

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4/18/81		G. Cotcamp		B. Cotcamp		6834		B.C.		3	1					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Kansas		Seneca/Corning		Kansas	Nemaha					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		instrument - Wild T1A chain - 330' steel cable + pins REMARKS
												LAT.	DEP.	Y	X	
7										1258.0				523,755	2,560,910	→ scaled R.
	1490	1489.4	353° 06' - 180°	+5.1°	+9.1	88° 20'	-43.3	-34.2	1223.8		BS	-1489.1	+47.1			T-intersect. el. 1258 R
	1490				+4.8	88° 30'	-39.0	-34.2			BS					
1	1320		352° 38'	+5.1°	2.7	88° 30'	+34.5	+31.8		1255.6		+1319	-52	523,584	2,560,906	dirt road
2	990		" "	"	4.3	88° 30'	+25.9	+21.6		1245.4		+989	-39	523,254	2,560,919	↓
3	660		" "	"	3.2	88° 30'	+17.3	+14.1		1237.9		+659	-26	522,924	2,560,932	
4	330		" "	"	2.8	88° 30'	+8.6	+5.8		1229.6		+330	-13	522,595	2,560,945	↑
5	0				5.4	-		-5.4		1218.4	X	0	0	522,265	2,560,958	Seneca Quad.
6	330		172° 47'	+5.1°	14.1	91° -	-5.8	-19.9		1203.9		-330	+12	521,935	2,560,970	Corning Quad.
7	660		" "	"	10.7	92° -	-23.0	-33.7		1190.1		-660	+24	521,605	2,560,982	↓
8	990		" "	"	5.0	92° -	-34.5	-39.5		1184.3		-989	+37	521,276	2,560,995	
9	1320		" "	"	13.2	91° 10'	-26.9	-40.1		1183.7		-1319	+49	520,946	2,561,007	
10	1650	1649.7	172° 47'	+5.1°	6.7	91° 10'	-33.6	-40.3			TP	-1649.1	+61	520,615	2,561,019	
10	1650				11.6	91° -	-28.8	-40.4		1183.4	TP					
	1320		352° 44' - 180°	+5.1°	+14.0	90° 30'	+11.5	+25.5	1208.9		BS	-1319.1	+50			
	1320				+12.5	90° 34'	+13.1	+25.6			BS					
11	1124		353° 08'	+5.1°	14.5	90° 36'	-11.8	-26.3		1182.6		+1123	-35	520,418	2,561,034	bridge el. 1183.
11	990		352° 44'	+5.1°	15.2	90° 30'	-8.6	-23.8		1185.1		+989	-37	520,284	2,561,032	
12	660		" "	"	11.6	-		-11.6		1197.3		+660	-25	519,955	2,561,044	
13	330		" "	"	6.9	-		-6.9		1202.0		+330	-12	519,625	2,561,057	
14	0				5.4	-		-5.4		1203.5	X	0	0	519,295	2,561,069	

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
4/18/81		G. Cotcamp		B. Cotcamp		6834		rlee BC		3	2				
AREA		TOPO MAP		STATE		COUNTY		RANGE		PARTY MANAGER					
Kansas		Corning 7 1/2'		Kansas		Nemaha				L. Davis					
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1208.9						
15	330		173° 05'	+5.1°	13.0	-		-13.0		1195.9		-330	+10	518,965	2,561,079
16	660		" "	"	10.5	91° -	-11.5	-22.0		1186.9		-660	+21	518,635	2,561,090
<u>16</u>	832		172° 03'	+5.1°	7.5	91° -	-14.5	-22.0			TP	-831	+91	518,464	2,561,110
<u>16</u>	832				12.4	90° 40'	-9.7	-22.1		1186.8	TP				
	594	592.8	263° 17' 48°	+5.1°	+13.1	93° 40'	+37.9	+51.0	1237.8		BS	+17	+593		594 (stadia) offset east
	594				+14.9	93° 30'	+36.2	+51.1			BS				
<u>17</u>	0				5.4	-		-5.4		1232.4	TP	0	0	518,481	2,561,703
17	150		175° 18'	+5.1°	6.1	-		-6.1		1231.7		-150	-1	518,331	2,561,702
18	480		175° 18'	+5.1°	6.7	-		-6.7		1231.1	TP	-480	-3	518,061	2,561,700
18	480				4.3	BH	-2.4	-6.7			TP				Town of Kelly ↓
	990		352° 57' 48°	+5.1°	+1.2	88° 40'	-23.0	-21.8	1209.3		BS	-989	+34		
	990				+6.9	88° 20'	-28.9	-21.9			BS				
19	660		352° 57'	+5.1°	6.1	88° 30'	+17.3	+11.2		1220.5		+660	-22	517,672	2,561,712
20	330		" "	"	7.8	88° 30'	+8.6	+0.8		1210.1		+330	-11	517,342	2,561,723
21	0				5.4	-		-5.4		1203.9	TP	0	0	517,012	2,561,734
22	330		183° 54'	+5.1°	13.2	91° 30'	-8.6	-21.8		1187.5		-326	-52	516,686	2,561,682
23	634		196° 56'	+5.1°	2.5	91° 30'	-16.6	-19.1		1190.2	TP	-587	-238	516,425	2,561,496
23	634				13.6	90° 30'	-5.5	-19.1			TP				
	330		29° 41' +180°	+5.1°	+10.3	92° -	+11.5	+21.8	1212.0		BS	-271	-188		
	330				+13.2	91° 30'	+8.6	+21.8			BS				

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
4/18/81		G. Cotcamp		B. Cotcamp		6834		B.L.		3	3			
AREA		TOPO MAP		STATE		COUNTY		RANGE		PARTY MANAGER				
Kansas		Corning		Kansas		Nemaha				L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1212.0					
24	0				5.4	-		-5.4		1206.6	X	0	0	516,154 2,561,308
25	330		208°34'	+5.1°	12.2	-		-12.2		1,199.8		-275	-183	515,879 2,561,125
26	638		194°02'	+5.1°	12.5	-		-12.5		1,199.5	TP	-603	-209	515,551 2,561,099
26	638				9.3	BH	-3.2	-12.5			TP			
	1320		354°29'20"-180°	+5.1°	+14.2	90°26'	+10.0	+24.2			BS	-1320	+9	
	1320				+12.8	90°30'	+11.5	+24.3	1203.8		BS			
27	990		354°29'	+5.1°	9.0	91°-	-17.3	-26.3		1,197.5		+990	-7	515,221 2,561,101
X	900		355°50'	+5.1°	10.2	91°-	-15.7	-25.9		1,197.9		+900	+15	515,131 2,561,123 concrete headwall el. 1198
28	660		354°29'	+5.1°	11.3	91°-	-11.5	-22.8		1,201.0		+660	-5	514,891 2,561,103
29	330		" "	"	10.6	91°-	-5.8	-16.4		1,207.4		+330	-2	514,561 2,561,106
30	0				5.4	-		-5.4		1,218.4	X	0	0	514,231 2,561,108
31	330		174°30'	+5.1°	10.3	91°-	-5.8	-16.1		1,207.7		-330	+2	513,901 2,561,110
32	660		" "	"	15.0	91°-	-11.5	-26.5		1,197.3		-660	+5	513,571 2,561,113
33	990		" "	"	11.2	91°-	-17.3	-28.5		1,195.3		-990	+7	513,241 2,561,115
$\frac{1}{2}$	1020		174°04'	+5.1°	10.3	91°-	-17.8	-28.1		1,195.7		-1020	+15	513,211 2,561,123 4-Way Intersect.
34	1316		172°48'	+5.1°	5.6	91°-	-23.0	-28.6		1,195.2	TP	-1315	+98	512,916 2,561,156
34	1316				13.3	90°40'	-15.3	-28.6			TP			
	990		344°47'20"-180°	+5.1°	+6.8	-		+6.8	1202.0		BS	-975	+174	
	990				+11.8	TH	-5.0	+6.8			BS			
35	660		344°47'	+5.1°	6.1	-		-6.1		1,195.9		+650	-116	512,591 2,561,214

