POE & ASSOCIATES OF KANSAS INC.
CONSULTING ENGINEERS
434 N. Oliver, Suite 110 ▪ Wichita, KS 67208 ▪ 316/685-4114

November 30, 1990

Vicki Huang, P.E.
Engineering Dept., 7th Floor
455 N. Main
Wichita, Kansas 67202

Re: Great Plains Business Park 2nd Addition

Dear Vicki:

This report is to be used with the drainage plan map of Great Plains Business Park Addition dated November 30, 1990. We have also included a separate report that addresses the impact of drainage from this area which discharges onto the property to the south.

As noted on the drainage plan map Lots 4 and 5, Block 1 will have a minimum building pad elevation of 179.6 city of wichita datum. A cross lot drainage agreement will be provided to allow drainage to cross Lots 1 through 6, Block 1. A 25 foot wide drainage easement has been added to the rear of Lots 7 through 10, Block 3 and between Lots 7 and 8, Block 3. The storm water drainage which flows between these two Lots will discharge into the City owned detention pond located east of this property.

After your review and approval of this plan we will prepare cost estimates and petitions to guarantee the construction of these drainage improvements.

Please let us know if you have any questions about this drainage plan or report.

Yours Truly,
Poe and Associates of Kansas, Inc.

Kenny E. Hill

Kenny E. Hill, P.E.
Project Manager

cc: Ken Rix

Encl.

DA #1 AND DA #2

35th ST. AND OLIVER

11-29-90

STORM SEWER @ 35TH AND OLIVER

DA # 2 = 6.5 Ac T.C. = 15 MIN. (MINIMUM)

$i_5 = 4.56$ $C_5 = 0.76$

$Q_5 = 6.5 \times 0.76 \times 4.56 = 22.5$ cfs

DA # 1 = 21.7 Ac $\frac{15'}{1850'} = .008$ FT/FT SLOPE

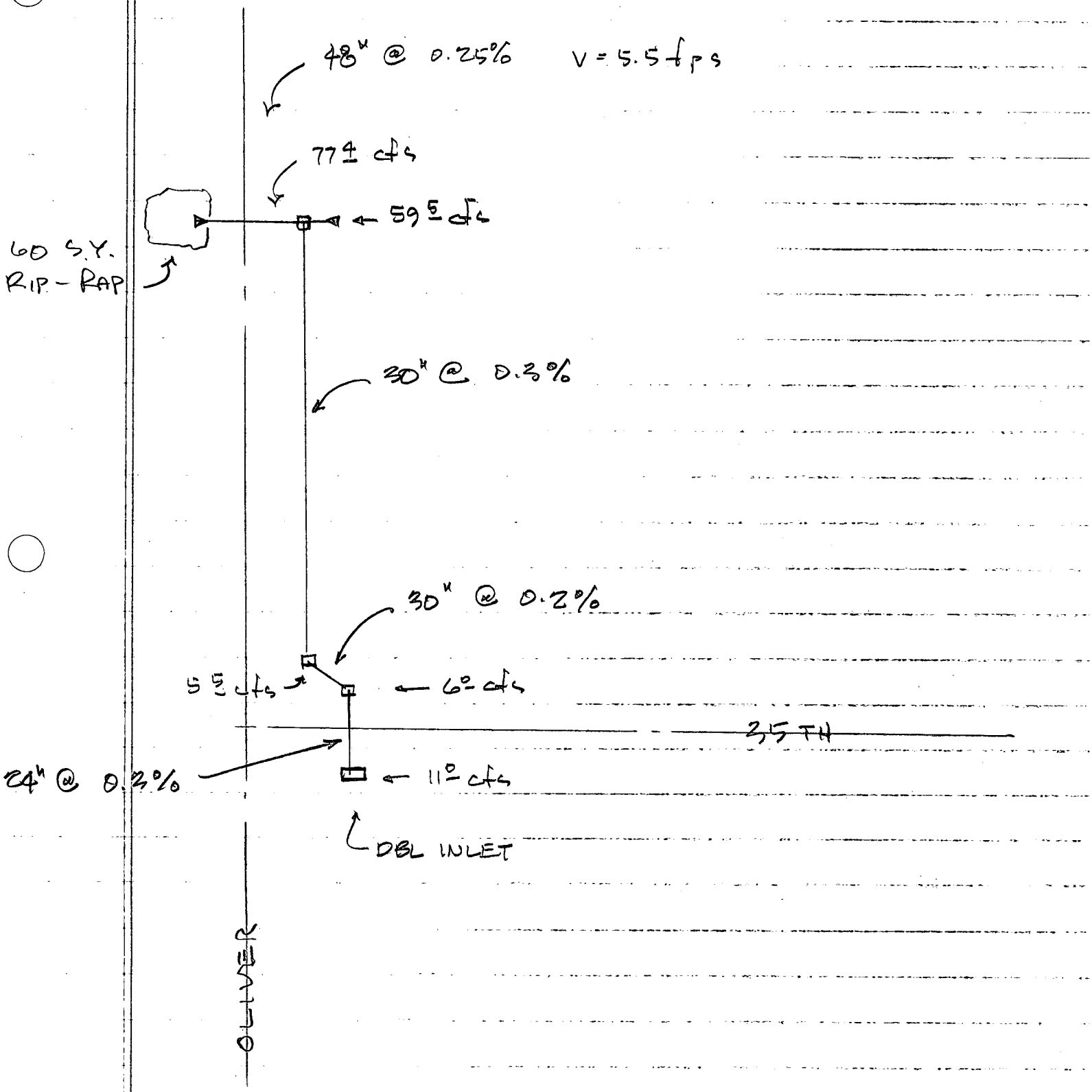
PAVED AREA @ 0.8% SLOPE = 1.26 f.p.s. VELOCITY OR 24.5 MIN T.C.

$i_5 = 3.61$

$Q_5 = 21.7 \times 0.76 \times 3.61 = 59.5$ cfs TO INLET

DA # 1 AND DA # 2 = 28.2 Ac

$Q_5 = 28.2 \times 0.76 \times 3.61 = 77.4$ cfs PIPE ACROSS OLIVER


48" @ 0.25%
V = 5.5 fps
77± cfs
59.5 cfs
60 S.Y.
RIP-RAP
30" @ 0.3%
30" @ 0.2%
5.5 cfs
6.0 cfs
35 FH
24" @ 0.3%
11.0 cfs
DBL INLET
OUTLET

SEWER PIPES

Enter up to 10 pipes.
Enter <Return> only for flowrate and diameter to end.

