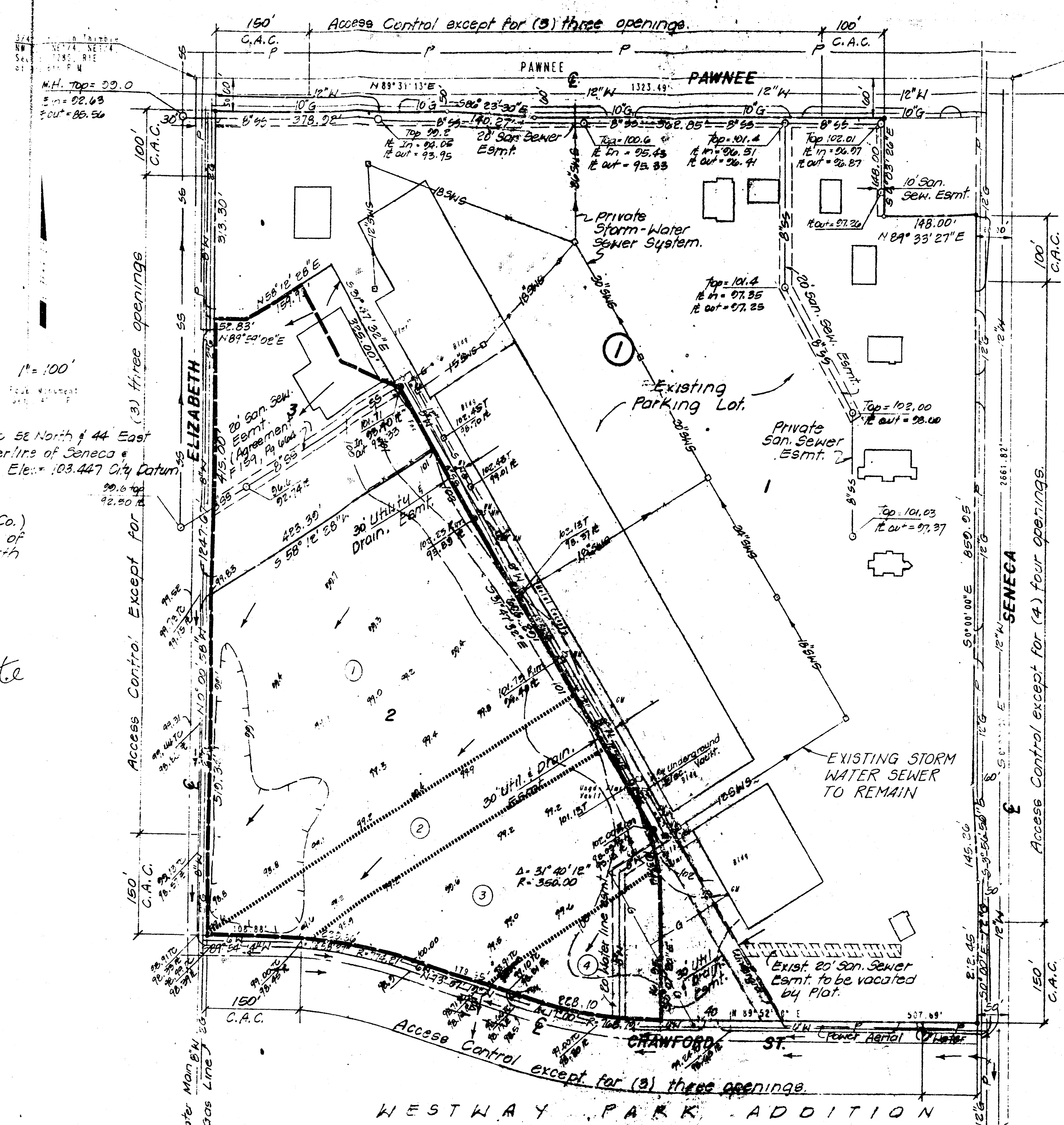


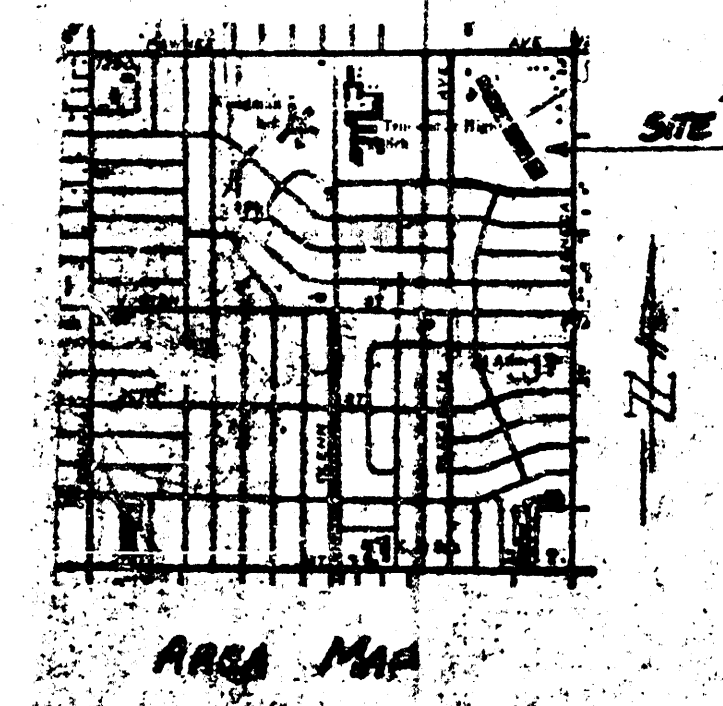


DRAINAGE PLAN **WESTWAY** Wichita, Sedgwick County, Kansas.

Owner/Developer: Phil Ruffin P.O. Box 17087 Wichita, Ks.
Engineer: R.E.C. p.a.
1440 English, Wichita, Ks. 67211

- Notes:
1. Lots 1 & 3 shall continue to be drained via existing streets & private storm water sewer system.
 2. Lot 2 shall be graded to drain to existing streets, gutters, and/or storm water sewer systems via drives, flumes, private storm sewers and/or other approved drainage facilities.

LEGEND	
---	DRAINAGE BASIN BOUNDARY
----	DRAINAGE SUB-BASIN BOUNDARY
→	DRAINAGE FLOW DIRECTION
②	SUB-BASIN NUMBER



MEMO



TO: City of Wichita
Engineering Dept.
PROJECT: Westway Add'n.

ATTN: Mr. Carl Gipson, P.E.
DATE: May 27, 1986

FROM: Charles S. Brown, P.E.
REFERENCE: Revised Drainage Plan

Transmitted herewith are two (2) prints of the revised Drainage Plan for Westway Addition to Wichita.

