PROFESSIONAL
ENGINEERING
CONSULTANTS
PROFESSIONAL ASSOCIATION

January 27, 1988

Mr. Michael E. Lindebak, P.E.
City Engineer
7th Floor - City Hall
455 N. Main
Wichita, Kansas 67202

Re: Smithmoor 1st Addition, Floodplain
PEC File No. 36-85360-1864

Dear Mr. Lindebak:

A portion of Smithmoor 1st Addition lies within the Floodplain as mapped on FEMA Panel No. 200321 0225. None of the lots in the subdivision lie within the Floodway.

Phase 1 and Phase 2 improvements have been constructed including the Storm Water Sewer and the paving of Lockmoor, from the west line of Lot 21, Block 2, and the west line of Lot 12, Block 1, to Smithmoor St.

The pavement on Lockmoor is a minimum of 1.6' above the elevation of Harry St. The houses to be constructed adjacent to Lockmoor St. will be an additional 2'+ above the elevation of Lockmoor. Listed below are the control elevations:

FEMA (@ S.L. Harry St.)	=	1340.0
Centerline Harry St.	=	1340.5
Lockmoor pavement	=	1342.1
Finish grade @ house (min.)	=	1344 ±

Flooding cannot occur on these lots as water will overtop Harry St. and drain to the north. A temporary drainage swale diverts surface drainage west of Phase 2.

The Storm Water Drain #54 project will improve the channel along the west and north side of Smithmoor 1st Addition and permit a map change to remove all lots from the Floodplain. Design of this project is in progress, with construction during the next few months.

1440 EAST ENGLISH
WICHITA, KANSAS 67211
(316) 262-2691

Mr. Michael E. Lindebak, P.E.
January 27, 1988

Based on the above data, development can proceed on the lots in Phase 2 - specifically Lots 8 through 12, incl., Block 1; Lots 17 through 21, Block 2; and Lots 1 through 3, Block 3. The lots are at the fringe of the Floodplain but are protected from the flooding by elevation.

Mr. Ron Smith, Developer, requests the approval of building permits on these lots.

If additional information is desired, please advise.

Very truly yours,

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

Richard W. Linn, P.E.
Project Manager
Land Development

cc: Ron Smith
Monte Robson, C.I.D.

RWL/kss

Calculations For Smithmoore Addition

The Following Calculations Are Based On Methods Discussed In "TR-55" by SCS-USDA. (1975) However, Lag Times Used Were Calculated By A Formula In "Open-File Report 78-974" By USGS (1978), Whereas $L = .49\left[\frac{l}{\sqrt{s}}\right]^{.5}(1)^{-.57}$ or Putnam's Equation. This Result Is Said To Be Compatable With The SCS Procedure.

Other Common Variables Are:

P = 5.9" in 6 hours, 100 yr. frequency
(given by City Engineering)

l = waterway slope (in miles)

s = slope (in ft per mile)

Q = from tbl 2-1, TR-55

q_p = Peak Flow in cubic feet per second per Squ. Mile per inch of runoff

cfs = $q_p \times Q \times$ Area

n = coefficient of friction .015 For Storm Sewers
.025 For Smooth Grassed Waterwly

Storm Sewers For Smithmoore 1st Addition Are Designed To Carry A 2yr. Frequency Rainfall. Data Used To Design Storm Sewers By Rational Formula Is Listed On Sheet D-4

Parcel B Into Huntcrest

by USGS

100 Acres .156 sq mi.

$l = .47$ mi.

$S = 63.8$

$L = .49\left(\frac{.47}{\sqrt{63.8}}\right)^{.5}(.05)^{-.57}$

$L = .49 \quad .24 \quad 5.52 = .649$

$T_c = L/.6 = .65/.6 = 1.1$ hr.

CN = 80 present

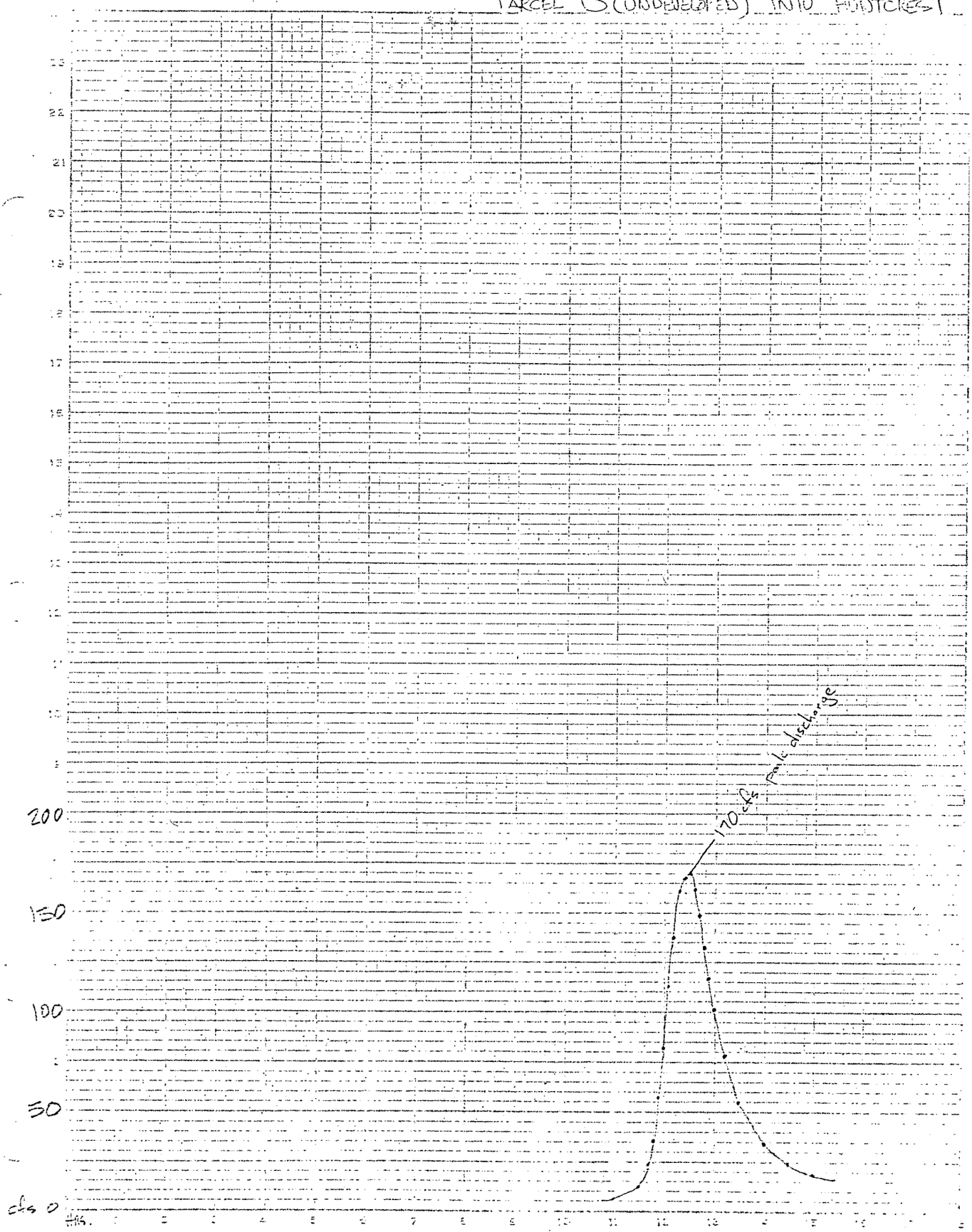
Q = 3.70

$q_p = 294.5$ csm/in at Huntcrest

T_c 1.1	11 hr	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	
B csm/in	12.1	22.1	42	61.5	99.7	144	196.6	240	260.5	291.7	
B cfs	6.9 cfs	12.9	24.2	35.5	57.5	83.1	113.5	138.5	161.9	168.4	
hour	12.5 hr	12.6	12.7	12.8	12.9	13.0	13.2	13.5	14	14.5	15
B csm/in	294.5	280.5	258.1	230.2	202.2	175.2	136.1	95.1	59.6	42.9	33.
B cfs	170 cfs	162	149	132.9	116.7	101.1	78.6	54.9	34.4	24.8	19.4

channel time $l = 1500'$ $V = 5.13$ $T_T = .1$ hr

PARCEL B (UNDEVELOPED) INTO HOUTCREST



Parcels B & C into Smithmoore UNDEVELOPED

by USGS

Parcel C

44 acres .069 sqmi

$l = .28$ mi

$S = 71.4$

$L = .49\left(\frac{.28}{\sqrt{71.4}}\right)^{.5}(.05)^{-.57} = .49$

$T_c = L/.6 = .82$ hr.

