

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	
INSTRUMENT MAN: R. Hulsey ROD MAN: G. Cotcamp PARTY NUMBER: 6834 NOTES CHECKED BY: R. Hulsey LINE NO.: 5 PAGE: 1 OF 32 AREA: OKLAHOMA TOPO MAP: Retrop 15' STATE: Oklahoma COUNTY: Washita Co. TWP: 8 N RANGE: 20 W PPM: PARTY MANAGER: L. O. Davis																	
Take-Off 4-way																	
#	2740			259° 54.2'	+10.6°	4.5	-		+4.5	1770.5		R	-24	+2740			→ scaled
#	2740					+2.9	90° 02'	+1.6	+4.5			R					Take-off int. E1. 1766
1	2640			259° 45.1'	+10.6°	4.7	-		-4.7		1765.8		+16	-2640	662,262	1,593,570	Sta. 1 chained
2	2310			" "	"	3.0	-		-3.0		1767.5		+14	-2310	662,260	1,593,900	100' from 4-way.
3	1980			" "	"	3.0	-		-3.0		1767.5		+12	-1980	662,258	1,594,230	
4	1650			" "	"	6.2	-		-6.2		1764.3		+10	-1650	662,256	1,594,560	
5	1320			" "	"	8.7	-		-8.7		1761.8		+8	-1320	662,254	1,594,890	
6	990			" "	"	3.7	-		-3.7		1766.8		+6	-990	662,252	1,595,220	
7	660			" "	"	2.9	-		-2.9		1767.6		+4	-660	662,250	1,595,550	
8	330			" "	"	3.5	-		-3.5		1767.0		+2	-330	662,248	1,595,880	
9	0					5.4	-		-5.4		1765.1	R	0	0	662,246	1,596,210	
10	330			79° 43.6'	+10.6°	6.2	-		-6.2		1764.3		-2	+330	662,244	1,596,540	
11	660			" "	"	7.2	-		-7.2		1763.3		-4	+660	662,242	1,596,870	
12	990			" "	"	7.8	-		-7.8		1762.7		-6	+990	662,240	1,597,200	
13	1320			" "	"	8.2	-		-8.2		1762.3		-8	+1320	662,238	1,597,530	
14	1650			" "	"	7.5	-		-7.5		1763.0		-9	+1650	662,237	1,597,860	
15	1980			" "	"	6.8	-		-6.8		1763.7		-11	+1980	662,235	1,597,190	
16	2310			" "	"	6.9	-		-6.9		1763.6		-13	+2310	662,233	1,598,520	662,225 + 1,598,650
#	2440			79° 35'	+10.6°	5.7	-		-5.7		1764.8		-14	+2440	662,232	1,598,650	4-way int. E1. 1766

DATE 5-8-79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 2
AREA Oklahoma	TOPO MAP Retrop 15'	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 20W	PARTY MANAGER L. O. 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 - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
									1770.5							
17	2640		79°43.6'	+106°	3.8	-		-3.8			TP	-15	+2640	662,231	1,598,850	
17	2640				2.2	90°02'	-1.5	-3.7		1766.8	TP					
	2640		260°26.2'-180°	+106°	+12.2	TH	-13.2	-1.0			BS	-48	+2640			
	2640				+3.7	89°54'	-4.6	-0.9	1765.9		BS					
18	2310		260°26.2'	+106°	9.4	TH	+11.6	+2.2		1768.1		+42	-2310	662,225	1,599,180	
19	1980		" "	"	7.8	TH	+9.9	+2.1		1768.0		+36	-1980	662,219	1,599,510	
20	1650		" "	"	6.5	TH	+8.3	+1.8		1747.7		+30	-1650	662,213	1,599,840	
21	1320		" "	"	0.1	-		-0.1		1765.8		+24	-1320	662,207	1,600,170	
22	990		" "	"	2.1	-		-2.1		1763.8		+18	-990	662,201	1,600,500	
23	660		" "	"	3.5	-		-3.5		1762.4		+12	-660	662,195	1,600,830	
24	330		" "	"	4.4	-		-4.4		1761.5		+6	-330	662,189	1,601,160	
25	0				5.4	-		-5.4		1760.5	TP	0	0	662,183	1,601,490	
26	330		80°29.1'	+106°	5.9	-		-5.9		1760.0		-6	+330	662,177	1,601,820	
27	660		" "	"	7.2	-		-7.2		1758.7		-12	+660	662,171	1,602,150	
28	990		" "	"	9.3	-		-9.3		1756.6		-19	+990	662,164	1,602,480	
29	1320		" "	"	11.3	-		-11.3		1754.6		-25	+1320	662,158	1,602,810	
30	1650		" "	"	12.8	-		-12.8		1753.1		-31	+1650	662,152	1,603,140	
31	1980		" "	"	4.2	BH	-9.9	-14.1		1751.8		-37	+1980	662,146	1,603,470	
32	2310		" "	"	4.3	BH	-11.6	-15.9		1750.0		-44	+2310	662,139	1,603,800	
FF	2435		80°28'	+106°	4.8	BH	-12.2	-17.0		1748.9		-45	+2435	662,138	1,603,925	662,145 + 1,603,935 -way int. El. 1750

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
5-8-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		5	3					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	RPM	PARTY MANAGER						
Oklahoma		Retrop 15'		Oklahoma	Washita		8 N	20 W		L.O. 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
									1765.9							
33	2640		80° 29.1'	+10.6°	7.4	BH	-13.2	-20.6			TP	-50	+2640	662,133	1,604,130	Pavement begins
33	2640				5.1	90° 20'	-15.4	-20.5		1745.4	TP					
	2640		259° 46.3' - 180°	+10.6°	+2.4	89° 20'	-30.7	-28.3	1717.1		BS	-17	+2640			
	2640				+10.0	89° 10'	-38.4	-28.4			BS					
34	2310		259° 46.3'	+10.6°	2.0	89° 20'	+26.9	+24.9		1742.0		+15	-2310	662,131	1,604,460	
35	1980		" "	"	2.9	89° 20'	+23.0	+20.1		1737.2		+13	-1980	662,129	1,604,790	
36	1650		" "	"	3.9	89° 20'	+19.2	+15.3		1732.4		+11	-1650	662,127	1,605,120	
37	1320		" "	"	5.8	89° 20'	+15.4	+9.6		1726.7		+9	-1320	662,125	1,605,450	
38	990		" "	"	2.4	89° 20'	+11.5	+9.1		1726.2		+6	-990	662,122	1,605,780	Pavement ends
39	660		" "	"	1.9	89° 20'	+7.7	+5.8		1722.9		+4	-660	662,120	1,606,110	
40	330		" "	"	3.5	89° 20'	+3.8	+0.3		1717.4		+2	-330	662,118	1,606,440	
41	0				5.4	-	-	-5.4		1711.7	TP	0	0	662,116	1,606,770	
42	330		79° 49.2'	+10.6°	10.3	-	-	-10.3		1706.8		-2	+330	662,114	1,607,100	
43	660		" "	"	11.3	BH	-3.3	-14.6		1702.5		-5	+660	662,111	1,607,430	
44	990		" "	"	13.8	BH	-5.0	-18.8		1698.3		-7	+990	662,109	1,607,760	
45	1320		" "	"	11.0	90° 30'	-11.5	-22.5		1694.6		-10	+1320	662,106	1,608,090	
46	1650		" "	"	9.1	90° 40'	-19.2	-28.3		1688.8		-12	+1650	662,104	1,608,420	
47	1980		" "	"	8.1	90° 50'	-28.8	-36.9		1680.2		-15	+1980	662,101	1,608,750	
48	2310		" "	"	11.3	90° 40'	-26.9	-38.2		1678.9		-17	+2310	662,099	1,609,080	
±	2460		79° 42'	-10.6°	5.3	90° 44'	-31.5	-36.8		1680.3		-13	+2460	662,103	1,609,230	(662,105+1,609,215(s)) 4-way int. El. 1682

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
5/8/79		R. Hulsey		G. Cotcam		6834		R. Hulsey		5		4			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Retrop 15'		Oklahoma		Washita		8 N		20 W				L.O. 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
									1717.1						
49	2640		79° 49.2'	+10.6°	15.0	90° 29'	-22.3	-37.3	-37.4	1679.7	TP	-19	+2640-3	662,097	1,609,407
49	2640				5.0	90° 42.5'	-32.6	-37.6			TP				
	660		259° 17.9' -180	+10.6°	+8.8	-		+8.8	1688.5		BS	+1	+660-2		
	660				+5.5	BH	+3.3	+8.8			BS				One lane trail begins. Brushy.
50	330		259° 17.9'	+10.6°	13.2	-		-13.2		1675.3		-1	-330	662,097	1,609,735
51	0				5.4	-		-5.4		1683.1	π	0	0	662,098	1,610,065
52	330		79° 46.6'	+10.6°	5.7	BH	-1.7	-7.4		1681.1		-2	+330	662,096	1,610,395
53	660		79° 46.6'	+10.6°	12.6	-		-12.6		1675.9	TP	-4	+660-3	662,094	1,610,722
53	660				9.3	BH	-3.3	-12.6			TP				
	1650		259° 43.1' -180	+10.6°	+3.8	89° -	-28.8	-25.0			BS	-9	+1650-2		
	1650				+2.9	89° 02'	-27.8	-24.9	1651.0		BS				
54	1320		259° 43.1'	+10.6°	4.1	89° -	+23.0	+18.9		1669.9		+7	-1320	662,092	1,611,050
55	990		" "	"	1.3	89° 10'	+14.4	+13.1		1664.1		+6	-990	662,091	1,611,380
56	660		" "	"	3.2	89° 40'	+3.8	+0.6		1651.6		+4	-660	662,089	1,611,710
57	330		" "	"	6.5	-		-6.5		1644.5		+2	-330	662,087	1,612,040
58	0				5.4	-		-5.4		1645.6	π	0	0	662,085	1,612,370
59	330		79° 43.7'	+10.6°	2.6	-		-2.6		1648.4		-2	+330	662,083	1,612,700
60	660		" "	"	2.7	TH	+3.3	+0.6		1651.6		-4	+660	662,081	1,613,030
61	990		79° 43.7'	+10.6°	3.6	89° 20'	+11.5	+7.9		1658.9	TP	-6	+990-3	662,079	1,613,357
61	990				6.5	89° 10'	+14.4	+7.9			TP				

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
5-8-79		R. Hulsey		G. Catcamp		6834		R. Hulsey		5	5					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Retrop 15'		Oklahoma	Washita		8 N	20 W		L.O. 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	
61										1658.9						
	1320		260° 21.9' - 180°	+10.6°	+3.6	89° 20'	-15.4	-11.8	1647.1		BS	-22	+1320-2			
	1320				+7.4	89° 10'	-19.2	-11.8		BS						
62	990		260° 21.9'	+10.6°	4.6	89° 30'	+8.6	+4.0		1651.1		+17	-990	662,074	1,613,685	
63	660		" "	"	7.5	89° 30'	+5.8	-1.7		1645.4		+11	-660	662,068	1,614,015	
64	330		" "	"	1.6	89° 30'	+2.9	+1.3		1648.4		+6	-330	662,063	1,614,345	
64	170		262° 29'	+10.6°	1.3	89° 30'	+1.5	+0.2		1647.3		+9	-170	662,066	1,614,505	662,060 + 1,614,500(s) 4-Way Intersect. El. 1648
65	0				5.4			-5.4		1641.7	TP	0	0	662,057	1,614,675	
66	330		80° 26.8'	+10.6°	<del>5.9</del> 7.2	90° 30'	-2.9	-8.8		1638.3		-6	+330	662,051	1,615,005	
67	660		" "	"	2.8	90° 20'	-3.8	-6.6		1640.5		-12	+660	662,045	1,615,335	
68	990		80° 26.8'	+10.6°	2.4	90° 20'	-5.8	-8.2		1638.9	TP	-18	+990	662,039	1,615,665	
68	990				8.1	-		-8.1			TP					
	1980		260° 38.3' - 180°	+10.6°	+5.0	90° 34'	+19.6	+24.6	1663.5		BS	-43	+1980			
	1980				+6.2	90° 32'	+18.4	+24.6		BS						
69	1650		260° 38.3'	+10.6°	5.1	90° 30'	-14.4	-19.5		1644.0		+36	-1650	662,032	1,615,995	
70	1320		" "	"	9.2	BH	-6.6	-15.8		1647.7		+29	-1320	662,025	1,616,325	
71	990		" "	"	12.1	-		-12.1		1651.4		+21	-990	662,017	1,616,655	
72	660		" "	"	10.9	-		-10.9		1652.6		+14	-660	662,010	1,616,985	
73	330		" "	"	6.6	-		-6.6		1656.9		+7	-330	662,003	1,617,315	
74	0				5.4	-		-5.4		1658.1	TP	0	0	661,996	1,617,645	
75	330		79° 10.9'	+10.6°	12.6	91° 10'	-6.7	-19.3		1644.2		+1	+330	661,997	1,617,975	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
5-8-79		R. Hulsey		G. Cotcamp		6334		R. Hulsey		5	6			
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER				
Oklahoma		Retrop 15'		Oklahoma	Washita		8N	20W		L. O. 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.	
									1663.5					
76	660		79° 10.9'	+10.6°	12.6	91° 30'	-17.3	-29.9		1633.6		+3	+660	661,999 1,618,305
77	990		79° 10.9'	+10.6°	5.4	91° 40'	-28.8	-34.2		1629.3	TP	+4	+990	662,000 1,618,635
77	990				2.5	91° 50'	-31.7	-34.2			TP			
	1650		259° 27' - 180°	+10.6°	+8.9	89° 30'	-14.4	-5.5			BS	-1	+1650	
	1650				+14.6	89° 18'	-20.2	-5.6	1623.7		BS			
78	1320		259° 27'	+10.6°	2.3	89° 30'	+11.5	+9.2		1632.9		+1	-1320	620,000 1,618,965
79	990		" "	"	2.0	89° 30'	+8.6	+6.6		1630.3		+1	-990	662,000 1,619,295
80	660		" "	"	0.7	-		-0.7		1623.0		+1	-660	662,000 1,619,625
7F	530		260° 13.6'	+10.6°	2.9	-		-2.9		1620.8		+8	-530	662,007 1,619,755 4-Way Intersect. E.I. 1620
81	330		259° 27'	+10.6°	4.4	-		-4.4		1619.3		0	-330	661,999 1,619,955
82	0				5.4	-		-5.4		1618.3	X	0	0	661,999 1,620,285
83	330		80° 22.3'	+10.7°	6.3	-		-6.3		1617.4		-6	+330	661,993 1,620,615
84	660		" "	"	6.7	-		-6.7		1617.0		-12	+660	661,987 1,620,945
85	990		80° 22.3'	+10.7°	8.1	-		-8.1		1615.6	TP	-19	+990	661,980 1,621,275
85	990				13.1	TH	+5.0	-8.1			TP			
	328		246° 21.8' - 180°	+10.7°	+13.0	89°	-5.7	+7.3	1622.9		BS	+73	+320	
	328				+14.0	88° 30'	-6.7	+7.3			BS			
86	68		241° 52'	+10.7°	4.6	-		-4.6		1618.3		-20	-65	662,033 1,621,530 wooden bridge
86	0				5.4	-		-5.4		1617.5	X	0	0	662,053 1,621,595
87	330		90° 14'	+10.7°	4.1	-		-4.1		1618.8		-63	+324	661,990 1,621,919

