

OREGON  
HIGH PRECISION NETWORK

DGMC 3

**NATIONAL GEODETIC SURVEY  
SURVEY CONTROL DATA**

**INPUT FILE =  
GPS197**

Compiled and published by  
National Geodetic Survey  
Rockville, MD  
APRIL 26, 1991

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Service  
Charting and Geodetic Services

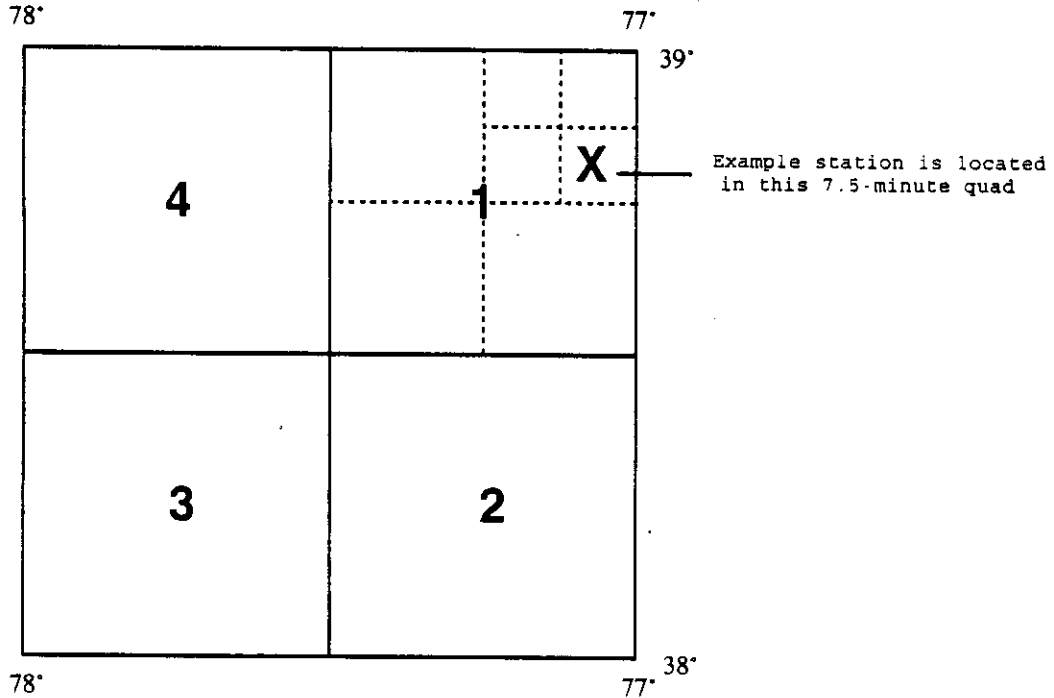
DGmc #3  
**FILED**  
DATE 8-5-92  
DESCHUTES COUNTY SURVEYOR  
BY Sheila Oller

**THE QUAD SYSTEM:**

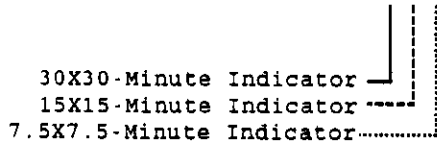
THE BASIC UNIT EMPLOYED FOR THE PUBLICATION OF GEODETIC CONTROL DATA IS THE GEOGRAPHIC AREA BOUNDED BY INTEGER-DEGREE LATITUDE AND LONGITUDE GRID-LINES. ANY SUCH 1X1-DEGREE "QUAD" MAY BE FURTHER SUBDIVIDED INTO 30X30-MINUTE, 15X15-MINUTE, and 7.5X7.5-MINUTE QUADS BY SUCCESSIVE HALVING OF THE LATITUDE AND LONGITUDE GRID-LINE INTERVAL. THE RESPECTIVE QUAD IDENTIFIER IS A NINE-CHARACTER SYMBOL "HLLWWWABC" WHERE:

- H - HEMISPHERE OF LATITUDE (N IF NORTHERN, S IF SOUTHERN)
- LL - LATITUDE (NORTH OR SOUTH) OF THE SOUTH EAST CORNER OF THE 1X1-DEGREE QUAD
- WWW - WEST LONGITUDE OF THE SOUTH-EAST CORNER OF THE 1X1 DEGREE QUAD
- A - 30X30-MINUTE SUBDIVISION INDICATOR (1-NE, 2-SE, 3-SW, 4-NW)
- B - 15X15-MINUTE SUBDIVISION INDICATOR (1-NE, 2-SE, 3-SW, 4-NW)
- C - 7.5X7.5-MINUTE SUBDIVISION INDICATOR (1-NE, 2-SE, 3-SW, 4-NW)

Example: A control station with coordinates N38°48'26.702" and W077°03'58.160" would fall within the quad shown below:



