AUSTIN MILLER, P. A.

355 N Waco; Suite 200, Wichita, Kansas 67202 316.262.1281 fax: 316.262.6773 e-mail:dklassen@austinmiller.com

TRANSMITTAL

November 14, 2000

To: Vicki Huang, P.E.
City of Wichita
455 N. Main, 7th Floor
Wichita, KS 67202

RE: Replat of Part of K.T. Wiedemann Business Park

AM No: 99319

We transmit the following:

____ Bluelines	__X__ Photocopies	____ Legal Desc.
____ Originals	____ Shop Drawings	____ Application

# Copies	Dated	Description
2		Drainage Plan & Calcs

Remarks:

AUSTIN MILLER, P.A.

Doug Klassen, I.E.

JOB WIDEMANN BUSINESS PARK 2ND
SHEET NO. _____ OF _____
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

DRAINAGE CALCS:

SOIL GROUP D:

DA-1 = 7.17 Ac
DA-2 = 19.84 Ac
DA-3 = 0.55 Ac.

DA-1

$C_{5_{UN}} = 0.37$ $C_{5_{DEV}} = 0.69$ $Q_{5_{UN}} = (0.37)(4.56)(7.17) = 12.1$ cfs

$C_{100_{UN}} = 0.67$ $C_{100_{DEV}} = 0.80$ $Q_{100_{UN}} = (0.67)(7.37)(7.17) = 35.4$ cfs

$Q_{5_{DEV}} = (0.69)(4.56)(7.17) = 22.6$ cfs $Q_{100_{DEV}} = (0.80)(7.37)(7.17) = 42.3$ cfs

DA-2

$Q_{5_{UN}} = (0.37)(4.56)(19.84) = 33.5$ cfs $Q_{100_{UN}} = (0.67)(7.37)(19.84) = 98.0$ cfs

$Q_{5_{DEV}} = (0.69)(4.56)(19.84) = 62.4$ cfs $Q_{100_{DEV}} = (0.80)(7.37)(19.84) = 117$ cfs

TOTAL DRAINING TO POND: $Q_{5_{UN}} = 33.5 + 12.1 = 45.6$ cfs

$Q_{5_{DEV}} = 62.4 + 22.6 = 85$ cfs

$Q_{100_{UN}} = 98.0 + 35.4 = 133.4$ cfs = ALLOWABLE DISCHARGE

$Q_{100_{DEV}} = 117.0 + 42.3 = 159.3$ cfs = INFLOW TO POND

DA-3

$Q_{5_{UN}} = (0.37)(4.56)(0.55) = 0.9$ cfs $Q_{100_{UN}} = (0.67)(7.37)(0.55) = 2.7$ cfs

$Q_{5_{DEV}} = (0.69)(4.56)(0.55) = 1.7$ cfs $Q_{100_{DEV}} = (0.80)(7.37)(0.55) = 3.2$ cfs

Hydrograph Report

Hyd. No. 1

Wiedemann 1

Hydrograph type	= Rational	Peak discharge	= 159.14 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 27.01 ac	Runoff coeff.	= .8
Intensity	= 7.37 in/hr	Time of conc. (Tc)	= 15 min
I-D-F Curve	= WICHITA.IDF	Reced. limb factor	= 1

Total Volume = 143,230 cuft, 3.288 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
0.02	10.61
0.03	21.22
0.05	31.83
0.07	42.44
0.08	53.05
0.10	63.66
0.12	74.27
0.13	84.88
0.15	95.49
0.17	106.10
0.18	116.71
0.20	127.32
0.22	137.93
0.23	148.53
0.25	159.14 <<
0.27	148.53
0.28	137.93
0.30	127.32
0.32	116.71
0.33	106.10
0.35	95.49
0.37	84.88
0.38	74.27
0.40	63.66
0.42	53.05
0.43	42.44
0.45	31.83
0.47	21.22
0.48	10.61

...End

Hydrograph Report

Hyd. No. 2

route 1

Hydrograph type	= Reservoir	Peak discharge	= 89.10 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 1	Reservoir name	= Pond 2
Max. Elevation	= 1263.21 ft	Max. Storage	= 53,659 cuft

Storage Indication method used.

