

# OBSTRUCTION DATA SHEET

ODS 5579  
BEND MUNICIPAL AIRPORT  
BEND, OREGON

DIGITIZED FROM

OC 5579  
SURVEYED JULY 1986  
1ST EDITION



PREPARED AND DISTRIBUTED BY  
THE NATIONAL OCEAN SERVICE  
U.S. DEPARTMENT OF COMMERCE  
FOR THE FEDERAL AVIATION ADMINISTRATION

## 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:

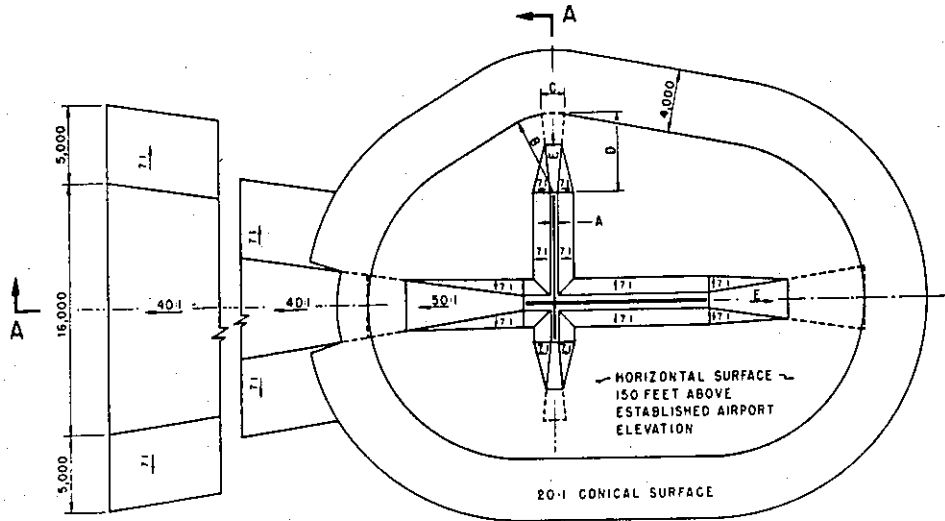
1. Objects located in FAR-77 approach (including supplemental approaches if present) or primary areas are listed with the associated runway (reference runway). For example, all objects in the Runway 9R approach or primary are listed with Runway 9R. Distances to these objects are computed from both the 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):

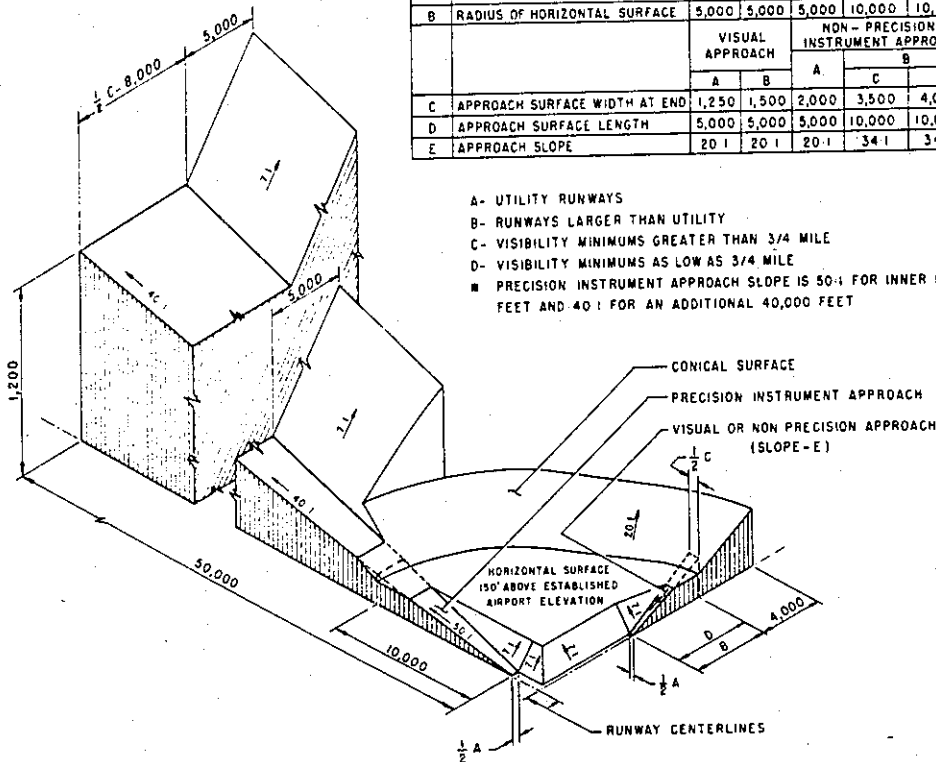
A(V) ..... Utility runway - visual approach only  
 A(NP) .... Utility runway - nonprecision instrument approach  
 B(V) ..... Nonutility runway - visual approach only  
 C ..... Nonutility runway - nonprecision instrument approach with  
 visibility minimums greater than 3/4 mile  
 D ..... Nonutility 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		
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
C	APPROACH SURFACE WIDTH AT END	VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH		PRECISION INSTRUMENT APPROACH	
		A	B	A	B		
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	4



