

# OBSTRUCTION DATA SHEET

**ODS 970  
KEOKUK MUNICIPAL AIRPORT  
KEOKUK, IOWA**

**DIGITIZED FROM**

**OC 970  
SURVEYED 30 OCTOBER 1992  
1ST EDITION**

**HORIZONTAL DATUM NAD83  
VERTICAL DATUM NGVD29**



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See SPECIAL NOTICES in "Dates of Latest Editions, Airport Obstruction Charts - Obstruction Data Sheets," for possible corrections. National Oceanic and Atmospheric Administration (NOAA) publications are available through NOAA Distribution Branch (N/CG33), National Ocean Service, Riverdale, MD 20737. Telephone: 301-436-6990

## OBSTRUCTION DATA SHEET

The Obstruction Data Sheet (ODS) provides digital obstruction and runway data for use in aircraft arrival and departure planning. This information has been obtained using field survey and photogrammetric methods by the Photogrammetry Branch of the National Ocean Service in accordance with Federal Aviation Regulations Part 77 (FAR-77), "Objects Affecting Navigable Airspace" and FAA No. 405, "Specifications - Airport Obstruction Chart and Related Products."

The ODS is a derivative of the Airport Obstruction Chart (OC). The source OC is indicated on the ODS cover. All objects, both obstructing and nonobstructing, that carry an elevation on the OC are listed in the ODS. The ODS and the OC depict a representation of objects that existed at the time of the OC field survey.

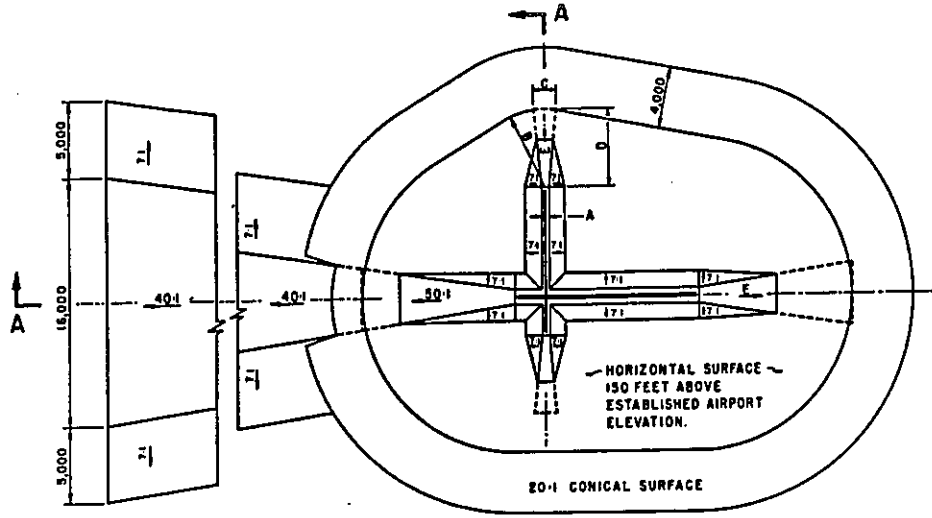
ODS information is arranged as follows:

1. Objects located in an FAR-77 approach or primary and listed with the associated runway (reference runway).
2. All objects not included in "1" above are listed with the Airport Reference Point (ARP).
3. Runway configuration and runway lengths, widths, and elevations are presented on the ODS last page.

