



SAVOY, RUGGLES & BOHM, P.A.
 ENGINEERING AND SURVEYING
 924 NORTH MAIN
 WICHITA, KANSAS 67203

MEMO

Date: Tuesday, November 05, 1996

To: Vicky Huang, P.E.
City of Wichita

From: Chris Bohm

Project: Brentwood Village Drainage Plan

SRB Project No.: _____

Other Project Reference No.: _____

Description:

- Confirmation
- Transmittal
- Transmittal under separate cover by

Purpose:

- Approval
- Review & comment
- Use
- Other: _____
- Distribution
- Information
- Record

Enclosures/Attachments:

- Prints
- Originals
- Diskettes containing: _____
- Change Order
- Shop Drawings

- Other: _____

Copies	Description
1	Drainage Plan

Remarks: Vicky, here is a copy of the final drainage plan for the above mentioned addition.

Please contact me with any questions.

Thank you.

Copies to:
 file _____

If checked below, please:

- Acknowledge receipt of enclosures
- Return enclosures to us.

Signed 

If Enclosures are not as noted above, please inform us immediately

Phone (316) 264-8008

Fax (316) 264-4621

Sheet1

Section	A	C		I		Q	
		100 yr.	2 yr.	100 yr.	2 yr.	100 yr.	2 yr.
a	1.6	0.68	0.55	7.37	3.83	8.01856	3.3704
b	1.87	0.59	0.46	6.39	3.25	7.050087	2.79565
c	1.06	0.68	0.55	7.37	3.83	5.312296	2.23289
d	2.2	0.59	0.46	7	3.61	9.086	3.65332
e	1.25	0.68	0.55	7.37	3.83	6.2645	2.633125
f	2.26	0.68	0.55	7.37	3.83	11.32622	4.76069
g	1.84	0.68	0.55	7.37	3.83	9.221344	3.87596
h	2.66	0.68	0.55	7.37	3.83	13.33086	5.60329
i	2.23	0.59	0.46	6.13	3.1	8.065241	3.17998
j	2.19	0.68	0.55	7.37	3.83	10.9754	4.613235
k	2.31	0.59	0.46	7.37	3.83	10.04457	4.069758
l	2.01	0.59	0.46	6.39	3.25	7.577901	3.00495
m	1.47	0.68	0.55	7.37	3.83	7.367052	3.096555
n	0.32	0.68	0.55	7.37	3.83	1.603712	0.67408

I-2	I-4	I-7	I-6
12.15367	9.357073	2.23289	3.65332

I-12	I-13	I-14	I-15
2.79565	2.633125	4.76069	9.977465

----- Beginning Calculation Cycle -----

Discharge: 12.15 cfs at node I-2
 Discharge: 21.51 cfs at node I-4
 Discharge: 2.23 cfs at node I-7
 Discharge: 27.39 cfs at node I-6
 Discharge: 2.80 cfs at node I-12
 Discharge: 30.19 cfs at node J-1
 Discharge: 32.82 cfs at node I-13
 Discharge: 37.58 cfs at node I-14
 Discharge: 9.98 cfs at node I-15
 Discharge: 47.56 cfs at node J-3
 Discharge: 47.56 cfs at node Outlet

Beginning iteration 1

Discharge: 12.15 cfs at node I-2
 Discharge: 21.51 cfs at node I-4
 Discharge: 2.23 cfs at node I-7
 Discharge: 27.39 cfs at node I-6
 Discharge: 2.80 cfs at node I-12
 Discharge: 30.19 cfs at node J-1
 Discharge: 32.82 cfs at node I-13
 Discharge: 37.58 cfs at node I-14
 Discharge: 9.98 cfs at node I-15
 Discharge: 47.56 cfs at node J-3
 Discharge: 47.56 cfs at node Outlet

Discharge Convergence Achieved in 1 iterations: relative error: 0.0

Information: P-19 Surcharged condition

Information: P-14 Surcharged condition

Information: P-6 Surcharged condition

----- Calculations Complete -----

** Analysis Options **

Friction method: Manning's Formula
 HGL Convergence Test: 0.001000
 Maximum Network Traversals: 5
 Number of Flow Profile Steps: 5
 Discharge Convergence Test: 0.001000
 Maximum Design Passes: 3

----- Network Quick View -----

Label	Length	Size	Discharge	Hydraulic Grade	
				Upstream	Downstream
P-3	300.00	24 inch	12.15	176.90	175.80
P-5	355.00	27 inch	21.51	175.80	174.14
P-6	115.00	12 inch	2.23	174.59	174.14
P-7	130.00	30 inch	27.39	174.14	173.57
P-14	300.00	12 inch	2.80	175.42	173.57
P-15	135.00	30 inch	30.19	173.57	172.80
P-16	32.00	33 inch	32.82	172.80	172.71
P-17	155.00	33 inch	37.58	172.71	172.08
P-18	20.00	36 inch	47.56	172.08	171.98
P-19	160.00	21 inch	9.98	172.72	172.08