$CN = 80$

$Q = 3.70$

$q_p = 388$ csm/in at Smithmoore

$T_c = .75$

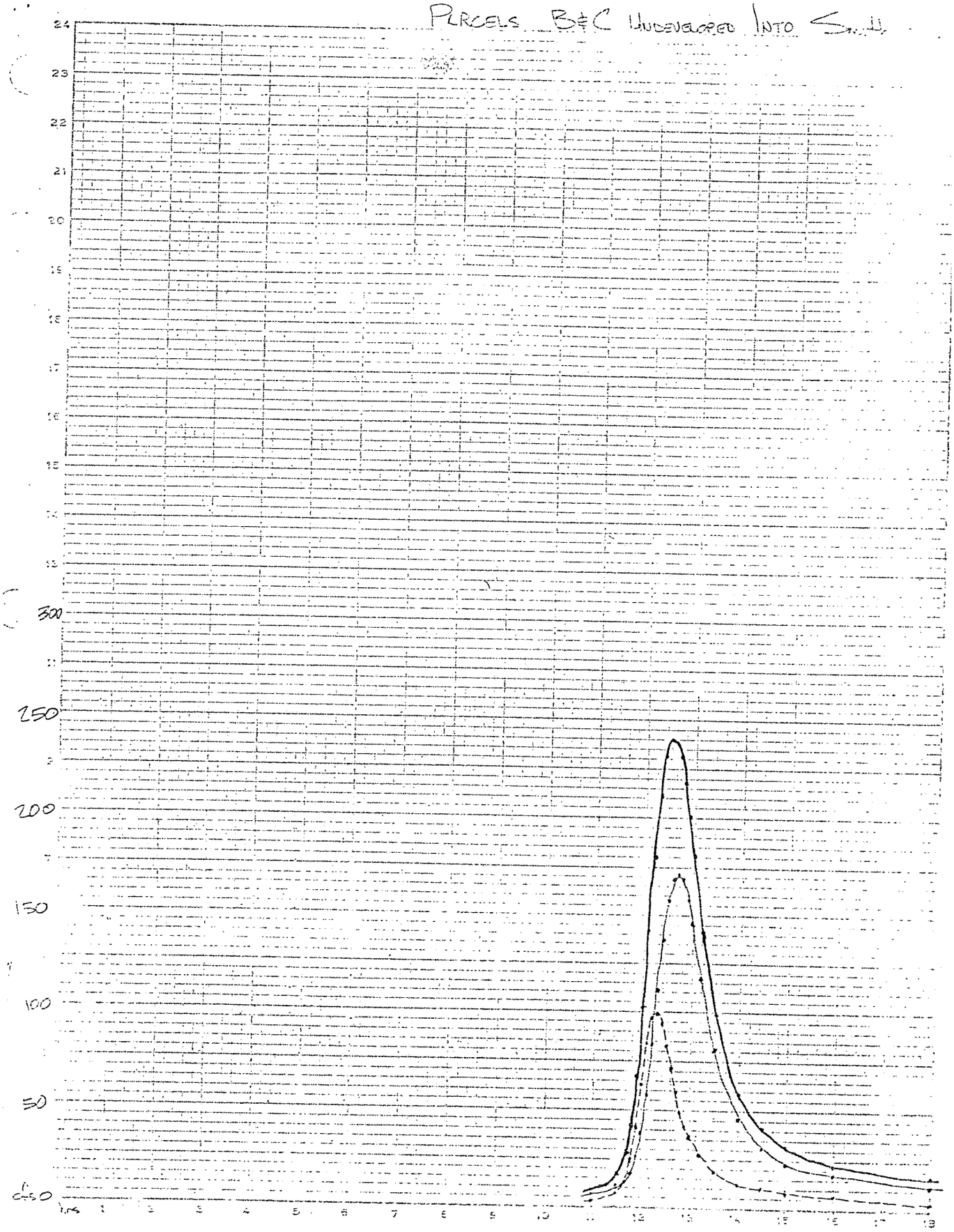
$T_T = 0$

Parcel B through Hunterest ditch $T_T = 2$ hr $T_c = 1.1$

hr	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
B csm/in	10	18	24	32	45	68	102	146	193	238	272	293
B cfs	5.8	10.4	13.8	18.5	26	39.2	58.9	84.3	111.4	137.4	157	169.1
C csm/in	15	29	57	98	163	248	329	375	388	369	325	276
C cfs	3.8	7.4	14.6	25.0	41.6	63.3	84	95.7	99	94.2	83	70.5
Total cfs inflow	9.6	17.8	28.4	43.5	67.6	102.5	142.9	180	210.4	231.6	240	239.6

hr	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	20
B csm/in	299	293	275	252	200	139	81	54	41	29	20	16
B cfs	172.5	169.1	158.7	145.4	115.4	80.2	46.8	31.2	23.7	16.7	11.5	9.2
C csm/in	232	195	165	142	107	76	51	39	33	26	19	15
C cfs	59.2	49.8	42.1	36.25	27.3	19.4	13	10	8.4	6.6	4.8	3.8
Total cfs inflow	231.7	218.9	200.8	181.7	142.7	99.6	59.8	41.2	32.1	23.3	16.3	13.0

PARCELS B & C UNDEVELOPED INTO S...



Parcels B & C into Smithmoore - C. Developed

USGS

PARCEL C

44 Acres .069 sqmi

$l = .47$ mi

$S = 42.5$

$L = 49\left(\frac{.47}{\sqrt{42.5}}\right)^{.5}(.38)^{-.57} = .23$

$T_c = 4/6 = .38$ hr

$CN = 87$

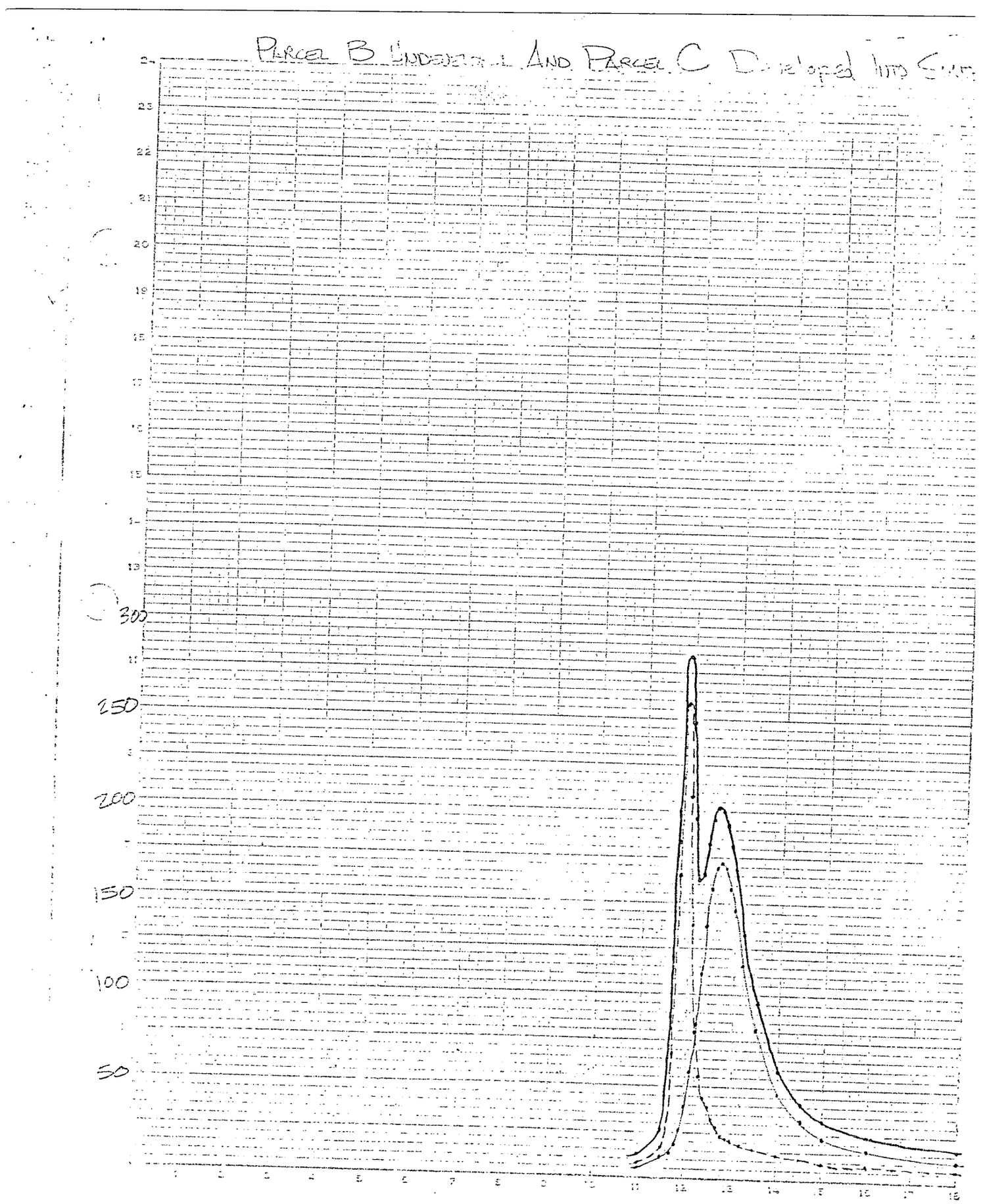
$Q = 4.7$

$q_p = 796$ csm/in

Parcel B remains Undeveloped - see page 2

hr	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
C' csm/in	23	47	208	509	796	641	424	245	170	138	121	104
C' cfs	7.4	15.2	67.4	165	258	207.9	137.5	79.4	55.1	44.8	39.2	33.7
B cfs	5.8	10.4	13.8	18.5	26	39.2	58.9	84.3	111.4	137.4	157	169.1
Total cfs Inflow	13.2	25.6	81.2	183.5	284	247.1	196.4	163.7	166.5	182.2	196.2	202.8

	12.7	12.8	12.9	13.0	13.2	13.5	14	14.5	15.0	16	18	20
C' csm/in	85	75	71	68	56	49	40	34	29	24	18	14
C' cfs	27.6	24.3	23	22	18.2	15.9	13	11	9.4	7.8	5.8	4.5
B cfs	172.5	169.1	158.7	145.4	115.4	80.2	46.8	31.2	23.7	16.7	11.5	9.2
Total	200.1	193.4	181.7	167.4	133.6	96.1	59.8	42.2	33.1	24.5	17.3	13.7


PARCEL B UNDEVELOPED AND PARCEL C Developed into Subd
300
250
200
150
100
50

SMITHMOORE Parcel #2 UNDEVELOPED

35 Acres .055 sq mi.

$l = .28$

$S = 71.4$

$L = 49\left(\frac{.29}{71.4}\right)^{.5}(.05)^{-.57} = .49$

$T_c = L/1.6 = .82$ hr

$CN = 80$

$Q = 3.7$

hr	11.	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#2 csm/in	15	29	57	98	163	248	329	375	388	369	325	276
#2 cfs	3	5.9	11.6	19.9	33.2	50.5	67	76.3	79	75.1	66.1	56.2

hr	12.7	12.8	12.9	13.0	13.1	13.5	14	14.5	15.0	16	18	20
#2 csm/in	232	195	165	142	107	76	51	39	33	26	19	15
#2 cfs	47.2	39.7	33.6	28.9	21.8	15.5	10.4	7.9	6.7	5.3	3.9	3.

Smithmoore Parcel 2 Developed

35 Acres .055 sq mi

$l = .32$ mi

$S = 49.1$

$L = .49 \left(\frac{.32}{\sqrt{49.1}}\right)^{.5} (.38)^{-.57} = .18$

$T_c = .4/.6 = .3$ hr

$CN = 87.5$

$Q = 4.77$

hr	11 hr	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
#2' csm/in	21	43	141	324	586	658	535	372	251	184	148	124
#2' cfs	5.5	11.3	37	85	153.7	172.6	140.4	97.6	65.8	48.3	38.8	32.5

	12.7 hr	12.8	12.9	13.0	13.2	13.5	14	14.5	15.0	16	18	20
#2' csm	102	86	77	71	61	51	41	34	30	24	18	14
#2' cfs	26.8	22.6	20.2	18.6	16	13.4	10.8	8.9	7.9	6.3	4.7	3.7

Smithmoore 1st Addition – Undeveloped

30.26 Acres .047 sq mi.

$l = .32$ mi.

$S = 52.8$

$L = .49\left(\frac{.32}{\sqrt{52.8}}\right)^{.5}(.05)^{-.57} = .56$

$T_c = L/.6 = .94$

$CN = 80$

$Q = 3.7$

hr	11	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
= 1 csm/in	13	24	45	66	107	155	211	258	301	313	316	301
= 1 cfs	2.2	4.2	7.8	11.5	18.6	27	36.6	44.9	52.3	54.4	54.9	52.3

hr	12.7	12.8	12.9	13.0	13.2	13.5	14	14.5	15	16	18	20
= 1 csm/in	277	247	217	188	146	102	64	46	36	27	19	15
= 1 cfs	48.2	42.9	37.7	32.7	25.4	17.7	11.1	8	6.3	4.5	3.3	2.6

Smithmoore 1st Addition - Developed

30.26 Acres .047 sq mi

$l = .31$ mi

$S = 32.9$

$L = .49 \left(\frac{.31}{\sqrt{32.9}}\right)^{.5} (30)^{-.57} = .23$

$T_c = L/.6 = .38$ hr

CN = 86.7 Q = 4.6

hr	11	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
# 1" csm/in	20	39	103	224	419	558	575	451	331	247	190	155
# 1" cfs	4.3	8.4	22.3	48.4	90.6	120.6	124.3	97.5	71.6	53.4	41.1	33.5

hour	12.7	12.8	12.9	13.0	13.2	13.5	14.0	14.5	15	16	18	20
# 1" csm/in	127	105	90	80	66	53	42	35	30	24	18	14
# 1" cfs	27.4	22.7	19.4	17.3	14.3	11.4	9.1	7.6	6.5	5.2	3.9	3.0

Parcels #1, #2, B, C, D UNDEVELOPED
144 Acres OFFSITE + 65.26 Acres of Smithmoore
Parcel D - Similar to Parcel C