Total Volume = 143,230 cuft, 3.288 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
0.02	10.61	1260.02	2.53	-----	-----	-----	-----	-----	2.52
0.03	21.22	1260.06	8.90	-----	-----	-----	-----	-----	8.90
0.05	31.83	1260.12	16.21	-----	-----	-----	-----	-----	16.21
0.07	42.44	1260.19	21.00	-----	-----	-----	-----	-----	21.00
0.08	53.05	1260.29	25.94	-----	-----	-----	-----	-----	25.94
0.10	63.66	1260.41	30.94	-----	-----	-----	-----	-----	30.94
0.12	74.27	1260.56	35.97	-----	-----	-----	-----	-----	35.97
0.13	84.88	1260.73	41.05	-----	-----	-----	-----	-----	41.05
0.15	95.49	1260.92	46.13	-----	-----	-----	-----	-----	46.13
0.17	106.10	1261.12	50.91	-----	-----	-----	-----	-----	50.91
0.18	116.71	1261.33	55.53	-----	-----	-----	-----	-----	55.53
0.20	127.32	1261.57	60.22	-----	-----	-----	-----	-----	60.22
0.22	137.93	1261.82	64.96	-----	-----	-----	-----	-----	64.96
0.23	148.53	1262.09	69.57	-----	-----	-----	-----	-----	69.57
0.25	159.14 <<	1262.36	73.92	-----	-----	-----	-----	-----	73.92
0.27	148.53	1262.61	77.82	-----	-----	-----	-----	-----	77.82
0.28	137.93	1262.82	80.88	-----	-----	-----	-----	-----	80.88
0.30	127.32	1262.99	83.08	-----	-----	-----	-----	-----	83.08
0.32	116.71	1263.10	86.15	-----	-----	-----	-----	-----	86.15
0.33	106.10	1263.17	88.06	-----	-----	-----	-----	-----	88.06
0.35	95.49	1263.21	89.01	-----	-----	-----	-----	-----	89.01
0.37	84.88	1263.21 <<	89.10	-----	-----	-----	-----	-----	89.10 <<
0.38	74.27	1263.19	88.39	-----	-----	-----	-----	-----	88.39
0.40	63.66	1263.13	86.92	-----	-----	-----	-----	-----	86.92
0.42	53.05	1263.05	84.64	-----	-----	-----	-----	-----	84.64
0.43	42.44	1262.94	82.43	-----	-----	-----	-----	-----	82.43
0.45	31.83	1262.79	80.43	-----	-----	-----	-----	-----	80.43
0.47	21.22	1262.62	77.90	-----	-----	-----	-----	-----	77.90
0.48	10.61	1262.42	74.89	-----	-----	-----	-----	-----	74.89
0.50	0.00	1262.20	71.37	-----	-----	-----	-----	-----	71.37
0.52	0.00	1261.97	67.51	-----	-----	-----	-----	-----	67.51
0.53	0.00	1261.73	63.27	-----	-----	-----	-----	-----	63.27
0.55	0.00	1261.51	59.05	-----	-----	-----	-----	-----	59.05
0.57	0.00	1261.30	54.82	-----	-----	-----	-----	-----	54.82
0.58	0.00	1261.10	50.58	-----	-----	-----	-----	-----	50.58
0.60	0.00	1260.92	46.13	-----	-----	-----	-----	-----	46.13
0.62	0.00	1260.74	41.36	-----	-----	-----	-----	-----	41.36

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Hydrograph Discharge Table

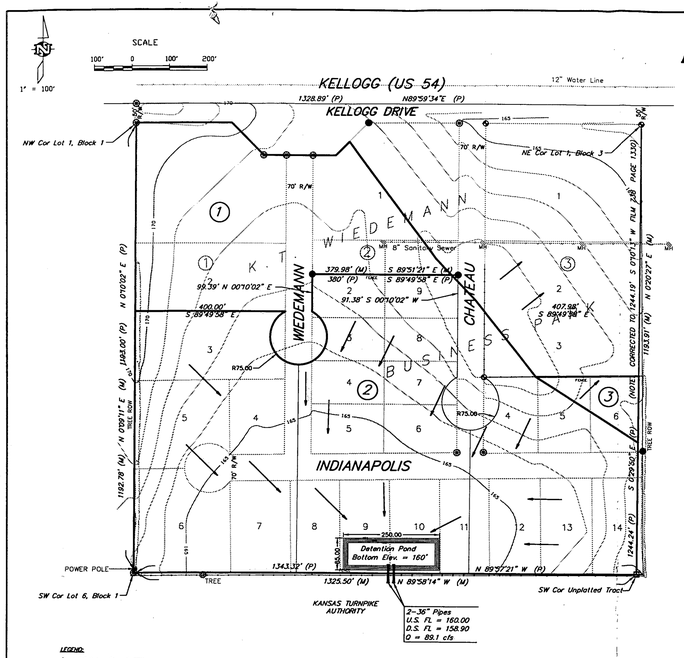
Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
0.63	0.00	1260.58	36.62	-----	-----	-----	-----	-----	36.61
0.65	0.00	1260.44	31.85	-----	-----	-----	-----	-----	31.84
0.67	0.00	1260.32	27.10	-----	-----	-----	-----	-----	27.10
0.68	0.00	1260.22	22.34	-----	-----	-----	-----	-----	22.34
0.70	0.00	1260.14	17.44	-----	-----	-----	-----	-----	17.44
0.72	0.00	1260.08	11.54	-----	-----	-----	-----	-----	11.54
0.73	0.00	1260.04	6.04	-----	-----	-----	-----	-----	6.05
0.75	0.00	1260.02	3.18	-----	-----	-----	-----	-----	3.17
0.77	0.00	1260.01	1.65	-----	-----	-----	-----	-----	1.66