Label	Discharge	Elevations		
		Ground	Upstream HGL	Downstream HGL
I-2	12.15	179.60	176.90	176.90
I-4	21.51	179.40	175.80	175.80
I-6	27.39	175.10	174.14	174.14
I-7	2.23	177.30	174.59	174.59
J-1	30.19	174.50	173.57	173.57
I-12	2.80	178.50	175.42	175.42
I-13	32.82	176.40	172.80	172.80
I-14	37.58	176.40	172.71	172.71

J-3	47.56	172.80	172.08	172.08
Outlet	47.56	175.00	171.98	171.98
I-15	9.98	176.20	172.72	172.72

Elapsed: 0 minute(s) 3 second(s)

SOIL TYPE = D

AREA	ft ²	ac	LAWNS	Distance (ft)		GUTTER	(min) t _c
				GRASSED	WATERWAY		
A	69,562	1.60	40	-	-	500	15
B	81,301	1.87	300	200	-	-	20.8
C	46,075	1.06	40	-	-	422	15
D	95,986	2.2	280	-	-	-	16.7
E	54,372	1.25	40	-	-	455	15
F	98,235	2.26	40	-	-	1200	15
G	80,196	1.84	40	-	-	970	15
H	115,770	2.66	40	-	-	570	15
I	97,232	2.23	300	350	-	-	23
J	95,346	2.19	40	-	-	761	15
K	100,840	2.31	300	340	-	-	15
L	37,332	2.01	300	220	-	-	21
M	64,045	1.47	40	-	-	930	15
N	13,393	.32	40	-	-	150	15

C
100yr. BACKYARD: $(.93) \frac{600}{5920} + \frac{5320}{5920} (.55) = .59$

5yr FRONT: $\frac{1258}{5328} (.38) + \frac{600}{5328} (.85) + \frac{3470}{5328} (.44) = .59$

2yr Front: $\frac{1258}{5328} (.37) + \frac{600}{5328} (.30) + \frac{3470}{5328} (.40) = .55$

2yr BACK: $(.80) \frac{600}{5920} + \frac{5320}{5920} (.42) = .46$

100yr. FRONT: $\frac{1258}{5328} (.93) + \frac{600}{5328} (.93) + \frac{3470}{5328} (.55) = .68$

2yr. = $\frac{600}{5920} (.30) + \frac{5320}{5920} (.40) = .44$

13-762 500 SHEETS, FILLER 5 SQUARE
42-380 100 SHEETS, FILLER 5 SQUARE
42-381 100 SHEETS, FILLER 5 SQUARE
42-382 200 SHEETS, FILLER 5 SQUARE
42-383 100 RECYCLED WHITE 5 SQUARE
42-389 200 RECYCLED WHITE 5 SQUARE
Printed in U.S.A.

National Brand

INLET 1

$$Q_{100} = A = 8.02$$

$$H = 13.33$$

$$I = 3.07$$

$$29.42 \text{ cfs}$$

$$Q_2 = A = 3.37$$

$$H = 5.60$$

$$I = 3.18$$

$$12.15 \text{ cfs}$$

$$Q_{100} = 29.42$$

$$- Q_2 = 12.15$$

$$\text{BYPASS } 17.27 \text{ cfs}$$

INLET 2

$$Q_{100} = J = 10.98$$

$$K = 10.04$$

$$N = 1.60$$

$$22.62$$

$$Q_2 = J = 4.61$$

$$K = 4.07$$

$$N = 0.67$$

$$9.35$$

$$Q_{100} = 22.62$$

$$- Q_2 = 9.35$$

$$\text{BYPASS } 13.27 \text{ cfs}$$

INLET 3

$$Q_{100} = D = 9.09$$

$$E = 6.26$$

$$F = 11.33$$

$$26.68$$

$$Q_2 = D = 3.65$$

$$E = 2.63$$

$$F = 4.76$$

$$11.04$$

$$Q_{100} = 26.68$$

$$- Q_2 = 11.04$$

$$\text{BYBASS } 15.64 \text{ cfs}$$

INLET 4

$$Q_{100} = L = 7.58$$

$$M = 7.37$$

$$G = 9.22$$

$$24.17$$

$$Q_2 = L = 3.00$$

$$M = 3.10$$

$$G = 3.83$$

$$9.93$$

$$Q_{100} = 24.17$$

$$- Q_2 = 9.93$$

$$\text{BYPASS } 14.19 \text{ cfs}$$

CAPACITY OF ROAD = 50.6 cfs

$$\text{IC 2 BYPASS} = 13.27 \text{ cfs}$$

$$e = 6.26 \text{ cfs}$$

$$f = 11.33 \text{ cfs}$$

$$30.86 < 50.6 \text{ cfs } \underline{\text{OK}}$$

$$+ \text{IC 4 BYPASS } 14.19$$

$$46.05 < 50.6 \text{ cfs } \underline{\text{OK}}$$

Q For SWALE

$$46.05 \text{ cfs} - (\text{BYPASS IC 3 } 15.64) = 30.41 \text{ cfs}$$

13-782 500 SHEETS, FILLER, 5 SQUARE
 42-381 50 SHEETS, EYE-EASE, 5 SQUARE
 42-382 100 SHEETS, EYE-EASE, 5 SQUARE
 42-383 200 SHEETS, EYE-EASE, 5 SQUARE
 42-384 100 RECYCLED, WHITE, 5 SQUARE
 42-385 200 RECYCLED, WHITE, 5 SQUARE
 Made in U.S.A.