36 Acres .056 SQ MI

T_c = .82

CN = 80

Q = 3.7

Parcels C, D & #2 add .25 T_T for Time through Smithmoore Addition

hr	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
Parcel B cfs	5.8	10.4	13.8	18.5	26	39.2	58.9	84.3	111.4	137.4	157	169.1
C cfs	3.1	5.4	7.4	10	15.6	25.5	40.3	57.9	74.3	85.8	(90.6)	88.8
#2 cfs	2.4	4.3	5.9	7.9	12.4	20.4	32.2	46.2	59.2	68.4	(72.2)	70.8
D cfs	3.1	6	11.8	20.3	33.8	51.4	68.2	77.7	(80.4)	76.4	67.3	57.2
#1 cfs	2.2	4.2	7.8	11.5	18.6	27	36.6	44.9	52.3	54.4	(54.9)	52.3
Total cfs	16.6	30.3	46.7	68.2	106.4	163.5	236.2	311.0	377.6	422.4	(442)	438.

hour	12.7	12.8	12.9	13.0	13.2	13.5	14.0	14.5	15.0	16	18	20
Parcel B	(172.5)	169.1	158.7	145.4	115.4	80.2	46.8	31.2	23.7	16.7	11.5	9.2
C	82	72.8	63	54.1	50	26.3	15.8	11.2	9.2	6.9	4.8	3.8
#2	65.3	58	50.3	43.1	31.7	21	12.6	8.9	7.3	5.5	3.9	3
D	48.1	40.4	34.2	29.4	22.2	15.7	10.6	8.1	6.8	5.4	3.9	3.1
#1	48.2	42.9	37.7	32.7	25.4	17.7	11.1	8	6.3	4.5	3.3	2.6
Total	416.1	383.2	343.9	304.7	244.7	160.9	96.9	67.4	53.3	39.0	27.4	21.7

Parcels #1', #2', B, C', D' Across Harry Developed
144 Acres Offsite + 65.26 Acres of Smithmore

Parcel D - Similar to Parcel C

36 Acres .056 sq mi

T_c = .38

CN = 87

Q = 4.7

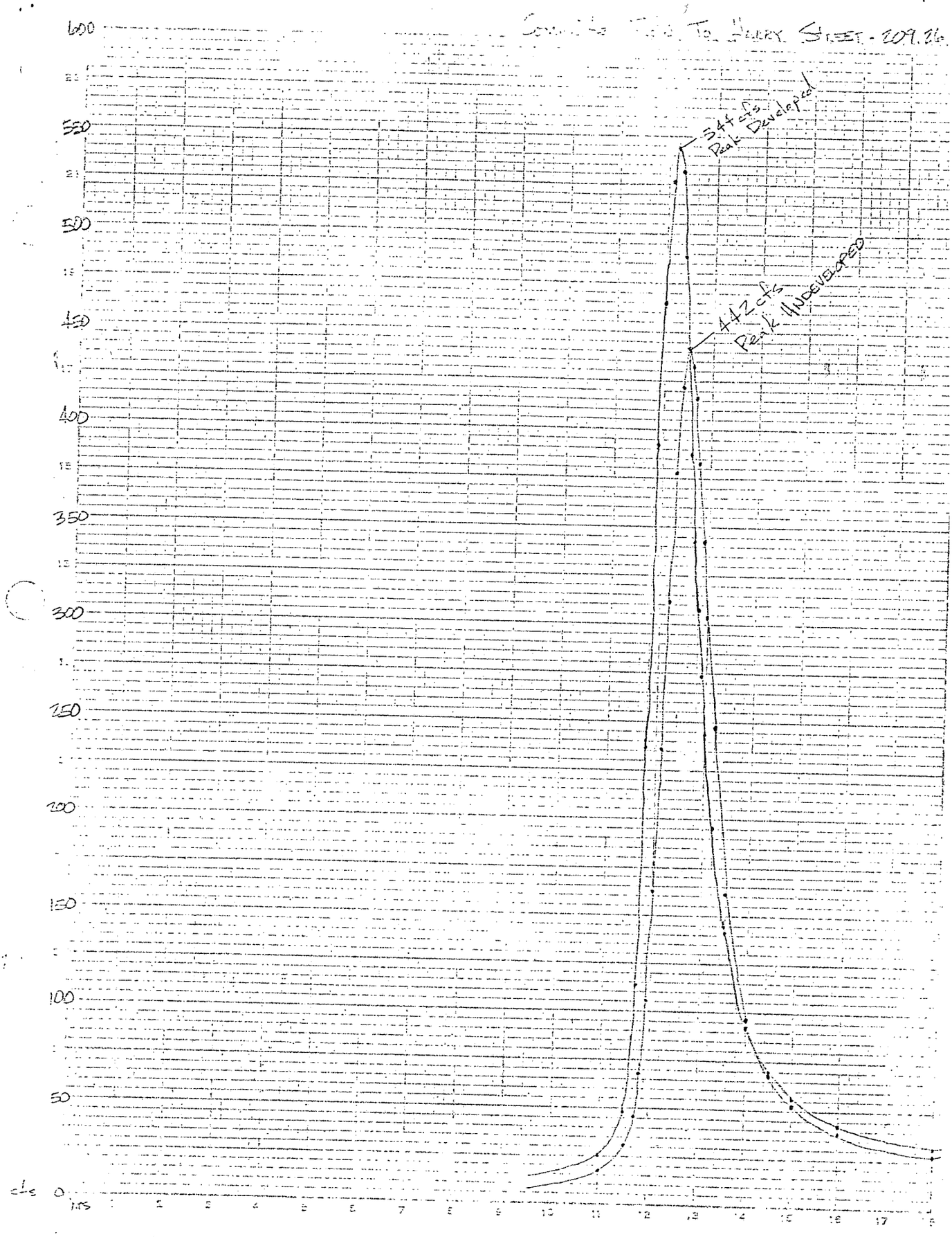
q_p = 796

Parcels C & #2 Add .25 T_T for Ditch Travel

Parcel B Undeveloped Add .25 T_T for Ditch Travel

hour	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
Parcel B cfs	5.8	10.4	13.8	18.5	26	39.2	58.9	84.3	111.4	137.4	157	169.1
Parcel C' cfs	4.9	9.1	12.3	17.5	31.8	63.6	111.2	151.4	(164.7)	150.5	123.2	95.7
Parcel #2' cfs	4.4	8.1	11.3	17.6	35.2	73.2	120.9	(146.6)	139	112.3	83.4	61.4
Parcel D' cfs	6.0	12.3	54.7	134	(209.5)	168.7	111.6	64.5	44.7	36.3	36.8	27.3
Parcel #1' cfs	4.3	8.4	22.3	48.4	90.6	120.6	(124.3)	97.5	71.6	53.4	41.1	33.5
Total	25.4	48.4	114.4	236	393.1	465.3	526.9	(544.3)	531.4	489.4	436.5	387.0

hour	12.7	12.8	12.9	13.	13.2	13.5	14	14.5	15	16	18	20
Parcel B cfs	(172.5)	169.1	158.7	145.4	115.4	80.2	46.8	31.2	23.7	16.7	11.5	9.2
C	73.9	58.4	47	38.6	28.2	20.8	15.2	12.3	10.4	8.4	6.2	4.9
#2	47	37.5	30.4	25.4	20	15.5	11.8	9.7	8.4	6.6	4.7	3.9
D	22.4	19.7	18.7	17.9	17.4	13.9	11.	9.2	7.9	6.3	4.7	3.6
#1	27.4	22.9	19.4	17.3	14.3	11.4	9.1	7.6	6.5	5.2	3.9	3.0
Total	343.1	307.4	274.2	244.6	195.3	141.8	93.9	70	56.9	43.2	31.0	24.6


544 cfs
Peak Developed
442 cfs
Peak Undeveloped
600
550
500
450
400
350
300
250
200
150
100
50
0
cfs

Ditch Data

Section 1

Area = 60 sq ft

$r = 60/30.4 = 1.56$

$s = .008$

$n = .025$

$V = \frac{1.49}{.025}(1.56)^{2/3}(.008)^{1/2} = 7.2$ ft/sec

Section 2

Area = 80 sq ft

$r = 80/42.4 = 1.89$

$s = .0044$

$n = .025$

$V = \frac{1.49}{.025}(1.89)^{2/3}(.0044)^{1/2} = 6.0$ ft/sec

Section 3

Area = 8525 sq ft

$r = 4525/425 = 2.0$

$s = .0044$

$n = .025$

$V = \frac{1.49}{.025}(2.0)^{2/3}(.0044)^{1/2} = 6.3$ ft/sec

Section 4

Area = 90

$r = 90/42.6 = 2.11$

$s = .0032$

$n = .025$

$V = 1.49/.025(2.11)^{2/3}(.0032)^{1/2} = 5.5$ ft/sec

Ditch Data

Section 5

Area = 90 sqft

$r = 90/46.4 = 1.94$

$s = .0036$

$n = .025$

$V = \frac{1.49}{.025}(1.94)^{2/3}(.0036)^{1/2} = 5.6$ ft/sec

Section 6

Area = 122 sqft

$r = 122/49 = 2.45$

$s = .002$

$n = .025$

$V = \frac{1.49}{.025}(2.45)^{2/3}(.002)^{1/2} = 4.8$ ft/sec

Section 7

controlled by RCBC under Harry

Area = 123.7 sqft

$r = 123.7/48.6 = 2.5$

$s = .002+$

$n = .025$

Pipes Under Harry

3 - 4.5 x 5.5 RCBC = 74.25 @ Elev 1339 Area at 1339.25 = 62 sqft

$r = 62/39 = 1.59$

$s = .0045$

$n = .015$

$V = \frac{1.49}{.015}(1.59)^{2/3}(.0045)^{1/2} = 9$ ft/sec

Parcel A into Smithmoore UNDEVELOPED

60 Acres .094 sq mi.

$l = .42$

$S = 67.2$

$L = .49 \left(\frac{.42}{67.2}\right)^{.5} (.05)^{-.57} = .61$

$T_c = 4/.6 = 1.0$ hr

$CN = 80$

$Q = 3.7$

hr.	11.0	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
Parcel A csm/in	13	24	45	46	107	155	211	258	301	313	316	301
A cfs	4.5	8.3	15.6	23	37.2	53.9	73.4	89.7	104.7	108.9	109.9	104.7

Hour	12.7	12.8	12.9	13	13.1	13.5	14	14.5	15	16	18	20
Parcel A csm/in	277	247	217	188	146	102	64	46	36	27	19	15
A cfs	96.3	85.9	75.5	65.4	50.8	35.5	22.2	16	12.5	9.4	6.6	5.2

Parcel #3 Undeveloped

20.5 Acres .032 sq mi

$l = .26$

$S = 63.4$

$L = .49\left(\frac{.26}{\sqrt{63.4}}\right)^{.5}(.05)^{-.57} = .49$

$T_c = L/6 = .81$ hr

$CN = 80$

$Q = 3.7$

	11	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#3 csm/in	15	29	57	98	163	248	329	375	388	369	323	276
#3 cfs	1.8	3.4	6.7	11.6	19.3	29.4	39	44.4	45.9	43.7	38.5	32.7

hour	12.7	12.8	12.9	13.0	13.2	13.5	14.0	14.5	15	16	18	20
#3 csm/in	232	195	165	142	107	76	51	39	33	26	19	15
#3 cfs	27.5	23.1	19.5	16.8	12.7	9	6	4.6	3.9	3.1	2.2	1.8

