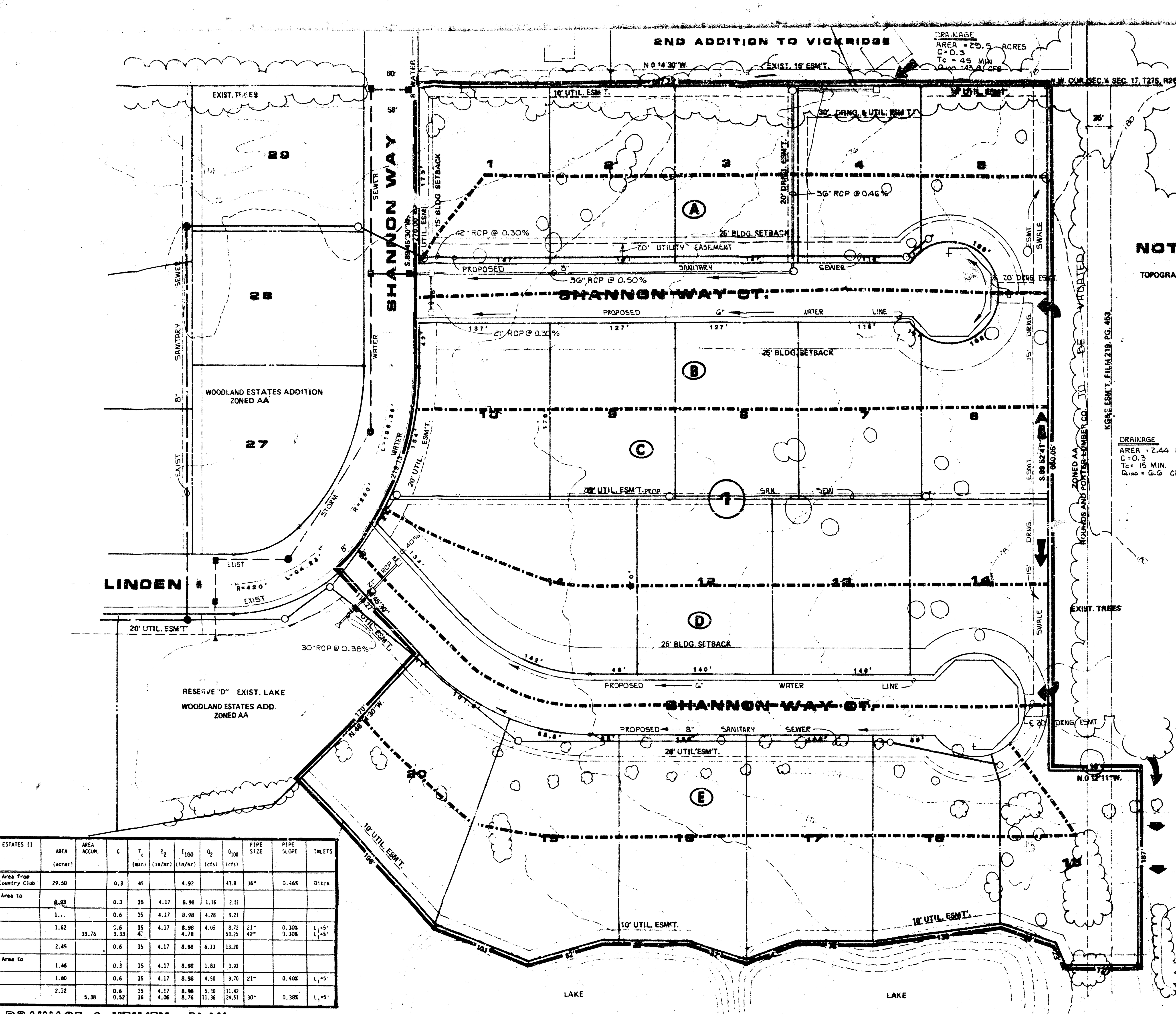
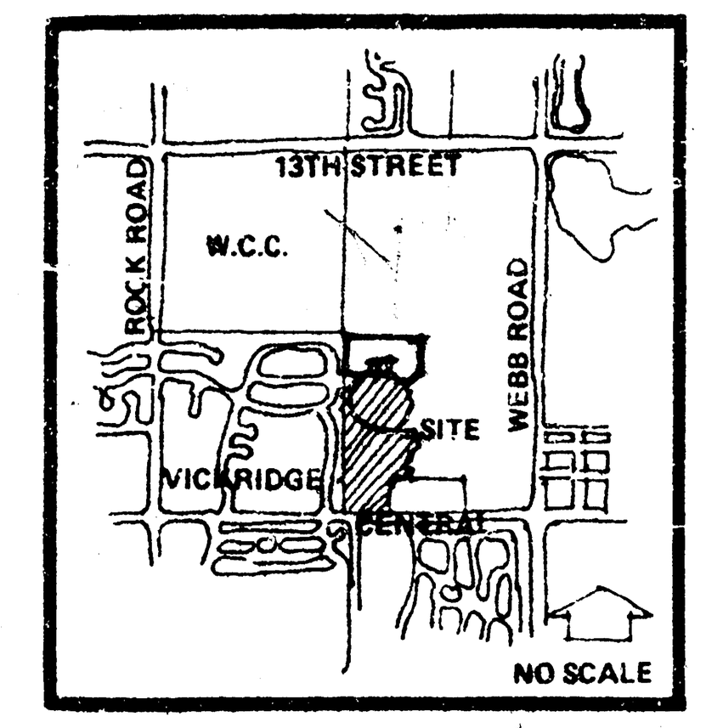