National Brand

Full Microcomputer Implementation
by
Haestad Methods, Inc.

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.
THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT
STRUCTURE.
THE DEFINITION OF -AMSK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77
VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE, SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL, LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

12 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG 0.20 LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
 14 END-OF-PERIOD ORDINATES

30.	98.	122.	97.	54.	31.	18.	10.	6.	3.
2.	1.	1.	0.						

HYDROGRAPH AT STATION DEV

COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS
200.	1		0000	1	0.00	0.00	0.00	0.	*	1		1205	146	0.09	0.00	0.09
168.	1		0005	2	0.01	0.01	0.00	0.	*	1		1210	147	0.09	0.00	0.09
125.	1		0010	3	0.01	0.01	0.00	0.	*	1		1215	148	0.09	0.00	0.09
89.	1		0015	4	0.01	0.01	0.00	0.	*	1		1220	149	0.09	0.00	0.09
69.	1		0020	5	0.01	0.01	0.00	0.	*	1		1225	150	0.09	0.00	0.09
58.	1		0025	6	0.01	0.01	0.00	0.	*	1		1230	151	0.09	0.00	0.09

50.	1	0030	7	0.01	0.01	0.00	0.	*	1	1235	152	0.05	0.00	0.05
	1	0035	8	0.01	0.01	0.00	0.	*	1	1240	153	0.05	0.00	0.05
42.	1	0040	9	0.01	0.01	0.00	0.	*	1	1245	154	0.05	0.00	0.05
35.	1	0045	10	0.01	0.01	0.00	0.	*	1	1250	155	0.05	0.00	0.05
29.	1	0050	11	0.01	0.01	0.00	0.	*	1	1255	156	0.05	0.00	0.05
26.	1	0055	12	0.01	0.01	0.00	0.	*	1	1300	157	0.05	0.00	0.05
24.	1	0100	13	0.01	0.01	0.00	0.	*	1	1305	158	0.03	0.00	0.03
23.	1	0105	14	0.01	0.01	0.00	0.	*	1	1310	159	0.04	0.00	0.03
21.	1	0110	15	0.01	0.01	0.00	0.	*	1	1315	160	0.03	0.00	0.03
19.	1	0115	16	0.01	0.01	0.00	0.	*	1	1320	161	0.03	0.00	0.03
18.	1	0120	17	0.01	0.01	0.00	0.	*	1	1325	162	0.04	0.00	0.03
17.	1	0125	18	0.01	0.01	0.00	0.	*	1	1330	163	0.03	0.00	0.03
17.	1	0130	19	0.01	0.01	0.00	0.	*	1	1335	164	0.03	0.00	0.03
16.	1	0135	20	0.01	0.01	0.00	0.	*	1	1340	165	0.03	0.00	0.03
15.	1	0140	21	0.01	0.01	0.00	0.	*	1	1345	166	0.03	0.00	0.03
15.	1	0145	22	0.01	0.01	0.00	0.	*	1	1350	167	0.03	0.00	0.03
14.	1	0150	23	0.01	0.01	0.00	0.	*	1	1355	168	0.03	0.00	0.03
14.	1	0155	24	0.01	0.01	0.00	0.	*	1	1400	169	0.03	0.00	0.03

13.	1	0200	25	0.01	0.01	0.00	0.	*	1	1405	170	0.02	0.00	0.02
13.	1	0205	26	0.01	0.01	0.00	0.	*	1	1410	171	0.02	0.00	0.02
13.	1	0210	27	0.01	0.01	0.00	0.	*	1	1415	172	0.02	0.00	0.02
12.	1	0215	28	0.01	0.01	0.00	0.	*	1	1420	173	0.02	0.00	0.02
11.	1	0220	29	0.01	0.01	0.00	0.	*	1	1425	174	0.02	0.00	0.02
11.	1	0225	30	0.01	0.01	0.00	0.	*	1	1430	175	0.02	0.00	0.02
11.	1	0230	31	0.01	0.01	0.00	0.	*	1	1435	176	0.02	0.00	0.02
11.	1	0235	32	0.01	0.01	0.00	0.	*	1	1440	177	0.02	0.00	0.02
10.	1	0240	33	0.01	0.01	0.00	0.	*	1	1445	178	0.02	0.00	0.02
10.	1	0245	34	0.01	0.01	0.00	0.	*	1	1450	179	0.02	0.00	0.02
9.	1	0250	35	0.01	0.01	0.00	0.	*	1	1455	180	0.02	0.00	0.02
9.	1	0255	36	0.01	0.01	0.00	0.	*	1	1500	181	0.02	0.00	0.02
9.	1	0300	37	0.01	0.01	0.00	0.	*	1	1505	182	0.02	0.00	0.02
9.	1	0305	38	0.01	0.01	0.00	0.	*	1	1510	183	0.02	0.00	0.02
9.	1	0310	39	0.01	0.01	0.00	0.	*	1	1515	184	0.02	0.00	0.02
9.	1	0315	40	0.01	0.01	0.00	0.	*	1	1520	185	0.02	0.00	0.02
8.	1	0320	41	0.01	0.01	0.00	0.	*	1	1525	186	0.02	0.00	0.02
8.	1	0325	42	0.01	0.01	0.00	0.	*	1	1530	187	0.02	0.00	0.02