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4/18/81		G. Cotcamp		B. Cotcamp		6837		B.C.		3		4			
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER			
Kansas		Corning		Kansas		Nemaha						L. Davis			
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1202.0						
36	330		349° 47'	+5.1°	4.5	-		-4.5		1197.5		+325	-58	512,266	2,561,272
37	0				5.4	-		-5.4		1196.6	π	0	0	511,941	2,561,330
38	305		209° 43'	+5.1°	5.3	-		-5.3		1196.7		-250	-174	511,691	2,561,156 S-curve
39	610		190° 38'	+5.1°	4.9	-		-4.9		1197.1		-587	-165	511,354	2,561,165
40	928		184° 12'	+5.1°	3.1	-		-3.1		1198.9	TP	-916	-150	511,025	2,561,180
40	928				7.7	TH	+4.6	-3.1			TP				
	1320		353° 10' - 180°	+5.1°	+12.0	92° 30'	+57.5	+69.5	1268.4		BS	-1318	+40		
	1320				+14.3	92° 24'	+55.2	+69.5			BS				
41	990		353° 10'	+5.1°	9.1	93° -	-51.7	-60.8		1207.6		+990	-30	510,697	2,561,190
42	660		" "	"	10.4	93° -	-34.5	-44.9		1223.5		+660	-20	510,367	2,561,200
43	330		" "	"	13.5	92° -	-11.5	-25.0		1243.4		+330	-10	510,037	2,561,210
44	0				5.4	-		-5.4		1263.0	π	0	0	509,707	2,561,220
45	330		173° 18'	+5.1°	0.3	-		-0.3		1268.1		-330	+9	509,377	2,561,229
46	660		" "	"	7.3	89° -	+11.5	+4.2		1272.6		-660	+18	509,047	2,561,238
47	990		" "	"	11.9	89° -	+17.3	+5.4		1273.8		-990	+28	508,717	2,561,248
48	1320		173° 18'	+5.1°	7.2	89° -	+23.0	+15.8		1284.2	TP	-1319	+37	508,388	2,561,257
48	1320				3.4	89° 10'	+19.2	+15.8			TP				
	454		351° 58' - 180°	+5.1°	+7.0	-		+7.0	1291.2		BS	-453	+23		
	454				+9.3	TH	-2.3	+7.0			BS				
49	124		351° 58'	+5.1°	5.9	-		-5.9		1285.3		+124	-6	508,059	2,561,274

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4/18/81		G. Cotcamp		T. Grady		6834		B.C.		3		5				
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER				
Kansas		Corning 7 1/2		Kansas		Nemaha						L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y	X
									1291.2						horiz. correct. y = -3' x = +1'	
TP	0				5.4	-		-5.4		1285.8	TP	0	0	507,935	2,561,280	507,935 + 2,561,280 4-way Intersect 1287
TP	460	459.4	262°54'	+5.4°	8.8	93°-	-24.0	-32.8		1258.4	TP	-14	-459	507,921	2,560,821	
TP	460				128	92°30'	-20.0	-32.8			TP					2577' offset
	927	925.7	82°24' +180°	+5.4°	4.9	87°-	-48.4	-43.5	1214.9		BS	-36	-925			west (sta 49 +50)
	927				+1.7	87°12'	-45.2	-43.5			BS					
X	0				5.4	-		-5.4		1209.5	TP	0	0	507,885	2,559,896	
TP	1190		262°06'	+5.4°	4.9	89°-	+20.8	+15.9			TP	-52	-1189	507,833	2,558,707	507,815 + 2,558,700 T-intersect. EL. 1232.0
TP	1190				1.5	89°10'	+17.3	+15.8		1230.7	TP					
	1196		353°55' -180°	+5.4°	+10.4	BH	+6.0	+16.4	1247.1		BS	-1196	+14			
	1196				+12.9	90°10'	+3.5	+16.4			BS					
50	990		353°44'	+5.4°	12.5	BH	-5.0	-17.5		1229.6		+990	-15	507,629	2,558,706	
51	660		" "	"	14.7	BH	-3.3	-18.0		1229.1		+660	-10	507,299	2,558,711	
52	330		" "	"	14.2	-		-14.2		1232.9		+330	-5	506,969	2,558,716	
53	0				5.4	-		-5.4		1241.7	TP	0	0	506,639	2,558,721	
54	330		191°46'	+5.4°	15.0	BH	-1.7	-16.7		1230.4		-315	-97	506,324	2,558,624	
55	660		" "	"	12.7	BH	-3.3	-16.0		1231.1		-631	-195	506,008	2,558,526	
56	985		188°49'38"	+5.4°	14.3	-		-14.3			TP	-955	-242	505,686	2,558,479	
56	985				9.3	BH	-4.9	-14.2		1232.9	TP					
	1280		340°47' -180°	+5.4°	+1.0	TH	-6.4	-5.4	1227.5		BS	-1243	+306			
	1280				+5.8	89°30'	-11.2	-5.4			BS					

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4/23/81		G. Cotcamp		T. Grady		6834		B.C.		3		6		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Corning		Kansas		Nemaha						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1227.5					
57	975		338° 0'	+5.9°	9.2	-		-9.2		1218.3		+934	-279	505,379 2,558,506
58	650		346° 52'	+5.9°	12.2	-		-12.2		1215.3		+694	-87	505,089 2,558,678
58	375		353° 44'	+5.9°	9.0	-		-9.0		1218.5		+375	-6	504,820 2,558,779 bridge 1219.0
59	330		" "	"	9.2	-		-9.2		1218.3		+330	-5	504,775 2,558,780
60	0				5.4	-		-5.4		1222.1	TP	0	0	504,445 2,558,785
61	330		173° 31'	+5.9°	3.7	88° -	+11.5	+7.8		1235.3		-330	+6	504,115 2,558,791
62	660		" "	"	0.3	88° -	+23.0	+22.7		1250.2		-660	+12	503,785 2,558,797
63	990	988.3	173° 31'	+5.9°	4.3	86° 40'	+57.5	+53.2		1280.7	TP	-988.2	+19	503,459 2,558,804
63	990				1.4	86° 50'	+54.6	+53.2			TP			
	1132		353° 21' 20" - 180°	+5.9°	+4.5	91° -	+19.8	+24.3	1305.0		BS	-1132.2	+25	
	1132				+14.4	90° 30'	+9.9	+24.3			BS			
64	802		353° 21'	+5.9°	7.2	91° -	-14.0	-21.2		1283.8		+802	-18	503,131 2,558,811
65	472		" "	"	12.8	93° -	-24.7	-37.5		1267.5		+472	-10	502,801 2,558,819
65	241		354° 29'	+5.9°	12.6	92° -	-8.4	-21.0		1284.0		+241	0	502,570 2,558,829 502,580 + 2,558,810 4-way Intersect. 1204
66	142		353° 21'	+5.9°	14.7	BH	-0.7	-15.4		1289.6		+142	-3	502,471 2,558,826
TP	0				5.4	-		-5.4		1299.6	TP	0	0	502,329 2,558,829
67	188		173° 48'	+5.9°	14.9	-		-14.9		1290.1		-188	+3	502,141 2,558,832
68	518		" "	"	13.0	91° -	-9.0	-22.0		1283.0		-518	+7	501,811 2,558,836
69	848		" "	"	13.0	BH	-4.2	-17.2		1287.8		-848	+12	501,481 2,558,841

