

October 28, 1982

Mr. R. W. Bruggeman, P.E.
Director of Engineering
City of Wichita
455 North Main
Wichita, Kansas 67202

Re: Northbrook Drainage

Dear Mr. Bruggeman:

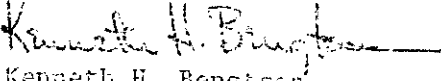
Enclosed herewith is a brief report on the hydrologic design considerations for Northbrook C.U.P. as requested in the Subdivision Committee meeting of the Metropolitan Area Planning Commission of September 30, 1982.

As stated in the report we will be following up with a detailed grading and drainage plan for Northbrook prior to submitting the final plat.

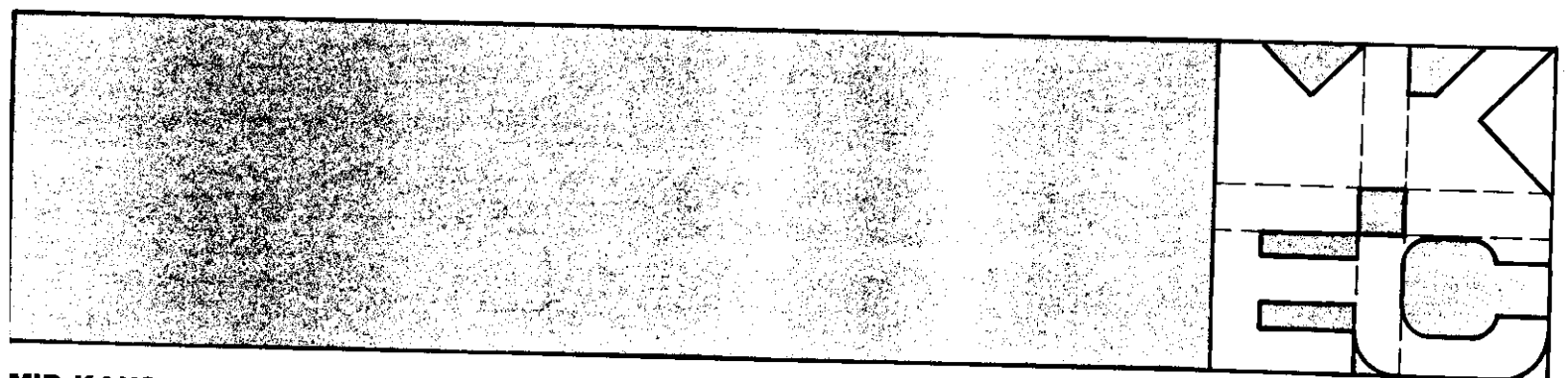
Should you or your staff have any questions regarding the enclosed material please feel free to call on us.

Very truly yours,

Mid-Kansas Engineering Consultants


Kenneth H. Bengtson
President

cc: Mike Lindebak
Chris Breitenstein



MID-KANSAS ENGINEERING CONSULTANTS PA
582-6561

260 N. ROCK ROAD SUITE 245
WICHITA, KANSAS 67206

HYDROLOGY STUDY FOR NORTHBROOK

The purpose of this study is to show the hydrologic impact of the east fork of Chisholm Creek on the planned development of Northbrook as illustrated in the approved C.U.P. and to set forth reasons for why a detention facility need not be constructed as part of the improvements guaranteed with the platting of the land encompassed by said C.U.P.

The routing of a flood through a detention reservoir changes the pattern of flow with time without changing the quantity of water. The purpose then is to reduce and delay the peak flow from any given storm event.

In a drainage basin such as illustrated in figure "A" a large percentage of the land remains undeveloped and in essence has a "natural" detention system built in because of farm ponds and undersized culverts under roads and railroad beds such as the MOPAC. As the basin develops, the most logical placement of detention facilities would be in the upper regions for drainage subbasins of one square mile or less. Otherwise, the size and cost of the detention facility becomes prohibitive. Also, if the policy of detention is practiced or required through the basin without extreme care, the net effect could be to actually increase the impact of a storm on the downstream user. A case in point would be Northbrook; any detention on such a small tract of land in relationship to the large contributing basin of which it is a part would only cause the peak discharge of Northbrook to be added to a rising flow for the entire basin.

Though we feel the material following adequately answers the hydrologic questions regarding Northbrook we would recommend that the following be done for the east fork of Chisholm Creek:

1. Detention be practiced in the upper regions of the subbasin for areas of less than one square mile.
2. That an area down stream of significant size be designated for a detention reservoir if any meaningful impact be established for this branch of Chisholm Creek.
3. That a study of the entire basin be considered for the final configuration and use of the flood prone areas.

Design Criteria for Northbrook:

The following criteria was used to establish the C.U.P. and preliminary plat for Northbrook:

1. FEMA Peak Discharge for 100-year storm event.
2. Existing flow quantity (and control structures) from the north would be unchanged.
3. No "detention" facilities would be constructed as a part of Northbrook.
4. Increased runoff from improvements with the Northbrook C.U.P. would be monitored by the existing or an improved structure under 37th Street North.

Scope:

Develop Water Surface Profile through the land proposed to be developed.

Develop rough grading plan for Northbrook

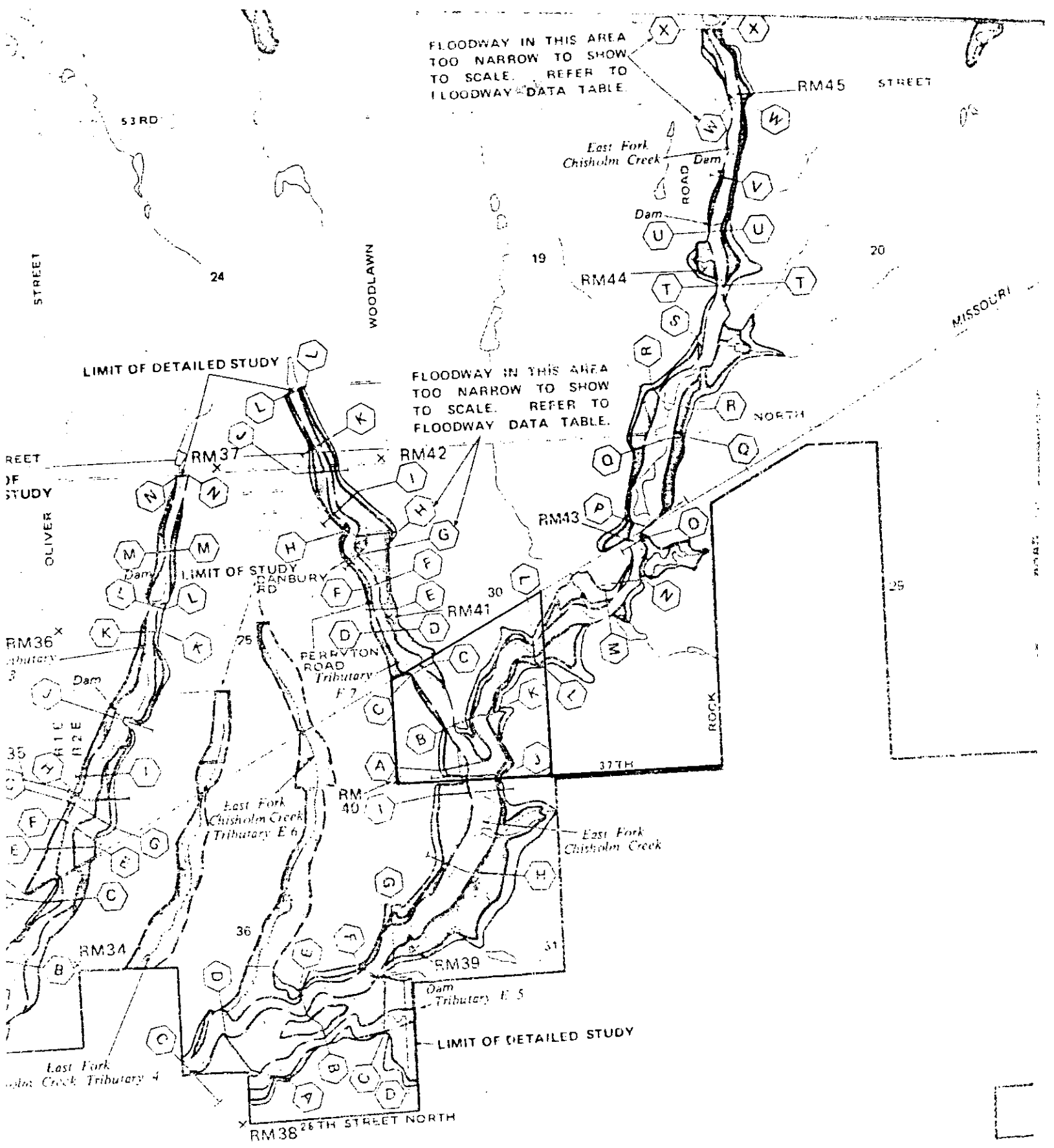
Discussion of Scope:

The water surface profile for the east branch of Chisholm Creek was developed using the HEC-2 Water Surface Profile computer program developed by the U.S. Army Corp of Engineers. The existing profile was made available to us through the Sedgwick County Department of Public Works and has been copied "as is" in appendix "A". We have also included a copy of the output data description for easy reference.

In early 1981 Mr. M.S. Mitchell plotted the regulatory flood on cross sections at various intervals through the proposed C.U.P. The improvements shown on the section reflect areas that can be cut and filled and still comply with federal regulations regarding the limitations of work within a flood plain and not changing the water surface profile by more than one foot.

The preliminary plat for Northbrook uses reserves and floodways to protect the regulatory floodways. A grading plan with pad elevations will be submitted with the final plat to be used as an administrative tool to guide future builders in establishing home sites and finished lot grades.

