

**PROFESSIONAL
ENGINEERING CONSULTANTS, PA**

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LETTER OF TRANSMITTAL

DATE	December 16, 1988	JOB NO.	30-8724B-220B
ATTENTION	Ms. Vicky Huang, P.E.		
RE:	Summerfield III		

TO Mr. Michael E. Lindebak, PE.
City Engineer
455 North Main
Wichita, KS 67202

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop drawings Prints Plans Samples Specifications
 Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
1	12.14.88		SWS calculations
1	12.14.88		SWS Cost Estimate
1	12.16.88		Revised Drainage Plan

THESE ARE TRANSMITTED as checked below:

- For approval Approved as submitted Resubmit _____ copies for approval
 For your use Approved as noted Submit _____ copies for distribution
 As requested Returned for corrections Return _____ corrected prints
 For review and comment _____
 FOR BIDS DUE _____ 19 _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS As requested, we have prepared necessary calculations
for a storm water sewer adjacent to the
"LC" parcel in summerfield III Addition. The cost
estimate was prepared assuming the discharge
at the Cowskin Creek, approximately 1200' east
of Moize Road.

Necessary petitions can be prepared based on the
enclosed estimate.

COPY TO Thurman Smith
File thru RWL

SIGNED: Charles Brown



Date 12.14.88 Page 1 of 5
 Project Summerfield III Commercial
 Item SWS Sizing for Petition

I HYDROLOGY

Use Rational Method $Q = CIA$

Determine "C"

<u>Node</u>	<u>Soil Type</u>	<u>Hyd. Group</u>	<u>Land Use</u>	<u>C₁₀₀</u>	<u>C₅</u>
1304	V _b	B	Neighborhood	0.80	0.69
1303	V _b	B	Business	0.80	0.69
1302	V _b	B	"	0.80	0.69
1301	V _b	B	50% "	0.78	0.66
1300	- End Section				

Determine "I"

Assume $t_c = 15$ minutes all nodes

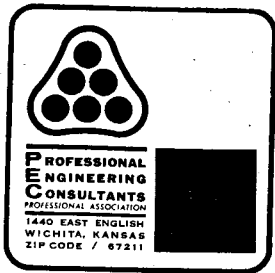
$\therefore I_{100} = 7.37$

$I_5 = 4.56$

Determine "A"

<u>Node</u>	<u>Plan. Units</u>	<u>Area SF</u>	<u>Area Ac.</u>
1304	11.04	110,400	2.53
1303	10.33	103,300	2.37
1302	20.06	200,600	4.61
1301	26.27	262,700	6.03

1300 - End Section



Date 12.14.88 Page 2 of 5
 Project Summerfield III Commercial
 Item SWS Sizing

Determine "Q₁₀₀"

<u>Node</u>	<u>C₁₀₀</u>	<u>I₁₀₀</u>	<u>A</u>	<u>Q₁₀₀</u>
1304	0.80	7.37	2.53	14.9
1303	0.80	7.37	2.37	14.0
1302	0.80	7.37	4.61	27.2
1301	0.78	7.37	6.03	34.7
1300	End Section			

Determine "Q₅"

<u>Node</u>	<u>C₅</u>	<u>I₅</u>	<u>A</u>	<u>Q₅</u>
1304	0.69	4.56	2.53	8.0
1303	0.69	4.56	2.37	7.5
1302	0.69	4.56	4.61	14.5
1301	0.66	4.56	6.03	18.1
1300	End Sec.			

100	i,	132.5000	1300	3	3	A			
110	t,	summerfield III addition							
120	t,	commercial tract							
130	t,	storm water sewer system 1300 analysis							
140	i,	1304	0.67	2.59	0.00	0.00	3.00	15.00	132.00
150	i,	1303	0.67	2.37	0.00	0.00	7.50	15.00	137.00
160	i,	1302	0.67	4.61	0.00	0.00	14.50	15.00	135.00
170	i,	1301	0.65	3.31	0.00	0.00	18.10	15.00	134.50
180	m,	1300	132.50						
190	p,	1304	1300	150.00	18	0.013	0.00	0.00	
200	p,	1303	1302	370.00	30	0.013	0.00	0.00	
210	p,	1302	1301	170.00	34	0.013	0.00	0.00	
220	p,	1301	1300	1200.00	48	0.013	0.00	0.00	
230	e,								