H L L W W W A B C  
**QUAD = N38077112**



Numbering sequences are in clockwise direction, range is from 1 to 4

**NATIONAL GEODETIC SURVEY  
SURVEY CONTROL DATA**

**INPUT FILE =  
ORDER\_A**

**Compiled and published by  
National Geodetic Survey  
Rockville, MD  
JUNE 17, 1991**

**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Service  
Charting and Geodetic Services**

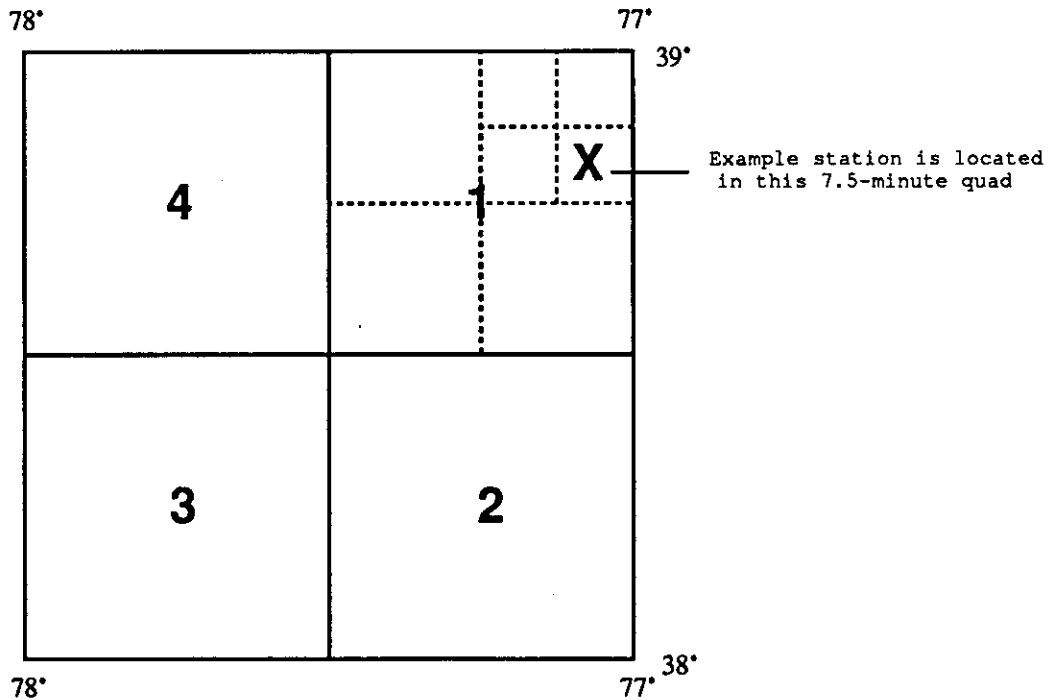


**THE QUAD SYSTEM:**

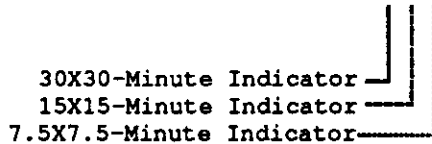
THE BASIC UNIT EMPLOYED FOR THE PUBLICATION OF GEODETIC CONTROL DATA IS THE GEOGRAPHIC AREA BOUNDED BY INTEGER-DEGREE LATITUDE AND LONGITUDE GRID-LINES. ANY SUCH 1X1-DEGREE "QUAD" MAY BE FURTHER SUBDIVIDED INTO 30X30-MINUTE, 15X15-MINUTE, and 7.5X7.5-MINUTE QUADS BY SUCCESSIVE HALVING OF THE LATITUDE AND LONGITUDE GRID-LINE INTERVAL. THE RESPECTIVE QUAD IDENTIFIER IS A NINE-CHARACTER SYMBOL "HLLWWWABC" WHERE:

- H - HEMISPHERE OF LATITUDE (N IF NORTHERN, S IF SOUTHERN)
- LL - LATITUDE (NORTH OR SOUTH) OF THE SOUTH EAST CORNER OF THE 1X1-DEGREE QUAD
- WWW - WEST LONGITUDE OF THE SOUTH-EAST CORNER OF THE 1X1 DEGREE QUAD
- A - 30X30-MINUTE SUBDIVISION INDICATOR (1-NE, 2-SE, 3-SW, 4-NW)
- B - 15X15-MINUTE SUBDIVISION INDICATOR (1-NE, 2-SE, 3-SW, 4-NW)
- C - 7.5X7.5-MINUTE SUBDIVISION INDICATOR (1-NE, 2-SE, 3-SW, 4-NW)

Example: A control station with coordinates N38°48'26.702" and W077°03'58.160" would fall within the quad shown below:



QUAD = HLLWWWABC  
**N38077112**



Numbering sequences are in clockwise direction, range is from 1 to 4

## EXPLANATION OF TERMS AND CODES USED IN THIS PUBLICATION

### GRID Designation:

SPC - State plane coordinate system  
UTM - Universal Transverse Mercator coordinate system

### Origin of Azimuth:

The GEODETTIC AZIMUTH is referenced to the geodetic meridian and measured clockwise from north.  
The GRID AZIMUTH in the SPC system is referenced to the SPC grid meridian and measured clockwise from north. The GRID AZIMUTH in the UTM system is referenced to the UTM grid meridian and measured clockwise from north.

### CONVERGENCE:

At any point, the convergence of meridians (commonly called convergence and also known as the map angle) is defined as the angle (positive clockwise) from the projected meridian, to the grid north of the respective map projection.

### Reference Azimuths:

Azimuths to the reference objects are geodetic azimuths and are referenced from north.

### POINT SCALE FACTOR:

At a given point, the ratio of the length of a linear increment on the grid to the length of the corresponding increment on the ellipsoid. For line reduction, an averaging of POINT SCALE FACTORS over that line may be required to reduce the line.