APPENDIX A



FLOODING SOURCE		FLOODWAY				BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (INGVD)	WITHOUT FLOODWAY (INGVD)	WITH FLOODWAY (INGVD)	INCREASE (FEET)	
EAST FORK CHISOLM CREEK									
A	8.98	1160	3351	1.8	1339.5	1339.5	1340.4	0.9	
B	9.13	1150	3710	1.6	1340.1	1340.1	1340.7	0.6	
C	10.67	180	767	4.9	1349.9	1349.9	1349.9	0.0	
D	10.90	292	1595	2.3	1351.9	1351.9	1352.1	0.2	
E	11.24	186	1088	3.2	1353.3	1353.3	1353.7	0.4	
F	11.56	242	1463	2.4	1354.7	1354.7	1355.2	0.5	
G	11.72	386	1391	2.5	1356.9	1356.9	1357.8	0.9	
H	12.02	472	2199	1.6	1359.9	1359.9	1360.5	0.6	
I	12.32	403	1781	1.9	1361.0	1361.0	1361.5	0.5	
J	12.38	399	2652	1.3	1362.1	1362.1	1362.6	0.5	
K	12.61	250	1681	1.6	1362.3	1362.3	1362.9	0.6	
L	12.97	147	864	3.3	1363.2	1363.2	1363.5	0.3	
M	13.31	87	543	5.1	1365.7	1365.7	1366.2	0.5	
N	13.43	168	959	2.9	1366.9	1366.9	1367.4	0.5	
O	13.60	117	613	4.5	1367.7	1367.7	1368.2	0.5	
P	13.69	475	4280	0.6	1376.2	1376.2	1376.7	0.5	
Q	13.99	504	3285	0.3	1376.2	1376.2	1376.7	0.5	
R	14.14	368	1843	0.5	1376.3	1376.3	1376.8	0.5	
S	14.29	187	638	1.5	1376.4	1376.4	1376.9	0.5	
T	14.62	61	156	6.1	1378.2	1378.2	1378.8	0.6	
U	14.82	151	401	2.4	1383.3	1383.3	1383.4	0.1	
V	15.00	133	366	2.6	1388.9	1388.9	1389.6	0.7	
W	15.28	54	115	8.3	1394.5	1394.5	1394.8	0.3	
X	15.53	80	131	7.3	1401.9	1401.9	1402.4	0.5	

¹MILES ABOVE MOUTH

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COUNTY OF SEDGWICK, KS
(UNINCORPORATED AREAS)

TABLE 3

FLOODWAY DATA

EAST FORK CHISHOLM CREEK

TABLE 2: SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS)		
		10-YEAR	50-YEAR	100-YEAR
			50-YEAR	100-YEAR
PARK CITY TRIBUTARY				
Interstate Highway 135	0.8	490	720	830
Above mouth of Tributary P2	0.2	320	460	540
TRIBUTARY P2				
At confluence with Park City Tributary	0.5	300	440	510
WEST FORK CHISHOLM CREEK				
At confluence with Chisholm Creek	8.3	2,710	4,930	6,040
MIDDLE FORK CHISHOLM CREEK				
Broadway	13.4	3,280	5,000	5,000
Above mouth of Tributary M1	11.7	2,990	5,280	6,190
53rd Street North	9.5	2,580	4,570	5,360
TRIBUTARY M1				
At confluence with Middle Fork Chisholm Creek	1.6	1,160	2,110	2,580
Hydraulic Avenue	1.1	950	1,740	2,120
EAST FORK CHISHOLM CREEK				
Below Cross Section D	6.2	1,820	3,200	3,740
Above Cross Section D	5.5	1,670	2,940	3,440
Above confluence with Tributary E7	4.0	1,350	2,370	2,770
45th Street North	1.6	460	810	950

TABLE 2: SUMMARY OF DISCHARGES (continued)

<u>FLOODING SOURCE AND LOCATION</u>	<u>DRAINAGE AREA</u> SQ MILES	<u>10-YEAR</u>	<u>PEAK DISCHARGES (CFS)</u>		
			<u>50-YEAR</u>	<u>100-YEAR</u>	
			<u>50-YEAR</u>	<u>100-YEAR</u>	<u>500-YEAR</u>
TRIBUTARY E1					
33rd Street North	1.4	1,110	2,010	2,460	3,700
Hillside Avenue	1.0	890	1,610	1,970	3,000
TRIBUTARY E3					
At confluence with East Fork Chisholm Creek	1.0	890	1,610	1,970	3,000
37th Street North	0.5	610	1,120	1,360	2,100
TRIBUTARY E5					
At confluence with East Fork Chisholm Creek	3.0	1,110	1,940	2,280	3,340
TRIBUTARY E7					
At confluence with East Fork Chisholm Creek	0.6	720	1,300	1,580	2,400
Perryton Street	0.4	600	1,090	1,320	2,000
MIDDLE BRANCH GYPSUM CREEK					
City of Wichita corporate limits	3.2	1,690	3,070	3,750	5,700
FOURMILE CREEK					
County line	12.6	3,380	5,100	5,920	7,900
Above mouth of Brookhaven Creek	8.4	2,370	3,540	4,100	5,400
Above mouth of West Fork Fourmile Creek	2.2	940	1,410	1,630	2,180

LINE NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL OF GROUND	DISCHARGE SCFS <	CWSEL	TQ	EG	TOPWID	STENCL	STENCR	*SEK
11.79	62.00	0.0	0.0	1348.60	3440.00	1359.42	1606.31	1359.48	563.60	0.0	0.0	0.0
11.79	62.00	0.0	0.0	1348.60	3440.00	1360.06	1661.14	1360.12	321.95	10342.73	10670.00	1359.42
11.79	62.00	0.0	0.0	1348.60	3440.00	1360.32	1681.07	1360.39	283.86	10381.93	10670.00	1359.42
11.79	62.00	0.0	0.0	1348.60	3440.00	1360.63	1721.95	1360.70	256.93	10410.07	10670.00	1359.42
12.02	1230.00	0.0	0.0	1348.40	3440.00	1359.92	1922.02	1359.96	983.68	0.0	0.0	0.0
12.02	1230.00	0.0	0.0	1348.40	3440.00	1360.53	1961.50	1360.57	471.62	9803.38	10275.00	1359.92
12.02	1230.00	0.0	0.0	1348.40	3440.00	1360.79	1981.51	1360.83	395.10	9879.90	10275.00	1359.92
12.02	1230.00	0.0	0.0	1348.40	3440.00	1361.08	2014.33	1361.13	338.12	9936.88	10275.00	1359.92
12.12	520.00	0.0	0.0	1349.60	3440.00	1360.12	1232.29	1360.22	786.51	0.0	0.0	0.0
12.12	520.00	0.0	0.0	1349.60	3440.00	1360.72	1244.44	1360.83	214.73	10060.27	10275.00	1360.12
12.12	520.00	0.0	0.0	1349.60	3440.00	1360.97	1249.83	1361.09	150.00	10125.00	10275.00	1360.12
12.12	520.00	0.0	0.0	1349.60	3440.00	1361.26	1318.09	1361.36	150.00	10125.00	10275.00	1360.12
12.22	520.00	0.0	0.0	1350.80	3440.00	1360.60	931.81	1360.76	545.39	0.0	0.0	0.0
12.22	520.00	0.0	0.0	1350.80	3440.00	1361.17	1020.90	1361.32	150.00	10125.00	10275.00	1360.60
12.22	520.00	0.0	0.0	1350.80	3440.00	1361.41	1073.76	1361.55	150.00	10125.00	10275.00	1360.60
12.22	520.00	0.0	0.0	1350.80	3440.00	1361.65	1128.48	1361.78	150.00	10125.00	10275.00	1360.60
12.32	520.00	0.0	0.0	1351.70	3440.00	1361.00	1989.61	1361.07	938.70	0.0	0.0	0.0
12.32	520.00	0.0	0.0	1351.70	3440.00	1361.53	1997.48	1361.60	403.15	10128.00	10531.15	1361.00
12.32	520.00	0.0	0.0	1351.70	3440.00	1361.73	1999.63	1361.82	339.30	10128.00	10467.30	1361.00
12.32	520.00	0.0	0.0	1351.70	3440.00	1361.95	2006.11	1362.04	305.39	10128.00	10433.39	1361.00
12.35	191.00	0.0	0.0	1350.70	3440.00	1361.08	3308.25	1361.11	969.27	0.0	0.0	0.0
12.35	191.00	0.0	0.0	1350.70	3440.00	1361.62	3344.97	1361.65	695.20	10629.63	11324.82	1361.08
12.35	191.00	0.0	0.0	1350.70	3440.00	1361.84	3218.51	1361.87	608.12	10630.00	11238.13	1361.08
12.35	191.00	0.0	0.0	1350.70	3440.00	1362.06	3223.27	1362.09	536.54	10630.00	11166.54	1361.08
12.35	90.00	0.0	0.0	1350.70	3440.00	1362.12	4763.08	1362.13	1183.77	0.0	0.0	0.0
12.35	90.00	0.0	0.0	1350.70	3440.00	1362.65	4808.64	1362.67	750.89	10620.78	11371.68	1362.12
12.35	90.00	0.0	0.0	1350.70	3440.00	1362.88	4654.12	1362.89	705.25	10630.00	11335.25	1362.12
12.35	90.00	0.0	0.0	1350.70	3440.00	1363.09	4663.70	1363.11	643.49	10630.00	11273.49	1362.12
12.38	44.00	0.0	0.0	1351.00	3440.00	1362.11	2727.58	1362.14	597.91	0.0	0.0	0.0
12.38	44.00	0.0	0.0	1351.00	3440.00	1362.65	2730.02	1362.68	398.61	10243.00	10641.61	1362.11
12.38	44.00	0.0	0.0	1351.00	3440.00	1362.87	2738.27	1362.91	371.46	10243.00	10614.46	1362.11
12.38	44.00	0.0	0.0	1351.00	3440.00	1363.09	2742.76	1363.13	346.54	10243.00	10589.54	1362.11
12.43	280.00	0.0	0.0	1352.30	2770.00	1362.17	2360.28	1362.19	1126.37	0.0	0.0	0.0
12.43	280.00	0.0	0.0	1352.30	2770.00	1362.70	2378.69	1362.72	371.71	10000.00	10377.96	1362.17
12.43	280.00	0.0	0.0	1352.30	2770.00	1362.93	2387.19	1362.95	324.46	10000.00	10330.46	1362.17
12.43	280.00	0.0	0.0	1352.30	2770.00	1363.14	2395.98	1363.17	291.55	10000.00	10297.30	1362.17
12.61	950.00	0.0	0.0	1353.00	2770.00	1362.34	1555.95	1362.39	438.04	0.0	0.0	0.0
12.61	950.00	0.0	0.0	1353.00	2770.00	1362.86	1764.72	1362.90	250.00	10200.00	10450.00	1362.34
12.61	950.00	0.0	0.0	1353.00	2770.00	1363.07	1857.73	1363.11	250.00	10200.00	10450.00	1362.34
12.61	950.00	0.0	0.0	1353.00	2770.00	1363.29	1951.74	1363.33	250.00	10200.00	10450.00	1362.34

