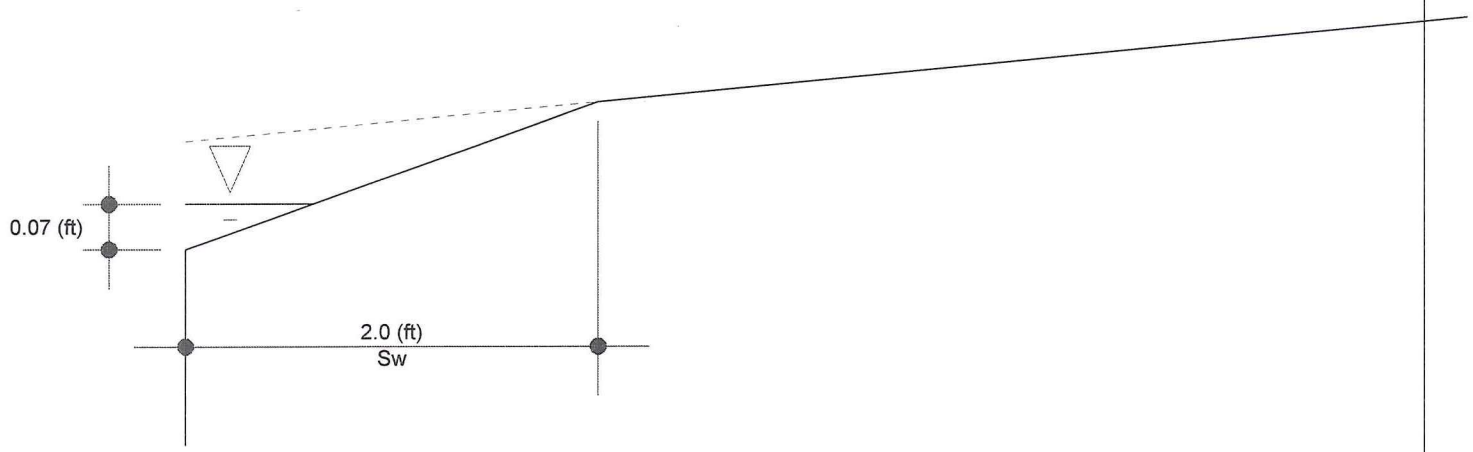
Inlet Section (Line 6 - Combination Inlet)

Inlet Flows

Q Catchment =	0.43 (cfs)
Q Carryover =	0.00
Q Total =	0.43
Q Captured =	0.43
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.62 (ft)



Inlet Section

CB64

Project file: JDP South line C.stm

08-26-2020

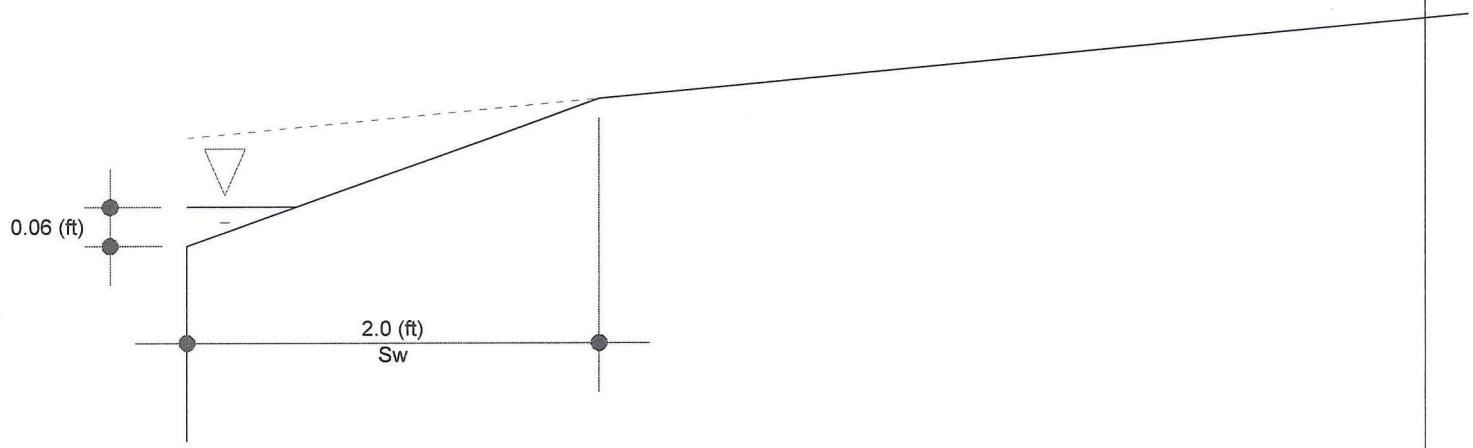
Inlet Section (Line 7 - Combination Inlet)