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
5/9/79		G. Catcamp		R. Hulsey		6834		R. Hulsey		5		7		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PARTY MANAGER		
Oklahoma		Retrop 15'		Oklahoma		Washita		8N		20/19 W		L.O. 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.	
									1622.9					
88	659		86°50.6'	+10.7°	38	-	-3.8		1619.1	TP	-87	+653	661,966	1,622,248
88	659				71	TH	+3.3	-3.8		TP				
	1320		260°38'-180°	+10.7°	+13.7	90°34'	+13.1	+26.8	1645.9	BS	-18	+1320		
	1320				+11.4	90°40'	+15.4	+26.8		BS				
89	790		260°3.8'	+10.7°	8.5	90°50'	-14.4	-22.9	1623.0		+13	-990	661,961	1,622,578
90	660		" "	"	11.4	BH	-3.3	-14.7	1631.2		+9	-660	661,957	1,622,908
91	330		" "	"	8.0	-		-8.0	1637.9		+4	-330	661,952	1,623,238
92	0				5.4	-		-5.4	1640.5	X	0	0	661,948	1,623,868
93	330		80°2'	+10.7°	8.0	-		-8.0	1637.9		-4	+330	661,944	1,623,898
94	660		" "	"	8.8	-		-8.8	1637.1		-8	+660	661,940	1,624,228
95	990		" "	"	10.3	-		-10.3	1635.6		-13	+990	661,935	1,624,558
96	1320		" "	"	12.0	-		-12.0	1633.9		-17	+1320	661,931	1,624,888
±	1490		79°44.2'	+10.7°	10.9	-		-10.9	1635.0		-11	+1490	661,937	1,625,058
97	1650		80°2'	+10.7°	13.6	-		-13.6	1632.3	TP	-21	+1650-3	661,927	1,625,215
97	1650				5.3	BH	-8.3	-13.6		TP				
	2310		260°9.8'-180°	+10.7°	+10.4	TH	-11.6	-1.2	1631.2	BS	-35	+2310-2		
	2310				+5.7	89°50'	-6.7	-1.0		BS				
98	1980		260°9.8'	+10.7°	9.8	TH	+9.9	+0.1	1631.3		+30	-1980	661,922	1,625,543
99	1650		" "	"	2.2	-		-2.2	1629.0		+25	-1650	661,917	1,625,873
100	1320		" "	"	3.2	-		-3.2	1628.0		+20	-1320	661,912	1,626,203

R 20 W  
661,920+1,625,050(S)  
4-Way Intersect. El. 1635

R 19 W

↑

Retrop wood.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
5/9/79		S. G. Galtcamp		R. Hulsey		6834		R. Hulsey		5	8					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Hobart 15'		Ok	ahoma		Washita	8 N	19 W	L. O. 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
									1631.2							
101	990		260° 9.8'	+10.7°	3.8	-		-3.8		1627.4		+15	-990	661,907	1,626,533	Hobart Quad.
102	660		" "	"	6.8	-		-6.8		1624.4		+10	-660	661,902	1,626,863	↓
103	330		" "	"	3.5	-		-3.5		1627.7		+5	-330	661,897	1,627,193	
104	0				5.4	-		-5.4		1625.8	X	0	0	661,892	1,627,523	
105	330		80° 18.6'	+10.7°	9.0	-		-9.0		1622.2		-6	+330	661,886	1,627,853	
106	660		" "	"	12.5	-		-12.5		1618.7		-12	+660	661,880	1,628,183	
107	990		" "	"	11.2	-		-11.2		1620.0		-17	+990	661,875	1,628,513	
108	1320		" "	"	12.0	-		-12.0		1619.2		-23	+1320	661,869	1,628,843	
109	1650		" "	"	12.8	BH	-8.3	-21.1		1610.1		-29	+1650	661,863	1,629,173	
110	1980		" "	"	13.1	90°22'	-12.7	-25.8		1605.4		-35	+1980	661,857	1,629,503	
111	2310		80° 18.6'	+10.7°	13.0	90°24'	-16.1	-29.1		1602.1	TP	-41	+2310	661,851	1,629,830	
111	2310				14.3	90°22'	-14.8	-29.1			TP					
	1650		260° 24' - 180°	+10.7°	+7.9	TH	-8.3	-0.4	1601.8	-0.3	BS	-32	+1650-2			
	1650				+4.6	89°50'	-4.8	-0.2			BS					
112	1320		260° 24'	+10.7°	1.9	-		-1.9		1599.9		+25	-1320	661,844	1,630,158	661,860 + 1,630,215(S)
<u>112</u>	1245		260° 214'	+10.7°	2.2	-		-2.2		1599.6		+23	-1245	661,842	1,630,233	T-rd (north) El. 1601
113	990		260° 24'	+10.7°	3.2	-		-3.2		1598.6		+19	-990	661,838	1,630,488	
114	660		" "	"	3.9	-		-3.9		1597.9		+13	-660	661,832	1,630,818	
115	330		" "	"	4.4	-		-4.4		1597.4		+6	-330	661,825	1,631,148	
116	0				5.4	-		-5.4		1596.4	X	0	0	661,819	1,631,478	

DATE		INSTRUMENT MAN			ROD MAN			PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE	
5/9/79		G. Cotcamp			R. Hulsey			6834		R. Hulsey			5	9	
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER					
Oklahoma		Hobart 15'		Oklahoma	Washita		8 N	19 W		L.O. 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.		Y
									1601.8						
117	330		80° 1'	+10.7°	5.3	-		-5.3		1596.5		-4	+330	661,815	1,631,808
118	660		" "	"	5.8	-		-5.8		1596.0		-8	+660	661,811	1,632,138
119	990		" "	"	6.3	-		-6.3		1595.5		-12	+990	661,807	1,632,468
120	1300		75° 35"	+10.7°	5.5	-		-5.5		1596.3	TP	+84	+1297	661,903	1,632,775 shooting across curve
120	1300				12.0	TH	+6.5	-5.5			TP				
	650		239° 22.5' - 180°	+10.7°	+4.9	-		+4.9	1601.2		BS	+222	+611		S-curve
	650				+8.2	TH	-3.3	+4.9			BS				
121	330		231° 3'	+10.7°	5.0	-		-5.0		1596.2		-156	-291	661,969	1,633,095
122	0				5.4	-		-5.4		1595.8	TP	0	0	662,125	1,633,386
123	330		73° 22'	+10.7°	5.7	-		-5.7		1595.5	TP	+34	+328	662,159	1,633,714 T.P. opposite sta.
123	330				4.0	BH	-1.7	-5.7			TP				
	950		279° 47.2' - 180°	+10.7°	+3.5	-		+3.5	1599.0		BS	-332	+890		shooting across curve
	950				+2.4	90° 46'	+11.0	+13.4			BS				Misread angle
124	657		271° 6.5'	+10.7°	4.0	-		-4.0		1595.0		+134	-643	661,961	1,633,961
125	330		266° 45'	+10.7°	5.2	-		-5.2		1593.8		+43	-327	661,870	1,634,277
126	0				5.4	-		-5.4		1593.6	TP	0	0	661,827	1,634,604
127	330		84° 58.5'	+10.7°	5.1	-		-5.1		1593.9	TP	-33	+328	661,794	1,634,932
127	330				6.8	TH	+1.7	-5.1			TP				
	322		271° 13' - 180°	+10.7°	+6.0	-		+6.0	1599.9		BS	-66	+315		curve
	322				+7.6	TH	-1.6	+6.0			BS				

DATE 5/9/79	INSTRUMENT MAN G. Catcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 10
AREA Oklahoma	TOPO MAP Hobart 15	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 19W	PPM
				PARTY MANAGER L.O. 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
									1599.9						
128	0				5.4	-		-5.4		1594.5	π	0	0	661,728	1,635,247
≡	50		58° 11'	+10.7°	4.2	-		-4.2		1595.7		+18	+47	661,746	1,635,294 wood bridge
TP	191		60° 18'	+10.7°	7.5	-		-7.5		1592.4	TP	+62	+180	661,790	1,635,427 split sta. - curve
TP	191				8.5	TH	+1.0	-7.5			TP				
	2450		260° 49' - 180°	+10.7°	+12	-		+1.2	1593.6		BS	-37	+2450		
	2450				+134	TH	-12.3	+1.2			BS				
≡	2325		260° 6.2'	+10.7°	3.0	-		-3.0		1590.6		+33	-2325	661,786	1,635,552 T-rd (south) El. 1589.3
129	2310		259° 52'	+10.7°	3.2	-		-3.2		1590.4		+23	-2310	661,776	1,635,567 line #2 tie Notes
130	1980		" "	"	3.3	-		-3.3		1590.3		+20	-1980	661,773	1,635,897
131	1650		" "	"	4.4	-		-4.4		1589.2		+16	-1650	661,769	1,636,227
132	1320		" "	"	4.9	-		-4.9		1588.7		+13	-1320	661,766	1,636,557
133	990		" "	"	4.6	-		-4.6		1589.0		+10	-990	661,763	1,636,887
134	660		" "	"	4.8	-		-4.8		1588.8		+7	-660	661,760	1,637,217
135	330		" "	"	4.8	-		-4.8		1588.8		+3	-330	661,756	1,637,547
136	0				5.4	-		-5.4		1588.2	π	0	0	661,753	1,637,877
137	330		79° 45'	+10.7°	5.8	-		-5.8		1587.8		-3	+330	661,750	1,638,207
138	660		" "		7.3	-		-7.3		1586.3		-5	+660	661,748	1,638,537
139	990		" "		6.6	-		-6.6		1587.0		-8	+990	661,745	1,638,867
140	1320		" "		6.1	-		-6.1		1587.5		-10	+1320	661,743	1,639,197
141	1650		" "		5.0	-		-5.0		1588.6		-13	+1650	661,740	1,639,527

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE								
5/9/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey		5		11								
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER						
Oklahoma		Hobart 15'		Oklahoma		Washita		8N		19W				L O 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					
									1593.6											
142	1980		79°45'	+10.7°	1.0	-		-1.0		1592.6		-16	+1980	661,737	1,639,857					
143	2310		" "	"	28	TH	+11.6	+8.8		1602.4		-18	+2310	661,735	1,640,187					
144	2640		79°45'	+10.7°	57	89°36'	+18.4	+12.7		1606.3	TP	-21	+2640	661,732	1,640,517					
144	2640				149	89°24'	+27.6	+12.7			TP									
	1320		260°47.3'-180°	+10.7°	+4.6	89°	-23.0	-18.4				BS	-34	+1319						
	1320				+0.7	89°10'	-19.2	-18.5	1587.8		BS									
145	990		260°13'	+10.7°	3.6	89°30'	+8.6	+5.0		1592.8		+16	-990	661,714	1,640,846					
$\frac{14}{14}$	972		260°45.3'	+10.7°	0.2	TH	+4.9	+4.7		1592.5		+25	-972	661,723	1,640,864	4-Way Intersect. El. 1592				
146	660		260°13'	+10.7°	3.2	TH	+3.3	+0.1		1587.9		+11	-660	661,709	1,641,176					
147	330		" "	"	3.1	-		-3.1		1584.7		+5	-330	661,703	1,641,506					
148	0				54	-		-5.4		1582.4	X	0	0	661,698	1,641,836					
149	330		80°6'	+10.7°	8.8	-		-8.8		1579.0		-5	+330	661,693	1,642,166					
150	660		" "	"	10.5	-		-10.5		1577.3		-9	+660	661,689	1,642,496					
151	990		80°6'	+10.7°	9.5	-		-9.5			TP	-14	+990	661,684	1,642,826					
151	990				14.4	TH	+5.0	-9.4		1578.4	TP									
	326		256°15.4'-180°	+10.7°	+5.5	-		+5.5	1583.9		BS	+17	+326							
	326				+7.1	TH	-1.6	+5.5			BS									
$\frac{15}{15}$	138		261°3'	+10.7°	3.3	-		-3.3		1580.6		+4	-138	661,705	1,643,014	wood bridge				
152	0				54	-		-5.4		1578.5	X	0	0	661,701	1,643,152					
153	330		87°4'	+10.7°	58	-		-5.8		1578.1		-45	+327	661,656	1,643,479					