FLOWRATE (CFS)	DIAMETER (IN)	FRICTION (FT^1/6)	SLOPE (%)	VELOCITY (FPS)
11.00	24.00	0.0120	0.20	3.50
17.00	30.00	0.0120	0.15	3.46
22.50	30.00	0.0120	0.26	4.58
77.40	48.00	0.0120	0.25	6.16
59.50	48.00	0.0120	0.15	4.73

Description: Great Plains Business Park 2nd Addn.
Storm Sewer at 35th and Oliver

Project Number: 1469
Date:November 29,1990

Item No.	Item	Quanity		Unit Cost	Total
1	15" Dia. Reinf. Conc. Storm Sewer Pipe	0.00	L.F.	15.00	0.00
2	18" Dia. Reinf. Conc. Storm Sewer Pipe	0.00	L.F.	18.00	0.00
3	24" Dia. Reinf. Conc. Storm Sewer Pipe	50.00	L.F.	24.00	1200.00
4	30" Dia. Reinf. Conc. Storm Sewer Pipe	330.00	L.F.	30.00	9900.00
5	36" Dia. Reinf. Conc. Storm Sewer Pipe	0.00	L.F.	36.00	0.00
6	42" Dia. Reinf. Conc. Storm Sewer Pipe	0.00	L.F.	42.00	0.00
7	48" Dia. Reinf. Conc. Storm Sewer Pipe	100.00	L.F.	48.00	4800.00
8	15" Reinf. Conc. End Section	0.00	E.A.	200.00	0.00
9	18" Reinf. Conc. End Section	0.00	E.A.	250.00	0.00
10	24" Reinf. Conc. End Section	0.00	E.A.	300.00	0.00
11	48" Reinf. Conc. End Section	2.00	E.A.	600.00	1200.00
12	18" Corrugated Metal Storm Sewer Pipe	0.00	L.F.	15.00	0.00
13	24" Corrugated Metal Storm Sewer Pipe	0.00	L.F.	21.00	0.00
14	30" Corrugated Metal Storm Sewer Pipe	0.00	L.F.	27.00	0.00
15	36" Corrugated Metal Storm Sewer Pipe	0.00	L.F.	33.00	0.00
16	48" Corrugated Metal Storm Sewer Pipe	0.00	L.F.	45.00	0.00
17	Std. Inlet Type 1-A (W=4'-4" L=6'-4")	3.00	E.A.	2000.00	6000.00
18	Std. Inlet Type 1-A (W=4'-4" L=11'-4")	1.00	E.A.	2500.00	2500.00
19	Std. Inlet Type II	0.00	E.A.		0.00
20	Std. Inlet Type II (Dbl.)	0.00	E.A.		0.00
21	Std. Manhole Type A	0.00	E.A.	2500.00	0.00
22	Light Stone Rip-Rap	60.00	S.Y.	35.00	2100.00
23	Remove and Replace Pavement	42.00	S.Y.	25.00	1050.00
24		0.00			0.00

Construction Cost	$ 28750.00
Engineering	2300.00
Inspection	1437.50
Temp. Note Interest	2300.00
Legal & Bond Fee	1150.00
Contingencies	2875.00
Total Estimated Cost	$ 38812.50

DA #3, #4 AND #5

34th ST. AND CHANNEL

11-29-90

STRUCTURE ACROSS 34TH AT DRAINAGE CHANNEL

DA #4 = 8.7 T.C 15 MIN. (MINIMUM)

i_5 = 4.56 C = 0.76

Q_5 = 8.7 x 0.76 x 4.56 = 30 ± cfs DRAINAGE FROM ST.

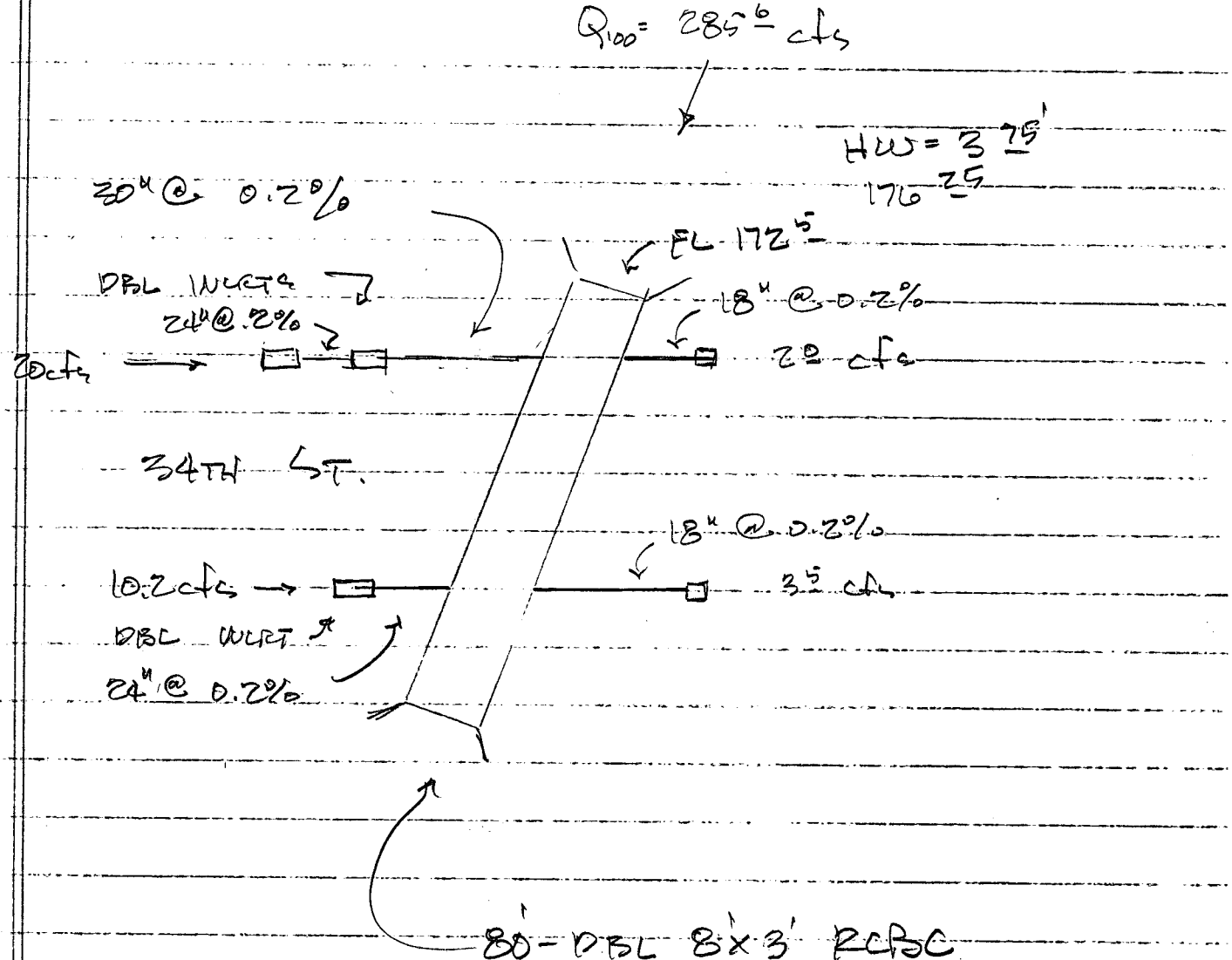
DA# 5 = 1.6 AC TC = 15 MIN

Q_5 = 1.6 x 0.76 x 4.56 = 5.5 cfs DRAINAGE FROM ST.

