



MEMO

TO: City of Wichita, Engineering Dept. PROJECT NO. 36-83713-1120
455 N. Main
Wichita, KS 67202
ATTN: Chris Breitenstein, P.E. DATE: April 4, 1984
FROM: Louise Olivarez
REFERENCE: Drainage Plan

Transmitted herewith are two (2) prints of the Drainage Plan for the proposed Briarwood 4th Addition, along with supporting calculations.

The plan was submitted last Friday, March 30, 1984, for hearing by the Subdivision Committee on April 12, 1984.

If you have any questions or need any additional information, please advise.

Briarwood Phase II (4th Add.)

PEC File 36-83713-1120

SYSTEM 100

- Due to minimal difference in 2 yr & 100 yr pipe sizes, use 100 yr storm.
- Street flow allowed to be 5' curb depth for 2 yr storm. See attached graph.
 $E = \text{reciprocal of cross slope} = \frac{1}{5/16} = 32$
 $n = 0.016$
 $Q_{max} \text{ street} = 13 \text{ cfs}$
Curb depth allowed = 0.55'
street slope = 0.32%
- Street flow allowed to be .03' above curb depth for 100 year storm (depth allowed = 0.55')
Approx. $Q_{max} \text{ street} = 40 \text{ cfs}$ (see attached graph)
Actual flows are 2.9 & 8.4 cfs
Therefore, street flow for 100 yr storm OK
- Inlet size:
Sump condition at both Nodes 101 & 102
 $H = 10"$ (City inlet) = depth of water
 $h = 6"$ inlet opening
 $H/h = 10/6 = 1.67$
Resulting $Q/L = 2.0 \text{ cfs per foot of inlet}$ (See graph)
at Node 102 $Q = 2.9$ $L \text{ required} = \frac{2.9}{2.0} = 1.45'$ Use 1'-0" curb inlet
at Node 101 $Q = 5.5$ $L \text{ required} = \frac{5.5}{2.0} = 2.75'$

HYDROLOGY DATA SHEET

PAGE 1 OF 2

PROJECT: BRIARWOOD PHASE II (4th Add.) PROJECT NO. 36-83713-1120

ITEM: STORM SEWER DESIGN - SYSTEM 100 DATE: April 3, 1984

RETURN PERIOD: 2 COMPUTATIONS BY: CSB REVISIONS BY:

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ONE EIGHT FOUR
HIGHT A STREET SE
BETHESDA MD 20814

SCHEMATIC DIAGRAM:

TERRITORY AREA

HYDROLOGY SUMMATION

CONDUIT DATA

SUB-BASIN (1)	C (2)	AREA (sq ft) (3)	SLOPE (%) (4)	LENGTH (feet) (5)	Q_p (cfs) (6)	Q_u in/ft (7)	Q_u (cfs) (8)	Q_u (cfs) (9)	Q_u (cfs) (10)	Q_u (cfs) (11)	Q_u (cfs) (12)	PIPE (inches) (13)	SLOPE (ft/ft) (14)	VELOCITY (ft/sec) (15)	LENGTH (feet) (16)	Q_u (cfs) (17)	Q_u (cfs) (18)	Q_u (cfs) (19)	Q_u (cfs) (20)
102	0.5	0.65		15.0	4.06	1.3	1.3	1.3	4.06	1.3	1.3	15		2.0	30	0.25	15.25		
101	0.5	1.23		15.0	4.06	2.5	13.25	4.06	2.5	3.0	3.0	15	0.6	3.4	220	1.08	16.33		

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HYDROLOGY DATA SHEET

PAGE 2 OF 2

PROJECT: BRIARWOOD PHASE II (4th ADD.) PROJECT NO. 36-83713-1120

ITEM: STORM SEWER DESIGN - SYSTEM 100 DATE: APRIL 4, 1984

RETURN PERIOD: 100 COMPUTATIONS BY: CSB REVISIONS BY: _____

SCHEMATIC DIAGRAM:

TERRITORY AREA

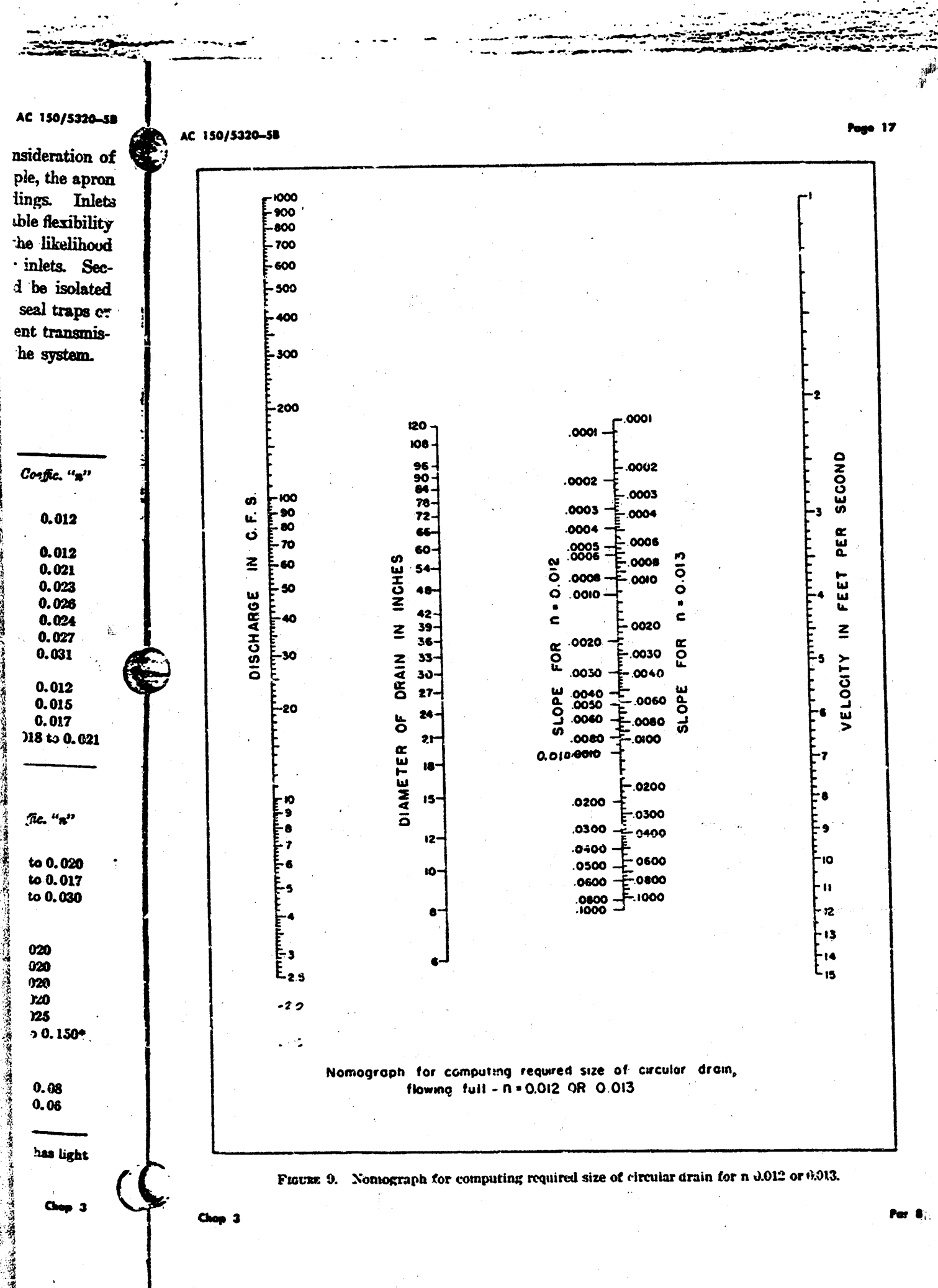
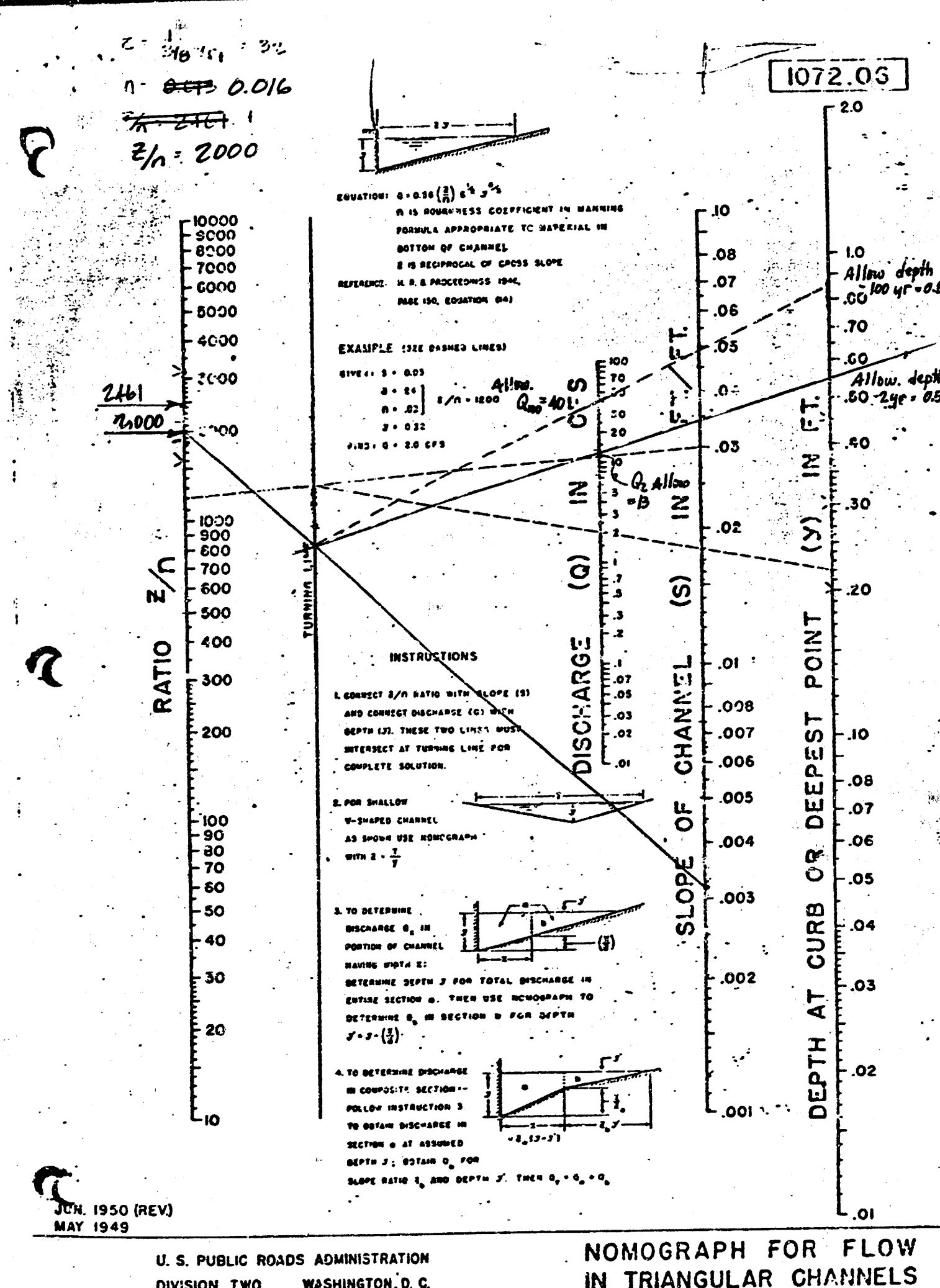
SUB-BASE	C	AREA (ACRES)	SLOPE (%)	LENGTH (FEET)	V_p (CMHRS)	V_p (CMHRS)	Q_p (CFS)	Q_p (CFS)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
102	0.5	0.45		15	8.26	2.9	15	8.90
101	0.5	1.23		15	8.90	3.5	15.2	8.90