H

I

J

K

MIN Elev 1348.4 @ 10.13 S

MIN Elev 1351.70 @ 10.20 B
323.15 RT 80' LT

MIN Elev 1351.0 @ 10.29 C
345.61 RT 53' LT

MIN Elev 1353.0 @ 10.26 D
346.16 RT 23' LT

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN FL GROUND	DISCHARGE %CFS	CWSEL	TQ	EG	TOPWID	STENCIL	STENC	#SELK
L	12.97	1900.00	0.0	1352.80	2770.00	1362.17	877.53	1363.30	277.80	0.0	0.0	0.0
	12.97	1900.00	0.0	1352.80	2770.00	1363.55	843.35	1363.72	147.18	10287.82	10435.00	1363.17 Min 1352.80 @ 10.409
	12.97	1900.00	0.0	1352.80	2770.00	1363.70	849.81	1363.88	137.13	10297.68	10435.00	1363.17 25' RT 121.19 Lt
	12.97	1900.00	0.0	1352.80	2770.00	1363.87	834.96	1364.06	125.71	10309.29	10435.00	1363.17
M	13.31	1800.00	0.0	1356.90	2770.00	1365.70	518.07	1366.02	248.73	0.0	0.0	0.0
	13.31	1800.00	0.0	1356.90	2770.00	1366.16	523.07	1366.57	86.80	10232.88	10319.68	1365.70 Min 1356.90 @ 10.291
	13.31	1800.00	0.0	1356.90	2770.00	1366.34	509.54	1366.77	86.98	10236.96	10317.94	1365.70 23.69 RT 58.12 Lt
	13.31	1800.00	0.0	1356.90	2770.00	1366.56	512.45	1367.00	76.08	10240.79	10316.88	1365.70
N	13.43	630.00	0.0	1358.70	2770.00	1366.86	914.37	1366.95	302.61	182.50	0.0	0.0
	13.43	630.00	0.0	1358.70	2770.00	1367.37	915.73	1367.50	168.29	10064.00	10246.50	0.0 Min 1358.70 @ 10.190
	13.43	630.00	0.0	1358.70	2770.00	1367.58	913.72	1367.72	156.71	10064.00	10233.75	1366.86 56.5' RT 121' Lt
	13.43	630.00	0.0	1358.70	2770.00	1367.80	916.09	1367.95	146.32	10064.00	10233.33	1366.86
O	13.60	900.00	0.0	1359.40	2770.00	1367.71	558.97	1368.01	191.55	0.0	0.0	0.0
	13.60	900.00	0.0	1359.40	2770.00	1368.22	570.05	1368.57	116.80	10257.69	10374.49	0.0 Min 1359.40 @ 10.230
	13.60	900.00	0.0	1359.40	2770.00	1368.44	564.99	1368.81	108.73	10262.21	10370.94	1367.71 51.99 RT 62.31 Lt
	13.60	900.00	0.0	1359.40	2770.00	1368.65	567.95	1369.04	101.65	10265.80	10367.46	1367.71
P	13.61	36.00	0.0	1360.30	2770.00	1367.75	383.48	1368.21	173.59	0.0	0.0	0.0
	13.61	36.00	0.0	1360.30	2770.00	1368.23	381.60	1368.80	105.48	10236.88	10342.36	1367.75
	13.61	36.00	0.0	1360.30	2770.00	1368.45	384.88	1369.04	96.36	10242.51	10338.87	1367.75
	13.61	36.00	0.0	1360.30	2770.00	1368.66	385.54	1369.28	88.60	10247.00	10335.60	1367.75
Q	13.61	20.00	0.0	1360.30	2770.00	1376.17	6234.41	1376.18	1295.05	0.0	0.0	0.0
	13.61	20.00	0.0	1360.30	2770.00	1376.65	6223.83	1376.66	633.13	9851.50	10484.63	1376.17
	13.61	20.00	0.0	1360.30	2770.00	1376.87	6247.07	1376.88	575.91	9880.04	10455.27	1376.17
	13.61	20.00	0.0	1360.30	2770.00	1377.08	6244.16	1377.08	530.34	9903.59	10433.93	1376.17
R	13.61	9.00	0.0	1363.80	2770.00	1376.17	6228.23	1376.18	1294.32	0.0	0.0	0.0
	13.61	9.00	0.0	1363.80	2770.00	1376.65	6217.49	1376.66	631.46	9852.29	10483.75	1376.17
	13.61	9.00	0.0	1363.80	2770.00	1376.87	6241.48	1376.88	574.55	9880.71	10455.27	1376.17
	13.61	9.00	0.0	1363.80	2770.00	1377.08	6232.77	1377.09	529.17	9904.18	10433.35	1376.17
S	13.69	400.00	0.0	1363.80	2770.00	1376.18	5382.54	1376.18	839.12	0.0	0.0	0.0
	13.69	400.00	0.0	1363.80	2770.00	1376.65	5352.44	1376.66	474.89	9968.87	10443.76	0.0 Min Elev @ 16.380
	13.69	400.00	0.0	1363.80	2770.00	1376.88	5362.89	1376.88	440.47	9985.71	10426.19	1376.18
	13.69	400.00	0.0	1363.80	2770.00	1377.08	5312.02	1377.09	418.27	10001.73	10420.00	1376.18 63.76 RT 411.19 Lt
T	13.71	110.00	0.0	1366.50	2770.00	1376.17	3173.69	1376.19	775.44	0.0	0.0	0.0
	13.71	110.00	0.0	1366.50	2770.00	1376.65	3154.48	1376.67	406.30	9944.40	10350.70	1376.17
	13.71	110.00	0.0	1366.50	2770.00	1376.87	3168.50	1376.89	372.11	9958.47	10330.58	1376.17
	13.71	110.00	0.0	1366.50	2770.00	1377.07	3163.63	1377.10	346.88	9970.38	10317.26	1376.17
U	13.99	1480.00	0.0	1364.90	950.00	1376.23	3517.58	1376.23	834.29	0.0	0.0	0.0
	13.99	1480.00	0.0	1364.90	950.00	1376.72	3501.99	1376.72	503.89	10074.89	10578.78	1376.23
	13.99	1480.00	0.0	1364.90	950.00	1376.94	3517.41	1376.94	460.05	10097.37	10557.42	1376.23
	13.99	1480.00	0.0	1364.90	950.00	1377.14	3525.79	1377.15	428.79	10110.24	10539.04	1376.23 276.76 Lt 227.11 Lt

