DRAINAGE PLAN
TURKEY CREEK ADDITION
TO
WICHITA, SEDGWICK COUNTY, KANSAS

Baughman Company, P.A.

DRAINAGE PLAN

TURKEY CREEK ADDITION

TO

WICHITA, SEDGWICK COUNTY, KANSAS

Prepared By

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February 11, 2004

Table of Contents

INTRODUCTION

This report provides information and documentation to support the "Drainage Plan" for the proposed "Turkey Creek Addition" plat, located in the Southeast Quarter of Section 36, T-27-S, R-2-W in Sedgwick County, Kansas.

The "Drainage Plan" being submitted herein in intended to serve as a guide for the design of streets, stormwater sewer systems, and detention facilities for the proposed development. Modifications may be made as necessary during the final design in order to obtain a more economical and constructable design.

OFFSITE DRAINAGE FLOW

Offsite drainage was determined using the West Wichita and Goddard USGS Quadrangles in conjunction with the June 26, 1997 Letter of Map Revision for Calfskin Creek.

The Calfskin Creek enters the project site from the south; at this point the contributing drainage area is approximately 4,000 acres. The creek flows through the project site to the north collecting approximately an additional 200 acres of drainage area.

This reach of the Calfskin Creek is identified as a "Zone A" on the FIRM panel 200321 0200 A. The limit of the detailed study on the Calfskin Creek is just downstream of U.S. 54 highway (Kellogg). In order to simplify calculations, the flowrates used in the FIS study have been transferred to the upstream limit of the Turkey Creek Addition. The flowrates cited in the FIS study are:

Q10 = 2,700 cfs

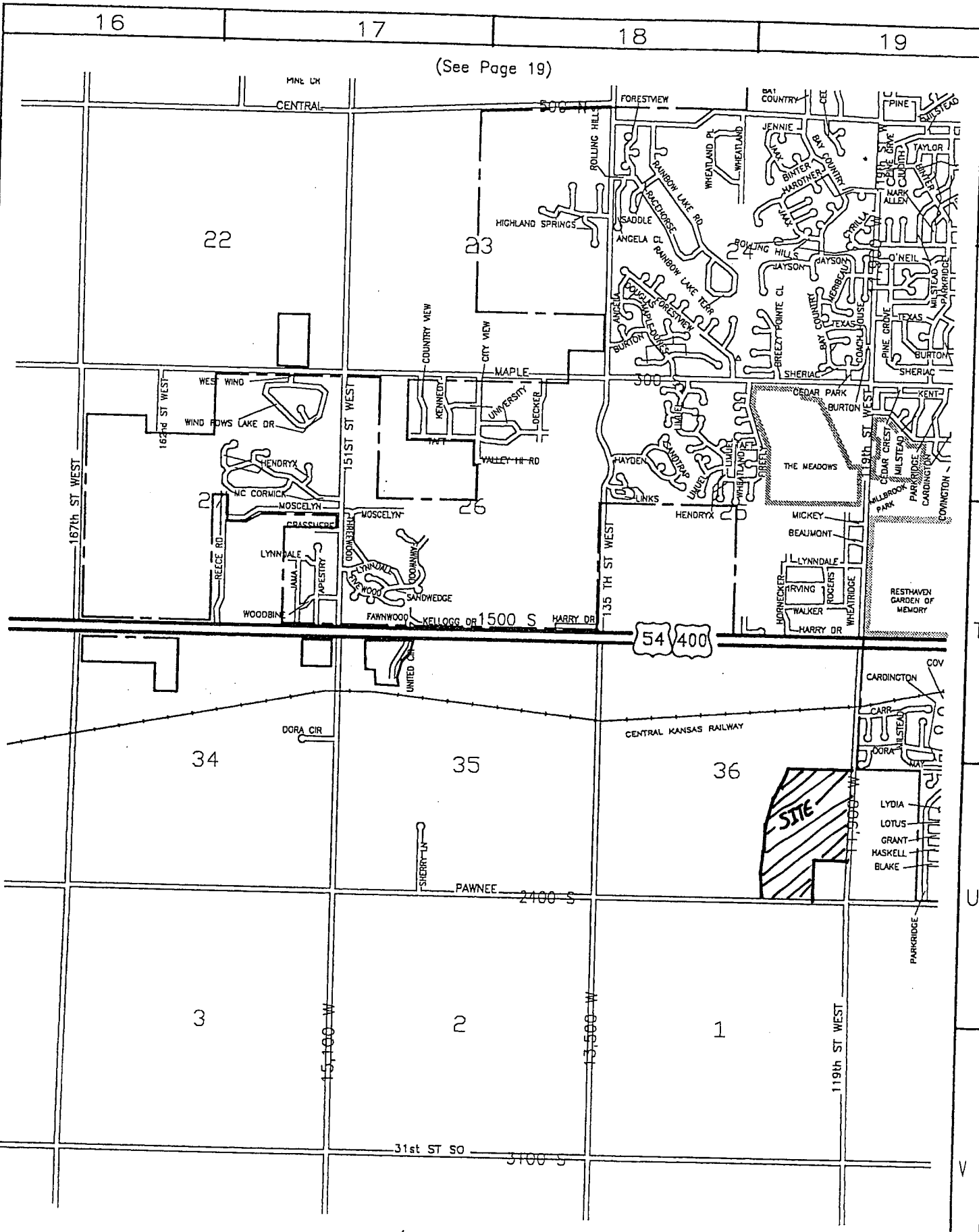
Q100 = 4,700 cfs

DETENTION ROUTING

Due to the magnitude of the contributing basin and the large difference in the times of concentration, no detention routing has been performed for this project. However a 9.5-acre lake will be constructed to obtain sufficient material to adequately grade the site. This lake will provide a detention effect on the smaller events, but will become inundated during the 100-yr and greater events.

STORMWATER SEWER SYSTEMS

The stormwater sewer systems within the proposed development have been designed to convey the 2-yr return period (10% exceedance) event, as required by the City of Wichita's Stormwater Management Criteria. The subdivision-grading plan provides for protection of the primary structures during the 100-yr return period (1% exccedance) event. Additionally, all stormwater sewer calculations have been performed using a 100-yr tailwater constraint. This condition was applied to simplify calculations as well as provide a more conservative design of the stormwater sewer systems.



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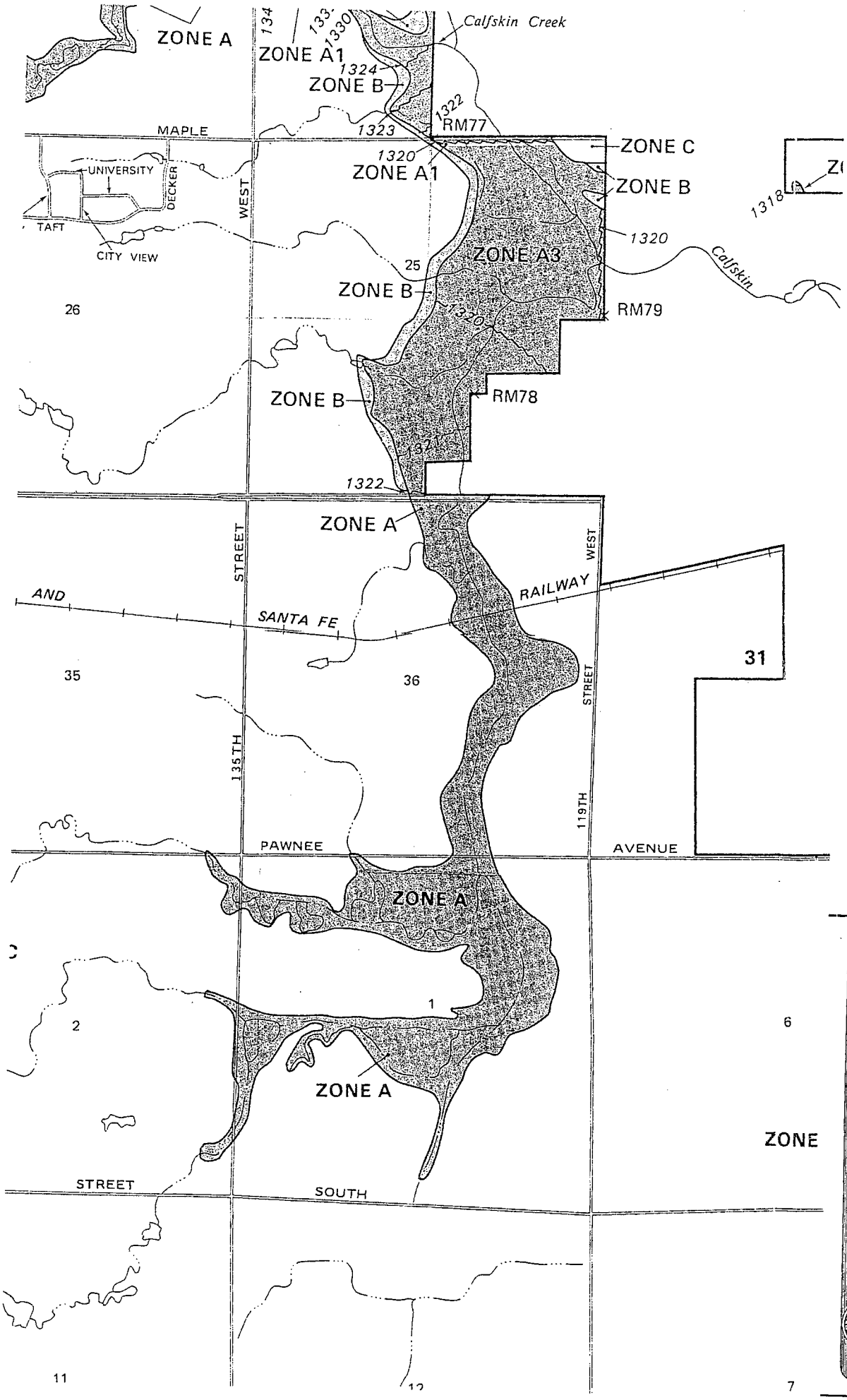
27



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

SEDGWICK COUNTY, KANSAS
(UNINCORPORATED AREAS)

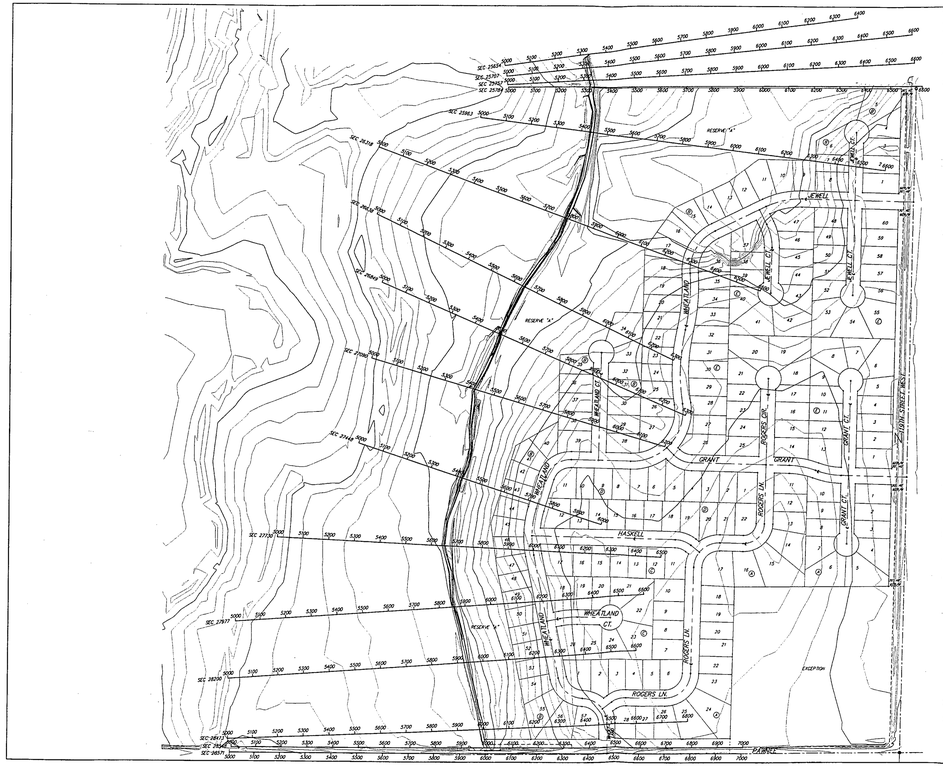
PANEL 200 OF 300

COMMUNITY-PANEL NUMBER
200321 0200 A

EFFECTIVE DATE:
JUNE 3, 1986

Federal Emergency Management Agency

Appendix A
Existing Conditions HEC-2 Model



TURKEY CREEK ADDITION HEC-2 CROSS-SECTION EXHIBIT

Section	Existing WS Elev.	Proposed WS Elev.
25654	138.6	138.6
25707	138.7	138.7
25757	138.9	138.9
25784	139.0	139.0
25963	140.2	139.4
26318	141.1	139.5
26638	141.7	139.8
26949	142.0	140.0
27090	142.6	140.4
27448	143.2	141.7
27730	143.7	143.4
27977	144.0	143.8
28200	144.1	144.0
28473	144.4	144.3
28548	144.4	144.4

BAUGHMAN COMPANY P.A.
ENGINEERS, SURVEYORS & PLANNERS

Existing Conditions HEC-2 Model
Turkey Creek Addition

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1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    04FEB04    TIME   12:48:36 *
 *****************************************
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**************************************
* U.S. ARMY CORPS OF ENGINEERS       *
* HYDROLOGIC ENGINEERING CENTER      *
* 609 SECOND STREET, SUITE D         *
* DAVIS, CALIFORNIA 95616-4687       *
*          (916) 756-1104            *
**************************************
```

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX   XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX  XXXXX             XXXXXXX
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04FEB04 12:48:36 PAGE 1

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************
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```
T1      CALFSKIN CREEK BEGINNING 1/2 MI. NORTH OF PAWNEE
T2      EXTENDING SOUTH TO PAWNEE
T3      ASSUMED STARTING WATER SURFACE BASED ON
T4      UNIFORM FLOW DEPTH OF CROSS SECTION 25654
T5      100-YR FLOODPLAIN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0         2         0         0         0         0         0         0    1326.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
        1         0        -1

J3  VARIABLE CODES FOR SUMMARY PRINTOUT
      110       115       150       200

QT        2      4710      4710
```

Existing Conditions HEC-2 Model
Turkey Creek Addition

ET			10.4						5200	5400
NC	.045	.045	.040	0.1	0.3					
X1	25654	34	5306	5337	0	0	0		1187.4	
GR	142.7	5000	142	5024	141	5066	140	5108	139	5145
GR	138	5179	137	5214	136	5249	135	5306	134	5312
GR	133	5317	133	5324	134	5329	135	5332	136	5337
GR	137	5352	138	5376	139	5400	140	5426	141	5524
GR	141	5577	140	5745	139	5807	138	5869	137	5971
GR	136	6107	136	6379	137	6420	138	6443	139	6467
GR	140	6496	141	6521	142	6555	143	6577		

ET			10.4						5150	5400
X1	25707	36	5305	5341	49	73	53		1187.4	
GR	143	5016	142	5053	141	5094	140	5131	139	5168
GR	138	5203	137	5243	136	5305	135	5308	134	5311
GR	133	5316	133	5326	134	5328	135	5333	136	5337
GR	137	5341	138	5358	139	5378	140	5397	141	5437
GR	142	5497	142	5608	141	5681	140	5758	139	5817
GR	138	5883	137	6000	136	6106	136	6361	137	6411
GR	138	6435	139	6457	140	6486	141	6513	142	6550
GR	143	6576								

1

04FEB04 12:48:36 PAGE 2

ET			10.4						5150	5400
X1	25757	41	5306	5349	44	78	50		1187.4	
GR	144	5010	143	5047	142	5085	141	5125	140	5162
GR	139	5212	138	5254	137	5306	136	5313	135	5318
GR	134	5320	133	5322	132	5325	132	5328	133	5336
GR	134	5337	135	5338	136	5339	137	5345	138	5349
GR	139	5366	140	5384	141	5407	142	5451	143	5510
GR	143	5596	142	5657	141	5706	140	5763	139	5822
GR	138	5898	137	6017	136	6145	136	6322	137	6402
GR	138	6421	139	6440	140	6465	141	6495	142	6534
GR	143	6567								

ET			10.4							
X1	25784	43	5307	5354	20	56	27		1187.4	
GR	144	5017	143	5057	142	5100	141	5142	140	5183
GR	139	5230	138	5262	137	5307	136	5314	135	5318
GR	134	5320	133	5322	133	5337	134	5338	135	5339
GR	136	5340	137	5343	138	5349	139	5354	140	5377
GR	141	5394	142	5436	143	5487	143	5608	142	5662
GR	141	5706	140	5751	139	5816	138	5905	137	6024
GR	137	6355	138	6395	139	6413	140	6432	141	6454
GR	142	6482	143	6510	144	6540	144	6566	144	6578
GR	145	6583	146	6587	146	6603				

ET			7.4							
X1	25963	34	5422	5465	158	300	180		1187.4	

GR	143	5101	142	5148	141	5192	140	5258	139	5306
GR	138	5415	137	5422	136	5427	135	5430	134	5432
GR	133	5435	133	5446	134	5447	135	5448	136	5449
GR	137	5450	138	5454	139	5458	140	5461	141	5465
GR	141	5529	140	5645	139	5713	138	5873	138	6222
GR	139	6252	140	6277	141	6303	142	6329	143	6355
GR	144	6381	145	6410	146	6438	147	6472		

ET			9.1						5500	5970
X1	26318	32	5772	5800	315	470	355		1187.4	
GR	145	5000	144	5058	143	5095	142	5193	141	5249
GR	140	5303	139	5365	138	5707	138	5734	138	5772
GR	137	5774	136	5777	135	5779	134	5782	133	5784
GR	133	5791	134	5792	135	5793	136	5794	137	5795
GR	138	5800	139	5812	139	5825	138	5836	138	5847
GR	139	5862	140	5876	141	6136	142	6295	143	6338
GR	144	6380	145	6431						

1 04FEB04 12:48:36 PAGE 3

ET			9.1						5425	5775
X1	26638	30	5628	5652	300	340	320		1187.4	
GR	143	5008	142	5061	141	5134	140	5207	139	5274
GR	139	5413	139	5508	139	5528	139	5628	138	5631
GR	137	5634	136	5635	135	5636	134	5637	133	5638
GR	133	5646	134	5647	135	5648	136	5649	137	5650
GR	138	5652	139	5670	140	5855	141	5905	142	5930
GR	143	6008	144	6114	145	6151	146	6194	147	6245

ET			10.4							
X1	26849	38	5475	5524	211	211	211		1187.4	
GR	144	5027	143	5059	142	5148	141	5203	140	5291
GR	140	5315	140	5318	139	5415	137	5475	136	5476
GR	135	5477	135	5481	136	5482	137	5483	138	5484
GR	138	5495	137	5499	136	5500	135	5501	134	5502
GR	133	5504	133	5508	134	5510	135	5511	136	5512
GR	137	5513	138	5515	139	5524	140	5626	141	5686
GR	142	5745	143	5783	144	5819	145	5860	145	5933
GR	145	6089	146	6165	147	6259				

ET			10.4							
X1	27090	42	5414	5441	257	228	241		1187.4	
GR	145	5018	144	5053	144	5085	144	5106	143	5130
GR	142	5166	141	5202	140	5242	139	5304	138	5350
GR	137	5392	136	5393	135	5394	135	5395	136	5396
GR	137	5397	138	5399	138	5414	137	5414	136	5415
GR	135	5416	134	5417	134	5422	135	5424	136	5427
GR	137	5429	138	5431	139	5441	139	5462	139	5491
GR	140	5534	141	5582	142	5625	143	5664	144	5702
GR	145	5737	146	5776	147	5812	148	5848	148	5931
GR	147	6149	147	6190						

ET			9.4							
X1	27448	37	5409	5432	348	358	358		1187.4	
GR	145	5025	145	5030	145	5060	144	5082	143	5100
GR	142	5130	141	5179	140	5285	140	5406	140	5409
GR	139	5414	138	5417	137	5418	136	5419	135	5420
GR	134	5421	134	5425	135	5427	136	5428	137	5430
GR	138	5431	139	5432	139	5443	138	5447	138	5460
GR	139	5484	140	5509	141	5534	142	5560	143	5585
GR	144	5611	145	5637	146	5663	147	5704	148	5745
GR	149	5787	150	5892						
ET			8.4							
X1	27730	35	5622	5677	321	251	282		1187.4	
GR	145	5046	144	5099	143	5176	142	5265	141	5488
GR	140	5622	139	5641	138	5642	137	5643	136	5644
GR	135	5645	135	5652	136	5653	137	5655	138	5656
GR	139	5671	140	5677	140	5683	139	5692	138	5700

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GR	138	5709	139	5736	140	5765	141	5795	142	5824
GR	143	5854	144	5883	145	5912	146	5945	147	5983
GR	149	6059	150	6103	151	6150	151	6281	151	6349
ET			10.4							
X1	27977	33	5849	5879	261	234	247		1187.4	
GR	146	5029	145	5074	144	5196	143	5366	142	5479
GR	141	5692	140	5849	139	5851	138	5852	137	5853
GR	136	5854	135	5855	135	5859	136	5860	137	5862
GR	138	5864	139	5865	140	5879	140	5885	139	5902
GR	139	5943	140	5984	141	6026	142	6066	143	6103
GR	144	6134	145	6164	146	6193	147	6222	148	6252
GR	149	6283	150	6314	151	6335				
ET			10.4							
X1	28200	36	5925	5950	223	230	223		1187.4	
GR	146	5008	145	5046	144	5174	143	5455	142	5570
GR	141	5788	141	5901	141	5923	140	5925	139	5928
GR	138	5931	137	5933	136	5936	136	5941	137	5942
GR	138	5944	139	5945	140	5950	141	5963	141	5965
GR	140	5991	139	6017	139	6052	140	6088	141	6116
GR	142	6141	143	6167	144	6193	145	6219	146	6244
GR	147	6273	148	6304	149	6335	150	6361	151	6452
GR	152	6593								
ET			10.4							
X1	28473	32	5985	6005	265	275	273		1187.4	
GR	145	5036	145	5097	144	5400	143	5512	142	5643
GR	141	5881	140	5985	139	5987	138	5988	137	5990
GR	137	5996	138	5997	139	6003	140	6004	141	6005

GR	141	6011	140	6042	139	6057	139	6060	140	6090
GR	141	6113	142	6151	143	6188	144	6237	145	6270
GR	146	6301	147	6325	148	6342	149	6358	150	6471
GR	151	6592	152	6714						

ET			9.1						5690	6050
X1	28548	33	5987	6011	66	80	75		1187.4	
GR	145	5022	145	5031	146	5032	146	5058	145	5061
GR	144	5268	143	5430	142	5659	141	5789	140	5928
GR	140	5943	140	5987	139	5989	138	5991	137	5994
GR	137	6001	138	6006	139	6008	140	6011	140	6027
GR	140	6051	141	6097	142	6167	143	6212	144	6257
GR	145	6294	146	6351	147	6410	148	6488	149	6535
GR	150	6588	150	6590	150	6647				

1
04FEB04 12:48:36 PAGE 5

ET			10.4							
X1	28571	11	5980	6050	23	23	23		1187.4	
GR	146	5088	145	5266	144	5443	143	5661	143	5710
GR	144	5848	145	5980	145	6050	146	6329	147	6410
GR	148	6470								

1
04FEB04 12:48:36 PAGE 6

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1
0

CCHV= .100 CEHV= .300
*SECNO 25654.000

3265 DIVIDED FLOW

25654.000	5.60	1326.00	.00	1326.00	1326.13	.13	.00	.00	1322.40
4710.0	804.6	653.7	3251.6	294.8	142.6	1294.1	.0	.0	1323.40
.00	2.73	4.58	2.51	.045	.040	.045	.000	1320.40	5158.60
.002037	0.	0.	0.	0	0	0	.00	857.40	6457.40

*SECNO 25707.000

3265 DIVIDED FLOW

25707.000	5.73	1326.13	.00	.00	1326.28	.15	.15	.01	1323.40
4710.0	472.0	755.0	3483.0	196.2	159.1	1264.1	2.6	1.3	1324.40
.01	2.41	4.75	2.76	.045	.040	.045	.000	1320.40	5177.62
.002333	49.	53.	73.	1	0	0	.00	810.71	6450.96

*SECNO 25757.000

3265 DIVIDED FLOW

25757.000	6.89	1326.29	.00	.00	1326.46	.17	.17	.01	1324.40
4710.0	168.9	836.3	3704.8	89.2	177.4	1246.9	5.2	2.6	1325.40
.01	1.89	4.71	2.97	.045	.040	.045	.000	1319.40	5216.48
.002609	44.	50.	78.	2	0	0	.00	755.57	6437.97

*SECNO 25784.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

25784.000	5.98	1326.38	.00	.00	1326.68	.30	.18	.04	1324.40
4710.0	235.7	1107.7	3366.6	81.8	173.0	941.0	6.7	3.4	1326.40
.02	2.88	6.40	3.58	.045	.040	.045	.000	1320.40	5230.70
.005549	20.	27.	56.	0	0	0	.00	717.85	6412.61