...End

DRAINAGE PLAN FOR:

A REPLAT OF PART OF K.T. WIEDEMANN BUSINESS PARK

WICHITA, SEDGWICK COUNTY, KANSAS

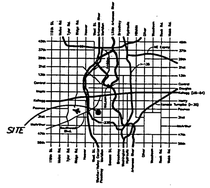


				Undeveloped		Developed	
Area #	Area	t_c	t_{100}	Q_5	Q_{100}	Q_5	Q_{100}
1	7.17	4.56	7.37	12.1	35.4	22.6	42.3
2	19.84	4.56	7.37	33.5	98.0	62.4	117.0
3	0.55	4.56	7.37	0.9	2.7	1.7	3.2
TOTAL	21.3	4.56	7.37	46.5	136.1	86.7	162.5

NOTES:
1. On-site detention will be required. Max. allowable Q100 = 133.4 cfs to South, Q100 = 2.7 to North.
2. Detention may be above or below ground. Final detention pond location and configuration shall be determined at time of development.
3. Approval for configuration of outlet pipe(s) shall be obtained by the Kansas Turnpike Assoc. prior to installation.

LEGEND:
- 1/2" Rebar (found) SRB
- 3/4" Iron (found)
- 1/2" Iron (found)
- 3/4" Iron (found) PEC
- Power Pole

(M) Measured
(P) Plotted



LOCATION MAP

REPLAT OF WIEDEMAN BUSINESS PARK
DATE PLAT PREPARED: 4/13/2000
FILENAME: 98297drainplan

AUSTIN MILLER P.A.
ENGINEERING SURVEYORS
200 N. Rock Suite 200 Wichita, KS 67202
316/262-1281 fax 316/262-2713

JOB WIDEMAN BUSINESS PARK 2ND
SHEET NO. _____ OF _____
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

DRAINAGE CALCS:

SOIL GROUP D:

DA-1 = 7.17 AC
DA-2 = 19.84 AC
DA-3 = 0.55 AC.

DA-1

$C_{5_{UN}} = 0.37$ $C_{5_{DEV}} = 0.69$ $Q_{5_{UN}} = (0.37)(4.56)(7.17) = 12.1$ cfs

$C_{100_{UN}} = 0.67$ $C_{100_{DEV}} = 0.80$ $Q_{100_{UN}} = (0.67)(7.37)(7.17) = 35.4$ cfs

$Q_{5_{DEV}} = (0.69)(4.56)(7.17) = 22.6$ cfs $Q_{100_{DEV}} = (0.80)(7.37)(7.17) = 42.3$ cfs

DA-2

$Q_{5_{UN}} = (0.37)(4.56)(19.84) = 33.5$ cfs $Q_{100_{UN}} = (0.67)(7.37)(19.84) = 98.0$ cfs

$Q_{5_{DEV}} = (0.69)(4.56)(19.84) = 62.4$ cfs $Q_{100_{DEV}} = (0.80)(7.37)(19.84) = 117$ cfs

TOTAL DRAINING TO POND: $Q_{5_{UN}} = 33.5 + 12.1 = 45.6$ cfs
$Q_{5_{DEV}} = 62.4 + 22.6 = 85$ cfs
$Q_{100_{UN}} = 98.0 + 35.4 = 133.4$ cfs = ALLOWABLE DISCHARGE
$Q_{100_{DEV}} = 117.0 + 42.3 = 159.3$ cfs = INFLOW TO POND

DA-3

$Q_{5_{UN}} = (0.37)(4.56)(0.55) = 0.9$ cfs $Q_{100_{UN}} = (0.67)(7.37)(0.55) = 2.7$ cfs

$Q_{5_{DEV}} = (0.69)(4.56)(0.55) = 1.7$ cfs $Q_{100_{DEV}} = (0.80)(7.37)(0.55) = 3.2$ cfs

Hydrograph Report

Hyd. No. 1

Wiedemann 1

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I-D-F Curve	= WICHITA.IDF	Reced. limb factor	= 1

Total Volume = 143,230 cuft, 3.288 acft

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0.05	31.83
0.07	42.44
0.08	53.05
0.10	63.66
0.12	74.27
0.13	84.88
0.15	95.49
0.17	106.10
0.18	116.71
0.20	127.32
0.22	137.93
0.23	148.53
0.25	159.14 <<
0.27	148.53
0.28	137.93
0.30	127.32
0.32	116.71
0.33	106.10
0.35	95.49
0.37	84.88
0.38	74.27
0.40	63.66
0.42	53.05
0.43	42.44
0.45	31.83
0.47	21.22
0.48	10.61

...End

Hydrograph Report

Hyd. No. 2

route 1

Hydrograph type	= Reservoir	Peak discharge	= 89.10 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 1	Reservoir name	= Pond 2
Max. Elevation	= 1263.21 ft	Max. Storage	= 53,659 cuft

Storage Indication method used.