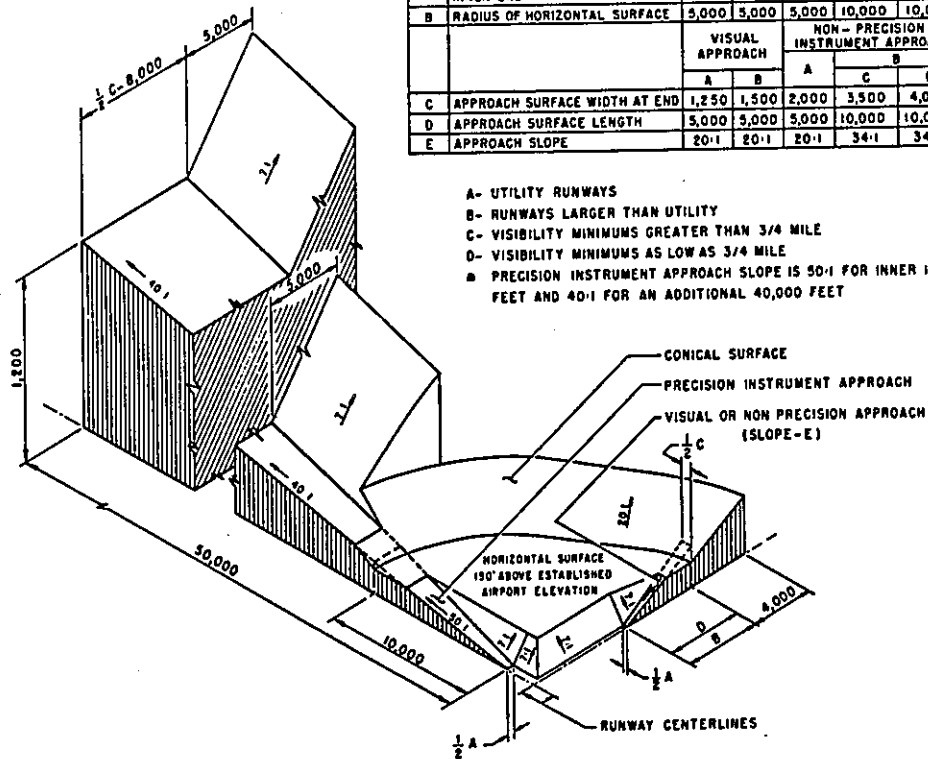
The FAR-77 imaginary approach surfaces for which the obstruction surveys were performed are coded in the ODS as follows:

A(V) ..... Utility runway - visual approach only  
A(NP) .... Utility runway - nonprecision instrument approach  
B(V) ..... Nonutility runway - visual approach only  
C ..... Nonutility runway - nonprecision instrument  
approach with visibility minimums greater than  
3/4 mile  
D ..... Nonutility runway- nonprecision instrument approach  
with visibility minimums as low as 3/4 mile  
PIR ..... Precision instrument runway  
SUPLC .... Supplemental C underlying a B(V)

FAR-77 imaginary surface dimensions are defined on page 2 of this report.



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	C	D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	900	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT APPROACH
		A	B	A	C	D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*



- A- UTILITY RUNWAYS
- B- RUNWAYS LARGER THAN UTILITY
- C- VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
- D- VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
- \* PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET

ISOMETRIC VIEW OF SECTION A-A

FAR-77 CIVIL AIRPORT  
IMAGINARY SURFACES

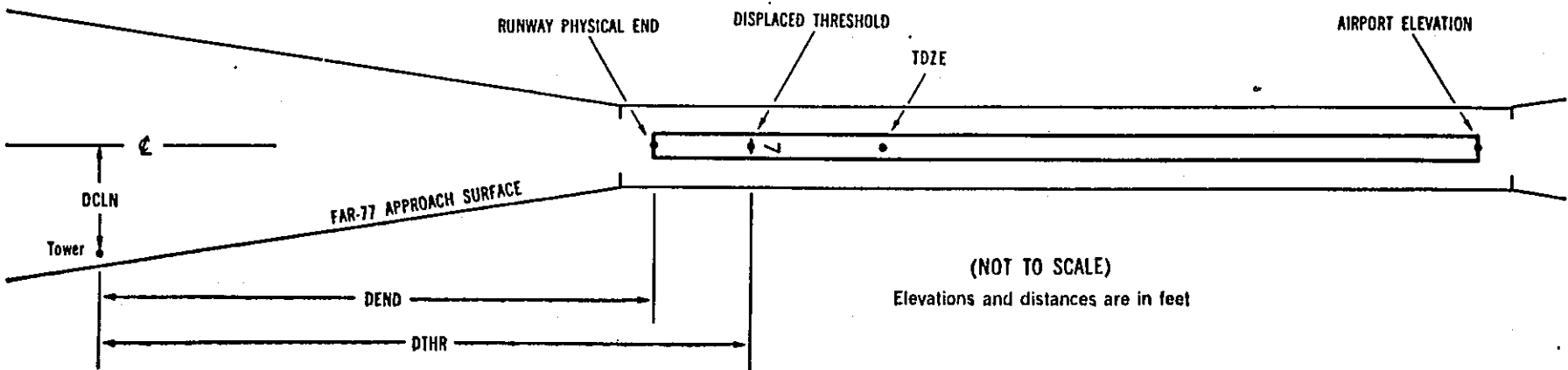
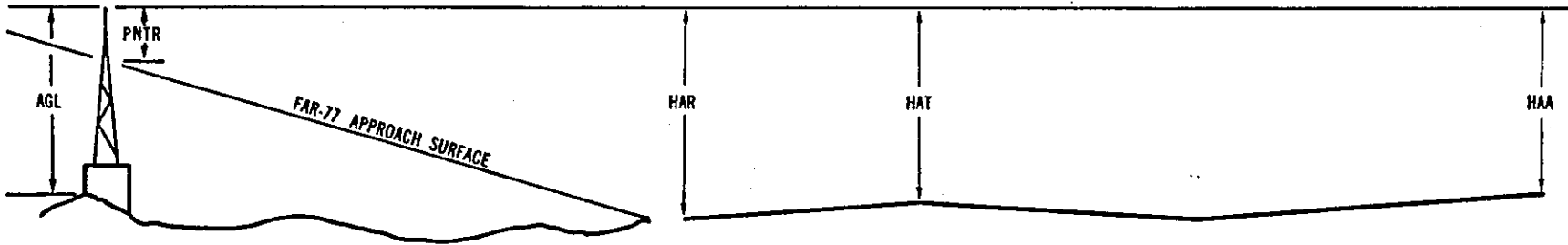
# ANNOTATION OF ODS DATA FORMAT

OC XXXX

AIRPORT ELEVATION XXXX

X <sup>1</sup>	X <sup>2</sup>	XXXX/XXXX <sup>3</sup>	XXXXXX.XXX <sup>4</sup>	XXXXXXX.XXX <sup>4</sup>	XXXXXXX <sup>5</sup>	XXXX/XXXX <sup>6</sup>	XXXXXX.XXX <sup>7</sup>	XXXXXXX.XXX <sup>7</sup>				
OBJECT	LAT	LONG	A <sup>8</sup>	ELEV <sup>9</sup>	AGL <sup>10</sup>	HAR <sup>11</sup>	HAT <sup>11</sup>	HAA <sup>11</sup>	DEND <sup>12</sup>	DTHR <sup>12</sup>	DCLN <sup>12</sup>	PNTR <sup>13</sup>
XXXXXXXXXXXXX	XXXXXX.XXX	XXXXXXXX.XXX	XX	XXXX	XXXX	XXX	XXX	XXX	XXXXX	XXXXX	XXXX	XXXX
XXXXXXXXXXXXX	XXXXXX.XXX	XXXXXXXX.XXX	XX	XXXX	XXXX	XXX	XXX	XXX	XXXXX	XXXXX	XXXX	XXXX