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 25963.000

3265 DIVIDED FLOW

25963.000	7.15	1327.55	.00	.00	1327.74	.19	1.05	.01	1324.40
4710.0	565.2	985.1	3159.8	230.6	181.9	1126.7	15.2	8.4	1328.40
.04	2.45	5.41	2.80	.045	.040	.045	.000	1320.40	5248.02
.003041	158.	180.	300.	2	0	0	.00	867.06	6280.93

*SECNO 26318.000

26318.000	8.10	1328.50	.00	.00	1328.65	.15	.91	.00	1325.40
4710.0	3247.8	824.0	638.3	1223.6	166.4	340.1	29.8	16.6	1325.40
.07	2.65	4.95	1.88	.045	.040	.045	.000	1320.40	5243.29
.001875	315.	355.	470.	3	0	0	.00	908.91	6152.21

*SECNO 26638.000

26638.000	8.67	1329.07	.00	.00	1329.19	.12	.54	.00	1326.40
4710.0	2860.8	708.6	1140.6	1191.7	153.1	522.3	42.6	22.9	1325.40
.11	2.40	4.63	2.18	.045	.040	.045	.000	1320.40	5085.18
.001603	300.	320.	340.	2	0	0	.00	836.54	5921.72

*SECNO 26849.000

26849.000	9.01	1329.41	.00	.00	1329.65	.24	.42	.04	1324.40
4710.0	2229.0	1461.7	1019.4	698.3	268.3	376.1	50.4	26.4	1326.40
.12	3.19	5.45	2.71	.045	.040	.045	.000	1320.40	5147.37
.002562	211.	211.	211.	2	0	0	.00	597.90	5745.27

*SECNO 27090.000

27090.000	8.58	1329.98	.00	.00	1330.16	.18	.50	.01	1325.40
4710.0	2708.2	772.8	1229.0	832.7	164.6	464.1	58.3	29.5	1326.40
.14	3.25	4.69	2.65	.045	.040	.045	.000	1321.40	5145.15
.001661	257.	241.	228.	2	0	0	.00	502.44	5647.59

*SECNO 27448.000

27448.000	9.20	1330.60	.00	.00	1330.80	.20	.64	.01	1327.40
4710.0	2293.3	762.8	1653.9	789.2	147.2	468.4	69.9	33.5	1326.40
.17	2.91	5.18	3.53	.045	.040	.045	.000	1321.40	5096.31
.001991	348.	358.	358.	2	0	0	.00	494.01	5590.33

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 27730.000

27730.000	8.71	1331.11	.00	.00	1331.21	.11	.40	.01	1327.40
4710.0	2013.0	1066.8	1630.3	1052.9	300.4	621.1	81.3	37.8	1327.40
.20	1.91	3.55	2.62	.045	.040	.045	.000	1322.40	5120.90
.001017	321.	282.	251.	1	0	0	.00	753.85	5874.75

*SECNO 27977.000

27977.000	8.97	1331.37	.00	.00	1331.44	.07	.22	.00	1327.40
4710.0	2314.7	569.5	1825.8	1314.8	177.0	799.5	93.5	42.7	1327.40
.23	1.76	3.22	2.28	.045	.040	.045	.000	1322.40	5201.67
.000806	261.	247.	234.	2	0	0	.00	931.30	6132.97

*SECNO 28200.000

28200.000	8.15	1331.55	.00	.00	1331.62	.07	.18	.00	1327.40
4710.0	2229.2	528.7	1952.1	1381.2	157.7	844.8	105.6	47.8	1327.40
.26	1.61	3.35	2.31	.045	.040	.045	.000	1323.40	5155.28
.000771	223.	223.	230.	2	0	0	.00	1041.52	6196.80

```
*SECNO 28473.000
 28473.000      7.36   1331.76       .00       .00   1331.84       .08       .22       .00   1327.40
    4710.0    2735.5     426.9    1547.6    1441.5     124.2     685.1     119.9      53.9   1328.40
       .30      1.90      3.44      2.26      .045      .040      .045      .000   1324.40   5291.04
   .000863      265.      273.      275.         0         0         0       .00    957.83   6248.87


*SECNO 28548.000
 28548.000      7.44   1331.84       .00       .00   1331.89       .06       .05       .00   1327.40
    4710.0    2991.1     480.7    1238.2    1800.7     155.8     695.3     123.9      55.6   1327.40
       .31      1.66      3.08      1.78      .045      .040      .045      .000   1324.40   5178.88
   .000605       66.       75.       80.         1         0         0       .00   1094.05   6272.93


*SECNO 28571.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
 28571.000      2.00   1332.40   1332.40       .00   1332.96       .55       .04       .15   1332.40
    4710.0    4710.0        .0        .0     788.4        .2        .0     124.8      56.1   1332.40
       .31      5.97       .11       .05      .045      .040      .000      .000   1330.40   5265.52
   .022262       23.       23.       23.        20        14         0       .00    785.23   6050.75


1
   04FEB04      12:48:36                                                                    PAGE    9


T1      CALFSKIN CREEK BEGINNING 1/2 MI. NORTH OF PAWNEE
T2      EXTENDING SOUTH TO PAWNEE
T3      ASSUMED STARTING WATER SURFACE BASED ON
T4      UNIFORM FLOW DEPTH OF CROSS SECTION 25654
T5      100-YEAR FLOODWAY


J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                3                                                                   1327.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15                 -1


1
   04FEB04      12:48:36                                                                    PAGE   10


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *PROF 2
0
```

```
CCHV=     .100 CEHV=     .300
*SECNO 25654.000
 2800 NAT Q1=    1043.61  WSELK=    1326.00  ENC Q1=    1043.61  WSEL=    1327.00  RATIO=    .0000
 NAT Q1=    1921.  RATIOS LOB, CH, ROB=    .1706   .1046   .7248  WSEL=    1327.00

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     5306.0    6229.2  TYPE=      4  TARGET=         .457
 25654.000      6.60   1327.00       .00   1326.00   1327.18       .18       .00       .00   1322.40
    4710.0        .0     843.0    3867.0        .0     173.6    1283.1        .0        .0   1323.40
       .00       .00      4.86      3.01      .000      .040      .045      .000   1320.40   5306.00
   .002108        0.        0.        0.         0         0         0       .00    569.01   6229.21


*SECNO 25707.000
 2800 NAT Q1=     975.09  WSELK=    1326.13  ENC Q1=     975.09  WSEL=    1327.13  RATIO=    .0000
 NAT Q1=    1807.  RATIOS LOB, CH, ROB=    .1179   .1218   .7604  WSEL=    1327.13

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     5305.0    6207.8  TYPE=      4  TARGET=         .460
 25707.000      6.73   1327.13       .00   1326.13   1327.35       .22       .16       .01   1323.40
    4710.0        .0     1012.0   3698.0        .0     195.3    1148.0       2.3        .9   1324.40
       .01       .00      5.18      3.22      .000      .040      .045      .000   1320.40   5305.00
   .002405       49.       53.       73.         2         0         0       .00    520.83   6207.79


*SECNO 25757.000
 2800 NAT Q1=     922.13  WSELK=    1326.29  ENC Q1=     922.13  WSEL=    1327.29  RATIO=    .0000
 NAT Q1=    1693.  RATIOS LOB, CH, ROB=    .0599   .1388   .8012  WSEL=    1327.29

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     5306.0    6189.2  TYPE=      4  TARGET=         .455
 25757.000      7.90   1327.30       .00   1326.29   1327.54       .24       .18       .01   1324.40
    4710.0        .0     1167.1   3542.9        .0     220.5    1052.5       4.5       1.8   1325.40
       .01       .00      5.29      3.37      .000      .040      .045      .000   1319.40   5306.00
   .002673       44.       50.       78.         2         0         0       .00    496.14   6189.17


1
   04FEB04      12:48:36                                                                    PAGE   11

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 25784.000
 2800 NAT Q1=     632.26  WSELK=    1326.38  ENC Q1=     632.26  WSEL=    1327.38  RATIO=    .0000
 NAT Q1=    1308.  RATIOS LOB, CH, ROB=    .0708   .1697   .7594  WSEL=    1327.38
```

```
3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .64


3470 ENCROACHMENT STATIONS=     5307.0    6106.6  TYPE=      4  TARGET=         .516
 25784.000      6.88   1327.28       .00   1326.38   1327.81       .53       .19       .09   1324.40
    4710.0        .0    1657.2    3052.8        .0     215.5     679.3       5.7       2.3   1326.40
       .01       .00      7.69      4.49       .000      .040      .045      .000   1320.40   5307.00
   .006457       20.       27.       56.          2         0         0       .00    415.35   6106.62


*SECNO 25963.000
 2800 NAT Q1=      854.15  WSELK=    1327.55  ENC Q1=      854.15  WSEL=    1328.25  RATIO=    .0000
 NAT Q1=    1399.  RATIOS LOB, CH, ROB=    .1414    .1561    .7026  WSEL=    1328.25

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.74


3470 ENCROACHMENT STATIONS=     5422.0    6070.8  TYPE=      4  TARGET=         .389
 25963.000      8.18   1328.58       .00   1327.55   1328.76       .18       .91       .03   1324.40
    4710.0        .0    1050.6    3659.4        .0     224.7    1261.3      13.3       5.9   1328.40
       .04       .00      4.68      2.90       .000      .040      .045      .000   1320.40   5422.00
   .002138       158.      180.      300.          2         0         0       .00    648.77   6070.77


*SECNO 26318.000

3470 ENCROACHMENT STATIONS=     5500.0    5970.0  TYPE=      1  TARGET=      470.000
 26318.000      8.88   1329.28       .00   1328.50   1329.44       .16       .68       .00   1325.40
    4710.0    2897.6     876.6     935.8     993.7     188.2     402.2      27.6      11.3   1325.40
       .07      2.92      4.66      2.33      .045      .040      .045      .000   1320.40   5500.00
   .001405       315.      355.      470.          3         0         0       .00    470.00   5970.00


*SECNO 26638.000

3470 ENCROACHMENT STATIONS=     5425.0    5775.0  TYPE=      1  TARGET=      350.000
1
   04FEB04      12:48:36                                                                    PAGE   12


    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


 26638.000      9.37   1329.77       .00   1329.07   1330.03       .26       .55       .03   1326.40
    4710.0    2383.5    1000.4    1326.1     683.1     169.8     393.1      37.8      14.3   1325.40
       .09      3.49      5.89      3.37      .045      .040      .045      .000   1320.40   5425.00
   .002262       300.      320.      340.          2         0         0       .00    350.00   5775.00


*SECNO 26849.000
```

```
 2800 NAT Q1=     930.45  WSELK=    1329.41  ENC Q1=     930.45  WSEL=    1330.41  RATIO=    .0000
 NAT Q1=    1574.  RATIOS LOB, CH, ROB=    .4989   .2426   .2585  WSEL=    1330.41

3470 ENCROACHMENT STATIONS=     5353.0    5552.6  TYPE=      4  TARGET=         .409
 26849.000      9.78   1330.18       .00   1329.41   1330.63       .46       .55       .06   1324.40
    4710.0    2328.0    1970.1     411.9     500.7     306.0     103.9      43.0      15.6   1326.40
       .10      4.65      6.44      3.96      .045      .040      .045      .000   1320.40   5353.02
   .003006      211.      211.      211.         2         0         0       .00    199.57   5552.59


*SECNO 27090.000
 2800 NAT Q1=    1155.73  WSELK=    1329.98  ENC Q1=    1155.73  WSEL=    1330.98  RATIO=    .0000
 NAT Q1=    1772.  RATIOS LOB, CH, ROB=    .5668   .1378   .2953  WSEL=    1330.98

3470 ENCROACHMENT STATIONS=     5291.4    5492.9  TYPE=      4  TARGET=         .348
 27090.000      9.51   1330.91       .00   1329.98   1331.21       .30       .56       .02   1325.40
    4710.0    2838.9    1005.9     865.2     671.4     189.7     234.0      48.7      16.8   1326.40
       .12      4.23      5.30      3.70      .045      .040      .045      .000   1321.40   5291.37
   .001755      257.      241.      228.         2         0         0       .00    201.55   5492.92


*SECNO 27448.000
 2800 NAT Q1=    1055.66  WSELK=    1330.60  ENC Q1=    1055.66  WSEL=    1331.51  RATIO=    .0000
 NAT Q1=    1590.  RATIOS LOB, CH, ROB=    .5233   .1339   .3428  WSEL=    1331.51

3470 ENCROACHMENT STATIONS=     5240.9    5482.1  TYPE=      4  TARGET=         .336
 27448.000     10.17   1331.57       .00   1330.60   1331.85       .29       .65       .00   1327.40
    4710.0    2526.6     943.6    1239.8     690.8     169.3     285.6      57.7      18.6   1326.40
       .14      3.66      5.57      4.34      .045      .040      .045      .000   1321.40   5240.92
   .001912      348.      358.      358.         2         0         0       .00    241.18   5482.09


*SECNO 27730.000
 2800 NAT Q1=    1477.02  WSELK=    1331.11  ENC Q1=    1477.02  WSEL=    1331.91  RATIO=    .0000
 NAT Q1=    2155.  RATIOS LOB, CH, ROB=    .4777   .1945   .3278  WSEL=    1331.91
1
   04FEB04      12:48:36                                                                  PAGE   13


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.46


3470 ENCROACHMENT STATIONS=     5384.3    5736.7  TYPE=      4  TARGET=         .315
 27730.000      9.69   1332.09       .00   1331.11   1332.24       .14       .37       .01   1327.40
    4710.0    2240.3    1317.6    1152.1     921.2     354.2     356.1      67.2      20.6   1327.40
       .17      2.43      3.72      3.24      .045      .040      .045      .000   1322.40   5384.26
   .000895      321.      282.      251.         2         0         0       .00    352.46   5736.73


*SECNO 27977.000
```

```
 2800 NAT Q1=    1658.85  WSELK=    1331.37  ENC Q1=    1658.85  WSEL=    1332.37  RATIO=    .0000
 NAT Q1=    2702.  RATIOS LOB, CH, ROB=    .5449   .0964   .3587  WSEL=    1332.37

3470 ENCROACHMENT STATIONS=     5579.4    5954.3  TYPE=      4  TARGET=         .386
 27977.000      9.94   1332.34       .00   1331.37   1332.46       .12       .22       .00   1327.40
    4710.0    2702.6     743.4    1263.9    1110.0     206.1     431.0      77.0      22.8   1327.40
       .20      2.43      3.61      2.93      .045      .040      .045      .000   1322.40   5579.38
   .000827      261.      247.      234.         2         0         0       .00    374.93   5954.31


*SECNO 28200.000
 2800 NAT Q1=    1696.62  WSELK=    1331.55  ENC Q1=    1696.62  WSEL=    1332.55  RATIO=    .0000
 NAT Q1=    2812.  RATIOS LOB, CH, ROB=    .5449   .0866   .3685  WSEL=    1332.55

3470 ENCROACHMENT STATIONS=     5623.0    6043.0  TYPE=      4  TARGET=         .397
 28200.000      9.13   1332.53       .00   1331.55   1332.64       .11       .18       .00   1327.40
    4710.0    2700.6     676.1    1333.3    1185.7     182.2     494.3      86.3      24.8   1327.40
       .22      2.28      3.71      2.70      .045      .040      .045      .000   1323.40   5622.95
   .000778      223.      223.      230.         2         0         0       .00    420.02   6042.97


*SECNO 28473.000
 2800 NAT Q1=    1603.70  WSELK=    1331.76  ENC Q1=    1603.70  WSEL=    1332.76  RATIO=    .0000
 NAT Q1=    2672.  RATIOS LOB, CH, ROB=    .6228   .0698   .3074  WSEL=    1332.76
3280 CROSS SECTION  28473.00 EXTENDED       .34 FEET


3470 ENCROACHMENT STATIONS=     5677.9    6061.0  TYPE=      4  TARGET=         .400
 28473.000      8.34   1332.74       .00   1331.76   1332.86       .12       .22       .00   1327.40
    4710.0    3323.8     550.5     835.7    1298.9     143.8     289.1      97.4      27.3   1328.40
       .25      2.56      3.83      2.89      .045      .040      .045      .000   1324.40   5677.86
   .000879      265.      273.      275.         2         0         0       .00    383.14   6061.00


1
   04FEB04      12:48:36                                                                    PAGE   14

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 28548.000

3470 ENCROACHMENT STATIONS=     5690.0    6050.0  TYPE=      1  TARGET=     360.000
 28548.000      8.40   1332.80       .00   1331.84   1332.92       .11       .06       .00   1327.40
    4710.0    3509.2     666.5     534.3    1398.5     179.2     210.7     100.2      27.9   1327.40
       .25      2.51      3.72      2.54      .045      .040      .045      .000   1324.40   5690.00
   .000731       66.       75.       80.         0         0         0       .00    360.00   6050.00


*SECNO 28571.000
 2800 NAT Q1=     315.68  WSELK=    1332.40  ENC Q1=     315.68  WSEL=    1333.40  RATIO=    .0000
 NAT Q1=     919.  RATIOS LOB, CH, ROB=    .9397   .0284   .0319  WSEL=    1333.40
3280 CROSS SECTION  28571.00 EXTENDED       .04 FEET
```

```
3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     5711.8    6050.0  TYPE=      4  TARGET=         .656
 28571.000      3.04   1333.44   1333.44   1332.40   1334.36       .92       .05       .24   1332.40
    4710.0    4313.4     396.6        .0     547.5      72.6        .0     100.8      28.0   1332.40
       .25      7.88      5.46       .00      .045      .040      .000      .000   1330.40   5711.80
   .021031       23.       23.       23.        20        22         0       .00    338.20   6050.00
```

1

04FEB04 12:48:36 PAGE 15

THIS RUN EXECUTED 04FEB04 12:48:36

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

ASSUMED STARTING WATER S

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	25654.000	1326.00	.00	1326.13	857.40	804.64	653.73	3251.63	.00	.00	5306.00	5337.00	.00
	25654.000	1327.00	1.00	1327.18	569.01	.00	843.02	3866.98	.46	5306.00	5306.00	5337.00	6229.21
	25707.000	1326.13	.00	1326.28	810.71	472.02	754.98	3483.00	.00	.00	5305.00	5341.00	.00
	25707.000	1327.13	1.00	1327.35	520.83	.00	1011.98	3698.02	.46	5305.00	5305.00	5341.00	6207.80
	25757.000	1326.29	.00	1326.46	755.57	168.94	836.27	3704.78	.00	.00	5306.00	5349.00	.00
	25757.000	1327.30	1.00	1327.54	496.14	.00	1167.08	3542.92	.46	5306.00	5306.00	5349.00	6189.17
*	25784.000	1326.38	.00	1326.68	717.85	235.66	1107.74	3366.59	.00	.00	5307.00	5354.00	.00
*	25784.000	1327.28	.90	1327.81	415.35	.00	1657.16	3052.84	.52	5307.00	5307.00	5354.00	6106.63
	25963.000	1327.55	.00	1327.74	867.06	565.17	985.08	3159.75	.00	.00	5422.00	5465.00	.00
*	25963.000	1328.58	1.03	1328.76	648.77	.00	1050.60	3659.40	.39	5422.00	5422.00	5465.00	6070.77
	26318.000	1328.50	.00	1328.65	908.91	3247.76	823.97	638.27	.00	.00	5772.00	5800.00	.00
	26318.000	1329.28	.78	1329.44	470.00	2897.61	876.60	935.79	470.00	5500.00	5772.00	5800.00	5970.00
	26638.000	1329.07	.00	1329.19	836.54	2860.80	708.55	1140.65	.00	.00	5628.00	5652.00	.00
	26638.000	1329.77	.70	1330.03	350.00	2383.51	1000.41	1326.08	350.00	5425.00	5628.00	5652.00	5775.00
	26849.000	1329.41	.00	1329.65	597.90	2228.99	1461.65	1019.36	.00	.00	5475.00	5524.00	.00
	26849.000	1330.18	.77	1330.63	199.57	2327.99	1970.08	411.93	.41	5353.02	5475.00	5524.00	5552.59
	27090.000	1329.98	.00	1330.16	502.44	2708.24	772.78	1228.98	.00	.00	5414.00	5441.00	.00
	27090.000	1330.91	.93	1331.21	201.55	2838.91	1005.88	865.21	.35	5291.37	5414.00	5441.00	5492.92
	27448.000	1330.60	.00	1330.80	494.01	2293.25	762.85	1653.90	.00	.00	5409.00	5432.00	.00
	27448.000	1331.57	.96	1331.85	241.18	2526.63	943.57	1239.80	.34	5240.92	5409.00	5432.00	5482.09
	27730.000	1331.11	.00	1331.21	753.85	2012.97	1066.78	1630.25	.00	.00	5622.00	5677.00	.00
*	27730.000	1332.09	.99	1332.24	352.46	2240.27	1317.64	1152.09	.31	5384.26	5622.00	5677.00	5736.73

1

04FEB04 12:48:36 PAGE 16

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	27977.000	1331.37	.00	1331.44	931.30	2314.73	569.47	1825.80	.00	.00	5849.00	5879.00	.00
	27977.000	1332.34	.97	1332.46	374.93	2702.63	743.43	1263.94	.39	5579.38	5849.00	5879.00	5954.31
	28200.000	1331.55	.00	1331.62	1041.52	2229.19	528.75	1952.06	.00	.00	5925.00	5950.00	.00
	28200.000	1332.53	.98	1332.64	420.02	2700.60	676.09	1333.30	.40	5622.95	5925.00	5950.00	6042.97
	28473.000	1331.76	.00	1331.84	957.83	2735.51	426.89	1547.60	.00	.00	5985.00	6005.00	.00
	28473.000	1332.74	.98	1332.86	383.14	3323.79	550.47	835.73	.40	5677.86	5985.00	6005.00	6061.00
	28548.000	1331.84	.00	1331.89	1094.05	2991.12	480.69	1238.19	.00	.00	5987.00	6011.00	.00
	28548.000	1332.80	.97	1332.92	360.00	3509.25	666.46	534.29	360.00	5690.00	5987.00	6011.00	6050.00
*	28571.000	1332.40	.00	1332.96	785.23	4709.98	.02	.00	.00	.00	5980.00	6050.00	.00
*	28571.000	1333.44	1.03	1334.36	338.20	4313.40	396.59	.00	.66	5711.80	5980.00	6050.00	6050.00

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04FEB04 12:48:36 PAGE 17

ASSUMED STARTING WATER S

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	25654.000	.00	.00	.00	1320.40	4710.00	1326.00	.00	1326.13	20.37	4.58	1731.50	1043.61
	25654.000	.00	.00	.00	1320.40	4710.00	1327.00	.00	1327.18	21.08	4.86	1456.68	1025.82
	25707.000	53.00	.00	.00	1320.40	4710.00	1326.13	.00	1326.28	23.33	4.75	1619.34	975.09
	25707.000	53.00	.00	.00	1320.40	4710.00	1327.13	.00	1327.35	24.05	5.18	1343.36	960.36
	25757.000	50.00	.00	.00	1319.40	4710.00	1326.29	.00	1326.46	26.09	4.71	1513.51	922.13
	25757.000	50.00	.00	.00	1319.40	4710.00	1327.30	.00	1327.54	26.73	5.29	1272.99	911.01
*	25784.000	27.00	.00	.00	1320.40	4710.00	1326.38	.00	1326.68	55.49	6.40	1195.78	632.26
*	25784.000	27.00	.00	.00	1320.40	4710.00	1327.28	.00	1327.81	64.57	7.69	894.80	586.15
	25963.000	180.00	.00	.00	1320.40	4710.00	1327.55	.00	1327.74	30.41	5.41	1539.21	854.15
*	25963.000	180.00	.00	.00	1320.40	4710.00	1328.58	.00	1328.76	21.38	4.68	1486.01	1018.59
	26318.000	355.00	.00	.00	1320.40	4710.00	1328.50	.00	1328.65	18.75	4.95	1730.03	1087.81
	26318.000	355.00	.00	.00	1320.40	4710.00	1329.28	.00	1329.44	14.05	4.66	1584.13	1256.41
	26638.000	320.00	.00	.00	1320.40	4710.00	1329.07	.00	1329.19	16.03	4.63	1867.08	1176.41
	26638.000	320.00	.00	.00	1320.40	4710.00	1329.77	.00	1330.03	22.62	5.89	1245.90	990.23
	26849.000	211.00	.00	.00	1320.40	4710.00	1329.41	.00	1329.65	25.62	5.45	1342.73	930.45
	26849.000	211.00	.00	.00	1320.40	4710.00	1330.18	.00	1330.63	30.06	6.44	910.61	859.12
	27090.000	241.00	.00	.00	1321.40	4710.00	1329.98	.00	1330.16	16.61	4.69	1461.44	1155.73

