



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 23, 2001

Mr. Chris Weiss, P.E.
C.L. Weiss Engineering
P.O. Box 987
Sandia Park, NM 87047

**RE: Grading and Drainage Plan for Seavey - Journal Center, Tract A1-2-A-2,
Journal Center, (D-17/D003V2), Engineer stamp dated 7/20/01.**

Dear Mr. Weiss,

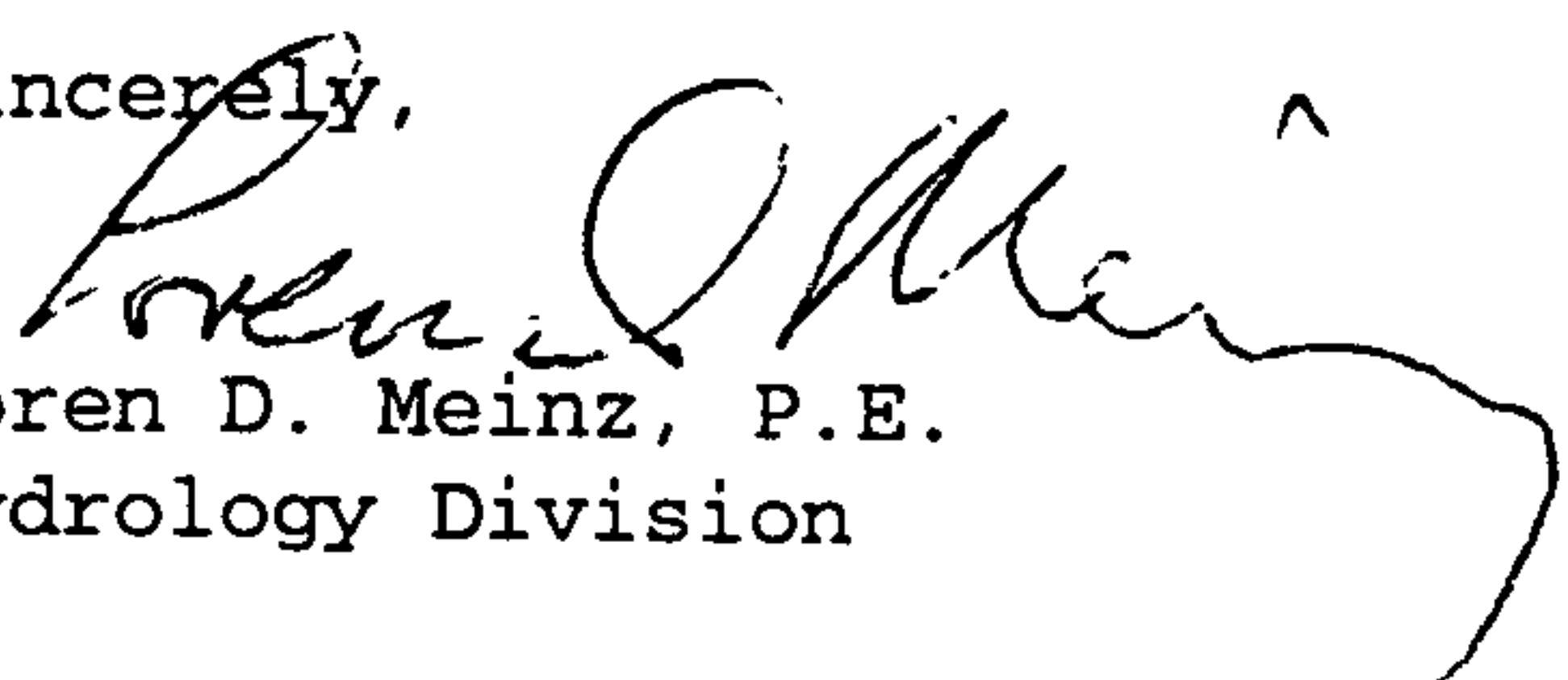
The referenced Grading and Drainage Plan is approved for Building Permit.