PARCEL #3 DEVELOPED

20.5 Acres .032 SQ MI

$l = .26$

$S = 84.5$

$L = .49 \left(\frac{.26}{\sqrt{84.5}}\right)^{.5} (.38)^{-.57} = .14$

$T_c = 1.6 = .24$

$CN = 87.5$

$Q = 4.77$

hr	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#3' csm/in	23	47	208	509	796	641	424	245	170	138	121	104
#3' cfs	3.5	7.2	31.7	77.7	121.5	97.8	64.7	37.4	25.9	21.1	18.5	15.9

hr	12.7	12.8	12.9	13.	13.2	13.5	14.0	14.5	15.	16.	18	20
#3' csm/in	85	75	71	68	56	49	40	34	29	24	18	14
#3' cfs	13.	11.4	10.8	10.4	8.5	7.5	6.1	5.2	4.4	3.7	2.7	2.1

Parcel #4 UNDEVELOPED

1.6 Acres .025 sq mi.

$l = .24$

$S = 26.4$

$L = .49 \left(\frac{.24}{\sqrt{26.4}}\right)^{.5} (.05)^{-.57} = .58$

$T_c = 4.6 = .97$

$CN = 80$

$Q = 3.7$

hour	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#4 csm/m	13	24	45	66	107	155	211	258	301	313	316	301
#4 cfs	1.2	2.2	4.2	6.1	9.9	14.3	19.5	23.9	27.8	28.9	29.2	27.8

hour	12.7	12.8	12.9	13.0	13.1	13.5	14.0	14.5	15	16	18	20
#4 csm/m	272	247	217	188	146	102	64	46	36	27	19	15
#4 cfs	25.6	22.8	20.1	17.4	13.5	9.4	5.9	4.2	3.3	2.5	1.8	1.4

PARCEL #4' Developed

16 Acres .025 sq mi

$l = .24$

$S = 21.1$

$L = .49\left(\frac{.24}{\sqrt{21.1}}\right)^{.5}(.80)^{-.57} = .13$

$T_c = L/.6 = .21$

$CN = 95$

$Q = 5.4$

hr	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#4' csm/in	23	47	208	509	796	641	424	245	170	138	121	104
#4' cfs	3.1	6.3	28	68.7	107.5	86.5	57.2	33.1	22.9	18.6	16.3	14.

hr	12.7	12.8	12.9	13.0	13.2	13.5	14.	14.5	15	16	18	20
#4' csm/in	85	75	71	68	56	49	40	34	29	24	18	14
#4' cfs	11.5	10.1	9.6	9.2	7.6	6.6	5.4	4.6	3.9	3.2	2.4	1.9

PIPE DESIGN Between Lots 3 & 4 - by rational method

LOT 3 + PART OF LOT 2 = 8.6 ACRES

$h = 4'$ $l = 700$ $T_c = 9$ $I_{100} = 10.96$ 65 cfs

$V = 7$ for pipes 3-24" @ 1.25%

$7 = \frac{1.49}{.015}\left(\frac{2}{4}\right)^{2/3}(1.25)^{1/2}$

Parcel #5 Undeveloped

3 Acres .0047 sq mi

$l = .0076$ mi

$S = 55.44$

$L = .49\left(\frac{.0076}{\sqrt{55.44}}\right)^{.5}(.05)^{-.57} = .085$

$T_c = 4/6 = .14$

$CN = 80$

$Q = 3.7$

$q_p = 991$ csm/in

Hour	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#5 csm/in	24	51	299	991	746	477	233	152	132	121	111	85
#5 cfs	.4	.9	5.2	17.2	13	8.3	4.0	2.6	2.3	2.1	1.9	1.5

Hour	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	20
#5 csm/in	74	70	68	65	52	48	39	33	29	24	18	14
#5 cfs	1.3	1.2	1.2	1.1	.9	.8	.7	.6	.5	.4	.3	.2

Parcel #5' Developed

3 Acres .0047 sqmi

$l = .0076$

$S = 80.0$

$L = .49\left(\frac{.0076}{\sqrt{80}}\right)^{.5}(.45)^{.57} = .02$

$T_c = .4/.6 = .04$

$CN = 90$

$Q = 4.8$

hr	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#5' csm/in	24	51	299	991	746	477	233	152	132	121	111	85
#5' cfs	.5	1.2	6.7	22.4	16.8	10.8	5.2	3.4	3.	2.7	2.5	1.9

hr	12.7	12.8	12.9	13.0	13.2	13.5	14	14.5	15	16	18	20
#5' csm/in	74	70	68	65	52	48	39	33	29	24	18	14
#5' cfs	1.7	1.6	1.5	1.5	1.2	1.1	.9	.7	.6	.5	.4	.3

PARCEL #6 UNDEVELOPED

17 Acres .026 sq mi

$\ell = .21$ mi.

$S = 67.2$

$L = .49\left(\frac{.21}{\sqrt{67.2}}\right)^{.5}(.05)^{-.57} = .43$

$T_c = L/.6 = .72$ hr.

$CN = 80$

$Q = 3.7$

$q_p = 388$

hour	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#6 csm/in	15	29	57	98	163	248	329	375	388	369	325	276
#6 cfs	1.4	2.8	5.5	9.4	15.7	23.8	31.6	36.1	37.3	35.5	31.3	26.5

hour	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	20
#6 csm/in	232	195	165	142	107	76	51	39	33	26	19	15
#6 cfs	22.3	18.8	15.9	13.7	10.3	7.3	4.9	3.8	3.2	2.5	1.8	1.4

PARCEL #6' Developed

17 Acres .026 sq mi

$l = .21$

$S = 48.5$

$L = .49 \left(\frac{.21}{\sqrt{48.5}}\right)^{.5} (.38)^{.57} = .148$

$T_c = 1/.6 = .24$

$CN = 87.5$

$Q = 4.77$

hr	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#6' csm/in	23	47	208	509	796	641	424	245	170	138	121	104
#6' cfs	2.8	5.8	25.8	63.1	98.7	79.5	52.6	30.4	21.1	17.1	15	12.9

	12.9	12.4	12.9	13.0	13.2	13.5	14.	14.5	15	16	18	20
#6' csm/in	85	75	71	68	56	49	40	34	29	24	18	14
#6' cfs	10.5	9.3	8.8	8.4	6.9	6.1	5.	4.2	3.6	3	2.2	1.7

PARCELS A, #3, #4, #5, #6 UNDEVELOPED
AT PROPOSED RETENTION POND

60 acres OFFSITE + 56.5 Acres of Smithmoore = 116.5 Acres

INCREASE T_T for PARCEL A NOT SIGNIFICANT

Hour	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12
Parcel Acfs	4.5	8.3	15.6	23	37.2	53.9	73.4	89.7	104.7	108.9	(109.9)	104
#3	1.8	3.4	6.7	11.6	19.3	29.4	39	44.4	(45.9)	43.7	38.5	32
#4	1.2	2.2	4.2	6.1	9.9	14.3	19.5	23.9	27.8	28.9	(29.2)	27
#5	.4	.9	5.2	(17.2)	13	8.3	4.0	2.6	2.3	2.1	1.9	1.
#6	1.4	2.8	5.5	9.4	15.7	23.8	31.6	36.1	(37.3)	35.5	31.3	26
Total	9.3	17.6	37.2	67.3	95.1	129.7	167.5	196.7	218	[219.2]	210.8	193

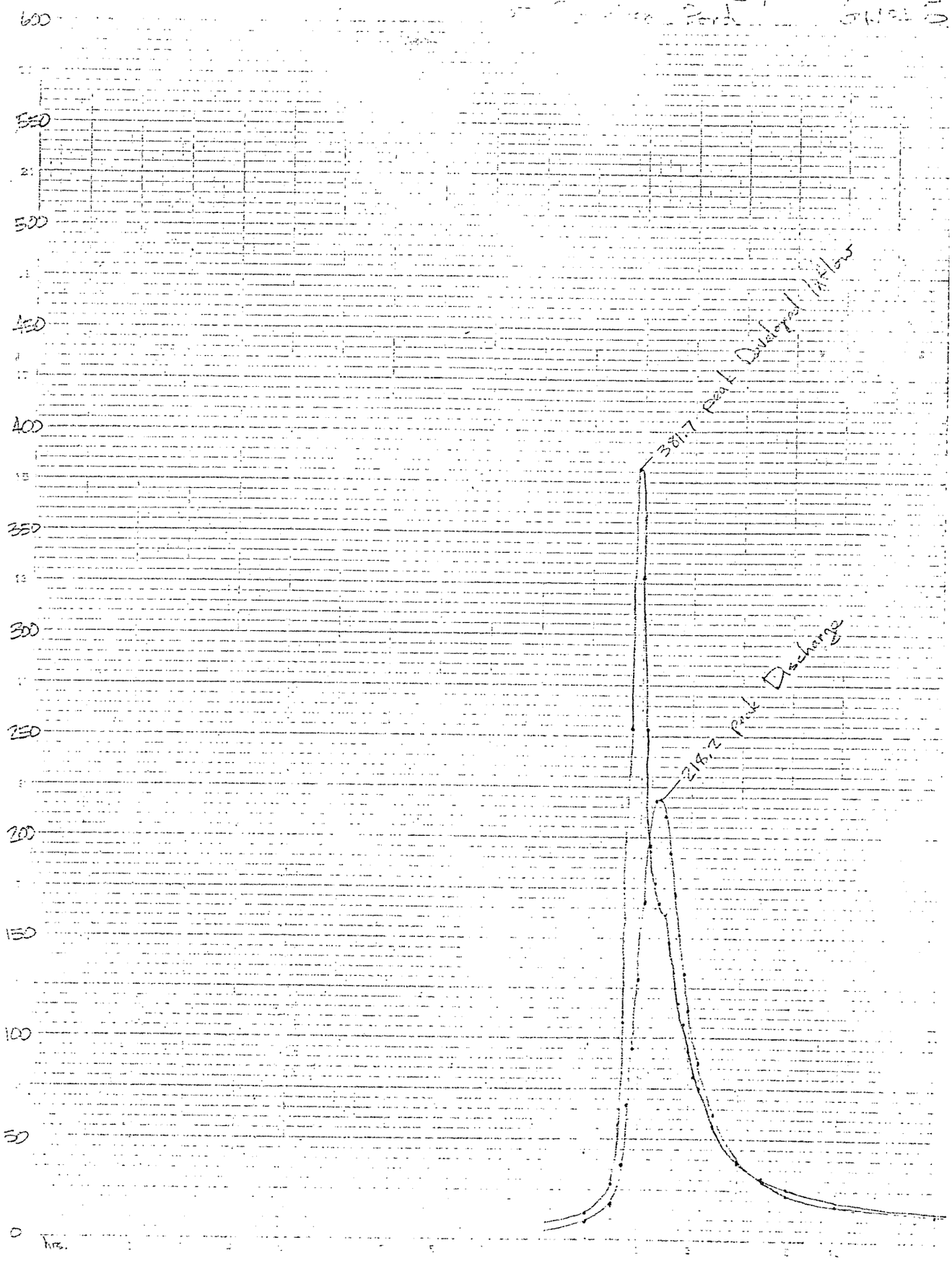
	12.7	12.8	12.9	13.0	13.2	13.5	14.0	14.5	15	16	18	20
Parcel Acfs	96.3	85.9	75.5	65.4	50.8	35.5	22.2	16	12.5	9.4	6.6	5.2
#3	27.5	23.1	18.5	16.8	12.7	9	6	4.6	3.9	3.1	2.2	1.8
#4	25.6	22.8	20.1	17.4	13.5	9.4	5.9	4.2	3.3	2.5	1.8	1.4
#5	1.3	1.2	1.2	1.1	.9	.8	.7	.6	.5	.4	.3	.2
#6	22.3	19.8	15.9	13.7	10.3	7.3	4.9	3.8	3.2	2.5	1.8	1.4
TOTAL	173	151.8	132.2	114.4	88.2	62	39.7	29.2	23.4	17.9	12.7	10