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4/23/81		G. Cotcamp		T. Grady		6834		B.C.		3		7		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Corning		Kansas		Nemaha						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
									1305.0					
70	1178		173°48'	+5.9°	6.7	-		-6.7		1298.3	TP	-1178.2	+16	501,153 2,558,845
70	1178				12.6	TH	+5.9	-6.7			TP			
	1980	1979.3	353°06'20"-180°	+5.9°	+7.3	88°30'	-51.8	-44.5			BS	-1979.2	+52	
	1980				+9.7	88°26'	-54.1	-44.4	1253.9		BS			
71	1650		353°06'	+5.9°	8.1	88°30'	+43.2	+35.1		1289.0		+1699	-43	500,825 2,558,854
72	1320		" "	"	7.7	88°30'	+34.5	+26.8		1280.7		+1320	-35	500,496 2,558,862
73	990		" "	"	3.3	89°30'	+8.6	+5.3		1259.2		+990	-26	500,166 2,558,871
74	660		" "	"	1.1	-		-1.1		1252.8		+660	-17	499,836 2,558,880
75	330		" "	"	3.5	-		-3.5		1250.4		+330	-9	499,506 2,558,888
76	0				5.4	-		-5.4		1248.5	X	0	0	499,176 2,558,897
77	330		173°32'	+5.9°	3.8	-		-3.8		1250.1		-330	+6	498,846 2,558,903
78	660		" "	"	1.2	TH	+3.3	+2.1		1256.0		-660	+12	498,516 2,558,909
79	990		" "	"	7.3	88°30'	+25.9	+18.6		1272.5		-990	+18	498,186 2,558,915
80	1320		" "	"	7.3	87°40'	+53.7	+46.4		1300.3		-1320	+25	497,856 2,558,922
81	1650	1648.3	173°31'40"	+5.9°	2.7	87°24'	+74.8	+72.1		1326.0	TP	-1648.2	+31	497,530 2,558,928
81	1650				4.6	87°20'	+76.7	+72.1			TP			
	660		353°0'-180°	+5.9°	+9.6	88°50'	-13.4	-3.8	1322.2		BS	-660.2	+18	
	660				+11.4	88°40'	-15.4	-4.0			BS			
IF	436		354°03'	+5.9°	3.6	88°40'	+10.1	+6.5		1328.7		+436	-4	497,308 2,558,942
82	330		353°0'	+5.9°	3.6	88°30'	+8.6	+5.0		1327.2		+330	-9	497,202 2,558,937

497,320 + 2,558,925
4-way Intersect. 1330

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/23/81		G. Cotcamp		T. Grady		6834		B.C.		3		8			
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER			
Kansas		Corning		Kansas		Nemaha						L. Davis			
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1322.2						
83	0				5.4	-		-5.4		1316.8	π	0	0	496,872	2,558,946
84	330		173° 31'	+5.9°	14.5	91° 30'	8.6	-23.1		1299.1		-330	+6	496,542	2,558,952
85	660		" "	"	15.3	0H	-3.3	-18.6		1303.6		-660	+12	496,212	2,558,958
86	990		173° 31' 20"	+5.4°	6.6	91° -	-17.3	-23.9		1298.3	TP	-990	+19	495,884	2,558,965
86	990				13.5	90° 36'	-10.4	-23.9			TP				
	2310		353° 31' 24" - 180°	+5.4°	+6.4	91° -	+40.3	+46.7			BS	-2309	+43		
	2310				+14.6	90° 48'	+32.2	-46.8	1345.1		BS				
87	1980		353° 31'	+5.4°	13.3	91° -	-34.6	-47.9		1297.2		+1980	-37	495,557	2,558,973
88	1650		" "	"	6.4	91° 30'	-43.2	-49.6		1295.5		+1650	-31	495,221	2,558,979
89	1320		" "	"	12.9	91° 30'	-34.5	-47.4		1297.7		+1320	-25	494,897	2,558,985
90	990		" "	"	7.9	91° 30'	-25.9	-33.8		1311.3		+990	-19	494,567	2,558,991
91	660		" "	"	12.6	91° -	-11.5	-24.1		1321.0		+660	-12	494,237	2,558,998
92	330		" "	"	11.1	91° -	-5.8	-16.9		1328.2		+330	-6	493,907	2,559,004
93	0				5.4	-		-5.4		1339.7	π	0	0	493,577	2,559,010
94	330		173° 29'	+5.4°	9.4	-		-9.4		1335.7		-330	+6	493,247	2,559,016
95	660		" "	"	9.0	-		-9.0		1336.1		-660	+13	492,917	2,559,023
96	990		" "	"	5.2	-		-5.2		1339.9		-990	+19	492,587	2,559,029
97	1320		" "	"	5.2	TH	+6.6	+1.4		1346.5		-1320	+26	492,257	2,559,036
IF	1554		173° 33'	+5.4°	4.3	89° 30'	+13.6	+9.3		1354.4		-1554	+28	492,023	2,559,038
98	1650		173° 29'	+5.4°	6.3	89° 20'	+19.2	+12.9		1358.0		-1650	+32	491,927	2,559,043

492,035 2,559,025
T-rd (east) et. 1355

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
4/23/81		G. Cotcamp		T. Grady		6834		B.L.		3	9				
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER					
Kansas		Corning		Kansas	Nemaha					L. Davis					
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1345.1						
99	1980		173° 29'	+59°	1.0	89° 10'	+28.8	+27.8		1372.9	TP	-1979 _H	+39 ₊₂	491,599	2,559,051
99	1980				6.8	89° -	+34.6	+27.8			TP				
	1650		353° 21' 18"-180°	+59°	+3.8	89° -	-28.8	-25.0	1347.9		BS	-1699	+36 ₊₂		
	1650				+8.6	88° 50'	-33.6	-25.0			BS				
#	1600		353° 23'	+59°	0.6	89° -	+27.9	+27.3		1375.2		+1600	-34	491,550	2,559,055 railroad
100	1320		353° 21'	+59°	8.2	89° -	+23.0	+14.8		1362.7		+1320	-29	491,270	2,559,060
101	990		" "	"	8.1	89° -	+17.3	+9.2		1357.1		+990	-22	490,940	2,559,067
102	660		" "	"	0.6	TH	+3.3	+2.7		1350.6		+660	-14	490,610	2,559,075
103	330		" "	"	0.6	-		-0.6		1347.3		+330	-7	490,280	2,559,082
104	0				5.4	-		-5.4		1342.5	π	0	0	489,950	2,559,089
105	330		173° 28'	+59°	11.6	91° -	-5.8	-17.4		1336.5		-330	+7	489,620	2,559,096
106	660		" "	"	11.8	91° -	-11.5	-23.3		1324.6		-660	+13	489,290	2,559,102
107	990		" "	"	15.0	8H	-5.0	-20.0		1327.9		-990	+20	488,960	2,559,109
108	1320		" "	"	9.1	8H	-6.6	-15.7		1332.2		-1320	+26	488,630	2,559,115
109	1650		" "	"	14.5	90° 30'	-14.4	-28.9		1319.0		-1650	+33	488,300	2,559,122
110	1980		173° 28'	+59°	7.3	90° 30'	-17.3	-24.6		1323.3	TP	-1980	+39 ₊₂	487,970	2,559,130
110	1980				5.0	90° 34'	-19.6	-24.6			TP				
	990		352° 45'-180°	+59°	+6.9	-		+6.9	1330.2		BS	-989	+32 ₊₂		
	66990				+11.9	TH	-5.0	+6.9			BS				
111	660		352° 45'	+59°	2.5	-		-2.5		1327.7		+660	-21	487,641	2,559,143