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
5/17/77		G. Cooney		R. Hulsey		6834		R. Hulsey		5		12		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PARTY MANAGER		
Oklahoma		Section 5		Oklahoma		Washita		8 N		19 W		L.O. 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.	
									1583.9					
154	660		82° 51.7'	+10.7°	6.9	-	-6.9		1577.0	TP	-41	+659	661,660	1,643,811
154	660				10.2	TH	+3.3	-6.9		TP				
	1650		259° 54.8' -180°	+10.7°	+11.0	91°	+28.8	+39.8		BS	-18	+1650		
	1650				+14.0	90° 54'	+25.9	+39.9	1616.9	BS				
155	1320		259° 54.8'	+10.7°	11.4	91° 10'	-26.9	-38.3		1578.6		+14	-1320	661,656 1,644,141
156	990		" "	"	10.9	91° 10'	-20.2	-31.1		1585.8		+11	-990	661,653 1,644,471
157	660		" "	"	14.0	91° 10'	-13.4	-27.4		1589.5		+7	-660	661,649 1,644,801
158	330		" "	"	12.2	91° 10'	-6.7	-18.9		1598.0		+4	-330	661,646 1,645,131
159	0				5.4	-	-5.4			1611.5	X	0	0	661,642 1,645,461
160	330		80° 20'	+10.7°	1.9	-	-1.9			1615.0		-6	+330	661,636 1,645,791 horizontal correct. $\frac{y}{x} = -25'$
161	660		" "	"	3.5	-	-3.5			1613.4		-12	+660	661,630 1,646,121 661,640 + 1,646,155(s)
##	694		79° 36.2'	+10.7°	3.2	-	-3.2			1613.7		-4	+694	661,638 1,646,155 4-way intersect
##	867		79° 52'	+10.7°	1.3	-	-1.3			1615.6		-9	+867	661,633 1,646,328 railroad
162	990		80° 20'	+10.8°	1.0	-	-1.0			1615.9	TP	-20	+990-2	661,622 1,646,449
162	990				6.0	TH	+5.0	-1.0			TP			
	2970		259° 26.8' -180°	+10.8°	+11.9	BH	+14.9	+26.8	1642.6	+26.7	BS	-13	+2970-3	
	2970				+9.3	90° 20'	+17.3	+26.6			BS			
163	2640		259° 26.8'	+10.8°	11.7	BH	-13.2	-24.9		1617.7		+11	-2640	661,620 1,646,776
164	2310		" "	"	11.1	BH	-11.6	-22.7		1619.9		+10	-2310	661,619 1,647,106
165	1980		" "	"	11.6	BH	-9.9	-21.5		1621.1		+9	-1980	661,618 1,647,436

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
5-10-79		R. Hulsey		G. Cotcam		6834		R. Hulsey		5	13				
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Hobart 15'	Oklahoma	Washita	8N	19W		L. O. 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.		Y
									1642.6						
166	1650		259°26.8'	+10.8°	11.5	BH	-8.3	-19.8		1622.8		+7	-1650	661,616	1,647,766
167	1320		" "	"	9.3	BH	-6.6	-15.9		1626.7		+6	-1320	661,615	1,648,096
168	990		" "	"	8.9	BH	-5.0	-13.9		1628.7		+4	-990	661,613	1,648,426
169	660														
169	725		259°58'	+10.8°	9.2	-		-9.2		1633.4		+10	-725	661,619	1,648,691 4-way int. 1633
169	660		259°26.8'	+10.8°	10.7	-		-10.7		1631.9		+3	-660	661,612	1,648,756
170	330		" "	"	8.1	-		-8.1		1634.5		+1	-330	661,610	1,649,086
171	0				5.4	-		-5.4		1637.2	TP	0	0	661,609	1,649,416
172	330		79°47.2'	+10.8°	2.1	-		-2.1		1640.5		-3	+330	661,606	1,649,746
173	660		" "	"	1.8	TH	+3.3	+1.5		1644.1		-7	+660	661,602	1,650,076
174	990		" "	"	2.9	89°30'	+8.6	+5.7		1648.3		-10	+990	661,599	1,650,406
175	1320		" "	"	2.1	89°30'	+11.5	+9.4		1652.0		-14	+1320	661,595	1,650,736
176	1650		" "	"	1.1	89°30'	+14.4	+13.3		1655.9		-17	+1650	661,592	1,651,066
177	1980		" "	"	2.8	89°20'	+23.0	+20.2		1662.8		-20	+1980	661,589	1,651,396
178	2310														661,590+1,651,440(s)
178	2025		79°30'	+10.8°	1.4	89°20'	+23.6	+22.2		1664.8		-11	+2025	661,598	1,651,441 4-way int. 1665
178	2310		79°47.2'	+10.8°	3.2	89°-	+40.3	+37.1		1679.7	TP	-24	+2310-2	661,585	1,651,724
178	2310				1.9	89°02'	+39.0	+37.1			TP				
	1980		260°9.9'-180°	+10.8°	+13.5	89°-	-34.6	-21.1	1658.6		BS	-33	+1980-3		
	1980				+12.3	89°02'	-33.4	-21.1			BS				

DATE 5-10-79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 14
AREA Oklahoma	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 19/18 W	PARTY MANAGER L. O. 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
									1658.6						
179	1650		260° 9.9'	+108°	2.6	89° 10'	+24.0	+21.4		1680.0		+28	-1650	661,580	1,652,051
180	1320		" "	"	1.2	89° 10'	+19.2	+18.0		1676.6		+22	-1320	661,574	1,652,381
181	990		" "	"	2.0	89° 10'	+14.4	+12.4		1671.0		+17	-990	661,569	1,652,711
182	660		" "	"	1.9	89° 20'	+7.7	+5.8		1664.4		+11	-660	661,563	1,653,041
183	330		" "	"	1.3	89° 20'	+3.8	+2.5		1661.1		+6	-330	661,558	1,653,371
184	0				5.4	-		-5.4		1653.2	X	0	0	661,552	1,653,701
185	330		80° 13.9'	+108°	13.7	BH	-1.7	-15.4		1643.2		-6	+330	661,546	1,654,031
186	660		" "	"	10.5	91°	-11.5	-22.0		1636.6		-12	+660	661,540	1,654,361
187	990		" "	"	12.4	91°	-17.3	-29.7		1628.9		-18	+990	661,534	1,654,691
188	1320		" "	"	12.8	91°	-23.0	-35.8		1622.8		-24	+1320	661,528	1,655,021
189	1650		" "	"	11.2	91°	-28.8	-40.0		1618.6		-30	+1650	661,522	1,655,351
190	1980		" "	"	10.1	91°	-34.6	-44.7		1613.9		-36	+1980	661,516	1,655,681
191	2310		80° 13.9'	+108°	12.1	90° 50'	-33.6	-45.7		1612.9	TP	-42	+2310-2	661,510	1,656,009
191	2310				10.7	90° 52'	-34.9	-45.6			TP				
	2310		259° 38.7' - 165°	+108°	+12.1	91°	+40.3	+52.4	1665.3		BS	-18	+2310-3		
	2310				+10.8	91° 02'	+41.6	+52.4			BS				
192	1980		259° 38.7'	+108°	10.1	91°	-34.6	-44.7		1620.6		+15	-1980	661,507	1,656,336
193	1650		" "	"	11.3	90° 50'	-24.0	-35.3		1630.0		+13	-1650	661,505	1,656,666
4-	1630		259° 41'	+108°	10.8	90° 50'	-23.7	-34.5		1630.8		+14	-1630	661,506	1,656,686
194	1320		259° 38.7'	+108°	10.8	90° 50'	-19.2	-30.0		1635.3		+10	-1320	661,502	1,656,996

↑  
R 19 W  
661,500 - 1,656,680(s)  
4-way int.  
R 18 W ↓

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
5-10-79		R. Hulsey			G. Cotcamp		6834		R. Hulsey		5	15				
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER								
Oklahoma		Hobart 15'	Oklahoma	Washita	8 N	18 W		L. O. 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	
									1665.3							
195	990		259° 38.7'	+10.8°	12.9	90° 38'	-14.4	-27.3		1638.0		+8	-990	661,500	1,657,326	
196	660		" "	"	13.5	90° 50'	-9.6	-23.1		1642.2		+5	-660	661,497	1,657,656	
197	330		" "	"	13.4	90° 26'	-1.9	-15.3		1650.0		+3	-330	661,495	1,657,986	
198	0				5.4	-	-	-5.4		1659.9	TP	0	0	661,492	1,658,316	
199	330		79° 27.8'	+10.8°	6.2	-	-	-6.2		1659.1		-2	+330	661,490	1,658,646	
200	660		" "	"	13.6	-	-	-13.6		1651.7		-3	+660	661,489	1,658,976	
201	990		" "	"	13.7	90° 20'	-5.8	-19.5		1645.8		-5	+990	661,487	1,659,306	
202	1320		" "	"	11.4	90° 30'	-11.5	-22.9		1642.4		-6	+1320	661,486	1,659,636	
203	1650		" "	"	12.9	90° 26'	-9.6	-22.5		1642.8		-8	+1650	661,484	1,659,966	
204	1980		" "	"	10.2	BH	-9.9	-20.1		1645.2		-9	+1980	661,483	1,660,296	
205	2310		79° 27.8'	+10.8°	7.3	BH	-11.6	-18.9		1646.4	TP	-11	+2310-2	661,481	1,660,624	
205	2310				13.5	90° 08'	-5.4	-18.9			TP					
	2310		259° 45.3'-18°	+10.8°	+11.8	TH	-11.6	+0.2	1646.7	+0.3	BS	-22	+2310-3			
	2310				+7.2	89° 50'	-6.7	+0.5			BS					
206	1980		259° 45.3'	+10.8°	9.9	TH	+9.9	0.0		1646.7		+19	-1980	661,478	1,660,951	
207	1650		" "	"	9.9	TH	+8.3	-1.6		1645.1		+16	-1650	661,475	1,661,281	
208	1320		" "	"	7.3	TH	+6.6	-0.7		1646.0		+13	-1320	661,472	1,661,611	
209																
209	1045		260° 24'	+10.8°	3.7	TH	+5.2	+1.5		1648.2		+22	-1045	661,481	1,661,886	661,470 + 1,651,885(s) 4-way int. EL. 1648
209	990		259° 45.3'	+10.8°	3.6	TH	+5.0	+1.4		1648.1		+10	-990	661,469	1,661,941	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
5-10-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		5	16				
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER					
Oklahoma		Hobart 15'		Oklahoma	Washita		8N	18W		L. O. 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 -	EAST + WEST -		Y
									1646.7						
210	660		59°45.3'	+10.8°	4.7	-		-4.7		1642.0		+6	-660	661,465	1,662,271
211	330		"		5.1	-		-5.1		1641.6		+3	-330	661,462	1,662,601
212	0				5.4	-		-5.4		1641.3	T	0	0	661,459	1,662,931
213	330		80°5.1'	+10.8°	7.7	-		-7.7		1639.0		-5	+330	661,454	1,663,261
214	660		"	"	3.4	TH	+3.3	-0.1		1646.6		-10	+660	661,449	1,663,591
215	990		"	"	5.4	TH	+5.0	-0.4		1646.3		-15	+990	661,444	1,663,921
216	1320		"	"	7.3	TH	+6.6	-0.7		1646.0		-20	+1320	661,439	1,664,251
217	1650		80°5.1'	+10.8°	12.3	89°54'	+2.9	-9.4		1637.3	TP	-25	+1650.2	661,434	1,664,579
217	1650		"	"	13.2	89°52'	+3.8	-9.4			TP				
	1650		260°5.0'-180°	+10.8°	+11.7	90°40'	+19.2	+30.9	1668.2		BS	-25	+1650.3		
	1650		"	"	+6.9	90°50'	+24.0	+30.9			BS				
218	1320		260°5'	+10.8°	10.1	91°-	-23.0	-33.1		1635.1		+20	-1320	661,429	1,664,906
219	990		"	"	13.6	91°-	-17.3	-30.9		1637.3		+15	-990	661,424	1,665,236
220	660		"	"	13.9	90°46'	-7.7	-21.6		1646.6		+10	-660	661,419	1,665,566
221	330		"	"	12.0	-		-12.0		1656.2		+5	-330	661,414	1,665,896
222	0				5.4	-		-5.4		1662.8	T	0	0	661,409	1,666,226
223	330		80°2.1'	+10.8°	10.3	-		-10.3		1657.9		-5	+330	661,404	1,666,556
224	660		"	"	4.1	-		-4.1		1664.1		-10	+660	661,399	1,666,886
<del>225</del>	<del>990</del>														
<del>22</del>	965		79°58'	+10.8°	3.0	TH	+4.8	+1.8		1670.0		-13	+965	661,396	1,667,191

661,376 + 1,667,195(s)  
4-way int.

SURVEY NOTES-HIGH RESOLUTION DATA  
GEO-445

Geosource Inc.

DATE 5-10-79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Catcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 17
AREA Oklahoma	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Washita	TWP 8 N	RANGE 18 W	PARTY MANAGER L. O. 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
									1668.2						
225	990		80°21'	+10.8°	2.8	TH	+5.0	+2.2		1670.4		-14	+990	661,395	1,667,216
BM	995		81°25'	+10.8°	0.7	89°40'	+5.8	+5.1		1673.3		-38	+994	661,371	1,667,220
226	1320		80°21'	+10.8°	2.0	TH	+6.6	+4.6		1672.8		-19	+1320	661,390	1,667,546
227	1450		" "	"	1.9	TH	+8.3	+6.4		1674.6		-24	+1650	661,385	1,667,876
228	1980		" "	"	6.1	89°30'	+17.3	+11.2		1679.4		-29	+1980	661,380	1,668,206
229	2310		86°21'	+10.8°	2.9	89°30'	+20.2	+17.3		1685.5	TP	-34	+2310-2	661,375	1,668,534
229	2310				1.5	89°32'	+18.8	+17.3			TP				
	1980		259°49.2' 24180°	+10.8°	+7.6	-		+7.6	1693.1		BS	-21	+1980-3		
	1980				+6.4	90°02'	+1.1	+7.5			BS				
230	1650		259°49.2'	+10.8°	5.9	-		-5.9		1687.2		+18	-1650	661,372	1,668,861
231	1320		" "	+10.8°	4.6	-		-4.6		1688.5		+14	-1320	661,368	1,669,191
232	990		" "	"	4.1	-		-4.1		1689.0		+11	-990	661,365	1,669,521
233	660		" "	"	4.1	-		-4.1		1689.0		+7	-660	661,361	1,669,851
234	330		" "	"	2.6	-		-2.6		1690.5		+4	-330	661,358	1,670,181
235	0				5.4	-		-5.4		1687.7	X	0	0	661,354	1,670,511
236	330		80°25.3'	+10.8°	9.3	-		-9.3		1683.8		-7	+330	661,347	1,670,841
237	660		" "	"	11.2	BH	-3.3	-14.5		1678.6		-14	+660	661,340	1,671,171
238	990		" "	"	11.9	90°30'	-8.6	-20.5		1672.6		-21	+990	661,333	1,671,501
239	1320		" "	"	10.1	90°40'	-15.4	-25.5		1667.6		-28	+1320	661,326	1,671,831
240	1650		" "	"	10.8	90°40'	-19.2	-30.0		1663.1		-35	+1650	661,319	1,672,161