8.	1	0330	43	0.01	0.01	0.00	0.	*	1	1535	188	0.02	0.00	0.02
8.	1	0335	44	0.01	0.01	0.00	1.	*	1	1540	189	0.02	0.00	0.02
8.	1	0340	45	0.01	0.01	0.00	1.	*	1	1545	190	0.02	0.00	0.02
8.	1	0345	46	0.01	0.01	0.00	1.	*	1	1550	191	0.02	0.00	0.02
8.	1	0350	47	0.01	0.01	0.00	1.	*	1	1555	192	0.02	0.00	0.02
8.	1	0355	48	0.01	0.01	0.00	1.	*	1	1600	193	0.02	0.00	0.02
8.	1	0400	49	0.01	0.01	0.00	1.	*	1	1605	194	0.01	0.00	0.01
8.	1	0405	50	0.01	0.01	0.00	1.	*	1	1610	195	0.01	0.00	0.01
7.	1	0410	51	0.01	0.01	0.00	1.	*	1	1615	196	0.02	0.00	0.01
7.	1	0415	52	0.01	0.01	0.00	1.	*	1	1620	197	0.01	0.00	0.01
7.	1	0420	53	0.01	0.01	0.00	1.	*	1	1625	198	0.01	0.00	0.01
7.	1	0425	54	0.01	0.01	0.00	1.	*	1	1630	199	0.01	0.00	0.01
7.	1	0430	55	0.01	0.01	0.00	1.	*	1	1635	200	0.01	0.00	0.01
7.	1	0435	56	0.01	0.01	0.00	1.	*	1	1640	201	0.01	0.00	0.01
6.	1	0440	57	0.01	0.01	0.00	1.	*	1	1645	202	0.01	0.00	0.01
6.	1	0445	58	0.01	0.01	0.00	1.	*	1	1650	203	0.01	0.00	0.01
6.	1	0450	59	0.01	0.01	0.00	1.	*	1	1655	204	0.01	0.00	0.01
6.	1	0455	60	0.01	0.01	0.00	1.	*	1	1700	205	0.01	0.00	0.01

5.	1	0500	61	0.01	0.01	0.00	2.	*	1	1705	206	0.01	0.00	0.01
5.	1	0505	62	0.01	0.01	0.00	2.	*	1	1710	207	0.01	0.00	0.01
5.	1	0510	63	0.01	0.01	0.00	2.	*	1	1715	208	0.01	0.00	0.01
5.	1	0515	64	0.01	0.01	0.00	2.	*	1	1720	209	0.01	0.00	0.01
5.	1	0520	65	0.01	0.01	0.00	2.	*	1	1725	210	0.01	0.00	0.01
5.	1	0525	66	0.01	0.01	0.00	2.	*	1	1730	211	0.01	0.00	0.01
5.	1	0530	67	0.01	0.01	0.00	2.	*	1	1735	212	0.01	0.00	0.01
5.	1	0535	68	0.01	0.01	0.00	2.	*	1	1740	213	0.01	0.00	0.01
5.	1	0540	69	0.01	0.01	0.00	2.	*	1	1745	214	0.01	0.00	0.01
5.	1	0545	70	0.01	0.01	0.00	2.	*	1	1750	215	0.01	0.00	0.01
5.	1	0550	71	0.01	0.01	0.00	2.	*	1	1755	216	0.01	0.00	0.01
5.	1	0555	72	0.01	0.01	0.00	2.	*	1	1800	217	0.01	0.00	0.01
5.	1	0600	73	0.01	0.01	0.00	2.	*	1	1805	218	0.01	0.00	0.01
5.	1	0605	74	0.01	0.01	0.01	2.	*	1	1810	219	0.01	0.00	0.01
5.	1	0610	75	0.01	0.01	0.01	2.	*	1	1815	220	0.01	0.00	0.01
5.	1	0615	76	0.01	0.01	0.01	2.	*	1	1820	221	0.01	0.00	0.01
5.	1	0620	77	0.01	0.01	0.01	2.	*	1	1825	222	0.01	0.00	0.01
5.	1	0625	78	0.01	0.01	0.01	3.	*	1	1830	223	0.01	0.00	0.01