- 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

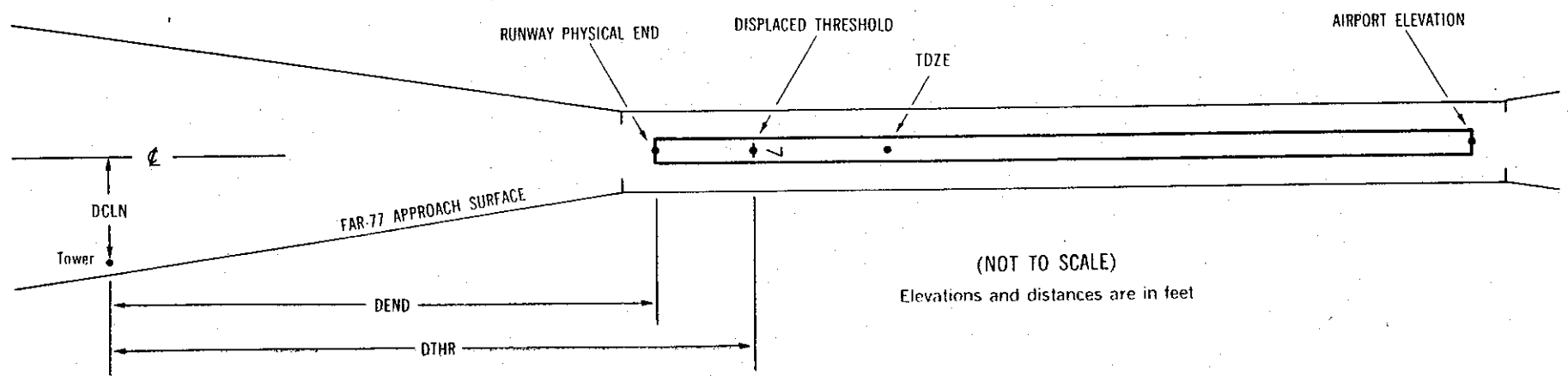
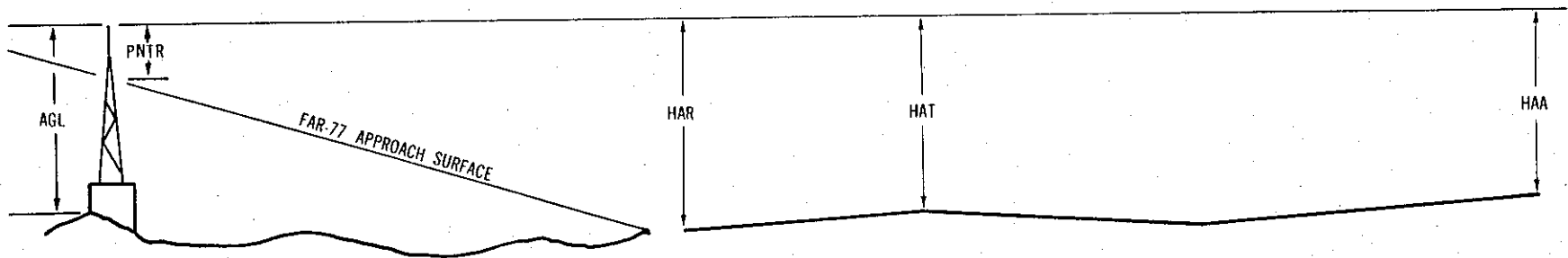
OC XXXX