The drainage plan has been revised to note that the combined maximum allowable discharge from Sub-Basins 1 through 4 is limited to 25 cfs.

The preliminary plat was approved by the Subdivision Committee on May 22, 1986, subject to this drainage revision.

If you have any questions, please advise.

CSB/nkm



Date: 5-16-86 Page 1 of 4

Project: Westway

Item: Drainage

SUBAREA NO. 1	
A. Existing Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 45 \text{ min}$
	$I_a = 2.00$
	$I_{100} = 4.30$
	$A = 7.6 \text{ Ac}$
$Q_2 = 0.9 \times 2.00 \times 7.6$	$Q_{100} = 0.9 \times 4.30 \times 7.6$
$Q_2 = 6.7 \text{ cfs}$	$Q_{100} = 12.2 \text{ cfs}$
Depth of St. Flow = 0.35'	Depth of St. Flow = 0.47'
B. Proposed Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 15 \text{ min}$
	$I_a = 3.83$
	$I_{100} = 7.37$
	$A = 7.6 \text{ Ac}$
$Q_2 = 0.9 \times 3.83 \times 7.6$	$Q_{100} = 0.9 \times 7.37 \times 7.6$
$Q_2 = 26.2 \text{ cfs}$	$Q_{100} = 50.4 \text{ cfs}$
Depth of St. Flow = 0.65'	Depth of St. Flow = 0.88'