Parcels A, #3', #4', #5', #6' Developed At Retention Pond

60 Acres + 56.5 Acres of Smithwick = 116.5 Acres

hour	11.0	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
Parcel Acs	4.5	8.3	15.6	23	37.2	53.9	73.4	89.7	104.7	108.9	109.9	54.7
#3' cfs	3.5	7.2	31.7	77.7	121.5	97.8	64.7	37.4	25.9	21.1	18.5	15.9
#4'	3.1	6.3	29	68.7	107.5	86.5	57.2	33.1	22.9	19.6	16.3	14
#5'	.5	1.2	6.7	22.4	16.8	10.8	5.2	3.4	3	2.7	2.5	1.9
#6'	2.8	5.8	25.8	63.1	98.7	79.5	52.6	30.4	21.1	17.1	15	12.9
TOTAL	14.4	28.8	107.8	254.9	381.7	328.5	253.1	194	177.6	169.4	162.2	149.4

	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	20
Parcel A cfs	96.3	85.9	75.5	65.4	50.8	35.5	22.2	16	12.5	9.4	6.6	5
#3' cfs	13	11.4	10.8	10.4	8.5	7.5	6.1	5.2	4.4	3.7	2.7	2.
#4'	11.5	10.1	9.6	9.2	7.6	6.6	5.4	4.6	3.9	3.2	2.4	1.8
#5'	1.7	1.6	1.5	1.5	1.2	1.1	.9	.7	.6	.5	.4	.3
#6'	10.5	9.3	9.8	9.4	6.9	6.1	5	4.2	3.6	3	2.2	1.7
TOTAL	133	118.3	106.2	94.9	75	59.8	39.6	30.7	25	19.8	15.3	11.2


600
550
500
450
400
350
300
250
200
150
100
50
0
Hrs.
3811.7 Peak Outlet Flows
2142 peak Discharge

Parcel #7 Undeveloped

4.13 Acres .006 sq mi

$l = .12$

$S = 32.5$

$L = .49\left(\frac{.12}{\sqrt{32.5}}\right)^{.5}(.05)^{-.57} = .4$

$T_c = 4/6 = .65$ hr

CN = 80

Q = 3.7

hr	11.	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#7 csm/in	18	36	80	166	301	433	496	474	395	309	242	194
#7 cfs	.4	.8	1.8	3.7	6.7	9.6	11.	10.5	8.8	6.8	5.4	4.3

hr	12.7	12.8	12.9	13.0	13.2	13.5	14	14.5	15	16	18	20
#7 csm/in	158	130	109	94	75	57	43	36	31	25	18	15
#7 cfs	3.5	2.9	2.4	2.1	1.7	1.3	1.0	.8	.7	.6	.4	.3

Parcel #7' Developed

4.13 Acres .006 sq mi

$l = .12$

$S = 67.2$

$L = .49\left(\frac{.12}{\sqrt{67.2}}\right)^{.5}(.40)^{-.57} = .1$

$T_c = 4/.6 = .17$ hr

$CN = 90$

$Q = 4.8$

hr	11	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
#7' csm/in	23	47	208	509	796	641	424	245	170	138	121	104
#7' cfs	.7	1.4	6	14.6	22.9	18.4	12.2	7.0	4.9	4	3.5	3

hr	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	20
#7' csm/in	85	75	71	68	56	49	40	34	29	24	18	14
#7' cfs	2.4	2.2	2.	1.9	1.6	1.4	1.2	1.	.8	.7	.5	.4

Parcel #8 UNDEVELOPED

6.5 Acres .01 sq mi

$l = .1$ mi

$S = 57.6$

$L = 49 \left(\frac{1}{\sqrt{57.6}}\right)^{.5} (.05)^{.57} = .31$

$Tc = L/.6 = .52$

$CN = 80$

$Q = 3.7$

hr	11	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#8 csm/in	18	36	80	166	301	433	496	474	395	309	242	194
#8 cfs	.7	1.3	3.	6.1	11.1	16	18.4	17.5	14.6	11.4	8.9	7.2

hr	12.7	12.8	12.9	13.0	13.2	13.5	14	14.5	15	16	18	20
#8 csm/in	158	130	109	94	75	57	43	36	31	25	18	15
#8 cfs	5.8	4.8	4.0	3.5	2.8	2.1	1.5	1.3	1.1	.9	.7	.6

Parcel #8' Developed

6.5 Acres .01 Sq mi

$l = .1$

$S = 57.6$

$L = .49\left(\frac{.1}{\sqrt{57.6}}\right)^{.5}(.80)^{-.57} = .05$

$T_c = 4/.6 = .09$

$CN = 95 \quad Q = 5.4$

hr	11	11.5	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
#8' csm/hr	24	5.1	2.99	.991	.746	.477	.233	.152	.132	.121	.111	.085
#8' cfs	1.3	2.8	16.1	53.5	40.3	25.8	12.6	8.2	7.1	6.5	6	4.6

	12.7	12.8	12.9	13.0	13.2	13.5	14	14.5	15	16	18	20
#8' csm/hr	74	70	68	65	52	48	39	33	29	24	18	14
#8' cfs	4	3.8	3.7	3.5	2.8	2.6	2.1	1.8	1.6	1.3	1.0	.8

PARCEL #9 UNDEVELOPED

17 Acres .026 sqmi

$l = .19$ mi

$S = 31.7$

$L = .49 \left(\frac{.19}{\sqrt{31.7}}\right)^{.5} (.05)^{-.57} = .5$

$T_c = .4/.6 = .83$

$CN = 80$

$Q = 3.7$

hr	11.	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
#9 csm/in	15	29	57	98	163	248	329	375	388	369	325	276
#9 cfs	1.4	2.8	5.5	9.4	15.7	23.8	31.6	36.1	37.3	35.5	31.3	26.6

hr	12.7	12.8	12.9	13.0	13.2	13.5	14.0	14.5	15	16	18	20
#9 csm/in	232	195	165	142	107	76	51	39	33	26	19	15
#9 cfs	22.3	18.8	15.9	13.7	10.3	7.3	4.9	3.8	3.2	2.5	1.8	1.4

Parcel #9' Developed

17 Acres .026 sq mi.

$l = .19$

$S = 26.4$

$L = .49 \left(\frac{.19}{\sqrt{26.4}}\right)^{.5} (.85)^{-.57} = .066$

$T_c = 4.6 = .1$

$CN = 95$

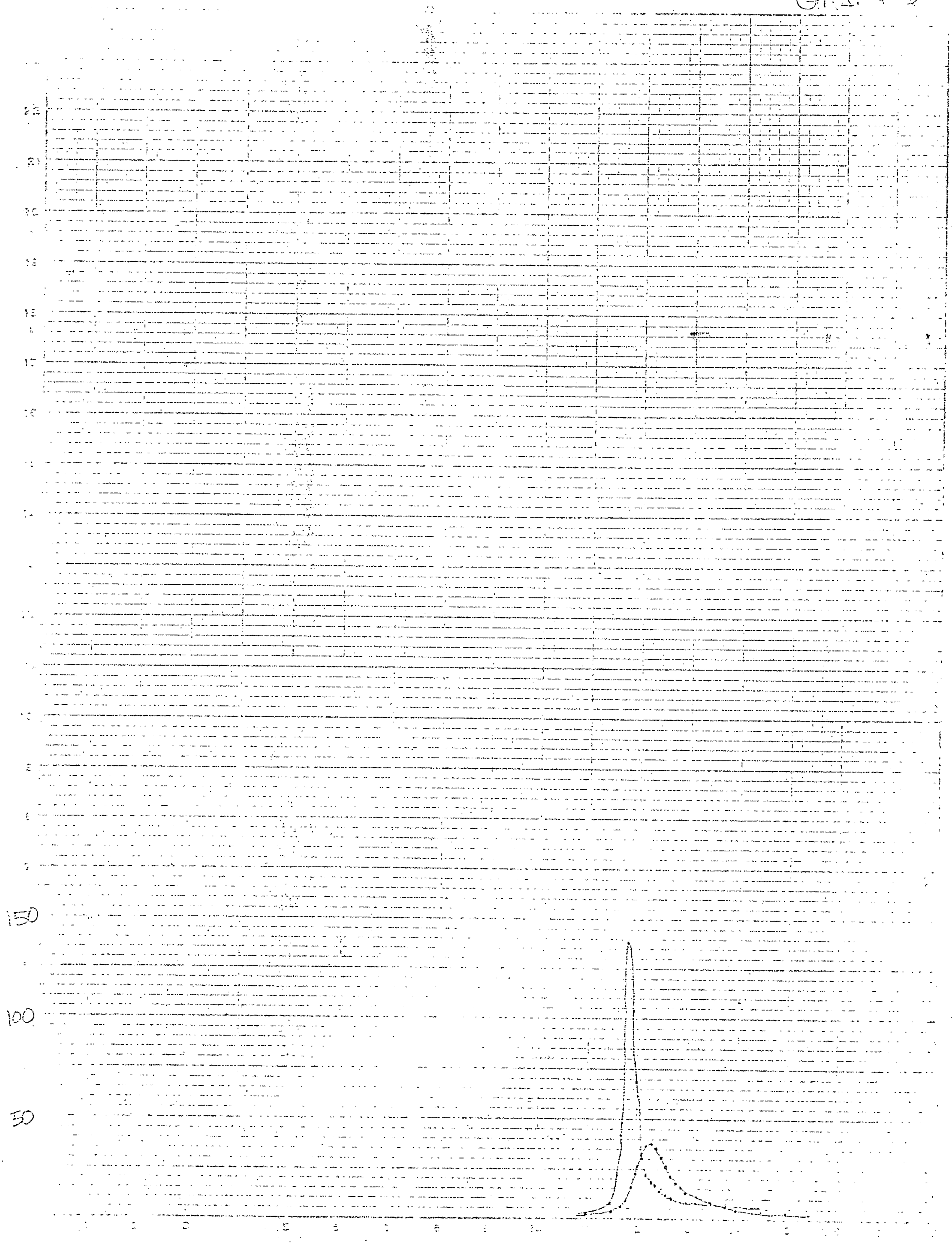
$Q = 5.4$

hr	11	11.5	11.7	11.8	11.9	12.	12.1	12.2	12.3	12.4	12.5	12.6
#9' csm/in	24	51	299	991	746	477	233	152	132	121	111	85
#9' cfs	3.3	7.2	42	139.1	104.7	67.	32.7	21.3	18.5	17	15.6	11.9

hr	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	17	18
#9' csm/in	74	70	68	65	52	48	39	33	29	24	18	14
#9 cfs	10.4	9.8	9.5	9.1	7.3	6.7	5.5	4.6	4.1	3.4	2.5	2.