### Vertical Reference Information:

GEOID HEIGHT is the distance of the geoid above (positive) or below (negative) the GRS 80 ellipsoid. The geoid height is based on GEOID90 model unless specified on individual sheet. Elevations are referenced to the National Geodetic Vertical Datum 1929 (NGVD 29).

### DEFLECTION OF THE VERTICAL:

MERIDIAN - Astronomical latitude minus the geodetic latitude (N is positive).  
PRIME VERTICAL - (Astronomical longitude minus geodetic longitude) multiplied by the cosine of the latitude (W is positive).

### STANDARD ERROR:

The best known and most widely used statistical measure of variability in a quantity such that the true value lies within the stated range of uncertainty from the given value 68% of the time.

### STATION ORDER:

As defined by the Federal Geodetic Control Committee in its publication 'Standards and Specifications for Geodetic Control Networks'.

NOTE: Any data which is excluded from the data sheets is available upon special request.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991 INDEX

PID	ORDER H V	DESIGNATION	LAST RECOVERED	PAGE	CONDITION
RC1972	B 3	A 545	1989	1	GOOD
NZ1331	1	AGATE DAM RP 1 1	1990	3	
NZ1332	2	AGATE DAM RP 2 2	1990	5	
PA0747	1	AGENCY DAM	1990	7	
QB1363	B	AIRPORT	1989	9	GOOD
PC0964	B	AIRWAY BEACON 43 RESET	1989	11	GOOD
NX0297	B	ALKALI	1989	15	GOOD
NY0977	B	ALTAMONT	1989	17	
NZ1326	B 3	ASH	1989	19	
SC2795	B 3	ASTO	1989	21	
NZ1329	B	AZAL	1989	23	
QE1161	B 3	BALD	1990	25	GOOD
PB0722	B	BALD MTN	1989	31	GOOD
OH1450	B 3	BARKLEY	1989	37	
QB1252	B	BEAVER 2	1989	39	GOOD
PB0632	B 3	BEAVER MARSH	1989	43	GOOD
OA1625	B	BLCO	1989	47	
PB0791	B 3	BROTHERS	1989	49	
RD4216	B	CANN	1989	51	
RB1491	B	CBL 1	1989	53	GOOD
RD4221	B 3	CHAS	1989	55	
SC2794	B 3	CLATS	1989	57	
RA0822	B 3	COVE	1989	59	GOOD
PB0794	B	CREST	1989	63	
QE2269	B 3	E 141	1990	65	GOOD
RC0290	B 3	E 40	1989	69	GOOD
QE2665	B	EZEL	1989	71	
RD4237	B	F 609	1967	73	
NZ1328	B	FAIR	1989	75	
PC0887	B	FAIRVIEW	1989	77	GOOD
OA1623	B 3	FISH	1989	81	
RB1489	B	FORE	1989	83	
QD1878	B 3	FOSS	1989	85	
PA0746	B 3	GENT	1989	87	
NX0302	B	GLEN	1989	89	
OA1624	B	GOLD	1989	91	
QE2663	B	HAMILTON	1989	93	
QD1881	1	HAY	1990	95	
NZ1336	2	HAY AZ MK	1990	96	
RD4218	B 3	HELEN	1989	98	
NW0330	B	HORSE HILL	1989	101	GOOD
NZ1333	1	HOWARD	1990	105	
NZ1334	2	HOWARD AZ MK	1990	107	
QE1851	B	HOWELL	1989	109	GOOD
NZ1335	1	HYATT DAM	1990	95	
QD1882	2	HYATT DAM AZ MK	1990	115	
NZ1330	B	ILLA	1989	117	
QE2672	B	JAIL	1989	119	
NW0588	B 3	JORD	1989	121	
RA1158	B 3	JOSEPH AIRPORT	1989	123	GOOD
NX0300	B	JUNIPER	1989	127	GOOD
NZ1325	B 3	JUSTICE	1989	131	
RB1490	B	LA GRANDE CBL 0 PT	1989	133	
QE2671	B	LANG	1989	135	
RC2729	B 3	LAST	1989	137	
QE2309	B	LAUREL	1989	139	GOOD
QC0956	B	LONG CREEK	1989	143	GOOD
MV0514	B	LOPE	1989	147	
RD4219	B	MACK	1989	149	
OH1198	B 3	MAHOGANY MOUNTAIN	1989	151	GOOD