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/23/81		G. Cotcamp		T. Grady		6834		B.C.		3		10			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Kansas		Corning		Kansas		Nemaha								L. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1330.2						
112	330		352°45'	+5.9°	13.7	-		-13.7		1316.5		+330	-11	487,311	2,559,153
113	0				5.4	-		-5.4		1324.8	π	0	0	486,981	2,559,164
114	232		175°36'	+5.9°	1.5	-		-1.5		1328.7		-232	-4	486,749	2,559,160
114	330		175°05'	+5.9°	3.4	89°-	+5.8	+2.4		1332.6		-330	-3	486,651	2,559,161
115	660		175°05'	+5.9°	7.7	89°-	+11.5	+3.8			TP	-660.2	+6+3	486,323	2,559,161
115	660				6.5	89°6'	+10.4	+3.9		1334.1	TP				
	1650		353°19'40"-180°	+5.9°	+8.5	-		+8.5			BS	-1650.2	+37+3		
	1650				+0.3	04	+8.3	+8.6	1342.7		BS				
116	1320		353°20'	+5.9°	9.6	91°-	-23.0	-32.6		1310.1		+1320	-29	485,995	2,559,172
117	990		" "	"	8.8	92°30'	-43.1	-51.9		1290.8		+990	-22	485,665	2,559,179
118	660		" "	"	12.7	93°30'	-40.2	-52.9		1289.8		+660	-15	485,335	2,559,186
119	330		" "	"	13.7	94°-	-23.0	-36.7		1306.0		+330	-7	485,005	2,559,194
120	0				5.4	-		-5.4		1337.3	π	0	0	484,675	2,559,201
121	330		172°36'	+5.9°	12.0	91°-	-5.8	-17.8		1324.9		-330	+12	484,345	2,559,213
122	660		" "	"	10.2	-		-10.2		1332.5		-660	+23	484,015	2,559,224
123	990		" "	"	5.5	-		-5.5		1337.2		-989	+35	483,686	2,559,236
124	1320		171°58'40"	+5.9°	5.7	74	+6.6	+0.9			TP	-1319.2	+60+3	483,358	2,559,264
124	1320				10.5	89°30'	+11.5	+1.0		1343.7	TP				
	1980		353°43'40"-180°	+5.9°	+6.2	04	+9.9	+16.1	1359.8		BS	-1980.2	+30+3		
	1980				+13.7	90°4'	+2.3	+16.0			BS				

486,720 + 2,559,140 = 3,045,860
4-Way Intersect. (At 9)

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE							
4/23/81		G. Cotcamp		B. Cotcamp		6834		B.C.		3		11							
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER					
Kansas		Corning		Kansas		Nemaha								L. Davis					
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS	
												LAT.	DEP.	Y	X				
									1359.8										
125	1650		353° 44'	+5.9°	4.3	91° -	-28.8	-33.1		1326.7		+1650	-25	483,030	2,559,272				
126	1320		" "	"	13.8	91° -	-23.0	-36.8		1323.0		+1320	-20	482,700	2,559,277				
127	990		" "	"	14.2	91° 46'	-28.8	-43.0		1316.8		+990	-15	482,370	2,559,282				
128	660		" "	"	7.4	92° 20'	-26.8	-34.2		1325.6		+660	-10	482,040	2,559,287				
129	330		" "	"	11.4	92° -	-11.5	-22.9		1336.9		+330	-5	481,710	2,559,292				
130	0		355° 51'	+5.9°	4.5	-	-	-4.5		1355.3		+104	+2	481,484	2,559,299				481,500 + 2,559,300 4-way Intersect. e. 1356
131	330				5.4	-	-	-5.4		1354.4	π	0	0	481,380	2,559,297				
132	330		173° 35'	+5.9°	13.3	-	-	-13.3		1346.5		-330	+6	481,050	2,559,303				
133	660		" "	"	13.2	-	-	-13.2		1346.6		-660	+12	480,720	2,559,309				
134	990		" "	"	0.6	-	-	-0.6		1359.2		-990	+18	480,390	2,559,315				
134	1320		173° 35'	+5.9°	8.5	89° 20'	+15.4	+6.9		1366.7	TP	-1320 _{±2}	+23 _{±3}	480,062	2,559,323				
134	1320				12.3	89° 10'	+19.2	+6.9			TP								
	1650		353° 01' 40" - 180°	+5.9°	7.2	TH	-8.3	-1.1	21365.7		BS	-1649 _{±2}	+45 _{±3}						
	1650				+5.8	89° 46'	-6.7	-0.9			BS								
135	1320		353° 02'	+5.9°	13.8	-	-	-13.8		1351.9		+1320	-36	479,735	2,559,335				
136	990		" "	"	11.2	BH	-5.0	-16.2		1349.5		+990	-27	479,405	2,559,344				
137	660		" "	"	11.6	91° 30'	-17.3	-28.9		1336.8		+660	-18	479,075	2,559,353				
138	330		" "	"	13.2	92° 30'	-14.4	-27.6		1338.1		+330	-9	478,745	2,559,362				
139	0				5.4	-	-	-5.4		1360.3	π	0	0	478,415	2,559,371				
140	330		173° 06'	+5.9°	14.6	-	-	-14.6		1351.1		-330	+9	478,085	2,559,380				

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/23/81		G. Cotcamp		B. Cotcamp		6834		rew B.C.		3		12		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Corning/Havensville		Kansas		Nemaha						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1365.7					
141	660		173°06'	+5.4°	10.8	91°-	-11.5	-22.3		1343.4		-660	+17	477,755 2,559,388
142	990		" "	"	12.8	91°-	-17.3	-30.1		1335.6		-990	+26	477,425 2,559,397
143	1320		" "	"	3.7	91°-	-23.0	-26.7		1339.0		-1320	+35	477,095 2,559,406
144	1650		173°06'	+5.4°	12.6	-		-12.6		1353.1	TP	-1699+2	+43+3	476,768 2,559,917
144	1650				4.3	BH	-8.3	-12.6			TP			
	2310		353°39'10"-180°	+5.4°	+5.1	TH	-11.6	-6.5	1346.7		BS	-2310+2	+38+3	
	2310				+7.1	89°40'	-13.4	-6.3			BS			Horiz. correct. y = +39, Havensville Road x = +34
145	1980		353°39'	+5.4°	5.5	TH	+9.9	+4.4		1351.1		+1980	-33	476,440 2,559,425
145	1740		353°51'	+5.4°	1.2	-		-1.2		1345.5		+1740	-23	476,200 2,559,435
146	1650		353°39'	+5.4°	7.1	-		-7.1		1339.6		+1650	-27	476,110 2,559,431
147	1320		" "	"	8.4	91°-	-23.0	-31.4		1315.3		+1320	-22	475,780 2,559,436
148	990		" "	"	9.5	92°20'	-40.3	-49.8		1296.9		+990	-16	475,450 2,559,442
149	660		" "	"	15.2	93°-	-34.5	-49.7		1297.0		+660	-11	475,180 2,559,447
150	330		" "	"	10.0	94°-	-23.0	-33.0		1313.7		+330	-5	474,790 2,559,453
151	0				5.4	-		-5.4		1341.3	TP	0	0	474,460 2,559,458
152	330		173°16'	+5.4°	1.3	89°-	+5.8	+4.5		1351.2		-330	+8	474,130 2,559,466
153	660	659.9	172°06'	+5.4°	14.3	88°58'	+11.9	-2.4		1344.3	TP	-659+2	+29+2	473,803 2,559,479
153	660				14.7	88°56'	+12.3	-2.4			TP			
	1320	1319.8	353°43'20"-180°	+5.4°	+7.8	89°-	-23.0	-15.2	1329.1		BS	-1320+2	+20+2	
	1320				+4.0	89°10'	-19.2	-15.2			BS			

