OBSTRUCTION DATA SHEET

ODS 5241
MANHATTAN MUNICIPAL AIRPORT
MANHATTAN, KANSAS

DIGITIZED FROM

OC 5241
SURVEYED APRIL 1991
7TH EDITION

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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 Nr. 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 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 FAR-77 approach (including supplemental approaches if present) or primary areas are listed with the associated runway (reference runway). For example, all objects in the Runway 9R approach or primary are listed with Runway 9R. Distances to these objects are computed from both the physical end and threshold of Runway 9R. Objects in the Runway 27L approach or primary are listed with Runway 27L. (Objects in the common 9R/27L primary area are listed with both runways.)

2. All objects not included in "1" above are listed with the Airport Reference Point (ARP).

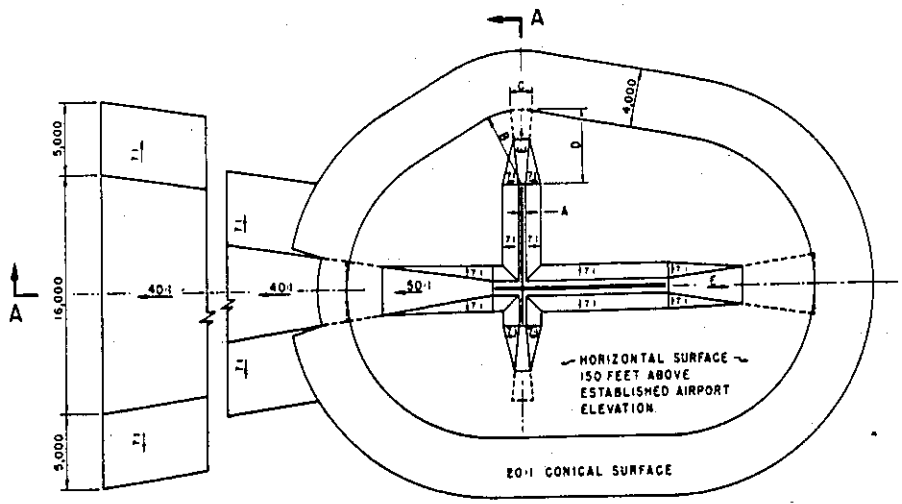
3. Runway configuration and runway lengths, widths, and elevations are presented on the ODS last page.

The FAR-77 imaginary approach surfaces for which the obstruction surveys were performed are coded in the ODS as follows (see footnote 2 on page 3):

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)

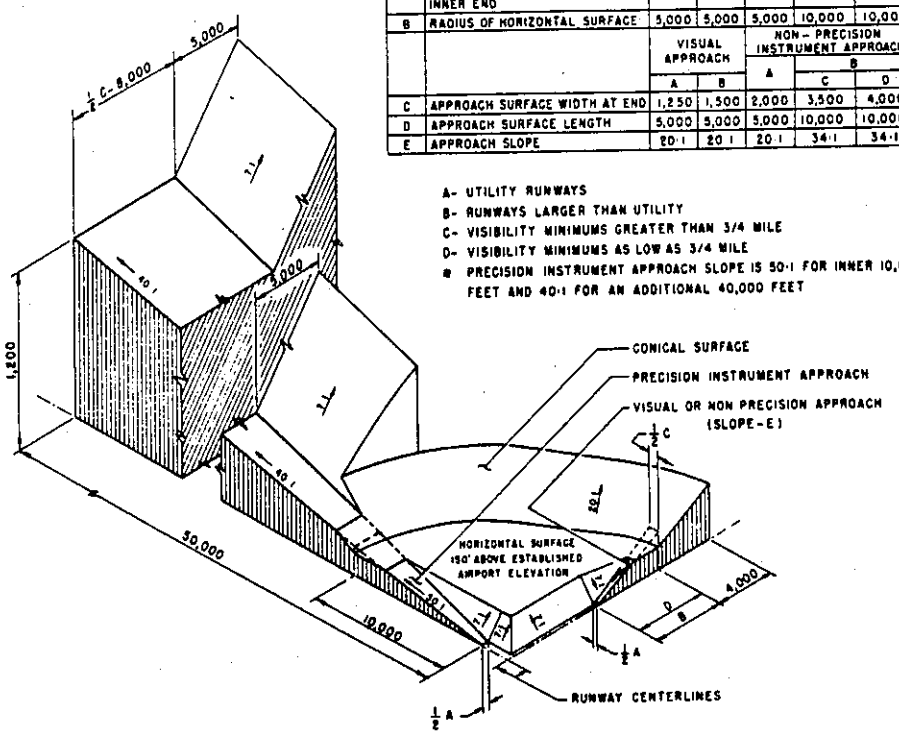
FAR-77 imaginary surface dimensions are defined on page 2 of this report.