Input File: suacon

summerfield III addition
commercial tract
storm water sewer system 1300 analysis

Storm Frequency = 5-Year

* * * HYDROLOGY * * *

*****													*****							
Tributary Area													Hydrology Summation				Conduit Data			
*****													*****				*****			
Node to	C	Area	Slope	Length	TC(θ)	I(θ)	Q(θ)	TC	I	Q	Sum Q	Size	Velocity	Length	TT	TT+TC				
Node		(Ac)	(%)	(Ft)	(Min)	(In/Hr)	(CFS)	(Min)	(In/Hr)	(CFS)	(CFS)		(Ft/Sec)	(Ft)	(Min)	(Min)				
*****													*****				*****			
1304	1303	0.69	2.53	0.00	0.0	15.00	5.22	0.00	15.00	5.22	0.00	0.00	18"	4.53	150.00	0.55	15.55			
1303	1302	0.69	2.37	0.00	0.0	15.00	5.22	7.50	15.00	5.14	7.89	15.39	30"	3.14	370.00	1.97	17.52			
1302	1301	0.69	4.61	0.00	0.0	15.00	5.22	14.50	17.52	4.91	13.65	29.04	36"	4.11	170.00	0.69	18.21			
1301	1300	0.66	3.31	0.00	0.0	15.00	5.22	10.10	10.21	4.04	16.70	45.63	48"	3.65	1200.00	5.48	23.49			
*****													*****				*****			

Input File: sumcom

summerfield III addition
commercial tract
storm water/sewer system 1998 analysis

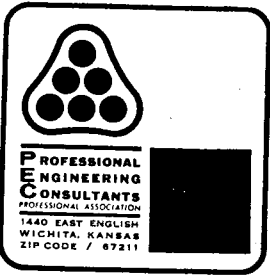
Storm Frequency = 5-Year

* * * HYDRAULICS * * *

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Node      Hyd-Slope  Friction   Bend      Transition  Manhole  Reflection  Junction  Total  Hyd-GI  Desired  Diff.
      (Ft/Ft)   (Ft)      (Ft)      (Ft)        (Ft)     (Ft)        (Ft)     (Ft)   Elevation  Elevation (Ft)
*****
1304      0.00530    0.5700    0.0000    0.0000      0.0000   0.0000     0.0000   0.9700  136.2567  138.0000  1.74
1303      0.00141    0.5212    0.0000    0.0331      0.0000   0.0000     0.1325   0.6849  135.3867  137.0000  1.61
1302      0.00170    0.3223    0.0000    0.0109      0.0000   0.0000     0.3774   0.7107  134.7518  135.8000  1.10
1301      0.00102    1.2213    0.0000    0.0111      0.0000   0.0000     0.1597   1.3911  132.9911  134.5000  0.51
1300      0.00000    0.0000    0.0000    0.0000      0.0000   0.0000     0.0000   0.0000  132.6000  132.6000  0.00
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Date 12.14.88 Page 1 of 1
 Project Summerfield III Commercial
 Item Cost Est. - SWS

<u>Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
1.	48" RCP	1200	LF	\$ 50.00	\$ 60,000
2.	36" RCP	170	LF	40.00	6,800
3.	30" RCP	370	LF	35.00	12,950
4.	18" RCP	150	LF	20.00	3,000
5.	Inlets	4	Eq	3000	12,000
6.*	Boring @ Mzize Rd.	100	LF	200.00	20,000
7.	Erosion Control	50	S.Y	40.00	2,000
8.	Seeding, Fert., Mulch	1	Ac.	1200.00	1,200
9.	R.O.W Clearing & Restoration along Maple	1	LS.	15000.00	15,000
				SUBTOTAL	\$ 132,950
				20%	26,590
				TOTAL	\$ 159,540
				USE	\$ 160,000

* Boring not required if SWS is constructed as a part of street improvements.