27090.000	241.00	.00	.00	1321.40	4710.00	1330.91	.00	1331.21	17.55	5.30	1095.08	1124.32
27448.000	358.00	.00	.00	1321.40	4710.00	1330.60	.00	1330.80	19.91	5.18	1404.77	1055.66
27448.000	358.00	.00	.00	1321.40	4710.00	1331.57	.00	1331.85	19.12	5.57	1145.72	1077.22
27730.000	282.00	.00	.00	1322.40	4710.00	1331.11	.00	1331.21	10.17	3.55	1974.30	1477.02
* 27730.000	282.00	.00	.00	1322.40	4710.00	1332.09	.00	1332.24	8.95	3.72	1631.52	1574.07
27977.000	247.00	.00	.00	1322.40	4710.00	1331.37	.00	1331.44	8.06	3.22	2291.35	1658.85
27977.000	247.00	.00	.00	1322.40	4710.00	1332.34	.00	1332.46	8.27	3.61	1747.01	1637.38
28200.000	223.00	.00	.00	1323.40	4710.00	1331.55	.00	1331.62	7.71	3.35	2383.67	1696.62
28200.000	223.00	.00	.00	1323.40	4710.00	1332.53	.00	1332.64	7.78	3.71	1862.21	1689.12
28473.000	273.00	.00	.00	1324.40	4710.00	1331.76	.00	1331.84	8.63	3.44	2250.73	1603.70
28473.000	273.00	.00	.00	1324.40	4710.00	1332.74	.00	1332.86	8.79	3.83	1731.92	1588.61
28548.000	75.00	.00	.00	1324.40	4710.00	1331.84	.00	1331.89	6.05	3.08	2651.92	1914.67
28548.000	75.00	.00	.00	1324.40	4710.00	1332.80	.00	1332.92	7.31	3.72	1788.40	1742.65
* 28571.000	23.00	.00	.00	1330.40	4710.00	1332.40	1332.40	1332.96	222.62	.11	788.61	315.68
* 28571.000	23.00	.00	.00	1330.40	4710.00	1333.44	1333.44	1334.36	210.31	5.46	620.03	324.78

1

04FEB04 12:48:36 PAGE 18

ASSUMED STARTING WATER S

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
25654.000	4710.00	1326.00	.00	.00	.00	857.40	.00
25654.000	4710.00	1327.00	1.00	.00	1.00	569.01	.00
25707.000	4710.00	1326.13	.00	.13	.00	810.71	53.00
25707.000	4710.00	1327.13	1.00	.13	1.00	520.83	53.00
25757.000	4710.00	1326.29	.00	.16	.00	755.57	50.00
25757.000	4710.00	1327.30	1.00	.16	1.00	496.14	50.00
* 25784.000	4710.00	1326.38	.00	.09	.00	717.85	27.00
* 25784.000	4710.00	1327.28	.90	-.01	.90	415.35	27.00
25963.000	4710.00	1327.55	.00	1.17	.00	867.06	180.00
* 25963.000	4710.00	1328.58	1.03	1.30	1.03	648.77	180.00
26318.000	4710.00	1328.50	.00	.95	.00	908.91	355.00
26318.000	4710.00	1329.28	.78	.70	.78	470.00	355.00
26638.000	4710.00	1329.07	.00	.57	.00	836.54	320.00
26638.000	4710.00	1329.77	.70	.48	.70	350.00	320.00
26849.000	4710.00	1329.41	.00	.34	.00	597.90	211.00
26849.000	4710.00	1330.18	.77	.41	.77	199.57	211.00

27090.000	4710.00	1329.98	.00	.57	.00	502.44	241.00
27090.000	4710.00	1330.91	.93	.73	.93	201.55	241.00
27448.000	4710.00	1330.60	.00	.63	.00	494.01	358.00
27448.000	4710.00	1331.57	.96	.66	.96	241.18	358.00
27730.000	4710.00	1331.11	.00	.50	.00	753.85	282.00
* 27730.000	4710.00	1332.09	.99	.53	.99	352.46	282.00
27977.000	4710.00	1331.37	.00	.26	.00	931.30	247.00
27977.000	4710.00	1332.34	.97	.24	.97	374.93	247.00
28200.000	4710.00	1331.55	.00	.18	.00	1041.52	223.00
28200.000	4710.00	1332.53	.98	.19	.98	420.02	223.00
28473.000	4710.00	1331.76	.00	.22	.00	957.83	273.00
28473.000	4710.00	1332.74	.98	.21	.98	383.14	273.00
28548.000	4710.00	1331.84	.00	.07	.00	1094.05	75.00
28548.000	4710.00	1332.80	.97	.06	.97	360.00	75.00
* 28571.000	4710.00	1332.40	.00	.57	.00	785.23	23.00
* 28571.000	4710.00	1333.44	1.03	.63	1.03	338.20	23.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 25784.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 25784.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 25963.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 27730.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 28571.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 28571.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 28571.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 28571.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 28571.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 28571.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

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Floodway width summary: ASSUMED STARTING WATER S
Profile No. 2

	Left Sta	Right Sta	
Left	Distance	Distance	Right

Section Number	Elevation Increase	Top Width	Encroach Station	From Center	Center Station	From Center	Encroach Station
25654.000	1.00	923.21	5306.00	15.50	5321.50	907.71	6229.21
25707.000	1.00	902.80	5305.00	18.00	5323.00	884.80	6207.80
25757.000	1.00	883.17	5306.00	21.50	5327.50	861.67	6189.17
25784.000	.90	799.63	5307.00	23.50	5330.50	776.13	6106.63
25963.000	1.03	648.77	5422.00	21.50	5443.50	627.27	6070.77
26318.000	.78	470.00	5500.00	286.00	5786.00	184.00	5970.00
26638.000	.70	350.00	5425.00	215.00	5640.00	135.00	5775.00
26849.000	.77	199.57	5353.02	146.48	5499.50	53.09	5552.59
27090.000	.93	201.55	5291.37	136.13	5427.50	65.42	5492.92
27448.000	.96	241.18	5240.92	179.58	5420.50	61.59	5482.09
27730.000	.99	352.47	5384.26	265.24	5649.50	87.23	5736.73
27977.000	.97	374.93	5579.38	284.62	5864.00	90.31	5954.31
28200.000	.98	420.02	5622.95	314.55	5937.50	105.47	6042.97
28473.000	.98	383.15	5677.86	317.14	5995.00	66.00	6061.00
28548.000	.97	360.00	5690.00	309.00	5999.00	51.00	6050.00
28571.000	1.03	338.20	5711.80	303.20	6015.00	35.00	6050.00

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04FEB04 12:48:36 PAGE 21

FLOODWAY DATA, ASSUMED STARTING WATER S
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
25654.000	923.	1457.	3.2	1327.0	1326.0	1.0
25707.000	903.	1343.	3.5	1327.1	1326.1	1.0
25757.000	883.	1273.	3.7	1327.3	1326.3	1.0
25784.000	800.	895.	5.3	1327.3	1326.4	.9
25963.000	649.	1486.	3.2	1328.6	1327.6	1.0
26318.000	470.	1584.	3.0	1329.3	1328.5	.8
26638.000	350.	1246.	3.8	1329.8	1329.1	.7
26849.000	200.	911.	5.2	1330.2	1329.4	.8
27090.000	202.	1095.	4.3	1330.9	1330.0	.9
27448.000	241.	1146.	4.1	1331.6	1330.6	1.0
27730.000	352.	1632.	2.9	1332.1	1331.1	1.0
27977.000	375.	1747.	2.7	1332.4	1331.4	1.0
28200.000	420.	1862.	2.5	1332.5	1331.5	1.0
28473.000	383.	1732.	2.7	1332.8	1331.8	1.0
28548.000	360.	1788.	2.6	1332.8	1331.8	1.0
28571.000	338.	620.	7.6	1333.4	1332.4	1.0

Appendix B
Proposed Conditions HEC-2 Model

Proposed Conditions HEC-2 Model
Turkey Creek Addition

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    10FEB04    TIME   15:35:28 *
 *****************************************
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**************************************
* U.S. ARMY CORPS OF ENGINEERS       *
* HYDROLOGIC ENGINEERING CENTER      *
* 609 SECOND STREET, SUITE D         *
* DAVIS, CALIFORNIA 95616-4687       *
*         (916) 756-1104             *
**************************************
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X     X  XXXXXXX   XXXXX            XXXXX
X     X  X       X     X          X     X
X     X  X       X                      X
XXXXXXX  XXXX    X          XXXXX   XXXXX
X     X  X       X                X
X     X  X       X     X          X
X     X  XXXXXXX   XXXXX            XXXXXXX
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THIS RUN EXECUTED 10FEB04 15:35:28

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************
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```
T1      CALFSKIN CREEK BEGINNING 1/2 MI. NORTH OF PAWNEE
T2      EXTENDING SOUTH TO PAWNEE
T3      ASSUMED STARTING WATER SURFACE BASED ON
T4      UNIFORM FLOW DEPTH OF CROSS SECTION 25654
T5      100-YR FLOODPLAIN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0         2         0         0         0         0         0         0    1326.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
        1         0        -1

J3  VARIABLE CODES FOR SUMMARY PRINTOUT
       15       150

QT        1      4710
```

Proposed Conditions HEC-2 Model
Turkey Creek Addition

NC	.045	.045	.040	0.1	0.3					
X1	25654	34	5306	5337	0	0	0		1187.4	
GR	142.7	5000	142	5024	141	5066	140	5108	139	5145
GR	138	5179	137	5214	136	5249	135	5306	134	5312
GR	133	5317	133	5324	134	5329	135	5332	136	5337
GR	137	5352	138	5376	139	5400	140	5426	141	5524
GR	141	5577	140	5745	139	5807	138	5869	137	5971
GR	136	6107	136	6379	137	6420	138	6443	139	6467
GR	140	6496	141	6521	142	6555	143	6577		
X1	25707	36	5305	5341	49	73	53		1187.4	
GR	143	5016	142	5053	141	5094	140	5131	139	5168
GR	138	5203	137	5243	136	5305	135	5308	134	5311
GR	133	5316	133	5326	134	5328	135	5333	136	5337
GR	137	5341	138	5358	139	5378	140	5397	141	5437
GR	142	5497	142	5608	141	5681	140	5758	139	5817
GR	138	5883	137	6000	136	6106	136	6361	137	6411
GR	138	6435	139	6457	140	6486	141	6513	142	6550
GR	143	6576								

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10FEB04 15:35:28 PAGE 2

X1	25757	41	5306	5349	44	78	50		1187.4	
GR	144	5010	143	5047	142	5085	141	5125	140	5162
GR	139	5212	138	5254	137	5306	136	5313	135	5318
GR	134	5320	133	5322	132	5325	132	5328	133	5336
GR	134	5337	135	5338	136	5339	137	5345	138	5349
GR	139	5366	140	5384	141	5407	142	5451	143	5510
GR	143	5596	142	5657	141	5706	140	5763	139	5822
GR	138	5898	137	6017	136	6145	136	6322	137	6402
GR	138	6421	139	6440	140	6465	141	6495	142	6534
GR	143	6567								
X1	25784	43	5307	5354	20	56	27		1187.4	
GR	144	5017	143	5057	142	5100	141	5142	140	5183
GR	139	5230	138	5262	137	5307	136	5314	135	5318
GR	134	5320	133	5322	133	5337	134	5338	135	5339
GR	136	5340	137	5343	138	5349	139	5354	140	5377
GR	141	5394	142	5436	143	5487	143	5608	142	5662
GR	141	5706	140	5751	139	5816	138	5905	137	6024
GR	137	6355	138	6395	139	6413	140	6432	141	6454
GR	142	6482	143	6510	144	6540	144	6566	144	6578
GR	145	6583	146	6587	146	6603				
X1	25963	29	5422	6090	158	300	180		1187.4	
GR	143	5101	142	5148	141	5192	140	5258	139	5306
GR	138	5415	137	5422	136	5427	135	5430	134	5432
GR	133	5435	133	5446	134	5447	135	5448	136	5449
GR	137	5450	138	5454	139	5458	140	5461	141	5465
GR	141	5501	134	5545	134	6052	138	6090	139	6110

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GR     140      6152      141      6261      142      6328      143      6354

X1   26318        32     5772      6105      315       470      355             1187.4
GR     145      5000      144      5058      143      5095      142      5193      141      5249
GR     140      5303      139      5365      138      5707      138      5734      138      5772
GR     137      5774      136      5777      135      5779      134      5782      133      5784
GR     133      5791      134      5792      135      5793      136      5794      137      5795
GR     138      5800      139      5812      139      5825      138      5836      138      5847
GR     138      5862      134      5886      134      6062      141      6105      142      6141
GR     143      6184      145      6431

X1   26638        30     5628      5994      300       340      320             1187.4
GR     143      5008      142      5061      141      5134      140      5207      139      5274
GR     139      5413      139      5508      139      5528      139      5628      138      5631
GR     137      5634      136      5635      135      5636      134      5637      133      5638
GR     133      5646      134      5647      135      5648      136      5649      137      5650
GR     138      5652      139      5670      139      5707      134      5737      134      5945
GR     142      5994      143      6004      145      6151      146      6194      147      6245
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     10FEB04      15:35:28                                                                  PAGE    3

X1   26849        38     5475      5749      211       211      211             1187.4
GR     144      5027      143      5059      142      5148      141      5203      140      5291
GR     140      5315      140      5318      139      5415      137      5475      136      5476
GR     135      5477      135      5481      136      5482      137      5483      138      5484
GR     138      5495      137      5499      136      5500      135      5501      134      5502
GR     133      5504      133      5508      134      5510      135      5511      136      5512
GR     137      5513      138      5515      139      5524      139      5568      134      5598
GR     134      5700      142      5749      143      5793      144      5829      145      5933
GR     145      6089      146      6165      147      6259

X1   27090        41     5414      5737      257       228      241             1187.4
GR     145      5018      144      5053      144      5085      144      5106      143      5130
GR     142      5166      141      5202      140      5242      139      5304      138      5350
GR     137      5392      136      5393      135      5394      135      5395      136      5396
GR     137      5397      138      5399      138      5414      137      5414      136      5415
GR     135      5416      134      5417      134      5422      135      5424      136      5427
GR     137      5429      138      5431      139      5441      139      5462      139      5491
GR     138      5494      134      5518      134      5689      142      5737      143      5768
GR     144      5791      147      5812      148      5848      148      5931      147      6149
GR     147      6190

X1   27448        37     5409      5432      348       358      358             1187.4
GR     145      5025      145      5030      145      5060      144      5082      143      5100
GR     142      5130      141      5179      140      5285      140      5406      140      5409
GR     139      5414      138      5417      137      5418      136      5419      135      5420
GR     134      5421      134      5425      135      5427      136      5428      137      5430
GR     138      5431      139      5432      139      5443      138      5447      138      5460
GR     139      5484      140      5509      141      5534      142      5560      143      5577
GR     144      5594      146      5596      146      5663      147      5704      148      5745
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GR     149      5787      150      5892

X1   27730        35     5622      5677       321       251       282                1187.4
GR     145      5046      144      5099       143      5176       142      5265      141      5488
GR     140      5622      139      5641       138      5642       137      5643      136      5644
GR     135      5645      135      5652       136      5653       137      5655      138      5656
GR     139      5671      140      5677       140      5683       139      5692      138      5700
GR     138      5709      139      5736       140      5765       141      5795      142      5824
GR     143      5830      144      5835       145      5856       146      5877      147      5983
GR     149      6059      150      6103       151      6150       151      6281      151      6349

X1   27977        32     5849      5879       261       234       247                1187.4
GR     146      5029      145      5074       144      5196       143      5366      142      5479
GR     141      5692      140      5849       139      5851       138      5852      137      5853
GR     136      5854      135      5855       135      5859       136      5860      137      5862
GR     138      5864      139      5865       140      5879       140      5885      139      5902
GR     139      5943      140      5984       141      6026       142      6034      144      6042
GR     145      6060      146      6079       147      6222       148      6252      149      6283
GR     150      6314      151      6335

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     10FEB04      15:35:28                                                          PAGE    4

X1   28200        34     5925      5950       223       230       223                1187.4
GR     146      5008      145      5046       144      5174       143      5455      142      5570
GR     141      5788      141      5901       141      5923       140      5925      139      5928
GR     138      5931      137      5933       136      5936       136      5941      137      5942
GR     138      5944      139      5945       140      5950       141      5963      141      5965
GR     140      5991      139      6017       139      6052       140      6088      141      6100
GR     144      6114      145      6132       146      6152       147      6273      148      6304
GR     149      6335      150      6361       151      6452       152      6593

X1   28473        32     5985      6005       265       275       273                1187.4
GR     145      5036      145      5097       144      5400       143      5512      142      5643
GR     141      5881      140      5985       139      5987       138      5988      137      5990
GR     137      5996      138      5997       139      6003       140      6004      141      6005
GR     141      6011      140      6042       139      6057       139      6060      140      6090
GR     141      6113      142      6151       143      6161       144      6165      145      6200
GR     146      6301      147      6325       148      6342       149      6358      150      6471
GR     151      6592      152      6714

X1   28548        33     5987      6011        66        80        75                1187.4
GR     145      5022      145      5031       146      5032       146      5058      145      5061
GR     144      5268      143      5430       142      5659       141      5789      140      5928
GR     140      5943      140      5987       139      5989       138      5991      137      5994
GR     137      6001      138      6006       139      6008       140      6011      140      6027
GR     140      6051      141      6097       142      6167       143      6212      144      6257
GR     145      6294      146      6351       147      6410       148      6488      149      6535
GR     150      6588      150      6590       150      6647
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X1    28571        11       5980       6050         23         23         23                1187.4
GR      146      5088        145       5266        144       5443        143       5661        143       5710
GR      144      5848        145       5980        145       6050        146       6329        147       6410
GR      148      6470
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10FEB04 15:35:28 PAGE 5

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 1
0

CCHV=     .100 CEHV=     .300
*SECNO 25654.000

3265 DIVIDED FLOW

 25654.000      5.60   1326.00       .00   1326.00   1326.13       .13       .00       .00   1322.40
    4710.0     804.6     653.7    3251.6     294.8     142.6    1294.1        .0        .0   1323.40
       .00      2.73      4.58      2.51      .045      .040      .045      .000   1320.40   5158.60
   .002037        0.        0.        0.         0         0         0       .00    857.40   6457.40


*SECNO 25707.000

3265 DIVIDED FLOW

 25707.000      5.73   1326.13       .00       .00   1326.28       .15       .15       .01   1323.40
    4710.0     472.0     755.0    3483.0     196.2     159.1    1264.1       2.6       1.3   1324.40
       .01      2.41      4.75      2.76      .045      .040      .045      .000   1320.40   5177.62
   .002333       49.       53.       73.         1         0         0       .00    810.71   6450.96


*SECNO 25757.000

3265 DIVIDED FLOW

 25757.000      6.89   1326.29       .00       .00   1326.46       .17       .17       .01   1324.40
    4710.0     168.9     836.3    3704.8      89.2     177.4    1246.9       5.2       2.6   1325.40
       .01      1.89      4.71      2.97      .045      .040      .045      .000   1319.40   5216.48
   .002609       44.       50.       78.         2         0         0       .00    755.57   6437.97


*SECNO 25784.000

3265 DIVIDED FLOW
```

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

25784.000	5.98	1326.38	.00	.00	1326.68	.30	.18	.04	1324.40
4710.0	235.7	1107.7	3366.6	81.8	173.0	941.0	6.7	3.4	1326.40
.02	2.88	6.40	3.58	.045	.040	.045	.000	1320.40	5230.70
.005549	20.	27.	56.	0	0	0	.00	717.85	6412.61

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10FEB04 15:35:28 PAGE 6

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 25963.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 5.42

25963.000	6.39	1326.79	.00	.00	1326.83	.03	.12	.03	1324.40
4710.0	50.5	4651.5	8.0	114.0	3106.2	21.0	17.2	7.4	1325.40
.06	.44	1.50	.38	.045	.040	.045	.000	1320.40	5287.23
.000189	158.	180.	300.	2	0	0	.00	787.25	6126.42

*SECNO 26318.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .40

26318.000	6.45	1326.85	.00	.00	1327.00	.14	.14	.03	1325.40
4710.0	491.3	4218.7	.0	425.9	1319.1	.0	37.3	13.5	1328.40
.09	1.15	3.20	.00	.045	.040	.000	.000	1320.40	5337.04
.001155	315.	355.	470.	3	0	0	.00	758.45	6095.48

*SECNO 26638.000

26638.000	6.79	1327.19	.00	.00	1327.31	.12	.31	.00	1326.40
4710.0	235.3	4474.7	.0	298.7	1564.5	.0	50.4	18.8	1329.40
.12	.79	2.86	.00	.045	.040	.000	.000	1320.40	5221.38
.000827	300.	320.	340.	2	0	0	.00	759.06	5980.44

*SECNO 26849.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .61

26849.000	6.95	1327.35	.00	.00	1327.62	.27	.27	.04	1324.40
4710.0	323.7	4386.3	.0	160.9	1028.4	.0	57.8	21.7	1329.40
.14	2.01	4.27	.00	.045	.040	.000	.000	1320.40	5322.76
.002191	211.	211.	211.	2	0	0	.00	413.69	5736.45

*SECNO 27090.000

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10FEB04 15:35:28 PAGE 7

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.75

27090.000	6.40	1327.80	.00	.00	1327.91	.11	.28	.02	1325.40
4710.0	498.6	4211.4	.0	333.3	1504.9	.0	66.2	24.3	1329.40
.16	1.50	2.80	.00	.045	.040	.000	.000	1321.40	5225.93
.000713	257.	241.	228.	2	0	0	.00	501.48	5727.41

*SECNO 27448.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

27448.000	7.71	1329.11	1329.11	.00	1330.00	.88	.66	.23	1327.40
4710.0	1666.1	1215.4	1828.5	353.1	112.9	260.2	76.7	28.0	1326.40
.18	4.72	10.77	7.03	.045	.040	.045	.000	1321.40	5144.13
.012251	348.	358.	358.	20	11	0	.00	408.37	5552.50

*SECNO 27730.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.96

27730.000	8.42	1330.82	.00	.00	1330.96	.14	.89	.07	1327.40
4710.0	1912.4	1143.7	1654.0	910.4	284.4	540.4	84.9	31.7	1327.40
.20	2.10	4.02	3.06	.045	.040	.045	.000	1322.40	5143.29
.001403	321.	282.	251.	4	0	0	.00	688.83	5832.12

*SECNO 27977.000

27977.000	8.77	1331.17	.00	.00	1331.27	.10	.31	.00	1327.40
4710.0	2345.6	624.6	1739.7	1186.8	170.9	626.6	95.6	36.1	1327.40
.23	1.98	3.65	2.78	.045	.040	.045	.000	1322.40	5236.22
.001090	261.	247.	234.	2	0	0	.00	804.84	6041.05

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10FEB04 15:35:28 PAGE 8

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 28200.000									
28200.000	8.01	1331.41	.00	.00	1331.51	.10	.24	.00	1327.40
4710.0	2308.3	584.2	1817.5	1280.6	154.4	661.8	106.2	40.6	1327.40
.26	1.80	3.78	2.75	.045	.040	.045	.000	1323.40	5172.19
.001010	223.	223.	230.	2	0	0	.00	942.07	6114.25
*SECNO 28473.000									
28473.000	7.29	1331.69	.00	.00	1331.78	.09	.27	.00	1327.40
4710.0	2783.1	444.0	1482.9	1399.8	123.0	585.9	119.2	46.1	1328.40
.29	1.99	3.61	2.53	.045	.040	.045	.000	1324.40	5309.49
.000964	265.	273.	275.	0	0	0	.00	865.96	6175.45
*SECNO 28548.000									
28548.000	7.38	1331.78	.00	.00	1331.84	.06	.06	.00	1327.40
4710.0	2982.1	488.9	1239.1	1753.5	154.4	680.0	122.9	47.7	1327.40
.30	1.70	3.17	1.82	.045	.040	.045	.000	1324.40	5191.08
.000645	66.	75.	80.	1	0	0	.00	1079.67	6270.75
*SECNO 28571.000									
3685 20 TRIALS ATTEMPTED WSEL,CWSEL									
3693 PROBABLE MINIMUM SPECIFIC ENERGY									
3720 CRITICAL DEPTH ASSUMED									
28571.000	2.00	1332.40	1332.40	.00	1332.96	.55	.04	.15	1332.40
4710.0	4709.9	.1	.0	789.9	.3	.0	123.8	48.2	1332.40
.30	5.96	.16	.05	.045	.040	.045	.000	1330.40	5265.15
.022143	23.	23.	23.	20	14	0	.00	786.18	6051.33

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10FEB04 15:35:28 PAGE 9

THIS RUN EXECUTED 10FEB04 15:35:28

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

ASSUMED STARTING WATER S

SUMMARY PRINTOUT

	QROB
	3251.626
	3482.998
	3704.784
*	3366.589
*	7.980
*	.000
	.000
*	.000
*	.000
*	1828.486
*	1653.956
	1739.739
	1817.533
	1482.919
	1239.072
*	.000

1

ASSUMED STARTING WATER S

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	25654.000	.00	.00	.00	1320.40	4710.00	1326.00	.00	1326.13	20.37	4.58	1731.50	1043.61
	25707.000	53.00	.00	.00	1320.40	4710.00	1326.13	.00	1326.28	23.33	4.75	1619.34	975.09
	25757.000	50.00	.00	.00	1319.40	4710.00	1326.29	.00	1326.46	26.09	4.71	1513.51	922.13
*	25784.000	27.00	.00	.00	1320.40	4710.00	1326.38	.00	1326.68	55.49	6.40	1195.78	632.26
*	25963.000	180.00	.00	.00	1320.40	4710.00	1326.79	.00	1326.83	1.89	1.50	3241.29	3423.93
*	26318.000	355.00	.00	.00	1320.40	4710.00	1326.85	.00	1327.00	11.55	3.20	1744.95	1386.05
	26638.000	320.00	.00	.00	1320.40	4710.00	1327.19	.00	1327.31	8.27	2.86	1863.17	1637.68
*	26849.000	211.00	.00	.00	1320.40	4710.00	1327.35	.00	1327.62	21.91	4.27	1189.32	1006.13
*	27090.000	241.00	.00	.00	1321.40	4710.00	1327.80	.00	1327.91	7.13	2.80	1838.25	1764.05
*	27448.000	358.00	.00	.00	1321.40	4710.00	1329.11	1329.11	1330.00	122.51	10.77	726.09	425.54
*	27730.000	282.00	.00	.00	1322.40	4710.00	1330.82	.00	1330.96	14.03	4.02	1735.22	1257.65
	27977.000	247.00	.00	.00	1322.40	4710.00	1331.17	.00	1331.27	10.90	3.65	1984.23	1426.51
	28200.000	223.00	.00	.00	1323.40	4710.00	1331.41	.00	1331.51	10.10	3.78	2096.83	1482.35
	28473.000	273.00	.00	.00	1324.40	4710.00	1331.69	.00	1331.78	9.64	3.61	2108.59	1516.75
	28548.000	75.00	.00	.00	1324.40	4710.00	1331.78	.00	1331.84	6.45	3.17	2587.84	1854.23
*	28571.000	23.00	.00	.00	1330.40	4710.00	1332.40	1332.40	1332.96	221.43	.16	790.24	316.52