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PID	ORDER		DESIGNATION	LAST RECOVERED	PAGE	CONDITION
	H	V				
QB1365	B		MANN CREEK DAM MON 2	1990	155	
QB1366	2		MANN CREEK DAM MON 4	1990	157	
QE2316	B		MARY RM 5	1990	159	GOOD
QB1364	1		MASON	1990	163	
QC1052	2		MASON AZ MK	1990	165	
QE2670	B		MILL	1989	167	
RD4215	B	3	NESK	1989	169	
QE2664	B	3	NESMITH	1989	171	
SC1760	B		NICKOLAI RIDGE	1989	173	GOOD
SD0854	B	3	NORTH HEAD RM 4	1989	177	GOOD
PC1120	B		OAKR	1989	179	
QC1049	B		OGILVIE	1989	181	
OH1451	B		OWYHEE DAM MON 1	1990	183	
OH1452	2		OWYHEE DAM MON 4	1990	185	
OA0733	B	3	P 750	1989	187	GOOD
NY0200	B	3	PAISLEY SOUTH BASE	1989	189	GOOD
RB1366	B		PENDLETON	1989	193	GOOD
QD1681	B		PILOT BUTTE	1989	197	GOOD
QE1597	B	3	PON	1989	203	GOOD
RC1674	B	3	PONDER 2	1990	205	GOOD
QC0135	B	3	PRAIRIE CITY N BASE RESET	1985	209	GOOD
SC1419	B		PRESCOTT RESET	1990	211	GOOD
QD1782	B		PRINEVILLE	1989	215	GOOD
NZ1327	B		PROS	1989	217	
OA1622	B	3	REED	1989	219	
RD4220	B	3	REST 26	1989	221	
OA1427	B		RINK	1989	223	GOOD
RD1910	B	3	RIVER RM 3	1990	227	GOOD
RD2899	B		ROCKY BUTTE RESET	1989	229	GOOD
PC1116	B	3	ROSEBURG CBL 1440	1989	237	
NZ1050	B		RUST RM 4	1989	239	GOOD
QE2669	B		SALS	1989	243	
QD1356	B	3	SAN	1989	245	GOOD
RD4228	B		SCOGGINS	1990	247	
RD4229	2		SCOGGINS AZ MK	1990	249	
NZ1210	B		SEXTON	1989	251	GOOD
PB0793	B		SILVER	1989	255	
RD4238	B	3	SISK	1989	257	
QD1879	B	3	SISTERS	1989	259	
QD1880	B		SKY	1989	261	
QE2673	B		SOAM	1989	263	
NZ1063	B		SODA RM 4	1989	265	GOOD
PC1121	B		STAB	1989	269	
RB1421	B		STANFIELD EAST BASE RESET	1989	271	GOOD
PC1122	B		STEAM	1989	277	
PA0745	B	3	TOMB	1989	279	
PA0685	B		TROUT	1989	281	GOOD
QD1787	B		TUB	1989	285	GOOD
NX0301	B		TURN	1989	289	
RC2196	B		TYGH RIDGE NE	1989	291	GOOD
QC1053	B		UNITY DAM	1990	297	
QC1054	2		UNITY DAM AZ MK	1990	299	
QD1520	B	3	V 719	1989	301	GOOD
QE2666	B	3	VIDA	1989	303	
NY0975	B	3	W 67 RM 1	1989	305	GOOD
PB0599	B	3	W 72	1989	307	GOOD
PA0724	B		WAGONTIRE	1989	311	GOOD
PA0749	B		WARM SPRINGS	1990	315	
PA0750	2		WARM SPRINGS AZ MK	1990	317	
RC2734	B		WASCO DAM	1990	319	
RC2732	2		WASCO DAM AZ MK	1990	321	

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PUBLICATION DATE: APRIL 26, 1991 INDEX

PID	ORDER H V	DESIGNATION	LAST RECOVERED	PAGE	CONDITION
PA0748	2	WC 568 S 5 E	1990	323	
PC1118	B 3	WCAM	1989	325	
PC1117	B 3	WELK	1989	327	
RC2533	B	WESTER BUTTE	1989	329	GOOD
RD4213	B	WHEY	1989	333	
PB0795	B	WICKIUP	1990	335	
PB0796	2	WICKIUP AZ MK	1990	337	
OA0933	B	WILDHORSE	1989	339	GOOD
NW0589	B 3	Y 129 RESET	1989	343	
RA1398	B	ZUMWALT ASTRO	1989	345	GOOD

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991 INDEX

<u>PID</u>	<u>ORDER</u> <u>H V</u>	<u>DESIGNATION</u>	<u>LAST</u> <u>RECOVERED</u>	<u>PAGE</u>	<u>CONDITION</u>
QD1711	A	BIG FALLS	1989	1	GOOD
RB1488	A	BIG HILL RESET	1989	7	GOOD
NX0049	A 3	H 118	1989	9	GOOD
NY0935	A	SHORT	1989	13	GOOD
RD4217	A	TERM	1989	21	

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MORO

**A 545**  
PID: RC1972

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: SHERMAN

LATITUDE:	45° 28' 28.25196"	N	±0.00020	SECONDS
LONGITUDE:	120° 44' 36.56095"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	577.16			METERS
	1893.6			FEET

GEOID HEIGHT:	-19.976			METERS
ELLIPSOIDAL HEIGHT:	557.179	±0.049		METERS
X:	2450090.828			METERS
Y:	-3107706.732			METERS
Z:	-4985948.419			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.2                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE FACTOR	DEG MIN SEC
SPC	OR N	200,920.771	2,480,962.541	0.99990880	- 0 10 21.6
UTM	10	5,038,141.879	676,372.798	0.99998247	+ 1 36 33.0

STATION MARK IS A . . . . BENCH MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . A 545

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
UNKNOWN	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION
1987	GOOD	NATIONAL GEODETIC SURVEY
1989	GOOD	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MORO

**A 545**  
PID: RC1972

#### STATION DESCRIPTION

DESCRIBED BY NATIONAL GEODETIC SURVEY 1987  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

#### STATION RECOVERY (1989)

RECOVERED BY OREGON DEPARTMENT OF TRANSPORTATION 1989  
TO REACH FROM THE FIRST INTERSTATE BANK IN  
MORO GO SOUTH ALONG HIGHWAY 97 FOR 1.6 KM (1.0 MI) TO THE MARK ON THE  
RIGHT. IT IS 11.94 M (39.17 FT) WEST OF THE CENTERLINE OF THE  
HIGHWAY, 8.93 M (29.30 FT) NORTHWEST OF THE SE END OF A GUARD RAIL,  
6.27 M (20.57 FT) EAST OF A FENCE, 4.57 M (14.99 FT) WEST OF A GUARD  
RAIL AND 0.3 M (1.0 FT) SOUTH OF A WITNESS POST.  
DESCRIBED BY PHILLIP V. LEWELLYN, ORDOT.