Primary surface width is determined by the widest approach at the two approach/primary interfaces for that runway.



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B C	B D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	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	B C	B 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[1]	X[2]	XXXX/XXXX[3]	XXXXXX.XXX[4]	XXXXXXX.XXX[4]	XXXXXXX[5]		XXXX/XXXX[6]	XXXXXX.XXX[7]	XXXXXXX.XXX[7]					
OBJECT			LAT	LONG	A[8]	ELEV[9]	AGL[10]	HAR[11]	HAT[11]	HAA[11]	DEND[12]	DTHR[12]	DCLN[12]	PNTR[13]
XXXXXXXXXXX			XXXXXX.XXX	XXXXXXX.XXX	XX	XXXX	XXXX	XXX	XXX	XXX	XXXXX	XXXXX	XXXX	XXXX
XXXXXXXXXXX			XXXXXX.XXX	XXXXXXX.XXX	XX	XXXX	XXXX	XXX	XXX	XXX	XXXXX	XXXXX	XXXX	XXXX

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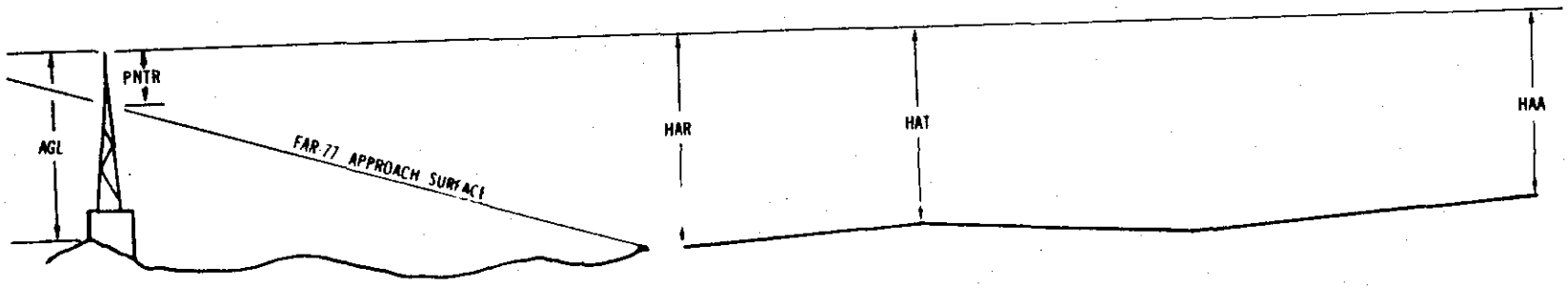
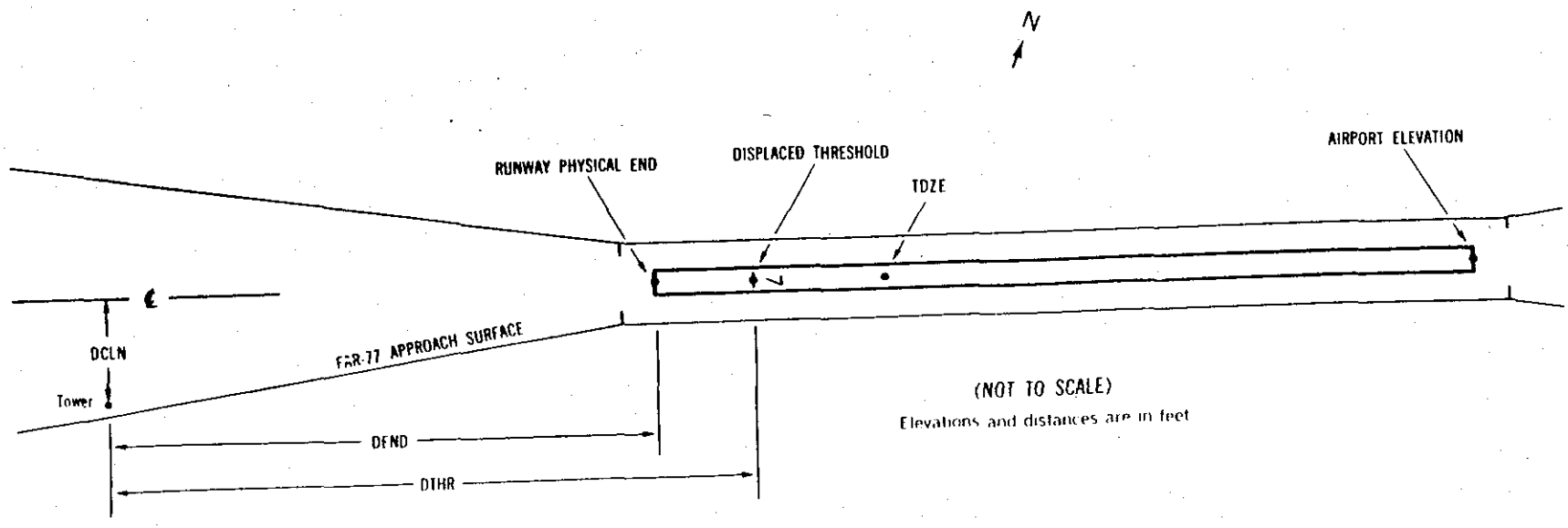