Hydrograph

GRAPH 1/2



Parcels #8 & #9 Into Ditch Undeveloped
23.5 Acres total

hr	11.	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
Parcel #8 cfs	.7	1.3	3	6.1	11.1	16	18.4	17.5	14.6	11.4	8.9	7.2
#9 cfs	1.4	2.8	5.5	9.4	15.7	23.8	31.6	36.1	37.3	35.5	31.3	26.6
Total	2.1	4.1	8.5	15.5	26.8	39.8	50.0	53.6	51.9	46.9	40.2	33.8

	12.7	12.8	12.9	13.	13.2	13.5	14.	14.5	15.	16	18	20
Parcel #8 cfs	5.8	4.8	4.0	3.5	2.8	2.1	1.6	1.3	1.1	.9	.7	.6
#9 cfs	22.3	18.8	15.9	13.7	10.3	7.3	4.9	3.8	3.2	2.5	1.8	1.4
	28.1	23.6	19.9	17.2	13.1	9.4	6.5	5.1	4.3	3.4	2.5	2.0

Parcels #8 & #9 Developed Into Ditch

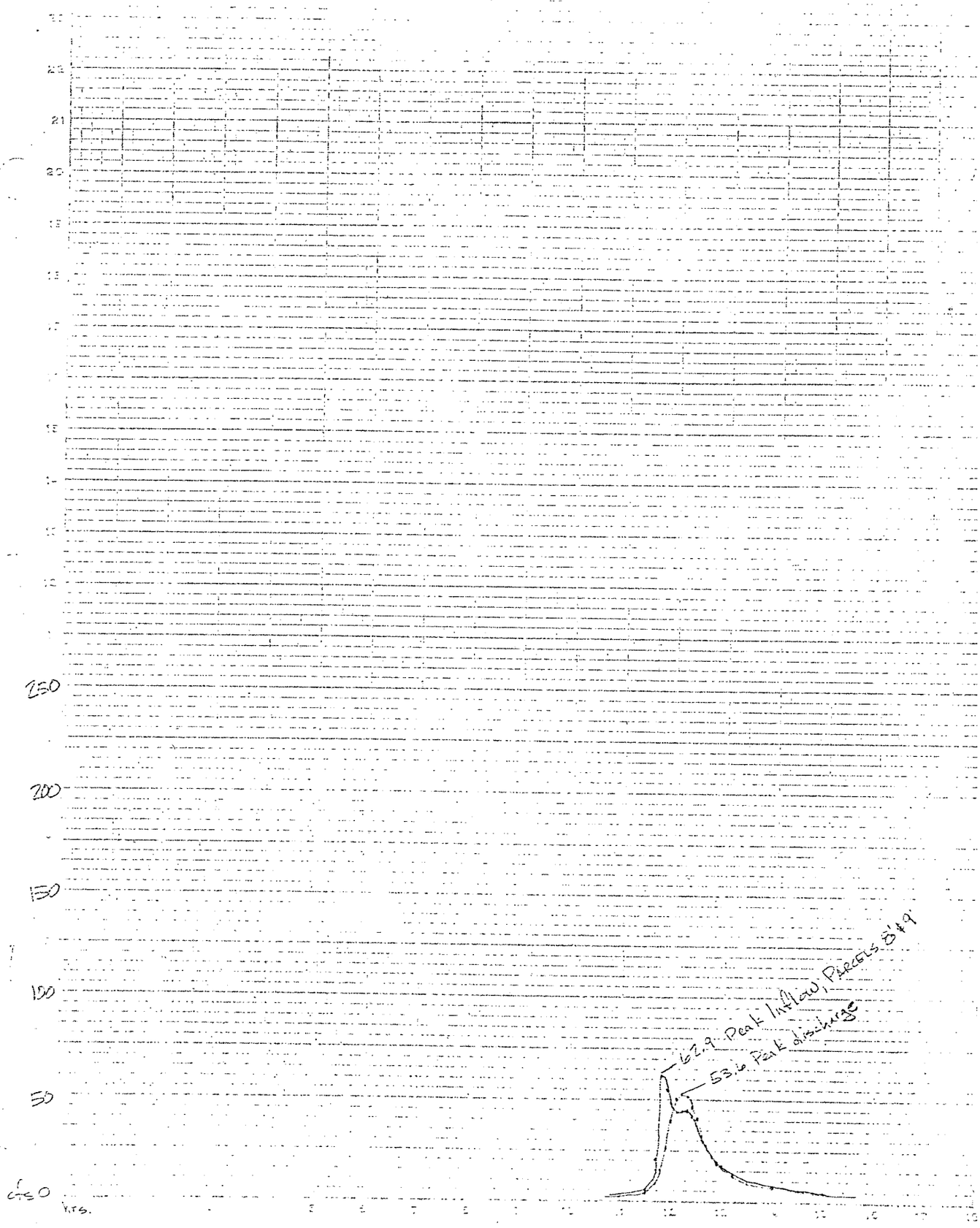
23.5 Acres Total

#9 discharge to be maintained as existing conditions

Hr	11.	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
Parcel #8 cfs	1.3	2.8	16.1	53.5	40.3	25.8	12.6	8.2	7.1	6.5	6	4.6
#9 cfs	1.4	2.8	5.5	19.4	15.7	23.8	31.6	36.1	37.3	35.5	31.3	26.6
Total	2.7	5.6	21.6	62.9	56.0	49.6	44.2	44.3	44.4	42.0	37.3	31.2

	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	20
Parcel #8 cfs	4	3.8	3.7	3.5	2.8	2.6	2.1	1.8	1.6	1.3	1.0	.8
#9 cfs	22.3	18.8	15.9	13.7	10.3	7.3	4.9	3.8	3.2	2.5	1.8	1.4
Total	26.3	22.6	19.6	17.2	13.1	9.9	7.0	5.6	4.8	3.8	2.8	2.2

Parcels 3 + 4 23.5 Acres



Parcels A, #3, #4, #5, #6, #7, #8, #9 Undeveloped At Greenwich Road

60 Acres Undeveloped Offsite + 84.13 Acres Undeveloped from Site

Parcel A

Add .25 hr = T_T for Parcel A. T_c = 1 hr T_T = .25

hr	11.	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
A cum/in	10	18	24	32	45	68	102	146	193	238	272	293
A cfs	3.5	6.3	8.3	11.1	15.6	23.6	35.5	50.8	67.1	82.8	94.6	101.9

hr	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	20
A cum/in	299	293	275	252	200	139	81	54	41	29	20	16
A cfs	104	101.9	95.6	87.6	69.6	48.3	28.2	18.8	14.2	10.1	6.9	5.6

hr	11.0	11.5	11.7	11.8	11.9	12	12.1	12.2	12.3	12.4	12.5	12.6
Parcel A	3.5	6.3	8.3	11.1	15.6	23.6	35.5	50.8	67.1	82.8	94.6	101.9
#3	1.8	3.4	6.7	11.6	19.3	29.4	39	44.4	45.9	43.7	39.5	32.7
#4	12	2.2	4.2	6.1	9.9	14.3	19.5	23.9	27.8	28.9	29.2	27.8
#5	.4	.9	5.2	17.2	13	8.3	4	2.6	2.3	2.1	1.9	1.5
#6	1.4	2.8	5.5	9.4	15.7	23.8	31.6	36.1	37.3	35.5	31.3	26.6
#7	.4	.8	1.8	3.7	6.7	9.6	11.0	10.5	8.8	6.8	5.4	4.3
#8	.7	1.3	3	6.1	11.1	16	18.4	17.5	14.6	11.4	8.9	7.2
#9	1.4	2.8	5.5	9.4	15.7	23.8	31.6	36.1	37.3	35.5	31.3	26.6
Total	10.8	20.5	40.2	74.6	107	148.8	190.6	221.9	241.1	246.7	241.1	228.6
Developed Discharge Add for Parcel 7	.3	.6	4.2	10.9	16.2	9.8	1.2	-3.5	-3.9	-2.8	-1.9	-1.3
Total Devel. cfs out of Smithmoore	11.1	21.1	44.4	95.5	123.2	157.6	191.8	218.4	237.2	243.9	239.2	227.3

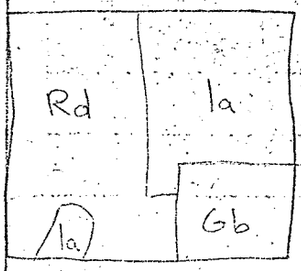
2/2

Parcels A, #3, 4, 5, 6, 7, 8, 9 Undeveloped

Hour	12.7	12.8	12.9	13	13.2	13.5	14	14.5	15	16	18	2
Parcel A cfs	104	101.9	95.6	87.6	69.6	46.3	28.2	18.8	14.2	10.1	6.9	5
#3	27.5	23.1	19.5	16.8	12.7	9	6	4.6	3.9	3.1	2.2	1.
#4	25.6	22.8	20.1	17.4	13.5	9.4	5.9	4.2	3.3	2.5	1.8	1.
#5	1.3	1.2	1.2	1.1	.9	.8	.7	.6	.5	.4	.3	.2
#6	22.3	18.8	15.9	13.7	10.3	7.3	4.9	3.8	3.2	2.5	1.8	1.4
#7	3.5	2.9	2.4	2.1	1.7	1.3	1.0	.8	.7	.6	.4	
#8	5.4	4.8	4.0	3.5	2.4	2.1	1.6	1.3	1.1	.9	.7	.(
#9	22.3	18.8	15.9	13.7	10.3	7.3	4.9	3.8	3.2	2.5	1.8	1.
Total cfs	212.3	194.3	174.6	155.9	121.8	85.5	53.2	37.9	30.1	22.6	15.9	1
	-1.1	-.7	-.4	-.2	-.1	-.1	.2	.2	.1	.1	.1	
Total Developed cfs out of Smithmoor	211.2	193.6	174.2	155.7	121.7	85.6	53.4	38.1	30.2	22.7	16.0	12

8-29-17

Soil Analysis - Smithmoore Addition



Soil Type

Rd Hydro Group "D"
slow Perm medium runoff
high shrink/swell, Clay type Silty, high erosion
- Provide for well drained soils around Foundations

Gb Hydro Group "D"
slow perm slow RUNOFF
high Shrink/Swell, Silty Clay
- favorable for pond reservoirs
- "do" on foundations

Ia Hydro Group D
slow perm medium runoff
high Shrink/Swell, Silty CLAY

THE CITY OF WICHITA

OFFICE OF PUBLIC WORKS - ENGINEERING DATE Feburary 10, 1988

TO Monty Robson, Superintendent of Central Inspection

FROM Vicky Huang, Subdivision Engineer

SUBJECT Smithmoor 1st Addition

Attached is a letter from Mr. Dick Linn of Professional Engineering Consultants requesting construction be allowed to begin on some of the lots in Smithmoor 1st Addition.

Storm Water Drain No. 54 will remove all lots from the floodplain. This project is under design and will be constructed this spring.

We concur with their request as long as they observe the recommended finish grade elevation of 1344.

Vicky Huang
Subdivision Engineer

VH:cp

cc: Robin Riddel, Central Inspecton Division
Dick Linn, Professional Engineering Consultants
Ron Smith, Smith & Company

February 23, 1989

Department of Engineering
City Hall - Seventh Floor
455 North Main
Wichita, Ks 67202

Subject: Letter of Map Revision, Tributary 13 of Spring Branch of 4 Mile Creek for Huntcrest and Smithmoor Additions.

Attention: Mr. Chris Breitenstein, P. E.