**AGATE DAM RP 1 1**

PID: NZ1331

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 24' 48.62405" N	± 0.00020 SECONDS
LONGITUDE:	122° 45' 43.34569" W	± 0.00030 SECONDS

ORTHOMETRIC HEIGHT:	{	463.5	METERS
		1521.	FEET

GEOID HEIGHT:	-22.693		METERS
ELLIPSOIDAL HEIGHT:	440.515	± 0.079	METERS
X:	6131233.614		METERS
Y:	-1233595.551		METERS
Z:	1249893.329		METERS

HORIZONTAL NETWORK ORDER: FIRST  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.1                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	85,476.681	1,313,832.674	0.99998077	- 1 32 51.2
UTM	10	4,695,716.481	519,579.145	0.99960472	+ 0 09 37.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE IMBEDDED IN MASS OF CONCRETE  
THE MARK IS STAMPED . . . RP 1-1 10+00 20+00

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	US BUREAU OF RECLAMATION (NOW WPRS)

(Continued on Next Page)

**AGATE DAM RP 1 1**

PID: NZ1331

**STATION DESCRIPTION**

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 12 MILES NE OF MEDFORD AND AT THE EAST END OF AGATE DAM.

TO REACH FROM THE INTERSECTION OF HIGHWAYS 62 AND 140, GO EAST ON 140 5.92 KM (3.68 MI) TO AGATE LAKE ROAD, TURN RIGHT AND GO 1.12 KM (0.70 MI) TO A ROAD RIGHT THAT LEADS TO WEST END OF DAM, HOWEVER KEEP LEFT AND GO 1.28 KM (0.80 MI) TO A T JUNCTION, TURN RIGHT AND GO 0.8 KM (0.5 MI) TO A ROAD RIGHT, TURN RIGHT AND GO 0.32 KM (0.20 MI) TO A DIRT ROAD RIGHT, TURN RIGHT AND GO 0.16 KM (0.10 MI) TO A THE EAST END OF DAM AND STATION.

THE STATION IS ON THE PROLONGATION OF THE EAST END OF THE DAM, 11.1 M (36.4 FT) EAST OF THE SOUTHEAST CORNER OF A GAGEING STATION AND 4.5 M (14.8 FT) EAST OF THE TOP EDGE OF A CANAL.

THE STATION IS A BOR BRASS CAP ON THE TOP OF AND IRON PIPE THAT IS IMBEDDED IN CONCRETE. THE CAP HAS BEEN DEFACED BUT IS READABLE.

DESCRIBED BY L.L. RIGGERS

**AGATE DAM RP 2 2**

PID: NZ1332

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 24' 54.1511" N	±0.00020 SECONDS
LONGITUDE:	122° 46' 33.0825" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	467.2	METERS
	1533.	FEET

GEOID HEIGHT:	-22.711	METERS
ELLIPSOIDAL HEIGHT:	444.179	±0.078 METERS
X:	6312583.708	METERS
Y:	-646652.507	METERS
Z:	645685.260	METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.1                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	85,677.96	1,312,700.54	0.99998043	- 1 33 25.3
UTM	10	4,695,883.86	518,441.94	0.99960418	+ 0.09 4.3

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE IMBEDDED IN MASS OF CONCRETE  
THE MARK IS STAMPED . . . RP-2-2 22+00 32+00

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	US BUREAU OF RECLAMATION (NOW WPRS)

(Continued on Next Page)

## AGATE DAM RP 2 2

PID: NZ1332

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 12 MILES NE OF MEDFORD AND AT THE EAST END OF AGATE DAM.

TO REACH FROM THE INTERSECTION OF HIGHWAYS 62 AND 140 IN WHITE CITY GO EAST ON 140 FOR 5.92 KM (3.68 MI) TO AGATE ROAD ON THE RIGHT, TURN RIGHT AND 1.12 KM (0.70 MI) TO A SIGN AGATE DAM, TURN HARD RIGHT AND GO 1.2 KM (0.7 MI) TO THE EAST END OF THE DAM, CONTINUE ON SOUTHERLY 0.05 KM (0.03 MI) TO THE MARK ON THE RIGHT.

THE STATION IS A BRASS CAP ON THE TOP OF A METAL PIPE PROJECTING 15 C . IT IS ABOUT 75 METERS EAST OF THE EAST END OF AGATE DAM, 11.5 M (37.7 FT) WEST OF THE CENTERLINE OF THE ROAD, 18.9 M (62.0 FT) SOUTH OF THE CENTERLINE OF A TRACK ROAD AND 0.7 M (2.3 FT) NORTH OF A WITNESS POST. THERE IS A METAL POST IN THE SAME CONCRETE AS THE STATION MARK.

DESCRIBED BY L.L. RIGGERS.