NOTES:

TOPOGRAPHY IS FROM AERIAL PHOTOGRAPH TAKEN JUNE 1985



LOCATION MAP

WOODLAND ESTATES II	AREA (acres)	AREA ACCUM.	C	T_c (min)	I_2 (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{100} (cfs)	PIPE SIZE	PIPE SLOPE	INLETS
Drainage Area from Wichita Country Club	29.50		0.3	45		4.92		43.8	36"	0.46%	Ditch
Drainage Area to North	0.93		0.3	15	4.17	8.98	1.16	2.51			
A	1...		0.6	15	4.17	8.98	4.28	9.21			
B	1.62	33.76	0.6 0.33	15 47	4.17	8.98 4.78	4.05	8.72 53.25	21" 42"	0.30% 0.30%	L_i=5' L_i=5'
C	2.45		0.6	15	4.17	8.98	6.13	13.20			
Drainage Area to North	1.46		0.3	15	4.17	8.98	1.83	3.93			
D	1.80		0.6	15	4.17	8.98	4.50	9.70	21"	0.40%	L_i=5'
E	2.12	5.38	0.6 0.52	15 16	4.17 4.06	8.98 8.76	5.30 11.36	11.42 24.51	30"	0.38%	L_i=5'

DRAINAGE & UTILITY PLAN

WOODLAND ESTATES 2ND

OWNER: RITCHIE ASSOCIATES 8100 E. 22ND STREET NORTH BLDG. 500 WICHITA KANSAS 67226

2' CONTOUR INTERVALS

MID-KANSAS ENGINEERING CONSULTANTS PA

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

PROJECT: Woodland Estates Second & Third

PROJECT #: DATE: 01/12/87

TO: Carl Gipson
Engineering Department
455 N. Main, 7th Floor
Wichita, KS 67202

Mr. Frank Nelson has met with you regarding our storm sewer plans for the referenced additions. We have asked for a meeting with Mr. Bill Yung to understand or obtain plans for how Mr. Coulter will convey storm run off through his "platted" lots to tie with the proposed storm water sewer.

If the plans for Mr. Coulters lots cannot be solved within the next two weeks we will call a meeting with you to discuss our proposed solution, so as to permit the construction plans for Woodland Estates II to be bid.

MID-KANSAS ENGINEERING CONSULTANTS, P.A.

Kenneth H. Bengtson, P.E.

KHB/dm

cc: Vicki Huang
Bill Yung
Jack Ritchie

MID-KANSAS ENGINEERING CONSULTANTS P.A.
CALCULATIONS & SKETCHES

Lake point
Lakes east of Woodland Estates 2nd

North Lake

South Lake

Drainage Area to Lake

Try Cipolatti Weir

MID-KANSAS ENGINEERING CONSULTANTS P.A.
CALCULATIONS & SKETCHES

Lake point

Try 20' Cipolatti Weir

For South Lake, assume contracted weir

XEQ REV 09/01/83 LAKEPOINT, N.W. LAKES: 100 YEAR, 24 HOUR EVENT USING SCS TR-20, CURVE 2 20-FOOT WEIR JOB 1 PASS 1 PAGE 1

FILE NO. 3

COMPUTER PROGRAM FOR PROJECT FORMULATION - HYDROLOGY USER NOTES

THE USERS MANUAL FOR THIS PROGRAM IS THE MAY 1982 DRAFT OF TR-20. CHANGES FROM THE 2/14/74 VERSION INCLUDE:

REACH ROUTING - THE MODIFIED ATT-KIN ROUTING PROCEDURE REPLACES THE CONVEX METHOD. INPUT DATA PREPARED FOR PREVIOUS PROGRAM VERSIONS USING CONVEX ROUTING COEFFICIENTS WILL NOT RUN ON THIS VERSION.