Inlet Flows

Q Catchment =	0.35 (cfs)
Q Carryover =	0.00
Q Total =	0.35
Q Captured =	0.35
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)



Inlet Section

CB58

Project file: JDP South line C.stm

08-26-2020

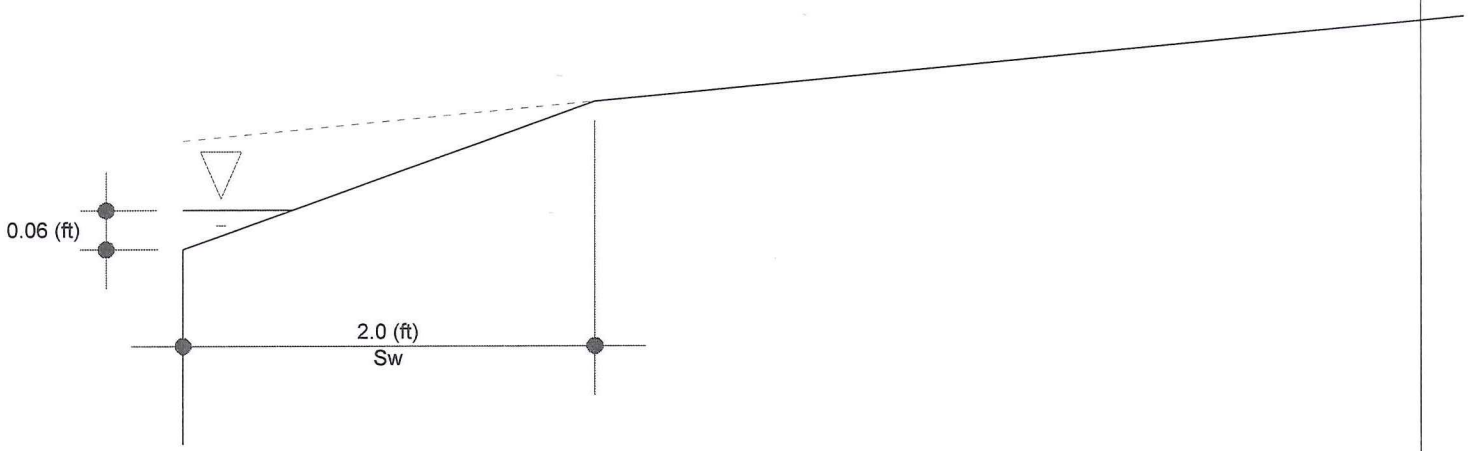
Inlet Section (Line 8 - Combination Inlet)

Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)