HYDROLOGY SUMMATION

Q_p (CMHRS)	Q_p (CMHRS)	Q_p (CMHRS)	Q_p (CMHRS)	Q_p (CMHRS)
(10)	(11)	(12)	(13)	(14)
15	8.90	2.9	2.9	15
15.2	8.90	3.5	8.4	

CONDUIT DATA

RPE (INCHES)	SLOPE (%)	VELOCITY (FPS)	LENGTH (FEET)	V_p (CMHRS)	V_p (CMHRS)
(15)	(16)	(17)	(18)	(19)	(20)
15	.22	2.5	30	0.2	15.2
15	.60	4.6	220	0.5	16.0



Page 1 of 3

RAINFALL INTENSITY TABLE

for

SEDGWICK COUNTY, KANSAS

The following tabulation contains rainfall intensity in inches per hour as derived from ESSA Weather Bureau Technical Paper 40.

DURATION IN MINUTES	1-YR	2-YR	RETURN PERIODS OF 5-YR	10-YR	25-YR	50-YR	100-YR
5	4.67	6.23	8.00	9.34	10.67	12.23	13.79
6	4.35	5.80	7.45	8.70	9.94	11.29	12.84
7	4.09	5.46	7.02	8.19	9.36	10.72	12.09
8	3.88	5.18	6.66	7.77	8.89	10.18	11.48
9	3.71	4.95	6.36	7.43	8.49	9.72	10.96
10	3.56	4.75	6.11	7.13	8.15	9.33	10.52
11	3.43	4.58	5.89	6.87	7.85	8.99	10.14
12	3.32	4.43	5.69	6.64	7.59	8.69	9.80
13	3.22	4.29	5.51	6.43	7.35	8.42	9.50
14	3.12	4.17	5.36	6.25	7.14	8.18	9.23
15	3.04	4.06	5.21	6.08	6.95	7.97	9.00
16	2.96	3.96	5.09	5.93	6.78	7.77	8.76
17	2.90	3.86	4.97	5.79	6.62	7.59	8.55
18	2.83	3.78	4.86	5.67	6.48	7.42	8.37
19	2.77	3.70	4.76	5.55	6.34	7.27	8.19
20	2.72	3.63	4.66	5.44	6.22	7.12	8.03
21	2.67	3.56	4.57	5.34	6.10	6.99	7.88
22	2.62	3.49	4.49	5.24	5.99	6.86	7.74
23	2.57	3.43	4.41	5.15	5.89	6.74	7.60
24	2.53	3.38	4.34	5.07	5.79	6.63	7.48
25	2.49	3.32	4.27	4.99	5.70	6.53	7.36
26	2.45	3.23	4.21	4.91	5.61	6.43	7.25
27	2.42	3.13	4.15	4.84	5.53	6.33	7.14
28	2.38	3.05	4.09	4.77	5.45	6.25	7.04
29	2.35	2.97	4.02	4.68	5.38	6.16	6.95
30	2.32	2.89	3.92	4.56	5.31	6.08	6.79
31	2.29	2.82	3.82	4.44	5.19	6.00	6.62
32	2.26	2.75	3.73	4.33	5.07	5.87	6.45
33	2.24	2.68	3.64	4.23	4.95	5.73	6.30
34	2.19	2.62	3.55	4.13	4.83	5.60	6.16
35	2.14	2.57	3.47	4.04	4.73	5.47	6.02
36	2.09	2.51	3.40	3.96	4.62	5.35	5.89
37	2.05	2.46	3.33	3.87	4.52	5.23	5.76
38	2.01	2.41	3.26	3.79	4.43	5.13	5.64
39	1.96	2.36	3.19	3.71	4.34	5.02	5.53
40	1.92	2.32	3.13	3.64	4.26	4.92	5.42
41	1.89	2.27	3.07	3.57	4.18	4.83	5.32
42	1.85	2.23	3.01	3.51	4.10	4.74	5.22
43	1.82	2.19	2.96	3.44	4.02	4.65	5.13
44	1.78	2.15	2.91	3.38	3.95	4.56	5.03
45	1.75	2.11	2.86	3.32	3.88	4.48	4.95