EXPLANATION OF FOOTNOTES

[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 area 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] Reference runway approach physical end elevation/touchdown zone elevation

[4] Latitude and longitude of reference runway approach physical end

[5] Reference runway geodetic azimuth reckoned clockwise from south

[6] Reference runway displaced threshold elevation/touchdown zone elevation

[7] Latitude and longitude of reference runway displaced threshold

[8] Accuracy Code:

Horizontal	Vertical
1 = 20	A = 2
2 = 40	B = 5
	C = 20

[9] Mean Sea Level (MSL) elevation 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). AGLs are provided only for those objects <u>appearing on the OC</u> that are equal to, or greater than, 200 feet AGL. AGL accuracy is ±10 feet.

[11] HAA - Height above airport
HAR - Height above reference runway approach physical end
HAT - Height above reference runway touchdown zone elevation

[12] DEND - Distance along reference runway centerline from point perpendicular to object to reference runway approach physical end
DTHR - Distance along reference runway centerline from point perpendicular to object to reference runway 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 object is in primary area on roll-out side of zero distance point.

[13] PNTR - Penetration of indicated FAR-77 approach or primary surface (see footnote 2).

OC5241

AIRPORT ELEVATION 1056

3 PIR 1054/1054 390756.637N 0964044.464W 2195334

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON ANEMOMETER	390838.94	0964006.45	1A	1068		14	14	12	-5205		447L	23
OL ON GLIDE SLOPE	390807.05	0964039.90	1A	1081		27	27	25	-1039		400L	33
GROUND	390756.40	0964053.33	1A	1062		8	8	6	466		521L	3
TREE	390751.26	0964059.45	1A	1095		41	41	39	1175		557L	21
GROUND	390742.62	0964108.57	1A	1097		43	43	41	2307		548L	1
TREE	390731.22	0964059.87	1A	1100		46	46	44	2752		718R	-5
TREE	390733.65	0964124.52	1A	1166		112	112	110	3809		931L	40
POLE	390726.14	0964117.11	1A	1121		67	67	65	4017		5R	-9
POLE	390725.64	0964126.61	1A	1160		106	106	104	4536		537L	19
TREE	390724.98	0964130.29	1A	1177		123	123	121	4774		717L	32
TREE	390724.08	0964136.56	1A	1189		135	135	133	5160		1038L	36

21 SUPLC 1043/1047 390849.716N 0963947.481W 0395410

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON GLIDE SLOPE	390807.05	0964039.90	1A	1081		38	34	25	-5961		400R	33
OL ON ANEMOMETER	390838.94	0964006.45	1A	1068		25	21	12	-1795		447R	23
ANTENNA ON BUILDING	390852.82	0963939.63	1A	1056		13	9	0	638		273L	1
OL ON LOCALIZER	390854.66	0963942.17	1A	1047		4	0	-9	652		0R	-9
TREE	390855.09	0963935.26	1A	1075		32	28	19	1034		390L	7
TREE	390902.23	0963927.55	1A	1101		58	54	45	1978		392L	6
TREE	390909.30	0963938.16	1A	1090		47	43	34	1991		708R	-6
TREE	390957.14	0963858.10	1B	1284		241	237	228	7728		1392R	20
TREE	391000.39	0963813.99	2C	1277		234	230	221	10210		1061L	34

OC5241

AIRPORT ELEVATION 1056

13 A(V) 1056/1056 390850.281N 0964025.087W 3221216

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
TREE	390912.06	0964043.21	1A	1143		87	87	87	2616		222L	-34