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ASSUMED STARTING WATER S

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	25654.000	4710.00	1326.00	.00	.00	.00	857.40	.00
	25707.000	4710.00	1326.13	.00	.13	.00	810.71	53.00
	25757.000	4710.00	1326.29	.00	.16	.00	755.57	50.00
*	25784.000	4710.00	1326.38	.00	.09	.00	717.85	27.00

*	25963.000	4710.00	1326.79	.00	.41	.00	787.25	180.00
*	26318.000	4710.00	1326.85	.00	.06	.00	758.45	355.00
	26638.000	4710.00	1327.19	.00	.33	.00	759.06	320.00
*	26849.000	4710.00	1327.35	.00	.17	.00	413.69	211.00
*	27090.000	4710.00	1327.80	.00	.45	.00	501.48	241.00
*	27448.000	4710.00	1329.11	.00	1.31	.00	408.37	358.00
*	27730.000	4710.00	1330.82	.00	1.71	.00	688.83	282.00
	27977.000	4710.00	1331.17	.00	.35	.00	804.84	247.00
	28200.000	4710.00	1331.41	.00	.24	.00	942.07	223.00
	28473.000	4710.00	1331.69	.00	.28	.00	865.96	273.00
	28548.000	4710.00	1331.78	.00	.09	.00	1079.67	75.00
*	28571.000	4710.00	1332.40	.00	.63	.00	786.18	23.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 25784.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 25963.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 26318.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 26849.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

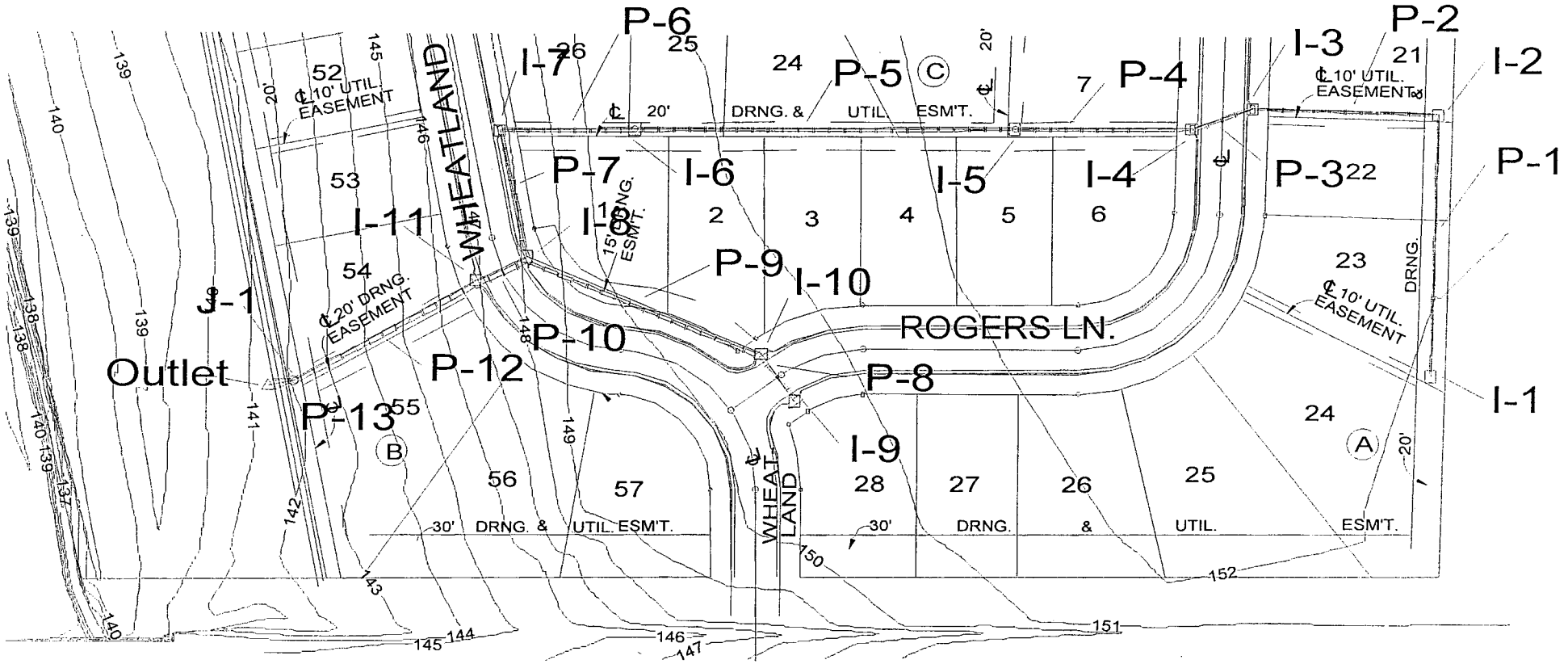
WARNING SECNO= 27090.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 27448.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 27448.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 27448.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 27730.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 28571.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 28571.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 28571.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

Appendix C
Stormwater Sewer System #1
StormCad Analysis



Project Title: Turkey Creek Addition, System #1
f:\...\stormcad\sys1\sys1_2.stm
02/10/04 08:38:58 AM

Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Baughman Company, P.A.
StormCAD v1.0

Turkey Creek Addtion, System 1, inlet I-3

Drainage area, acres	0.3
Li = Inlet Length	5
So = street grade, ft/ft	0.0053
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	0.5	0.7	1.5
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	0.5	0.7	1.5
depth of flow, ft	0.17	0.19	0.25
Flow width, ft	5.45	5.96	8.15
Froude Number	0.64550	0.65515	0.69033
Length 1, ft	3.10	3.44	4.96
Length 2, ft	2.03	2.26	3.25
Length 3, ft	5.80	6.44	9.29
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 0.9 0.0	NO GOOD 1.0 0.0	NO GOOD 1.6 0.0
case 2, Li > L2 intercepted flow bypassed flow	VALID 0.5 0.0	VALID 0.6 0.1	VALID 1.2 0.3

Turkey Creek Addtion, System 1, inlet I-4

Drainage area, acres	0.3
Li = Inlet Length	5
So = street grade, ft/ft	0.0053
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	0.5	0.7	1.5
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	0.5	0.7	1.5
depth of flow, ft	0.17	0.19	0.25
Flow width, ft	5.45	5.96	8.15
Froude Number	0.64550	0.65515	0.69033
Length 1, ft	3.10	3.44	4.96
Length 2, ft	2.03	2.26	3.25
Length 3, ft	5.80	6.44	9.29
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 0.9 0.0	NO GOOD 1.0 0.0	NO GOOD 1.6 0.0
case 2, Li > L2 intercepted flow bypassed flow	VALID 0.5 0.0	VALID 0.6 0.1	VALID 1.2 0.3

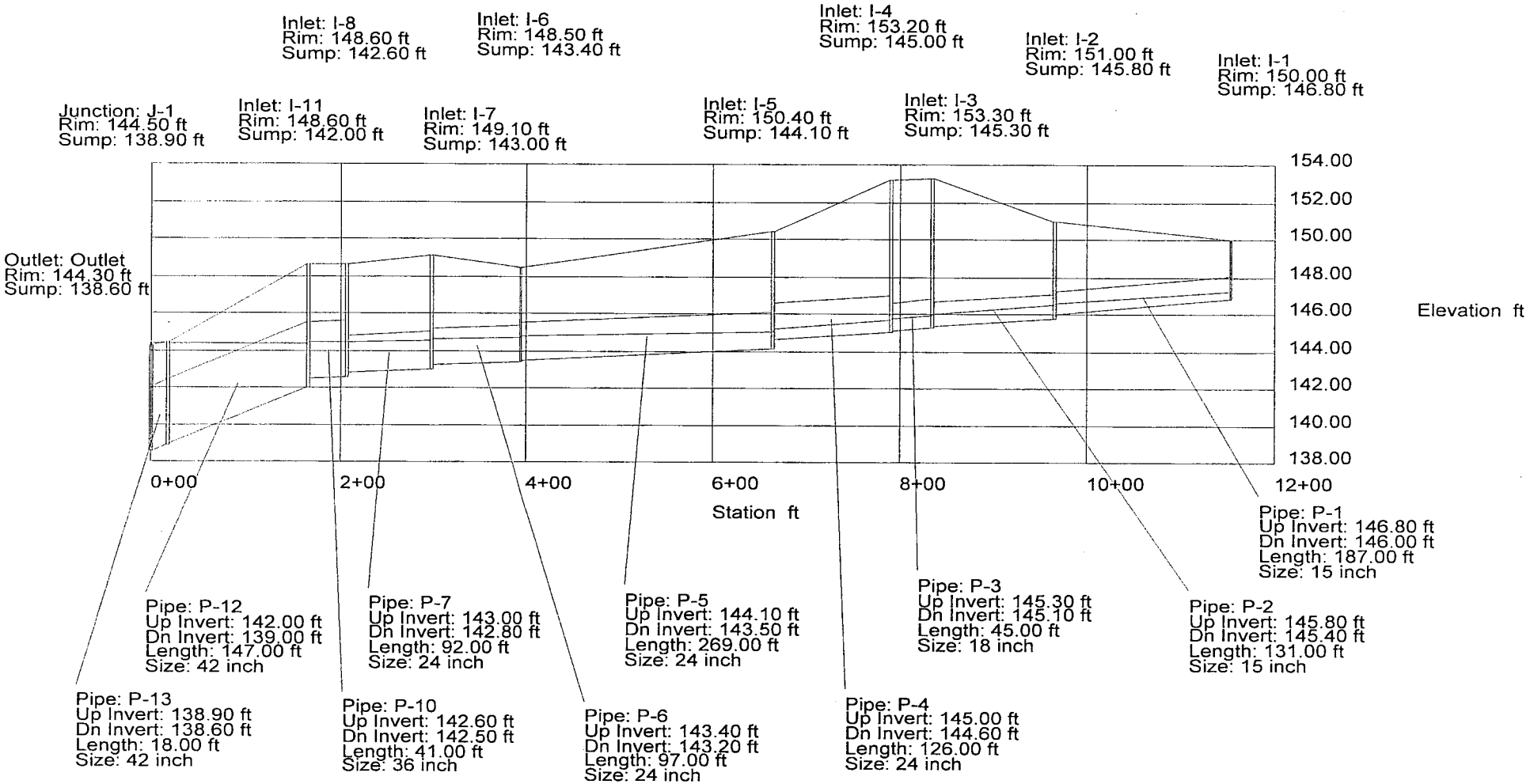
Turkey Creek Addtion, System 1, inlet I-7

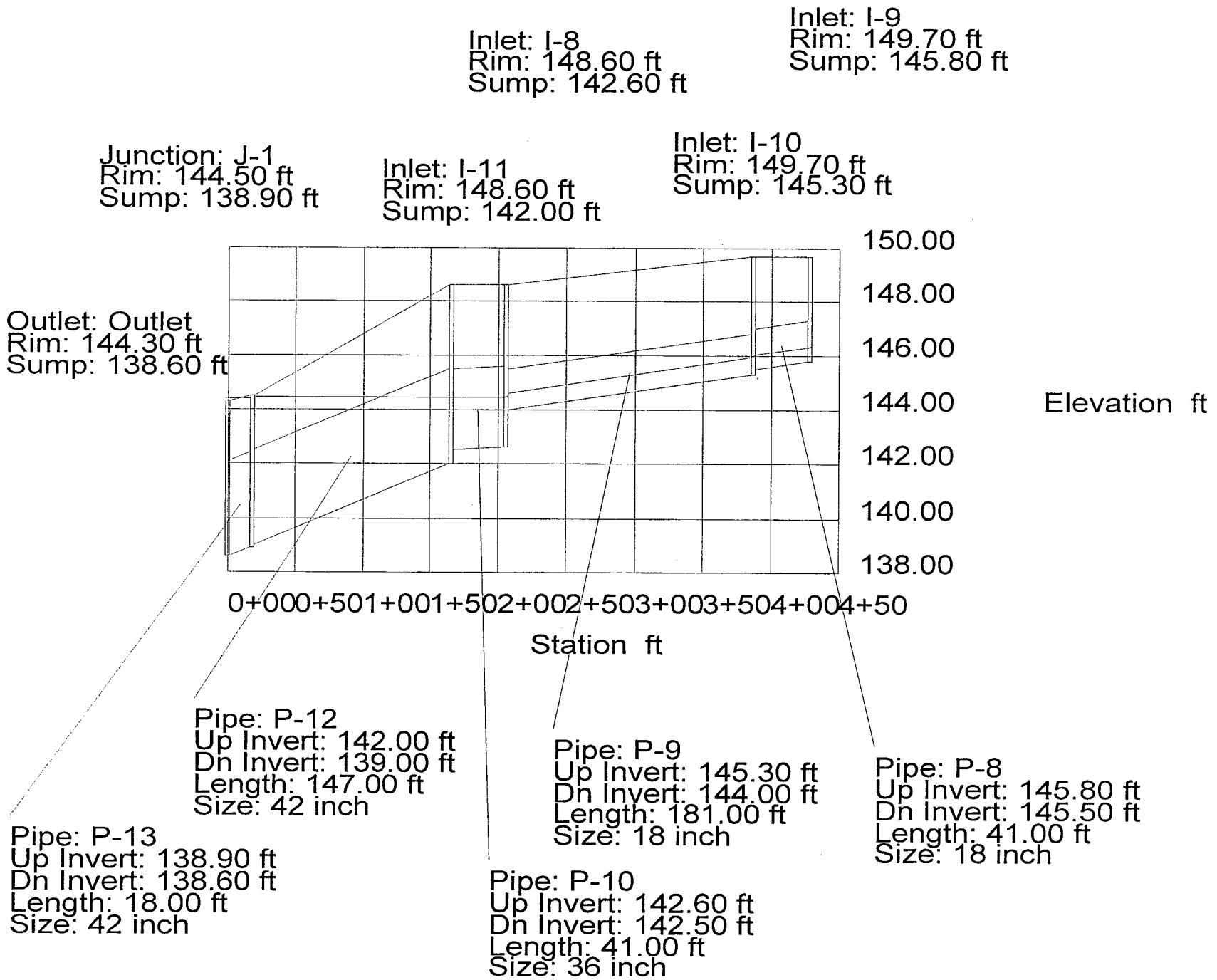
Drainage area, acres	0.8
Li = Inlet Length	5
So = street grade, ft/ft	0.0053
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	1.4	1.8	4.1
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	1.4	1.8	4.1
depth of flow, ft	0.25	0.27	0.37
Flow width, ft	7.87	8.61	11.78
Froude Number	0.68630	0.69657	0.73397
Length 1, ft	4.76	5.28	7.61
Length 2, ft	3.12	3.47	5.00
Length 3, ft	8.92	9.89	14.27
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 1.5 0.0	NO GOOD 1.7 0.1	NO GOOD 2.7 1.4
case 2, Li > L2 intercepted flow bypassed flow	VALID 1.1 0.3	VALID 1.4 0.4	VALID 2.7 1.4

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-8	1.60	0.00	1.60	I-9	Circular	145.80	145.50	149.70	146.27	0.006818	1.60	41.00
				I-10	18 inch			149.70	146.06	0.007317	8.98	
P-9	1.20	1.60	2.80	I-10	Circular	145.30	144.00	149.70	145.94	0.007118	2.80	181.00
				I-8	18 inch			148.60	144.58	0.007182	8.90	
P-1	1.20	0.00	1.20	I-1	Circular	146.80	146.00	150.00	147.26	0.004028	1.20	187.00
				I-2	15 inch			151.00	146.56	0.004278	4.22	
P-2	0.90	1.20	2.10	I-2	Circular	145.80	145.40	151.00	146.49	0.003215	2.10	131.00
				I-3	15 inch			153.30	146.04	0.003053	3.57	
P-3	0.50	2.10	2.60	I-3	Circular	145.30	145.10	153.30	145.93	0.004335	2.60	45.00
				I-4	18 inch			153.20	145.76	0.004444	7.00	
P-4	0.50	2.60	3.10	I-4	Circular	145.00	144.60	153.20	145.67	0.003245	3.10	126.00
				I-5	24 inch			150.40	145.22	0.003175	12.75	
P-5	1.40	3.10	4.50	I-5	Circular	144.10	143.50	150.40	145.04	0.001321	4.50	269.00
				I-6	24 inch			148.50	144.76	0.002230	10.68	
P-6	1.40	4.50	5.90	I-6	Circular	143.40	143.20	148.50	144.71	0.001045	5.90	97.00
				I-7	24 inch			149.10	144.62	0.002062	10.27	
P-7	1.10	5.90	7.00	I-7	Circular	143.00	142.80	149.10	144.57	0.000971	7.00	92.00
				I-8	24 inch			148.60	144.50	0.002174	10.55	
P-10	1.00	9.80	10.80	I-8	Circular	142.60	142.50	148.60	144.45	0.000501	10.80	41.00
				I-11	36 inch			148.60	144.44	0.002439	32.94	
P-12	1.60	10.80	12.40	I-11	Circular	142.00	139.00	148.60	144.42	0.000156	12.40	147.00
				J-1	42 inch			144.50	144.42	0.020408	143.72	
P-13	N/A	12.40	12.40	J-1	Circular	138.90	138.60	144.50	144.40	0.000152	12.40	18.00
				Outlet	42 inch			144.30	144.40	0.016667	129.88	

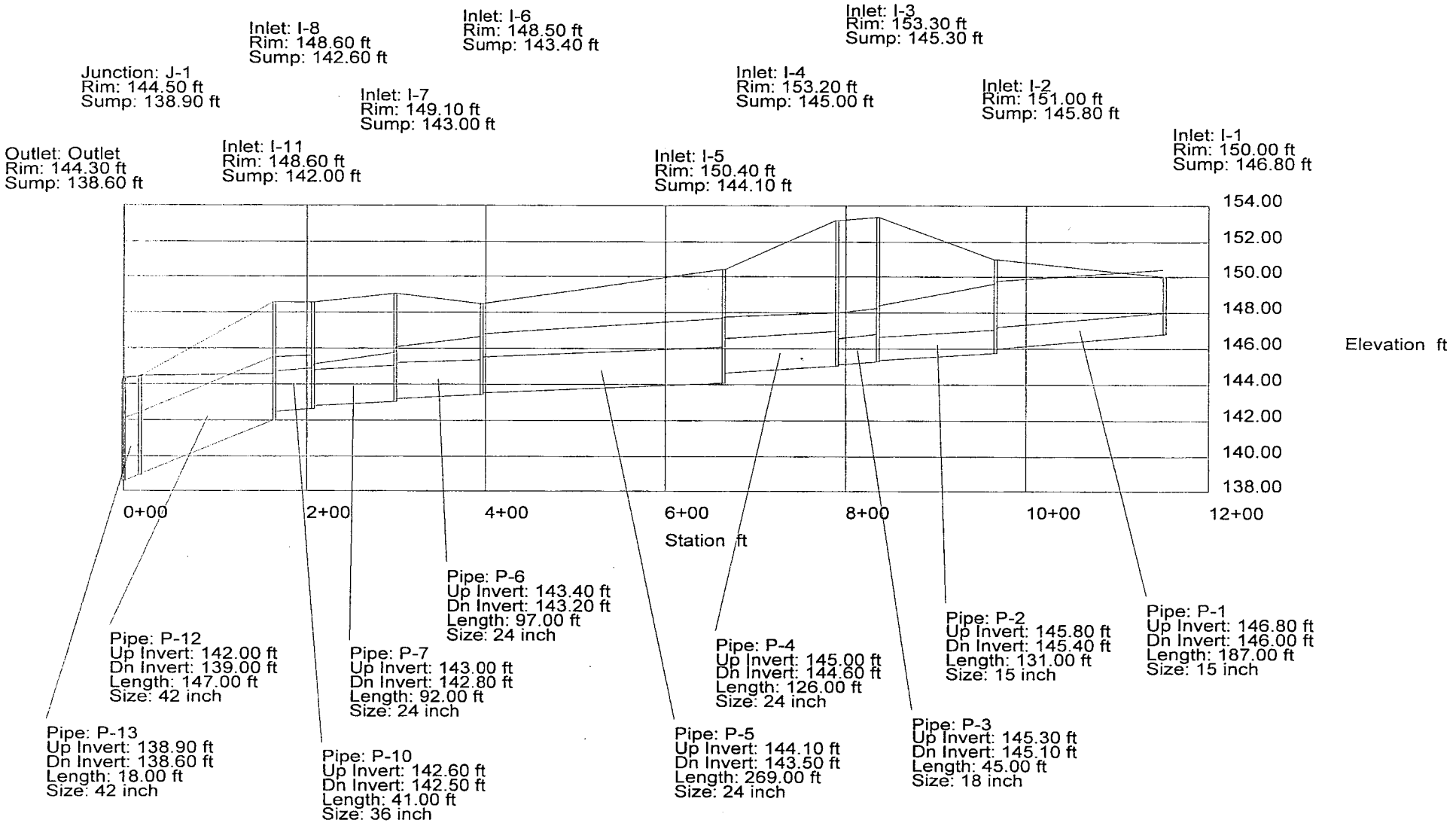

Inlet: I-8
Rim: 148.60 ft
Sump: 142.60 ft
Inlet: I-6
Rim: 148.50 ft
Sump: 143.40 ft
Inlet: I-4
Rim: 153.20 ft
Sump: 145.00 ft
Inlet: I-2
Rim: 151.00 ft
Sump: 145.80 ft
Inlet: I-1
Rim: 150.00 ft
Sump: 146.80 ft
Junction: J-1
Rim: 144.50 ft
Sump: 138.90 ft
Inlet: I-11
Rim: 148.60 ft
Sump: 142.00 ft
Inlet: I-7
Rim: 149.10 ft
Sump: 143.00 ft
Inlet: I-5
Rim: 150.40 ft
Sump: 144.10 ft
Inlet: I-3
Rim: 153.30 ft
Sump: 145.30 ft
Outlet: Outlet
Rim: 144.30 ft
Sump: 138.60 ft
154.00
152.00
150.00
148.00
146.00
144.00
142.00
140.00
138.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
Station ft
Pipe: P-1
Up Invert: 146.80 ft
Dn Invert: 146.00 ft
Length: 187.00 ft
Size: 15 inch
Pipe: P-2
Up Invert: 145.80 ft
Dn Invert: 145.40 ft
Length: 131.00 ft
Size: 15 inch
Pipe: P-3
Up Invert: 145.30 ft
Dn Invert: 145.10 ft
Length: 45.00 ft
Size: 18 inch
Pipe: P-4
Up Invert: 145.00 ft
Dn Invert: 144.60 ft
Length: 126.00 ft
Size: 24 inch
Pipe: P-5
Up Invert: 144.10 ft
Dn Invert: 143.50 ft
Length: 269.00 ft
Size: 24 inch
Pipe: P-6
Up Invert: 143.40 ft
Dn Invert: 143.20 ft
Length: 97.00 ft
Size: 24 inch
Pipe: P-7
Up Invert: 143.00 ft
Dn Invert: 142.80 ft
Length: 92.00 ft
Size: 24 inch
Pipe: P-10
Up Invert: 142.60 ft
Dn Invert: 142.50 ft
Length: 41.00 ft
Size: 36 inch
Pipe: P-12
Up Invert: 142.00 ft
Dn Invert: 139.00 ft
Length: 147.00 ft
Size: 42 inch
Pipe: P-13
Up Invert: 138.90 ft
Dn Invert: 138.60 ft
Length: 18.00 ft
Size: 42 inch



Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-8	4.90	0.00	4.90	I-9	Circular	145.80	145.50	149.70	146.78	0.002706	4.90	41.00
				I-10	18 inch			149.70	146.77	0.007317	8.98	
P-9	3.90	4.90	8.80	I-10	Circular	145.30	144.00	149.70	146.51	0.007222	8.80	181.00
				I-8	18 inch			148.60	145.15	0.007182	8.90	
P-1	3.60	0.00	3.60	I-1	Circular	146.80	146.00	150.00	150.40	0.003106	3.60	187.00
				I-2	15 inch			151.00	149.82	0.004278	4.22	
P-2	2.60	3.60	6.20	I-2	Circular	145.80	145.40	151.00	149.62	0.009213	6.20	131.00
				I-3	15 inch			153.30	148.41	0.003053	3.57	
P-3	1.20	6.20	7.40	I-3	Circular	145.30	145.10	153.30	148.28	0.004963	7.40	45.00
				I-4	18 inch			153.20	148.05	0.004444	7.00	
P-4	1.20	7.40	8.60	I-4	Circular	145.00	144.60	153.20	147.99	0.001445	8.60	126.00
				I-5	24 inch			150.40	147.81	0.003175	12.75	
P-5	4.10	8.60	12.70	I-5	Circular	144.10	143.50	150.40	147.69	0.003152	12.70	269.00
				I-6	24 inch			148.50	146.84	0.002230	10.68	
P-6	4.10	12.70	16.80	I-6	Circular	143.40	143.20	148.50	146.62	0.005516	16.80	97.00
				I-7	24 inch			149.10	146.08	0.002062	10.27	
P-7	2.70	16.80	19.50	I-7	Circular	143.00	142.80	149.10	145.78	0.007431	19.50	92.00
				I-8	24 inch			148.60	145.10	0.002174	10.55	
P-10	3.50	28.30	31.80	I-8	Circular	142.60	142.50	148.60	144.86	0.002752	31.80	41.00
				I-11	36 inch			148.60	144.73	0.002439	32.94	
P-12	4.60	31.80	36.40	I-11	Circular	142.00	139.00	148.60	144.55	0.001309	36.40	147.00
				J-1	42 inch			144.50	144.50	0.020408	143.72	
P-13	N/A	36.40	36.40	J-1	Circular	138.90	138.60	144.50	144.42	0.001309	36.40	18.00
				Outlet	42 inch			144.30	144.40	0.016667	129.88	


Inlet: I-8
Rim: 148.60 ft
Sump: 142.60 ft
Inlet: I-6
Rim: 148.50 ft
Sump: 143.40 ft
Inlet: I-3
Rim: 153.30 ft
Sump: 145.30 ft
Junction: J-1
Rim: 144.50 ft
Sump: 138.90 ft
Inlet: I-7
Rim: 149.10 ft
Sump: 143.00 ft
Inlet: I-4
Rim: 153.20 ft
Sump: 145.00 ft
Inlet: I-2
Rim: 151.00 ft
Sump: 145.80 ft
Inlet: I-1
Rim: 150.00 ft
Sump: 146.80 ft
Outlet: Outlet
Rim: 144.30 ft
Sump: 138.60 ft
Inlet: I-11
Rim: 148.60 ft
Sump: 142.00 ft
Inlet: I-5
Rim: 150.40 ft
Sump: 144.10 ft
154.00
152.00
150.00
148.00
146.00
144.00
142.00
140.00
138.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
Station ft
Pipe: P-6
Up Invert: 143.40 ft
Dn Invert: 143.20 ft
Length: 97.00 ft
Size: 24 inch
Pipe: P-12
Up Invert: 142.00 ft
Dn Invert: 139.00 ft
Length: 147.00 ft
Size: 42 inch
Pipe: P-7
Up Invert: 143.00 ft
Dn Invert: 142.80 ft
Length: 92.00 ft
Size: 24 inch
Pipe: P-4
Up Invert: 145.00 ft
Dn Invert: 144.60 ft
Length: 126.00 ft
Size: 24 inch
Pipe: P-2
Up Invert: 145.80 ft
Dn Invert: 145.40 ft
Length: 131.00 ft
Size: 15 inch
Pipe: P-1
Up Invert: 146.80 ft
Dn Invert: 146.00 ft
Length: 187.00 ft
Size: 15 inch
Pipe: P-13
Up Invert: 138.90 ft
Dn Invert: 138.60 ft
Length: 18.00 ft
Size: 42 inch
Pipe: P-10
Up Invert: 142.60 ft
Dn Invert: 142.50 ft
Length: 41.00 ft
Size: 36 inch
Pipe: P-5
Up Invert: 144.10 ft
Dn Invert: 143.50 ft
Length: 269.00 ft
Size: 24 inch
Pipe: P-3
Up Invert: 145.30 ft
Dn Invert: 145.10 ft
Length: 45.00 ft
Size: 18 inch

Inlet: I-8
Rim: 148.60 ft
Sump: 142.60 ft

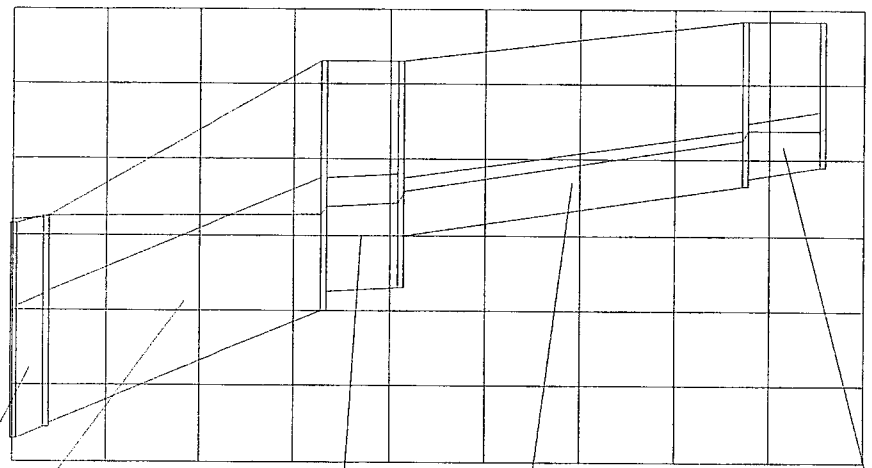
Inlet: I-9
Rim: 149.70 ft
Sump: 145.80 ft

Junction: J-1
Rim: 144.50 ft
Sump: 138.90 ft

Inlet: I-11
Rim: 148.60 ft
Sump: 142.00 ft

Inlet: I-10
Rim: 149.70 ft
Sump: 145.30 ft

Outlet: Outlet
Rim: 144.30 ft
Sump: 138.60 ft



Pipe: P-12
Up Invert: 142.00 ft
Dn Invert: 139.00 ft
Length: 147.00 ft
Size: 42 inch

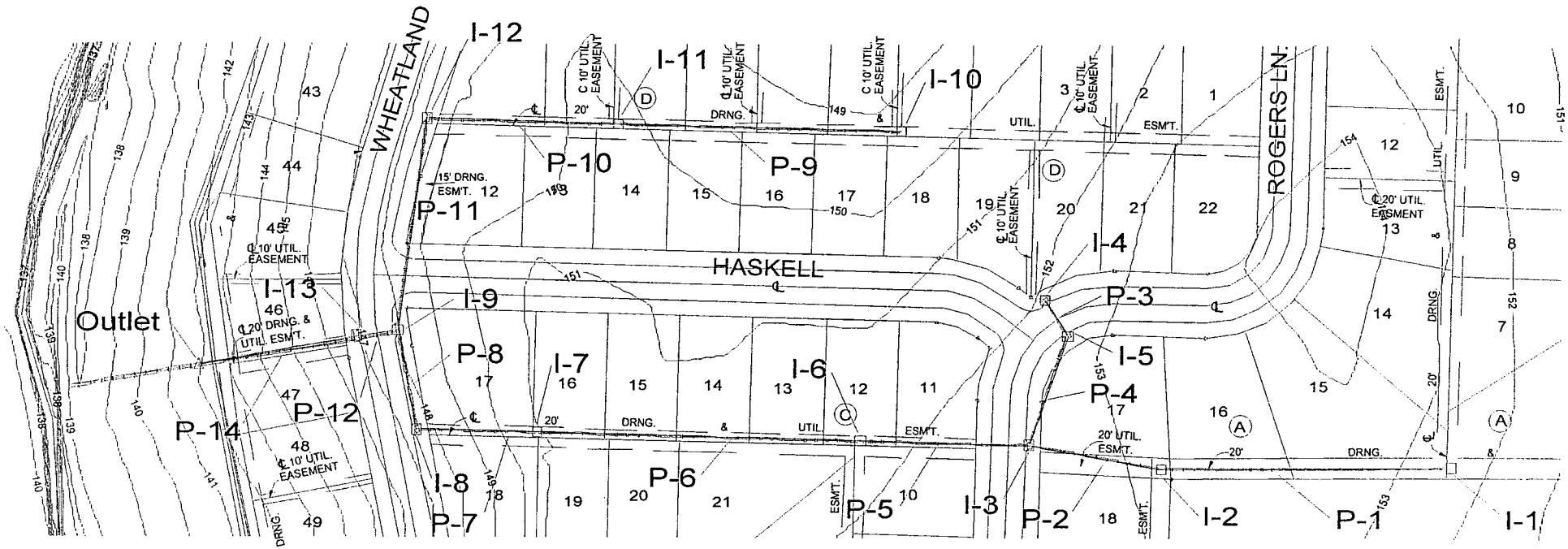
Pipe: P-9
Up Invert: 145.30 ft
Dn Invert: 144.00 ft
Length: 181.00 ft
Size: 18 inch

Pipe: P-8
Up Invert: 145.80 ft
Dn Invert: 145.50 ft
Length: 41.00 ft
Size: 18 inch

Pipe: P-13
Up Invert: 138.90 ft
Dn Invert: 138.60 ft
Length: 18.00 ft
Size: 42 inch

Pipe: P-10
Up Invert: 142.60 ft
Dn Invert: 142.50 ft
Length: 41.00 ft
Size: 36 inch

Appendix D
Stormwater Sewer System #2
StormCad Analysis



Project Title: Turkey Creek Addition, System #2
f:\...\stormcad\sys2\sys2_2.stm
02/10/04 09:50:11 AM

Baughman Company, P.A.
 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Baughman Company, P.A.
StormCAD v1.0

Turkey Creek Addition, System 2, Inlet I-3

Drainage area, acres	0.3
Li = Inlet Length	5
So = street grade, ft/ft	0.00505
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	0.5	0.7	1.5
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	0.5	0.7	1.5
depth of flow, ft	0.17	0.19	0.26
Flow width, ft	5.50	6.01	8.23
Froude Number	0.63104	0.64048	0.67487
Length 1, ft	3.06	3.39	4.89
Length 2, ft	2.01	2.23	3.21
Length 3, ft	5.73	6.35	9.16
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 0.9 0.0	NO GOOD 1.0 0.0	NO GOOD 1.6 0.0
case 2, Li > L2 intercepted flow bypassed flow	VALID 0.5 0.0	VALID 0.6 0.1	VALID 1.2 0.3

Turkey Creek Addition, System 2, Inlet I-8

Drainage area, acres	0.7
Li = Inlet Length	5
So = street grade, ft/ft	0.005145
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	1.2	1.6	3.6
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	1.2	1.6	3.6
depth of flow, ft	0.24	0.26	0.35
Flow width, ft	7.53	8.23	11.27
Froude Number	0.67120	0.68124	0.71781
Length 1, ft	4.45	4.94	7.12
Length 2, ft	2.92	3.24	4.67
Length 3, ft	8.34	9.25	13.34
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 1.4 0.0	NO GOOD 1.6 0.0	NO GOOD 2.5 1.1
case 2, Li > L2 intercepted flow bypassed flow	VALID 1.0 0.2	VALID 1.2 0.3	VALID 2.4 1.2

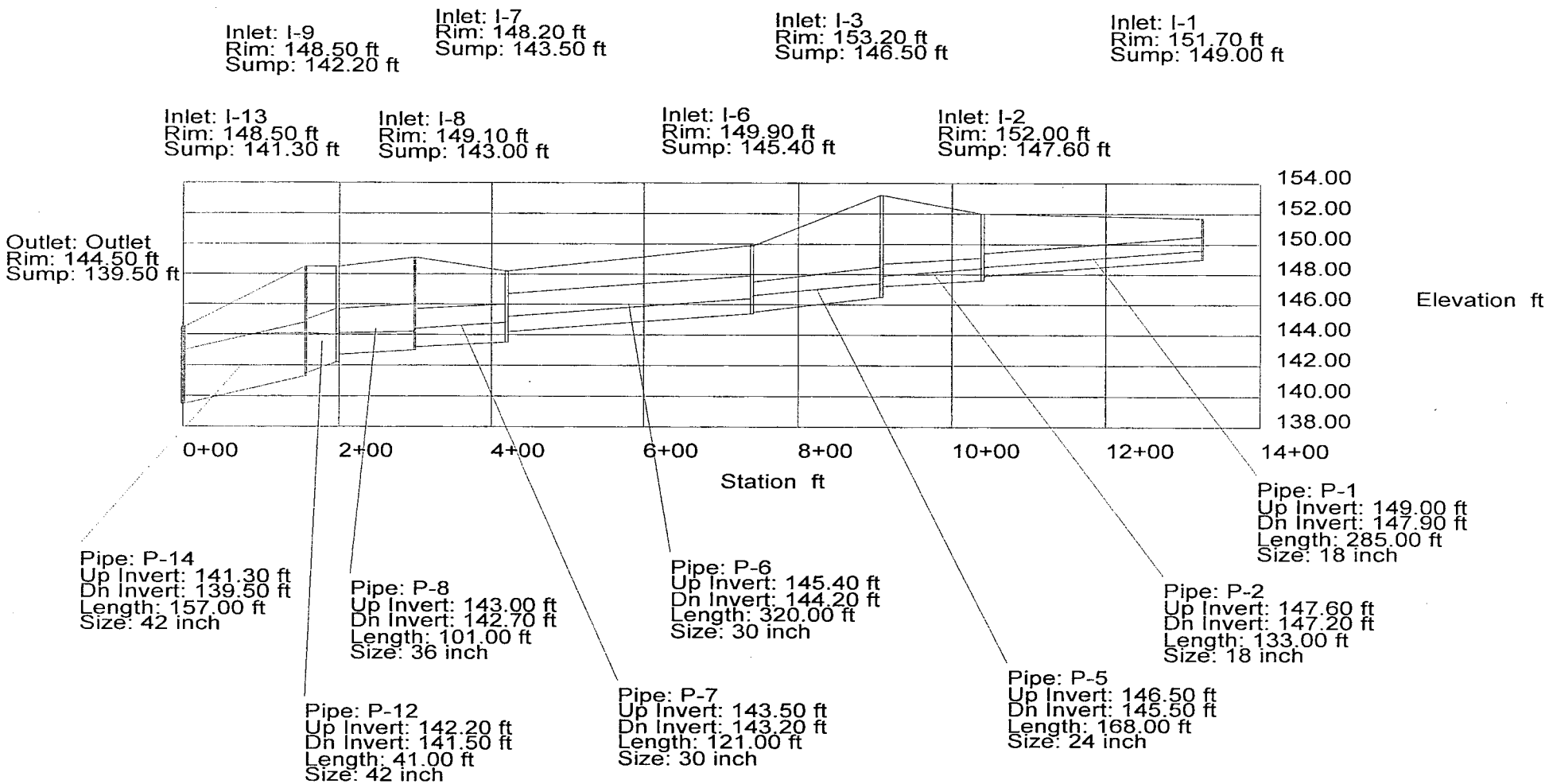
Turkey Creek Addition, System 2, Inlet I-12

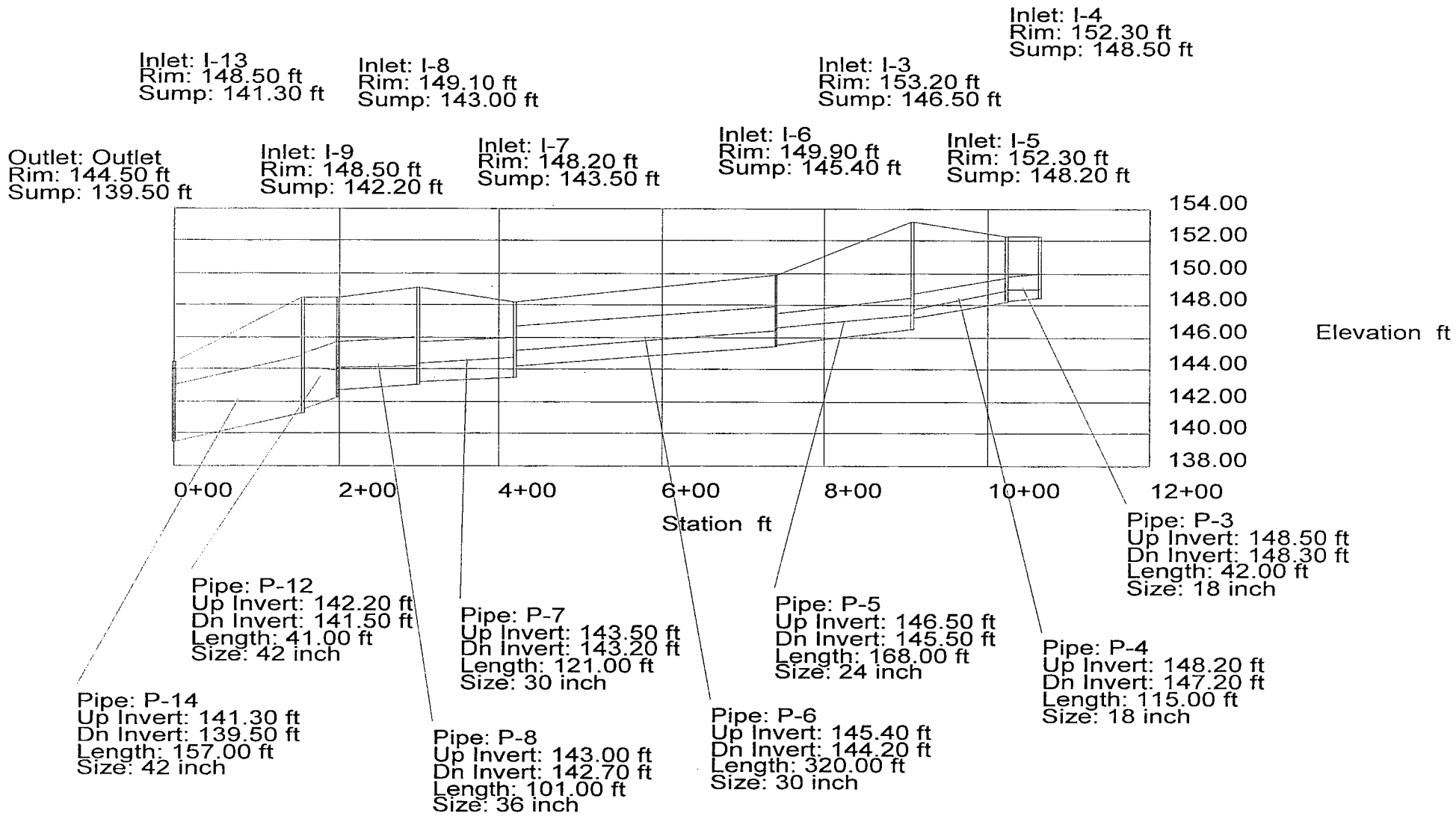
Drainage area, acres	0.1
Li = Inlet Length	5
So = street grade, ft/ft	0.005526
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

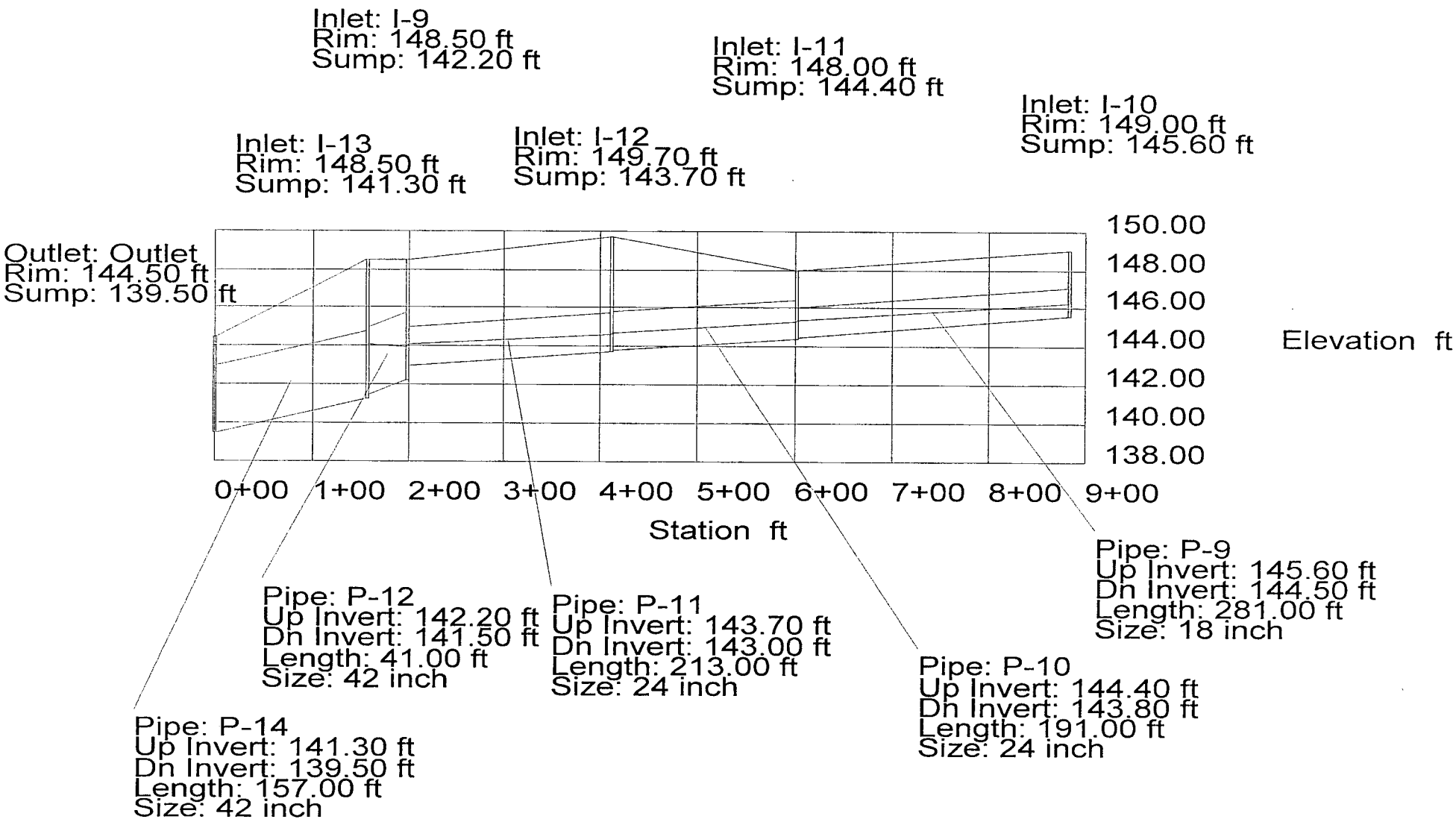
	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	0.2	0.2	0.5
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	0.2	0.2	0.5
depth of flow, ft	0.11	0.12	0.17
Flow width, ft	3.58	3.92	5.36
Froude Number	0.61457	0.62377	0.65726
Length 1, ft	1.94	2.15	3.10
Length 2, ft	1.27	1.41	2.04
Length 3, ft	3.63	4.03	5.81
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 0.5 0.0	NO GOOD 0.5 0.0	NO GOOD 0.8 0.0
case 2, Li > L2 intercepted flow bypassed flow	VALID 0.2 0.0	VALID 0.2 0.0	VALID 0.5 0.0

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-9	2.80	0.00	2.80	I-10	Circular	145.60	144.50	149.00	146.28	0.003507	2.80	281.00
				I-11	18 inch			148.00	145.40	0.003915	6.57	
P-10	2.30	2.80	5.10	I-11	Circular	144.40	143.80	148.00	145.28	0.003089	5.10	191.00
				I-12	24 inch			149.70	144.71	0.003141	12.68	
P-11	0.20	5.10	5.30	I-12	Circular	143.70	143.00	149.70	144.59	0.002720	5.30	213.00
				I-9	24 inch			148.50	144.12	0.003286	12.97	
P-3	1.90	0.00	1.90	I-4	Circular	148.50	148.30	152.30	149.02	0.002979	1.90	42.00
				I-5	18 inch			152.30	149.00	0.004762	7.25	
P-4	1.20	1.90	3.10	I-5	Circular	148.20	147.20	152.30	148.87	0.008439	3.10	115.00
				I-3	18 inch			153.20	147.78	0.008696	9.79	
P-1	1.90	0.00	1.90	I-1	Circular	149.00	147.90	151.70	149.55	0.003861	1.90	285.00
				I-2	18 inch			152.00	148.45	0.003860	6.53	
P-2	1.10	1.90	3.00	I-2	Circular	147.60	147.20	152.00	148.37	0.003214	3.00	133.00
				I-3	18 inch			153.20	147.86	0.003008	5.76	
P-5	0.50	6.10	6.60	I-3	Circular	146.50	145.50	153.20	147.41	0.005710	6.60	168.00
				I-6	24 inch			149.90	146.57	0.005952	17.45	
P-6	1.90	6.60	8.50	I-6	Circular	145.40	144.20	149.90	146.40	0.003756	8.50	320.00
				I-7	30 inch			148.20	145.17	0.003750	25.12	
P-7	1.90	8.50	10.40	I-7	Circular	143.50	143.20	148.20	144.75	0.002754	10.40	121.00
				I-8	30 inch			149.10	144.36	0.002479	20.42	
P-8	1.00	10.40	11.40	I-8	Circular	143.00	142.70	149.10	144.22	0.001915	11.40	101.00
				I-9	36 inch			148.50	144.12	0.002970	36.35	
P-12	4.10	16.70	20.80	I-9	Circular	142.20	141.50	148.50	143.98	0.000899	20.80	41.00
				I-13	42 inch			148.50	144.10	0.017073	131.45	
P-14	1.90	20.80	22.70	I-13	Circular	141.30	139.50	148.50	144.04	0.000503	22.70	157.00
				Outlet	42 inch			144.50	144.00	0.011465	107.72	