DURATION
IN MINUTES

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RETURN PERIODS OF							DURATION IN MINUTES	1-YR	2-YR
1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	91	1.00	1.23
							92	1.00	1.22
1.62	2.08	2.81	3.27	3.82	4.41	4.86	93	0.99	1.21
1.69	2.04	2.76	3.21	3.75	4.33	4.78	94	0.98	1.20
1.67	2.01	2.72	3.16	3.69	4.26	4.70	95	0.97	1.19
1.64	1.98	2.67	3.11	3.63	4.19	4.63	96	0.96	1.18
1.61	1.95	2.63	3.06	3.58	4.13	4.56	97	0.96	1.17
1.59	1.92	2.59	3.01	3.52	4.06	4.49	98	0.95	1.16
1.56	1.89	2.55	2.97	3.47	4.00	4.42	99	0.94	1.15
1.54	1.86	2.51	2.92	3.42	3.94	4.35	100	0.94	1.14
1.52	1.84	2.48	2.88	3.37	3.88	4.29	101	0.93	1.14
1.50	1.81	2.44	2.84	3.32	3.83	4.23	102	0.91	1.12
1.47	1.79	2.41	2.80	3.27	3.77	4.17	103	0.93	1.13
1.45	1.76	2.37	2.76	3.23	3.72	4.11	104	0.92	1.13
1.43	1.74	2.34	2.73	3.19	3.67	4.06	105	0.91	1.12
1.42	1.72	2.31	2.69	3.14	3.62	4.01	106	0.90	1.11
1.40	1.69	2.28	2.65	3.10	3.57	3.95	107	0.90	1.10
1.38	1.67	2.25	2.62	3.06	3.53	3.90	108	0.89	1.09
1.36	1.65	2.22	2.59	3.02	3.48	3.85	109	0.88	1.09
1.34	1.63	2.20	2.55	2.99	3.44	3.81	110	0.88	1.08
1.33	1.61	2.17	2.52	2.95	3.40	3.76	111	0.87	1.07
1.31	1.59	2.14	2.49	2.92	3.35	3.71	112	0.87	1.06
1.30	1.57	2.12	2.46	2.88	3.31	3.67	113	0.86	1.05
1.28	1.55	2.09	2.44	2.85	3.27	3.63	114	0.85	1.04
1.26	1.54	2.07	2.41	2.81	3.24	3.59	115	0.84	1.03
1.25	1.52	2.05	2.38	2.78	3.20	3.54	116	0.84	1.03
1.24	1.50	2.02	2.35	2.75	3.16	3.51	117	0.83	1.02
1.22	1.49	2.00	2.33	2.72	3.13	3.47	118	0.82	1.01
1.21	1.47	1.98	2.30	2.69	3.09	3.43	119	0.81	1.00
1.20	1.46	1.96	2.28	2.66	3.05	3.39	120	0.81	0.99
1.18	1.44	1.94	2.25	2.63	3.03	3.36	121	0.80	0.99
1.17	1.43	1.92	2.23	2.61	3.00	3.32	122	0.79	0.97
1.16	1.41	1.90	2.21	2.58	2.96	3.29	123	0.80	0.98
1.15	1.40	1.88	2.18	2.55	2.93	3.25	124	0.79	0.97
1.13	1.38	1.86	2.16	2.53	2.90	3.22	125	0.79	0.97
1.12	1.37	1.84	2.14	2.50	2.88	3.19	126	0.78	0.96
1.11	1.36	1.82	2.12	2.48	2.85	3.16	127	0.78	0.96
1.10	1.34	1.81	2.10	2.46	2.82	3.13	128	0.77	0.95
1.09	1.33	1.79	2.08	2.43	2.79	3.10	129		
1.08	1.32	1.77	2.06	2.41	2.76	3.07	130		
1.07	1.31	1.75	2.04	2.39	2.74	3.04	131		
1.06	1.30	1.74	2.02	2.37	2.71	3.01	132		
1.05	1.28	1.72	2.00	2.34	2.69	2.99	133		
1.04	1.27	1.71	1.99	2.32	2.66	2.96	134		
1.03	1.26	1.69	1.97	2.30	2.64	2.93	135		
1.02	1.25	1.68	1.95	2.28	2.62	2.91			
1.01	1.24	1.66	1.93	2.26	2.59	2.88			

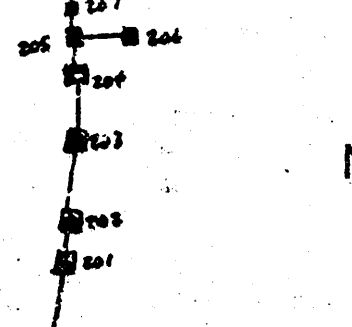
Briarwood Phase II (4th Addition)