19K 33TT 1934' ascc.  
EI-1673.3

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
5-10-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		5	18					
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE	PPM	PARTY MANAGER				
Oklahoma		Hobart 15'		Oklahoma		Washita		8N		18W		L. O. 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-	EAST+ WEST-		Y	X
									1693.1							
244	1980															
#	1925		80° 12'	+10.8°	11.5	90° 40'	-22.4	-33.9		1659.2		-34	+1925	661,320	1,672,436	4-way int.
241	1980		80° 25.3'	+10.5°	12.8	90° 40'	-23.0	-35.8		1657.3	TP	-32	+1979-2	661,322	1,672,488	
241	1980				11.7	90° 42'	-24.2	-35.9			TP					
	1980		260° 35.4' - 180°	+10.5°	+12.6	89°	-34.6	-22.0	1635.3		BS	-38	+1979-3			
	1980				+11.4	81° 02'	-33.4	-22.0			BS					
□	1905		261° 2'	+10.5°	13.3	89°	+33.2	+19.9		1655.2		+51	-1904	661,335	1,672,560	Chiseled □ El. 1656.2
242	1650		260° 35.4'	+10.5°	9.9	89°	+28.8	+18.9		1654.2		+31	-1650	661,315	1,672,814	
243	1320		" "	"	2.0	89°	+23.0	+21.0		1656.3		+25	-1320	661,309	1,673,144	
244	990		" "	"	3.0	89°	+17.3	+14.3		1649.6		+19	-990	661,303	1,673,474	
245	660		" "	"	1.1	89° 30'	+5.8	+4.7		1640.0		+13	-660	661,297	1,673,804	
246	330		" "	"	2.2	-	-	-2.2		1633.1		+6	-330	661,290	1,674,134	
247	0				5.4	-	-	-5.4		1629.9	T	0	0	661,284	1,674,464	
248	330		81° 6.5'	+10.5°	6.8	-	-	-6.8		1628.5		-9	+330	661,275	1,674,794	
249	660		" "	"	6.8	-	-	-6.8		1628.5		-19	+660	661,265	1,675,124	
250	990		" "	"	4.6	-	-	-4.6		1630.7		-28	+990	661,256	1,675,454	
251	1320		81° 6.5'	+10.5°	0.9	-	-	-0.9		1634.4	TP	-37	+1319-3	661,247	1,675,780	
251	1320				7.5	TH	+6.6	-0.9			TP					
	1320		260° 41.8' - 180°	+10.5°	+1.1	-	-	+1.1	1635.5		BS	-28	+1320			
	1320				+7.7	TH	-6.6	+1.1			BS					

DATE 5-10-79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 19
AREA Oklahoma	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 18W	PARTY MANAGER L.O. 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			
									1635.5									
252	990		260° 41.8'	+10.5°	7.9	-		-7.9		1627.6		+21	-990	661,240	1,676,110			
253	660				12.6	-		-12.6		1622.9		+14	-660	661,233	1,676,440			
254	330				9.8	-		-9.8		1625.7		+7	-330	661,226	1,676,770			
255	0				5.4	-		-5.4		1630.1	T	0	0	661,219	1,677,100			
256	330		80° 54.2'	+10.5°	7.2	-		-7.2		1628.3		-8	+330	661,211	1,677,430			
<del>257</del>	<del>660</del>				<del>11.4</del>	<del>-</del>												
#	650		80° 1'	+10.5°	11.0	-		-11.0		1624.5		-6	+650	661,213	1,677,750	4-way int. E. 1624		
257	660		80° 54.2'	+10.5°	11.4	-		-11.4		1624.1		-16	+660	661,203	1,677,760			
258	990		80° 54.2'	+10.5°	10.8	BH	-5.0	-15.8			TP	-24	+990+3	661,195	1,678,093	horiz. correct. Y=0		
258	990				14.6	90° 04'	-1.1	-15.7		1619.8	TP					x=-38'		
	2640		260° 1.6' -180°	+10.5°	+3.0	-		+3.0	1622.9	+3.1	BS	-24	+2640+3					
	2640				+13.9	89° 46'	-10.7	+3.2			BS							
259	2310		266° 1.6'	+10.5°	8.8	-		-8.8		1614.1		+21	-2310	661,192	1,678,426			
260	1980		" "	"	8.0	BH	-9.9	-17.9		1605.0		+18	-1980	661,189	1,678,756			
261	1650		" "	"	13.4	BH	-8.3	-21.7		1601.2		+15	-1650	661,186	1,679,086			
262	1320		" "	"	10.9	BH	-6.6	-17.5		1605.4		+12	-1320	661,183	1,679,416			
263	990		" "	"	9.2	BH	-5.0	-14.2		1608.7		+9	-990	661,180	1,679,746			
264	660		" "	"	13.6	-		-13.6		1609.3		+6	-660	661,177	1,680,076			
265	330		" "	"	9.6	-		-9.6		1613.3		+3	-330	661,174	1,680,406			
266	0		" "	"	5.4	-		-5.4		1617.5	T	0	0	661,171	1,680,736			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN			ROD MAN			PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE			
5/11/79		S. Catcamp			R. Hulsey			6834		R. Hulsey			5	20			
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Hobart 15'		Oklahoma	Washita		8N	18W		L.D. 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		
									1622.9								
267	330		80° 81'	+10.5°	4.1	-	-4.1		1618.8			-4	+330	661,167	1,681,066		
268	660		" "	"	3.4	-	-3.4		1619.5			-7	+660	661,164	1,681,396		
269	990		" "	"	8.3	-	-8.3		1614.6			-11	+990	661,160	1,681,726		
270	1320		" "	"	5.2	-	-5.2		1617.7			-15	+1320	661,156	1,682,056		
##	1425		80° 3'	+10.5°	5.3	-	-5.3		1617.6			-14	+1425	661,157	1,682,161	railroad	
271	1650		80° 8.1'	+10.5°	9.0	-	-9.0		1613.9			-18	+1650	661,153	1,682,386		
272	1980		" "	"	6.0	-	-6.0		1616.9			-22	+1980	661,149	1,682,716	661,165 + 1,683,225(s)	
≠	2275		80° 1.5'	+10.5°	0.3	-	-0.3		1622.6			-21	+2275	661,150	1,683,011	4-way Intersect.	
273	2310		80° 8.1'	+10.5°	11.4	TH	+11.6	+0.2	1623.1			-26	+2310	661,145	1,683,046		
274	2640		80° 8.1'	+10.5°	8.8	TH	+13.2	+4.4	1627.2	TP		-29	+2640	661,142	1,683,379		
274	2640				5.1	89° 48'	+9.2	+4.1			TP						
	1320		259° 48.8' - 180°	+10.5°	+14.8	90° 20'	+7.7	+22.5	1649.7		BS	-7	+1320				
	1320				+11.0	90° 30'	+11.5	+22.5			BS						
□	1660		259° 40'	+10.5°	12.8	90° 30'	-14.5	-27.3	1622.4			+5	-1660	661,140	1,683,039	chiseled square E.I.	
275	990		259° 48.8'	+10.5°	13.8	8H	-5.0	-18.8	1630.9			+5	-990	661,140	1,683,709	1622.7	
276	660		" "	"	11.2	8H	-3.3	-14.5	1635.2			+4	-660	661,139	1,684,039		
277	330		" "	"	7.9	-		-7.9	1641.8			+2	-330	661,137	1,684,369		
278	0				5.4	-		-5.4	1644.3	π		0	0	661,135	1,684,699		
279	330		79° 54.2'	+10.5°	9.2	-		-9.2	1640.5			-2	+330	661,133	1,685,029		
280	660		" "	"	10.8	-		-10.8	1638.9			-5	+660	661,130	1,685,359		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.		PAGE			
5/11/79		G Cottramp			R. Hulsey		287		R. Hulsey			5		21			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PARTY MANAGER					
Oklahoma		Robert K		Oklahoma		Delaware		8 N		18/17 W		L.O. 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 - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS	
														Y	X		
									1649.7								
281	990		79°54.2'	+10.5°	11.5	-		-11.5		1638.2		-7	+990	661,128	1,685,689		
282	1320		79°54.2'	+10.5°	12.5	-		-12.5		1637.2	TP	-9	+1320	661,126	1,686,019		
282	1320				5.9	BH	-6.6	-12.5			TP						
	2670		259°58.3' 180°	+10.5°	+9.6	-		+9.6	1646.8		BS	-22	+2670				
	2640				+5.0	90°	+4.6	+9.6			BS						
283	2310		259°58.3'	+10.5°	12.3	-		-12.3		1634.5		+19	-2310	661,123	1,686,349		
284	1980		" "	" "	10.3	-		-10.3		1636.5		+16	-1980	661,120	1,686,679		
285	1650		" "	" "	9.1	-		-9.1		1637.7		+14	-1650	661,118	1,687,009		
286	1320		" "	" "	9.2	-		-9.2		1637.6		+11	-1320	661,115	1,687,339		
287	990		" "	" "	7.3	-		-7.3		1639.5		+8	-990	661,112	1,687,669		↑
288	660		" "	" "	8.0	-		-8.0		1638.8		+5	-660	661,109	1,687,999		R 18 W
FF	385		261°22'	+10.5°	7.0	-		-7.0		1639.8		+13	-385	661,117	1,688,274		661,125 + 1,688,270 (s) 4-Way Intersect. El. 1640
289	330		259°58.3'	+10.5°	6.7	-		-6.9		1639.9		+3	-330	661,107	1,688,329		R 17 W
290	0				5.4	-		-5.4		1641.4	TP	0	0	661,104	1,688,659		↓
291	330		80°36'	+10.5°	5.0	-		-5.0		1641.8		-6	+330	661,098	1,688,989		
292	660		" "	" "	6.6	-		-6.6		1640.2		-13	+660	661,091	1,689,319		
293	990		" "	" "	3.4	-		-3.4		1643.4		-19	+990	661,085	1,689,649		
294	1320		" "	" "	7.9	-		-7.9		1638.9		-25	+1320	661,079	1,689,979		
295	1650		" "	" "	7.0	-		-7.0		1639.8		-32	+1650	661,072	1,690,309		
296	1980		" "	" "	8.9	-		-8.9		1637.9		-38	+1980	661,066	1,690,639		

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE					
5/11/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey		5		22					
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM					
Oklahoma		Hobart 15'		Oklahoma		Delaware		8 N		17 W		L.O. 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	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS	
														Y	X		
									1646.8								
297	2310		80°36'	+10.5°	7.4	-		-7.4		1639.4		-44	+2310	661,060	1,690,969		
298	2640		80°36'	+10.5°	2.2	-		-2.2		1644.6	TP	-51	+2640.3	661,053	1,691,302		
298	2640				5.3	89°36'	+3.1	-2.2			TP						
	2640		260°39.2'-180°	+10.5°	+14.2	-		+14.2	1658.8		BS	-53	+2639				
	2640				+1.0	84	+13.2	+14.2			BS						
299	2310		260°39.2'	+10.5°	12.2	-		-12.2		1646.6		+46	-2310	661,046	1,691,631		
300	9980		" "	"	10.9	-		-10.9		1647.9		+40	-1980	661,040	1,691,961		
301	1650		" "	"	9.2	-		-9.2		1649.6		+33	-1650	661,033	1,692,291		
302	1320		" "	"	7.7	-		-7.7		1651.1		+27	-1320	661,027	1,692,621		
303	990		" "	"	6.7	-		-6.7		1652.1		+20	-990	661,020	1,692,951		
304	660		" "	"	6.1	-		-6.1		1652.7		+13	-660	661,013	1,693,281		
≠	515		261°3'	+10.5°	4.8	-		-4.8		1654.0		+14	-515	661,014	1,693,426	661,015 + 1,693,430(s)	4-Way Intersect. E. 1653
305	330		260°39.2'	+10.5°	5.9	-		-5.9		1652.9		+7	-330	661,007	1,693,611		
306	0				5.4	-		-5.4		1653.4	TP	0	0	661,000	1,693,941		
307	320		79°58.3'	+10.5°	4.8	-		-4.8		1654.0		-3	+330	660,997	1,694,271		
308	660		79°58.3'	+10.5°	5.3	-		-5.3		1653.5		-5	+660	660,995	1,694,601		
309	990		" "	"	6.5	-		-6.5		1652.3		-8	+990	660,992	1,694,931		
310	1320		" "	"	3.4	-		-3.4		1655.4		-11	+1320	660,989	1,695,261		
311	1650		" "	"	1.8	-		-1.8		1657.0		-14	+1650	660,986	1,695,591		
312	1980		" "	"	1.1	-		-1.1		1657.7		-16	+1980	660,984	1,695,921		