Date: 5-16-86 Page 2 of 4

Project: Westway

Item: Drainage

SUBAREA NO. 2	
A. Existing Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 45 \text{ min}$
	$I_a = 2.00$
	$I_{100} = 4.30$
	$A = 13.4 \text{ Ac}$
$Q_2 = 0.9 \times 2.00 \times 13$	$Q_{100} = 0.9 \times 4.30 \times 13$
$Q_2 = 23.8 \text{ cfs}$	$Q_{100} = 51.9 \text{ cfs}$
Depth of St. Flow = 0.17'	Depth of St. Flow = 0.24'
B. Proposed Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 15 \text{ min}$
	$I_a = 3.83$
	$I_{100} = 7.37$
	$A = 13 \text{ Ac}$
$Q_2 = 0.9 \times 3.83 \times 13$	$Q_{100} = 0.9 \times 7.37 \times 13$
$Q_2 = 45 \text{ cfs}$	$Q_{100} = 86 \text{ cfs}$



Date: 5-16-86 Page 3 of 4

Project: Westway

Item: Drainage

SUBAREA NO. 3	
A. Existing Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 40 \text{ min}$
	$I_a = 2.24$
	$I_{100} = 4.64$
	$A = 2.1 \text{ Ac}$
$Q_2 = 0.9 \times 2.24 \times 2.1$	$Q_{100} = 0.9 \times 4.64 \times 2.1$
$Q_2 = 4.1 \text{ cfs}$	$Q_{100} = 8.9 \text{ cfs}$
Depth of St. Flow = 0.24'	Depth of St. Flow = 0.31'
B. Proposed Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 15 \text{ min}$
	$I_a = 3.83$
	$I_{100} = 7.37$
	$A = 2.1 \text{ Ac}$
$Q_2 = 0.9 \times 3.83 \times 2.1$	$Q_{100} = 0.9 \times 7.37 \times 2.1$
$Q_2 = 7.1 \text{ cfs}$	$Q_{100} = 13.9 \text{ cfs}$