GR	1340.400	10185.000	1349.400	10215.000	1350.400	10225.000	1352.400	10140.000	1351.100	10150.000
GR	1354.400	10265.000	1356.400	10275.000	1357.400	10300.000	1358.400	10240.000	1353.400	10255.000
GR	1360.400	10370.000	1361.400	10420.000	1362.400	10475.000	1363.400	10315.000	1359.400	10320.000
GR	1365.400	10545.000	1366.400	10625.000	1367.400	10695.000	0.0	10495.000	1364.400	10515.000
X1	12.120	0.0	0.0	0.9	490.000	430.000	520.000	0.0	1.200	0.0
X1	12.220	0.0	0.0	0.0	490.000	430.000	520.000	0.0	1.200	0.0
NC	0.045	0.045	0.035	0.300	0.500	0.0	0.0	0.0	0.0	0.0
X1	12.320	29.000	10128.000	10249.000	490.000	430.000	520.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	1367.400	9620.000	1366.400	9690.000	1365.400	9750.000	1364.400	9780.000	1363.400	9900.000
GR	1362.500	9950.000	1362.500	10000.000	1361.700	10100.000	1360.900	10128.000	1356.000	10155.000
GR	1355.500	10170.000	1351.800	10178.000	1351.100	10208.000	1350.200	10233.000	1360.400	10249.000
GR	1360.500	10264.000	1357.900	10284.000	1357.600	10438.000	1359.600	10522.000	1359.600	10700.000
GR	1359.600	11000.000	1360.400	11040.000	1361.400	11080.000	1362.400	11115.000	1363.400	11180.000
GR	1364.400	11250.000	1365.400	11320.000	1366.400	11370.000	1367.400	11420.000	0.0	0.0
X1	12.353	17.000	10630.000	10679.000	191.000	191.000	191.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	1366.400	10072.000	1365.400	10142.000	1364.400	10202.000	1363.400	10232.000	1359.100	10352.000
GR	1361.500	10402.000	1361.100	10552.000	1359.900	10580.000	1356.600	10607.000	1354.500	10622.000
GR	1350.700	10630.000	1350.700	10679.000	1356.900	10701.000	1355.600	10890.000	1358.200	10974.000
GR	1358.600	11452.000	1370.000	11772.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	1.250	1.600	2.700	0.0	32.000	10.000	252.000	1.020	0.0	0.0
X1	12.355	0.0	0.0	0.0	90.000	90.000	90.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	1359.000	1359.300	0.0	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	16.000	10072.000	1366.400	0.0	10142.000	1365.400	0.0	1359.300	1360.000	0.0
GR	10232.000	1363.400	0.0	10352.000	1362.400	0.0	10402.000	10202.000	1364.400	0.0
GR	1361.100	0.0	0.0	1359.900	0.0	10607.000	1359.300	1361.500	0.0	10552.000
GR	0.0	10630.000	1360.000	0.0	10679.000	1360.000	0.0	10701.000	1360.600	1359.600
GR	10890.000	1352.500	0.0	10974.000	1363.300	0.0	11452.000	1369.000	0.0	0.0
GR	0.055	0.060	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	12.380	33.000	10243.000	10326.000	44.000	44.000	44.000	0.0	0.0	0.0
GR	1368.400	9490.000	1367.400	9520.000	1366.400	9590.000	1365.400	9740.000	1364.400	9840.000
GR	1354.400	10000.000	1363.200	10100.000	1361.500	10200.000	1360.300	10243.000	1352.900	10263.000
GR	1351.000	10296.000	1352.100	10314.000	1357.400	10326.000	1355.700	10436.000	1356.900	10486.000
GR	1356.900	10695.000	1359.600	10709.000	1360.200	10740.000	1362.900	10770.000	1363.600	10800.000
GR	1364.600	11009.000	1364.700	11060.000	1364.900	11120.000	1365.500	11171.000	1366.000	11296.000
GR	1365.500	11302.000	1365.500	11320.000	1366.300	11417.000	1367.200	11425.000	1369.900	11520.000
GR	1370.700	11693.000	1373.300	11708.000	1374.200	11720.000	0.0	0.0	0.0	0.0
C	0.050	0.060	0.060	0.100	0.300	0.0	0.0	0.0	0.0	0.0
T	4.000	1350.000	2370.000	2770.000	4070.000	0.0	0.0	0.0	0.0	0.0
X1	12.430	21.000	10000.000	10207.000	290.000	260.000	280.000	0.0	0.0	0.0
GR	1373.400	9560.000	1372.400	9710.000	1370.400	9820.000	1369.400	9880.000	1368.400	9945.000
GR	1368.200	10000.000	1359.000	10015.000	1352.700	10018.000	1352.300	10045.000	1352.700	10074.000
GR	1354.100	10085.000	1353.500	10110.000	1352.300	10182.000	1359.900	10206.000	1359.900	10207.000
GR	1357.700	10211.000	1359.100	10330.000	1358.800	10430.000	1361.400	10515.000	1361.400	11080.000
GR	1367.400	11500.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.045	0.045	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0

GR	1354.200	10273.000	1353.500	10280.000	12100.000	1351.800	10200.000	1357.400	10230.000
GR	1354.900	10355.000	1356.600	10425.000	1362.000	10283.000	10286.000	1354.300	10289.000
NH	4.000	0.045	10300.000	0.050	10402.000	0.045	10530.000	1367.400	10650.000
							0.050	10890.000	0.0
X1	12.970	16.000	10402.000	10435.000	1400.000	1900.000	0.0	0.0	0.0
GR	1370.000	10030.000	1364.800	10100.000	1362.000	10200.000	10300.000	1356.300	10402.000
GR	1354.000	10405.000	1352.800	10409.000	1354.000	10412.000	10415.000	1356.800	10425.000
GR	1363.000	10435.000	1364.600	10443.000	1364.400	10530.000	10630.000	1366.600	10730.000
GR	1370.000	10890.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.050	0.050	0.055	0.0	0.0	0.0	0.0	0.0	0.0
X1	13.310	15.000	10286.000	10294.000	1620.000	1800.000	0.0	0.0	0.0
GR	1370.300	10000.000	1369.400	10095.000	1368.300	10180.000	10235.000	1359.200	10286.000
GR	1357.200	10289.000	1356.900	10291.000	1357.200	10292.000	10294.000	1358.600	10301.000
GR	1365.300	10340.000	1365.600	10395.000	1365.800	10495.000	10595.000	1370.000	10670.000
NC	0.040	0.050	0.045	0.0	0.0	0.0	0.0	0.0	0.0
X1	13.430	12.000	10064.000	10117.000	740.000	540.000	0.0	0.0	0.0
GR	1372.500	10000.000	1372.400	10054.000	1372.400	10064.000	10092.000	1359.900	10105.000
GR	1359.100	10108.000	1358.700	10109.000	1359.000	10110.000	10117.000	1361.900	10218.000
GR	1366.800	10380.000	1370.000	10510.000	0.0	0.0	0.0	0.0	0.0
NC	0.050	0.050	0.045	0.300	0.500	0.0	0.0	0.0	0.0
X1	13.600	18.000	10310.000	10340.000	630.000	570.000	0.0	0.0	0.0
GR	1374.400	9800.000	1373.400	9830.000	1372.400	9890.000	9960.000	1370.400	9980.000
GR	1369.600	10000.000	1368.600	10100.000	1367.700	10212.000	10257.000	1363.600	10310.000
GR	1361.300	10312.000	1359.400	10320.000	1360.600	10325.000	10340.000	1362.800	10373.000
GR	1369.300	10412.000	1371.600	10520.000	1373.000	10620.000	0.0	0.0	0.0
X1	13.609	19.000	10286.000	10295.000	36.000	36.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	1360.000	9200.000	1370.500	9970.000	1369.500	10070.000	10182.000	1365.200	10227.000
GR	1364.500	10280.000	1362.200	10292.000	1362.200	10286.000	10286.000	1360.300	10295.000
GR	1361.500	10295.000	1363.900	10310.000	1363.700	10343.000	10382.000	1372.500	10490.000
GR	1373.900	10590.000	1375.000	10680.000	1376.700	10850.000	0.0	0.0	0.0
58	0.0	1.500	2.500	9.000	9.000	0.0	0.0	0.0	0.0
X1	13.612	0.0	0.0	20.000	20.000	20.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	1375.100	1375.000	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3T	18.000	9200.000	1380.000	9970.000	1370.500	10070.000	10070.000	1375.000	10282.000
3T	10162.000	1375.000	1368.600	10227.000	1375.000	10280.000	10280.000	1364.500	10282.000
3T	1375.000	1352.200	10286.000	1375.000	1360.300	10286.000	10286.000	10295.000	10295.000
3T	1365.100	10295.000	1375.000	1360.300	10310.000	1375.000	10343.000	1375.000	1363.700
3T	10382.000	1375.000	1370.200	10490.000	1375.000	10590.000	1375.000	1373.900	10680.000
3T	1375.000	1375.000	10860.000	1379.900	1376.700	0.0	0.0	0.0	0.0
X1	13.612	0.0	0.0	9.000	9.000	9.000	0.0	0.0	0.0
X2	0.050	0.050	0.055	0.100	0.300	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3T	18.000	9200.000	1380.000	9970.000	1370.500	10070.000	10070.000	1375.000	10282.000
3T	10162.000	1375.000	1368.600	10227.000	1375.000	10280.000	10280.000	1364.500	10282.000
3T	1375.000	1352.200	10286.000	1375.000	1360.300	10286.000	10286.000	10295.000	10295.000
3T	1365.100	10295.000	1375.000	1360.300	10310.000	1375.000	10343.000	1375.000	1363.700
3T	10382.000	1375.000	1370.200	10490.000	1375.000	10590.000	1375.000	1373.900	10680.000
3T	1375.000	1375.000	10860.000	1379.900	1376.700	0.0	0.0	0.0	0.0
X1	13.612	0.0	0.0	9.000	9.000	9.000	0.0	0.0	0.0
X2	0.050	0.050	0.055	0.100	0.300	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3T	18.000	9200.000	1380.000	9970.000	1370.500	10070.000	10070.000	1375.000	10282.000
3T	10162.000	1375.000	1368.600	10227.000	1375.000	10280.000	10280.000	1364.500	10282.000
3T	1375.000	1352.200	10286.000	1375.000	1360.300	10286.000	10286.000	10295.000	10295.000
3T	1365.100	10295.000	1375.000	1360.300	10310.000	1375.000	10343.000	1375.000	1363.700
3T	10382.000	1375.000	1370.200	10490.000	1375.000	10590.000	1375.000	1373.900	10680.000
3T	1375.000	1375.000	10860.000	1379.900	1376.700	0.0	0.0	0.0	0.0
X1	13.690	14.000	10230.000	10420.000	40.000	300.000	400.000	0.0	0.0
X2	9680.000	1369.900	1370.000	10109.000	1367.900	1367.900	10200.000	1366.400	10230.000
X3	10237.000	1364.000	10260.000	1364.500	10272.000	1365.200	10284.000	1364.700	10300.000
X4	10380.000	1370.300	10420.000	1373.500	10500.000	1380.000	10340.000	1370.000	10300.000
X5	4.000	0.050	10000.000	0.040	10170.000	0.060	10700.000	0.0	0.0

EXHIBIT 9

OUTPUT DATA DESCRIPTION

A. All variables discussed below apply to the cross section identified by SECNO.

<u>Variable</u>	<u>Description</u>
*SECNO	Identifying cross section number. Equal to the number in first field of card X1.
*DEPTH	Depth of flow.
*CWSEL	Computed water surface elevation.
*CRIWS	Critical water surface elevation.
*WSELK	Known water surface elevation from high water mark.
*EG	Mean energy gradient elevation across the entire cross section which is equal to the computed water surface elevation CWSEL plus the mean velocity head HV.
*HV	Mean velocity head across the entire cross section.
*HL	Energy loss due to friction.
*OLOSS	Energy loss due to minor losses such as transition losses.
*Q	Total flow in the cross section.
*QLOB	Amount of flow in the left overbank.
*QCH	Amount of flow in the channel.
*QROB	Amount of flow in the right overbank.
ALOB	Cross section area of the left overbank.
*ACH	Cross section area of the channel.
AROB	Cross section area of the right overbank.