**AGENCY DAM**

PID: PA0747

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 54' 39.47960" N	±0.00020 SECONDS
LONGITUDE:	118° 09' 33.15653" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 1041.4 METERS  
3417. FEET

GEOID HEIGHT:	-16.923	METERS
ELLIPSOIDAL HEIGHT:	1024.575 ±0.067	METERS
X:	5671905.564	METERS
Y:	2006254.681	METERS
Z:	-2113820.745	METERS

HORIZONTAL NETWORK ORDER: FIRST  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                   -00.4                   +03.7                   (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE
				SCALE FACTOR	DEG MIN SEC
SPC	OR S	251,938.651	1,687,997.863	0.99997859	+ 1 36 5.2
UTM	11	4,862,637.236	406,922.238	0.99970655	- 0 48 14.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE SURROUNDED BY MASS OF CONCRETE

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## AGENCY DAM

PID: PA0747

### STATION DESCRIPTION

#### DESCRIBED 1990

THE STATION IS LOCATED ABOUT 14 MILES NORTH OF JUNTURA ON THE WEST SIDE OF THE AGENCY VALLEY DAM AND ON THE WEST SIDE OF BEULAH RESERVOIR.

TO REACH FROM JUNTURA GO NORTHWEST ON HIGHWAY 20 FOR 0.48 KM (0.30 MI) TO A CROSSROADS, TURN RIGHT TOWARD BEULAH RES AND GO 0.32 KM (0.20 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 23.04 KM (14.32 MI) TO A CROSSROADS NEAR THE EAST END OF AGENCY VALLEY DAM. TURN LEFT ONTO DAM AND GO 0.64 KM (0.40 MI) TO THE WEST END OF THE DAM, CONTINUE ON .08 KM (0.05 MI) TO A WIDE SPOT IN THE ROAD ON THE LEFT AND THE MARK ABOUT 90 METERS UP THE HILL. WITH A 4-WHEEL DRIVE IT CAN BE DRIVEN TO.

THE STATION IS A GLO MARK RIVETED TO AN IRON PIPE THAT IS SET INTO CONCRETE. IT IS 19.0 M (62.3 FT) NNW OF A JUNIPER TREE, 1.8 M (5.9 FT) SOUTH OF THE PROLONGATION OF THE UPSTREAM EDGE OF THE DAM AND 0.6 M (2.0 FT) WEST OF A WITNESS POST.

DESCRIBED BY L.L. RIGGERS.

**AIRPORT**

PID: QB1363

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BAKER

LATITUDE:	44° 49' 57.80718" N	±0.00010 SECONDS
LONGITUDE:	117° 48' 54.56010" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT:	{	1027.0	METERS
		3369.	FEET

GEOID HEIGHT:	-16.155		METERS
ELLIPSOIDAL HEIGHT:	1010.910	±0.041	METERS
X:	6369855.931		METERS
Y:	-243905.771		METERS
Z:	-242450.778		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.46282"                    +03.80810" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO AIRPORT AZ MK DEG MIN SEC
SPC	OR N	133,101.064	2,712,248.715	0.99991168	+ 1 54 14.6	087 48 22.7
UTM	11	4,964,691.621	435,566.591	0.99965105	- 0 34 29.1	090 17 06.4

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
QB0911	X 483	20.957 METERS	055 31
QB1256	AIRPORT AZ MK USCGS AND STATE SURV BM 1946	15.553 METERS	089 42 37.3 147 02

STATION MARK IS A ..... HORIZONTAL CONTROL DISK  
WITH SETTING ..... TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED ... AIRPORT 1946

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1946	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1977		NATIONAL GEODETIC SURVEY (DAH)
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## AIRPORT

PID: QB1363

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1946 (DHK)  
STATION IS LOCATED 4 MILES NORTH OF BAKER AT THE BAKER  
AIRPORT. STATION MARK IS 51 FEET EAST OF THE CENTERLINE OF  
HIGHWAY NO 203, 72 FEET SOUTHWEST OF THE CENTER OF BEACON TOWER, 45  
FEET NORTH-NORTHWEST OF THE CATTLE GUARD AT THE ENTRANCE TO  
AIRPORT. MARK IS A BRONZE DISK STAMPED--AIRPORT 1946 AND SET IN  
A CONCRETE CYLINDER FLUSH WITH GROUND.

REFERENCE MARK NO. 1 IS A U.S.G. AND G.S. BENCH MARK STAMPED--X  
483, SET IN THE NORTHWEST CORNER OF THE CONCRETE BASE OF THE BEACON  
TOWER AT THE SAME ELEVATION AS THE STATION MARK.

REFERENCE MARK NO. 2 IS A U.S.C. AND G.S. AND STATE SURVEY BENCH  
MARK, SET IN A CONCRETE BLOCK 10 INCHES BELOW GROUND LEVEL, 4 FEET  
WEST OF CATTLE GUARD, 18 INCHES WEST OF A WHITE REFERENCE POST,  
AND IS 1 FOOT LOWER THAN THE STATION MARK.

THE AZIMUTH MARK IS 25 FEET SOUTH OF CENTER OF LONE ROAD EAST OF  
STATION, 3 FEET NORTH OF EDGE OF DRAIN DITCH, A BRONZE DISK SET IN  
A CONCRETE BLOCK WHICH PROJECTS 2 INCHES AND STAMPED--AIRPORT 1946.