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## EXPLANATION OF FOOTNOTES

- 1 Data block identifier. If a runway number is entered (reference runway), this data block will contain data pertinent to the reference runway and to objects in the FAR-77 approach and primary areas of the reference runway. If ARP is entered, this data block will contain the ARP position and data relative to all objects not in an FAR-77 approach or primary area.
- 2 For the reference runway, the lowest FAR-77 approach surface for which an obstruction survey was performed. (More than one surface may be surveyed).
- 3 Elevation at approach end of reference runway/touchdown zone elevation
- 4 Latitude and longitude at approach end of reference runway
- 5 Geodetic azimuth of reference runway reckoned from north
- 6 Elevation at reference runway displaced threshold/touchdown zone elevation
- 7 Latitude and longitude at reference runway displace threshold
- 8 Accuracy codes:           Horizontal           Vertical  
                           1 = 20                A = 2  
                           2 = 40                B = 5  
   C = 20
- 9 Elevation above mean sea level (MSL) at top of object. This value includes 15 feet added to noninterstate roads, 17 feet added to interstate roads, and 23 feet added to railroad tracks.
- 10 Height above ground level (AGL). AGL's are provided only for manmade objects appearing on the OC and equal to or greater than 200 feet AGL. AGL accuracy is 10 feet.
- 11 HAA - Height above airport  
 HAR - Height above approach end of reference runway  
 HAT - Height above reference runway touchdown zone elevation
- 12 DEND - Distance along reference runway centerline from point nearest to object (perpendicular) to approach end of runway  
 DTHR - Distance along reference runway centerline from point nearest to object (perpendicular) to displace threshold  
 DCLN - Distance left (L) or right (R) of reference runway centerline as observed facing forward in a landing aircraft
- A negative value for DEND or DTHR indicates that object is in primary on roll-out side of zero distance point.
- 13 PTNR - Penetration of indicated FAR-77 approach or primary surface (See footnote 2).

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AIRPORT ELEVATION 671

14 D 668/ 671 402749.806 -912611.367 1415433.

OBJECT	LAT	LONG	A	EL	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
BUSH	402715.97	-912544.59	1A	679		11	8	8	-3972		483R	13
OL ON LTD WSK	402740.30	-912557.05	1A	699		31	28	28	-1439		277L	28
ANT ON HANGAR	402753.05	-912607.14	1A	704		36	33	33	57		459L	36
TREE	402748.94	-912614.47	1A	697		29	26	26	79		243R	29
BUSH	402752.67	-912610.43	1A	674		6	3	3	183		236L	6
TREE	402755.33	-912609.76	1A	730		62	59	59	363		443L	57
POLE	402754.33	-912612.66	1A	675		7	4	4	422		203L	1
TREE	402753.10	-912616.13	1A	688		20	17	17	489		84R	12
TREE	402753.03	-912622.80	1A	725		57	54	54	802		495R	40
LT POLE	402755.24	-912620.27	1A	687		19	16	16	857		202R	0
TREE	402758.35	-912618.13	1A	698		30	27	27	1003		122L	7
TREE	402815.25	-912633.69	1A	735		67	64	64	3091		231L	-18
TREE	402813.98	-912646.56	1A	752		84	81	81	3603		631R	-16

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AIRPORT ELEVATION 671

32 D 666/ 671 402720.249 -912541.038 3215453.

OBJECT	LAT	LONG	A	EL	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
BUSH	402752.67	-912610.43	1A	674		8	3	3	-3984		236R	6
TREE	402748.94	-912614.47	1A	697		31	26	26	-3879		243L	29
ANT ON HANGAR	402753.05	-912607.14	1A	704		38	33	33	-3857		459R	36
OL ON LTD WSK	402740.30	-912557.05	1A	699		33	28	28	-2361		277R	28
BUSH	402715.97	-912544.59	1A	679		13	8	8	171		483L	13
TREE	402721.62	-912534.55	1A	696		30	25	25	200		480R	30
TREE	402720.60	-912534.54	1A	693		27	22	22	282		417R	25
TREE	402716.93	-912535.07	1A	684		18	13	13	549		156R	8
TREE	402714.10	-912537.79	1A	688		22	17	17	645		186L	9
TREE	402716.79	-912532.44	1A	695		29	24	24	686		307R	15
TREE	402717.06	-912530.13	1A	703		37	32	32	774		464R	21
TREE	402713.84	-912527.02	1A	704		38	33	33	1179		453R	10
TREE	402708.42	-912530.42	1A	702		36	31	31	1449		92L	0
TREE	402703.64	-912533.02	1A	735		69	64	64	1705		549L	25
ANT	402702.13	-912533.40	1A	739		73	68	68	1808		667L	26