*Variables that can be printed in the summary.

<u>Variable</u>	<u>Description</u>
*VOL	Cumulative volume of water in the river since the first cross section.
TWA	Cumulative top width of the river since the first cross section.
*TIME	Travel time from the first cross section to the present cross section in hours.
VLOB	Mean velocity in the left overbank.
*VCH	Mean velocity in the channel.
VROB	Mean velocity in the right overbank.
**XNL	Manning's "n" for the left overbank area.
**XNCH	Manning's "n" for the channel area.
**XNR	Manning's "n" for the right overbank area.
**WTN	Weighted value of Manning's "n" for the channel based on the distance between cross sections and channel flow from the first cross section. Used when computing Manning's "n" from high water marks.
*ELMIN	Minimum elevation in the cross section.
*SLOPE	Slope of the energy grade line. (The summary printout value has been multiplied by 10,000.)
XLOBL	Distance in the left overbank between the previous cross section and the current cross section.
*XLCH	Distance in the channel between the previous cross section and the current cross section.
XLOBR	Distance in the right overbank between the previous cross section and the current cross section.
ITRIAL	Number of trials required to balance the assumed and computed water surface elevations.

** The summary printout value has been multiplied by 1,000.

<u>Variable</u>	<u>Description</u>
IDC	Number of trials required to determine critical depth.
ICONT	Number of trials to determine the water surface elevation by the slope area method or the number of trials to balance the energy gradient in the special bridge routine.
CORAR	Area of the bridge deck subtracted from the total cross sectional area in the normal bridge routine.
*TOPWID	Cross section width at the assumed water surface elevation.
EGPRS	The energy grade line elevation computed assuming pressure flow.
EGLWC	The energy grade line elevation computed assuming low flow control.
H3	Drop in water surface elevation from upstream to downstream sides of the bridge computed using Yarnell's equation assuming Class A low flow.
QWEIR	Total weir flow at the bridge.
QPR	Total pressure flow at the bridge.
BAREA	Net area of the bridge opening below the low chord. Equals BAREA entered on Card SB.
*ELLC	Elevation of the bridge low chord. Equals ELLC entered on card X2 if used, otherwise it equals the maximum low chord in the BT table.
*ELTRD	Elevation of the top of roadway. Equals ELTRD entered on card X2 if used, otherwise it equals the maximum low chord in the BT table.
CLASS	The controlling type of flow is identified using the following coded values for this variable: <ul style="list-style-type: none"> 1. Low Flow - Class A 2. Low Flow - Class B 3. Low Flow - Class C 10. Pressure Flow Alone 11. Weir Flow (Overbank) and Class A Low Flow (Bridge) 12. Weir Flow (Overbank) and Class B Low Flow (Bridge) 13. Weir Flow (Overbank) and Class C Low Flow (Bridge) 30. Weir Pressure Flow (Bridge)

<u>Variable</u>	<u>Description</u>
SSTA	The station on the GR cards where the water surface intersects the ground on the left side.
STEND	The station on the GR cards where the water surface intersects the ground on the right side.
*XLBEL	Left bank elevation.
*RBEL	Right bank elevation.

B. The following variables can be printed out with the summary printout option along with those variables from the previous list that have an asterisk (*):

<u>Variable</u>	<u>Description</u>
*CASE	A variable indicating how the water surface elevation was computed. Values of -1, -2, and 0 indicate assumptions of critical depth, minimum difference or a balance between the computed and assumed water surface elevations.
STCHL	Station of the left bank.
STCHR	Station of the right bank.
STENCL	The station of the left encroachment.
STENCR	The station of the right encroachment.
CLSTA	The centerline station of the trapezoidal excavation.
BW	The bottom width of the trapezoidal excavation.

Final Plat
SUBDIVISION REPORT

S/D No.: 84-98 Name: TEAL COVE ADDITION

Preliminary Approved: 10/11/84
Scheduled S/D Meeting: 11/8/84

DESCRIPTION

General Location: North of 37th Street North in an area east of Woodlawn.
Owner: William Oliver, Jr.
Surveyor/Engineer: Mid-Kansas Engineering Consultants, P.A.

1. Gross Acreage of Plat: 43 Acres
 2. Number of Lots:
 - Residential: 43
 - Office:
 - Commercial:
 - Industrial:
 - Total: 43
 3. Minimum Lot Area: 7,200 Sq. Ft.
 4. Existing Zoning: "AA" as in CUP DP-119
 5. Proposed Zoning: Same
-

STAFF COMMENTS:

- A. The applicant shall guarantee extension of sanitary sewer to serve all the lots being platted.
- B. The applicant shall guarantee extension of municipal water to serve all the lots being platted.
- C. The applicant shall guarantee the paving of the proposed interior streets.
- D. The applicant shall guarantee the construction of sidewalks adjacent to the east line of Lot 1, Block 1 and Lot 34, Block 1 (multi-family zoning - include in street paving petition). 37
- E. A covenant providing for four off-street parking spaces per dwelling unit for Lots 5 through 19, Block 1 shall be submitted for recording.
- F. The applicant shall guarantee all drainage improvements required by the platting of this property.
- G. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.
- H. The applicant shall submit a copy of the 50-foot cooperative refinery easement agreement which encumbers this property.
- I. Any relocation, encasement or lowering of the cooperative refinery pipeline made necessary by the development of this property, shall be at the applicant's expense.
- J. The final plat tracing shall label more clearly the utility easements adjacent to the northwest lines of Lots 7 through 10, Block 1.
- K. On the final plat tracing, the east line of the floodway being platted as part of Lot 1, Block 1 shall be changed to a dashed line rather than a solid line.
- L. As stated in the note labeled "FOR INFORMATION ONLY," adjacent to the east line of this plat, the final plat tracing shall indicate the platting of a contingent dedication for right-of-way for the proposed Northeast Circumferential. The contingent dedication falls within the 125-foot wide K.C. & E. easement. Reserves should not be platted for the contingent dedication.

- M. The applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserves will be deeded to the association and who is to own and maintain the reserves prior to the association taking over those responsibilities. The covenant shall contain a provision which gives the City the authority to maintain the reserves and charge the costs to the owner(s) in the event the owner(s) fail to maintain the reserves.
- N. The representative from the City Engineer's office should be prepared to comment on the acceptability of the proposed minimum building pad for Lots 1 through 14, Block 1. Also, are any drainage improvements required by the platting of this property?
- O. Closure computations shall be submitted with the final plat tracing.
- P. Recording of the plat within 30 days after approval by the Board of City Commissioners.

Preliminary Plat
SUBDIVISION REPORT

SUBDIVISION COMMITTEE
METROPOLITAN AREA
PLANNING COMMISSION

S/D No.: 84-98

Name: Teal Cove Addition

Preliminary Approved:

Scheduled S/D Meeting: 10/11/84

DESCRIPTION

General Location: North of 37th Street North in an area east of Woodlawn.
Owner: William Oliver, Jr.
Surveyor/Engineer: Mid-Kansas Engineering Consultants, P.A.

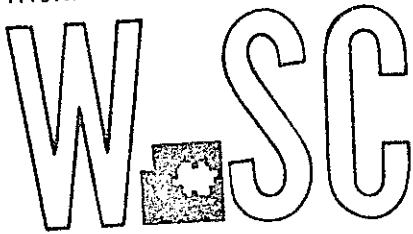
1. Cross Acreage of Plat: 43 Acres
 2. Number of Lots:
 - Residential: 43
 - Office:
 - Commercial:
 - Industrial:
 - Total: 43
 3. Minimum Lot Area: 7,200 Sq. Ft.
 4. Existing Zoning: "AA" as in CUP-DP-119
 5. Proposed Zoning: Same
-

STAFF COMMENTS:

- NOTE: This plat is subject to the provisions of the Northbrook Residential Community Unit Plan (DP-119) and represents the platting of Parcels 3, 4 and 5. Lots 1 and 34, Blk. 1 are proposed for development of townhouses. The remaining lots are to be developed with single family homes.
- A. Drainage in this area is of primary importance. General Provision No. 10 of the C.U.P. requires a hydrology study to be submitted at the time of platting. The representative from the City Engineer's office should be prepared to comment on the required hydrology study and this plat's drainage concept. If the hydrology study and drainage concept for this plat have not been submitted to City Engineering with sufficient time for review, then this plat should be deferred.
 - B. The applicant shall guarantee extension of sanitary sewer to serve all the lots being platted.
 - C. The applicant shall guarantee extension of municipal water to serve all the lots being platted.
 - D. The applicant shall guarantee the paving of the proposed interior streets.
 - E. The applicant shall guarantee the construction of sidewalks adjacent to the east line of Lot 1, Block 1 and Lot 34, Block 1 (multi-family zoning - include in street paving petition).
 - F. A covenant providing for 4 off-street parking spaces per dwelling unit for Lots 6 through 20, Block 1 shall be submitted for recording.
 - G. The applicant shall guarantee all drainage improvements required by the platting of this property.
 - H. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.
 - I. An application signed by the property owner shall be submitted.
 - J. The MAPC signature block on the final plat shall reference JAMES C. WILSON, CHAIRMAN.
 - K. The County Clerk's signature block on the final plat shall reference MICHAEL T. SAWYER, COUNTY CLERK.