Inlet Section

CB56

Project file: JDP South line C.stm

08-26-2020

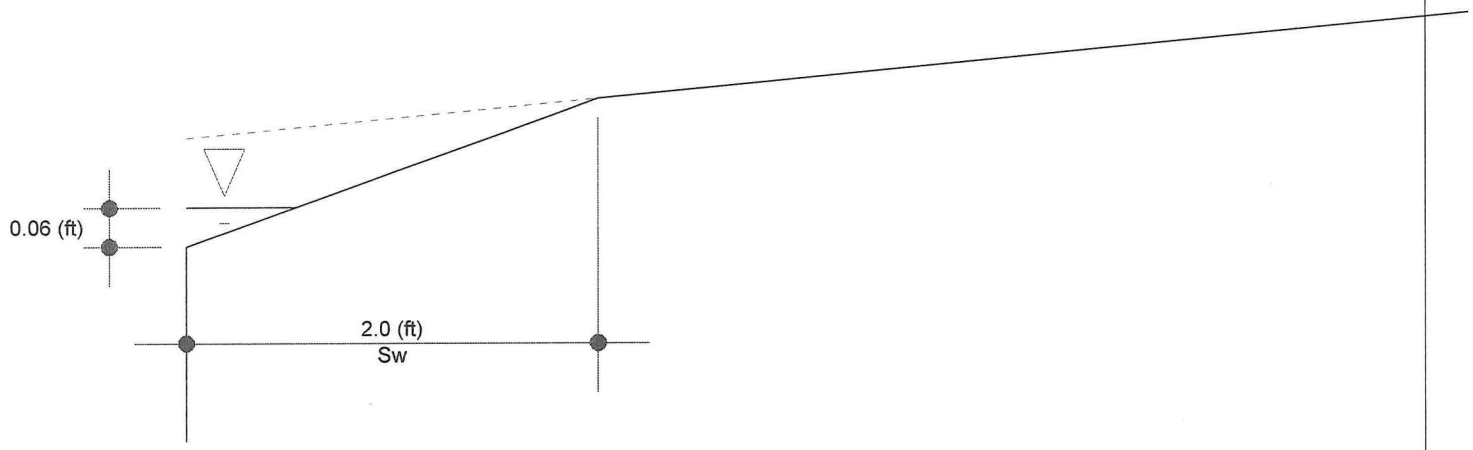
Inlet Section (Line 9 - Combination Inlet)

Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.53 (ft)



Inlet Section

CB57

Project file: JDP South line C.stm

08-26-2020

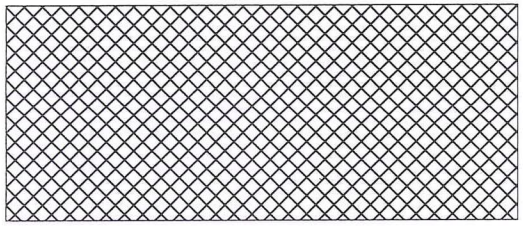
Inlet Section (Line 10 - Combination Inlet)