TOTAL DRAINAGE USE ORIGINAL TR 55 CALC.
SUBTRACT 10.75 AC (DA #3) = 92.3 AC TOTAL

RECALCULATE PEAK FLOW (SEE ATTACHED TR 55 FORM Q_{100} = 285.6 cfs

20' BOT. CHANNEL S = 0.6% 2.0' DEEP
N. OF 34TH @ 285.6 cfs



20' BOT. 4:1 SIDES 0.016 SLOPE CHANNEL
2.84' DEEP @ 285.6 cfs S OF 34TH

URBAN HYDROLOGY FOR SMALL WATERSHEDS (TR-55)
PEAK DISCHARGE WORKSHEET
FOR CHAPTER 4 (APPENDICES D & E)

11-29-90

Project GT. PLAINS BUS. PARK 2ND ADDN. By K. HILL Date 8-10-90

@ N. SIDE 24TH ST. Checked _____ Date _____

Steps Peak Discharge Computations for up to 3 Storms: Type II, Duration 24 hours.

1. Data: Watershed Condition = _____ (present or (future))

Drainage Area (DA) = ~~103~~ 92.3 acres. Ave. Watershed Slope (S) = 0.6 %.

2. Runoff Curve Number (CN)

Hydrologic Soil Group (Appendix B)	Land Use Description Include Treatment, Practice & Condition (Table 2-2)	CN (Table 2-2) (3)	% or Area (acres) (4)	Product (3)x(4) (5)
B	RESIDENTIAL 1/2 ACRE	70	50	3500
B	INDUSTRIAL	88	50	4400
	Totals =		100	7900

CN (weighted) = $\frac{\text{total col. (5)}}{\text{total col. (4)}} \left[\frac{7900}{100}\right]$ = 79 ; use CN = 79

1st Storm	2nd Storm	3rd Storm	
		100	yrs.
		7.8	inches

3. Rainfall Frequency (F)

Rainfall Depth (P)

4. Runoff Depth (Q)
Use P, CN, and Table 2-1.

5. Basic Peak Discharge (q)
Use S, DA, CN, and Figure D-2.
For graph labeled: (check one)
☑ Flat (S = less than 3%)
☐ Moderate (S = 3% to 7.9%)
☐ Steep (S = 8% & greater)

*6. Watershed Slope Factor
Use S, DA, and Table E-1.

7. Peak Discharge (q_p)
where q_p = Steps #4 x 5 x 6

		5.37	inches
	x		
		39 36	cfs/inch of Q
	x		
		0.82	
	=		
		121.7	cfs

154.5

See Steps 8 to 13 for adjustments that may be applicable.

TR-55, CHAPTER 4 (APPENDICES D & E), PEAK DISCHARGE WORKSHEET (CONT.)

Steps Peak Discharge Computations with Adjustments

8. Data: Obtain if Adjustments are Applicable

Ponding and Swampy areas (PND) = _____ acres, _____ % of DA

Impervious Area (IMP) = _____ acres, 48.5 % of DA

Total Hydraulic Length (HL) = _____ feet

Hydraulic Length Modified (HLM) = _____ feet, 90 % of HL

	1st Storm	2nd Storm	3rd Storm	
Rainfall Frequency (F) from Step 3			100	yrs.
Peak Discharge (q_p) from Step 7			158.5	cfs
	X	X	X	

*9. Ponding and Swampy Area Peak Factor

Use % PND, F, and Tables E-2, 3 or 4.

Location in Watershed: (check one)
- ☐ at Design Point (E-2)
- ☐ Center or Spreadout (E-3)
- ☐ Upper Reaches (E-4)

*10. Watershed Shape Peak Factor

Use HL with Figure E-1 and read;

Equiv. Drainage Area (EDA) = 230 acres.

Use Figure D-2 graph from Step 5, CN, and EDA for;

Equiv. Peak/Inch Runoff (q_e) = 68 cfs/in.

$$\text{Factor} = \left[\frac{q_e}{q \text{ from Step 5}}\right] \times \left[\frac{DA}{EDA}\right]$$

$$\text{Factor} = \left[\frac{68}{39}\right] \times \left[\frac{103}{230}\right] =$$

X .78

*11. Impervious Area Peak Factor

Use % IMP, CN and Figure 4-1.

X 1.32

*12. Hydraulic Length Modified Peak Factor

Use % HLM, CN and Figure 4-2.

X 1.75

=

13. Adjusted Peak Discharge (q_p) 309.4 cfs

q_p = q_p (from Step 7) x Steps #9 x 10 x 11 x 12

285.6 cfs

* If the adjustment is not applicable, enter a Factor of 1.0

IMPERVIOUS AREA

50% RESIDENTIAL 1/2 AC 25%

50% INDUSTRIAL 72%

} 48.5 %

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH	B - CHANNEL BOTTOM WIDTH	S - CHANNEL SLOPE
Q - FLOWRATE	M - CHANNEL SIDE SLOPE	N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

Q (CFS) ? 285.6
B (FT) ? 20
M (FT/FT) ? 4
S (FT/FT) ? .0016
N (FT^1/6) ? .03

RESULTS

Y= 2.84 FT
A= 89.22 SF
P= 43.45 FT
V= 3.20 FPS
F= 0.39 SUB-CRITICAL FLOW

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MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH	B - CHANNEL BOTTOM WIDTH	S - CHANNEL SLOPE
Q - FLOWRATE	M - CHANNEL SIDE SLOPE	N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

Q (CFS) ? 285.6
B (FT) ? 20
M (FT/FT) ? 4
S (FT/FT) ? .006
N (FT^1/6) ? .03

RESULTS

Y= 2.00 FT
A= 55.96 SF
P= 36.48 FT
V= 5.10 FPS
F= 0.72 SUB-CRITICAL FLOW

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BACKWATER FLOW

Q (CFS)	? 285.6
B (FT)	? 20
M (FT/FT)	? 4
S (FT/FT)	? .0016
N (FT^1/6)	? .03
WS EL (FT)	? 175.3
INV EL (FT)	? 171.3
XINC (FT)	? 50

N. LINE K-96

S. LINE 34TH

RESULTS

X (FT)	WS (FT)	Y (FT)	V (FPS)	S (FT/FT)
0	175.30	4.00	1.98	0.00000
50	175.31	3.93	2.04	0.00045
100	175.33	3.87	2.08	0.00048
150	175.35	3.81	2.13	0.00051
200	175.37	3.75	2.17	0.00054
250	175.40	3.70	2.22	0.00058
300	175.43	3.65	2.27	0.00061
350	175.45	3.59	2.31	0.00065
400	175.48	3.54	2.36	0.00068
450	175.51	3.49	2.40	0.00072
~~500~~	~~175.55~~	~~3.45~~	~~2.45~~	~~0.00076~~

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BACKWATER FLOW

Q (CFS)	? 285.6
B (FT)	? 20
M (FT/FT)	? 4
S (FT/FT)	? .006
N (FT^1/6)	? .030
WS EL (FT)	? 176.5
INV EL (FT)	? 172.5
XINC (FT)	? 100

N LINE 34TH

S LINE 36TH

RESULTS

X (FT)	WS (FT)	Y (FT)	V (FPS)	S (FT/FT)
0	176.50	4.00	1.98	0.00000
100	176.50	3.40	2.49	0.00080
200	176.56	2.86	3.17	0.00156
300	176.70	2.40	4.02	0.00305
400	177.00	2.10	4.80	0.00504
500	177.50	2.00	5.10	0.00598
600	178.10	2.00	5.10	0.00600
~~700~~	~~178.70~~	~~2.00~~	~~5.10~~	~~0.00600~~
~~800~~	~~179.30~~	~~2.00~~	~~5.10~~	~~0.00600~~
~~900~~	~~179.90~~	~~2.00~~	~~5.10~~	~~0.00599~~
~~1000~~	~~180.50~~	~~2.00~~	~~5.10~~	~~0.00599~~