SYSTEM 200

- Design this system for 2 year storm in pipe. Difference ($Q_{100} - Q_2$) overlaid in swales.
- Street flow for 2 yr storm (same criteria as System 100)
 $Q_{max} \text{ street} = 13 \text{ cfs}$
Street flows at all nodes are less than 13 cfs
Therefore all street flows for 2-yr storm OK
- Street flow for 100 yr storm (same criteria as System 100)
 $Q_{max} \text{ street} = 40 \text{ cfs}$
Check each segment: Node 208 to 207
Node 207 to 206
Node 206 to 205
Node 205 to 204
Node 204 to 203
Node 203 to 202
Node 202 to 201
Node 201 to 200
Node 208 to 207: $180 \times 8.2 = 1476$
Node 207 to 206: $222 \times 10.1 = 2242$
Node 206 to 205: $44 \times 2.0 = 88$
Node 205 to 204: $316 \times 14.3 = 4519$
Node 204 to 203: $360 \times 14.3 = 5148$
Node 203 to 202: $498 \times 22.2 = 11056$
Node 202 to 201: $524 \times 23.3 = 12209$
Node 201 to 200: $552 \times 24.5 = 13524$

 PROFESSIONAL ENGINEERING CONSULTANTS INCORPORATED BY ACT REG. NO. 1000	HYDROLOGY DATA SHEET		PAGE <u>1</u> OF <u>120</u>
	PROJECT <u>Brimwood Phase II (4th Adv.)</u>		PROJECT NO. <u>3E-23713-1120</u>
	ITEM <u>SDRM SEWER DESIGN - SYSTEM 200</u>		DATE <u>April 2, 1986</u>
RETURN PERIOD <u>2</u>		COMPUTATIONS BY <u>CSB</u>	REVISIONS BY _____

SCHEMATIC DIAGRAM:



TRIBUTARY AREA					HYDROLOGY SIMULATION										CONDUIT DATA					
SUB-BASIN	C	AREA (sq ft)	SLOPE (%)	LENGTH (feet)	V_1 (ft/sec)	V_2 (ft/sec)	Q_1 (cfs)	Q_2 (cfs)	h_1/h_2 (ft)	Q (cfs)	V (ft/sec)	T (sec)	T (sec)	PIPE (inches)	SLOPE (%)	VELOCITY (ft/sec)	LENGTH (feet)	V (ft/sec)	T (sec)	V + T (ft/sec)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
200	0.5	8.32		15	4.06	8.2	15	4.06	8.2	8.2	18	0.85	5.6	40	0.15	15.15				
201	0.5	0.93		15	4.06	1.9	15	4.06	1.9	10.1	18	0.85	5.6	100	0.4	15.64				
202	0.5	0.97		15	4.06	2.0	15	4.06	2.0	2.0	15	0.1	2.0	50	0.4	15.64				
203	0.5	1.11		15	4.06	2.3	15	4.06	2.3	2.2	18	0.4	6.4	60	0.23	15.7				
204	0.5	1.02		15	4.06	2.1	15	4.06	2.0	16.3	24	0.5	5.0	170	0.6	16.3				
205	0.5	3.83		15	4.06	6.2	15	4.06	3.93	5.9	22.2	2.1	5.3	160	0.5	16.3				
206	0.5	0.58		15	4.06	1.2	15	4.06	3.88	1.1	23.3	3.0	6.3	4.7	30	0.1	16.3			
207	0.5	0.63		15	4.06	1.3	15	4.06	3.87	1.2	24.5	3.6	6.2	3.4	220	1.1	16.0			

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PROJECT: Briarwood Phase II (4th Add) PROJECT NO. 26-09713-1120 PAGE 1 OF 2

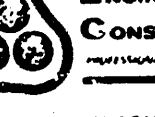
ITEM: STORM SEWER DESIGN (SYSTEM 300) DATE: APRIL 3, 1984

RETURN PERIOD: 2 COMPUTATIONS BY: CSB REVISIONS BY: _____

SCHEMATIC DIAGRAM:

TRIBUTARY AREA				HYDROLOGY SUMMATION						CONDUIT DATA						
SUB-BASIN	C	AREA (Acres)	SLOPE (%)	LENGTH (Feet)	Q_p (cfs)	Q_u (cfs)	Q_t (cfs)	T_c (min)	T_u (min)	T_t (min)	Q_p (cfs)	SLOPE (%)	VELOCITY (ft/sec)	LENGTH (Feet)	Q_u (cfs)	Q_t (cfs)
302	0.3	0.36		15	4.04	1.3	15.3	4.03	2.5	4.4	15	0.5	3.4	180	0.8	16
301	0.5	1.65		15	4.06	2.6	15.3	4.03	2.5	4.4	15	0.5	3.4	180	0.8	16

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HYDROLOGY DATA SHEET

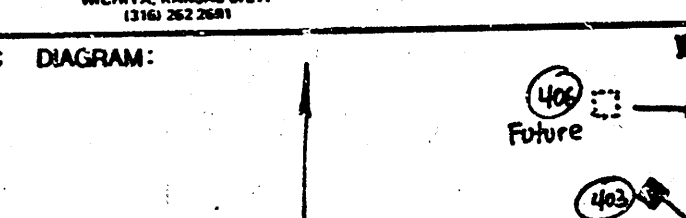
PROJECT: BIRKENHEAD PHASE II (4th Addition) PROJECT NO: 36-23712-1120