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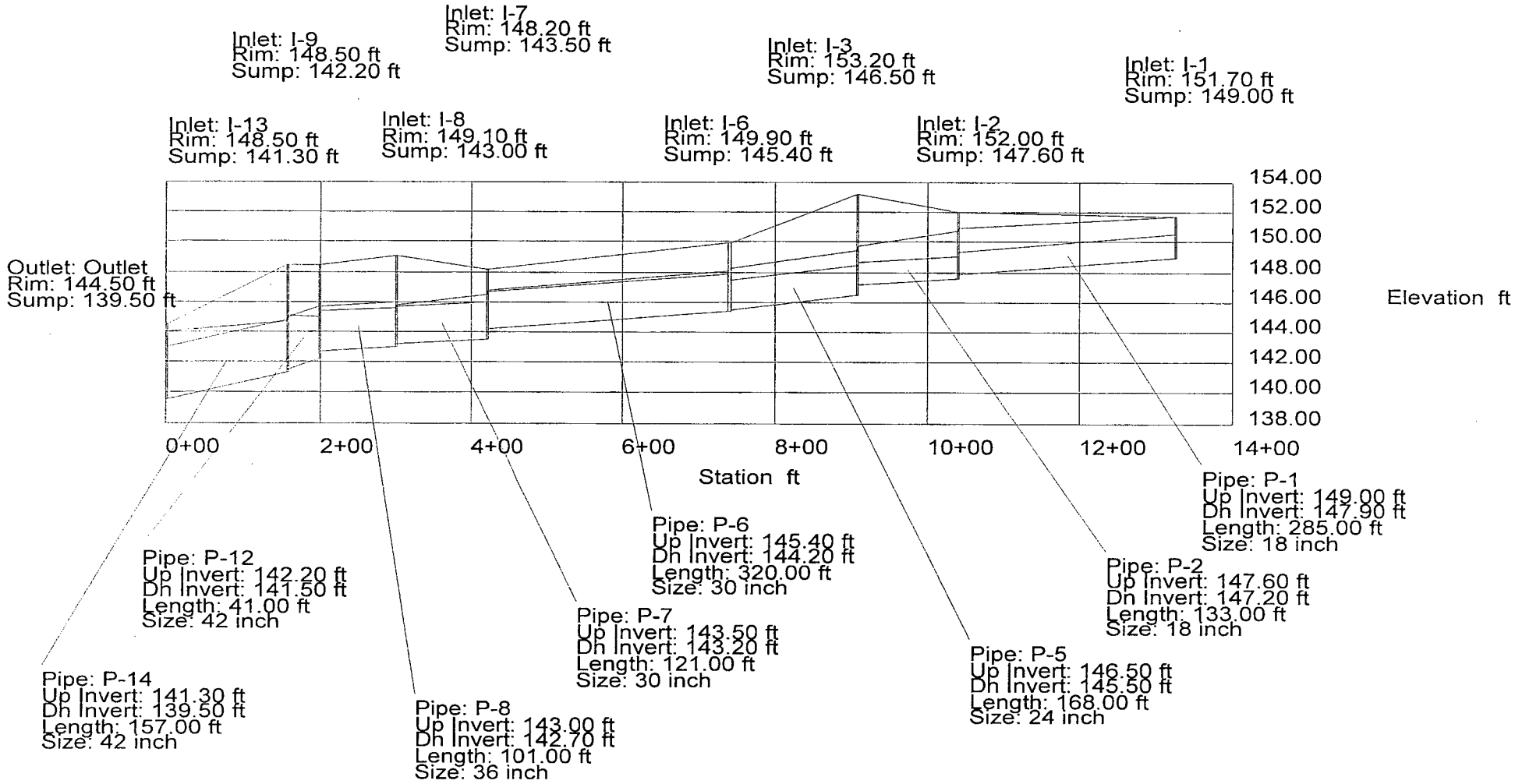
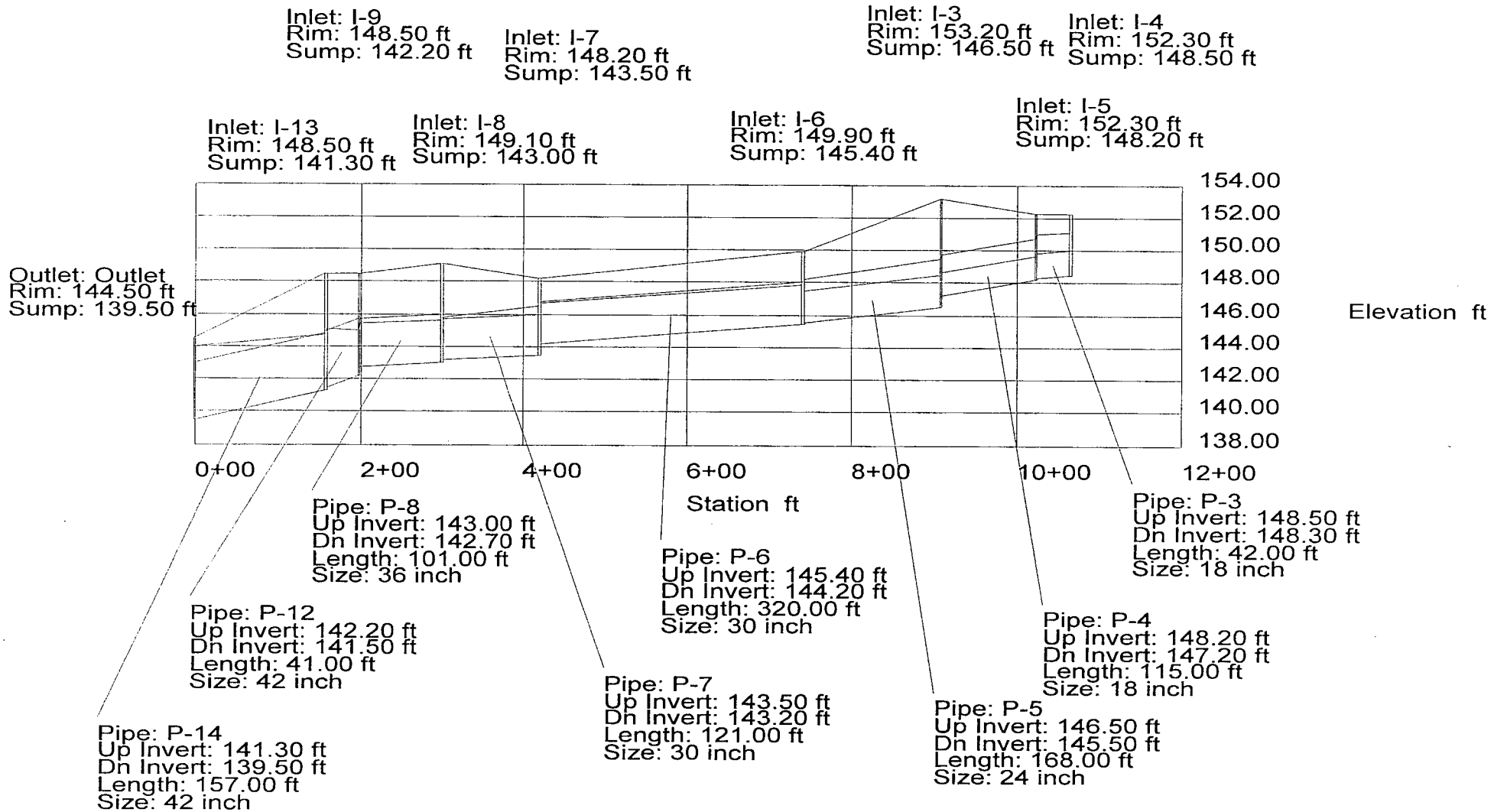
Rim: 148.50 ft
Sump: 142.20 ft
Inlet: I-11
Rim: 148.00 ft
Sump: 144.40 ft
Inlet: I-10
Rim: 149.00 ft
Sump: 145.60 ft
Inlet: I-13
Rim: 148.50 ft
Sump: 141.30 ft
Inlet: I-12
Rim: 149.70 ft
Sump: 143.70 ft
Outlet: Outlet
Rim: 144.50 ft
Sump: 139.50 ft
150.00
148.00
146.00
144.00
142.00
140.00
138.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
Station ft
Pipe: P-9
Up Invert: 145.60 ft
Dn Invert: 144.50 ft
Length: 281.00 ft
Size: 18 inch
Pipe: P-12
Up Invert: 142.20 ft
Dn Invert: 141.50 ft
Length: 41.00 ft
Size: 42 inch
Pipe: P-11
Up Invert: 143.70 ft
Dn Invert: 143.00 ft
Length: 213.00 ft
Size: 24 inch
Pipe: P-10
Up Invert: 144.40 ft
Dn Invert: 143.80 ft
Length: 191.00 ft
Size: 24 inch
Pipe: P-14
Up Invert: 141.30 ft
Dn Invert: 139.50 ft
Length: 157.00 ft
Size: 42 inch

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-9	8.30	0.00	8.30	I-10	Circular	145.60	144.50	149.00	149.36	0.006244	8.30	281.00
				I-11	18 inch			148.00	147.60	0.003915	6.57	
P-10	6.70	8.30	15.00	I-11	Circular	144.40	143.80	148.00	147.42	0.004397	15.00	191.00
				I-12	24 inch			149.70	146.58	0.003141	12.68	
P-11	0.50	15.00	15.50	I-12	Circular	143.70	143.00	149.70	146.39	0.004695	15.50	213.00
				I-9	24 inch			148.50	145.39	0.003286	12.97	
P-3	5.70	0.00	5.70	I-4	Circular	148.50	148.30	152.30	151.11	0.002945	5.70	42.00
				I-5	18 inch			152.30	150.98	0.004762	7.25	
P-4	3.90	5.70	9.60	I-5	Circular	148.20	147.20	152.30	150.75	0.008353	9.60	115.00
				I-3	18 inch			153.20	149.79	0.008696	9.79	
P-1	5.70	0.00	5.70	I-1	Circular	149.00	147.90	151.70	151.76	0.002945	5.70	285.00
				I-2	18 inch			152.00	150.92	0.003860	6.53	
P-2	3.10	5.70	8.80	I-2	Circular	147.60	147.20	152.00	150.73	0.007019	8.80	133.00
				I-3	18 inch			153.20	149.79	0.003008	5.76	
P-5	1.20	18.40	19.60	I-3	Circular	146.50	145.50	153.20	149.49	0.007507	19.60	168.00
				I-6	24 inch			149.90	148.23	0.005952	17.45	
P-6	5.70	19.60	25.30	I-6	Circular	145.40	144.20	149.90	148.02	0.003805	25.30	320.00
				I-7	30 inch			148.20	146.81	0.003750	25.12	
P-7	5.70	25.30	31.00	I-7	Circular	143.50	143.20	148.20	146.50	0.005713	31.00	121.00
				I-8	30 inch			149.10	145.81	0.002479	20.42	
P-8	2.40	31.00	33.40	I-8	Circular	143.00	142.70	149.10	145.60	0.002254	33.40	101.00
				I-9	36 inch			148.50	145.39	0.002970	36.35	
P-12	12.50	48.90	61.40	I-9	Circular	142.20	141.50	148.50	144.95	0.003505	61.40	41.00
				I-13	42 inch			148.50	145.06	0.017073	131.45	
P-14	5.70	61.40	67.10	I-13	Circular	141.30	139.50	148.50	144.68	0.004423	67.10	157.00
				Outlet	42 inch			144.50	144.00	0.011465	107.72	





Inlet: I-9
Rim: 148.50 ft
Sump: 142.20 ft

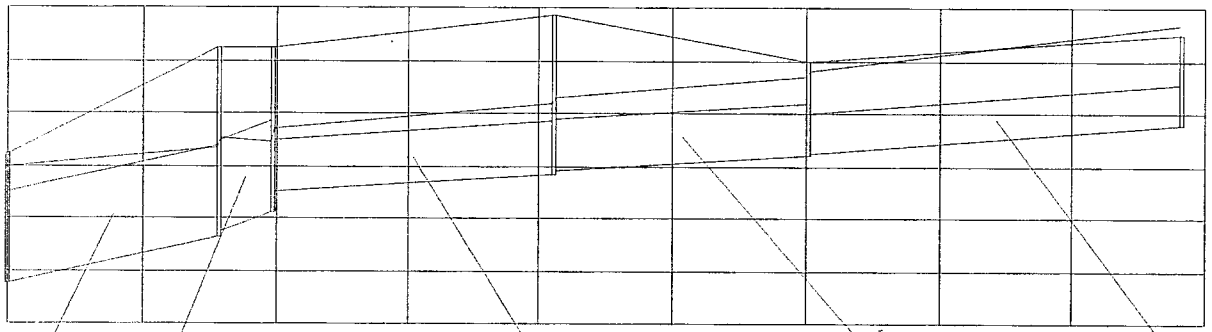
Inlet: I-11
Rim: 148.00 ft
Sump: 144.40 ft

Inlet: I-10
Rim: 149.00 ft
Sump: 145.60 ft

Inlet: I-13
Rim: 148.50 ft
Sump: 141.30 ft

Inlet: I-12
Rim: 149.70 ft
Sump: 143.70 ft

Outlet: Outlet
Rim: 144.50 ft
Sump: 139.50 ft



Pipe: P-9
Up Invert: 145.60 ft
Dn Invert: 144.50 ft
Length: 281.00 ft
Size: 18 inch

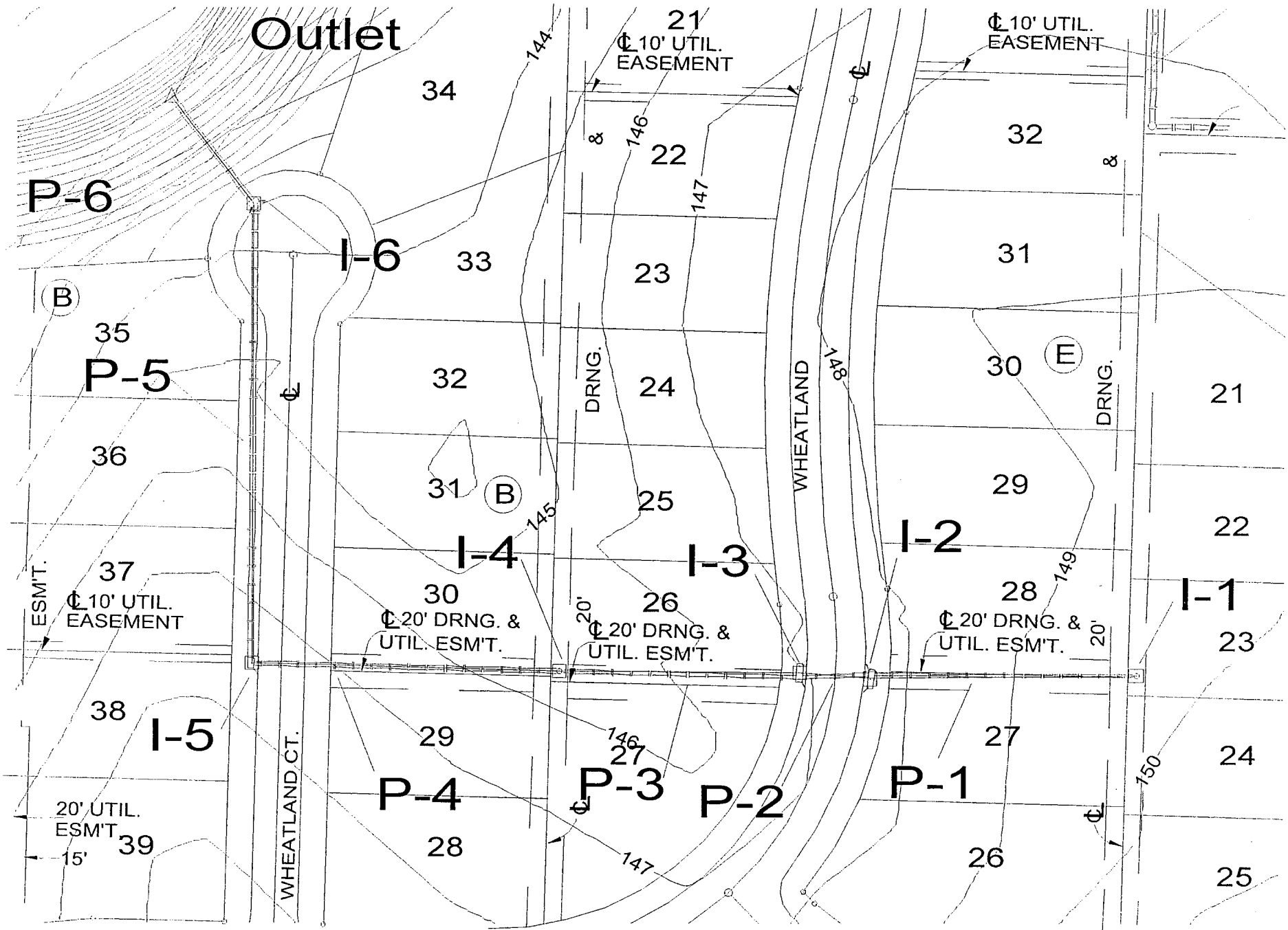
Pipe: P-12
Up Invert: 142.20 ft
Dn Invert: 141.50 ft
Length: 41.00 ft
Size: 42 inch

Pipe: P-11
Up Invert: 143.70 ft
Dn Invert: 143.00 ft
Length: 213.00 ft
Size: 24 inch

Pipe: P-10
Up Invert: 144.40 ft
Dn Invert: 143.80 ft
Length: 191.00 ft
Size: 24 inch

Pipe: P-14
Up Invert: 141.30 ft
Dn Invert: 139.50 ft
Length: 157.00 ft
Size: 42 inch

Appendix E
Stormwater Sewer System #3
StormCad Analysis



Project Title: Turkey Creek Addition, System #3
f:\...\stormcad\sys3\sys3_2.stm
02/10/04 10:27:05 AM

Baughman Company, P.A.
 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Baughman Company, P.A.
StormCAD v1.0

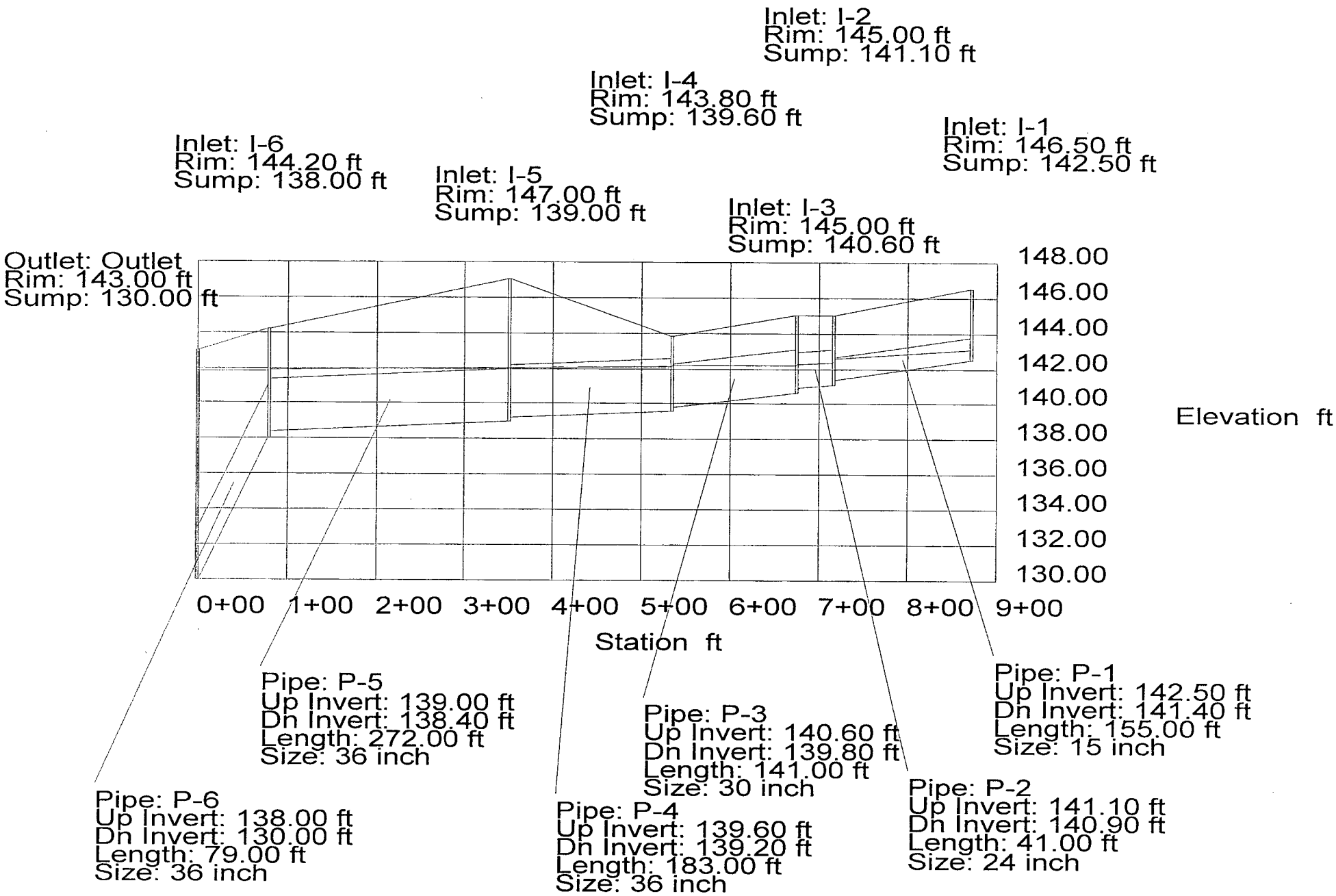
Turkey Creek Addition, System 3, Inlet I-5

Drainage area, acres	0.7
Li = Inlet Length	5
So = street grade, ft/ft	0.01083
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	1.2	1.6	3.6
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	1.2	1.6	3.6
depth of flow, ft	0.20	0.22	0.31
Flow width, ft	6.55	7.16	9.80
Froude Number	0.95141	0.96565	1.01750
Length 1, ft	5.49	6.09	8.78
Length 2, ft	3.60	4.00	5.76
Length 3, ft	10.28	11.41	16.45
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 1.1 0.1	NO GOOD 1.3 0.3	VALID 2.1 1.6
case 2, Li > L2 intercepted flow bypassed flow	VALID 0.9 0.3	VALID 1.1 0.4	NO GOOD 2.2 1.4

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-1	2.10	0.00	2.10	I-1	Circular	142.50	141.40	146.50	143.08	0.004509	2.10	155.00
				I-2	15 inch			145.00	142.55	0.007097	5.44	
P-2	8.30	2.10	10.40	I-2	Circular	141.10	140.90	145.00	142.36	0.003526	10.40	41.00
				I-3	24 inch			145.00	142.29	0.004878	15.80	
P-3	1.60	10.40	12.00	I-3	Circular	140.60	139.80	145.00	142.19	0.001005	12.00	141.00
				I-4	30 inch			143.80	142.16	0.005674	30.89	
P-4	1.80	12.00	13.80	I-4	Circular	139.60	139.20	143.80	142.12	0.000388	13.80	183.00
				I-5	36 inch			147.00	142.06	0.002186	31.18	
P-5	0.90	13.80	14.70	I-5	Circular	139.00	138.40	147.00	142.03	0.000486	14.70	272.00
				I-6	36 inch			144.20	141.90	0.002206	31.32	
P-6	2.40	14.70	17.10	I-6	Circular	138.00	130.00	144.20	141.85	0.000657	17.10	79.00
				Outlet	36 inch			143.00	141.80	0.101266	212.24	


Inlet: I-2
Rim: 145.00 ft
Sump: 141.10 ft
Inlet: I-4
Rim: 143.80 ft
Sump: 139.60 ft
Inlet: I-1
Rim: 146.50 ft
Sump: 142.50 ft
Inlet: I-6
Rim: 144.20 ft
Sump: 138.00 ft
Inlet: I-5
Rim: 147.00 ft
Sump: 139.00 ft
Inlet: I-3
Rim: 145.00 ft
Sump: 140.60 ft
Outlet: Outlet
Rim: 143.00 ft
Sump: 130.00 ft
148.00
146.00
144.00
142.00
140.00
138.00
136.00
134.00
132.00
130.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
Station ft
Pipe: P-5
Up Invert: 139.00 ft
Dn Invert: 138.40 ft
Length: 272.00 ft
Size: 36 inch
Pipe: P-3
Up Invert: 140.60 ft
Dn Invert: 139.80 ft
Length: 141.00 ft
Size: 30 inch
Pipe: P-1
Up Invert: 142.50 ft
Dn Invert: 141.40 ft
Length: 155.00 ft
Size: 15 inch
Pipe: P-6
Up Invert: 138.00 ft
Dn Invert: 130.00 ft
Length: 79.00 ft
Size: 36 inch
Pipe: P-4
Up Invert: 139.60 ft
Dn Invert: 139.20 ft
Length: 183.00 ft
Size: 36 inch
Pipe: P-2
Up Invert: 141.10 ft
Dn Invert: 140.90 ft
Length: 41.00 ft
Size: 24 inch