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PROJECT: GREAT PLAINS BUSINESS PARK 2ND ADDN. DESIGNER K. HILL

Q100 FLOW = 285.4 cfs DATE 11-29-30

HYDROLOGIC AND CHANNEL INFORMATION

Q_1 = ____

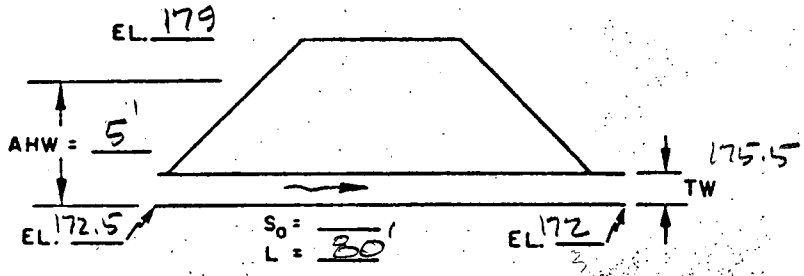
Q_2 = ____

TW_1 = ____

TW_2 = ____

SKETCH

STATION: 35TH ST.



ALLOWABLE OUTLET VELOCITY = ____

CULVERT TYPE	Q	SIZE	HEADWATER COMPUTATION									CONTROLLING HW	OUTLET VELOCITY	COST	COMMENTS
			INLET CONT.		OUTLET CONTROL										
			HW/D	HW	K_e	d_c	$\frac{d_c+D}{2}$	h_o	H	LS_o	HW				
DBL 8'x3' RCBC	286	—	1.16	3.5	0.2	2.3	2.7	3.0	.75		3.75	3.75			HW = 176.25
DBL 8'x3' RCBC @ 35TH			USE		CANE			FLOW							HW = 180.65

SUMMARY & RECOMMENDATIONS:

Figure 5

DA #6 AND DA #7

36th AND CHANNEL

11-30-90

STRUCTURE ACROSS 36TH ST AT DRAINAGE CHANNEL

DA # 6 = 8.0 AC C = 0.67 V = 0.88

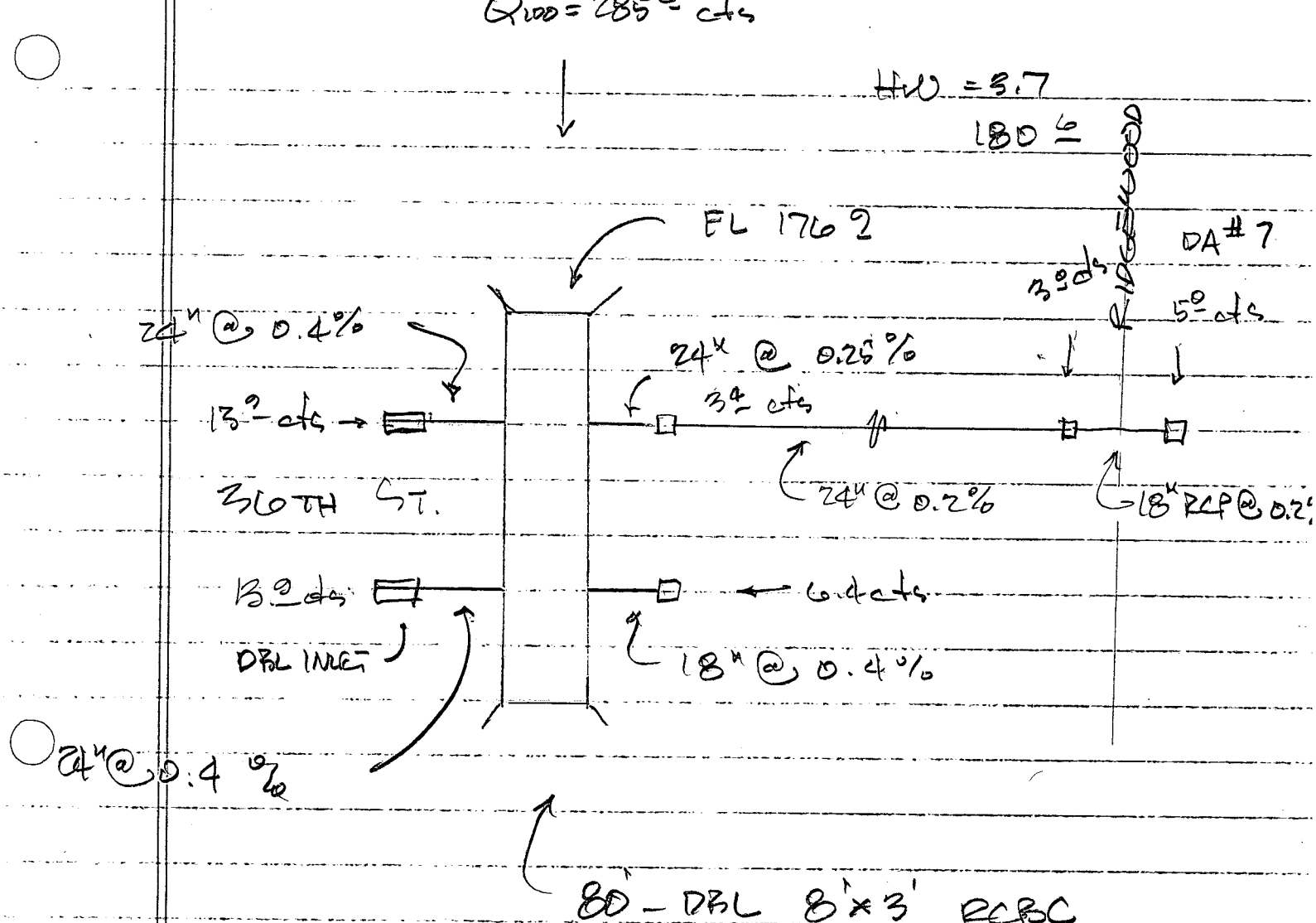
OVERLAND FLOW 500' @ 0.88 fps = 9.5 MIN
600' @ 2 fps 5 MIN.

USE TC = 15 MIN. (MINIMUM)

i_5 = 4.56 C = 0.76

Q_5 = 8.0 x 0.76 x 4.56 = 27.7 cfs

DA # 7 = 3.7 Ac
1550' @ 2 fps = 12.9 MIN USE TC = 15 MIN.
Q_5 = 3.7 x 0.76 x 4.56 = 12.8 cfs


Q100 = 285 cfs
HW = 5.7
180 ±
EL 176.2
DA #7
3.0 cfs
5.0 cfs
24" @ 0.4%
24" @ 0.25%
13.2 cfs
3.4 cfs
24" @ 0.2%
18" RCP @ 0.2%
36TH ST.
13.2 cfs
6.4 cfs
DBL INLET
18" @ 0.4%
24" @ 0.4%
80' - DBL 8' x 3' RCBC
EL 176.3
TW = 3.5'
179.8

DA #8 AND DA #9

EAST SIDE OF SUBDIVISION

11-30-90

DA # 8 = 8.7 Ac.