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
4/23/81		G. Cotcamp			B. Cotcamp		6834		T.G.		3	13				
AREA		TOPO MAP		STATE	COUNTY		TWP		RANGE	PPM	PARTY MANAGER					
Kansas		Corning		Kansas	Nemaha						L. Davis					
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1329.1							
154	990		353°15'	+5.4°	7.8	-		-7.8		1321.3		+990	-23	473,475	2,559,488	
155	660		" "	+5.4°	12.5	04	-3.3	-15.8		1313.3		+660	-16	473,145	2,559,495	
156	330		" "	" "	10.4	-		-10.4		1318.7		+330	-8	472,815	2,559,503	
157	0				5.4	-		-5.4		1323.7	TP	0	0	472,485	2,559,511	
158	330		173°20'	+5.4°	2.5	89°-	+5.8	+3.3		1332.4		-330	+7	472,155	2,559,518	
159	660		" "	+5.4°	5.5	88°-	+23.0	+17.5		1346.6		-660	+15	471,825	2,559,526	
160	990		" "	" "	0.3	88°-	+34.5	+34.2		1363.3		-990	+22	471,495	2,559,533	
161	1320	1319	173°20'	" "	8.4	87°46'	+51.4	+43.0		1372.1	TP	-1319.2	+29+2	471,168	2,559,542	
161	1320				6.9	87°50'	+49.9	+43.0			TP					
	330		354°24'-180°	+5.4°	+1.1	89°30'	-2.9	-1.8	1370.3		BS	-330+3	+1+2			
	330				+3.0	89°10'	-4.8	-1.8			BS					
FF	90		356°10'	+5.4°	1.7	-		-1.7		1362.6		+90	+2	470,931	2,559,547	470,950 + 2,559,550 4-Way Intersect. EL 1368.0
162	0				5.4	-		-5.4		1364.9	TP	0	0	470,841	2,559,545	
163	330		173°18'	+5.4°	14.6	04	-1.7	-16.3		1354.0	TP	-330.3	+7+2	470,514	2,559,554	
163	330				10.5	91°-	-5.8	-16.3			TP					
	2310	2309.5	353°30'-180°	+5.4°	+13.7	88°58'	-45.7	-32.5			BS	-2309.3	+44+2			
	2310				+14.6	88°50'	-47.0	-32.4	1321.6		BS					
164	1980		353°30'	+5.4°	5.9	89°-	+34.6	+28.7		1350.3		+1980	-38	470,188	2,559,562	
165	1650		" "	" "	6.7	89°-	+28.8	+22.1		1343.7		+1650	-32	469,858	2,559,568	
166	1320		" "	" "	8.5	89°-	+23.0	+14.5		1336.1		+1320	-25	469,528	2,559,575	

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
4/24/81		G. Cotcamp		B. Cotcamp		6834		T.G. rlx		3	14						
AREA		TOPO MAP	STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER								
Kansas		Havensville	Kansas	Nemaha					L. Davis								
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1321.6								
167	990		353° 30'	+5.4°	10.0	89° -	+17.3	+7.3		1328.9		+990	-19	469,198	2,559,581		
168	660		" "	+5.4°	9.2	89° -	+11.5	+2.3		1323.9		+660	-13	468,868	2,559,587		
169	330		" "	" "	7.5	89° -	+5.8	-1.7		1319.9		+330	-6	468,538	2,559,594		
170	0				5.4	-		-5.4		1316.2	X	0	0	468,208	2,559,600		
171	330		173° 9'	+5.4°	6.0	91° -	-5.8	-11.8		1309.8		-330	+8	467,878	2,559,608		
172	660		" "	+5.4°	3.0	91° -	-11.5	-14.5		1307.1		-660	+17	467,548	2,559,617		
173	990		" "	+5.4°	12.3	BH	-5.0	-17.3		1304.3		-990	+25	467,218	2,559,625		
174	1320		" "	" "	11.0	BH	-6.6	-17.6		1304.0		-1320	+33	466,888	2,559,633		
175	1650		173° 9'	" "	7.5	BH	-8.3	-15.8		1305.8		-1649	+42	466,559	2,559,642		
176	1980		" "	+5.4°	12.1	-		-12.1		1309.5		-1979	+50	466,229	2,559,650		
177	2310		" "	+5.4°	4.2	-		-4.2		1317.4		-2309	+58	465,899	2,559,658		
7F	2580		173° 50' 20"	" "	8.7	TH	+12.8	+3.7		1325.3		-2560	+34	465,648	2,559,634	465,650 + 2,559,670 7F FL 1327	
178	2640		173° 9' 20"	" "	8.3	TH	+13.8	+4.9		1326.5	TP	-2639	+67	465,572	2,559,629		
178	2640		" "	" "	10.6	89° 40'	+15.4	+4.8			TP						
	1320		353° 20' 40"	+5.4°	+3.2	-		+3.2	1329.7		BS	-1320	+29				
	1320		" "	" "	+9.8	TH	-6.6	+3.2			BS						
179	990		353° 20'	" "	9.8	-		-9.8		1319.9		+990	-22	465,245	2,559,678		
180	660		" "	+5.4°	10.3	-		-10.3		1319.4		+660	-15	464,915	2,559,685		
181	330		" "	+5.4°	5.7	-		-5.7		1324.0		+330	-7	464,585	2,559,693		
182	0				5.4	-		-5.4		1324.3	X	0	0	464,255	2,559,700		