- L. On the final plat, the street name Teal shall be changed to Rushwood and Teal Circle to Rushwood Circle. Canvas Back and Canvas back Court shall be renamed 39th Street North and 39th Street North Court, respectively.
- M. The final plat shall omit the platting of building setbacks, but instead shall reference that building setbacks are per C.U.P.-119. This notation shall be made on the face of the plat as well as in the plat's text.
- N. The applicant shall submit a copy of the 50-foot cooperative refinery easement agreement which encumbers this property.
- O. The final plat shall indicate the recording information for the cooperative refinery easement on this property.
- P. Any relocation, encasement or lowering of the cooperative refinery pipeline made necessary by the development of this property, shall be at the applicant's expense.
- Q. The final plat shall indicate the recording information for the KG&E easement adjacent to the east line of this plat.
- R. The center lines of the various utility easements being platted shall be indicated on the final plat.
- S. When Northbrook Addition was platted to the north, substantial land was set aside for drainage purposes by platting several reserves. No such reserves or floodway have been indicated on this preliminary plat. The applicant or his agent shall be prepared to comment on how drainage will be handled on this plat.
- T. When Northbrook Addition was platted to the north, minimum building pads were established. The representative from the City Engineer's office should be prepared to comment on the need for required minimum building pads on this plat.
- U. If reserves are indicated on the final plat, the plat's text shall specify who is to own and maintain them.
- V. If reserves are indicated on the final plat, the applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserves will be deeded to the association and who is to own and maintain the reserves prior to the association taking over those responsibilities. The covenant shall contain a provision which gives the City the authority to maintain the reserves and charge the costs to the owner(s) in the event the owner(s) fail to maintain the reserves.
- W. On the final plat, it is requested that the applicant's plat reserves adjacent to the east line of this property in order to cover land that may be needed as right-of-way for the Northeast Circumferential. Prior to submitting a final plat, it is requested that the applicant or his agent meet with City Engineering to discuss the geometrics of the needed reserves. All of the requested reserves for the Northeast Circumferential fall within the 125-foot KG&E easement along the east line of this property.
- X. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the Subdivision Regulations.
- Y. Requirements for a final plat (see pages 20-25, Part 4, Article 5 of the MAPC Subdivision Regulations).

WICHITA - SEDGWICK COUNTY



METROPOLITAN AREA PLANNING
COMMISSION

CITY HALL - TENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4561

October 12, 1984



Mid-Kansas Engineering Consultants, P.A.
240 North Rock Road, Suite 130
Wichita, KS 67206

Re: S/D. 84-98 - Preliminary Plat of Teal Cove Addition

Gentlemen:

At the regular meeting of the Subdivision Committee of the Metropolitan Area Planning Commission on Thursday, October 11, 1984, the above-captioned plat was considered. The action of the Committee was to approve the preliminary and authorize preparation of the final plat, subject to the following:

- A. The applicant shall guarantee extension of sanitary sewer to serve all the lots being platted.
- B. The applicant shall guarantee extension of municipal water to serve all the lots being platted.
- C. The applicant shall guarantee the paving of the proposed interior streets.
- D. The applicant shall guarantee the construction of sidewalks adjacent to the east line of Lot 1, Block 1 and Lot 34, Block 1 (multi-family zoning - include in street paving petition).
- E. A covenant providing for 4 off-street parking spaces per dwelling unit for Lots 6 through 20, Block 1 shall be submitted for recording.
- F. The applicant shall guarantee all drainage improvements required by the platting of this property.
- G. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.

WICHITA—SEDGWICK COUNTY

Mid-Kansas Engineering Consultants, P.A.
Re: S/D 84-98 - Preliminary Plat of Teal Cove Addition
October 12, 1984
Page 2

- H. An application signed by the property owner shall be submitted.
- I. The MAPC signature block on the final plat shall reference JAMES C. WILSON, CHAIRMAN.
- J. The County Clerk's signature block on the final plat shall reference MICHAEL T. SAWYER, COUNTY CLERK.
- K. On the final plat, the street name Teal shall be changed to Rushwood and Teal Circle to Rushwood Circle. Canvas Back and Canvas back Court shall be renamed 39th Street North and 39th Street North Court, respectively.
- L. The final plat shall omit the platting of building setbacks, but instead shall reference that building setbacks are per C.U.P.-119. This notation shall be made on the face of the plat as well as in the plat's text.
- M. The applicant shall submit a copy of the 50-foot cooperative refinery easement agreement which encumbers this property.
- N. The final plat shall indicate the recording information for the cooperative refinery easement on this property.
- O. Any relocation, encasement or lowering of the cooperative refinery pipeline made necessary by the development of this property, shall be at the applicant's expense.
- P. The final plat shall indicate the recording information for the K.G. & E. easement adjacent to the east line of this plat.
- Q. The center lines of the various utility easements being platted shall be indicated on the final plat.
- R. If reserves are indicated on the final plat, the plat's text shall specify who is to own and maintain them.
- S. If reserves are indicated on the final plat, the applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserves will be deeded to the association and who is to own and maintain the reserves prior to the association taking over those responsibilities. The covenant shall contain a provision which gives the City the authority to maintain the reserves and charge the costs to the owner(s) in the event the owner(s) fail to maintain the reserves.
- T. The final plat shall indicate the contingent dedication of the right-of-way needed for the northeast circumferential. This right-of-way falls within the 100-Foot K.G. & E. easement.

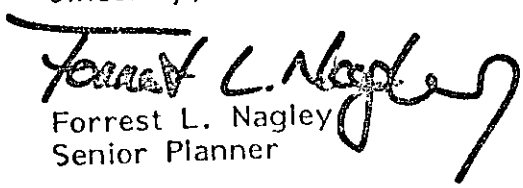
WICHITA—SEDGWICK COUNTY

Mid-Kansas Engineering Consultants, P.A.
Re: S/D 84-98 - Preliminary Plat of Teal Cove Addition
October 12, 1984
Page 3

- U. If the drainage plan for this property requires minimum building pads, they shall be indicated on the final plat.
- V. The final plat shall indicate the utility easements requested by K.G. & E. which are indicated on the engineer's copy of this plat.
- X. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the Subdivision Regulations.
- Y. Requirements for a final plat (see pages 20-25, Part 4, Article 5 of the MAPC Subdivision Regulations).

The enclosed "marked" copy of the plat is for your information and files.
If you should have any questions, please call.

Sincerely,


Forrest L. Nagley
Senior Planner

FLN:mlh

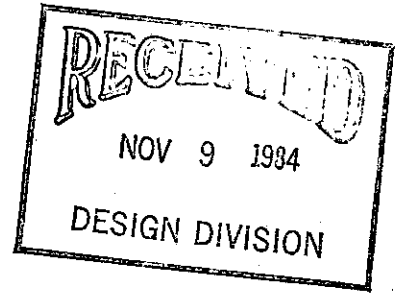
cc: William Oliver, Jr., 300 Page Court, Wichita, KS 67202
✓ Mike Lindebak, City Engineer

WICHITA - SEDGWICK COUNTY



METROPOLITAN AREA PLANNING
COMMISSION

CITY HALL - TENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4561



November 9, 1984

Mid-Kansas Engineering Consultants, P.A.
240 North Rock Road, Suite 130
Wichita, KS 67206

Re: S/D 84-98 - Final Plat of Teal Cove Addition

Gentlemen:

At the regular meeting of the Subdivision Committee of the Metropolitan Area Planning Commission on Thursday, November 9, 1984, the above-captioned plat was considered. The action of the Committee was to recommend that this plat be approved subject to:

- A. The applicant shall guarantee extension of sanitary sewer to serve all the lots being platted.
- B. The applicant shall guarantee extension of municipal water to serve all the lots being platted.
- C. The applicant shall guarantee the paving of the proposed interior streets.
- D. The applicant shall guarantee the construction of sidewalks adjacent to the east line of Lot 1, Block 1 and Lot 34, Block 1 (multi-family zoning - include in street paving petition).
- E. A covenant providing for four off-street parking spaces per dwelling unit for Lots 5 through 19, Block 1 shall be submitted for recording.
- F. The applicant shall guarantee the storm sewers required by the platting of this property.
- G. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.
- H. The applicant shall submit a copy of the 50-foot cooperative refinery easement agreement which encumbers this property.

WICHITA—SEDGWICK COUNTY

Mid-Kansas Engineering Consultants, P.A.
Re: S/D 84-98 - Final Plat of Teal Cove Addition
November 9, 1984
Page 2

- I. Any relocation, encasement or lowering of the cooperative refinery pipeline made necessary by the development of this property, shall be at the applicant's expense.
- J. The final plat tracing shall label more clearly the utility easements adjacent to the northwest lines of Lots 7 through 10, Block 1.
- K. On the final plat tracing, the east line of the floodway being platted as part of Lot 1, Block 1 shall be changed to a dashed line rather than a solid line.
- L. As stated in the note labeled "FOR INFORMATION ONLY," adjacent to the east line of this plat, the final plat tracing shall indicate the platting of a contingent dedication for right-of-way for the proposed Northeast Circumferential. The contingent dedication falls within the 125-foot wide K.G. & E. easement. Reserves should not be platted for the contingent dedication.
- M. The applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserves will be deeded to the association and who is to own and maintain the reserves prior to the association taking over those responsibilities. The covenant shall contain a provision which gives the City the authority to maintain the reserves and charge the costs to the owner(s) in the event the owner(s) fail to maintain the reserves.
- N. The final plat tracing shall indicate a 10 foot utility easement centered on the lot line common to Lots 6 and 7, Block 1.
- O. Closure computations shall be submitted with the final plat tracing.
- P. Recording of the plat within 30 days after approval by the Board of City Commissioners.

Enclosed with the applicant's copy of this letter is a list of the five methods which have been adopted as being acceptable for guaranteeing improvements required in the approval of plats. The certificate will be required if petitions are submitted. Forms for the bond and irrevocable Letter of Credit are available from this office.

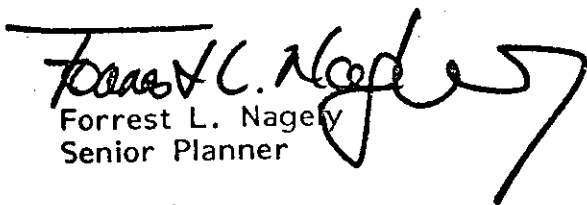
WICHITA—SEDGWICK COUNTY

Mid-Kansas Engineering Consultants, P.A.
Re: S/D 84-98 - Final Plat of Teal Cove Addition
November 9, 1984
Page 3

The enclosed "marked" copy of the final plat is for your information and files.