OVERLAND FLOW 180' GRASS S = 1.4%

V = 0.35 fps 140' @ 0.35 = 8.6 MIN.

1700' @ 2 fps AVERAGE = 14.6 MIN.

TC = 8.6 + 14.6 = 23.2 MIN. i_5 = 3.73

C = 0.76

Q_5 = 8.7 x 0.76 x 3.76 = 24.9 cfs

Q_{100} = 8.7 x 0.84 x 6.10 = 44.6 cfs

DA # 9 = 9.8 Ac + 8.7 Ac = 18.5 Ac TOTAL

30" PIPE @ 24.9 cfs = 5.1 fps 320' = 1.1 MIN.

TC = 23.2 + 1.1 = 24.3 MIN. i_5 = 3.62

i_{100} = 5.97

Q_5 = 18.5 x 0.76 x 3.62 = 50.9 cfs

Q_{100} = 18.5 x 0.84 x 5.97 = 92.8 cfs

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH	B - CHANNEL BOTTOM WIDTH	S - CHANNEL SLOPE
Q - FLOWRATE	M - CHANNEL SIDE SLOPE	N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

```
Q (CFS)     ? 19.7
B (FT)      ? 0
M (FT/FT)   ? 6
S (FT/FT)   ? .01
N (FT^1/6)  ? .03
```

RESULTS

```
Y=        1.02 FT
A=        6.28 SF
P=       12.44 FT
V=        3.14 FPS
F=        0.77      SUB-CRITICAL FLOW
```

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MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH	B - CHANNEL BOTTOM WIDTH	S - CHANNEL SLOPE
Q - FLOWRATE	M - CHANNEL SIDE SLOPE	N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

```
Q (CFS)     ? 48.2
B (FT)      ? 10
M (FT/FT)   ? 4
S (FT/FT)   ? .01
N (FT^1/6)  ? .03
```

RESULTS

```
Y=        0.90 FT
A=       12.29 SF
P=       17.45 FT
V=        3.92 FPS
F=        0.82      SUB-CRITICAL FLOW
```

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MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH	B - CHANNEL BOTTOM WIDTH	S - CHANNEL SLOPE
Q - FLOWRATE	M - CHANNEL SIDE SLOPE	N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

```
Q (CFS)     ? 41.9
B (FT)      ? 10
M (FT/FT)   ? 4
S (FT/FT)   ? .01
N (FT^1/6)  ? .03
```

RESULTS

```
Y=        0.84 FT
A=       11.16 SF
P=       16.89 FT
V=        3.76 FPS
F=        0.81      SUB-CRITICAL FLOW
```

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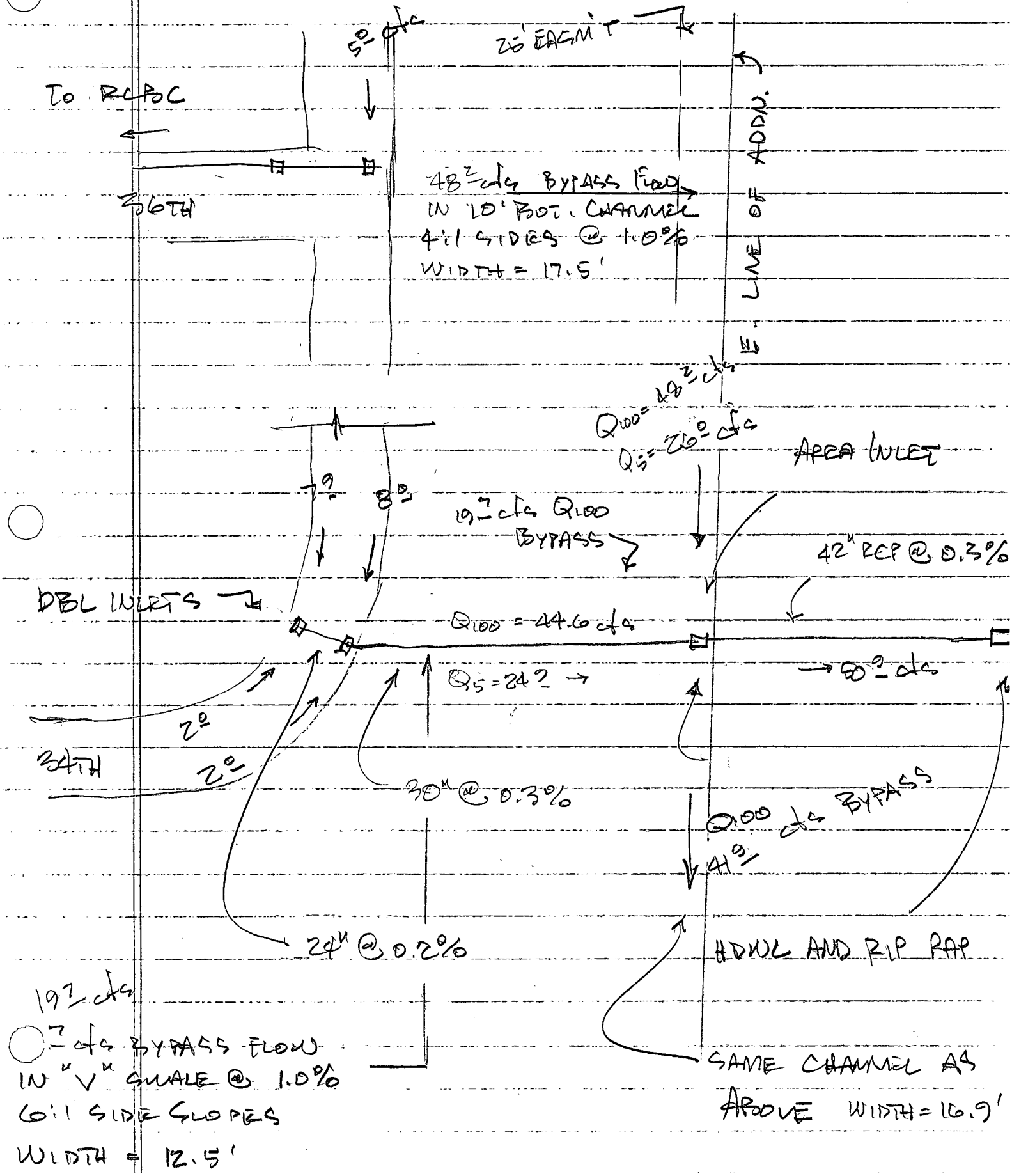

50 cfs
25' EASMT
TO RCBOC
36TH
48 cfs BYPASS FLOW
IN 10' BOT. CHANNEL
4:1 SIDES @ 1.0%
WIDTH = 17.5'
LINE OF ADJ.
Q100 = 49 cfs
Q5 = 26 cfs
AREA INLET
7%
8%
19 cfs Q100
BYPASS
42" RCP @ 0.3%
DBL INLETS
Q100 = 44.6 cfs
Q5 = 24 cfs
50 cfs
2%
2%
34TH
30" @ 0.3%
Q100 cfs BYPASS
4:1
24" @ 0.2%
HDWL AND RIP RAP
19 cfs
7 cfs BYPASS FLOW
IN "V" SWALE @ 1.0%
6:1 SIDE SLOPES
WIDTH = 12.5'
SAME CHANNEL AS
ABOVE WIDTH = 16.9'

DRAINAGE TO PROPERTY SOUTH

POE & ASSOCIATES OF KANSAS INC.
CONSULTING ENGINEERS
434 N. Oliver, Suite 110 ▪ Wichita, KS 67208 ▪ 316/685-4114

November 28, 1990

Vicki Huang, P.E.
Engineering Dept., 7th Floor
455 N. Main
Wichita, Kansas 67202

Re: Great Plains Business Park 2nd Addition

Dear Vicki:

During your review of the drainage plan for the above captioned addition you requested that we provide additional information to determine the impact of the drainage on the adjacent property to the south. The enclosed drawings and charts include a one foot contour map, FEMA maps, floodway information and flow charts. The base flood elevation in this area is 1347.0 which is about 159.6 city datum and is shown in yellow on the enclosed contour map.