The storm drain pipe is a public storm sewer, and will require DRC approval and approved Work Order prior to construction.

Prior to release of the Certificate of Occupancy, Engineer's Certification of the grading and drainage plan per the DPM checklist is required by Hydrology.

If you have any questions or if I can be of further assistance, please call me at 924-3980.

Sincerely,


Loren D. Mainz, P.E.
Hydrology Division

c: Terri Martin
file



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 26, 2001

Mr. Chris Weiss, P.E.
C.L. Weiss Engineering
P.O. Box 987
Sandia Park, NM 87047

**RE: Grading and Drainage Plan for Seavey - Journal Center, Tract A1-2-A-2,
Journal Center, (D-17/D003V2), Engineer stamp dated 6/25/01.**

Dear Mr. Weiss,

The referenced Grading and Drainage Plan is approved for Site Plan for Building Permit action by the DRB.

Prior to issuance of Building Permit, please make the following corrections on the plan.

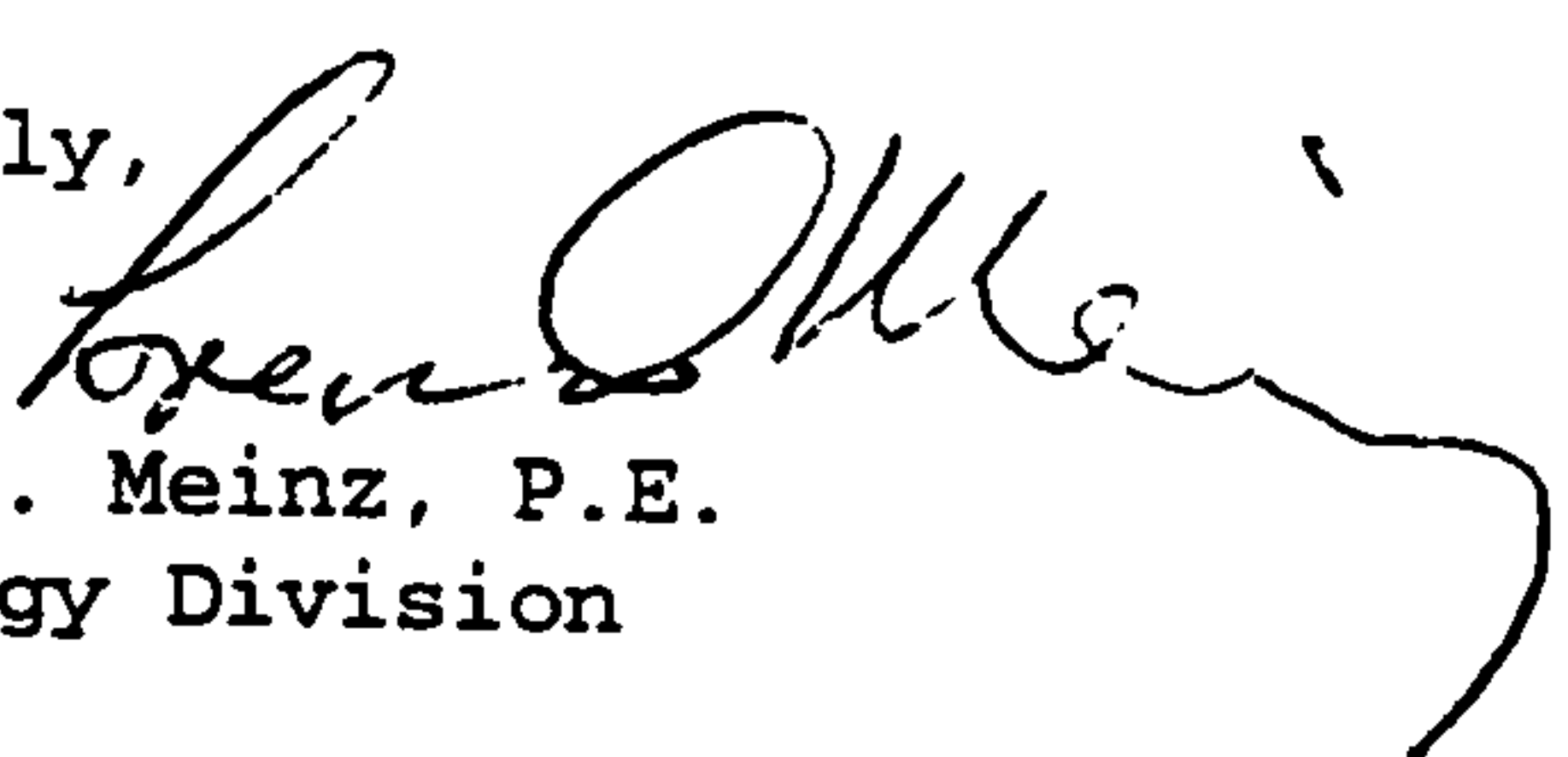
1. On note 15, remove the pipe produce manufacturer name. The pipe product should specify HDPE smooth-flow pipe with rubber gasket bell and spigot joints, conforming to NMSHTD standard specifications.
2. Install a 6' dia. Std city manhole at the junction of the 24" and 48" pipes.