This matter will be forwarded to the Planning Commission for its consideration on Thursday, November 15, 1984 at 1:30 p.m. If you have any questions concerning this matter, please call.

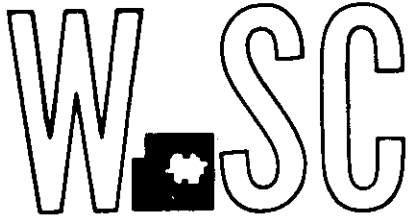
Sincerely,


Forrest L. Nagely
Senior Planner

FLN:mlh

cc: William Oliver, Jr., 300 Page Court, Wichita, KS 67202
✓ Mike Lindebak, City Engineer

WICHITA—SEDGWICK COUNTY



METROPOLITAN AREA PLANNING
COMMISSION

CITY HALL — TENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4561

November 15, 1984



Mid-Kansas Engineering Consultants, P.A.
240 North Rock Road, Suite 130
Wichita, KS 67206

Re.: S/D 84-98 - Final Plat of Teal Cove Addition

Gentlemen:

At the regular meeting of the Metropolitan Area Planning Commission on November 15, 1984, the above-captioned plat was considered. The action of the Planning commission was to recommend that the plat be approved as recommended by the Subdivision Committee subject to the conditions stated in our letter of November 9, 1984.

In addition to complying with those conditions, it is necessary that you meet the following requirements before this plat can be forwarded to the Board of City Commissioners for consideration:

1. Submission of the fully completed and signed tracing of the subdivision to the Metropolitan Area Planning Department.
2. Submission of a title report by an abstract or title insurance company or an attorney's opinion that fee title is vested in the platlor.
3. Certification that all real estate taxes for 1982 (both first and second halves) and prior years have been paid.

Please call if you have any questions.

Very truly yours,

Barbara R. Bonanni
Planning Analyst

BRB:mlh

cc: William Oliver, Jr., 300 PageCourt, Wichita, KS 67202
↓ Mike Lindebak, City Engineer

C
O
P
Y

Project Name Teal Cove

Checked By Mike

Date 4-29-85

PLAT CHECKLIST

TEXT:

1. Engineer/Surveyor's statement - plat name, lots, blocks etc.
2. Legal - check title binder & check against plat & computer run
3. Owner's statement - plat name, lots, blocks, etc., grants & dedications, access control, minimum pad, flood control
4. Owner's title & name - check title binder
5. Mortgagees - other parties with interest
6. Notaries
7. City/County text - correct names & dates
8. C.U.P. referenced in text and under north arrow?
9. Are reserves called out in text, owned, maintained?
10. Is access control correct in text (except # of openings)?
11. Is this an addition to Wichita, Sedgwick County, Kansas, or other?
12. Is the certificate the same in text and description (i.e. an Engineer, Civil Engineers Certificate)?

PLAT:

1. Title, sheet No., "an addition to...", north arrow, scale, legend, minimum pad
2. Street names, railroads, water courses, highways
3. Ties to government corner or other adjoining plats
4. Lot & block numbers
5. Street widths, additional dedications
6. Setbacks - labeled
7. Make sure setbacks & easement lines don't cross
8. Irons - control points
9. Access control notation
10. Easements, utility drainage, KG&E existing
11. Other parcels - reserves - commercial lots
12. Label government corners and adjoining plats, lines & corners
13. Do lot numbers agree with preliminary plat?
14. Are street names labelled as on preliminary plat?
15. Does easement agree with drainage and sanitary sewer plan?
16. Are all lots served by utilities?
17. Do the setbacks need to be shown or is there a C.U.P.?
18. Is the P.O.B. shown with bearings and distance from reference corner?
19. Are bearings and distances to P.O.B. same as in legal?
20. Are all easements, dedications, etc., on title binder shown on plat?
21. Does the recording data match binder?

- 22. Have all conditions of preliminary plat (pink sheet) been met?
- 23. Do the reserve letters go in consecutive order (clockwise)
- 24. Are bearings all clockwise from P.O.B.?
- 25. Do we show access control with dimensions?
- 26. Do the dedications show up plainly, do they match preliminary plat?
- 27. Should there be a bench mark shown (min. pads)?
- 28. Is plat name spelled correctly, is it centered?
- 29. Do addition numbers match (i.e. 'second vs. 2nd)?

NUMBERS:

- 1. Boundary - verify plat, text & computer data
- 2. Check all lot, block & street dimensions against computer data
- 3. Total lot dimensions to verify block boundary or street dimensions
- 4. Total arcs along curve to verify against centerline curve or cul-de-sac
- 5. Check curve data

-
- Application or revised application
 - 4-29-85 Title Binder
 - No Tax receipt
 - Drainage Approval
 - Petitions
 - NA Letter from County Engineer
 - Recording fees

CERTIFICATE

City of Wichita)
Sedgwick County) SS
State of Kansas)

I, William L. Oliver, Jr. & Mary Lynn Oliver, owner and
plattor of Teal Cove Addition, do
hereby certify that petitions for the following improvements have been
submitted to the Board of Commissioners of the City of Wichita, Kansas:

1. Sanitary Sewer
2. Water
3. Asphalt Paving
4. Storm Water Sewer
- 5.
- 6.
- 7.
- 8.

As a result of the above mentioned petitions for improvements, lots
within Teal Cove Addition may be sub-
ject to special assessments assessed thereto for the cost of construction
the above described improvements.

Signed this _____ day of _____, 1985.

William L. Oliver, Jr.

Mary Lynn Oliver

City of Wichita)
Sedgwick County) SS
State of Kansas

Be it remembered that on this _____ day of _____,
1985, before me, a notary public in and for said County and State, came
_____ to me personally known to be the
same person who executed the foregoing instrument of writing and duly
acknowledge the execution of same.

In Testimony Whereof, I have hereunto set my hand and affixed my
notarial seal the day and year above written.

(SEAL)

Notary Public

My Appointment Expires: _____

THE CITY OF WICHITA

OFFICE OF MAPD/DESIGN

DATE May 21, 1985

TO Forrest Nagley, Senior Planner

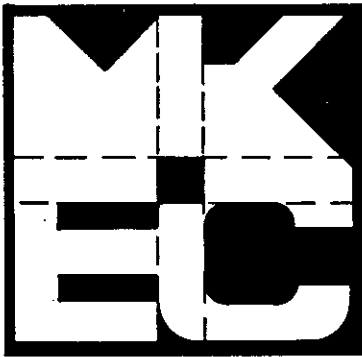
FROM Larry Henry, Program Development Engineer

SUBJECT Teal Cove Addition

Please be advised that the required petitions for Teal Cove Addition have been submitted to this office by the platting engineer.


Larry Henry
Program Development Engineer

LH:mgr



LETTER OF TRANSMITTAL

SUBJECT: Teal Cove

PROJECT #: _____ DATE: 11/27/85

MID-KANSAS ENGINEERING
CONSULTANTS, P.A.
3500 N. Rock Road, #800
Wichita, KS 67226

TO: Mr. Bill Morris
Engineering Department
455 N. Main, 7th Floor
Wichita, KS 67202

We are sending the following items: Attached
 Under separate cover via _____
 Prints Specifications Legal Descriptions
 Tracings Petitions Correspondence Other

COMMENTS: Transmitted herewith are Affidavits for Paving, San. Sewer, Storm Water Sewer, and Water Mains, plus an Easement and a Certificate of Plan and Specifications Review Authorizing Bid Taking.

These are transmitted as checked below:

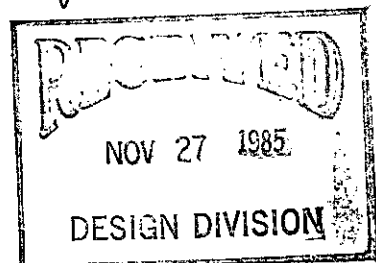
For Your Approval As Requested
 For Your Use For Your Files
 Approved as Noted For Review and Comment

REMARKS:

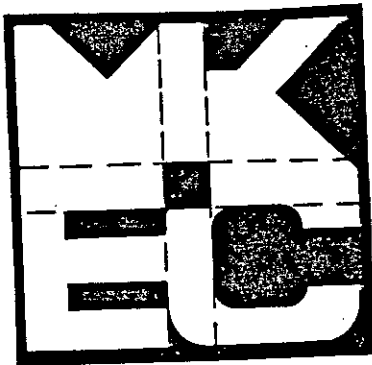
Copies: Carl Gipson
Chris Breitenstein
Rob Younkin

BG:js

Signed: *Benny Gegen*
Benny Gegen



TBW
Me



MID-KANSAS ENGINEERING
CONSULTANTS, P.A.
3500 N. Rock Road, #800
Wichita, KS 67226

SUBJECT: Teal Cove Storm Water Sewer No. 293

PROJECT #: 468-76-245-81474

DATE: 1/14/86

TO: Mr. Mike Lindebak, P.E.
City Engineer
455 N. Main, 7th Floor
Wichita, KS 67202

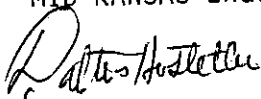
We have designed the storm sewer for the above referenced project using reinforced concrete pipe for the following reasons:

1. The shallowness of the lines.
2. The soil type.
3. Past bidding history with pipes of 36 inch diameter or less.

Should you have any questions, please feel free to call.

Sincerely,

MID-KANSAS ENGINEERING CONSULTANTS, P.A.



for Kenneth H. Bengtson, P.E.