THE PREFERRED TYPE OF DATA ENTRY IS CROSS SECTION DATA REPRESENTATIVE OF A REACH. IT IS RECOMMENDED THAT THE OPTIONAL CROSS SECTION DISCHARGE-AREA PLOTS BE OBTAINED WHENEVER NEW CROSS SECTION DATA IS ENTERED. THE PLOTS SHOULD BE CHECKED FOR REASONABLENESS AND ADEQUACY OF INPUT DATA FOR THE COMPUTATION OF "M" VALUES USED IN THE ROUTING PROCEDURE.

GUIDELINES FOR DETERMINING OR ANALYZING REACH LENGTHS AND COEFFICIENTS (X,M) ARE AVAILABLE IN THE USERS MANUAL. SUMMARY TABLE 2 DISPLAYS REACH ROUTING RESULTS AND ROUTING PARAMETERS FOR COMPARISON AND CHECKING.

HYDROGRAPH GENERATION - THE PROCEDURE TO CALCULATE THE INTERNAL TIME INCREMENT AND PEAK TIME OF THE UNIT HYDROGRAPH HAVE BEEN IMPROVED. PEAK DISCHARGES AND TIMES MAY DIFFER FROM THE PREVIOUS VERSION. OUTPUT HYDROGRAPHS ARE STILL INTERPOLATED, PRINTED, AND ROUTED AT THE USER SELECTED MAIN TIME INCREMENT.

INTERMEDIATE PEAKS - METHOD ADDED TO PROVIDE DISCHARGES AT INTERMEDIATE POINTS WITHIN REACHES WITHOUT ROUTING.

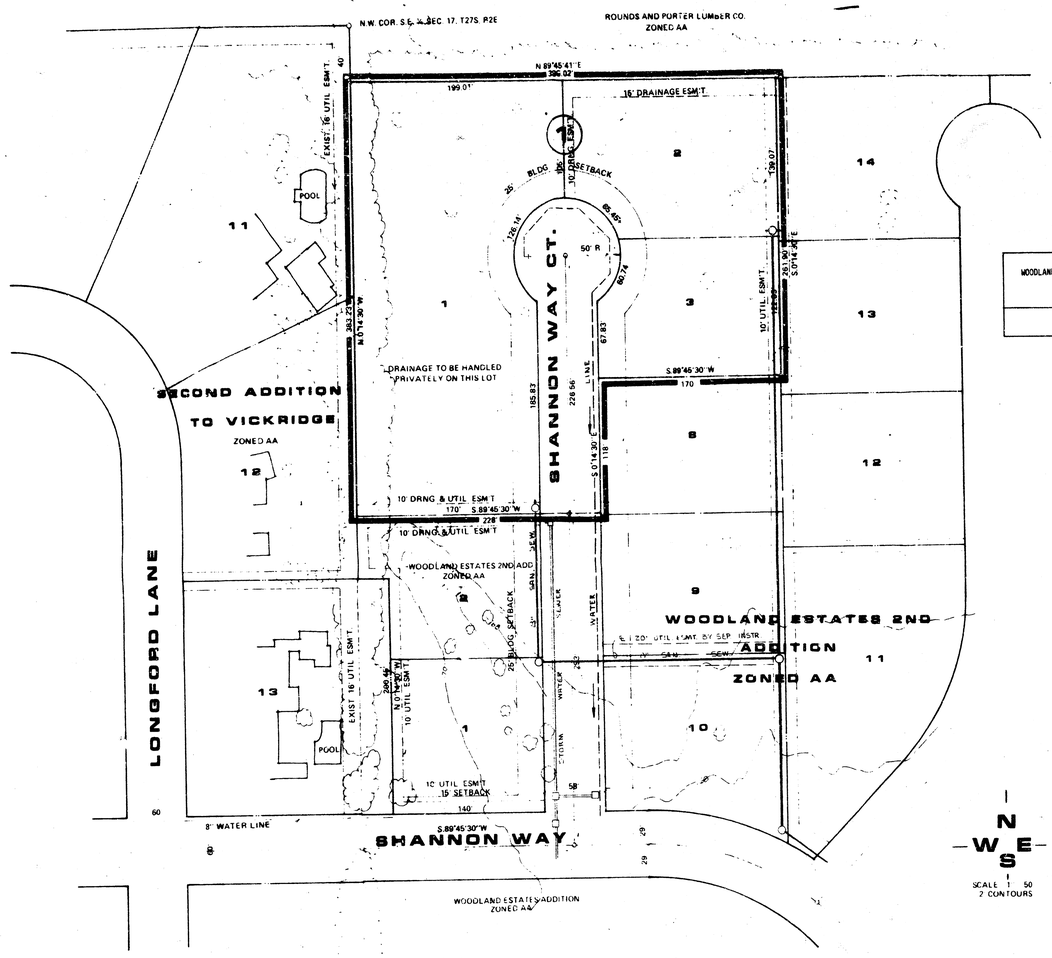
OTHER - THIS VERSION CONTAINS SOME ADDITIONS TO THE INPUT AND NUMEROUS MODIFICATIONS TO THE OUTPUT. USER OPTIONS HAVE BEEN MODIFIED AND AUGMENTED ON THE JOB RECORD, RAINTABLES ADDED, ERROR AND WARNING MESSAGES EXPANDED, AND THE SUMMARY TABLES COMPLETELY REVISED. THE HOLDOUT OPTION IS NOT OPERATIONAL AT THIS TIME.