x

5.	1	0630	79	0.01	0.01	0.01	0.01	3.	*	1	1835	224	0.01	0.00	0.01
5.	1	0635	80	0.01	0.01	0.01	0.01	3.	*	1	1840	225	0.01	0.00	0.01
5.	1	0640	81	0.01	0.01	0.01	0.01	3.	*	1	1845	226	0.01	0.00	0.01
5.	1	0645	82	0.01	0.01	0.01	0.01	3.	*	1	1850	227	0.01	0.00	0.01
5.	1	0650	83	0.01	0.01	0.01	0.01	3.	*	1	1855	228	0.01	0.00	0.01
5.	1	0655	84	0.01	0.01	0.01	0.01	3.	*	1	1900	229	0.01	0.00	0.01
5.	1	0700	85	0.01	0.01	0.01	0.01	3.	*	1	1905	230	0.01	0.00	0.01
5.	1	0705	86	0.01	0.01	0.01	0.01	3.	*	1	1910	231	0.01	0.00	0.01
5.	1	0710	87	0.01	0.01	0.01	0.01	3.	*	1	1915	232	0.01	0.00	0.01
5.	1	0715	88	0.01	0.01	0.01	0.01	3.	*	1	1920	233	0.01	0.00	0.01
5.	1	0720	89	0.01	0.01	0.01	0.01	4.	*	1	1925	234	0.01	0.00	0.01
5.	1	0725	90	0.01	0.01	0.01	0.01	4.	*	1	1930	235	0.01	0.00	0.01
5.	1	0730	91	0.01	0.01	0.01	0.01	4.	*	1	1935	236	0.01	0.00	0.01
5.	1	0735	92	0.01	0.01	0.01	0.01	4.	*	1	1940	237	0.01	0.00	0.01
5.	1	0740	93	0.01	0.01	0.01	0.01	4.	*	1	1945	238	0.01	0.00	0.01
5.	1	0745	94	0.02	0.01	0.01	0.01	4.	*	1	1950	239	0.01	0.00	0.01
5.	1	0750	95	0.01	0.01	0.01	0.01	4.	*	1	1955	240	0.01	0.00	0.01
5.	1	0755	96	0.01	0.01	0.01	0.01	4.	*	1	2000	241	0.01	0.00	0.01

5.	1	0800	97	0.01	0.01	0.01	0.01	4.	*	1	2005	242	0.01	0.00	0.01
5.	1	0805	98	0.02	0.01	0.01	0.01	4.	*	1	2010	243	0.01	0.00	0.01
5.	1	0810	99	0.02	0.01	0.01	0.01	5.	*	1	2015	244	0.01	0.00	0.01
5.	1	0815	100	0.02	0.01	0.01	0.01	5.	*	1	2020	245	0.01	0.00	0.01
5.	1	0820	101	0.02	0.01	0.01	0.01	5.	*	1	2025	246	0.01	0.00	0.01
5.	1	0825	102	0.02	0.01	0.01	0.01	5.	*	1	2030	247	0.01	0.00	0.01
5.	1	0830	103	0.02	0.01	0.01	0.01	5.	*	1	2035	248	0.01	0.00	0.01
4.	1	0835	104	0.02	0.01	0.01	0.01	5.	*	1	2040	249	0.01	0.00	0.01
4.	1	0840	105	0.02	0.01	0.01	0.01	5.	*	1	2045	250	0.01	0.00	0.01
4.	1	0845	106	0.02	0.01	0.01	0.01	6.	*	1	2050	251	0.01	0.00	0.01
4.	1	0850	107	0.02	0.01	0.01	0.01	6.	*	1	2055	252	0.01	0.00	0.01
4.	1	0855	108	0.02	0.01	0.01	0.01	6.	*	1	2100	253	0.01	0.00	0.01
4.	1	0900	109	0.02	0.01	0.01	0.01	6.	*	1	2105	254	0.01	0.00	0.01
4.	1	0905	110	0.02	0.01	0.01	0.01	6.	*	1	2110	255	0.01	0.00	0.01
4.	1	0910	111	0.02	0.01	0.01	0.01	6.	*	1	2115	256	0.01	0.00	0.01
4.	1	0915	112	0.02	0.01	0.01	0.01	6.	*	1	2120	257	0.01	0.00	0.01
4.	1	0920	113	0.02	0.01	0.01	0.01	7.	*	1	2125	258	0.01	0.00	0.01
4.	1	0925	114	0.02	0.01	0.01	0.01	7.	*	1	2130	259	0.01	0.00	0.01

4.	1	0930	115	0.02	0.01	0.01	0.01	7.	*	1	2135	260	0.01	0.00	0.01
4.	1	0935	116	0.02	0.01	0.02	0.02	7.	*	1	2140	261	0.01	0.00	0.01
3.	1	0940	117	0.02	0.01	0.02	0.02	7.	*	1	2145	262	0.01	0.00	0.01
3.	1	0945	118	0.02	0.01	0.02	0.02	8.	*	1	2150	263	0.01	0.00	0.01
3.	1	0950	119	0.02	0.01	0.02	0.02	8.	*	1	2155	264	0.01	0.00	0.01
3.	1	0955	120	0.02	0.01	0.02	0.02	8.	*	1	2200	265	0.01	0.00	0.01
3.	1	1000	121	0.02	0.01	0.02	0.02	8.	*	1	2205	266	0.01	0.00	0.01
3.	1	1005	122	0.03	0.01	0.02	0.02	8.	*	1	2210	267	0.01	0.00	0.01
4.	1	1010	123	0.03	0.01	0.02	0.02	9.	*	1	2215	268	0.01	0.00	0.01
4.	1	1015	124	0.03	0.01	0.02	0.02	10.	*	1	2220	269	0.01	0.00	0.01
4.	1	1020	125	0.03	0.01	0.02	0.02	10.	*	1	2225	270	0.01	0.00	0.01
4.	1	1025	126	0.03	0.01	0.02	0.02	11.	*	1	2230	271	0.01	0.00	0.01
4.	1	1030	127	0.03	0.01	0.02	0.02	11.	*	1	2235	272	0.01	0.00	0.01
4.	1	1035	128	0.04	0.01	0.03	0.03	11.	*	1	2240	273	0.01	0.00	0.01
3.	1	1040	129	0.04	0.01	0.03	0.03	12.	*	1	2245	274	0.01	0.00	0.01
3.	1	1045	130	0.04	0.01	0.03	0.03	13.	*	1	2250	275	0.01	0.00	0.01
3.	1	1050	131	0.04	0.01	0.03	0.03	14.	*	1	2255	276	0.01	0.00	0.01
3.	1	1055	132	0.04	0.01	0.03	0.03	15.	*	1	2300	277	0.01	0.00	0.01