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AIRPORT ELEVATION 671

8 D 669/ 671 402734.630 -912609.861 854250.

OBJECT	LAT	LONG	A	EL	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
FENCE	402741.71	-912457.90	1A	673		4	2	2	-5600		300L	3
GROUND	402742.63	-912459.43	1A	673		4	2	2	-5490		402L	3
GROUND	402741.92	-912513.84	1A	673		4	2	2	-4374		413L	3
TREE	402740.83	-912531.46	1A	700		31	29	29	-3007		404L	31
TREE	402732.01	-912537.06	1A	704		35	33	33	-2508		454R	35
OL ON LTD WSK	402740.30	-912557.05	1A	699		30	28	28	-1030		499L	28
TREE	402730.64	-912602.27	1A	699		30	28	28	-555		447R	28
TREE	402730.28	-912605.72	1A	719		50	48	48	-286		463R	49
TREE	402729.52	-912613.23	1A	695		26	24	24	299		496R	23
TREE	402739.20	-912618.02	1A	685		16	14	14	595		508L	4
TREE	402735.59	-912624.43	1A	696		27	25	25	1116		181L	0
TREE	402734.38	-912627.61	1A	703		34	32	32	1370		77L	-1
TREE	402729.97	-912633.94	1A	707		38	36	36	1891		331R	-12
ANT ON TANK	402740.62	-912657.60	1A	790		121	119	119	3635		880L	20

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AIRPORT ELEVATION 671

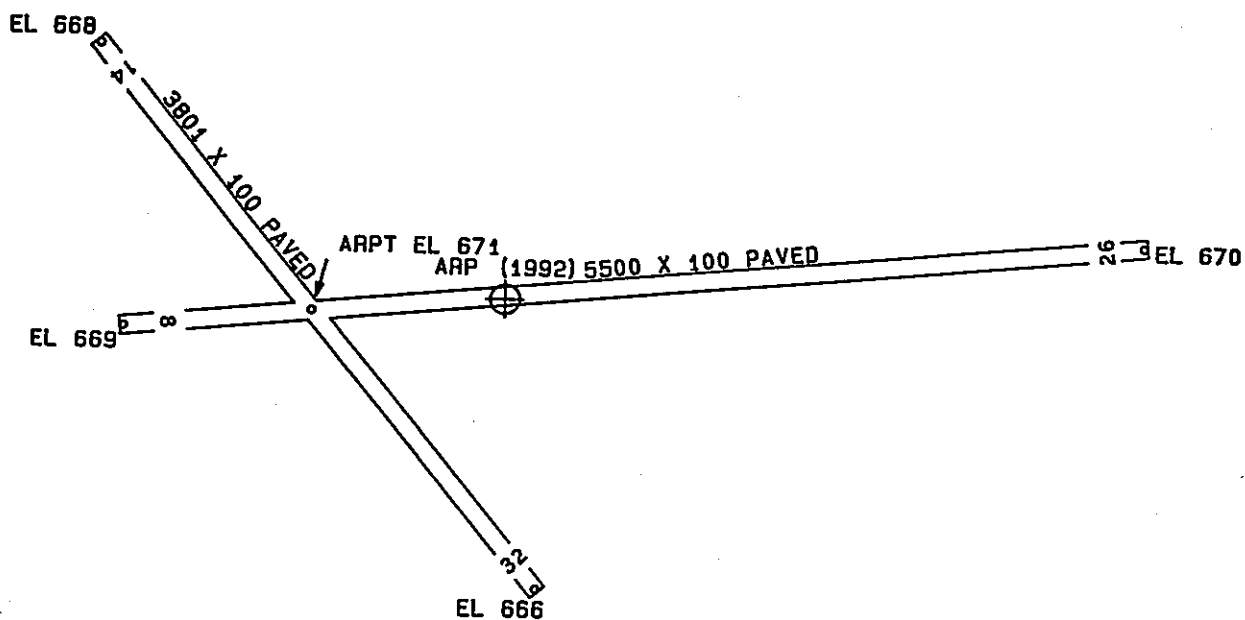
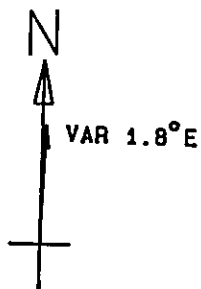
26 D 670/ 670 402738.686 -912458.906 2654336.