Our drainage report shows the existing 100 year storm peak discharge rate to be 169 cfs at the north end of the drainage structure that crosses K-96. This flow rate will increase to 309.4 cfs after the industrial park is completely developed. To determine the impact of this increased flow we computed the depth of flow at section A - A at both existing and future flow rates. We also looked at the difference in flow depth through spillways around the pond dam for both conditions.

At a discharge rate of 169 cfs through section A-A the water surface elevation is 64.01 and will increase to 64.63 when the flow increases to 309.4 cfs. The data used to calculate these elevations is shown on the enclosed page entitled "Natural Channels".

An existing pond dam has been constructed across the tributary which will accept the drainage from this addition and is shown on the enclosed contour map. This dam is located about 500 feet south of the south line of the proposed K-96 Highway. The top of the dam is built to an elevation of about 169.0 and will overflow

around each end at an elevation between 165.5 and 167.0. There is not enough detail on the contour map to accurately determine the dimensions of the spillways around the ends of the dam. We therefore used a hypothetical spillway around each end of the dam for the purpose of analyzing the effects of the increased flow (169 cfs to 309.4 cfs) after development. Water surface elevations for various widths of broad crested weirs are shown on the enclosed computations. The results indicate that if the total length of the weir around each end of the dam is between 20 and 50 feet in length and is at an elevation of 166.0 then the increase in water surface depth will be as follows:

20' weir ..... 0.97' increase in depth

30' weir ..... 0.74' increase in depth

40' weir ..... 0.61' increase in depth

50' weir ..... 0.53' increase in depth

We are proceeding with the preparation of the final drainage plan based on a peak discharge rate from this development of 309.4 cfs.

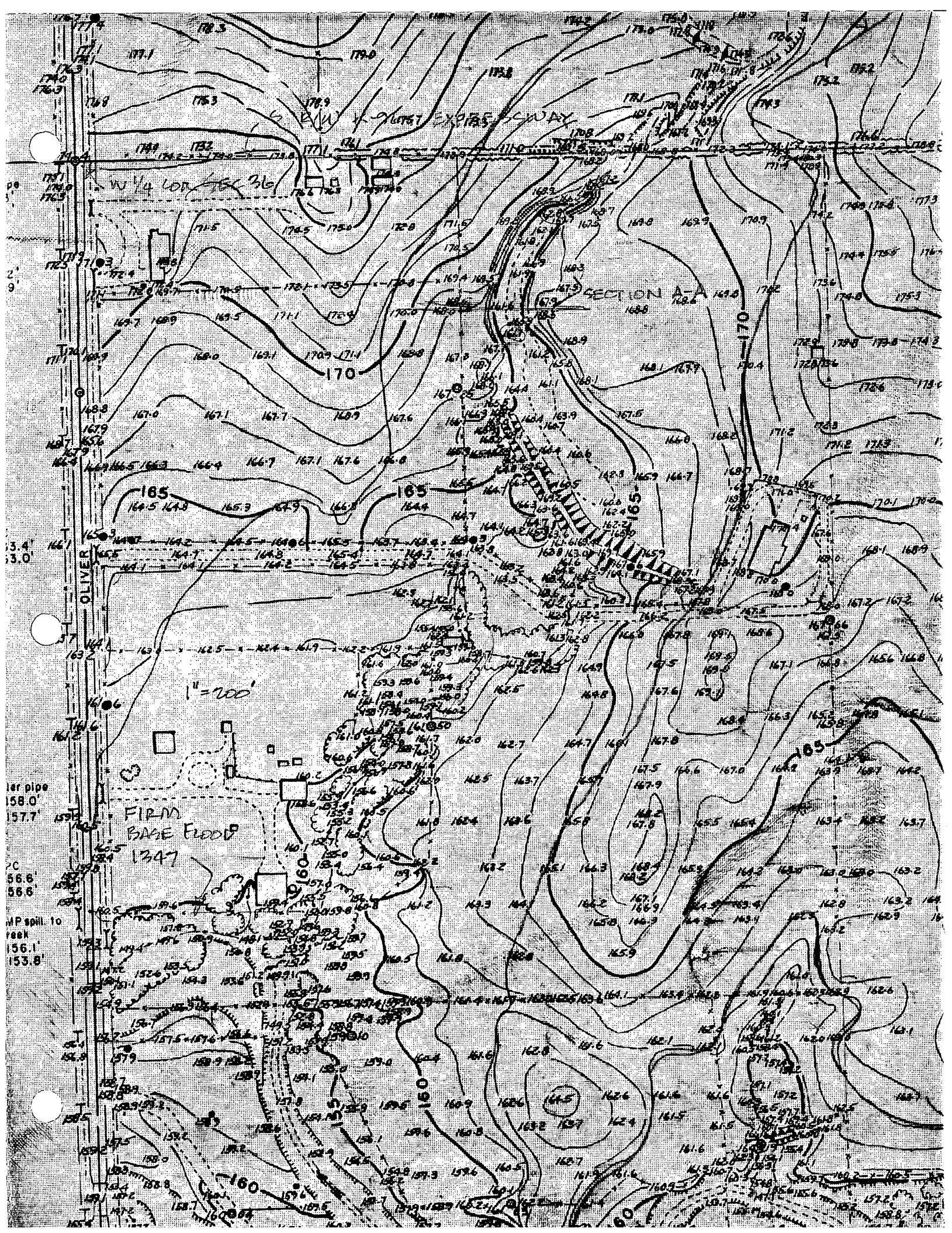
Please advise us as soon as possible if this is not satisfactory.