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/24/81		B. Cotcamp		T. GRADY		6834		T.G.		3		15		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Havensville		Kansas		Nemaha						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1329.7					
183	330		173° 49'	+5.4°	11.7	BH -1.7	-13.4		1316.3			-330	+8	463,925 2,559,708
184	660		" "	+5.4°	10.1	91° -	-11.5	-21.6	1308.1			-660	+17	463,595 2,559,717
185	990		" "	+5.4°	9.7	91° 30'	-25.9	-35.6	1294.1			-990	+25	463,265 2,559,725
186	1320		" "	+5.4°	10.0	91° 40'	-38.4	-48.4	1281.3			-1320	+33	462,935 2,559,733
187	1650		" "	+5.4°	8.0	91° 50'	-52.8	-60.8	1268.9			-1649	+42	462,606 2,559,742
188	1980	1979.0	173° 8' 55"	+5.4°	6.1	91° 50'	-63.3	-69.4			TP	-1978.3	+50.0	462,280 2,559,752
188	1980		" " "	+5.4°	11.7	91° 40'	-57.6	-69.3	1260.4		TP			
	1320	1319.8	353° 52' 50" - 185°	+5.4°	+7.5	91° -	+23.0	+30.5			BS	-1320.2	+17.2	
	1320				+11.4	90° 50'	+19.2	+30.6	1291.0		BS			
189	990		353° 53'	+5.4°	8.2	91° 30'	-25.9	-34.1	1256.9			+990	-12	461,953 2,559,759
190	660		" "	+5.4°	5.0	92° 30'	-28.8	-33.8	1257.2			+660	-8	461,623 2,559,763
191	330		" "	+5.4°	8.8	92° 30'	-14.4	-23.2	1267.8			+330	-4	461,293 2,559,767
192	0				5.4	-		-5.4	1285.6		X	0	0	460,963 2,559,771
193	330		173° 2'	+5.4°	1.0	BH -1.7	-2.7		1288.3			-330	+9	460,633 2,559,780
≠	581	580.9	172° 4' 0"	+5.4°	6.5	89° -	+10.1	+3.6	1294.6			-580	+26	460,303 2,559,797 way inters. EL. 1296.
194	660		173° 2'	"	7.5	89° -	+11.5	+4.0	1295.0			-660	+18	460,303 2,559,789
195	990	989.9	173° 1' 40"	"	12.4	89° -	+17.3	+4.9	1295.9		TP	-989.3	+27.2	459,977 2,559,800
195	990		" " "	"	6.6	89° 20'	+11.5	+4.9			TP			
	1320	1319.8	353° 10' 30" - 185°	+5.4°	+2.1	91° -	+23.0	+25.1			BS	-1319.3	+33.2	
	1320				+6.0	90° 50'	+19.2	+25.2	1321.1		BS			

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/24/81		B. Cotcamp		T. GRADY		6837		B.C.		3		16		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MGR		
Kansas		Havensville		Kansas		NEMAHA						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1321.1					
196	990		353° 10'	+5.4°	4.5	92° -	-34.5	-39.0		1282.1		+990	-25	459,651 2,559,810
197	660		" "	+5.4°	11.1	92° -	-23.0	-34.1		1287.0		+660	-17	459,321 2,559,818
198	330		" "	+5.4°	8.5	91° -	-5.8	-14.3		1306.8		+330	-8	458,991 2,559,827
199	0				5.4	-		-5.4		1315.7	π	0	0	458,661 2,559,835
200	330		173° 4'	+5.4°	3.0	TH	+1.7	-1.3		1319.8		-330	+9	458,331 2,559,944
201	660	659.9	173° 4'	" "	8.7	89° -	+11.5	+2.8		1323.9	TP	-660±3	+18±2	458,004 2,559,855
201	660		" "	" "	10.7	88° 50'	+13.4	+2.7			TP			
	990	989.4	353° 24' 30" - 180°	+5.4°	+10.3	88° -	-34.5	-24.2	1299.7		BS	-989±3	+21±2	
	990				+4.5	88° 20'	-28.8	-24.3			BS			
202	660		353° 25'	+5.4°	7.3	88° -	+23.0	+15.7		1315.4		+660	-14	457,678 2,559,864
203	330		" "	" "	6.1	88° -	+11.5	+5.4		1305.1		+330	-7	457,348 2,559,871
204	0				5.4	-		-5.4		1294.3	π	0	0	457,018 2,559,878
205	330		173° 22'	+5.4°	10.5	89° -	+5.8	-4.7		1295.0		-330	+7	456,688 2,559,885
206	660		173° 22'	+5.4°	7.0	89° -	+11.5	+4.5		1304.2		-660	+14	456,358 2,559,892
207	990	989.9	173° 22' 20"	" "	4.3	89° -	+17.3	+13.0		1312.7	TP	-990±3	+21	456,031 2,559,899
207	990		" " "	" "	10.0	88° 40'	+23.0	+13.0			TP			
	1083.2	931.7	354° 20' 20" - 180°	+5.4°	+11.0	88° 30'	-24.4	-13.4			BS	-932±3	+4	
	1063.0		" "	+5.4°	+8.4	88° 40'	-21.7	-13.3	1299.4		BS			
208	432.502		" "	" "	11.8	88° -	+17.5	+5.7		1305.1		+502	-2	455,604 2,559,901
209	272		" "	" "	6.5	90° -		-6.5		1292.9		+272	-1	455,374 2,559,902

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/24/81		B. Cotcamp		T. Grady		6834		B.C.		3		18		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Havensville		Kansas		Jackson						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1215.5					
≡	581		171°33'40"	+54°	9.2	90°40'	-6.8	-16.0		1199.5		-580	+31	451,496 2,559,203 bridge el. 1202
221	660		172°59'	+54°	7.2	-		-7.2		1208.3		-660	+19	451,416 2,559,191
222	989		172°59'10"	+54°	0.5	88°40'	+23.0	+22.5	+226	1238.1	TP	-988	+28	451,088 2,559,200
222	989				3.2	88°30'	+25.9	+22.7			TP			
	990		354°42'10"-180°	+54°	+6.8	92°-	+34.5	+41.3			BS	-989	-2	
	990				+9.7	91°50'	+31.7	+41.4		1279.5	BS			
223	660		359°42'	+54°	12.3	92°-	-23.0	-35.3		1244.2		+660	+1	450,759 2,559,199
224	330		" "	"	4.5	92°-	-11.5	-16.0		1263.5		+330	+1	450,429 2,559,199
225	0				5.4	-		-5.4		1274.1	TP	0	0	450,099 2,559,198
226	330		173°17'	+54°	3.8	89°-	+5.8	+2.0		1281.5		-330	+8	449,769 2,559,206
227	660		" "	"	8.9	88°-	+23.0	+14.1		1293.6		-660	+15	449,439 2,559,213
≡	749		172°56'20"	+54°	6.8	88°-	+26.1	+19.3		1298.8		-749	+22	449,350 2,559,220 4-way Intersect.
228	990		173°17'	+54°	4.1	88°-	+34.5	+30.4		1309.9		-990	+23	449,109 2,559,221
229	1320		173°16'40"	+54°	6.6	88°-	+46.0	+39.4		1318.9	TP	-1320.5	+30	448,784 2,559,228
229	1320				10.6	87°50'	+49.9	+39.3			TP			
	2640		353°05'-180°	+54°	+8.5	BH	+13.2	+21.7		1340.6	BS	-2639.5	+70	
	2640				+6.2	90°20'	+15.4	+21.6			BS			
230	2310		353°05'	+54°	7.4	BH	-11.6	-19.0		1321.6		+2309	-61	448,459 2,559,237
231	1980		" "	"	7.9	BH	-9.9	-17.8		1322.8		+1979	-52	448,129 2,559,246
232	1650		" "	"	6.8	90°40'	-19.2	-26.0		1314.6		+1649	-44	447,799 2,559,251