Dear Chris:

Reference is made to my letter of October 25, 1988 transmitting my report and supporting information and requesting that the City of Wichita make application for a Letter of Map Revision for that portion of subject tributary which affects Huntcrest and Smithmoor Additions. Reference is also made to a reply from The Federal Emergency Management Agency advising that additional data is required for the Agency to evaluate the request.

Subsequent to receipt of FEMA's letter, I have talked to Chris Hauser of Greenhorne & O'Mara who is reviewing the request and am advised that the following materials will address the items listed on the FEMA Checklist dated Jan 5, 1989:

Item 4. A brief statement describing the methodology used to determine hydrologic and hydraulic parameters. The hydraulic parameters are adequately addressed in the Exhibit H and the HEC-2 run input file furnished with the original application. The hydrologic parameters are submitted here in the form of Page 1 of 14 taken from PEC's Smithmoor 1st Addition Drainage Plan.

Item 10. Certified topographic work map showing revised 100-year flood boundary, base flood elevations, cross sections, stream alignment, and road alignment. I explained to Mr. Hauser that the only work map I used for the HEC-2 hydraulic analysis was the title sheet of the plans for Storm Water Drain 54 since all flow of the PEC 100-year frequency discharge is contained within the right of way for the Storm Drain, and because the lots in both Huntcrest and Smithmoor are in the process of being filled, no current topography is available, and that it would be of no value once the lot fills have been completed. Hauser agreed that the Title Sheet would fulfill the requirement for Item 10, but that there must be a Certification by the City or PEC that the SWD 54 Plans are As-Built plans.

Item 11. Current corporate limits map. You need to supply only that portion of the City Limit Map for the vicinity of Tributary 13 and SWD 54.

Item 12. Annotated FIRM and/or Flood Boundary and Floodway Map (FBFM) showing revised 100-year flood boundary, base flood elevations, and road alignment, and corporate limits. I described the exhibit made by combining a photoreduction of the portion of the SWD 54 plan Title Sheet with a photoenlargement of a portion of the County FBFM and a print of a portion of the City FIRM to show the relationship of SWD 54 to Huntcrest and Smithmoor Additions as well as the balance of Tributary 13. I explained that adding elevations, cross section locations and other items will clutter the exhibit to the extent that it becomes difficult to read. He agreed that the exhibit as described will probably satisfy his need.

Item 21. Letter from Sedgwick County requesting revision to the FIRM. I enclose a letter from Mr. James Weber, P. E. supporting the proposed revision.

Please review the materials transmitted with this letter, certify that the SWD Plans are As-Built, attach an excerpt of the current corporate limits map and send the assembled information to:

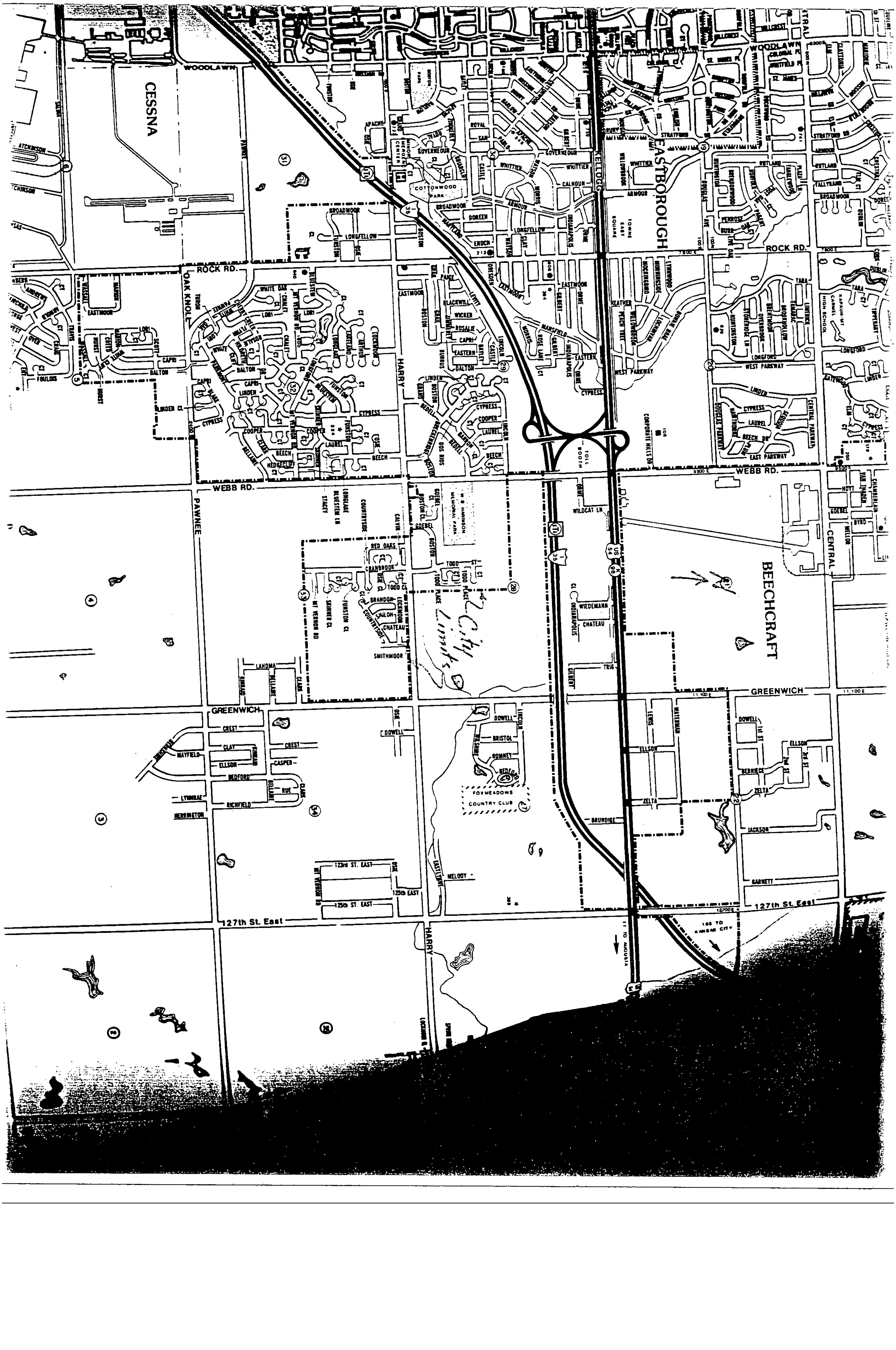
Greenhorne & O'Mara, Inc.
Maryland Trade Center
7500 Greenway Center Drive, Suite 700
Greenbelt, Maryland 20770
Attention: Mr. Vincent DiCamillo and Mr. Chris Hauser.

If you have any questions please call me.

Yours truly,

encl

M. S. Mitchell
Flood Plain Management & Land Development Specialist
1215 Forest • Wichita, KS. 67203
(316) 265-9812


CESSNA
WOODLAWN
ROCK RD.
OAK KNOLL
BROADMOOR
LONGFELLOW
EASTMOOR
COTTONWOOD PARK
EASTBOROUGH
KELLOGG
WEBB RD.
PAWNEE
HARRY
BEECHCRAFT
CENTRAL
WEST PARKWAY
EAST PARKWAY
GREENWICH
FOXMEADOWS COUNTRY CLUB
127th St. East
City Limits

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

Date June 17, 1986 Page 1 of 14

Project Smithmoor 1st Addition

Item Drainage Plan

Channel Improvements - West side of Property
100-YEAR STORM (Also on N side - west of box)

D.A. = 207 Ac. (see page 2)

composite c = 40 Ac. ≈ residential (1/4 Ac Lots Type D) c = 0.76
(Red-Oaks / Huntcrest)

167 Ac agricultural pasture c = 0.67
(1-4% slopes Type D soil)

$$\text{comp. } c = \frac{(40 \times 0.76) + (167 \times 0.67)}{207} = \underline{0.69}$$

t_c = 1700 Ft @ 0.45 fps = 63 min (overland flow)
4000 Ft @ 5 fps = 13 min (channelized flow)
76 min

I_{100} = 3.26 inches/hr.

$Q_{100} = C_{100} I_{100} A = 0.69 \times 3.26 \times 207$
$= 466$ cfs

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

Date June 19, 1986 Page 1 of 14

Project Smithmoor 1st Addition

Item Drainage Plan

Channel Improvements - West side of Property (Also on N side - west of box)

100-YEAR STORM

D.A. = 207 Ac. (see page 2)

composite C = 40 Ac. ± residential (1/4 Ac Lots Type D) C = 0.76
(Red-Oaks / Hunterest)

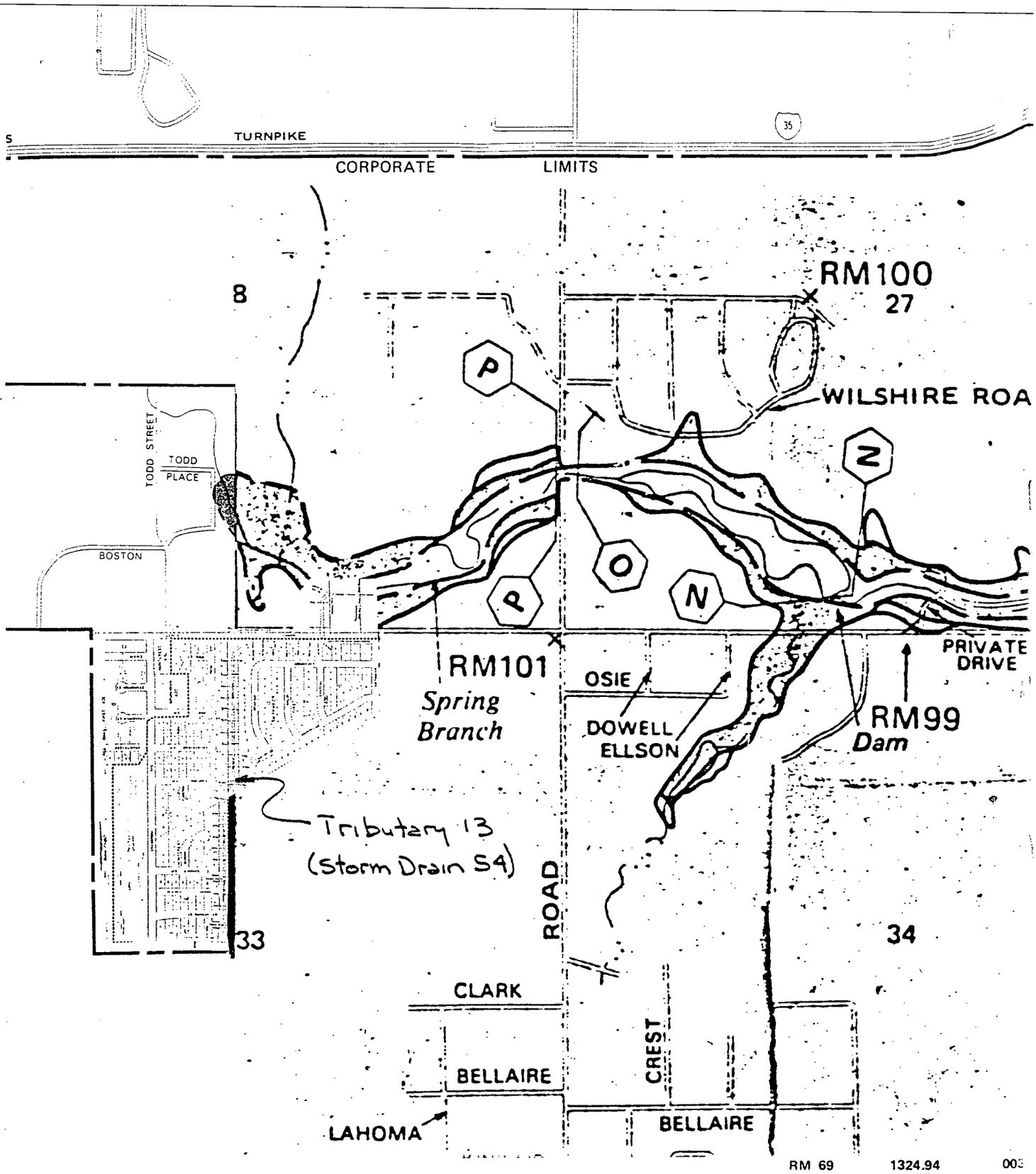
167 Ac agricultural pasture C = 0.67
(1-4% slopes Type D soil)

$$\text{comp. } C = \frac{(40 \times 0.76) + (167 \times 0.67)}{207} = 0.69$$

t_c = 1700 Ft @ 0.45 fps = 63 min (overland flow)
4000 Ft @ 5 fps = 13 min (channelized flow)
76 min

I_{100} = 3.26 inches/hr.