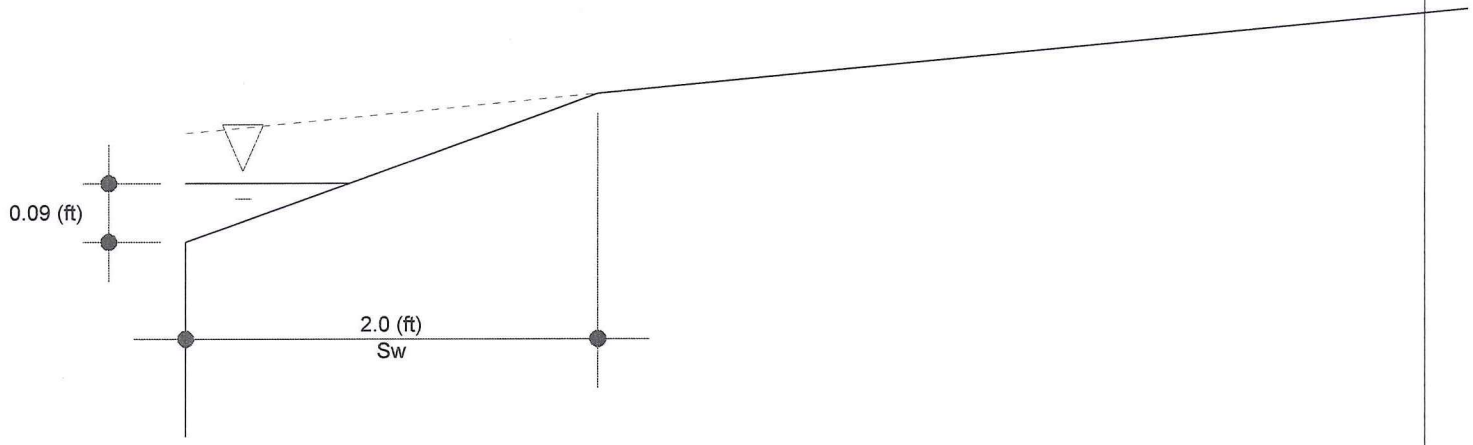
Inlet Flows

Q Catchment =	0.58 (cfs)
Q Carryover =	0.00
Q Total =	0.58
Q Captured =	0.58
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	2.00 (in)
Spread width, T =	0.79 (ft)





Inlet Section

CB55

Project file: JDP South line C.stm

08-26-2020

Hydraflow Storm Sewers 2003

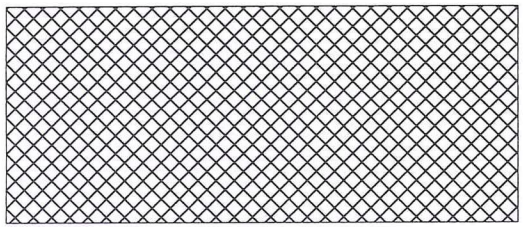
Inlet Section (Line 11 - Combination Inlet)

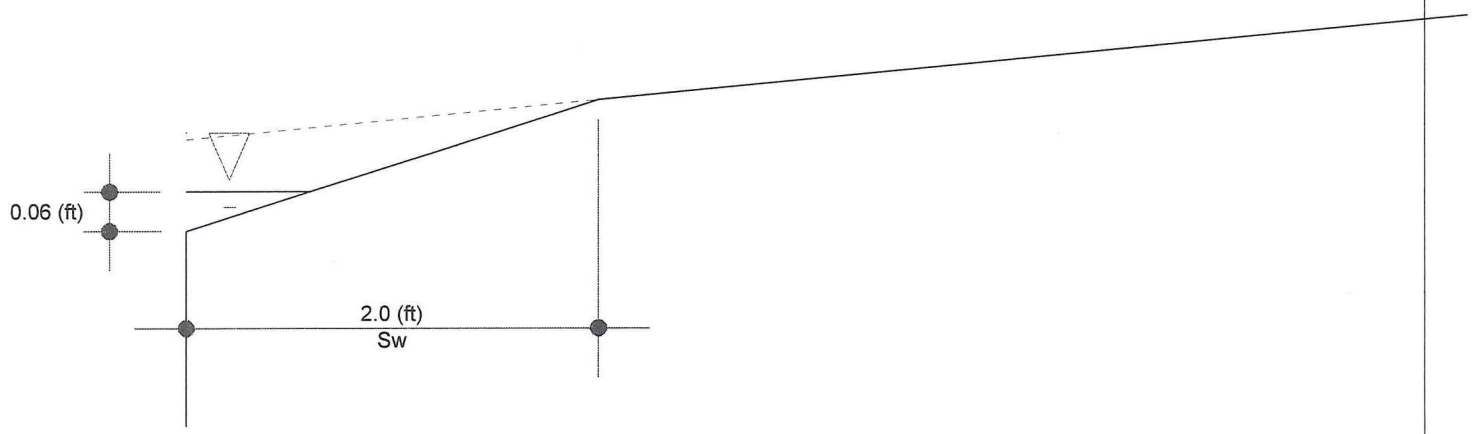
Inlet Flows

Q Catchment =	0.29 (cfs)
Q Carryover =	0.00
Q Total =	0.29
Q Captured =	0.29
Q Bypassed =	0.00

Gutter

Gutter Width =	2.00 (ft)
Gutter Slope =	Sag
Cross Slope, Sw =	0.100 (ft/ft)
Cross Slope, Sx =	0.030 (ft/ft)
Loc. Depression =	0.00 (in)
Spread width, T =	0.60 (ft)





Inlet Section

CB54

Project file: JDP South line C.stm	08-26-2020