The storm drain pipe is a public storm sewer, and will require DRC approval and approved Work Order prior to construction.

Prior to release of the Certificate of Occupancy, Engineer's Certification of the grading and drainage plan per the DPM checklist is required by Hydrology.

If you have any questions or if I can be of further assistance, please call me at 924-3980.

Sincerely,


Loren D. Mainz, P.E.
Hydrology Division

c: Terri Martin
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CALCULATIONS: Journal Center : June 25, 2001

Calculations are based on the Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

ON-SITE

AREA OF SITE:	76230	SF	=	1.75	Ac
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HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	76230	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	76230	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	17000	SF
Area c	=	0	SF
Area d	=	78% 59230	SF
Total Area	=	76230	SF

EXCESS PRECIPITATION:

Precip Zone	2
Ea	= 0.53
Eb	= 0.78
Ec	= 1.13
Ed	= 2.12

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.53 in	Developed E	=	1.82 in
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On-Site Volume of Runoff V360 = $E \cdot A / 12$

Historic V360	=	3367 CF	Developed V360	=	11569 CF
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On-Site Peak Discharge Rate: $Qp = QpaAa + QpbAb + QpcAc + QpdAd / 43,560$

For Precipitation Zone 2

Qpa	=	1.56	Qpc	=	3.14
Qpb	=	2.28	Qpd	=	4.70

Historic Qp	=	2.7 CFS	Developed Qp	=	7.3 CFS
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4.17 cfs/ac.

SUB-BASIN 1 - DISCHARGE TO NORTH INLET

Area of sub-basin flows	=	42090 SF	=	1.0 Ac
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The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E	=	1.92 in
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Sub-basin Volume of Runoff (see formula above)

V360	=	6731 CF
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Sub-basin Peak Discharge Rate (see formula above)

Qp	=	4.2 cfs
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TREATMENT	
A	= 0%
B	= 15%
C	= 0%
D	= 85% ? ok

SUB-BASIN 2 - DISCHARGE TO SOUTH INLET / STORM DRAIN

Area of sub-basin flows	=	24775 SF	=	0.6 Ac
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The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E	=	1.92 in
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Sub-basin Volume of Runoff (see formula above)

V360	=	3962 CF
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Sub-basin Peak Discharge Rate (see formula above)

Qp	=	2.5 cfs
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TREATMENT	
A	= 0%
B	= 15%
C	= 0%
D	= 85% ? ok