OBJECT	LAT	LONG	A	EL	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
TREE	402730.28	-912605.72	1A	719		49	49	48	-5214		463L	49
TREE	402730.64	-912602.27	1A	699		29	29	28	-4945		447L	28
OL ON LTD WSK	402740.30	-912557.05	1A	699		29	29	28	-4470		499R	28
TREE	402732.01	-912537.06	1A	704		34	34	33	-2992		454L	35
TREE	402740.83	-912531.46	1A	700		30	30	29	-2493		404R	31
GROUND	402741.92	-912513.84	1A	673		3	3	2	-1126		413R	3
GROUND	402742.63	-912459.43	1A	673		3	3	2	-11		402R	3
FENCE	402741.71	-912457.90	1A	673		3	3	2	100		300R	3
GROUND	402743.06	-912455.32	1A	674		4	4	3	310		421R	1
TREE	402744.92	-912449.48	1A	690		20	20	19	773		575R	3
TREE	402743.75	-912442.65	1A	690		20	20	19	1291		417R	-12
POLE	402744.31	-912437.81	1A	702		32	32	31	1668		446R	-11
TREE	402744.60	-912429.10	1A	716		46	46	45	2342		426R	-17
TREE	402737.40	-912425.55	1A	718		48	48	47	2562		322L	-22
TREE	402741.71	-912424.32	1A	718		48	48	47	2689		106R	-25

OC0970

AIRPORT ELEVATION 671

ARP	402735.993	-912543.299							
OBJECT	LAT	LONG	A	EL	AGL	HAA	MAG BEARING	DISTANCE	
TREE	402729.64	-912540.42	1A	712		41	15906	680	
LIGHT	402747.86	-912559.60	1A	699		28	31150	1741	
TREE	402716.05	-912547.58	1A	694		23	18730	2045	
ANT	402752.03	-912603.42	1A	710		39	31424	2248	
OL ON APBN	402754.00	-912603.12	1A	725		54	31809	2381	
TREE	402739.60	-912614.90	1A	709		38	27641	2470	
TREE	402742.84	-912614.22	1A	721		50	28422	2489	
FENCE	402732.78	-912509.99	1A	674		3	9523	2595	
TREE	402743.05	-912510.59	1A	681		10	7224	2628	
TREE	402702.91	-912536.29	1A	706		35	16900	3392	
TREE	402740.21	-912626.97	1A	699		28	27524	3403	
TREE	402733.69	-912457.40	1A	695		24	9157	3556	
TREE	402744.44	-912457.25	1A	693		22	7441	3661	
TREE	402725.99	-912629.38	1A	703		32	25220	3703	
TREE	402744.37	-912455.03	1A	706		35	7523	3827	
ANT	402807.71	-912613.96	1A	712		41	32145	3990	
TREE	402732.21	-912435.02	1A	707		36	9220	5292	
TREE	402729.85	-912425.85	1A	710		39	9407	6019	



TOUCHDOWN ZONE RUNWAY ELEVATION	
14	671
32	671
8	671
26	670

KEOKUK MUNICIPAL AIRPORT  
 KEOKUK, IOWA  
 (NOT TO SCALE)  
 (ELEVATIONS AND DISTANCES IN FEET)