3.	1	1100	133	0.04	0.01	0.03	15.	*	1	2305	278	0.01	0.00	0.01
3.	1	1105	134	0.06	0.01	0.05	16.	*	1	2310	279	0.01	0.00	0.01
3.	1	1110	135	0.06	0.01	0.05	18.	*	1	2315	280	0.01	0.00	0.01
3.	1	1115	136	0.06	0.01	0.05	21.	*	1	2320	281	0.01	0.00	0.01
3.	1	1120	137	0.06	0.01	0.05	23.	*	1	2325	282	0.01	0.00	0.01
3.	1	1125	138	0.06	0.01	0.05	24.	*	1	2330	283	0.01	0.00	0.01
3.	1	1130	139	0.06	0.01	0.06	25.	*	1	2335	284	0.01	0.00	0.01
3.	1	1135	140	0.49	0.05	0.44	37.	*	1	2340	285	0.01	0.00	0.01
3.	1	1140	141	0.49	0.04	0.45	75.	*	1	2345	286	0.01	0.00	0.01
3.	1	1145	142	0.49	0.03	0.46	124.	*	1	2350	287	0.01	0.00	0.01
3.	1	1150	143	0.49	0.03	0.47	164.	*	1	2355	288	0.01	0.00	0.01
3.	1	1155	144	0.49	0.02	0.47	188.	*	2	0000	289	0.01	0.00	0.01
3.	1	1200	145	0.49	0.02	0.48	203.	*	*					

TOTAL RAINFALL = 7.80, TOTAL LOSS = 1.19, TOTAL EXCESS = 6.61

PEAK FLOW (CFS)	TIME (HR)	6-HR AVERAGE FLOW (CFS)	24-HR AVERAGE FLOW (CFS)	72-HR AVERAGE FLOW (CFS)	24.00-HR AVERAGE FLOW (CFS)
203.	12.00	33.	11.	11.	11.

(INCHES) 5.077 6.587 6.587 6.587
 (AC-FT) 17. 21. 21. 21.

CUMULATIVE AREA = 0.06 SQ MI

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 * POND *
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HYDROGRAPH ROUTING DATA

15 RS	STORAGE ROUTING	1	NUMBER OF SUBREACHES						
	NSTPS	ELEV	TYPE OF INITIAL CONDITION						
	ITYP	167.70	INITIAL CONDITION						
	RSVRIC	0.00	WORKING R AND D COEFFICIENT						
	X								
16 SA	AREA	0.0	0.2	1.3	1.7	1.8	1.9	2.0	
17 SE	ELEVATION	167.70	168.00	169.00	170.00	171.00	172.00	173.00	
18 SQ	DISCHARGE	0.	1.	18.	44.	44.	59.	72.	
19 SE	ELEVATION	167.70	168.00	169.00	170.00	171.00	172.00	173.00	