Total Volume = 143,230 cuft, 3.288 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
0.02	10.61	1260.02	2.53	-----	-----	-----	-----	-----	2.52
0.03	21.22	1260.06	8.90	-----	-----	-----	-----	-----	8.90
0.05	31.83	1260.12	16.21	-----	-----	-----	-----	-----	16.21
0.07	42.44	1260.19	21.00	-----	-----	-----	-----	-----	21.00
0.08	53.05	1260.29	25.94	-----	-----	-----	-----	-----	25.94
0.10	63.66	1260.41	30.94	-----	-----	-----	-----	-----	30.94
0.12	74.27	1260.56	35.97	-----	-----	-----	-----	-----	35.97
0.13	84.88	1260.73	41.05	-----	-----	-----	-----	-----	41.05
0.15	95.49	1260.92	46.13	-----	-----	-----	-----	-----	46.13
0.17	106.10	1261.12	50.91	-----	-----	-----	-----	-----	50.91
0.18	116.71	1261.33	55.53	-----	-----	-----	-----	-----	55.53
0.20	127.32	1261.57	60.22	-----	-----	-----	-----	-----	60.22
0.22	137.93	1261.82	64.96	-----	-----	-----	-----	-----	64.96
0.23	148.53	1262.09	69.57	-----	-----	-----	-----	-----	69.57
0.25	159.14 <<	1262.36	73.92	-----	-----	-----	-----	-----	73.92
0.27	148.53	1262.61	77.82	-----	-----	-----	-----	-----	77.82
0.28	137.93	1262.82	80.88	-----	-----	-----	-----	-----	80.88
0.30	127.32	1262.99	83.08	-----	-----	-----	-----	-----	83.08
0.32	116.71	1263.10	86.15	-----	-----	-----	-----	-----	86.15
0.33	106.10	1263.17	88.06	-----	-----	-----	-----	-----	88.06
0.35	95.49	1263.21	89.01	-----	-----	-----	-----	-----	89.01
0.37	84.88	1263.21 <<	89.10	-----	-----	-----	-----	-----	89.10 <<
0.38	74.27	1263.19	88.39	-----	-----	-----	-----	-----	88.39
0.40	63.66	1263.13	86.92	-----	-----	-----	-----	-----	86.92
0.42	53.05	1263.05	84.64	-----	-----	-----	-----	-----	84.64
0.43	42.44	1262.94	82.43	-----	-----	-----	-----	-----	82.43
0.45	31.83	1262.79	80.43	-----	-----	-----	-----	-----	80.43
0.47	21.22	1262.62	77.90	-----	-----	-----	-----	-----	77.90
0.48	10.61	1262.42	74.89	-----	-----	-----	-----	-----	74.89
0.50	0.00	1262.20	71.37	-----	-----	-----	-----	-----	71.37
0.52	0.00	1261.97	67.51	-----	-----	-----	-----	-----	67.51
0.53	0.00	1261.73	63.27	-----	-----	-----	-----	-----	63.27
0.55	0.00	1261.51	59.05	-----	-----	-----	-----	-----	59.05
0.57	0.00	1261.30	54.82	-----	-----	-----	-----	-----	54.82
0.58	0.00	1261.10	50.58	-----	-----	-----	-----	-----	50.58
0.60	0.00	1260.92	46.13	-----	-----	-----	-----	-----	46.13
0.62	0.00	1260.74	41.36	-----	-----	-----	-----	-----	41.36

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
0.63	0.00	1260.58	36.62	-----	-----	-----	-----	-----	36.61
0.65	0.00	1260.44	31.85	-----	-----	-----	-----	-----	31.84
0.67	0.00	1260.32	27.10	-----	-----	-----	-----	-----	27.10
0.68	0.00	1260.22	22.34	-----	-----	-----	-----	-----	22.34
0.70	0.00	1260.14	17.44	-----	-----	-----	-----	-----	17.44
0.72	0.00	1260.08	11.54	-----	-----	-----	-----	-----	11.54
0.73	0.00	1260.04	6.04	-----	-----	-----	-----	-----	6.05
0.75	0.00	1260.02	3.18	-----	-----	-----	-----	-----	3.17
0.77	0.00	1260.01	1.65	-----	-----	-----	-----	-----	1.66

...End