Date: May 16, 1986 Page 4 of 4

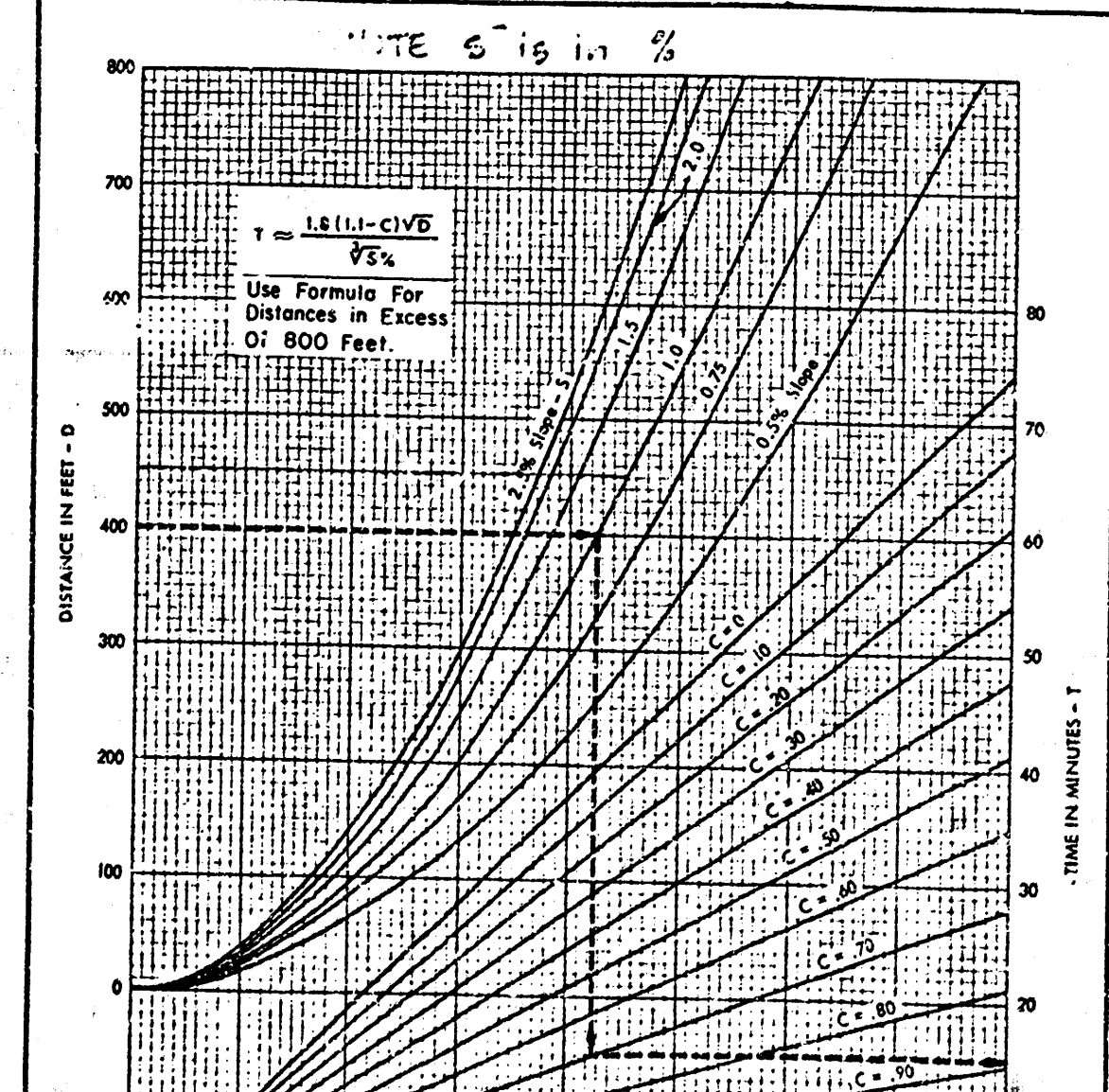
Project: Westway

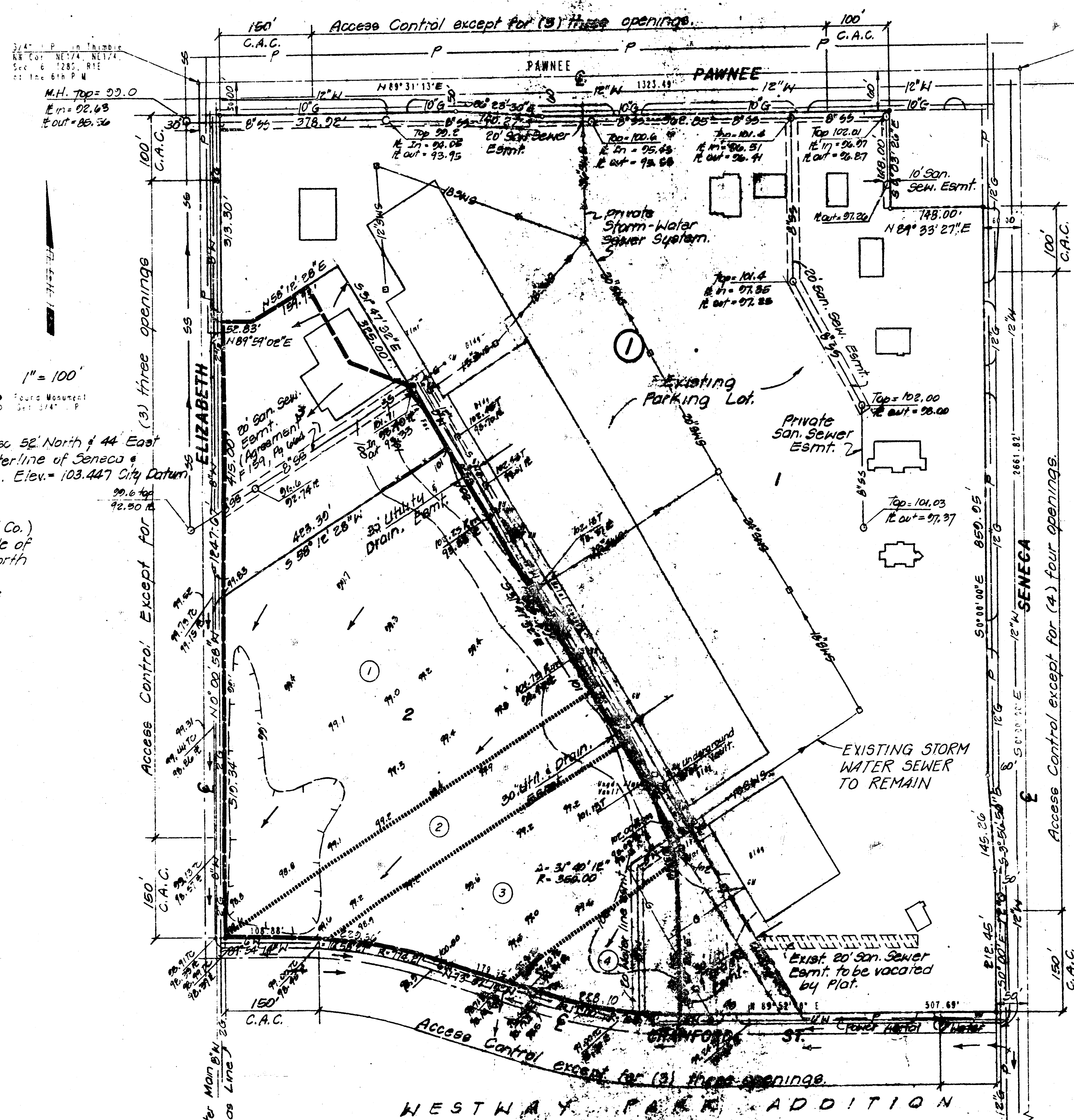
Item: Drainage

SUBAREA NO. 4	
A. Existing Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 20 \text{ min}$
	$I_a = 0.93$
	$I_{100} = 4.53$
	$A = 0.84 \text{ Ac}$
$Q_2 = 0.9 \times 0.93 \times 0.8$	$Q_{100} = 0.9 \times 4.53 \times 0.8$
$Q_2 = 0.6 \text{ cfs}$	$Q_{100} = 3.3 \text{ cfs}$
B. Proposed Conditions	
$Q = C I A$	$C = 0.3$
	$t_c = 15 \text{ min}$
	$I_a = 3.83$
	$I_{100} = 7.37$
	$A = 0.8 \text{ Ac}$
$Q_2 = 0.9 \times 3.83 \times 0.8$	$Q_{100} = 0.9 \times 7.37 \times 0.8$
$Q_2 = 2.8 \text{ cfs}$	$Q_{100} = 5.3 \text{ cfs}$