1	0035	8	0.	0.0	167.7 *	1	0840	105	5.	0.2	168.2 *	1	1645	202	8.
0.3	168.4														
1	0040	9	0.	0.0	167.7 *	1	0845	106	5.	0.2	168.2 *	1	1650	203	7.
0.3	168.4														
1	0045	10	0.	0.0	167.7 *	1	0850	107	5.	0.2	168.2 *	1	1655	204	7.
0.2	168.3														
1	0050	11	0.	0.0	167.7 *	1	0855	108	5.	0.2	168.2 *	1	1700	205	7.
0.2	168.3														
1	0055	12	0.	0.0	167.7 *	1	0900	109	5.	0.2	168.2 *	1	1705	206	7.
0.2	168.3														
1	0100	13	0.	0.0	167.7 *	1	0905	110	5.	0.2	168.2 *	1	1710	207	6.
0.2	168.3														
1	0105	14	0.	0.0	167.7 *	1	0910	111	5.	0.2	168.3 *	1	1715	208	6.
0.2	168.3														
1	0110	15	0.	0.0	167.7 *	1	0915	112	6.	0.2	168.3 *	1	1720	209	6.
0.2	168.3														
1	0115	16	0.	0.0	167.7 *	1	0920	113	6.	0.2	168.3 *	1	1725	210	6.
0.2	168.3														
1	0120	17	0.	0.0	167.7 *	1	0925	114	6.	0.2	168.3 *	1	1730	211	6.
0.2	168.3														
1	0125	18	0.	0.0	167.7 *	1	0930	115	6.	0.2	168.3 *	1	1735	212	6.
0.2	168.3														
1	0130	19	0.	0.0	167.7 *	1	0935	116	6.	0.2	168.3 *	1	1740	213	6.
0.2	168.3														
1	0135	20	0.	0.0	167.7 *	1	0940	117	6.	0.2	168.3 *	1	1745	214	6.
0.2	168.3														
1	0140	21	0.	0.0	167.7 *	1	0945	118	6.	0.2	168.3 *	1	1750	215	6.
0.2	168.3														
1	0145	22	0.	0.0	167.7 *	1	0950	119	7.	0.2	168.3 *	1	1755	216	6.
0.2	168.3														
1	0150	23	0.	0.0	167.7 *	1	0955	120	7.	0.2	168.3 *	1	1800	217	6.
0.2	168.3														
1	0155	24	0.	0.0	167.7 *	1	1000	121	7.	0.2	168.4 *	1	1805	218	6.
0.2	168.3														
1	0200	25	0.	0.0	167.7 *	1	1005	122	7.	0.3	168.4 *	1	1810	219	6.
0.2	168.3														

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1	0.2	168.3	0205	26	0.	0.0	167.7 *	1	1010	123	8.	0.3	168.4 *	1	1815	220	6.
1	0.2	168.3	0210	27	0.	0.0	167.7 *	1	1015	124	8.	0.3	168.4 *	1	1820	221	5.
1	0.2	168.3	0215	28	0.	0.0	167.7 *	1	1020	125	8.	0.3	168.4 *	1	1825	222	5.
1	0.2	168.3	0220	29	0.	0.0	167.7 *	1	1025	126	9.	0.3	168.4 *	1	1830	223	5.
1	0.2	168.3	0225	30	0.	0.0	167.7 *	1	1030	127	9.	0.3	168.5 *	1	1835	224	5.
1	0.2	168.3	0230	31	0.	0.0	167.7 *	1	1035	128	9.	0.3	168.5 *	1	1840	225	5.
1	0.2	168.3	0235	32	0.	0.0	167.7 *	1	1040	129	10.	0.3	168.5 *	1	1845	226	5.
1	0.2	168.3	0240	33	0.	0.0	167.7 *	1	1045	130	10.	0.4	168.5 *	1	1850	227	5.
1	0.2	168.2	0245	34	0.	0.0	167.7 *	1	1050	131	11.	0.4	168.6 *	1	1855	228	5.
1	0.2	168.2	0250	35	0.	0.0	167.7 *	1	1055	132	11.	0.4	168.6 *	1	1900	229	5.
1	0.2	168.2	0255	36	0.	0.0	167.7 *	1	1100	133	12.	0.4	168.6 *	1	1905	230	5.
1	0.2	168.2	0300	37	0.	0.0	167.7 *	1	1105	134	13.	0.5	168.7 *	1	1910	231	5.
1	0.2	168.2	0305	38	0.	0.0	167.7 *	1	1110	135	13.	0.5	168.7 *	1	1915	232	5.
1	0.2	168.2	0310	39	0.	0.0	167.7 *	1	1115	136	14.	0.5	168.8 *	1	1920	233	5.
1	0.2	168.2	0315	40	0.	0.0	167.7 *	1	1120	137	16.	0.6	168.8 *	1	1925	234	5.
1	0.2	168.2	0320	41	0.	0.0	167.7 *	1	1125	138	17.	0.6	168.9 *	1	1930	235	5.
1	0.2	168.2	0325	42	0.	0.0	167.8 *	1	1130	139	18.	0.7	169.0 *	1	1935	236	5.
1	0.2	168.2	0330	43	0.	0.0	167.8 *	1	1135	140	20.	0.7	169.0 *	1	1940	237	5.