DATE 5/11/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 23
AREA Oklahoma	TOPO MAP Hobart/Gotebo 15	STATE Oklahoma	COUNTY Washita	TWP 8 N	RANGE 17 W	PARTY MANAGER L.O. 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.	
									1658.8					
313	2310		79°58.3'	+10.5°	11.3	TH	+11.6	+0.3		1659.1		-19	+2310	660,981   1,696,251
314	2640		79°58.3'	+10.5°	11.7	TH	+13.2	+1.5	+1.4	1660.2	TP	-22	+2640	660,978   1,696,581
314	2640				14.1	89°40'	+15.4	+1.3			TP			
	2970		259°41.3 - 180°	+10.5°	5.8	BH	+14.9	+20.7	1680.9		BS	-10	+2970	
	2970				73.7	90°8'	+6.9	+20.6			BS			
315	2640		259°41.3'	+10.5°	5.7	BH	-13.2	-18.9		1662.0		+9	-2640	660,977   1,696,911
316	2310		" "	"	6.8	BH	-11.6	-18.4		1662.5		+8	-2310	660,976   1,697,241
317	1980		" "	"	7.8	BH	-9.9	-17.7		1663.2		+7	-1980	660,975   1,697,571
318	1650		" "	"	8.0	BH	-8.3	-16.3		1664.6		+5	-1650	660,973   1,697,901
319	1320		" "	"	13.8	-		-13.8		1667.1		+4	-1320	660,972   1,698,231
320	990		" "	"	11.1	-		-11.1		1669.8		+3	-990	660,971   1,698,561
7F	827		260°30.5'	+10.5°	9.3	-		-9.3		1671.6		+15	-827	660,983   1,698,724 660,990 + 1,698,735(s) 4-Way Intersect. El. 1672
321	660		259°41.3'	+10.5°	9.1	-		-9.1		1671.8		+2	-660	660,970   1,698,891 Pavement
322	330		" "	"	7.8	-		-7.8		1673.1		+1	-330	660,969   1,699,221
323	0		" "	"	5.4	-		-5.4		1675.5	π	0	0	660,968   1,699,551
324	330		80°17.6'	+10.5°	1.9	-		-1.9		1679.0		-5	+330	660,963   1,699,881
325	660		" "	"	2.3	TH	+3.3	+1.0		1681.9		-9	+660	660,959   1,700,211
326	990		" "	"	3.1	TH	+5.0	+1.9		1682.8		-14	+990	660,954   1,700,541
327	1320		" "	"	4.4	TH	+6.6	+2.2		1683.1		-18	+1320	660,950   1,700,871 Hobart Quad.
328	1650		" "	"	5.0	TH	+8.3	+3.3		1684.2		-23	+1650	660,945   1,701,201 Gotebo Quad.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
5/11/79		G. Cotcamp		R. Hulsey		6837		R. Hulsey		5	24			
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER				
Oklahoma		Gatebo 15'		Oklahoma	Washita		8 N	17 W		L.O. 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.	
									1680.9					
329	1980		80° 17.6'	+10.5°	3.5	TH	+9.9	+6.4		1687.3		-27	+1980	660,941   1,701,531
330	2310		80° 17.6'	+10.5°	9.6	TH	+11.6	+2.0			TP	-32	+2310	660,936   1,701,861
330	2310				4.2	89° 36'	+16.1	+1.9		1682.8	TP			
	2640		260° 10.5' - 180°	+10.5°	+3.0	89° -	-46.1	-43.1	1639.7		BS	-31	+2640	
	2640				+4.6	88° 58'	-47.6	-43.0			BS			
331	2310		260° 10.5'	+10.5°	7.9	89° -	+40.3	+32.4		1672.1		+27	-2310	660,932   1,702,191
332	1980		"	"	9.8	89° 10'	+28.8	+19.0		1658.7		+23	-1980	660,928   1,702,521
333	1650		"	"	7.8	89° 20'	+19.2	+11.4		1651.1		+19	-1650	660,924   1,702,851
334	1320		"	"	7.2	89° 20'	+15.4	+8.2		1647.9		+16	-1320	660,921   1,703,181
335	990		"	"	5.2	89° 20'	+11.5	+6.3		1646.0		+12	-990	660,917   1,703,511
336	660		"	"	5.5	89° 20'	+7.7	+2.2		1641.9		+8	-660	660,913   1,703,841
7F	480		260° 53.2'	+10.5°	1.6	-		-1.6		1638.1		+12	-480	660,917   1,704,021
337	330		260° 10.5'	+10.5°	3.2	-		-3.2		1636.5		+4	-330	660,909   1,704,171
338	0				5.4	-		-5.4		1634.3	T	0	0	660,905   1,704,501
339	330		80° 3.3'	+12.7°	10.5	-		-10.5		1629.2		-4	+330	660,901   1,704,831
340	660		"	"	11.1	BH	-3.3	-14.4		1625.3		-9	+660	660,896   1,705,161
341	990		"	"	12.9	-		-12.9		1626.8		-13	+990	660,892   1,705,491
342	1320		"	"	12.2	-		-12.2		1627.5		-17	+1320	660,888   1,705,821
343	1650		"	"	11.2	-		-11.2		1628.5		-22	+1650	660,883   1,706,151
344	1980		"	"	7.7	-		-7.7		1632.0		-26	+1980	660,879   1,706,481

660,920 + 1,704,010 (s)  
4-Way Intersect. El. 1638

DATE 5/11/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 25
AREA Oklahoma	TOPO MAP Gatobe 15'	STATE Oklahoma	COUNTY Washita	TWP 8 N	RANGE 17 W	PPM
			PARTY MANAGER L.O. 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.	
									1639.7					
345	2310		80°33'	+10.7°	7.6	-		-7.6		1632.1		-30	+2310	660,875   1,706,811
346	2640		80°33'	-10.7°	11.3	-		-11.3		1628.4	TP	-35	+2640	660,870   1,707,141
346	2640				14.4	89°56'	+3.1	-11.3			TP			
	1320		259°54'-180°	+10.7°	+0.9	89°-	-23.0	-22.1	1606.3		BS	-14	+1320	
	1320				+4.7	88°50'	-26.9	-22.2			BS			
347	990		259°54'	+10.7°	0.4	89°-	+17.3	+16.9		1623.2		+10	-990	660,866   1,707,471
348	660		"	"	1.2	89°-	+11.5	+10.3		1616.6		+7	-660	660,863   1,707,801
349	330		"	"	3.1	89°-	+5.8	+2.7		1609.0		+3	-330	660,859   1,708,131
350	0				5.4	-		-5.4		1600.9	TP	0	0	660,856   1,708,461
351	330		80°17.5'	+10.7°	8.9	-		-8.9		1597.4		-6	+330	660,850   1,708,791
352	660		"	"	9.9	91°-	-11.5	-21.4		1584.9		-11	+660	660,845   1,709,121
+	822		80°7.5'	+10.7°	8.6	91°-	-14.3	-22.9		1583.4		-12	+822	660,844   1,709,283
353	990		80°17.5'	+10.7°	1.1	90°40'	-11.5	-12.6		1593.7	TP	-17	+990.3	660,839   1,709,448
353	990				2.2	90°36'	-10.4	-12.6			TP			
	1320		260°31.7'-180°	+10.4°	+14.8	90°24'	+9.2	+24.0	1617.7		BS	-21	+1320-2	
	1320				+12.5	90°30'	+11.5	+24.0			BS			
354	990		260°31.7'	+10.4°	11.5	-		-11.5		1606.2		+16	-990	660,834   1,709,776
355	660		"	"	8.7	-		-8.7		1609.0		+11	-660	660,829   1,710,106
356	330		"	"	6.4	-		-6.4		1611.3		+5	-330	660,823   1,710,436
357	0				5.4	-		-5.4		1612.3	TP	0	0	660,818   1,710,766

horiz. correction y=0'  
x=-19'

660,840 | 1,709,280  
Sec. Corner E1. 1585

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 5-12-79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 5	PAGE 26
AREA Oklahoma	TOPO MAP Gatsbo 15'	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 17W	PARTY MANAGER L.O. 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
									1617.7						
358	330		80°40.2'	+10.9°	5.0	-		-5.0		1612.7		-6	+330	660,812	1,711,096
359	660		" "		5.5	-		-5.5		1612.2		-12	+660	660,806	1,711,426
360	990		" "		5.0	-		-5.0		1612.7		-18	+990	660,800	1,711,756
361	1320		80°40.2'	+10.9°	3.8	-		-3.8		1613.9	TP	-25	+1320.3	660,793	1,712,083
361	1320				10.4	TH	+6.6	-3.8			TP				
	2310		260°33.2'-180°	+10.9°	+4.9	TH	-11.6	-6.7	1607.2		BS	-38	+2310.2		
	2310				+13.4	89°30'	-20.2	-6.8			BS				
362	1980		260°33.2'	+10.9°	3.5	TH	+9.9	+6.4		1613.6		+33	-1980	660,788	1,712,411
363	1450		" "	"	2.7	TH	+8.3	+5.6		1612.8		+27	-1450	660,782	1,712,741
364	1320		" "	"	2.0	TH	+6.6	+4.6		1611.8		+22	-1320	660,777	1,713,071
365	990		" "	"	2.3	TH	+5.0	+2.7		1609.9		+16	-990	660,771	1,713,401
366	660		" "	"	2.0	TH	+3.3	+0.4		1607.6		+11	-660	660,766	1,713,731
367	330		" "	"	2.3	-		-2.3		1604.9		+5	-330	660,760	1,714,061
368	0				5.4	-		-5.4		1601.8	T	0	0	660,755	1,714,391
#	168		80°48'	+10.9°	6.7	-		-6.7		1600.5		-4	+168	660,751	1,714,559
369	330		78°25.9'	+10.9°	9.8	-		-9.8		1597.4		+7	+330	660,762	1,714,721
370	660		" "		12.8	-		-12.8		1594.4		+14	+660	660,769	1,715,051
371	990		" "		10.2	BH	-5.0	-15.2		1592.0		+20	+990	660,775	1,715,381
372	1320		" "		12.1	90°30'	-11.5	-23.6		1583.6		+27	+1320	660,782	1,715,711
373	1650		" "		11.2	BH	-8.3	-19.5		1587.7		+34	+1650	660,789	1,716,041

660,755 = 1,714,560  
4-way in El. 1602

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE								
5-12-79		R. Hulsey		G. Cotcamp		633~		R. Hulsey		5	27								
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER										
Oklahoma		Gatebo 15'		Oklahoma	Washita	8N	17W		L. O. 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 A TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS	
												LAT.	DEP.	Y	X				
									1607.2										
374	1980		78° 25.4'	+10.1°	11.8	BH	-9.9	-21.7	1604.5	1585.5	TP	+51	+1979	660,806	1,716,370				
374	1980				10.2	90° 20'	-11.5	-21.7		TP									
	1320		257° 39.6' -180°	+10.1°	+12.4	BH	+6.6	+19.0	1604.5		BS	+52	+1319						
	1320				+14.3	90° 12'	+4.6	+18.9		BS									
375	990		257° 39.6'	+10.1°	12.9	-		-12.9		1591.6		-39	-989	660,819	1,716,700				
376	660		" "	"	12.6	-		-12.6		1591.9		-26	-659	660,832	1,717,030				
377	330		" "	"	8.9	-		-8.9		1595.6		-13	-330	660,845	1,717,359				
378	0				5.4	-		-5.4		1599.1	TP	0	0	660,858	1,717,689				
379	330		78° 14.1'	+10.1°	11.3	-		-11.3		1593.2		+10	+330	660,868	1,718,019				
380	660		" "	"	12.4	BH	-3.3	-15.7		1588.8		+19	+660	660,877	1,718,349				
381	990		78° 14.1'	+10.1°	12.2	BH	-5.0	-17.2	1608.2	1587.3	TP	+29	+989	660,887	1,718,678				
381	990				8.5	90° 30'	-8.6	-17.1		TP									
	1650		258° 9.1' -180°	+10.1°	+12.6	BH	+8.3	+20.9	1608.2		BS	+50	+1649						
	1650				+11.3	90° 20'	+9.6	+20.9		BS									
382	1320		258° 9.1'	+10.1°	11.3	91° 10'	-26.9	-38.2		1570.0		-40	-1319	660,897	1,719,008				
383	990		" "	"	11.4	91° 20'	-23.0	-34.4		1573.8		-30	-989	660,907	1,719,338				
384	660		" "	"	12.4	BH	-3.3	-15.7		1592.5		-20	-660	660,917	1,719,667				
385	330		" "	"	12.9	-		-12.9		1595.3		-10	-330	660,927	1,719,997				
386	0				5.4	-		-5.4		1602.8	TP	0	0	660,937	1,720,327				
387	330		78° 52.3'	+10.1°	5.2	-		-5.2		1603.0		+6	+330	660,943	1,720,657				

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
5-12-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		5		28			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PARTY MANAGER			
Oklahoma		Gotebo 15'		Oklahoma		Washita		8N		16W		L.O. 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
387									1608.2						
≠	605		76° 35'	+10.1°	3.7	-		-3.7		1604.5		+35	+604	660,972, 1,720,931	4-way int. E. 1606
388	660		78° 52.3'	+10.1°	3.8	-		-3.8		1604.4		+12	+660	660,949, 1,720,987	
389	990		" "	"	3.9	TH	+5.0	+1.1		1609.3		+18	+990	660,955, 1,721,317	
390	1320		" "	"	2.9	89° 30'	+11.5	+8.6		1616.8		+24	+1320	660,961, 1,721,647	
391	1650		78° 52.3'	-10.1°	4.4	89° 10'	+24.0	+19.6		1627.8	TP	+30	+1650-2	660,967, 1,721,975	Pavement ends
391	1650				5.4	89° 08'	+24.9	+19.5			TP				
	2310		260° 11.9' - 180°	+10.1°	+7.2	TH	-11.6	-4.4			BS	-12	+2310-3		
	2310				+9.3	89° 46'	-13.4	-4.1	1623.6	-4.2	BS				
392	1980		260° 11.9'	+10.1°	12.4	TH	+9.9	-2.5		1621.1		+10	-1980	660,965, 1,722,302	
393	1650		" "	"	10.0	-		-10.0		1613.6		+9	-1650	660,964, 1,722,632	
394	1320		" "	"	11.7	-		-11.7		1611.9		+7	-1320	660,962, 1,722,962	
395	990		" "	"	11.7	-		-11.7		1611.9		+5	-990	660,960, 1,723,292	
396	660		" "	"	11.8	-		-11.8		1611.8		+3	-660	660,958, 1,723,622	
397	330		" "	"	9.0	-		-9.0		1614.6		+2	-330	660,957, 1,723,952	
398	0				5.4	-		-5.4		1618.2	TP	0	0	660,955, 1,724,282	
399	330		80° 14.0'	+10.1°	4.8	-		-4.8		1618.8		-2	+330	660,953, 1,724,612	
400	660		" "	"	6.5	-		-6.5		1617.1		-4	+660	660,951, 1,724,942	
401	990		" "	"	4.0	-		-4.0		1619.6		-6	+990	660,949, 1,725,272	
402	1320		80° 14.0'	+10.1°	7.7	-		-7.7			TP	-8	+1320-2	660,947, 1,725,600	
402	1320				14.2	TH	+6.6	-7.6		1616.0	TP				

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
5-12-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		5	29			
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER				
Oklahoma		Gotebo 15'		Oklahoma	Washita		8N	16W		L.O. 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.	
402										1616.0				
	1650		259°38.4'-180°	+10.1°	+13.4	89°10'	-24.0	-10.6	1605.4		BS	-7	-1650-3	
	1650				+14.3	89°08'	-24.9	-10.6			BS			
403	1320		259°38.4'	+10.1°	2.9	TH	+6.6	+3.7		1609.1		-6	-1320	660,948   1,725,927
<del>404</del>	<del>990</del>		" "	"										
<del>404</del>	1070		259°57'	+10.1°	3.8	TH	+5.4	+1.6		1607.0		-12	-1070	660,966   1,726,177 4-way int. E. 1609
404	990		259°38.4'	+10.1°	3.3	TH	+5.0	+1.7		1607.1		-4	-990	660,950   1,726,257
405	660		" "	"	1.7	TH	+3.3	+1.6		1607.0		-3	-660	660,951   1,726,587
406	330		" "	"	0.9	TH	+1.7	+0.8		1606.2		-1	-330	660,953   1,726,917
407	0				5.4	-		-5.4		1600.0	π	0	0	660,954   1,727,247
408	330		79°45.1'	+10.9°	11.3	-		-11.3		1594.1		-1	+330	660,953   1,727,577
409	660		" "	"	10.5	91°-	-11.5	-22.0		1583.4		-2	+660	660,952   1,727,907
410	990		" "	"	13.4	91°-	-17.3	-30.7		1574.7		-3	+990	660,951   1,728,237
411	1320		" "	"	11.2	91°-	-23.0	-34.2		1571.2		-3	+1320	660,951   1,728,567
412	1650		" "	"	10.3	90°50'	-24.0	-34.3		1571.1		-4	+1650	660,950   1,728,897
413	1980		79°45.1'	+10.9°	13.3	90°30'	-17.3	-30.6			TD	-5	+1980-3	660,949   1,729,224
413	1980				7.5	90°40'	-23.0	-30.5		1574.9	TP			
	1650		259°42.7'-180°	+10.9°	+10.2	BH	+8.3	+18.5	1593.4		BS	-3	+1650	
	1650				+13.6	90°16'	+4.8	+18.4			BS			
414	1320		259°42.7'	+10.9°	7.6	BH	-6.6	-14.2		1579.2		+3	-1320	660,949   1,729,554
415	990		" "	"	12.9	90°30'	-8.6	-21.5		1571.9		+2	-990	660,948   1,729,884

SURVEY NOTES - HIGH RESOLUTION DATA

Geosource Inc.