### STATION RECOVERY (1977)

RECOVERED BY NATIONAL GEODETIC SURVEY 1977 (DAH)  
THE STATION MARK WAS RECOVERED AS DESCRIBED IN GOOD  
CONDITION. REFERENCE MARK 1, BM X 483, WAS RECOVERED AS DESCRIBED,  
BUT THE CONCRETE IN WHICH IT IS SET APPEARS TO HAVE  
CRACKED. REFERENCE MARK 2 AND THE AZIMUTH MARK WERE SEARCHED FOR  
BUT NOT RECOVERED AND ARE BELIEVED LOST.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
4 MILES NORTH OF BAKER.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.  
THE STATION IS LOCATED ABOUT 6.4 KM (4.00 MI) NORTHEAST OF BAKER AT  
THE BAKER MUNICIPAL AIRPORT. OWNERSHIP--BAKER MUNICIPAL AIRPORT.  
TO REACH THE STATION FROM EXIT 302 OF INTERSTATE 84, NORTH OF BAKER,  
GO EAST 0.16 KM (0.10 MI) TO MEDICAL SPRINGS ROAD. TURN LEFT AND GO  
NORTH FOR 3.4 KM (2.10 MI), PARALLELING THE INTERSTATE, TO T JUNCTION  
WITH AIRPORT ROAD. TURN RIGHT THEN LEFT PASSING THROUGH METAL GATE  
INTO SOUTHWEST CORNER OF AIRPORT PROPERTY AND STATION ON THE LEFT.  
LOCATED 21.3 M (69.9 FT) NORTH OF AIRPORT ROAD, 17.1 M (56.1 FT) EAST  
OF MEDICAL SPRINGS ROAD, 14.3 M (46.9 FT) NORTHEAST OF A FENCE CORNER,  
6.3 M (20.7 FT) EAST-SOUTHEAST OF A DOD WITNESS POST, 5.3 M (17.4 FT)  
WEST OF A GRAVEL ROAD AND AT NORTHEAST LEG OF AN OLD SIGN. (OBTAIN  
PERMISSION TO TAKE THE SIGN DOWN FOR GPS SURVEY.)



**AIRWAY BEACON 43 RESET**

PID: PC0964

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DOUGLAS

LATITUDE:	43° 38' 19.00379" N	±0.00010 SECONDS
LONGITUDE:	123° 19' 36.74692" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	547.5	METERS
	1796.	FEET

GEOID HEIGHT:	-21.525	METERS
ELLIPSOIDAL HEIGHT:	525.700	±0.050 METERS
X:	5704343.221	METERS
Y:	1964584.964	METERS
Z:	2063924.408	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.56621"                    +04.27892" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
						SAN FRANCISCO PORTLAND BCN 44A DEG MIN SEC
SPC	OR S	222,901.072	1,271,955.189	0.99992822	- 1 56 2.4	053 03 11.2
UTM	10	4,831,787.466	473,634.604	0.99960855	- 0 13 32.1	051 20 40.9

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
PC0961	SAN FRANCISCO PORTLAND BCN 44A	APPROX. 17.4 KM	051 07 08.8
	AIRWAY BEACON 43 RM 3	8.870 METERS	051 39
	AIRWAY BEACON 43 RM 1	8.885 METERS	051 43
	AIRWAY BEACON 43 RM 4	9.230 METERS	142 07
	AIRWAY BEACON 43 RM 2	9.232 METERS	142 11

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . PREFABRICATED CONCRETE POST IMBEDDED IN GROUND  
THE MARK IS STAMPED . . . AIRWAY BEACON 43 RESET 1957  
(Continued on Next Page)

## AIRWAY BEACON 43 RESET

PID: PC0964

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1957	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1970		NATIONAL GEODETIC SURVEY (LFS)
1989	GOOD	US BUREAU OF LAND MANAGEMENT

### STATION DESCRIPTION

DESCRIBED BY FEDERAL AVIATION ADMINISTRATION 1957  
STATION, LOCATED ON TOP OF GRASSY HILL 3.25 MILES NORTHWEST OF  
YONCALLA AND 2.0 MILES SSW OF DRAIN, WAS RECOVERED IN GOOD  
CONDITION BY FAA. STATION MARK, RM NO 1 AND RM NO 2 WERE  
DESTROYED, AND THE TOP OF THE HILL WAS CUT OFF. MARKS WERE THEN  
REPLACED.

THE NEW STATION MARK IS A STANDARD DISK STAMPED AIRWAY BEACON 43  
RESET 1957 SET IN 2 FT X 2 FT X 2 FT CONCRETE BLOCK FLUSH WITH THE  
GROUND, ABOUT 50 FEET WEST OF A 40 FT. MICRO-WAVE TOWER. ITS  
ELEVATION, 13 FEET LOWER THAN THE ORIGINAL STATION, IS NOW ABOUT  
1,781 FT.

RM NO 3 WAS ESTABLISHED IN THE ORIGINAL POSITION OF NO 1. IT IS  
A STANDARD DISK STAMPED AIRWAY BEACON 43 NO 3 1957 SET IN A 2 FT X  
2 FT X 2 FT CONCRETE BLOCK FLUSH WITH THE GROUND AND AT THE SAME  
ELEVATION AS THE STATION.

RM NO 4 WAS ESTABLISHED IN THE ORIGINAL POSITION OF NO 2. IT IS  
A STANDARD DISK STAMPED AIRWAY BEACON 43 NO 4 1957 SET IN A 2 FT X  
2 FT X 2 FT CONCRETE BLOCK FLUSH WITH THE GROUND AND AT THE SAME  
ELEVATION AS THE STATION.