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
4/25/81		G. Cotcamp		T. Grady		6837		TG		3	19						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Kansas		Havensville		Kansas	Jackson					L. Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1340.6								
233	1320		353°05'	+5.9°	11.3	90°40'	-15.4	-26.7		1313.9		+1320	-35	447,470	2,559,263		
234	990		" "	"	7.6	91°30'	-25.9	-33.5		1307.1		+990	-26	447,140	2,559,272		
235	660		" "	"	11.1	92°-	-23.0	-34.1		1306.5		+660	-17	446,810	2,559,281		
236	330		" "	"	8.5	92°-	-11.5	-20.0		1320.6		+330	-9	446,480	2,559,289		
237	0				5.4	-		-5.4		1335.2	TP	0	0	446,150	2,559,298		
238	330		173°24'44"	+5.9°	6.1	-		-6.1		1334.5		-330	+7	445,820	2,559,305		
239	660		" "	"	5.9	-		-5.9		1334.7		-660	+14	445,490	2,559,312		
240	990		" "	"	7.3	-		-7.3		1333.3		-990	+21	445,160	2,559,319		
241	1320		" "	"	4.1	-		-4.1		1336.5		-1320	+27	444,830	2,559,325		
242	1650		" "	"	3.2	TH	+8.3	+5.1		1345.7		-1650	+34	444,500	2,559,332		
243	1980		" "	"	6.1	89°20'	+23.0	+16.9		1357.5		-1980	+41	444,170	2,559,339		
IF	2177		172°57'38"	+5.9°	3.6	89°20'	+25.3	+21.7		1362.3		-2176	+62	443,974	2,559,360	4-Way Intersect. el. 1363.	
244	2310		173°24'44"	+5.9°	1.3	89°20'	+26.9	+25.67			TP	-2310+5	+48	443,845	2,559,346		
244	2310				7.9	89°10'	+33.6	+23.75		1366.3	TP						
	1980		353°24'20"-180°	+5.9°	+2.1	-		+2.1	1368.4		BS	-1980+5	+41				
	1980				+12.0	TH	-9.9	+2.15			BS						
245	1650		353°24'	+5.9°	12.8	-		-12.8		1355.6		+1650	-35	443,520	2,559,352		
246	1320		" "	"	9.5	90°30'	-11.5	-21.0		1347.4		+1320	-28	443,190	2,559,359		
247	990		" "	"	11.9	90°30'	-8.6	-20.5		1347.9		+990	-21	442,860	2,559,366		
248	660		" "	"	7.5	91°-	-11.5	-19.0		1349.4		+660	-14	442,530	2,559,373		

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/25/81		G. Cotcamp		T. Grady		6834		JLW TG		3		20		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Havensville		Kansas		Jackson						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1368.4					
249	330		353° 24'	+5.9°	13.2	-		-13.2		1355.2		+330	-7	442,200 2,559,380
250	0				5.4	-		-5.4		1363.0	X	0	0	441,870 2,559,387
251	330		173° 10'	+5.9°	2.0	89°-	+5.8	+3.8		1372.2		-330	+8	441,540 2,559,395
252	660		" "	"	1.8	89°-	+11.5	+9.7		1378.1		-660	+17	441,210 2,559,404
253	990		" "	"	4.0	89°-	+17.3	+13.3		1381.7		-990	+25	440,880 2,559,412
254	1320		173° 10' 30"	+5.9°	11.6	89°-	+23.0	+11.4			TP	-1320+5	+33	440,555 2,559,420
254	1320				9.9	89°4'	+21.5	+11.6		1380.0	TP			
	2640		352° 43' 16" -180°	+5.9°	+6.7	89°20'	-30.7	-24.0	1356.0		BS	-2639+5	+87	
	2640				+14.1	89°10'	-38.4	-24.3			BS			
255	2310		352° 43'	+5.9°	7.1	89°20'	+26.9	+19.8		1375.8		+2309	-76	440,230 2,559,431
256	1980		" "	"	8.7	89°20'	+23.0	+14.3		1370.3		+1979	-65	439,900 2,559,442
257	1650		" "	"	4.0	TH	+8.3	+4.3		1360.3		+1699	-54	439,570 2,559,453
258	1320		" "	"	7.5	-		-7.5		1348.5		+1319	-43	439,240 2,559,464
259	990		" "	"	3.8	91°-	-17.3	-21.1		1334.9		+989	-33	438,910 2,559,474
259	864		352° 58'	+5.9°	8.6	91°-	-15.1	-23.7		1332.3		+864	-25	438,785 2,559,482 438,805 + 2,559,475 - rd (west) El. 1334
260	660		352° 43'	+5.9°	12.5	91°-	-11.5	-24.0		1332.0		+660	-22	438,581 2,559,485
261	330		" "	"	11.7	-		-11.7		1344.3		+330	-11	438,251 2,559,496
262	0				5.4	-		-5.4		1350.6	X	0	0	437,921 2,559,507
263	330		173° 12'	+5.9°	11.8	91°-	-5.8	-17.6		1338.4		-330	+8	437,591 2,559,515
264	660		" "	"	10.2	-		-10.2		1345.8		-660	+16	437,261 2,559,523

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/25/81		G. Cotcamp		T. Grady		6834		B.C.		3		21		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Havensville		Kansas		Jackson						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1356.0					
265	990		173° 12'	+59°	8.7	-		-8.7		1347.3		-990	+24	436,931 2,559,531
266	1320		" "	"	7.0	-		-7.0		1349.0		-1320	+32	436,601 2,559,539
267	1650		" "	"	5.0	TH	+8.3	+3.3		1359.3		-1650	+40	436,271 2,559,547
268	1980		173° 11' 40"	+59°	4.6	TH	+9.9	+5.3		1361.3	TP	-1979+5	+49	435,947 2,559,556
268	1980				5.2	89° 42'	+10.4	+5.2			TP			
	1980		352° 55' 40" -180°	+59°	+7.4	TH	-9.9	-2.5			BS	-1979+5	+58	
	1980				+3.4	89° 30'	-5.8	-2.4	1358.9		BS			
269	1650		352° 56'	+59°	4.5	-		-4.5		1354.4		+1649	-48	435,622 2,559,566
270	1320		" "	"	6.4	-		-6.4		1352.5		+1319	-38	435,292 2,559,576
271	990		" "	"	8.6	-		-8.6		1350.3		+990	-29	434,963 2,559,585
272	660		" "	"	6.9	91° -	-11.5	-18.4		1340.5		+660	-19	434,633 2,559,595
273	330		" "	"	13.1	-		-13.1		1345.8		+330	-10	434,303 2,559,604
274	0				5.4	-		-5.4		1353.5	TP	0	0	433,973 2,559,614
275	330		173° 01'	+59°	8.8	92° -	-11.5	-20.3		1338.6		-330	+9	433,643 2,559,623
IF	470		172° 51'	+59°	6.6	92° -	-16.4	-23.0		1335.9		-470	+14	433,503 2,559,628 ^{933,530 + 2,559,610} 4-way Intersect. E.L. 1338
276	660		173° 01'	+59°	5.8	92° -	-23.0	-28.8		1330.1		-660	+18	433,313 2,559,632
277	990		" "	"	10.3	91° 20'	-23.0	-33.3		1325.6		-990	+27	432,983 2,559,641
278	1320		" "	"	7.2	91° 40'	-38.4	-45.6		1313.3		-1319	+36	432,654 2,559,650
279	1650		" "	"	8.7	91° 20'	-38.4	-47.1		1311.8		-1649	+46	432,324 2,559,660
280	1980		" "	"	4.1	91° -	-34.6	-38.7		1320.2		-1979	+55	431,994 2,559,669