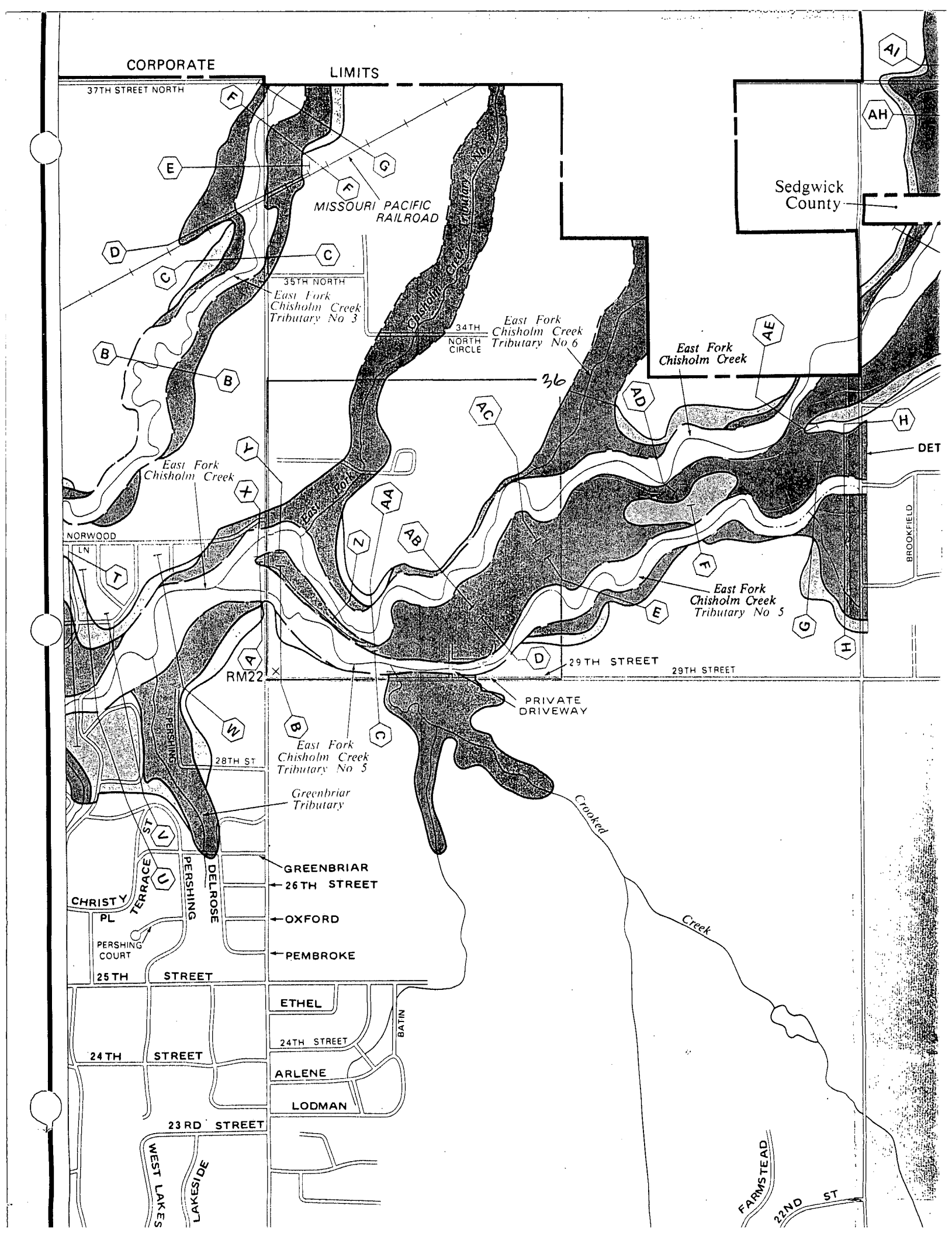
Yours Truly,
Poe and Associates of Kansas, Inc.

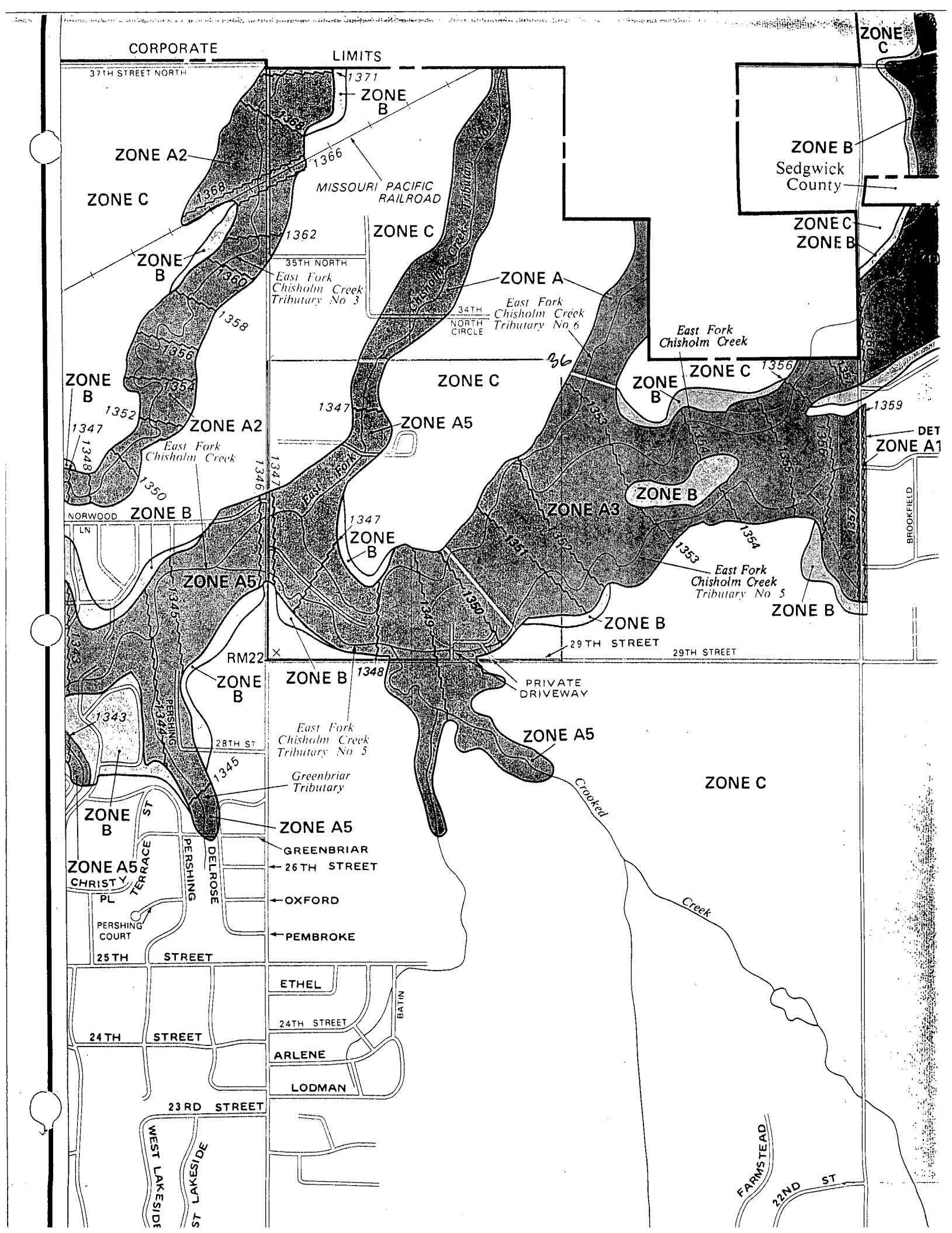
Kenny E. Hill

Kenny E. Hill, P.E.
Project Manager

cc: Ken Rix
Encl.