31 A(V) 1044/1049 390820.593N 0963955.524W 1421235

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
OL ON POLE	390815.47	0963950.14	1A	1062		18	13	6	670		17R	-5
POLE	390813.95	0963947.30	1A	1067		23	18	11	928		100R	-13
POLE	390811.53	0963942.31	1A	1074		30	25	18	1363		261R	-28
TREE	390756.60	0963933.98	1A	1120		76	71	64	2959		146L	-62

OC5241

AIRPORT ELEVATION 1056

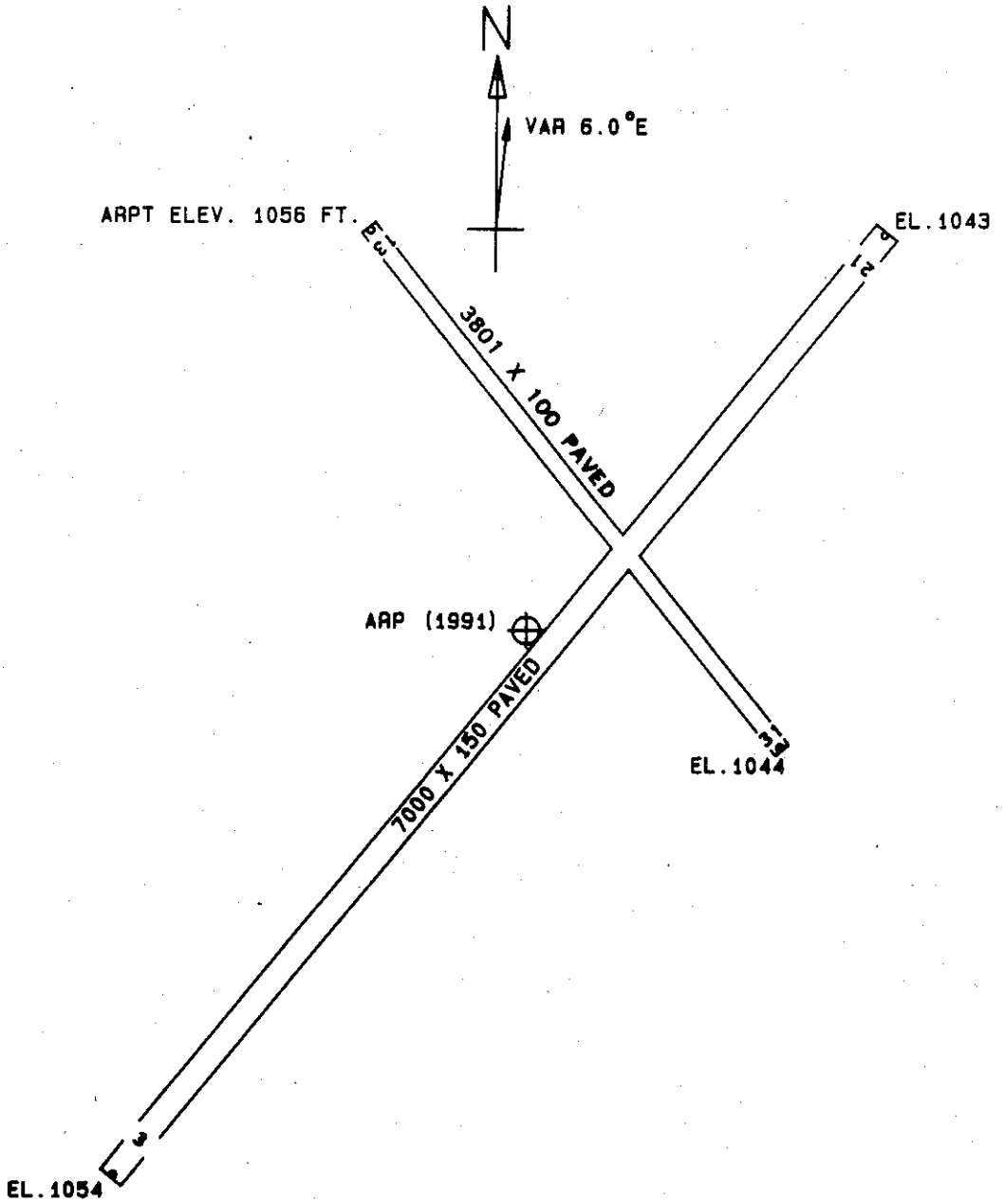
ARP 390827.492N 0964013.980W

OBJECT	LAT	LONG	A	ELEV	AGL	HAA	MAG BEARING	DISTANCE
ANTENNA ON ATC TOWER	390829.75	0963958.10	1A	1064		8	73 39	1272
POLE	390829.72	0963957.85	1A	1071		15	73 55	1291
ANTENNA ON BUILDING	390820.14	0964000.54	1A	1057		1	119 6	1294
ROD ON OL DIRECTION FINDER	390817.08	0964003.74	1A	1087		31	136 33	1327
OL POLE	390843.36	0964007.16	1A	1087		31	12 29	1693
OL VOR/DME	390843.62	0964006.41	1A	1072		16	14 5	1738
LTD WINDSOCK ON OL HANGAR	390824.03	0963950.84	1A	1084		28	94 52	1857
FLOODLIGHT POLE	390821.17	0963948.77	1A	1083		27	101 51	2087
ROD ON AIRPORT BEACON	390828.45	0963947.36	1A	1102		46	81 21	2100
TREE	390813.65	0963953.46	1A	1073		17	124 53	2139
LIGHT POLE	390817.44	0963946.61	1A	1071		15	109 15	2384
TREE	390837.66	0963946.22	1A	1113		57	58 48	2417
TREE	390852.00	0963957.01	1A	1074		18	22 20	2817
TREE	390843.45	0963941.58	1A	1075		19	51 42	3020
TREE	390806.00	0964045.27	1A	1089		33	222 36	3287
TREE	390809.10	0963935.73	1A	1126		70	115 41	3542
TREE	390808.24	0964052.41	1A	1154		98	231 15	3600
TREE	390759.52	0963942.49	1A	1113		57	132 45	3764
TREE	390802.32	0964050.72	1A	1107		51	222 40	3856
TREE	390902.09	0963947.82	1A	1106		50	24 29	4062
TREE	390904.84	0964045.03	1A	1138		82	321 5	4501
TREE	390909.55	0964033.54	1A	1128		72	334 6	4526
TREE	390753.43	0964059.73	1A	1114		58	220 18	4987
TREE	390753.16	0964107.62	1A	1156		100	224 35	5471