EXAMPLE: $d = 400$, $C = 0.7$, $S = 1\%$

$Q = 1.48 \times 10^3 \times 0.7 \times \sqrt{0.01} = 14.4$



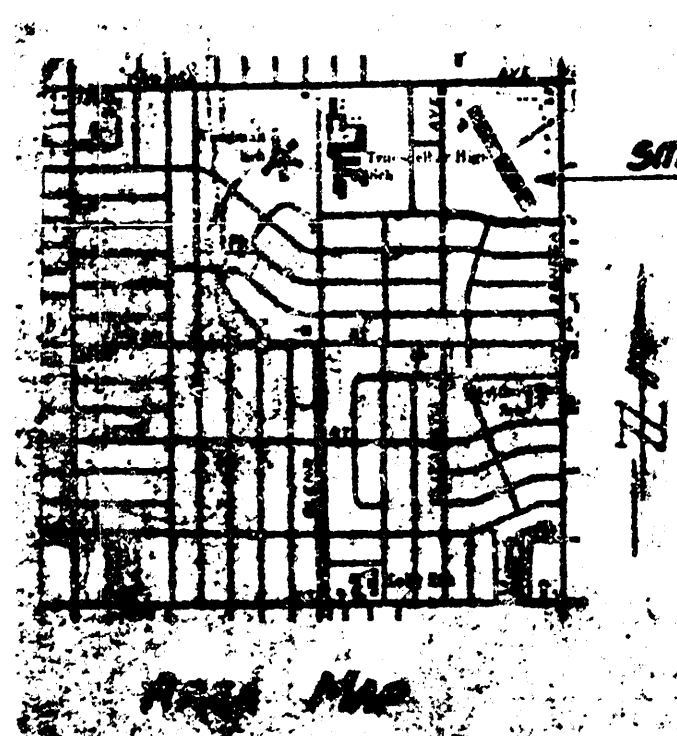


**APPROVED
DRAINAGE PLAN**

**DRAINAGE PLAN
WESTWAY**
Wichita, Sedgwick County, Kansas

Owner/Developer: Phil Ruffin P.O. Box 17087 Wichita, Ks.
Engineer: REC. p.a.
1440 English, Wichita, Ks. 67211

- Notes:
1. Lots 1 & 3 shall continue to be drained via existing streets & private storm water sewer system.
 2. Lot 2 shall be graded to drain to existing streets, gutters, and/or storm water sewer systems via drives, flumes, private storm sewers and/or other approved drainage facilities.
 3. The combined 100-yr runoff from Sub-Basins 1 through 4 inclusive shall be limited to 1.0 cfs.



- LEGEND**
- DRAINAGE BASIN BOUNDARY
 - DRAINAGE SUB-BASIN BOUNDARY
 - DRAINAGE FLOW DIRECTION
 - ② SUB-BASIN NUMBER

Revised 5-27-80

Calculation of Rainfall Intensities between Technical Paper No. 40, 1975 and 1977.

Frequency	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
1	0.20	0.25	0.30	0.35	0.40	0.45	0.50
2	0.25	0.30	0.35	0.40	0.45	0.50	0.55
3	0.30	0.35	0.40	0.45	0.50	0.55	0.60
4	0.35	0.40	0.45	0.50	0.55	0.60	0.65
5	0.40	0.45	0.50	0.55	0.60	0.65	0.70
6	0.45	0.50	0.55	0.60	0.65	0.70	0.75
7	0.50	0.55	0.60	0.65	0.70	0.75	0.80
8	0.55	0.60	0.65	0.70	0.75	0.80	0.85
9	0.60	0.65	0.70	0.75	0.80	0.85	0.90
10	0.65	0.70	0.75	0.80	0.85	0.90	0.95
11	0.70	0.75	0.80	0.85	0.90	0.95	1.00
12	0.75	0.80	0.85	0.90	0.95	1.00	1.05
13	0.80	0.85	0.90	0.95	1.00	1.05	1.10
14	0.85	0.90	0.95	1.00	1.05	1.10	1.15
15	0.90	0.95	1.00	1.05	1.10	1.15	1.20
16	0.95	1.00	1.05	1.10	1.15	1.20	1.25
17	1.00	1.05	1.10	1.15	1.20	1.25	1.30
18	1.05	1.10	1.15	1.20	1.25	1.30	1.35
19	1.10	1.15	1.20	1.25	1.30	1.35	1.40
20	1.15	1.20	1.25	1.30	1.35	1.40	1.45
25	1.25	1.30	1.35	1.40	1.45	1.50	1.55
30	1.35	1.40	1.45	1.50	1.55	1.60	1.65
40	1.50	1.55	1.60	1.65	1.70	1.75	1.80
50	1.65	1.70	1.75	1.80	1.85	1.90	1.95
60	1.80	1.85	1.90	1.95	2.00	2.05	2.10
70	1.95	2.00	2.05	2.10	2.15	2.20	2.25
80	2.10	2.15	2.20	2.25	2.30	2.35	2.40
90	2.25	2.30	2.35	2.40	2.45	2.50	2.55
100	2.40	2.45	2.50	2.55	2.60	2.65	2.70