SECTION A-A
1" = 200'
FIRM
BASE FLOOD
1347
OLIVER


CORPORATE LIMITS
37TH STREET NORTH
MISSOURI PACIFIC RAILROAD
Sedgwick County
35TH NORTH
East Fork Chisholm Creek Tributary No 3
Chisholm Creek Tributary No 7
34TH NORTH CIRCLE
East Fork Chisholm Creek Tributary No 6
East Fork Chisholm Creek
36
East Fork Chisholm Creek
East Fork Chisholm Creek Tributary No 5
NORWOOD
BROOKFIELD
RM22
29TH STREET
PRIVATE DRIVEWAY
East Fork Chisholm Creek Tributary No 5
28TH ST
Greenbriar Tributary
PERSHING
TERRACE
DELROSE
GREENBRIAR
26TH STREET
OXFORD
PEMBROKE
CHRISTY PL
PERSHING COURT
25TH STREET
ETHEL
24TH STREET
ARLENE
LODMAN
23RD STREET
BATIN
WEST LAKESIDE
Crooked Creek
FARMSTEAD
22ND ST


CORPORATE LIMITS
37TH STREET NORTH
ZONE C
1371
ZONE B
1368
ZONE A2
1366
MISSOURI PACIFIC RAILROAD
ZONE C
1368
1362
ZONE C
ZONE B
35TH NORTH
East Fork Chisholm Creek Tributary No 3
1360
1358
1356
ZONE A
Chisholm Creek Tributary No 6
34TH NORTH CIRCLE
East Fork Chisholm Creek Tributary No 6
ZONE B
ZONE C
1354
1352
1347
ZONE A2
1348
East Fork Chisholm Creek
1350
1346
ZONE C
1347
ZONE A5
East Fork
NORWOOD
ZONE B
LN
1347
ZONE B
ZONE A5
1345
1343
RM22
ZONE B
1348
ZONE B
PRIVATE DRIVEWAY
ZONE A5
1343
PERSHING
1344
28TH ST
East Fork Chisholm Creek Tributary No 5
1345
Greenbriar Tributary
ZONE B
ST
ZONE A5
GREENBRIAR
ZONE A5
CHRISTY PL
TERRACE
PERSHING
DELROSE
26TH STREET
OXFORD
PEMBROKE
PERSHING COURT
25TH STREET
ETHEL
24TH STREET
BATIN
24TH STREET
ARLENE
LODMAN
23RD STREET
WEST LAKESIDE
ST LAKESIDE
ZONE C
ZONE B
Sedgwick County
ZONE C
ZONE B
East Fork Chisholm Creek
ZONE C
1356
ZONE B
1359
DET
ZONE A1
BROOKFIELD
ZONE B
ZONE A3
1354
1353
East Fork Chisholm Creek Tributary No 5
ZONE B
ZONE B
29TH STREET
29TH STREET
ZONE C
Crooked
Creek
FARMSTEAD
22ND ST

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
EAST FORK CHISHOLM CREEK TRIBUTARY NO. 3								
A	0.35	107	352	5.6	1345.3	1345.3	1345.7	0.4
B	0.88	357	816	2.4	1354.3	1354.3	1354.9	0.6
C	1.29	180	328	6.0	1362.1	1362.1	1362.5	0.4
D	1.39	313	1123	1.8	1367.6	1367.6	1367.9	0.3
E	1.45	201	617	3.2	1367.7	1367.7	1368.1	0.4
F	1.53	193	640	3.1	1368.5	1368.5	1368.9	0.4
G	1.59	335	693	2.0	1369.7	1369.7	1370.3	0.6
EAST FORK CHISHOLM CREEK TRIBUTARY NO. 5								
A	400[2]	360	1940	1.1	1345.8	1345.5[3]	1345.9	0.4
B	600[2]	360	1916	1.2	1346.8	1346.0[3]	1346.4	0.4
C	1760[2]	205	911	2.5	1348.0	1346.5[3]	1346.8	0.3
D	2240[2]	116	496	4.6	1348.3	1347.2[3]	1347.4	0.2
E	3750[2]	185	735	2.0	1352.0	1351.0[3]	1351.5	0.5
F	5250[2]	115	379	3.9	1353.5	1352.3[3]	1352.4	0.1
G	7250[2]	150	473	3.1	1356.5	1355.4[3]	1356.4	1.0
H	7375[2]	150	504	2.9	1356.6	1355.7[3]	1356.7	1.0

[1]MILES ABOVE MOUTH
[2]FEET ABOVE MOUTH
[3]ELEVATIONS WITHOUT CONSIDERING OVERFLOW EFFECT FROM EAST FORK CHISHOLM CREEK

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF WICHITA, KS

(SEDGWICK CO.)

FLOODWAY DATA

EAST FORK CHISHOLM CREEK TRIBUTARY NO. 3
EAST FORK CHISHOLM CREEK TRIBUTARY NO. 5

TABLE 3 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
CENTER DRAIN TRIBUTARY					
at confluence with Wichita Drainage Canal	3.12	1,430	2,500	2,950	4,250
CENTER DRAIN EAST TRIBUTARY					
mouth at Storm Water Management Basin	2.1	840	1,330	1,560	2,080
EAST FORK CHISHOLM CREEK					
at confluence with Wichita Drainage Canal	13.8	3,250	5,580	6,540	9,420
upstream of confluence of East Fork Chisholm Creek Tributary No. 5	6.3	2,240	3,310	3,740	5,850
at 45th Street	1.6	860	1,270	1,545	2,240
EAST FORK CHISHOLM CREEK TRIBUTARY NO. 3					
at mouth	1.0	890	1,610	1,970	3,000
EAST FORK CHISHOLM CREEK TRIBUTARY NO. 5					
downstream of Woodlawn Avenue	2.7	800	1,180	1,460	2,200
EAST FORK CHISHOLM CREEK TRIBUTARY NO. 7					
at mouth	0.6	720	1,300	1,580	2,400
MIDDLE FORK CHISHOLM CREEK					
at mouth	13.54	3,280	5,000	5,000	5,000
at 45th Street North	11.14	2,850	5,000	5,900	8,500

WEIRS

Enter up to 10 weirs.
Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
169.00	10.0	3.087	3.11
169.00	20.0	3.087	1.96
169.00	30.0	3.087	1.49
309.40	30.0	3.087	2.23
309.40	30.0	3.087	2.23
309.40	20.0	3.087	2.93
309.40	40.0	3.087	1.84
169.00	40.0	3.087	1.23
169.00	50.0	3.087	1.06
309.40	50.0	3.087	1.59

<Shift> <Prt Sc> print <Return> repeat <Space Bar> back to menu

NATURAL CHANNELS

VARIABLES LIST:
Y - FLOW ELEVATION Q - FLOWRATE S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Q (CFS) ? 169
S (FT/FT) ? .005

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	68	.03			
60	65	.03			
80	61.6	.03			
110	65	.03			
160	68	.03			

RESULTS
==========
Y= 64.01 FT
A= 42.84 SF
P= 35.84 FT
V= 3.94 FPS
F= 0.63 SUB-CRITICAL FLOW

<Shift> <Prt Sc> print <Return> repeat <Space Bar> back to menu

NATURAL CHANNELS

VARIABLES LIST:
Y - FLOW ELEVATION Q - FLOWRATE S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Q (CFS) ? 309.4
S (FT/FT) ? .005

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	68	.03			
60	65	.03			
80	61.6	.03			
110	65	.03			
160	68	.03			

RESULTS
==========
Y= 64.63 FT
A= 67.42 SF
P= 44.96 FT
V= 4.59 FPS
F= 0.66 SUB-CRITICAL FLOW

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