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-1	6.20	0.00	6.20	I-1	Circular	142.50	141.40	146.50	146.43	0.009213	6.20	155.00
				I-2	15 inch			145.00	145.00	0.007097	5.44	
P-2	14.40	6.20	20.60	I-2	Circular	141.10	140.90	145.00	145.34	0.008293	20.60	41.00
				I-3	24 inch			145.00	145.00	0.004878	15.80	
P-3	14.40	20.60	35.00	I-3	Circular	140.60	139.80	145.00	145.04	0.007282	35.00	141.00
				I-4	30 inch			143.80	144.01	0.005674	30.89	
P-4	5.20	35.00	40.20	I-4	Circular	139.60	139.20	143.80	144.67	0.003633	40.20	183.00
				I-5	36 inch			147.00	144.01	0.002186	31.18	
P-5	2.10	40.20	42.30	I-5	Circular	139.00	138.40	147.00	143.73	0.004023	42.30	272.00
				I-6	36 inch			144.20	142.64	0.002206	31.32	
P-6	7.80	42.30	50.10	I-6	Circular	138.00	130.00	144.20	142.25	0.005643	50.10	79.00
				Outlet	36 inch			143.00	141.80	0.101266	212.24	

Inlet: I-2
Rim: 145.00 ft
Sump: 141.10 ft

Inlet: I-4
Rim: 143.80 ft
Sump: 139.60 ft

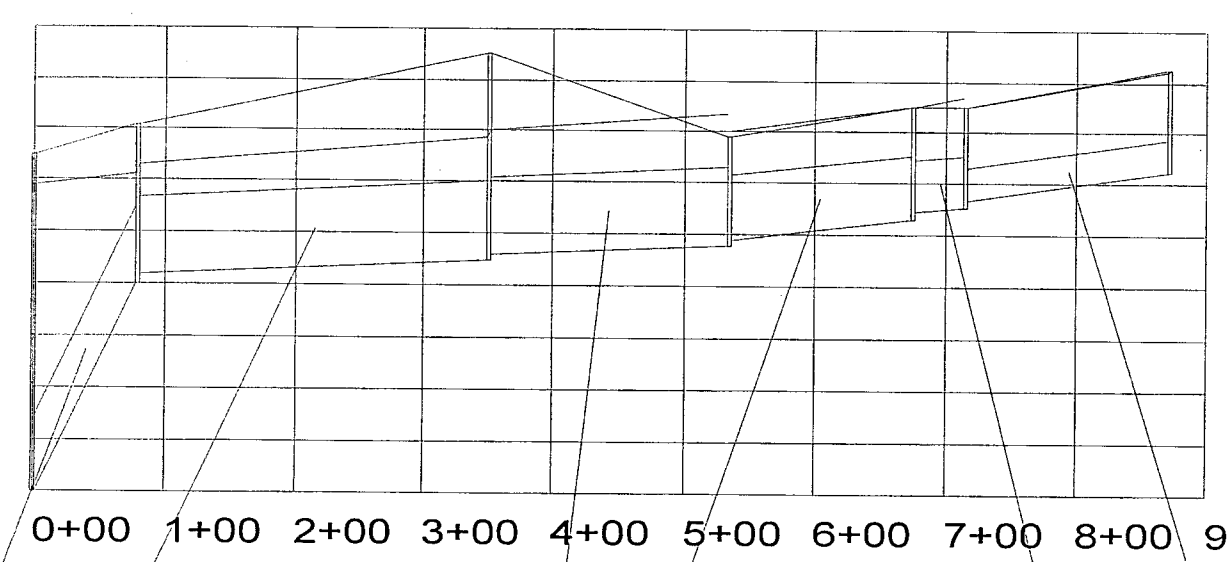
Inlet: I-6
Rim: 144.20 ft
Sump: 138.00 ft

Inlet: I-1
Rim: 146.50 ft
Sump: 142.50 ft

Inlet: I-5
Rim: 147.00 ft
Sump: 139.00 ft

Inlet: I-3
Rim: 145.00 ft
Sump: 140.60 ft

Outlet: Outlet
Rim: 143.00 ft
Sump: 130.00 ft



Pipe: P-1
Up Invert: 142.50 ft
Dn Invert: 141.40 ft
Length: 155.00 ft
Size: 15 inch

Pipe: P-5
Up Invert: 139.00 ft
Dn Invert: 138.40 ft
Length: 272.00 ft
Size: 36 inch

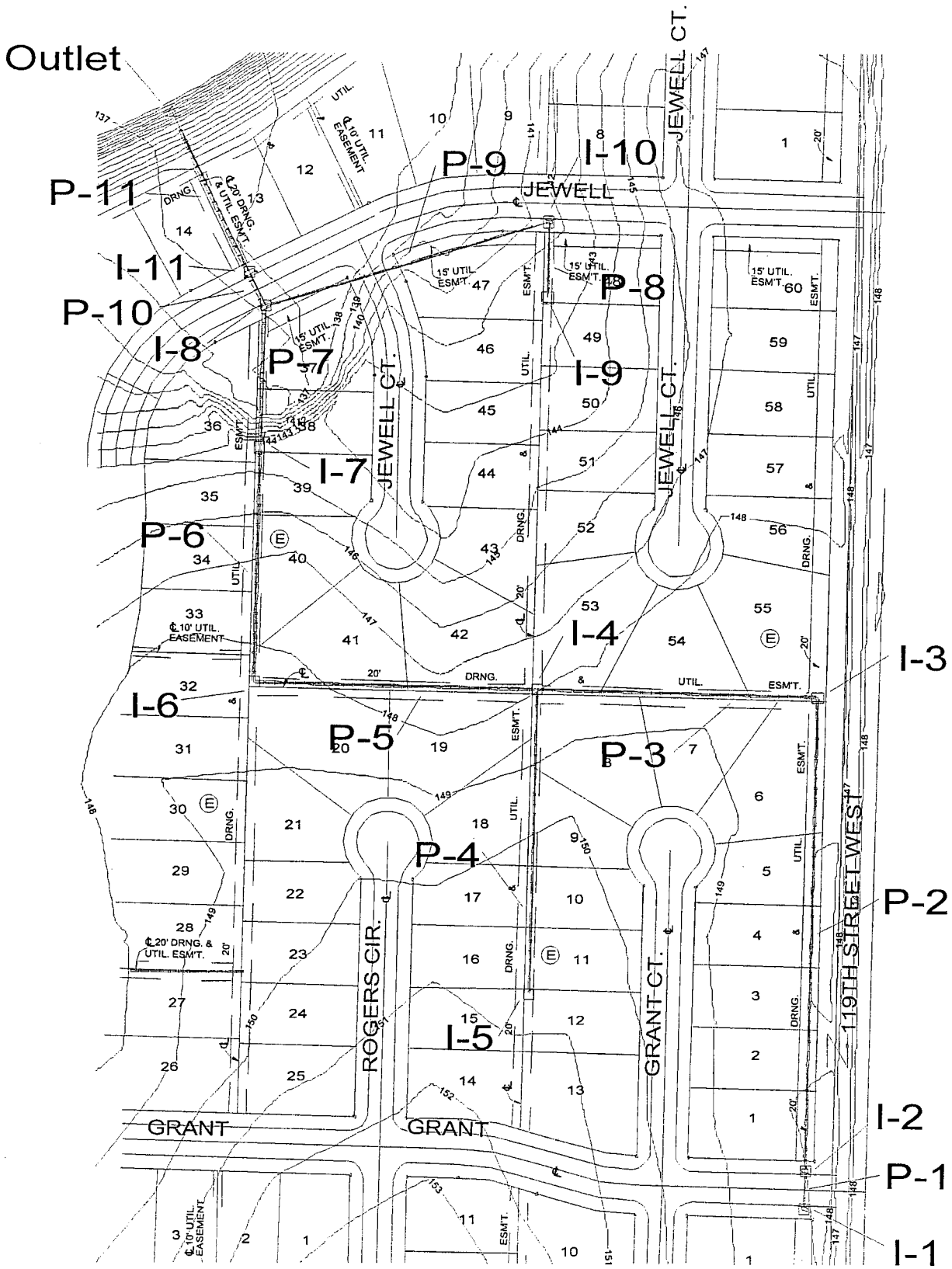
Pipe: P-3
Up Invert: 140.60 ft
Dn Invert: 139.80 ft
Length: 141.00 ft
Size: 30 inch

Pipe: P-2
Up Invert: 141.10 ft
Dn Invert: 140.90 ft
Length: 41.00 ft
Size: 24 inch

Pipe: P-6
Up Invert: 138.00 ft
Dn Invert: 130.00 ft
Length: 79.00 ft
Size: 36 inch

Pipe: P-4
Up Invert: 139.60 ft
Dn Invert: 139.20 ft
Length: 183.00 ft
Size: 36 inch

Appendix F
Stormwater Sewer System #4
StormCad Analysis



Turkey Creek Addition, System 4, Inlet I-10

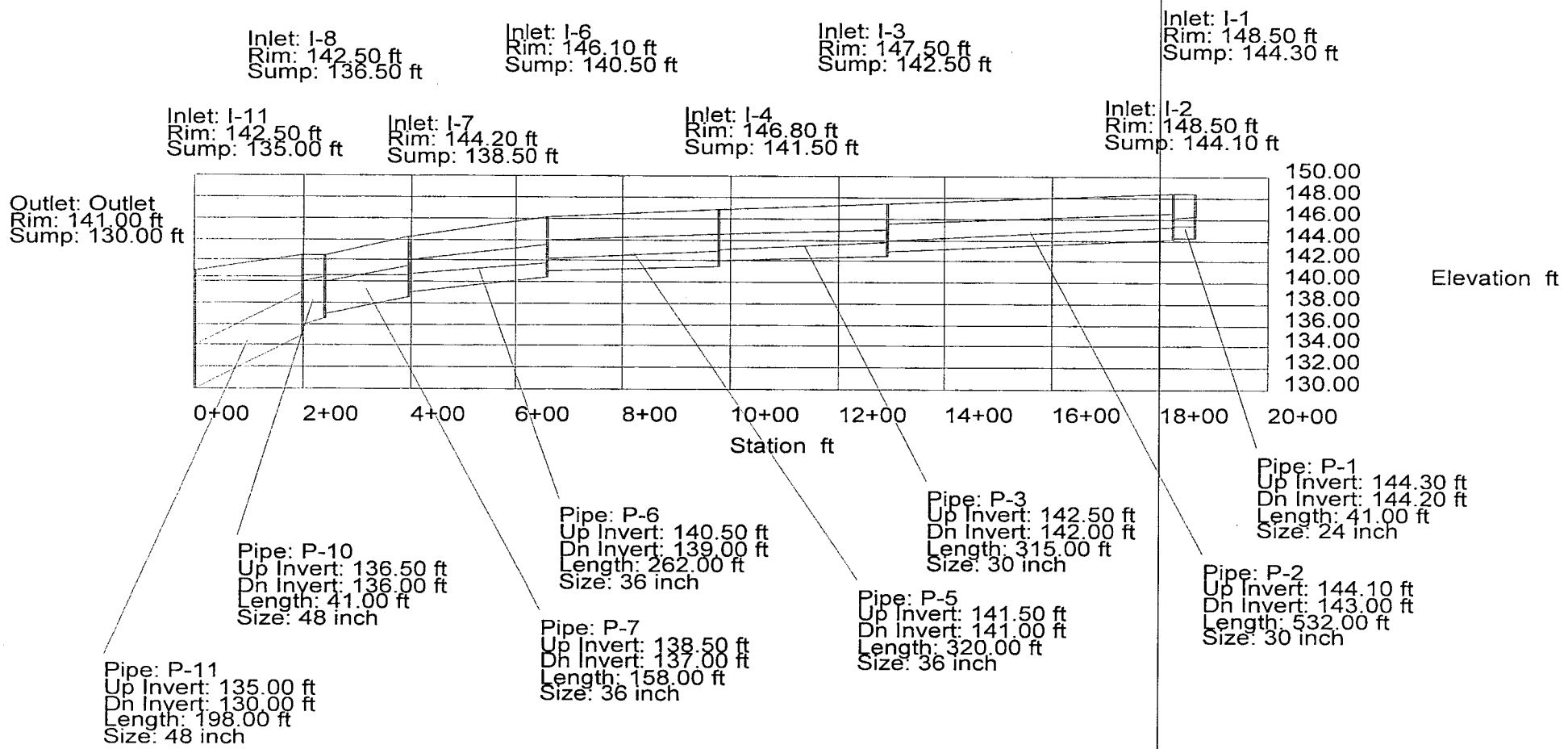
Drainage area, acres	1.9
Li = Inlet Length	10
So = street grade, ft/ft	0.01746
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

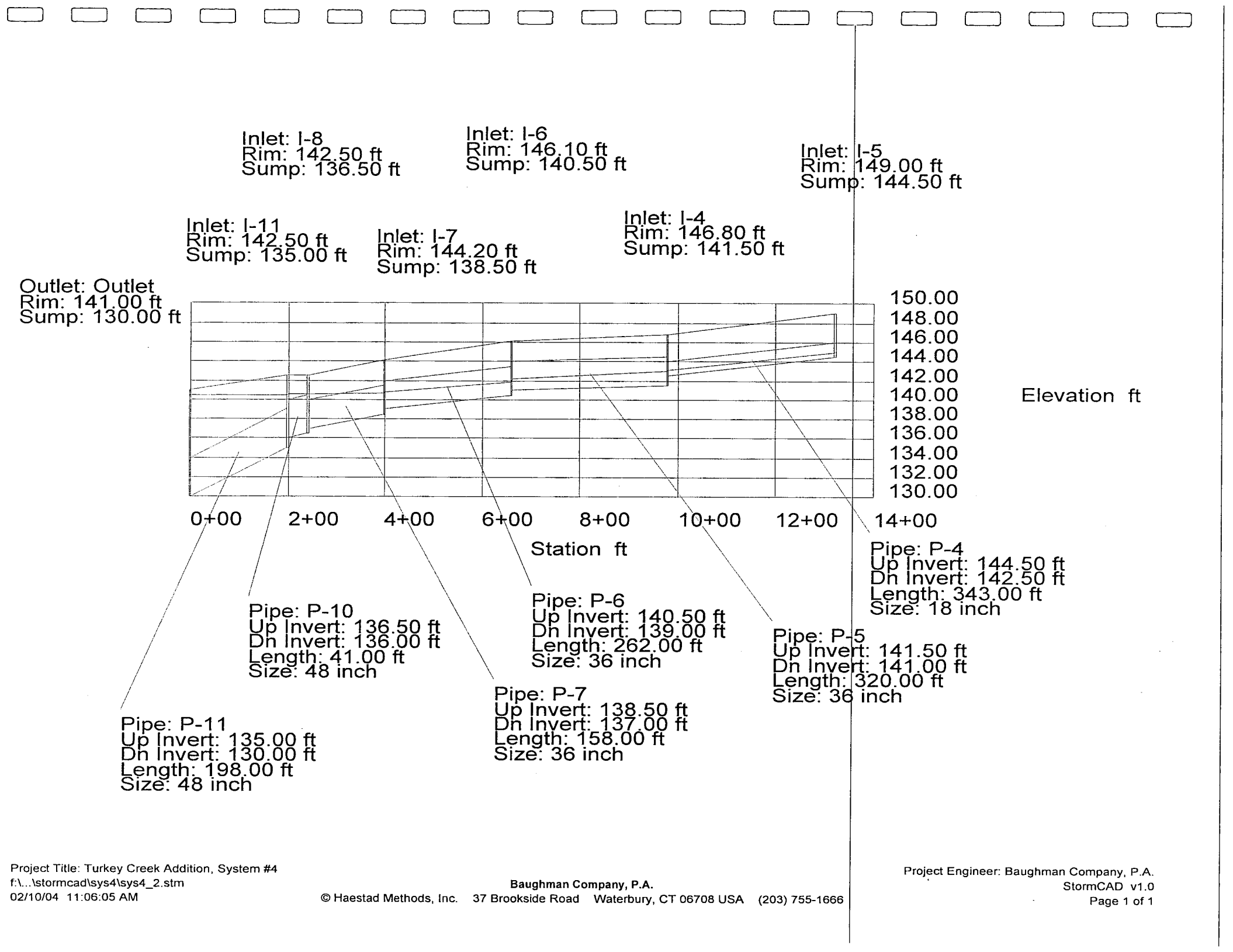
	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.46	0.49	0.7
Flowrate, cfs	3.3	4.2	9.8
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	3.3	4.2	9.8
depth of flow, ft	0.27	0.30	0.41
Flow width, ft	8.71	9.52	13.03
Froude Number	1.26677	1.28573	1.35476
Length 1, ft	9.71	10.78	15.54
Length 2, ft	6.38	7.08	10.20
Length 3, ft	18.20	20.20	29.12
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 3.4 0.0	NO GOOD 3.9 0.3	VALID 6.3 3.5
case 2, Li > L2 intercepted flow bypassed flow	VALID 2.6 0.7	VALID 3.2 1.0	NO GOOD 6.4 3.4

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-8	5.50	0.00	5.50	I-9	Circular	139.50	139.20	143.00	140.74	0.000927	5.50	84.00
				I-10	24 inch			144.40	140.70	0.003571	13.52	
P-9	2.60	5.50	8.10	I-10	Circular	138.70	138.00	144.40	140.65	0.000183	8.10	333.00
				I-8	36 inch			142.50	140.61	0.002102	30.58	
P-4	1.40	0.00	1.40	I-5	Circular	144.50	142.50	149.00	144.94	0.005656	1.40	343.00
				I-4	18 inch			146.80	143.09	0.005831	8.02	
P-1	4.40	0.00	4.40	I-1	Circular	144.30	144.20	148.50	145.37	0.001097	4.40	41.00
				I-2	24 inch			148.50	145.34	0.002439	11.17	
P-2	3.50	4.40	7.90	I-2	Circular	144.10	143.00	148.50	145.24	0.002183	7.90	532.00
				I-3	30 inch			147.50	143.93	0.002068	18.65	
P-3	1.20	7.90	9.10	I-3	Circular	142.50	142.00	147.50	143.82	0.001938	9.10	315.00
				I-4	30 inch			146.80	143.09	0.001587	16.34	
P-5	2.60	10.50	13.10	I-4	Circular	141.50	141.00	146.80	142.98	0.001942	13.10	320.00
				I-6	36 inch			146.10	142.15	0.001563	26.36	
P-6	3.50	13.10	16.60	I-6	Circular	140.50	139.00	146.10	141.80	0.004989	16.60	262.00
				I-7	36 inch			144.20	140.76	0.005725	50.46	
P-7	2.30	16.60	18.90	I-7	Circular	138.50	137.00	144.20	140.67	0.000810	18.90	158.00
				I-8	36 inch			142.50	140.61	0.009494	64.98	
P-10	2.10	27.00	29.10	I-8	Circular	136.50	136.00	142.50	140.57	0.000410	29.10	41.00
				I-11	48 inch			142.50	140.55	0.012195	158.62	
P-11	3.50	29.10	32.60	I-11	Circular	135.00	130.00	142.50	140.50	0.000515	32.60	198.00
				Outlet	48 inch			141.00	140.40	0.025253	228.25	

Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666


Inlet: I-8
Rim: 142.50 ft
Sump: 136.50 ft
Inlet: I-6
Rim: 146.10 ft
Sump: 140.50 ft
Inlet: I-3
Rim: 147.50 ft
Sump: 142.50 ft
Inlet: I-1
Rim: 148.50 ft
Sump: 144.30 ft
Inlet: I-11
Rim: 142.50 ft
Sump: 135.00 ft
Inlet: I-7
Rim: 144.20 ft
Sump: 138.50 ft
Inlet: I-4
Rim: 146.80 ft
Sump: 141.50 ft
Inlet: I-2
Rim: 148.50 ft
Sump: 144.10 ft
Outlet: Outlet
Rim: 141.00 ft
Sump: 130.00 ft
150.00
148.00
146.00
144.00
142.00
140.00
138.00
136.00
134.00
132.00
130.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
14+00
16+00
18+00
20+00
Station ft
Pipe: P-1
Up Invert: 144.30 ft
Dn Invert: 144.20 ft
Length: 41.00 ft
Size: 24 inch
Pipe: P-2
Up Invert: 144.10 ft
Dn Invert: 143.00 ft
Length: 532.00 ft
Size: 30 inch
Pipe: P-3
Up Invert: 142.50 ft
Dn Invert: 142.00 ft
Length: 315.00 ft
Size: 30 inch
Pipe: P-5
Up Invert: 141.50 ft
Dn Invert: 141.00 ft
Length: 320.00 ft
Size: 36 inch
Pipe: P-6
Up Invert: 140.50 ft
Dn Invert: 139.00 ft
Length: 262.00 ft
Size: 36 inch
Pipe: P-7
Up Invert: 138.50 ft
Dn Invert: 137.00 ft
Length: 158.00 ft
Size: 36 inch
Pipe: P-10
Up Invert: 136.50 ft
Dn Invert: 136.00 ft
Length: 41.00 ft
Size: 48 inch
Pipe: P-11
Up Invert: 135.00 ft
Dn Invert: 130.00 ft
Length: 198.00 ft
Size: 48 inch


Inlet: I-8
Rim: 142.50 ft
Sump: 136.50 ft
Inlet: I-6
Rim: 146.10 ft
Sump: 140.50 ft
Inlet: I-5
Rim: 149.00 ft
Sump: 144.50 ft
Inlet: I-11
Rim: 142.50 ft
Sump: 135.00 ft
Inlet: I-7
Rim: 144.20 ft
Sump: 138.50 ft
Inlet: I-4
Rim: 146.80 ft
Sump: 141.50 ft
Outlet: Outlet
Rim: 141.00 ft
Sump: 130.00 ft
150.00
148.00
146.00
144.00
142.00
140.00
138.00
136.00
134.00
132.00
130.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
14+00
Station ft
Pipe: P-4
Up Invert: 144.50 ft
Dn Invert: 142.50 ft
Length: 343.00 ft
Size: 18 inch
Pipe: P-10
Up Invert: 136.50 ft
Dn Invert: 136.00 ft
Length: 41.00 ft
Size: 48 inch
Pipe: P-6
Up Invert: 140.50 ft
Dn Invert: 139.00 ft
Length: 262.00 ft
Size: 36 inch
Pipe: P-5
Up Invert: 141.50 ft
Dn Invert: 141.00 ft
Length: 320.00 ft
Size: 36 inch
Pipe: P-11
Up Invert: 135.00 ft
Dn Invert: 130.00 ft
Length: 198.00 ft
Size: 48 inch
Pipe: P-7
Up Invert: 138.50 ft
Dn Invert: 137.00 ft
Length: 158.00 ft
Size: 36 inch

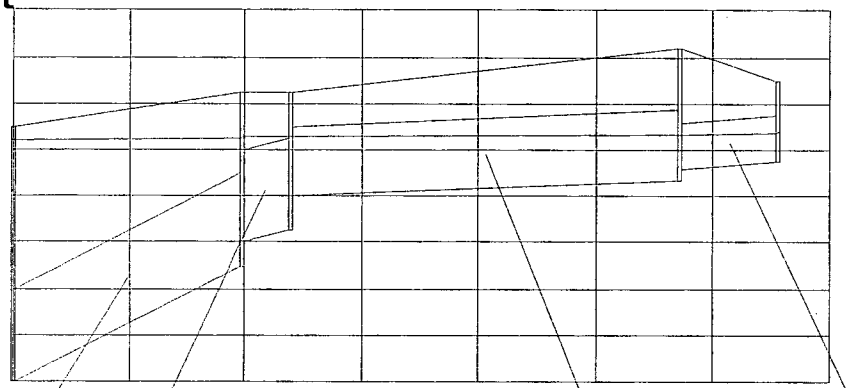
Inlet: I-9
Rim: 143.00 ft
Sump: 139.50 ft

Inlet: I-8
Rim: 142.50 ft
Sump: 136.50 ft

Inlet: I-10
Rim: 144.40 ft
Sump: 138.70 ft

Inlet: I-11
Rim: 142.50 ft
Sump: 135.00 ft

Outlet: Outlet
Rim: 141.00 ft
Sump: 130.00 ft



Pipe: P-8
Up Invert: 139.50 ft
Dn Invert: 139.20 ft
Length: 84.00 ft
Size: 24 inch