ITEM: STORM SEWER DESIGN (SYSTEM 400)

RETURN PERIOD: 2 COMPUTATIONS BY: CS REVISIONS BY: _____

PAGE 1 OF 2

SCHEMATIC DIAGRAM:



TERMINAL AREA					HYDROLOGY SUBMATION					CONDUIT DATA						
SUB-BASIN	C	AREA (SQ. FT.)	SLOPE FTH/100	LENGTH (FEET)	$\frac{1}{4}$ INCHES (SQ. FT.)	$\frac{1}{4}$ INCHES (SQ. FT.)	$\frac{1}{4}$ INCHES (SQ. FT.)	$\frac{1}{4}$ INCHES (SQ. FT.)	$\frac{1}{4}$ INCHES (SQ. FT.)	PIPE (INCHES)	SLOPE FTH/100	VELOCITY (FT./SEC.)	LENGTH (FEET)	$\frac{1}{4}$ INCHES (SQ. FT.)	$\frac{1}{4}$ INCHES (SQ. FT.)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
406	0.5	13.0	0.5	15	4.06	26.4	15.0	4.06	26.4	22.4	3.0	0.4	5.4	270	0.8	15.8
405	0.5	3.6	0.5	15	4.06	7.3	15.0	4.06	7.3	7.3	1.5	1.2	5.4	40	0.1	15.1
404	-	MANHOLE					15.0	4.06	7.3	22.4	3.0	0.4	4.7	215	0.8	16.6
403	0.5	0.9	0.5	15	4.06	1.8	15.0	4.06	1.8	1.8	1.5	0.1	2.3	30	0.3	15.3
402	0.5	0.44	0.5	15	4.06	0.9	15.0	4.06	0.9	0.9	1.5	0.1	2.1	110	0.9	15.3
401	0.5	0.25	0.5	15	4.06	1.9	16.6	3.90	1.9	39.2	3.6	0.36	5.2	280	0.9	17.8

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HYDROLOGY DATA SHEET

PROJECT: Briarwood Phase II (4th Add) PROJECT NO: 30-B2713-120

ITEM: STORM SEWER DESIGN (SYSTEM ACO) DATE: April 5, 1984

RETURN PERIOD: 100 COMPUTATIONS BY: CSB REVISIONS BY: _____

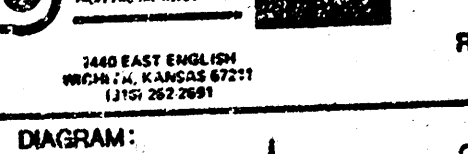


**PROFESSIONAL
ENGINEERING
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INCORPORATED

10000
12/31/84

PROJECT LOCATION:
 INTERSECTION OF
 BIRCH AVE. & 1ST ST.
 SAN JOSE, CA

SCHEMATIC DIAGRAM:



Briarwood Phase II (4th Addition)

SYSTEM 300

1. Design this system to carry the 100-yr Q. The increase in cost for bigger pipe is offset by omitting ditch lining or other type of erosion control at swale outfall.

2. Street flow for 2-year storm
(same criteria as System 100)
 $Q_{max-street} = 13 \text{ cfs}$

Street flows to both Nodes 302 & 301 are less than 13. Therefore street flows for 2yr. storm OK.

3. Street flow for 100-year storm
(Same criteria as system 100)
 $Q_{\text{max-street}} = 40 \text{ cfs}$

Street flows₁₀₀ to both Nodes 302 & 301 are less than 40 cfs. Therefore street flows for 100-year storm OK.

4. Inlet capacity

Both inlets in sump condition
 Q_2 allowable = 2 cfs/foot (see System 100) $\times 5' =$
 = 10 cfs. cfs in:

Both inlet O's for 100 year storm $< 10\text{ cfs}$
Therefore, use 1 C-O-W inlet at each node.

SYSTEM 400

1. Design this system with Q_2 in pipe.
Difference $(Q_{100} - Q_2)$ in swale.

2. Street flow for 2-yr. storm
(Same criteria as System 100)
 $Q_{max-st.2} = 13 \text{ cfs}$

street flows to all nodes in Briarwood 4th are less than 13. Therefore street flow for 2 year storm OK.

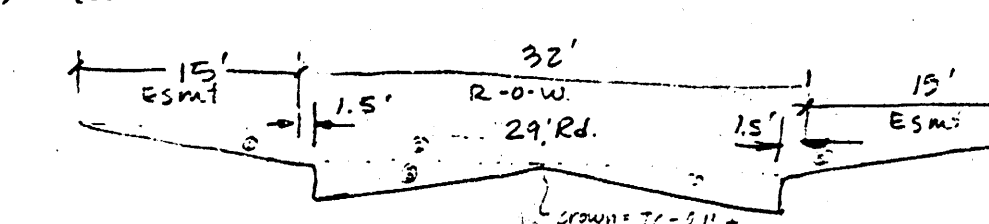
NOTE: Upon plotting of north portion of parcel, street flows will be checked for North 400.