AIRPORT ELEVATION XXXX

X<sup>1</sup> X<sup>2</sup> XXXX/XXXX<sup>3</sup> XXXXXX.XXX<sup>4</sup> XXXXXXXX.XXX<sup>4</sup> XXXXXXXX<sup>5</sup> XXXX/XXXX<sup>6</sup> XXXXXX.XXX<sup>7</sup> XXXXXXXX.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>
XXXXXXXXXXXX	XXXXXX.XXX	XXXXXXXXX.XXX	XX	XXXX	XXXX	XXX	XXX	XXX	XXXXX	XXXXX	XXXX	XXXX
XXXXXXXXXXXX	XXXXXX.XXX	XXXXXXXXX.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 appearing on the OC that are equal to, or greater than, 200 feet AGL. AGL accuracy is  $\pm 10$  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).

## AIRPORT ELEVATION 3453

34 A(V) 3453/ 440517.256N 1211158.226W 1800221 3451/3451 440519.331N 1211158.224W

OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
GROUND	440607.61	1211159.54	1A	3402		-51	-49	-51	-5099	-4889	100L	1
GROUND	440606.07	1211201.62	1A	3402		-51	-49	-51	-4942	-4732	251L	1
BUSH	440552.86	1211155.57	1A	3414		-39	-37	-39	-3605	-3395	192R	5
BUSH	440549.79	1211155.51	1A	3420		-33	-31	-33	-3295	-3085	196R	8
BUSH	440546.80	1211201.63	1A	3429		-24	-22	-24	-2991	-2781	251L	13
OL ON LTD WSK	440533.12	1211156.14	1A	3451		-2	0	-2	-1607	-1397	151R	19
BUSH	440521.97	1211155.37	1A	3454		1	3	1	-477	-267	208R	7
GROUND	440516.54	1211157.10	1A	3454		1	3	1	73	283	82R	1
BUSH	440516.49	1211155.31	1A	3459		6	8	6	77	287	213R	6
ROAD (N)	440515.37	1211201.62	1A	3473		20	22	20	192	402	248L	20
TREE	440505.33	1211156.81	1A	3500		47	49	47	1208	1418	104R	-3
TREE	440505.27	1211159.35	1A	3500		47	49	47	1213	1423	81L	-4