GEO-445

DATE: 5-12-79  
 AREA: Oklahoma  
 INSTRUMENT MAN: R. Hulsey  
 TOPO MAP: Gotscho 15'  
 STATE: Oklahoma  
 COUNTY: Washita  
 ROD MAN: G. Cotcamp  
 PARTY NUMBER: 6834  
 TWP: 8N  
 NOTES CHECKED BY: R. Hulsey  
 RANGE: 16W  
 LINE NO.: 5  
 PARTY MANAGER: L.O. Davis  
 PAGE: 30

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			
									1593.4									
416	660		259° 42.7'	+10.9°	13.5	91° 20'	-15.4	-28.9		1564.5		+1	-660	660,947	1,730,214			
417	330		" "	"	13.1	91° 50'	-10.6	-23.7		1569.7		+1	-330	660,947	1,730,544			
418	0				5.4	-		-5.4		1588.0	TP	0	0	660,946	1,730,874			
419	330		79° 19.7'	+10.4°	8.6	89° 40'	+1.9	-6.7		1596.7	TP	+1	+330	660,947	1,731,204			
419	330				9.6	89° 30'	+2.9	-6.7			TP							
	1650		260° 17.3' - 180°	+10.4°	+4.1	89° -	-28.8	-24.7	1562.0		BS	-20	+1650					
	1650				+3.1	89° 02'	-27.8	-24.7			BS							
41	1410		260° 42'	+10.4°	2.3	89° 10'	+20.5	+18.2		1580.2		+27	-1410	660,954	1,731,444			660,990 + 1,731,455(s) 4-way int. el. 1581
420	1320		260° 17.3'	+10.4°	3.0	89° 10'	+19.2	+16.2		1578.2		+16	-1320	660,943	1,731,534			
421	990		" "	"	2.9	89° 20'	+11.5	+8.6		1570.6		+12	-990	660,939	1,731,864			
422	660		" "	"	0.1	89° 40'	+3.8	+3.7		1565.7		+8	-660	660,935	1,732,194			
423	330		" "	"	0.8	-		-0.8		1561.2		+4	-330	660,931	1,732,524			
424	0				5.4	-		-5.4		1556.6	TP	0	0	660,927	1,732,854			
425	330		80° 25.2'	+10.2'	8.0	-		-8.0		1554.0		-4	+330	660,923	1,733,184			
426	660		" "	"	7.4	-		-7.4		1554.6		-7	+660	660,920	1,733,514			
427	990		" "	"	10.5	-		-10.5		1551.5		-11	+990	660,916	1,733,844			
428	1320		" "	"	13.0	-		-13.0		1549.0		-14	+1320	660,913	1,734,174			
429	1650		80° 25.2'	+10.2'	10.5	-		-10.5		1551.5	TP	-18	+1650	660,909	1,734,504			
429	1650				2.3	BH	-8.3	-10.6			TP							



DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
5-12-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		5	32 of 32						
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER								
Oklahoma		Gotebo		15'	Oklahoma	Washita	8N	16W	L.O. 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		
									1534.9								
442	660		80° 17.6'	+10.2°	6.2	-		-6.2		1528.7	TP	-6	+660-3	660,860	1,738,785		
442	660				2.9	BH	-3.3	-6.2			TP						
	1320	1319	259° 44.1' - 180°	+10.2°	+5.7	87° 50'	-49.9	-44.2	1484.5		BS	+1	-1319-3				
	1320				+9.5	87° 40'	-53.7	-44.2			BS						
443	990		259° 44.1'	+10.2°	0.1	88° 10'	+31.7	+31.6		1516.1		-1	-990	660,860	1,739,111		
444	660		" "	"	2.4	88° 50'	+13.4	+11.0		1495.5		-1	-660	660,860	1,739,441		
445	330		" "	"	1.1	89° 30'	+2.9	+1.8		1486.3		0	-330	660,861	1,739,771		
446	0				5.4	-		-5.4		1479.1	TP	0	0	660,861	1,740,101	Set up middle of road	
447	330		81° 2'	+10.2°	13.0	90° 50'	-4.8	-17.8		1466.7		-7	+330	660,854	1,740,431		
448	660	659	" "	"	12.2	92° -	-23.0	-35.2		1449.3		-14	+659	660,847	1,740,760		
449	990	989	79° 17.1'	+10.2°	12.4	92° 20'	-40.3	-52.7			TP	+9	+989-3	660,870	1,741,087	First sta. in cross-	
449	990				9.5	92° 30'	-43.1	-52.6		1431.9	TP					Country	
	660		261° 26.5' - 180°	+10.2°	+5.7	TH	-3.3	+2.4	1434.3		BS	-19	+660-1			line shortened due to permit problems	
	660				+8.1	89° 30'	-5.8	+2.3			BS					E.O.L.	
450	330		261° 3'	+10.2°	7.9	-		-7.9		1426.4		+7	-330	660,858	1,741,416	Last cross-country	
451	0				5.4	-		-5.4		1428.9	TP	0	0	660,851	1,741,746	Set up across road	
451	230		85° 48'	+10.2°	4.0	-		-4.0		1430.3		-24	+229	660,827	1,741,975	4-way int. El. 1432	
452	330		84° 52.7'	+10.0°	3.9	-		-3.9		1430.4	TP	-28	+329-3	660,823	1,742,072	horizontal curve	
452	330				5.6	TH	+1.7	-3.9			TP					y=0', x=-41	

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
5/13/79		G. Coitcamp		R. Hulsey		6834		R. Hulsey		5-A	33			
AREA		TOPO MAP		STATE		COUNTY		RANGE		PARTY MANAGER				
OKLAHOMA		Gatebo 15		Oklahoma		Washita				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.	
452										1430.4				
	990		260°44.7'180'	+10°	+14.9	91°14'	+21.3	+36.2	1466.6		BS	-13	+990.2	
	990				+10.3	91°30'	+25.9	+36.2			BS			
453	660		260°44.7'	+10°	14.0	91°30'	-17.3	-31.3		1435.3		+9	-660	660,819 1742400
454	330		" "	"	12.9	90°30'	-2.9	-15.8		1450.8		+4	-330	660,817 1742,720 Line #5 5/13/79
455	0				5.4	-		-5.4		1461.2	TP	0	0	660,810 1743,060 Line #5-A 10/10/50
456	330		80°52'	+10°	11.3	-		-11.3		1455.3		-5	+330	660,815 1743,390
457	660		" "	"	12.1	BH	-3.3	-15.4		1451.2		-10	+660	660,810 1743,720
458	990		" "	"	3.8	TH	+5.0	+1.2		1467.8		-15	+990	660,795 1744,050
459	1320		80°52'	+10°	9.6	89°28'	+12.3	+2.7	128	1419.4	TP	-20	+1320.3	660,790 1744,370
459	1320				14.8	89°14'	+17.7	+2.9			TP			
	1650		260°32.2'180'	+10°	+6.8	89°24'	-17.3	-10.5	1458.9		BS	-15	+1650.2	
	1650				+8.7	89°20'	-13.2	-10.5			BS			
460	1320		260°32.2'	+10°	11.2	-		-11.2		1447.7		+12	-1320	660,787 1744,705
461	990		" "	"	9.4	90°40'	-11.5	-20.9		1438.0		+9	-990	660,784 1745,035
462	660		" "	"	11.2	91°0'	-11.5	-22.7		1436.2		+6	-660	660,781 1745,365
463	330		" "	"	9.7	91°0'	-5.8	-15.5		1443.4		+3	-330	660,778 1745,695
464	0				5.4	-		-5.4		1453.5	TP	0	0	660,775 1746,025
465	330		80°52'	+10°	11.3	93°0'	-17.2	-28.5		1430.4		-5	+330	660,770 1746,355
466	660		" "	"	6.0	93°0'	-34.5	-40.5		1418.4		-10	+660	660,765 1746,685
467	990		" "	"	9.0	92°0'	-34.5	-43.5		1415.4		-15	+990	660,760 1747,015



**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
5/13/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey <i>rlw</i>		5-A	35						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Gateno		Oklahoma	Washita		8N	16/15W		L. O. 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	NORTH +	EAST +	COORDINATES		REMARKS	
												SOUTH -	WEST -	Y	X		
									1454.5								
483	990		80°27.5'	+10°	12.3	90°40'	-11.5	-23.8		1430.7	TP	-8	+990-3	660,699	1,752,287		
483	990				14.5	90°32'	-9.2	-23.7			TP						
	1320		260°11'-180°	+10°	+7.5	-		+7.5	1438.2		BS	-4	+1320-2				
	1320				+14.1	TH	-6.6	+7.5			BS						
≠	1125		260°33'	+10°	14.6	BH	-5.6	-20.2		1418.0		+11	-1125	660,706	1,752,480	↑ R16W 660,710, +1,752,480(s) 4-way int. El. 1418	
484	990		260°11'	+10°	7.3	91°-	-17.3	-24.6		1413.6		+3	-990	660,698	1,752,615	R15W	
485	660		" "	"	10.1	91°30'	-17.3	-27.4		1410.8		+2	-660	660,697	1,752,945	↓	
486	330		" "	"	10.6	91°-	-5.8	-16.4		1421.8		+1	-330	660,696	1,753,275		
487	0				54	-		-5.4		1432.8	↑	0	0	660,695	1,753,605		
488	330		80°4.2'	+9.9°	9.4	93°-	-17.2	-26.6		1411.6		0	+330	660,695	1,753,935		
489	660		" "	"	11.8	92°20'	-26.8	-38.6		1399.6		0	+660	660,695	1,754,265		
490	990		" "	"	7.8	92°-	-34.5	-42.3		1395.9		+1	+990	660,696	1,754,595		
491	1320		" "	"	10.5	91°0'	-26.9	-37.4		1400.8		+1	+1320	660,696	1,754,925		
492	1650		" "	"	9.8	BH	-8.3	-18.1		1420.1		+1	+1650	660,696	1,755,255		
493	1980		" "	"	4.0	-		-4.0		1434.2		+1	+1980	660,696	1,755,585		
494	2310		" "	"	7.9	TH	+11.6	+3.7		1441.9		+1	+2310	660,696	1,755,915		
495	2640		80°4.2'	+9.9°	5.7	TH	+13.2	+7.5		1445.9	TP	+1	+2640-3	660,696	1,756,242	vertical correction	
495	2640				4.8	89°44'	+12.3	+7.5			TP						
	990		259°55.3'-180°	+9.9°	+1.6	-		+1.6	1447.7		BS	+3	+990-2				
	990				+6.6	TH	-5.0	+1.6			BS						

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
5/13/79		G. Cotcamp		R. Hulsey		5839		R. Hulsey adw		5-A	36						
AREA		TOPO MAP	STATE	COUNTY		TWP	RANGE	PRM	PARTY MANAGER								
Oklahoma		Gateco 15	Oklahoma	Washita		8N	15W		L.D. 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	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1447.7								
496	660		259°55.3'	+9.9°	12.9	-		-12.9		1434.8		-2	-660	660,697	1,756,570		
497	330		" "	"	13.7	BH	-1.7	-15.4		1432.3		-1	-330	660,698	1,756,900		
498	0				5.4	-		-5.4		1442.3	TP	0	0	660,699	1,757,230		
499	327		78°25'	+9.9°	14.1	BH	-1.6	-15.7		1432.0		+10	+327	660,709	1,757,557	4-Way Intersect El. 1432	
499	330		80°8.8'	+9.8°	14.2	BH	-1.7	-15.9		1431.8		0	+330	660,699	1,757,560		
500	660		" "	"	11.8	91°20'	-15.4	-27.2		1420.5		+1	+660	660,700	1,757,890		
501	990		" "	"	9.0	91°20'	-23.0	-32.0		1415.7		+1	+990	660,700	1,758,220		
502	1320		" "	"	10.9	90°40'	-15.4	-26.3		1421.4		+1	+1320	660,700	1,758,550		
503	1650		" "	"	10.0	90°30'	-14.4	-24.4		1423.3		+2	+1650	660,701	1,758,880		
504	1980		" "	"	9.7	90°30'	-17.3	-27.0		1420.7		+2	+1980	660,701	1,759,210		
505	2310		80°8.8'	+9.8°	3.6	90°30'	-20.2	-23.8			TP	+2	+2310-2	660,701	1,759,538		
505	2310				14.3	90°14'	-9.4	-23.7		1424.2	TP						
	2310		260°28'-180°	+9.8°	+14.9	89°12'	-32.2	-17.3	1407.1		BS	-11	+2310-2				
	2310				+14.4	89°14'	-30.9	-17.5			BS						
506	1980		260°28'	+9.8°	1.9	89°30'	+17.3	+15.4		1422.5		+9	-1980	660,699	1,759,866		
507	1650		" "	"	3.3	89°30'	+14.4	+11.1		1418.2		+8	-1650	660,698	1,760,196		
508	1320		" "	"	3.3	89°30'	+11.5	+8.2		1415.3		+6	-1320	660,696	1,760,526		
509	990		" "	"	3.7	89°30'	+8.6	+4.9		1412.0		+5	-990	660,695	1,760,856		
510	660		" "	"	2.1	TH	+3.3	+1.2		1408.3		+3	-660	660,693	1,761,186		
511	330		" "	"	2.0	-		-2.0		1405.1		+2	-330	660,692	1,761,516		