3. Street flow for 100 yr. storm.

Check each segment:

		$Q_{\text{net}} - Q_{\text{a}}$
Node	406 to 404	$58.4 - 26.4 = 32.0$
Node	405 to 404	$16.2 - 7.3 = 8.9$
Node	404 to 401	$74.6 - 33.6 = 41.0$
Node	403 to 401	$4.0 - 1.8 = 2.2$
Node	402 to 401	$2.0 - 0.9 = 1.1$
Node	401 to 400	$84.9 - 39.2 = 45.7$

3) (continued)



Use Manning's Eq'n to determine a more exact amount of flow on the above street section

- a) Determine "composite" n

$$\begin{aligned} 33 \text{ LF @ } 0.030 &= 0.99 \\ 29 \text{ LF @ } 0.016 &= \underline{0.46} \\ \Sigma &= 1.45 / 62 = 0.023 \end{aligned}$$

- b) Determine Cross-Sectional Area

①	$\frac{1}{2} \times 16.5' \times 0.3'$	=	2.48
②	$0.4 \times 20'$	=	11.60
③	$\frac{1}{2} \times 14.5' \times 0.45$	=	3.26
④	$\frac{1}{2} \times 14.5' \times 0.45$	=	3.26
⑤	$\frac{1}{2} \times 16.5' \times 0.3'$	=	2.48
			22.08

- c) Assume wetted perimeter = 62'

d) Hydraulic radius = $\frac{1}{2} = \frac{23.08}{62} = 0.37225$

$$\begin{aligned} Q_{11.11.1} &= \frac{1.492}{0.023} \times 23.06 \times (0.37225)^{2/3} \times (0.0032)^{1/6} \\ &= \frac{1.496}{0.023} \times 23.02 \times 0.51748 \times 0.05656 \\ &= 43.6 \text{ cfs} \end{aligned}$$

3) (continued)

Street Flow (100 yr.) is right at the maximum of Node 401. OK

- 4) Inlet capacity.

All inlets in sump condition.

Allowable $Q = \frac{2fs}{ft} \text{ (see System 100)} \times 5' \text{ (LOW in-)} \\ = 10 \text{ cfs}$

All inlets in Briarwood 4th OK

Future Nodes 406-407-408-409 will be checked when north portion plotted.

- 5.) Swale Design.

Use Mannings Eq'n.

$Q = \frac{1486}{n} AR^{2/3} S^{1/2}$ where $Q = 46.7 \text{ cfs}$
 $n = 0.035$
 $S = 0.5\% \pm$

$$AR^{23} = \frac{Q + r}{1.486 \times 5^2} = \frac{46.7 \times 0.035}{1.486 \times 0.07071}$$

$$= 15.55$$

Briarwood Estates 4th Addition

To Wichita, Sedgwick County, Kansas

DRAINAGE PLAN

4-4-84

LEGEND
Storm Water Sewer Size
Inlet
Manhole
Street Flow Direction
100 Year Storm Runoff
Node No.
Drainage Sub-Basin
Drainage Basin
Prop. Approx. Elev.

Scale: 1" = 50'
March 30, 1984

We, the Mellon Bank, N.A., Pittsburgh, Pa., holder of a mortgage on the above described property, do hereby consent to the platting of Briarwood Estates 4th Addition to Wichita, Sedgwick County, Kansas.