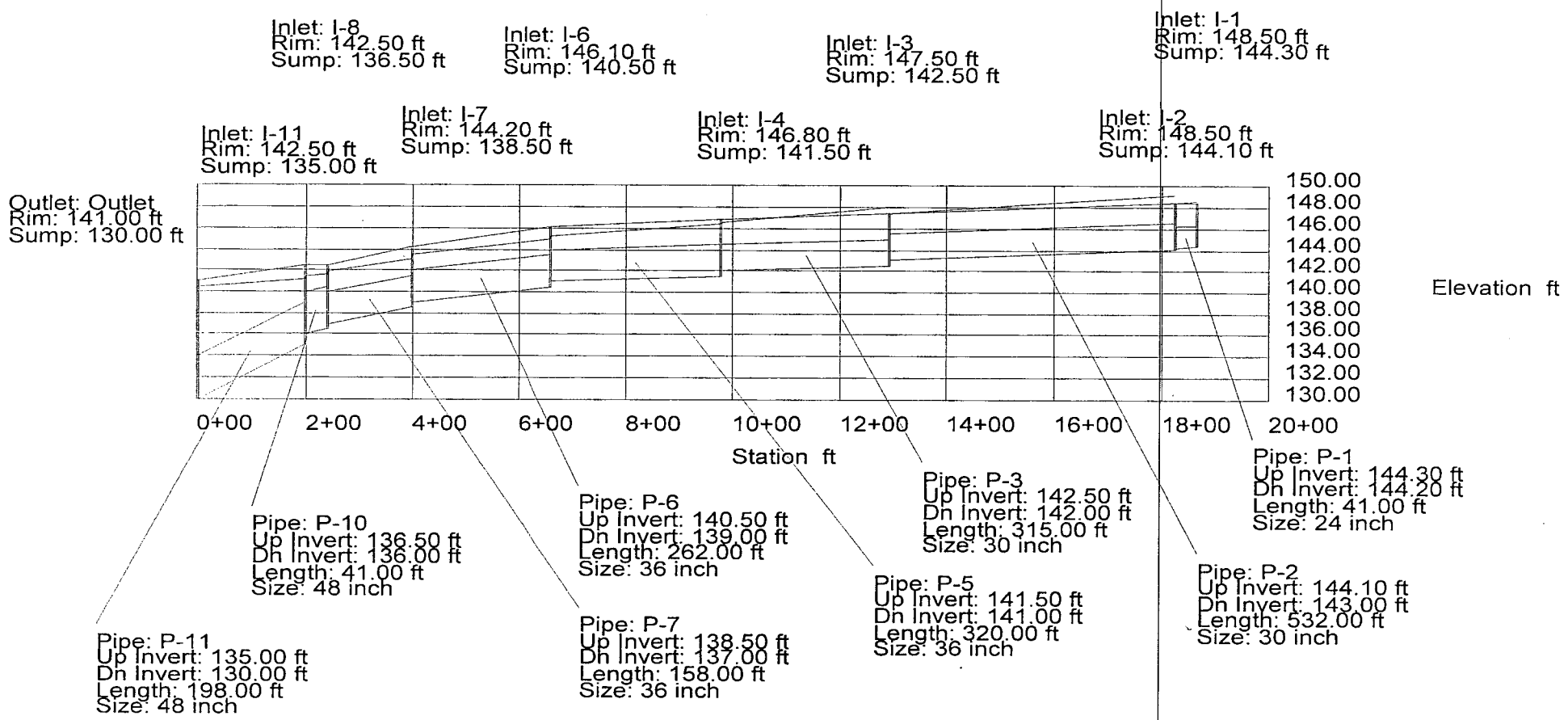
Pipe: P-10
Up Invert: 136.50 ft
Dn Invert: 136.00 ft
Length: 41.00 ft
Size: 48 inch

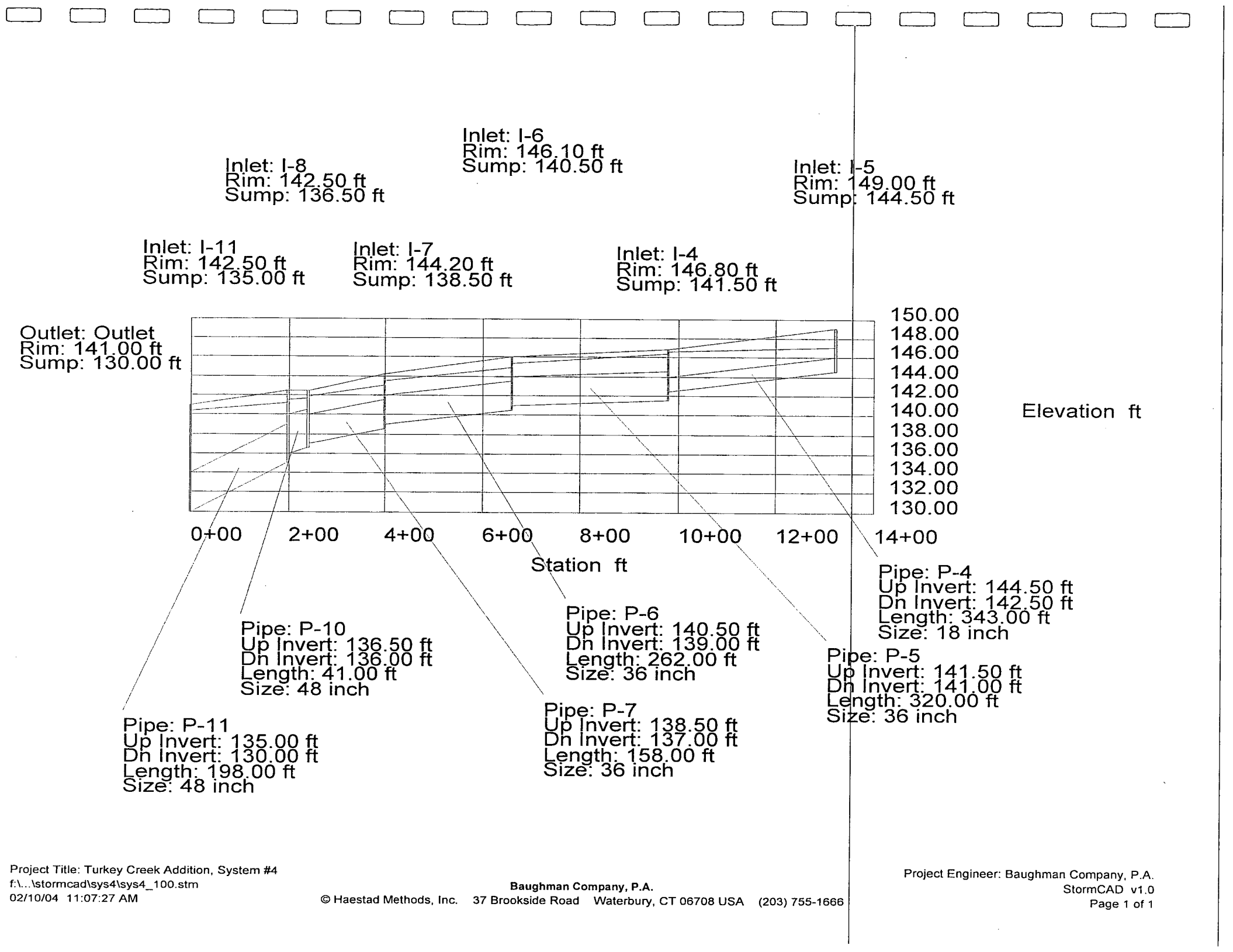
Pipe: P-9
Up Invert: 138.70 ft
Dn Invert: 138.00 ft
Length: 333.00 ft
Size: 36 inch

Pipe: P-11
Up Invert: 135.00 ft
Dn Invert: 130.00 ft
Length: 198.00 ft
Size: 48 inch

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)
P-8	8.00	0.00	8.00	I-9	Circular	139.50	139.20	143.00	142.26	0.001251	8.00	84.00
				I-10	24 inch			144.40	142.15	0.003571	13.52	
P-9	6.30	8.00	14.30	I-10	Circular	138.70	138.00	144.40	142.09	0.000460	14.30	333.00
				I-8	36 inch			142.50	141.93	0.002102	30.58	
P-4	4.10	0.00	4.10	I-5	Circular	144.50	142.50	149.00	147.12	0.001524	4.10	343.00
				I-4	18 inch			146.80	146.60	0.005831	8.02	
P-1	12.90	0.00	12.90	I-1	Circular	144.30	144.20	148.50	148.63	0.003252	12.90	41.00
				I-2	24 inch			148.50	148.50	0.002439	11.17	
P-2	10.30	12.90	23.20	I-2	Circular	144.10	143.00	148.50	149.20	0.003200	23.20	532.00
				I-3	30 inch			147.50	147.50	0.002068	18.65	
P-3	3.60	23.20	26.80	I-3	Circular	142.50	142.00	147.50	147.94	0.004270	26.80	315.00
				I-4	30 inch			146.80	146.60	0.001587	16.34	
P-5	7.70	30.90	38.60	I-4	Circular	141.50	141.00	146.80	146.37	0.003350	38.60	320.00
				I-6	36 inch			146.10	145.29	0.001563	26.36	
P-6	10.30	38.60	48.90	I-6	Circular	140.50	139.00	146.10	144.92	0.005376	48.90	262.00
				I-7	36 inch			144.20	143.51	0.005725	50.46	
P-7	6.70	48.90	55.60	I-7	Circular	138.50	137.00	144.20	143.03	0.006950	55.60	158.00
				I-8	36 inch			142.50	141.93	0.009494	64.98	
P-10	7.60	69.90	77.50	I-8	Circular	136.50	136.00	142.50	141.64	0.002911	77.50	41.00
				I-11	48 inch			142.50	141.52	0.012195	158.62	
P-11	10.30	77.50	87.80	I-11	Circular	135.00	130.00	142.50	141.14	0.003737	87.80	198.00
				Outlet	48 inch			141.00	140.40	0.025253	228.25	


Inlet: I-8
Rim: 142.50 ft
Sump: 136.50 ft
Inlet: I-6
Rim: 146.10 ft
Sump: 140.50 ft
Inlet: I-3
Rim: 147.50 ft
Sump: 142.50 ft
Inlet: I-1
Rim: 148.50 ft
Sump: 144.30 ft
Inlet: I-11
Rim: 142.50 ft
Sump: 135.00 ft
Inlet: I-7
Rim: 144.20 ft
Sump: 138.50 ft
Inlet: I-4
Rim: 146.80 ft
Sump: 141.50 ft
Inlet: I-2
Rim: 148.50 ft
Sump: 144.10 ft
Outlet: Outlet
Rim: 141.00 ft
Sump: 130.00 ft
150.00
148.00
146.00
144.00
142.00
140.00
138.00
136.00
134.00
132.00
130.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
14+00
16+00
18+00
20+00
Station ft
Pipe: P-11
Up Invert: 135.00 ft
Dn Invert: 130.00 ft
Length: 198.00 ft
Size: 48 inch
Pipe: P-10
Up Invert: 136.50 ft
Dn Invert: 136.00 ft
Length: 41.00 ft
Size: 48 inch
Pipe: P-7
Up Invert: 138.50 ft
Dn Invert: 137.00 ft
Length: 158.00 ft
Size: 36 inch
Pipe: P-6
Up Invert: 140.50 ft
Dn Invert: 139.00 ft
Length: 262.00 ft
Size: 36 inch
Pipe: P-5
Up Invert: 141.50 ft
Dn Invert: 141.00 ft
Length: 320.00 ft
Size: 36 inch
Pipe: P-3
Up Invert: 142.50 ft
Dn Invert: 142.00 ft
Length: 315.00 ft
Size: 30 inch
Pipe: P-2
Up Invert: 144.10 ft
Dn Invert: 143.00 ft
Length: 532.00 ft
Size: 30 inch
Pipe: P-1
Up Invert: 144.30 ft
Dn Invert: 144.20 ft
Length: 41.00 ft
Size: 24 inch



 Baughman Company, P.A. 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

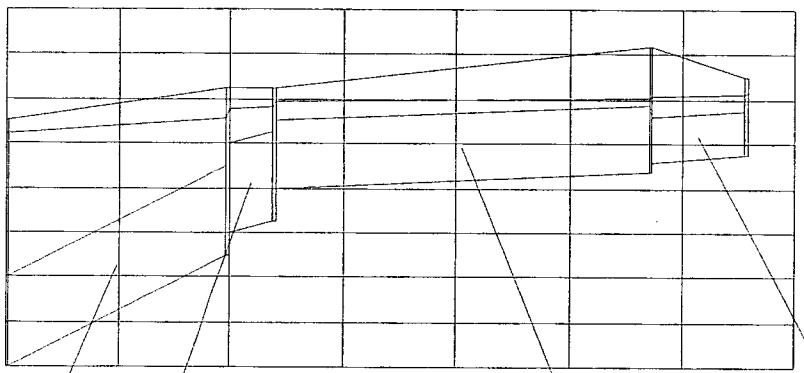
Inlet: I-8
Rim: 142.50 ft
Sump: 136.50 ft

Inlet: I-9
Rim: 143.00 ft
Sump: 139.50 ft

Inlet: I-10
Rim: 144.40 ft
Sump: 138.70 ft

Inlet: I-11
Rim: 142.50 ft
Sump: 135.00 ft

Outlet: Outlet
Rim: 141.00 ft
Sump: 130.00 ft



Pipe: P-8
Up Invert: 139.50 ft
Dn Invert: 139.20 ft
Length: 84.00 ft
Size: 24 inch

Pipe: P-10
Up Invert: 136.50 ft
Dn Invert: 136.00 ft
Length: 41.00 ft
Size: 48 inch

Pipe: P-9
Up Invert: 138.70 ft
Dn Invert: 138.00 ft
Length: 333.00 ft
Size: 36 inch

Pipe: P-11
Up Invert: 135.00 ft
Dn Invert: 130.00 ft
Length: 198.00 ft
Size: 48 inch

Appendix G
Stormwater Sewer System #5
Hand Calculation

System #5

$L = 115$ ft Inlet Top = 144.2 Tailwater = 140.0

D.A. = 1.1 acres $Q_2 = 1.9$ cfs $Q_{100} = 5.7$ cfs

Size Pipe to carry Q_{100}

$$\frac{P_1}{\gamma} + \frac{V_1^2}{2g} + WS_1 = \frac{P_2}{\gamma} + \frac{V_2^2}{2g} + WS_2 + h_f + \Sigma K \frac{\bar{V}^2}{2g}$$

assume: $P_1 = P_2 = 0$

$V_1 = V_2$

$K_e = 0.5$, $K_x = 1.0$ $h_f = S_f L$

Try 15" RCP

$$WS_1 = WS_2 + h_f + \Sigma K \frac{\bar{V}^2}{2g}$$

15" RCP $A = 1.23$ sq ft $P = 3.92$ ft $R = 0.3125'$

$\bar{V} = 4.2$ f.p.s

$$S_f = \left[\frac{(4.2)(0.013)}{(1.49)(0.3125)^{2/3}}\right]^2 = 0.0063 \text{ ft/ft}$$

$S_f L = 0.73'$

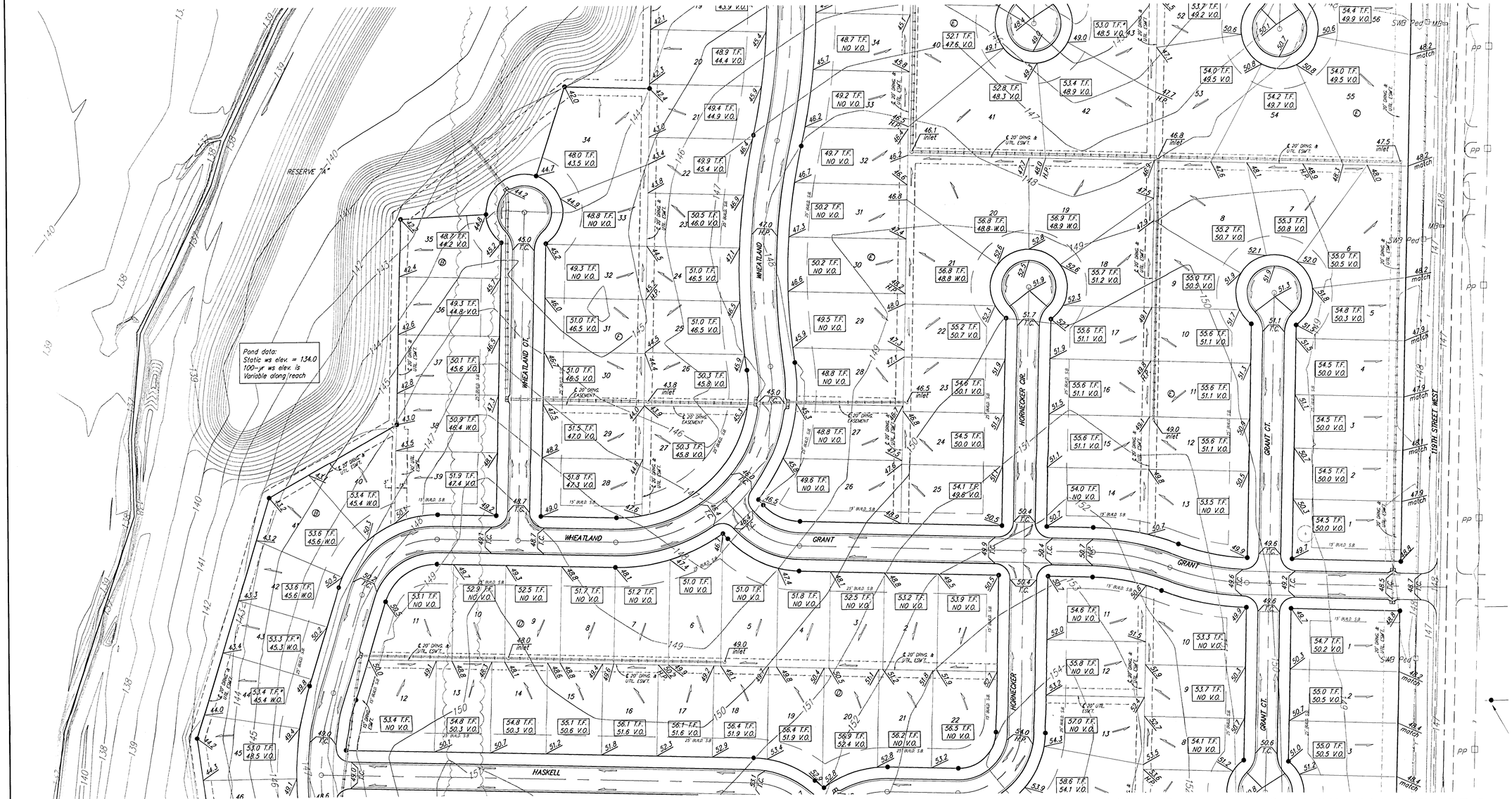
$$\Sigma K \frac{\bar{V}^2}{2g} = 1.5 \frac{(4.2)^2}{2g} = 0.41 \text{ ft}$$

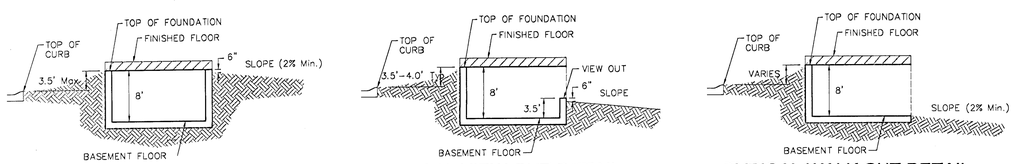
$WS_1 = 140.0 + 0.73 + 0.41 = 141.14$ < inlet top

∴ Use 15" RCP

Appendix H
Drainage Plan Sheet

Appendix I
Grading Plan Sheets





TYPICAL NON-VIEW OUT DETAIL
NO SCALE

TYPICAL VIEW OUT DETAIL
NO SCALE

TYPICAL WALK OUT DETAIL
NO SCALE

0 60 120

NOTES:

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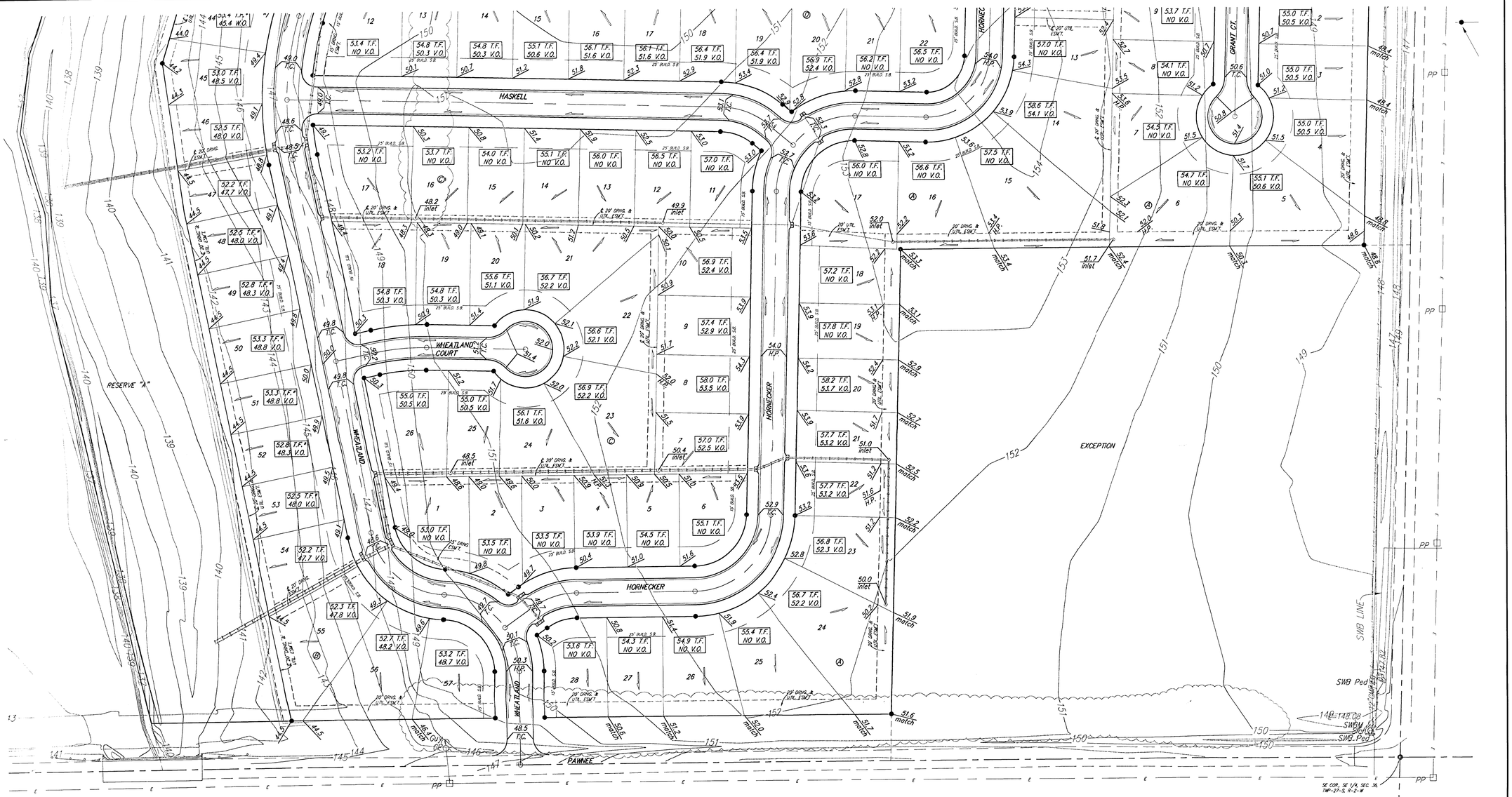
NOTE:
Per scaled location from FIRM panel 20032B 0125 A, the SFHA as identified is contained within "Reserve A"

TURKEY CREEK ADDITION
GRADING PLAN
WICHITA, KANSAS

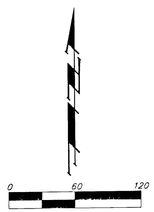
BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

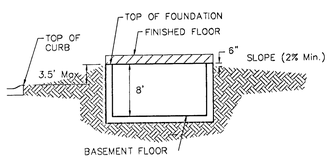
PROJECT NUMBER	SHEET
	2 OF 3

DESIGN	DRAWN	APPROVED	DATE	SCALE
BLG			02/04	NOTED



PRELIMINARY PLAN – NOT FOR CONSTRUCTION





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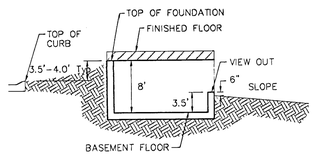
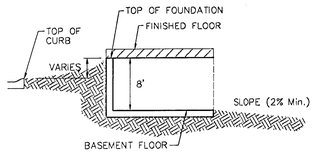
NO SCALE



TYPICAL VIEW OUT DETAIL
NO SCALE



TYPICAL WALK OUT DETAIL
NO SCALE

NOTES:

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NOTE:
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GRADING PLAN
WICHITA, KANSAS

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PROJECT NUMBER					SHEET 1 OF 3
DESIGN BLG	DRAWN	APPROVED	DATE 02/04	SCALE NOTED	

RESERVE "A"

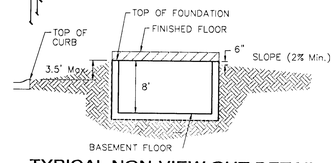
Pond data:
Static ws elev. = 134.0
100-yr ws elev. is
Variable along reach

JEWELL CT.

119TH STREET WEST

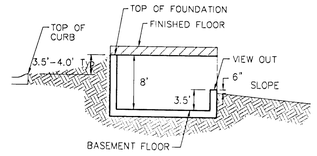
WHEATLAND CT.

0 60 120



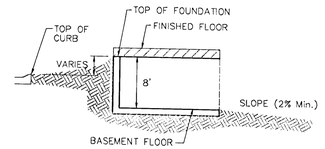
TYPICAL NON-VIEW OUT DETAIL

NO SCALE



TYPICAL VIEW OUT DETAIL

NO SCALE



TYPICAL WALK OUT DETAIL

NO SCALE

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NOTE:
Per scaled location from FIRM panel 200328 0125 A, the SFHA as identified is contained within "Reserve A"

PRELIMINARY PLAN
NOT FOR CONSTRUCTION

TURKEY CREEK ADDITION

GRADING PLAN

WICHITA, KANSAS

BAUGHMAN COMPANY P.A.
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316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER

DESIGN	DRAWN	APPROVED	DATE	SCALE	SHEET
BLG			02/04	NOTED	3 OF 3