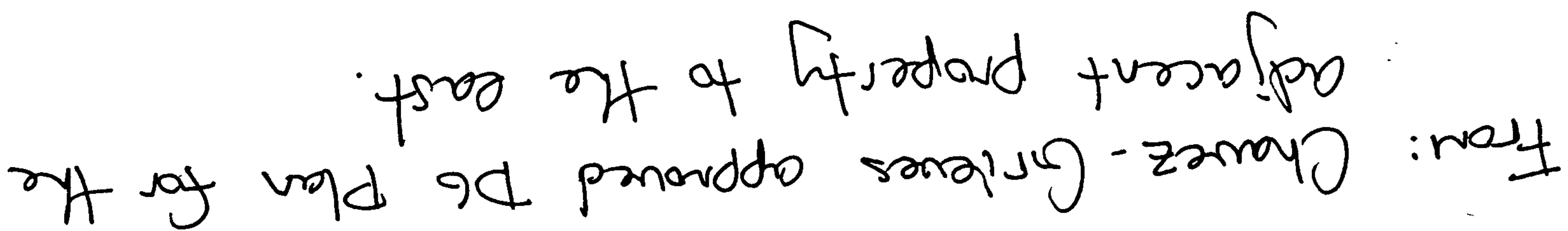
ALBUQUERQUE GRATE CAPACITY CALCULATIONSusing orifice equation $Q = CA \cdot (2gh)^{0.5}$

C	=	0.6
A	=	4.80
g	=	32.2
h	=	0.5
Q	=	16.34
Clogging Factor	=	50%
Qclog	=	8.17

Note: Area (A) at left, is based on the open area of a single COA Albuquerque Grate. Based on calculations shown, a single inlet with a head (h) of 0.5 ft will accept 16.34 cfs. If the inlet becomes 50% clogged, at an h = 0.5, the inlet will accept 8.17 cfs.

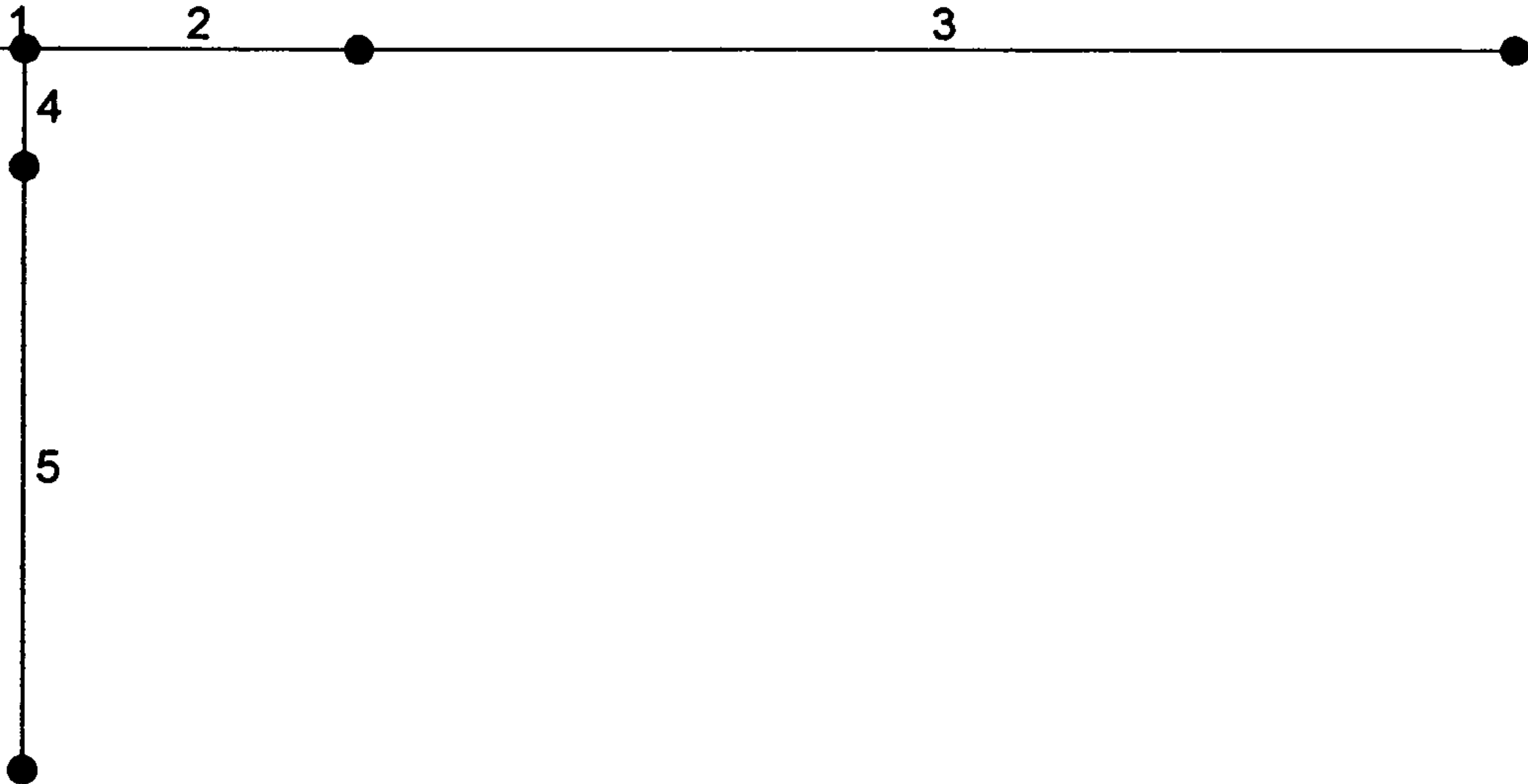
Note: The above calculations references 0.5' head. The following chart refers to head values from 0.1' to 1.0' for additional info