DATE 5/13/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6934	NOTES CHECKED BY R. Hulsey	LINE NO. 5-A	PAGE 37
AREA Oklahoma	TOPO MAP Gatobo 15'	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 15W	PARTY MANAGER L.O. 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.	
									1407.1					
512	0				5.4	-		-5.4		1401.7	π	0	0	660,690 1,761,846
513	330		80° 48.7'	+9.8°	8.2	-		-8.2		1398.9		-4	+330	660,686 1,762,176
514	660		"	"	9.7	-		-9.7		1397.4		-7	+660	660,683 1,762,506
515	960		80° 16.4'	+9.8°	10.1	-		-10.1		1397.0		-1	+960	660,689 1,762,866
515	990		80° 48.7'	+9.8°	10.7	-		-10.7		1396.4		-11	+990	660,679 1,762,836
516	1320		"	"	12.1	-		-12.1		1395.0		-14	+1320	660,676 1,763,166
517	1650		"	"	6.0	BH	-8.3	-14.3		13928		-18	+1650	660,672 1,763,496
518	1980		"	"	5.8	BH	-9.9	-15.7		1391.4		-21	+1980	660,669 1,763,826
519	2310		80° 48.7'	+9.6°	6.1	BH	-11.6	-17.7			f	-17	+2310-2	660,673 1,764,154
519	2310				14.9	90° 4'	-2.7	-17.6		1389.7	f			
	1320		260° 35' - 180°	+9.6°	+6.1	TH	-6.6	-0.5	1389.4		BS	-4	+1320-2	
	1320				+4.1	89° 48'	-4.6	-0.5			BS			
520	990		260° 35'	+9.6°	0.9	-		-0.9		1388.5		+3	-990	660,672 1,764,482
521	660		"	"	2.2	-		-2.2		1387.2		+2	-660	660,671 1,764,812
522	330		"	"	3.5	-		-3.5		1385.9		+1	-330	660,670 1,765,142
523	0				5.4	-		-5.4		1384.0	π	0	0	660,669 1,765,472
524	330		80° 43'	+9.6°	6.0	-		-6.0		1383.4		-2	+330	660,667 1,765,802
525	660		"	"	6.9	-		-6.9		1382.5		-4	+660	660,665 1,766,132
526	990		"	"	7.9	-		-7.9		1381.5		-5	+990	660,664 1,766,462
527	1320		"	"	8.8	-		-8.8		1380.6		-8	+1320	660,661 1,766,792

660,690 + 1,762,805(s)  
Way Intersect El. 1398

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE	
5/13/79		G. Cotcamp			R. Wiley		6834		GUC			5-A	38	
AREA		TOPO MAP		STATE	COUNTY			TWP	RANGE	PPM	PARTY MANAGER			
Oklahoma		Gator 15		Oklahoma	Washita						L.O. 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.	
									1389.4					
528	1650		81°14.3'	+9.6°	10.7	-		-10.7		1378.9	TP	-24	+1650.2	660,645   1,767,120
528	1650				2.4	BH	-8.3	-10.7			TP			
	320		286°40.5'-180°	+9.6°	+2.4	88°40'	-7.4	-5.0	1374.2		BS	-142	+287	curve
	320				+6.2	88°	-11.2	-5.0			BS			
529	0				5.4	-		-5.4		1368.8	T	0	0	660,503   1,767,407
530	330		126°3'	+9.6°	5.4	-		-5.4		1368.8		-236	+231	660,267   1,767,638
531	660		" "	"	6.2	"		-6.2		1368.0		-472	+461	660,031   1,767,838 sta 531 is 210' right L.
	945		125°26.3'	+9.6°	5.9	-		-5.9		1368.5	TP	-669	+668	659,834   1,768,075 Y-intersect (offset south)
	945				10.6	TH	+4.7	-5.9			TP			659,835 + 1,768,075(s)
	1070		350°25.1'-180°	+9.9°	+8.3	TH	-5.4	+2.9			BS	-1070	-6	correct. y = 0 y = -33
	1070				+6.1	89°50'	-3.1	+3.0	1371.8		BS			Traverse E. South
T	0				5.4	-		-5.4		1366.4	T	0	0	
TP	1355		170°36.0'	+9.9°	10.1	-		-10.1		1362.0	TP	-1355	-12	
TP	1355				3.3	BH	-6.8	-10.1			TP			
	1060		350°16.6'-180°	+9.9°	+0.4	89°40'	-6.2	-5.8	1356.5		BS	-1060	-3	
	1060				+3.5	89°30'	-9.3	-5.8			BS			
T	0				5.4	-		-5.4		1351.1	T	0	0	vertical correct. +3.1
#	970		170°41.5'	+9.9°	11.0	-		-11.0		1345.8	TP	-970	-10	4-Way Intersect. 1346.
#	970				6.2	BH	-4.9	-11.1			TP			656,365 + 1,768,035(s)

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
5/14/79		R. Hulsey		G. Cotcamp		6834		Guc. [initials]		5-A	39					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Gotebo 15'		Oklahoma	Washita					L. O. 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
									1	1345.8				655,365	1,768,025	
	1110		260° 42.9'	+9.9°	+1.1	89° 20'	-72.9	-11.8			BS	-12	+1110			Back on line
	1110				+4.4	89° 10'	-76.1	-11.7	1334.1		BS					
532	990		260° 42.9'	+9.9°	0.4	89° 30'	+8.6	+8.2		1342.3		+11	-990	655,364	1,768,145	
533	660		" "	"	1.5	-		-1.5		1332.6		+7	-660	655,360	1,768,975	
534	330		" "	"	3.7	-		-3.7		1330.4		+4	-330	655,357	1,768,805	
535	0				5.4	-		-5.4		1328.7	TP	0	0	655,353	1,769,135	
536	330		80° 30'	-9.9°	6.0	-		-6.0		1328.1		-2	+330	655,351	1,769,465	
537	660		" "	"	6.0	-		-6.0		1328.1		-5	+660	655,348	1,769,795	Curve
538	985		82° 56.6'	+9.9°	6.6	-		-6.6		1327.5	TP	-49	+984	655,304	1,770,119	Shooting across
538	985				11.5	TH	+4.9	-6.6			TP					Curve
	990		258° 19.9'	+9.9°	+3.7	-		+3.7	1331.2		BS	+31	+990			
	990				+8.6	TH	-5.0	+3.6			BS					
538	855		258' -	+9.9°	1.7	-		-1.7		1329.5		-31	-854	655,304	1,770,255	Bridge
539	660		261° 32'	+9.9°	3.1	-		-3.1		1328.1		+17	-660	655,352	1,770,499	
540	330		" "	"	4.7	-		-4.7		1326.5		+8	-330	655,343	1,770,779	
541	0				5.4	-		-5.4		1325.8	TP	0	0	655,335	1,771,109	
542	330		79° 1'	+9.9°	4.6	-		-4.6		1326.6		+6	+330	655,341	1,771,439	
543	660		" "	"	2.2	-		-2.2		1329.0		+12	+660	655,347	1,771,769	
544	990		79° 1.0'	+9.9°	3.2	-		-3.2			TP	+19	+990	655,354	1,772,099	
544	990				8.1	TH	+5.0	-3.1		1328.1	TP					

DATE 5/14/79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C. <i>rdm</i>	LINE NO. 5-A	PAGE 40	
AREA Oklahoma	TOPO MAP Gotebo 15'	STATE Oklahoma	COUNTY Washita	TWP	RANGE	PPM	PARTY MANAGER L.O. 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			
544										1328.1								
	1208		259° 24.0' ± 180°	+9.9°	+7.5	-		+7.5	1335.6		BS	+15	+1208					
	1208				+1.5	BH	+6.0	+7.5			BS							
545	878		259° 24'	+9.9°	8.5	-		-8.5		1327.1		-11	-878	655,358	1,772,429			
546	548		" "	"	8.2	-		-8.2		1327.4		-7	-548	655,362	1,772,759			
547	218		" "	"	7.1	-		-7.1		1328.5		-3	-218	655,366	1,773,089			
#	0				5.4	-		-5.4		1330.2	T	0	0	655,369	1,773,307			
TP	870		350° 29.9'		3.7	89° -	+15.2	+11.5		1347.1	TP						El. 1332 Set-up middle int. 655,370 1,773,305 Traverse North	
TP	870				6.3	88° 50'	+17.7	+11.4			TP							
	1580		169° 55.0' ± 180°		+5.1	-		+5.1			BS							
	1580				+13.2	TH	-7.9	+5.3	1352.4		BS							
T	0				5.4	-		-5.4		1347.0	T							
#	2770		350° 42.9'		12.0	-		-12.0		1340.4	TP							
#	2770				10.4	90° 02'	-1.6	-12.0			TP			660,590	1,773,380		4-way int. El. 1342	
	1432		261° 0.4' ± 180°	+9.9°	+13.9	91° 20'	+33.3	+47.2	1387.6		BS	-23+3	+1432				Back on line	
	1432				+9.7	91° 30'	+37.5	+47.2			BS							
548	1320		261° 0.4'	+9.9°	11.6	91° 30'	-34.5	-46.1		1341.5		+21	-1320	660,591	1,773,492			
549	990		" "	"	13.1	91° 30'	-25.9	-39.0		1348.6		+16	-990	660,586	1,773,822			
550	660		" "	"	13.8	91° 30'	-17.3	-31.1		1356.5		+10	-660	660,580	1,774,152			
551	330		" "	"	13.2	90° 50'	-4.8	-18.0		1369.6		+5	-330	660,575	1,774,982			
552	0				5.4	-		-5.4		1382.2	T	0	0	660,570	1,774,812			

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

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DATE 5/14/79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Catcamp	PARTY NUMBER 6834	NOTES CHECKED BY Gwc. <i>slw</i>	LINE NO. 5-A	PAGE 41	
AREA Oklahoma	TOPO MAP Gatebo/Carnegie 15	STATE Oklahoma	COUNTY Washita	TWP	RANGE	PPM	PARTY MANAGER L.O. 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
									1387.6							
553	330		80° 15.2'	+9.9°	6.3	-		-6.3		1381.3		-1	+380	660,569	1,775,192	↑
554	660		" "	"	2.8	-		-2.8		1384.8		-2	+660	660,568	1,775,972	Gatebo Quad
555	990		" "	"	2.9	TH	+5.0	+2.1		1389.7		-3	+990	660,567	1,775,802	Carnegie Quad
556	1320		" "	"	3.3	TH	+6.6	+3.3		1390.9		-4	+1320	660,566	1,776,132	↓
557	1650		80° 15.2'	+9.9°	3.7	TH	+8.3	+4.6		1392.2	TP	-4+3	+1650	660,569	1,776,962	
557	1650				5.2	89°40'	+9.6	+4.4			TP					
	1650		260° 18.9' - 180°	+9.9°	+14.6	90°20'	+9.6	+24.2	1416.4		BS	-6+3	+1650			
	1650				+9.8	90°30'	+14.9	+24.2			BS					
558	1320		260° 18.9'	+9.9°	9.9	90°40'	-15.4	-25.3		1391.1		+5	-1320	660,571	1,776,792	
559	990		" "	"	12.7	90°40'	-11.5	-24.2		1392.2		+4	-990	660,570	1,777,122	
560	660		" "	"	12.0	90°40'	-7.7	-19.7		1396.7		+2	-660	660,568	1,777,952	
561	330		" "	"	11.8	-		-11.8		1404.6		+1	-330	660,567	1,777,782	
562	0				5.4	-		-5.4		1411.0	TP	0	0	660,566	1,778,112	
563	330		90° 34.5'	+9.9°	5.3	-		-5.3		1411.1		-3	+330	660,563	1,778,442	
<del>564</del>	<del>660</del>															
#10	520		79° 55'	+9.9°	12.3	-		-12.3		1404.1		+2	+520	660,568	1,778,632	660,600 + 1,778,690 4-way int. 1406
564	660		80° 34.5'	+9.9°	10.5	-		-10.5		1405.9		-5	+660	660,561	1,778,772	
565	990		" "	"	2.3	-		-2.3		1414.1		-8	+990	660,558	1,779,102	
566	1320		" "	"	4.9	-		-4.9		1411.5		-11	+1320	660,555	1,779,932	

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE				
5/14/79		R. Hulsey			G. Cotcamp		6834		Guc. <i>rlw</i>			5-A	42				
AREA		TOPO MAP		STATE	COUNTY		TWP		RANGE	PPM	PARTY MANAGER						
Oklahoma		Carnegie 15'		Oklahoma	Washita						L.O. 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		
									1416.4								
567	1650		80° 34.5'	+9.9°	5.8	-		-5.8		1410.6	TP	-14 +3	+1650	660,555	1,779,762		
567	1650				14.1	TH	+8.3	-5.8			TP						
	1980		260° 10.3' - 180°	+9.9°	+11.7	91°	+34.6	+46.3	1456.9		BS	-2 +3	+1980				
	1980				+6.0	91° 10'	+40.3	+46.3			BS						
568	1650		260° 10.3'	+9.9°	13.0	91° 10'	-33.6	-46.6		1410.3		+2	-1650	660,558	1,780,092		
569	1320		" "	"	10.6	91° 20'	-30.7	-41.3		1415.6		+2	-1320	660,558	1,780,422		
570	990		" "	"	13.5	91° -	-17.3	-30.8		1426.1		+1	-990	660,557	1,780,752		
571	660		" "	"	11.5	90° 40'	-7.7	-19.2		1437.7		+1	-660	660,557	1,781,082		
572	330		" "	"	10.6	-		-10.6		1446.3		+0	-330	660,556	1,781,412		
573	0				5.4	-		-5.4		1451.5	X	0	0	660,556	1,781,742		
574	330		80° 39.2'	+9.9°	5.3	-		-5.3		1451.6		-3	+330	660,553	1,782,072		
575	660		" "	"	6.0	-		-6.0		1450.9		-6	+660	660,550	1,782,902		
576	990		" "	"	7.0	-		-7.0		1449.9		-10	+990	660,546	1,782,732		
577	1320		" "	"	7.7	-		-7.7		1449.2		-13	+1320	660,543	1,783,062		
578	1650		" "	"	7.9	-		-7.9		1449.0		-16	+1650	660,540	1,783,392		
579	1980		80° 39.2'	+9.9°	10.4	-		-10.4		1446.5	TP	-19 +3	+1980	660,540	1,783,722		
579	1980				9.3	90° 02'	-1.1	-10.4			TP						
	1650		260° 26.5' - 180°	+9.9°	+5.4	TH	-8.3	-2.9			BS	-10 +3	+1650				
	1650				+2.0	89° 50'	-4.8	-2.8	1443.7		BS						
77	1480		260° 45'	+9.9°	6.9	TH	+7.4	+0.5		1449.2		+17	-1480	660,550	1,783,892	660,560 + 1,783,900 4-way int. El. 1444	