ANTENNA ON OL RTR TOWER	390754.24	0964111.81	1A	1193		137	227 34	5664
TREE	390813.75	0964123.92	1B	1213		157	249 51	5683
TREE	390820.41	0964128.01	1B	1220		164	257 0	5877
GROUND	390732.59	0963903.93	1B	1207		151	129 10	7831
TREE	390836.46	0964157.92	1B	1235		179	270 20	8240
TREE	390726.45	0963904.65	1B	1221		165	132 30	8246
POLE	390659.97	0963921.67	1B	1224		168	149 2	9767
TREE	390703.99	0963906.81	1B	1228		172	141 55	9970
TREE	390911.63	0964208.83	1B	1210		154	290 16	10090

AIRPORT ELEVATION 1056

ARP 390827.492N 0964013.980W

OBJECT	LAT	LONG	A	ELEV	AGL	HAA	MAG BEARING	DISTANCE
POLE	390700.05	0963911.57	1B	1231		175	144 56	10122
TREE	390857.17	0964217.77	1B	1235		179	281 7	10205
TREE	391011.39	0963946.86	1B	1355		299	5 29	10726
TREE	390958.05	0964125.88	2C	1307		251	322 17	10772
TREE	391000.78	0964121.37	2C	1314		258	324 39	10829
TREE	391014.16	0964001.93	1B	1354		298	359 2	10833
TREE	390957.60	0963859.56	1B	1285		229	26 44	10839
TREE	391015.25	0963932.71	1B	1384		328	10 36	11376
GROUND	391016.08	0964056.59	2C	1347		291	337 1	11488
GROUND	391019.98	0964035.42	1B	1326		270	345 34	11505
GROUND	390637.55	0963928.15	1B	1266		210	156 0	11695
WIND MACHINE	391020.43	0964049.74	2C	1345		289	340 9	11769
TREE	391024.66	0964020.67	1B	1341		285	351 27	11866
GROUND	391024.92	0964021.69	1B	1342		286	351 4	11896
GROUND	391016.97	0964126.57	2C	1351		295	326 42	12465
TREE	391033.36	0964001.20	2C	1369		313	358 31	12775
SILO	391029.99	0964053.37	2C	1385		329	339 57	12776
GROUND	390618.16	0964019.03	2C	1215		159	175 45	13091
TREE	391038.57	0963946.38	2C	1295		239	3 18	13439
GROUND	390606.75	0964032.11	2C	1322		266	179 44	14311
GROUND	391014.74	0963811.95	2C	1284		228	35 32	14497



TOUCHDOWN ZONE RUNWAY	ELEVATION
3	1054
21	1047
13	1056
31	1049

MANHATTAN MUNICIPAL AIRPORT

MANHATTAN, KANSAS

(NOT TO SCALE)