1	0335	44	0.	0.0	167.8 *	1	1140	141	24.	1.0	169.2 *	1	1945	238	5.
0.2	168.2														
1	0340	45	0.	0.0	167.8 *	1	1145	142	32.	1.5	169.5 *	1	1950	239	5.
0.2	168.2														
1	0345	46	0.	0.0	167.8 *	1	1150	143	44.	2.2	170.0 *	1	1955	240	5.
0.2	168.2														
1	0350	47	0.	0.0	167.8 *	1	1155	144	44.	3.1	170.5 *	1	2000	241	5.
0.2	168.2														
1	0355	48	1.	0.0	167.8 *	1	1200	145	46.	4.1	171.1 *	1	2005	242	5.
0.2	168.2														
1	0400	49	1.	0.0	167.9 *	1	1205	146	55.	5.2	171.7 *	1	2010	243	5.
0.2	168.2														
1	0405	50	1.	0.0	167.9 *	1	1210	147	61.	6.1	172.2 *	1	2015	244	5.
0.2	168.2														
1	0410	51	1.	0.0	167.9 *	1	1215	148	65.	6.6	172.5 *	1	2020	245	5.
0.2	168.2														
1	0415	52	1.	0.0	167.9 *	1	1220	149	67.	6.9	172.6 *	1	2025	246	5.
0.2	168.2														
1	0420	53	1.	0.0	167.9 *	1	1225	150	67.	7.0	172.7 *	1	2030	247	5.
0.2	168.2														
1	0425	54	1.	0.0	168.0 *	1	1230	151	67.	7.0	172.7 *	1	2035	248	5.
0.2	168.2														
1	0430	55	1.	0.0	168.0 *	1	1235	152	67.	6.9	172.6 *	1	2040	249	5.
0.2	168.2														
1	0435	56	1.	0.0	168.0 *	1	1240	153	66.	6.7	172.5 *	1	2045	250	5.
0.2	168.2														
1	0440	57	1.	0.0	168.0 *	1	1245	154	65.	6.6	172.4 *	1	2050	251	5.
0.2	168.2														
1	0445	58	1.	0.0	168.0 *	1	1250	155	63.	6.3	172.3 *	1	2055	252	5.
0.2	168.2														
1	0450	59	1.	0.0	168.0 *	1	1255	156	62.	6.1	172.2 *	1	2100	253	5.
0.2	168.2														
1	0455	60	1.	0.0	168.0 *	1	1300	157	60.	5.9	172.1 *	1	2105	254	4.
0.1	168.2														
1	0500	61	1.	0.0	168.0 *	1	1305	158	58.	5.6	171.9 *	1	2110	255	4.
0.1	168.2														

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1945 238

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1	0635	80	2.	0.1	168.1	*	1	1440	177	34.	1.6	169.6	*	1	2245	274	4.
0.1	168.2																
1	0640	81	2.	0.1	168.1	*	1	1445	178	31.	1.4	169.5	*	1	2250	275	4.
0.1	168.1																
1	0645	82	2.	0.1	168.1	*	1	1450	179	28.	1.3	169.4	*	1	2255	276	4.
0.1	168.1																
1	0650	83	3.	0.1	168.1	*	1	1455	180.	26.	1.1	169.3	*	1	2300	277	3.
0.1	168.1																
1	0655	84	3.	0.1	168.1	*	1	1500	181	24.	1.0	169.2	*	1	2305	278	3.
0.1	168.1																
1	0700	85	3.	0.1	168.1	*	1	1505	182	23.	0.9	169.2	*	1	2310	279	3.
0.1	168.1																
1	0705	86	3.	0.1	168.1	*	1	1510	183	21.	0.8	169.1	*	1	2315	280	3.
0.1	168.1																
1	0710	87	3.	0.1	168.1	*	1	1515	184	20.	0.7	169.0	*	1	2320	281	3.
0.1	168.1																
1	0715	88	3.	0.1	168.1	*	1	1520	185	18.	0.7	169.0	*	1	2325	282	3.
0.1	168.1																
1	0720	89	3.	0.1	168.1	*	1	1525	186	17.	0.6	168.9	*	1	2330	283	3.
0.1	168.1																
1	0725	90	3.	0.1	168.1	*	1	1530	187	15.	0.6	168.8	*	1	2335	284	3.
0.1	168.1																
1	0730	91	3.	0.1	168.1	*	1	1535	188	14.	0.5	168.8	*	1	2340	285	3.
0.1	168.1																
1	0735	92	3.	0.1	168.1	*	1	1540	189	13.	0.5	168.7	*	1	2345	286	3.
0.1	168.1																
1	0740	93	3.	0.1	168.1	*	1	1545	190	12.	0.4	168.7	*	1	2350	287	3.
0.1	168.1																
1	0745	94	3.	0.1	168.1	*	1	1550	191	12.	0.4	168.6	*	1	2355	288	3.
0.1	168.1																
1	0750	95	4.	0.1	168.1	*	1	1555	192	11.	0.4	168.6	*	2	0000	289	3.
0.1	168.1																
1	0755	96	4.	0.1	168.2	*	1	1600	193	10.	0.4	168.5	*				
0.1	168.1																
1	0800	97	4.	0.1	168.2	*	1	1605	194	10.	0.4	168.5	*	*			

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW		
		6-HR	24-HR	72-HR

67.	12.42	33.	11.	11.	11.
		(INCHES)	6.563	6.563	6.563
		(AC-FT)	21.	21.	21.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE		
		6-HR	24-HR	72-HR

7.	12.42	2.	1.	1.	1.

CUMULATIVE AREA = 0.06 SQ MI

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RUNOFF SUMMARY
 FLOW IN CUBIC FEET PER SECOND
 TIME IN HOURS, AREA IN SQUARE MILES

TIME OF MAX STAGE	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD	BASIN AREA	MAXIMUM STAGE
	HYDROGRAPH AT						
	DEV	203.	12.00	33.	11.	11.	0.06
	ROUTED TO						
	POND	67.	12.42	33.	11.	11.	0.06
		172.67	12.42				

*** NORMAL END OF HEC-1 ***