DATE 5/14/79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C.	LINE NO. 5-A	PAGE 43	
AREA Oklahoma	TOPO MAP Carnegie 15'	STATE Oklahoma	COUNTY Washita	TWP	RANGE	PPM	PARTY MANAGER L.O. 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 - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
									1443.7							
580	1320		260° 26.5'	+9.9°	5.9	TH	+6.6	+0.7		1444.4		+8	-1320	660,541	1,789,052	
581	990		" "	"	4.5	TH	+5.0	+0.5		1444.2		+6	-990	660,539	1,789,362	
582	460		" "	"	2.9	-		-2.9		1440.8		+4	-660	660,537	1,789,712	
583	330		" "	"	3.5	-		-3.5		1440.2		+2	-330	660,535	1,785,042	
584	0				5.4	-		-5.4		1438.3	TP	0	0	660,533	1,785,372	
585	330		80° 27.1'	+9.9°	6.3	-		-6.3		1437.4		-2	+330	660,531	1,785,702	
586	660		" "	"	6.4	-		-6.4		1437.3		-4	+660	660,529	1,786,032	
587	990		" "	"	6.3	-		-6.3		1437.4		-6	+990	660,527	1,786,362	
588	1320		" "	"	5.4	-		-5.4		1438.3		-8	+1320	660,525	1,786,692	
589	1650		80° 27.1'	+9.9°	4.5	-		-4.5			TP	-10 73	+1650	660,526	1,787,022	
589	1650				12.7	TH	+8.3	-4.4		1439.3	TP					
	1980		260° 49.1'-180°	+9.9°	+8.8	BH	+9.9	+18.7	1457.9		BS	-25 73	+1980			
	1980				+12.7	90° 10'	+5.8	+18.5	148.6		BS					
590	1650		260° 49.1'	+9.9°	9.1	BH	-8.3	+17.4		1440.5		+21	-1650	660,525	1,787,352	
591	1320		" "	"	9.9	BH	-6.6	-16.5		1441.4		+17	-1320	660,521	1,787,682	
592	990		" "	"	9.9	BH	-5.0	-14.9		1443.0		+12	-990	660,516	1,788,012	
593	660		" "	"	11.9	-		-11.9		1446.0		+8	-660	660,512	1,788,342	
594	330		" "	"	8.1	-		-8.1		1447.8		+4	-330	660,508	1,788,672	
#	11		281° 22'	+9.9°	5.5	-		-5.5		1452.7		+4	-10	660,508	1,788,992	660,505 + 1,789,000 H-way int. El. 1453
595	0				5.4	-		-5.4		1452.5	TP	0	0	660,507	1,789,002	

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
5/14/79		R. Hulsey		G. Cotcamp		6834		Gul. adw		5-A		44		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Oklahoma		Carnegie 15		Oklahoma		Washita						L.O. 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.	
									1457.9					
596	330		81° 7.5'	+9.9°	2.1	-		-2.1		1455.8		-6	+330	660,498 1,789,332
597	660		" "	"	0.0	-		-0.0		1457.9		-12	+660	660,492 1,789,662
598	990		" "	"	2.7	TH	+5.0	+2.3		1460.2		-18	+990	660,486 1,789,992
599	1320		81° 7.5'	+9.9°	<del>1.8</del>	TH	+6.6	+4.3		1462.2	TP	-24+3	+1320	660,483 1,790,322
599	1320				3.5	89°40'	+7.7	+4.2			TP			
	1980		260° 42.4'	+9.9°	+8.6	89°-	-34.6	-26.0			BS	-21+3	+1980	
	1980				+2.9	89°10'	-28.8	-25.9	1436.3		BS			
600	1650		260° 42.4'	+9.9°	2.4	89°20'	+19.2	+16.8		1453.1		+17	-1650	660,482 1,790,652
601	1320		" "	"	3.0	89°20'	+15.4	+12.4		1448.7		+19	-1320	660,479 1,790,982
602	990		" "	"	2.2	89°20'	+11.5	+9.3		1445.6		+10	-990	660,475 1,791,312
603	660		" "	"	1.0	89°30'	+5.8	+4.8		1441.1		+7	-660	660,472 1,791,642
604	330		" "	"	3.1	-		-3.1		1433.2		+3	-330	660,468 1,791,972
605	0				5.4	-		-5.4		1430.9	TP	0	0	660,465 1,792,302
606	330		80° 54.2'	+9.9°	11.8	-		-11.8		1424.5		-5	+330	660,460 1,792,632
607	660		" "	"	13.7	BH	-3.3	-17.0		1419.3		-9	+660	660,455 1,792,962
608	990		" "	"	12.0	-		-12.0		1424.3		-14	+990	660,451 1,793,292
609	1320		" "	"	3.0	-		-3.0		1433.3		-19	+1320	660,446 1,793,622
610	1650		80° 54.2'	+9.9°	1.2	TH	+8.3	+7.1		1443.4	TP	-23+2	+1650	660,444 1,793,952
610	1650				2.7	89°46'	+9.6	+6.9			TP			

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE				
5/14/79		R. Hulsey			G. Cotcamp		6834		sw. rdw			5-A	45				
AREA		TOPO MAP	STATE	COUNTY		TWP		RANGE	PPM	PARTY MANAGER							
Oklahoma		Carnegie 15'	Oklahoma	Washita						L.O. 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 - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS	
														Y	X		
610										1443.4							
	660		260°17.4'-180°	+9.9°	+0.8	TH	-3.3	-2.5			BS	-2 +2	+660+1				
	660				+1.4	89°40'	-3.8	-2.4	1441.0		BS						horiz. correct. y = +37 x = +1
611	330		260°17.4'	+9.9°	2.2	-		-2.2		1438.8		+1	-330	660,445	1,794,283		
#	328		261°10'	+9.9°	2.1	-		-2.1		1438.9		+6	-328	660,450	1,794,285		660,450+1,794,285 4-day int. El. 1440
612	0				5.4	-		-5.4		1435.6	TP	0	0	660,444	1,794,613		
613	330		80°25.8'	+9.9°	13.4	92°-	-11.5	-24.9		1416.1		-2	+330	660,442	1,794,943		
614	660		80°25.8'	+9.9°	13.6	92°10'	-24.9	-38.5			TP	-4	+660+3	660,440	1,795,276		
614	660				11.6	92°20'	-26.8	-38.4		1402.6	TP						
	1320		259°12.5'-180°	+9.9°	+5.6	88°40'	-30.7	-25.1	1377.5		BS	+21	+1320+3				
	1320				+9.4	88°30'	-34.5	-25.1			BS						
615	990		259°12.5'	+9.9°	7.6	88°40'	+23.0	+15.4		1392.9		-15	-990	660,446	1,795,609		
616	660		" "	"	7.6	88°40'	+15.4	+7.8		1385.3		-10	-660	660,451	1,795,939		
617	330		" "	"	2.9	88°40'	+7.7	+4.8		1382.3		-5	-330	660,456	1,796,269		
618	0				5.4	-		-5.4		1372.1	TP	0	0	660,461	1,796,599		
#	112		76°33'	+9.9°	6.1	-		-6.1		1371.4		+7	+112	660,468	1,796,711		
619	330		79°21.4'	+9.9°	4.5	-		-4.5		1373.0		+4	+330	660,465	1,796,929		
620	660		" "	"	0.5	88°50'	+13.4	+8.4		1385.9		+9	+660	660,470	1,797,259		
621	990		" "	"	2.2	88°26'	+28.8	+26.6		1404.1		+13	+990	660,474	1,797,589		
622	1320		" "	"	3.2	88°16'	+42.2	+39.0		1416.5		+17	+1320	660,478	1,797,919		

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
5/14/79		R. Hulstey		G. Cotcamp		6834		JWC rlu		5-A		46			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Carnegie 15'		Oklahoma		Washita								L. O. 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
									1377.5						
623	1650	1649	79° 21.4'	+9.9°	2.0	88° -	+57.6	+55.6		1433.1	TP	+21	+1649.3	660,982	1,798,251
623	1650				6.8	87° 50'	+62.3	+55.5			TP				
	990		260° 24.1-180°	+9.9°	+2.8	-		+12.8		1445.9	BS	-5	+990.3		
	990				+7.9	BH	+5.0	+12.9			BS				
624	660		260° 24.1'	+9.9°	7.0	-		-7.0		1438.9		+3	-660	660,480	1,798,584
625	330		" "	"	6.3	-		-6.3		1439.6		+2	-330	660,979	1,798,914
626	0				5.4	-		-5.4		1440.5	TP	0	0	660,977	1,799,249
627	<del>330</del>														
#	305		80° 16'	+9.9°	3.6	-		-3.6		1442.3		-1	+305	660,976	1,799,599
627	330		80° 54'	+9.6°	3.5	-		-3.5		1442.4		-3	+330	660,979	1,799,574
628	660		" "	"	3.0	TH	+3.3	+0.3		1446.2		-6	+660	660,971	1,799,904
629	990		" "	"	2.0	TH	+5.0	+3.0		1448.9		-9	+990	660,968	1,800,234
630	1320		80° 54.0'	+9.6°	2.8	TH	+6.6	+3.8	+3.9	1449.8	TP	-12+2	+1320+3	660,967	1,800,567
630	1320				14.4	89° 12'	+18.4	+4.0			TP				
	1320		261° 36' -180°	+9.6°	+7.8	-		+9.8		1459.7	BS	-28+2	+1320		
	1320				+13.8	89° 50'	-3.8	+10.0	+9.9		BS				
631	990		261° 36'	+9.6°	9.3	-		-9.3		1450.4		+21	-990	660,462	1,800,897
632	660		" "	"	8.2	-		-8.2		1451.5		+14	-660	660,455	1,801,227
633	330		" "	"	2.9	-		-2.9		1456.8		+7	-330	660,998	1,801,557
634	0				5.4	-		-5.4		1454.3	TP	0	0	660,991	1,801,887

660,420 + 1,799,560  
4-way int. El. 1446

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
10/8/80		S. Calcamp		D. Stabaldern		6437		Jusk. rlu		5-1		47			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Carnegie		Oklahoma		Muskogee								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
									459.7						
635	330		81° 33.5'	+9.9°	11.6	92°	-11.5	-23.1		426.6		-6	+330	660,435	1,802,217
636	660		" "	"	13.7	92°	-23.0	-36.7		423.0		-11	+660	660,430	1,802,547
637	990		" "	"	9.8	92°	-34.5	-44.3		415.4		-17	+990	660,424	1,802,877
638	1320		" "	"	13.2	92°	-26.9	-40.7		419.0		-22	+1320	660,419	1,803,207
639	1650		" "	"	12.7	64°	-8.3	-21.2		422.5		-28	+1650	660,413	1,803,537
640	1980		" "	"	6.2	-	-	-6.2		452.5		-33	+1980	660,408	1,803,867
641	2310		81° 33.5'	+9.9°	4.3	89° 52'	+5.4	+11.1		432.8	TP	-39	+2310	660,403	1,804,197
641	2310				5.7	89° 50'	+5.7	+11.0			TP				
	2310		261° 23.3' - 10°	+9.9°	+13.2	89°	-40.3	-27.1	433.7		BS	-32	+2310		
	2310				+6.9	89°	-33.5	-27.2			BS				
642	1980		261° 23.3'	+9.9°	11.4	89°	+34.6	+23.2		456.9		+27	-1980	660,398	1,804,527
643	1650		261° 41.1'	+9.9°	3.5	89°	+14.8	+11.3		445.0		+34	-1650	660,405	1,804,817
644	1320		261° 23.3'	+9.9°		89°	+14.4	+8.4		442.1		+23	-1650	660,397	1,804,857
644	1320							+2.8		427.8		+18	-1320	660,389	1,805,127
645	990							-11.0		422.7		+14	-990	660,385	1,805,517
646	660							-19.2		419.5		+9	-660	660,380	1,805,847
647	330							-3.8		423.9		+5	-330	660,376	1,806,177
648	0				5.4			-5.4		428.3		0	0	660,371	1,806,507
649	330			+9.9°	4.5			-9.5		424.2		-4	+330	660,367	1,806,837

660,380 ± 1,804,810  
+w. 2.7.1946

DATE 10/8/80	INSTRUMENT MAN Carnegie		ROD MAN D. Shabert	PARTY NUMBER 6834	NOTES CHECKED BY Gul.	LINE NO. 5A	PAGE 48
AREA OKLAHOMA	TOPO MAP Carnegie	STATE OK	COUNTY Murray	TWP 12N	RANGE 10E	PPM 100	PARTY MANAGER L.A. 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
									1433.7						
650	111		211° 10'	+9.9°	3.5	-		-13.5		1420.2		-8	+660	660,353	1807,157
651	111			"	10.5	-		-19.7		1423.0		-13	+990	660,348	1807,997
652	111			"	4.2	-		-9.7		1423.8		-17	+1320	660,359	1807,827
653	111			"	4.1	-		-4.1		1429.6		-21	+1650	660,350	1808,157
654	111			"	11	78	+9.9	+8.5		1442.0		-25	+1980	660,346	1808,487
655	111		211° 10'	+9.9°	2.4	78	+26.2	+24.5		1458.2		-29	+2310	660,342	1808,820
656	99.7				1.7	88	+25.5	+24.4							
	990	989	260° 57.3' - 180°	+9.9°	-2.8	87° 50'	-37.4	-31.6	1423.6			-6	+987.3		
	990				+5.7	87° 40'	-40.3	-39.6							
657	660		210° 57.3'	+9.9°	4.0	88° -	+23.0	+19.0		1442.6		+4	-660	660,340	1809,152
658	330				2.7	89° -	+5.8	+3.1		1426.7		+2	-330	660,338	1809,982
659	0				5.4	-		-5.4		1418.2	π	0	0	660,336	1809,512
#L #F	273		80° 45'	+9.9°	8.8	-		-8.8		1414.8		-1	+273	660,335	1810,285

**EOL #5-A**  
660,335  
4-way intersection 1716  
curve, curved. V=45'  
Y=+2'