KHB/js

cc: Vicki Huang
Carl Gipson

Revised

January 16, 1986

Jay Cranor
Crude Supply and Transportation
P.O. Box 3516
Bartlesville, OK 74005

Reference: Teal Cove Addition

Dear Mr. Cranor:

Enclosed is one copy of the street plans showing elevations of existing coop line and proposed street grades. Please look them over, and if you have any questions regarding this matter, please don't hesitate to contact me.

Sincerely Yours,

MID-KANSAS ENGINEERING CONSULTANTS, P.A.

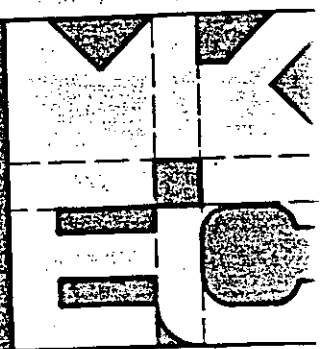
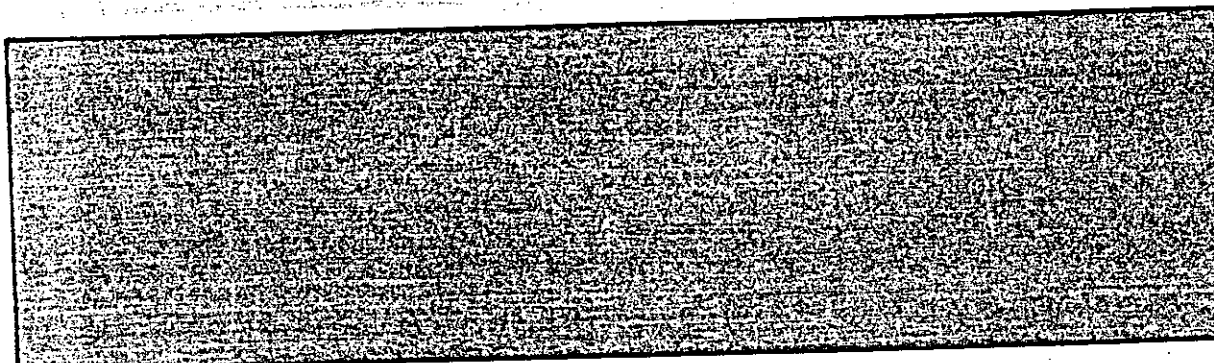
Arsalan M. Shaghghi

Arsalan M. Shaghghi

AMS:js

cc: Carl Gipson

RECEIVED
JAN 20 1986
DESIGN DIVISION



MID-KANSAS ENGINEERING CONSULTANTS PA
682-6561

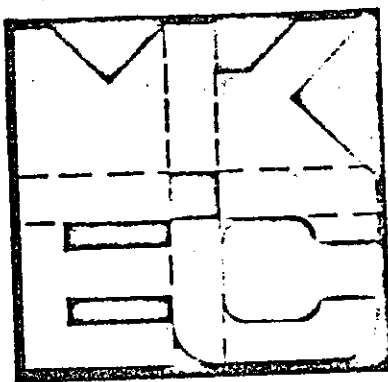
3500 N. ROCK ROAD •#
WICHITA, KANSAS 67

1 copy in each project folder

REFERENCE: Teal Cove & Teal Cove Second L.O.C.

PROJECT #: _____ DATE: 5/19/86

TO: Carl Gipson
Engineering Department
455 N. Main, 7th Floor
Wichita, KS 67226



MID-KANSAS ENGINEERING
CONSULTANTS, P.A.
3500 N. Rock Road, #800
Wichita, KS 67226

- ✓1. Sanitary Sewer Laterals 17, Main, 9, Sanitary Sewer #23 Existing Letter of Credit in the amount of \$ 59,000.00 may be reduced to \$ 45,000.00.
- ✓2. Storm Water Sewer #293 - Existing Letter of Credit in the amount of \$ 17,000.00 may be reduced to \$ 16,000.00.
- ✓3. The Water Distribution Letter of Credit in the amount of \$ 35,000.00 may be reduced to \$ 19,000.00.
- ✓4. The Pavement Letter of Credit for Rushwood, Rushwood Circle, 29th Street North, and 29th Street Court for \$ 161,000.00 may be reduced to \$ 100,000.00.

MID-KANSAS ENGINEERING CONSULTANTS, P.A.

Kenneth H. Bengtson

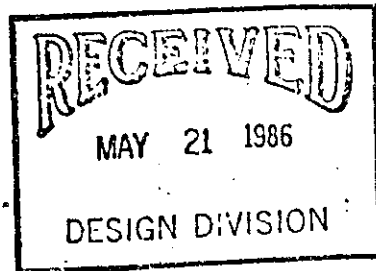
Kenneth H. Bengtson, P.E.

KHB:js

cc: Phil Snodgrass

*Low amounts show for new LofC's
are o.k. Reduction of LofC for subs 293
may not be worthwhile. Complete the attached
form for each requested reduction and return to
me and we'll get the ball rolling on our end.*

*Carl
5-27-86*



Assessment

AGREEMENT

BY AND BETWEEN

THE CITY OF WICHITA, KANSAS,
Party of the First Part

and

WILLIAM L. OLIVER, JR.
Party of the Second Part

WHEREAS, Party of the First Part has constructed certain municipal improvements within Teal Cove, an Addition to the City of Wichita, Kansas; and

WHEREAS, Party of the Second Part is the owner of all of the improvement district for said improvements; and

WHEREAS, the total cost of said improvements is to be assessed the land owned by the Party of the Second Part within the improvement district; and

WHEREAS, Party of the Second Part desires that a change be made in the manner that the cost of said municipal improvements are assessed against the land owned by the Party of the Second Part from the manner in which said assessments were requested to be made in the petition previously signed by the Party of the Second Part; and

WHEREAS, the Party of the First Part and the Party of the Second Part are both desirous of accomplishing such a change in the manner of assessment.

NOW, THEREFORE, in consideration of the mutual covenants and promises herein contained, the parties agree as follows:

27

1. The Parties agree that the assessments against the improvement district for Project No. 472 76 245 81480 000 000 001 shall be as follows:

Lot 1, Block 1, Teal Cove, shall pay 9/50 of the total cost payable by the improvement district;

Lots 2-32, inclusive, Block 1; Lots 1-10, inclusive, Block 2; all within Teal Cove, shall each pay 1/50 of the total cost payable by the improvement district;

Except when driveways are requested to serve a particular tract, lot or parcel, the cost of said driveway shall be a direct assessment to said tract, lot or parcel and shall be in addition to the assessment for other improvements. Where the ownership of a single lot is or may be divided into two or more parcels, the assessment to the lot so divided shall be assessed to each ownership or parcel on a square foot basis.

2. The Party of the Second Part is the owner of all of the property in Blocks 1 and 2 of Teal Cove Addition, to the City of Wichita, Kansas, and said Party of the Second Part hereby waives the notice and hearing requirements of K.S.A. 12-6a12(b) with respect to the assessment herein described.

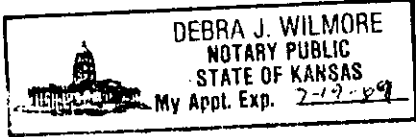
3. The Party of the Second Part further waives his right to appeal the special assessment for Project No. 472 76 245 81480 000 000 001 (including this described change in assessment) and agrees that no suit to set aside said assessment shall be brought by him nor shall he in any other way bring an action to question the validity of the proceedings taken by the Party of the First Part in constructing this project and levying the special assessment therefor.

4. The Party of the Second Part further agrees that he will indemnify the Party of the First Part against any and all

STATE OF KANSAS)
) ss:
SEDGWICK COUNTY)

BE IT REMEMBERED, That on this 8th day of September, 1987, before me, the undersigned, a Notary Public in and for the County and State aforesaid, came William L. Oliver, Jr., personally known to me to be the same person who executed the within instrument of writing and such person duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.



Debra J. Wilmore
Notary Public

My Appointment Expires:

7-19-89



MID-KANSAS ENGINEERING
CONSULTANTS, INC.
3500 N. Rock Road, #800
Wichita, KS 67226

PROJECT: Teal Cove - Minimum Pad & Ground Elevations
Lots 1 through 18, inclusive, Block 1

PROJECT #: _____ DATE: 5/02/91

TO: Mr. Chris Breitenstein
City of Wichita
Engineering Department - 7th Floor
455 North Main
Wichita, Kansas 67202

Enclosed herewith are plot plans for the following lots in Teal Cove:

Lots 2, 3, 4, 6, 9 thru 14, and 16, all in Block 1 of the referenced addition.

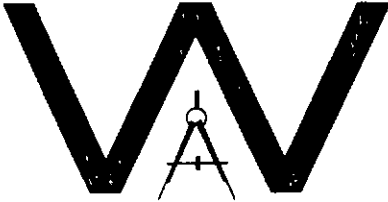
We will pick up lot 1, 7 and 18 of Block 1 to give elevations at the corners of all lots 1 through 18 inclusive, Block 1 of Teal Cove. Please review and see if what is enclosed is satisfactory.

A handwritten signature in black ink that reads "Kenneth H. Bengtson". The signature is written in a cursive style with a long horizontal stroke at the end.

Kenneth H. Bengtson, P.E.
President

Enclosure
KHB/kb

THE CITY OF WICHITA



CITY ENGINEER'S OFFICE
CITY HALL — SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501

October 4, 1988

Ken Bengtson
Mid-Kansas Engineering Consultants P.A.
3500 N. Rock Road, Bldg. #800
Wichita, Kansas 67226

Dear Ken:

The property located in Wichita, Kansas, legally described as "Lots 2 and 11, Block 1, Teal Cove Addition", is shown not to be within a special 100 year flood hazard area as determined from Map Panel Number 15, Flood Hazard Boundary Map for the City of Wichita, Sedgwick County, Kansas.

If you have any further questions, please contact Mike Greene at 268-4573.

Sincerely,

Chris J. Breitenstein, P.E.
Civil Engineer III

CJB:ta

7112J