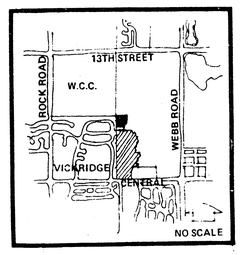
PROGRAM QUESTIONS OR PROBLEMS SHOULD BE DIRECTED TO HYDRAULIC ENGINEERS AT THE SCS NATIONAL TECHNICAL CENTERS:

CHESTER, PA (NORTHEAST) -- 215-499-3933, FORT WORTH, TX (SOUTH) -- 334-5242 (FTS)
LINCOLN, NE (MIDWEST) -- 541-5318 (FTS), PORTLAND, OR (WEST) -- 423-4099 (FTS)
OR HYDROLOGY UNIT, ENGINEERING DIVISION, LANHAM, MD -- 436-7383 (FTS).

PROGRAM CHANGES SINCE MAY 1982:

12/17/82 - CORRECT PEAK RATE FACTOR FOR USER ENTERED DIMHYD
CORRECT REACH ROUTING PEAK TRAVEL TIME PRINTED WITH FULLPRINT OPTION
5/02/83 - CORRECT COMPUTATIONS FOR ---
1. DIVISION OF BASEFLOW IN DIVERT OPERATION
2. HYDROGRAPH VOLUME SPLIT BETWEEN BASEFLOW AND ABOVE BASEFLOW
3. CROSS SECTION DATA PLOTTING POSITION
4. INTERMEDIATE PEAK WHEN "FROM" AREA IS LARGER THAN "THRU" AREA
5. STORAGE ROUTED REACH TRAVEL TIME FOR MULTIPEAK HYDROGRAPH
6. ORDERING "FLOW-FREQ" FILE FROM SUMMARY TABLE #3 DATA
7. BASEFLOW ENTERED WITH READHYD





LOCATION MAP

How to handle Drainage from West?

WOODLAND ESTATES 3RD	AREA (acres)	AREA ACCUM.	C_2	C_{100}	T_c (min)	I_2 (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{100} (cfs)	PIPE SIZE	PIPE SLOPE	INLETS
	3.0	3.0	0.50	0.76	15	3.63	7.37	5.7	16.8			

NOTES:

TOPOGRAPHY IS FROM AERIAL TAKEN JUNE 1985

A DRAINAGE CONCEPT PLAN WILL BE PREPARED BY M.K.E.C. AND SUBMITTED TO CITY ENGINEER

BENCH MARK: SPIKE STEP IN CORNER FENCE POST, 90' S. OF N.W. CORNER LOT 15, BLOCK 1 WOODLAND ESTATES 2ND ADDITION. ELEV. 178.09

DRAINAGE & UTILITY PLAN (REPLAT OF A PORTION OF WOODLANDS ESTATES 2ND ADDITION)

WOODLAND ESTATES 3RD

OWNER: RITCHIE ASSOCIATES, 8100 E. 22ND NORTH, BLDG. 500, WICHITA, KS 67226

MID-KANSAS ENGINEERING CONSULTANTS PA
3500 NORTH ROCK ROAD
BUILDING 1400
WICHITA, KANSAS 67226
682-4561