16 A(NP) 3401/3426 440606.676N 1211158.179W 0000221

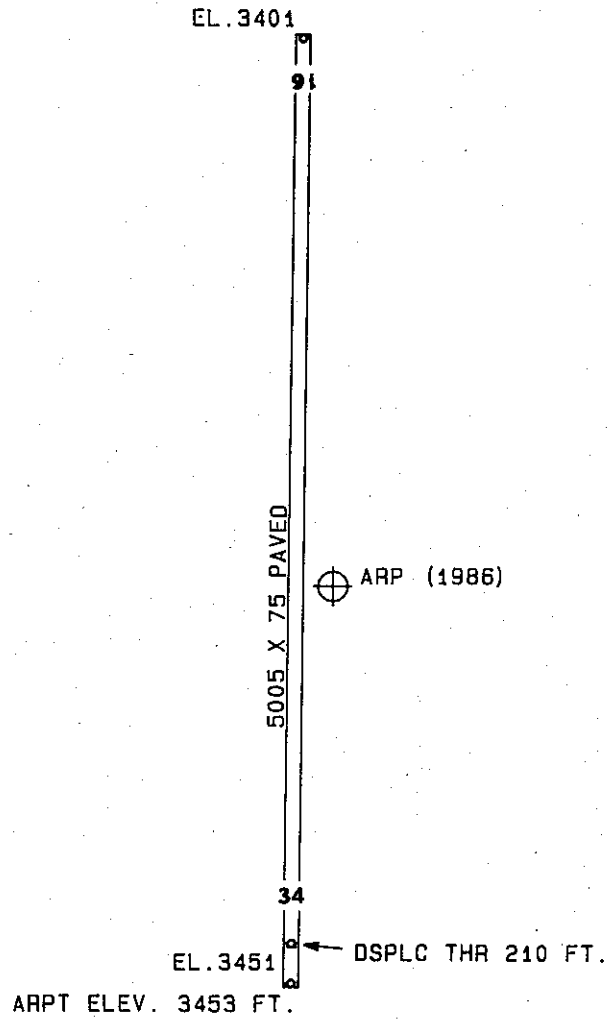
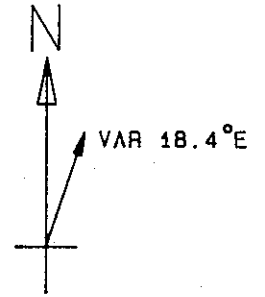
OBJECT	LAT	LONG	A	ELEV	AGL	HAR	HAT	HAA	DEND	DTHR	DCLN	PNTR
ROAD (N)	440515.37	1211201.62	1A	3473		72	47	20	-5196		248R	20
BUSH	440516.49	1211155.31	1A	3459		58	33	6	-5081		213L	6
GROUND	440516.54	1211157.10	1A	3454		53	28	1	-5077		82L	1
BUSH	440521.97	1211155.37	1A	3454		53	28	1	-4527		208L	7
OL ON LTD WSK	440533.12	1211156.14	1A	3451		50	25	-2	-3397		151L	19
BUSH	440546.80	1211201.63	1A	3429		28	3	-24	-2013		251R	13
BUSH	440549.79	1211155.51	1A	3420		19	-6	-33	-1709		196L	8
BUSH	440552.86	1211155.57	1A	3414		13	-12	-39	-1399		192L	5
GROUND	440606.07	1211201.62	1A	3402		1	-24	-51	-62		251R	1
GROUND	440607.61	1211159.54	1A	3402		1	-24	-51	95		100R	1
TREE	440612.61	1211154.92	1A	3412		11	-14	-41	601		237L	-9
TREE	440612.75	1211200.75	1A	3422		21	-4	-31	615		188R	0
TREE	440613.25	1211201.42	1A	3425		24	-1	-28	665		237R	1
TREE	440614.68	1211202.14	1A	3432		31	6	-21	811		290R	0

005579

AIRPORT ELEVATION 3453

ARP 440537.913N 1211155.541W

OBJECT	LAT	LONG	A	ELEV	AGL	HAA	MAG	BEARING	DISTANCE
DL ANTENNA	440536.51	1211205.69	1A	3477		24	240	44	754
AIRPORT BEACON	440532.84	1211205.69	1A	3462		9	216	50	901
TREE	440533.95	1211209.43	1A	3532		79	230	1	1090
HANGAR	440524.83	1211202.35	1A	3458		5	182	10	1415
BUSH	440552.28	1211201.99	1A	3418		-35	323	41	1529
TREE	440554.13	1211153.58	1A	3425		-28	346	35	1648
TREE	440517.76	1211203.52	1A	3481		28	177	32	2122
TREE	440604.68	1211152.50	1A	3427		-26	346	17	2720
TREE	440510.74	1211205.30	1A	3513		60	176	7	2842
BUSH	440607.60	1211202.74	1A	3407		-46	331	41	3052
TREE	440608.34	1211153.21	1A	3416		-37	344	46	3086
TREE	440609.74	1211203.94	1A	3434		-19	330	50	3280



TOUCHDOWN ZONE RUNWAY ELEVATION	
34	3451
16	3426

BEND MUNICIPAL AIRPORT  
BEND, OREGON  
(NOT TO SCALE)