h = 0.1'	→	7.31 cfs	h = 0.6'	→	17.90 cfs
h = 0.2'	→	10.34 cfs	h = 0.7'	→	19.34 cfs
h = 0.3'	→	12.66 cfs	h = 0.8'	→	20.67 cfs
h = 0.4'	→	14.62 cfs	h = 0.9'	→	21.93 cfs
h = 0.5'	→	16.34 cfs	h = 1.0'	→	23.11 cfs

$$10\epsilon = 1$$


adjacent property to the east.

Hydraflow Plan View



Hydraflow Storm Sewer Tabulation

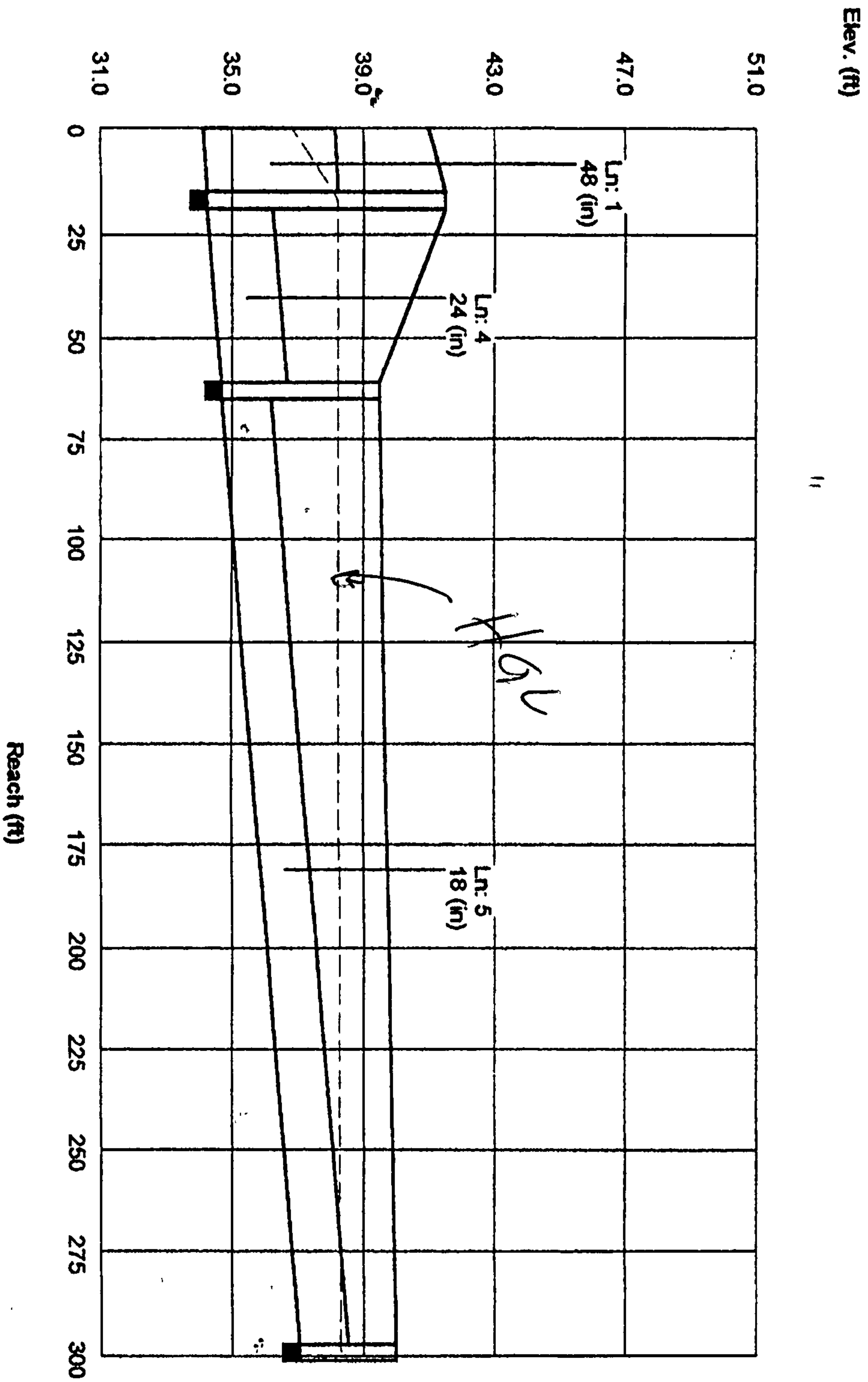
Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	17.0	0.00	0.00	0.00	0.00	0.00	0.0	3.1	0.0	113.7	143.2	10.90	48	0.59	34.23	34.13	38.08	36.82	41.50	41.00	Main SS Stub
2	1	180.0	0.00	0.00	0.00	0.00	0.00	0.0	1.0	0.0	107.0	270.3	9.45	48	2.09	38.00	34.23	41.06	38.21	45.00	41.50	Main SS East
3	2	503.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	107.0	249.8	10.11	48	1.79	47.00	38.00	50.06	41.23	52.00	45.00	Existing Upstream
4	1	46.0	0.00	0.00	0.00	0.00	0.00	0.0	2.8	0.0	6.70	29.40	2.13	24	1.00	34.69	34.23	38.23	38.21	39.50	41.50	Private SS
5	4	236.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.50	13.65	1.50	18	1.00	37.05	34.69	38.30	38.23	40.00	39.50	Private SS 2
Project File: SeavyJC.stm									IDF File: SMBP.IDF						Total number of lines: 5				Run Date: 06-25-2001			
NOTES: Intensity = 0.00 / (Inlet time + 0.00) ^ 0.00; Return period = 100 Yrs. ; Initial tailwater elevation = 36.82 (ft)																						

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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	Main SS Stub	113.7	48 c	17.0	34.13	34.23	0.588	36.82	38.08	0.13	End
2	Main SS East	107.0	48 c	180.0	34.23	38.00	2.094	38.21	41.08	0.17	1
3	Existing Upstream S	107.0	48 c	503.0	38.00	47.00	1.789	41.23	50.06	1.67	2
4	Private SS	6.70	24 c	46.0	34.23	34.69	1.000	38.21*	38.23*	0.00	1
5	Private SS 2	2.50	18 c	236.0	34.69	37.05	1.000	38.23	38.30	0.04	4
Project File: SeavyJC.stm IDF File: SMBP.IDF Total No. Lines: 5 Run Date: 06-25-2001											
NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * Indicates surcharge condition.											

Storm Sewer Profile

Proj. file: SeavyJC.stm



Storm Sewer Profile

Proj. file: SeavyJC.stm