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4/25/81		G. Cotcamp		T. Grady		6834		rew T.G.		3		22				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Kansas		Onaga NE		Kansas		Jackson								L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y	X
									1358.9							
281	2310		173° 01'	+5.9°	12.0	0H	-11.6	-23.6		1335.3		-2309	+64	431,664	2,559,678	↑
282	2640		173° 01' 18"	+5.9°	8.1	-		-8.1		1350.8	TP	-2639+5	+73	431,339	2,559,687	Havensville Quad
282	2640				12.8	89° 54'	+4.6	-8.2			TP					
	1980		353° 04' 40" - 180°	+5.9°	+15.0	90° 20'	+11.5	+26.5			BS	-1979+5	+53			
	1980				+10.5	90° 28'	+16.1	+26.6	1377.4		BS					
283	1650		353° 05'	+5.9°	7.9	90° 30'	-14.4	-22.3		1355.1		+1699	-94	431,014	2,559,186	Onaga NE
284	1320		" "	"	5.2	91° -	-23.0	-28.2		1349.2		+1320	-35	430,685	2,559,705	↓
285	990		" "	"	2.4	92° -	-34.5	-36.9		1340.5		+990	-26	430,355	2,559,714	
286	660		" "	"	11.9	92° -	-23.0	-34.9		1342.5		+660	-17	430,025	2,559,723	
287	330		" "	"	13.5	91° -	-5.8	-19.3		1358.1		+330	-9	429,695	2,559,731	
288	0				5.4	-		-5.4		1372.0	X	0	0	429,365	2,559,740	
289	330		172° 35'	+5.9°	5.4	-		-5.4		1372.0		-330	+12	429,035	2,559,752	
290	660		" "	"	11.8	-		-11.8		1365.6		-660	+23	428,705	2,559,763	
291	990		" "	"	12.5	0H	-5.0	-17.5		1359.9		-990	+35	428,375	2,559,775	
IF	1140		172° 46'	+5.4'	14.5	0H	-5.7	-20.2		1357.2		-1139	+36	428,226	2,559,776	428,200 + 2,559,780 4-Way Intersect. E.L. 1359
292	1320		172° 35'	+5.6°	9.4	90° 40'	-15.4	-24.8			TP	-1319+5	+42+1	428,051	2,559,783	
292	1320				13.9	90° 28'	-10.7	-24.6		1352.8	TP					
	2640		352° 59' 26" - 180°	+5.6°	+10.8	-		+10.8			BS	-2639+5	+65+1			
	2640				+14.0	89° 56'	-3.1	+10.9	1363.7		BS					
293	2310		352° 59'	+5.6°	12.9	0H	-11.6	-24.5		1339.2		+2309	-57	427,726	2,559,792	

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/25/81		G. Cotcamp		B. Cotcamp		6834		B.C.		3		23		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Onaga NE		Kansas		Jackson						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1363.7					
294	1980		352° 59'	+5.6°	8.6	90° 40'	-23.0	-31.6		1332.1		+1979	-49	427,396 2,559,800
295	1650		" "	"	12.2	90° 40'	-19.2	-31.4		1332.3		+1649	-41	427,066 2,559,808
296	1320		" "	"	10.2	91°	-23.0	-33.2		1330.5		+1320	-33	426,737 2,559,816
297	990		" "	"	12.3	91°	-17.3	-29.6		1334.1		+990	-24	426,407 2,559,825
298	660		" "	"	7.5	91°	-11.5	-19.0		1344.7		+660	-16	426,077 2,559,833
299	330		" "	"	9.5	91°	-5.8	-15.3		1348.4		+330	-8	425,747 2,559,841
300	0				5.4	-		-5.4		1358.3	π	0	0	425,417 2,559,849
301	330		173° 04'	+5.6°	9.2	91°	-5.8	-15.0		1348.7		-330	+8	425,087 2,559,857
302	660		" "	"	5.0	92°	-23.0	-28.0		1335.7		-660	+15	424,757 2,559,864
303	990		" "	"	4.5	92°	-34.5	-39.0		1324.7		-990	+23	424,427 2,559,872
304	1320		" "	"	9.2	91° 20'	-30.7	-39.9		1323.8		-1320	+31	424,097 2,559,880
305	1650		" "	"	3.0	91°	-28.8	-31.8		1331.9		-1650	+38	423,767 2,559,887
306	1980		" "	"	5.2	88°	-9.9	-15.1		1348.6		-1979	+46	423,438 2,559,895
307	2310		173° 04' 20"	+5.6°	12.2	-		-12.2		1351.5	TP	-2309.5	+59+1	423,113 2,559,904
307	2310				9.5	90° 4'	-2.7	-12.2			TP			
	2310		353° 14' -180°	+5.6°	+4.2	89°	-40.3	-36.1	1315.4		BS	-2310+5	+97+1	
	2310				+10.8	88° 50'	-47.0	-36.2			BS			
±1	2129		353° 19' 22"	+5.6°	4.7	89°	+32.2	+32.5		1347.9		+2129	-40	422,937 2,559,912 422,995 + 2,559,905 T-rod (west) EL. 1350
308	1980		353° 14'	+5.6°	3.9	89°	+34.6	+30.7		1346.1		+1980	-40	422,788 2,559,912
309	1650		" "	"	5.0	89°	+28.8	+23.8		1339.2		+1650	-34	422,458 2,559,918

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/25/81		G. Cotcamp		B. Cotcamp		6834		JGW T.G.		3		24		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Kansas		Onaga NE		Kansas		Jackson						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1315.4					
310	1320		353°14'	+5.6°	10.1	89°-	+23.0	+12.9		1328.3		+1320	-27	422,128 2,559,925
311	990		" "	"	10.1	89°-	+17.3	+7.2		1322.6		+990	-20	421,798 2,559,932
312	660		" "	"	6.0	89°-	+11.5	+5.5		1320.9		+660	-13	421,468 2,559,939
313	330		" "	"	5.1	89°-	+5.8	+0.7		1316.1		+330	-7	421,138 2,559,945
314	0				5.4	-		-5.4		1310.0	π	0	0	420,808 2,559,952
315	330		173°12'	+5.6°	11.2	91°-	-5.8	-17.0		1298.4		-330	+7	420,478 2,559,959
316	660		" "	"	9.3	92°-	-23.0	-32.3		1283.1		-660	+14	420,148 2,559,966
317	990		" "	"	5.1	92°-	-34.5	-39.6		1275.8		-990	+21	419,818 2,559,973
318	1320		" "	"	10.1	91°-	-23.0	-33.1		1282.3		-1320	+28	419,488 2,559,980
319	1650		173°12'30"	+5.6°	7.4	90°40'	-19.2	-26.67			TP	-1650±5	+34±1	419,163 2,559,987
319	1650				14.0	90°26'	-12.5	-26.55		1288.9	TP			
	660		353°08'±80°	+5.6°	+4.0	89°-	-11.5	-7.55	1281.4		BS	-660±5	+15±1	
	660				+1.3	89°14'	-8.8	-7.55			BS			
320	330		353°08'	+5.6°	3.2	89°-	+5.8	+2.6		1284.0		+330	-7	418,838 2,559,996
321	0				5.4	-		-5.4		1276.0	π	0	0	418,508 2,560,003
322	330		173°35'	+5.6°	12.7	84	-1.7	-14.4		1267.0		-330	+5	418,178 2,560,008
323	660		" "	"	12.2	91°-	-11.5	-23.7		1257.7		-660	+9	417,848 2,560,012
±	850		173°17'	+5.6°	1.9	91°-	-14.8	-16.7		1264.7		-850±2	+17	417,660 2,560,020
														horiz. correct. y=+81' x=+6'

E.O.L. #3
417,660 + 2,560,020
4-way Intersect. EL 1266