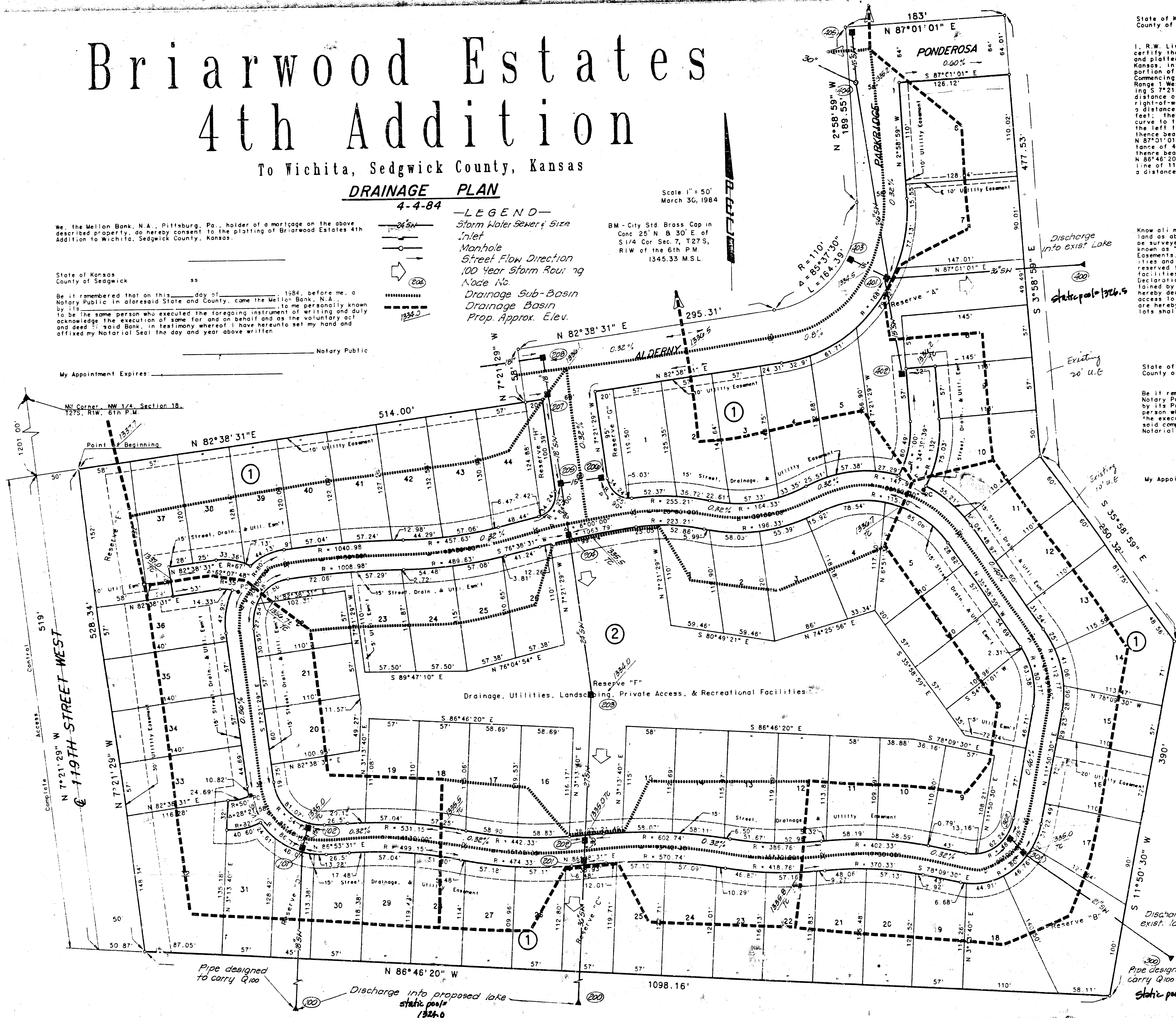
State of Kansas
County of Sedgwick

Be it remembered that on this _____ day of _____, 1984, before me, a Notary Public in aforesaid State and County, came the Mellon Bank, N.A., to be the same person who executed the foregoing instrument of writing and duly acknowledged the execution of same for and on behalf of and as the voluntary act and deed of said Bank, in testimony whereof I have hereunto set my hand and affixed my Notarial Seal the day and year above written.

Notary Public

My Appointment Expires: _____

NW Corner, NW 1/4, Section 18,
T25S, R17W, 6th P.M.



BRIARWOOD ESTATES FOURTH ADDITION
(Drainage)

State of Kansas
County of Sedgwick

I, R.W. Linn, a Professional Engineer in aforesaid State and County, do hereby certify that on this _____ day of _____, 1984, I have caused to be surveyed and plotted the BRIARWOOD ESTATES 4TH ADDITION, to Wichita, Sedgwick County, Kansas, into lots, blocks, streets and reserves, the same being a replat of a portion of Briarwood Estates, Wichita, Sedgwick County, Kansas, described as: Commencing at the NW Corner of the NW 1/4 of Section 18, Township 27 South, Range 1 West of the 6th P.M., thence along the west line of said NW 1/4 bearing S 7°21'29\"

R.W. Linn, P.E. No. 3684

Know all men by these presents that we, the undersigned property owners of the land as above set forth in the Engineer's Certificate have caused the land to be surveyed and plotted into lots, blocks, streets and reserves, the same to be known as BRIARWOOD ESTATES 4TH ADDITION, to Wichita, Sedgwick County, Kansas, as indicated, for the construction and maintenance of public utilities and drainage, are hereby granted. The reserves, as indicated, shall be reserved for drainage, utilities, landscaping, private access, and recreational facilities in accordance with the restrictive covenants established by the Declaration of Landowners Association Agreement, and shall be owned and maintained by the Briarwood Estates Homeowners Association. The streets are hereby dedicated to and for the use of the public. All public rights of access to and from 119th Street West over and across the west line of Block 1 are hereby granted to the City of Wichita. Minimum Pad Elevation for all lots shall be 1335.00 M.S.L. Inland Investment Co., Inc.

Larry A. Chambers President

State of Kansas
County of Sedgwick

Be it remembered that on this _____ day of _____, 1984, before me, a Notary Public in aforesaid State and County, came Inland Investment Co., Inc., by its President Larry A. Chambers, to me personally known to be the same person who executed the foregoing instrument of writing and duly acknowledged the execution of same for and on behalf of and as the voluntary act and deed of said company, in testimony whereof I have hereunto set my hand and affixed my Notarial Seal the day and year above written.

Notary Public

My Appointment Expires: _____

This plat has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this _____ day of _____, 1984

Robert K. Chisholm Chairman

Robert A. Lakin Secretary

This plat approved and all dedications shown hereon are accepted by the City Commission of the City of Wichita, Kansas.

Dated this _____ day of _____, 1984.

Margalee Wright Mayor

Donald C. Givick City Clerk

This is to certify that this instrument was filed for record in the Register of Deeds Office of _____ m. on this _____ day of _____, 1984.

Bette F. McCarl Register of Deeds

Pat Kettler Deputy

This plat approved and all dedications shown hereon are accepted by the Board of County Commissioners of Sedgwick County, Kansas

Dated this _____ day of _____, 1984

Jack Spratt Chairman

Donald E. Grogg Commissioner

Tom Scott Commissioner

Dorothy K. White County Clerk

Entered on Transfer Record this _____ day of _____, 1984.

Dorothy K. White County Clerk