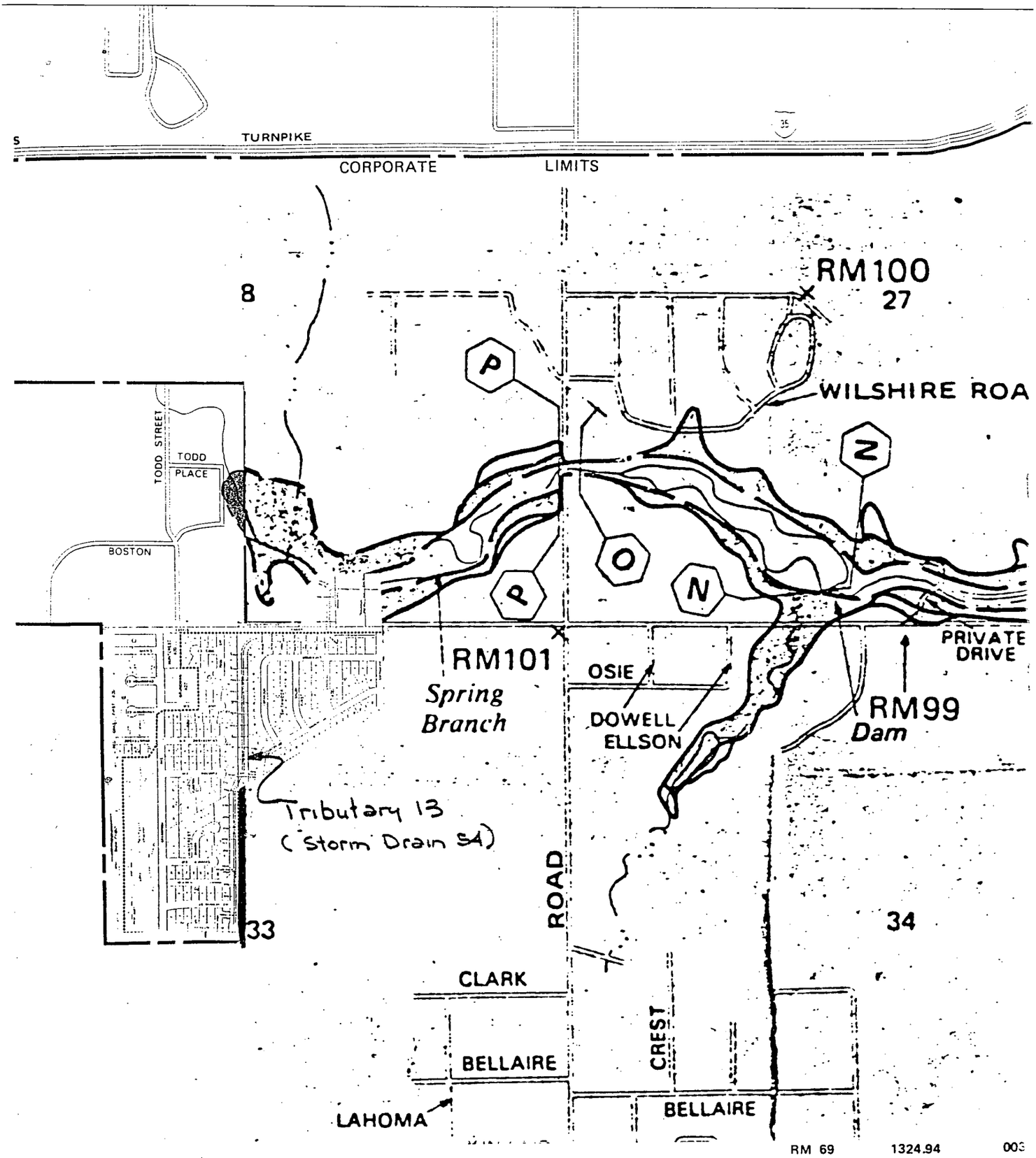
$Q_{100} = C_{100} I_{100} A = 0.69 \times 3.26 \times 207$
$= 466$ cfs



RM 69	1324.94	003
RM 70	1373.06	003
RM 71	1327.20	003
RM 72	1340.30	003

EFERENCE MARKS

#11



RM 69	1324.94	003
RM 70	1373.06	003
RM 71	1327.20	003
RM 72	1340.30	003

EFERENCE MARKS

SEDGWICK COUNTY, KANSAS
DEPARTMENT OF SEWER OPERATIONS & MAINTENANCE
BUREAU OF PUBLIC SERVICES

1250 S. SENECA
WICHITA, KANSAS 67213-4498
(316) 268-7901

February 8, 1989

Greenhorne & O'Mara, Inc.
Maryland Trade Center
7500 Greenway Center Drive, Suite 700
Greenbelt, Maryland 20770

Attn: Mr. Vincent DiCamillo

Dear Mr. DiCamillo:

Re: IA-RA-RS (65-DRI), Case No. 897008

I have reviewed the report submitted by the City of Wichita supporting their request for a revision to the Flood Insurance Rate Map and Flood Boundary and Floodway Map Panels for Spring Branch of Four Mile Creek Tributary 13. I also note that a small portion of the flood plain for Tributary 13 appears on Sedgwick County Panel 225. In response to FEMA's request that Sedgwick County provide a letter requesting revision of our FIRM, please accept this letter supporting the proposed revision.

If you have any questions, please advise me.

Sincerely,

James Weber, P.E., Director,
Sewer Operations and Maintenance

JW/MSM/tlb

#21

Pre-Sub July 7, '86

1. Union Equity Co-op Exchange. Vacation of St. R/W. No water problem.

2. Kansas Dept. of Transportation. Vacation of St. R/W. No existing water line in area. Replat of Vanderhoff will provide easement along Young St. For water and sanitary, will this need to be retained as utility easement?

3. Phillips Petroleum Company. Requests Vacation of Sewer easement No water problem

4. Messiah Baptist Church Third Addition. Final Plat. Existing 6" water main in Clark, existing 16" in Hillside. No water problem.

5. Wilderness Third Addition. Final plat. Item A, mains to be extended. Existing 8" in Wilderness at north edge of plat to be extended. No water problem.

6. Autumn Ridge. Preliminary plat. Item A, mains to be extended. Existing 12" main in 119th St. West. No water problem.

City. 7. Lakelane Estates. Final Plat. No city water available, no water problem.

8. Smithmoor First Addition. Final plat. Item D, mains to be extended. 16" main in Harry to be extended in Harry to East line of Smithmoor, 8" Interior mains to be extended. No water problem

County 9. Sam & Judy Eberly. Dedicate St. R/W. No water problem.

10. Other matters.

MEMO

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

TO: Mike Lindebak, P.E.
Interim Director of Planning

ATTN: Forrest Nagley

PROJECT NO. 36-85360-1864

PROJECT: Smithmoor 1st Addition

DATE: 8/18/86

COPIES TO:
✓ Carl Gipson
Ron Smith
Keith Parker

FROM: Dick Linn

REFERENCE: "Off-Site" Drainage Easement

PLEASE ADVISE IMMEDIATELY OF ANY MISCONCEPTIONS OR OMISSIONS YOU BELIEVE TO BE CONTAINED HEREIN.

The final plat of Smithmoor 1st Addition has been approved, subject to several requirements.

Item "D," in your July 3, 1986 letter, states that "The applicant shall attempt to obtain the off-site drainage easement required by the drainage plan for this property." The resolution for Storm Water Drain No. 54 includes a provision for acquisition of the necessary easement or right-of-way.

I have contacted Mr. Keith Parker, Developer of Huntcrest 2nd Addition (located within the benefit district of SWD #54), relative to the necessary easement.

Mr. Parker has an interest in the property north of Harry Street, where the "off-site" easement is required. Mr. Parker stated that he will cooperate in dedication of the easement.

Contact should be made with Mr. Parker after design engineering is completed on the project and the easement is defined.

If additional information is desired, please advise.

RWL/mkm

468 76 245 81224 000 000 001
(East and West of Cranbrook, from Harry to South of Mt. Vernon)
6-29-82

RESOLUTION

RESOLUTION OF FINDINGS OF ADVISABILITY AND RESOLUTION AUTHORIZING CONSTRUCTION OF STORM WATER DRAIN NO. 54 IN THE CITY OF WICHITA, KANSAS, PURSUANT TO FINDINGS OF ADVISABILITY MADE BY THE GOVERNING BODY OF THE CITY OF WICHITA, KANSAS.

BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF WICHITA, KANSAS, THAT THE FOLLOWING FINDINGS AS TO THE ADVISABILITY OF CONSTRUCTING STORM WATER DRAIN NO. 54 IN THE CITY OF WICHITA, KANSAS, ARE HEREBY MADE TO-WIT:

SECTION 1. That it is necessary and in the public interest to construct Storm Water Drain No. 54 in the City of Wichita, Kansas as follows:

That there be constructed a storm water drain to serve the area described above, according to plans and specifications to be furnished by the City Engineer of the City of Wichita, Kansas.

That there be constructed a reinforced concrete box culvert across Harry immediately east of the east line of Huntcrest 2nd Addition, that existing box culvert be removed and pavement removed and replaced where necessary, all according to plans and specifications to be furnished by the City Engineer.

That all right-of-way necessary to construct the above be acquired by purchase or eminent domain.

SECTION 2. That the cost of said improvements provided for hereof is estimated to be One Hundred Seventy-Two Thousand Dollars ($172,000.00) payable by the improvement district. Said estimated cost as above setforth is hereby increased at the pro-rata rate of 1 1/2 percent per month from and after May 1, 1982.

SECTION 3. That all costs of said improvements attributable to the improvement district, when ascertained, shall be assessed against the land lying within the improvement district described as follows:

Lots 1 through 18 inclusive, Block 1

Lots 1 through 14 inclusive, Block 2

Lots 1 through 18 inclusive, Block 3

Lots 1 through 23 inclusive, Block 4

Lots 1 through 26 inclusive, Block 5

Lots 1 through 8 inclusive, Block 6

Lots 1 through 9 inclusive, Block 7

All in Huntcrest 2nd Addition