TO REACH THE STATION FROM THE POST OFFICE IN DRAIN, GO SOUTH ON  
U.S. HIGHWAY 99 FOR 3.25 MILES TO A SIDE ROAD RIGHT, TURN RIGHT  
AND GO WEST FOR 0.3 MILE TO A T-ROAD RIGHT JUST AFTER CROSSING A  
CATTLE GUARD. (GET PERMISSION TO ENTER FROM LAND OWNER AT HOUSE  
0.1 MILE NORTH) CONTINUE STRAIGHT AHEAD, WEST, FOR 0.05 MILE TO A  
FORK, TAKE THE RIGHT FORK STRAIGHT AHEAD FOR 0.1 MILE TO A WIRE  
GATE, GO THROUGH GATE AND CONTINUE WEST FOR 0.4 MILE TO A FORK,  
TAKE THE RIGHT FORK AND GO NORTH FOR 0.5 MILE TO WIRE GATE, GO  
THROUGH GATE AND FOLLOW TRACK ROAD UP THE HILL FOR 0.7 MILE  
TO AIRWAY BEACON 43 AND STATION.

THE FOLLOWING DISTANCES AND DIRECTIONS ARE FROM 1953 DATA,  
SUBSTITUTING REFERENCE MARK NUMBERS--

### STATION RECOVERY (1970)

RECOVERED BY NATIONAL GEODETIC SURVEY 1970 (LFS)  
LANDMARKS, AND NUMEROUS CHANGES HAVE BEEN MADE. THE BEACON HAS  
BEEN REMOVED. A NEW AND COMPLETE DESCRIPTION FOLLOWS.

(Continued on Next Page)

## AIRWAY BEACON 43 RESET

PID: PC0964

THE STATION IS 2 MILES SOUTH-SOUTHWEST OF DRAIN, ON THE SUMMIT OF A HILL LOCALLY KNOWN AS BALDY, ON GRASSLAND OWNED BY MR. DARRELL PAYNE.

TO REACH THE STATION FROM THE DRAIN POST OFFICE GO SOUTH ON THIRD STREET FOR 1 BLOCK TO U.S. HIGHWAY 99, TURN RIGHT, AND GO WEST, AND SOUTH ON U.S. HIGHWAY 99 FOR 3.0 MILES TO A DRIVEWAY ON THE RIGHT, TURN RIGHT, AND GO SOUTHWEST ON THE DRIVEWAY FOR 0.3 MILE TO A GATE, JUST SOUTH OF MR. DARRELL PAYNES RESIDENCE. PASS THRU THE GATE, AND GO NORTHWEST ON THE MAIN TRAVELED ROAD FOR 1.1 MILES TO A GATE, PASS THRU THE GATE, AND CONTINUE NORTHWEST ON STEEP WINDING ROAD FOR 1.2 MILES TO THE SUMMIT, AND STATION.

THE STATION MARK, STAMPED AIRWAY BN 43 RESET 1957, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A 2 BY 3 FOOT CONCRETE SLAB THAT PROJECTS 1 INCH. IT IS 210 FEET SOUTHEAST OF A TIN SHED THAT HOUSES SOME COMMUNICATION EQUIPMENT, 66 FEET WEST OF A TIN SHED THAT HOUSES SOME COMMUNICATION EQUIPMENT, 30 FEET NORTHWEST OF A WALK GATE IN THE NORTH-SOUTH FENCE LINE, 27 FEET WEST OF THE NORTH-SOUTH FENCE LINE, AND 2 FEET EAST OF A METAL WITNESS POST.

REFERENCE MARK NO. 3, STAMPED AIRWAY BN 43 NO 3 1957, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A ROUND CONCRETE SLAB THAT IS 3 FEET IN DIAMETER, 30 FEET NORTHEAST OF THE WITNESS POST, 4 FEET WEST OF THE NORTH-SOUTH FENCE LINE, AND LEVEL WITH THE STATION.

REFERENCE MARK NO. 4, STAMPED AIRWAY BN 43 4 1957, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A 2 BY 3 FOOT SLAB THAT PROJECTS 1 INCH, 32 FEET SOUTHEAST OF THE WITNESS POST, 14 FEET SOUTHWEST OF THE WALK GATE, 9 FEET WEST OF THE NORTH-SOUTH FENCE LINE, AND LEVEL WITH THE STATION.

THE DISTANCE BETWEEN R.M. NO. 3 AND R.M. NO. 4 IS 42.16 FEET.

### STATION RECOVERY (1989)

RECOVERED BY US BUREAU OF LAND MANAGEMENT 1989  
THE STATION MARK AND REFERENCE MARKS 3 AND 4 WERE RECOVERED AS DESCRIBED IN THE 1970 DESCRIPTION.  
THE FOLLOWING IS A NEW HOW-TO-REACH DESCRIPTION. FROM THE INTERSECTION OF STATE HIGHWAY 38 AND DOUGLAS COUNTY HIGHWAY 389 IN DRAIN, OREGON, PROCEED WEST ON HIGHWAY 38 FOR 1.61 KM (1.00 MI) TO A HAYHURST ROAD ON THE LEFT. TURN LEFT AND PROCEED SOUTHERLY ON HAYHURST ROAD FOR 0.48 KM (0.30 MI) TO THE INTERSECTION WITH SOUTH ELK CREEK ROAD. CONTINUE AN ADDITIONAL 1.45 KM (0.90 MI) SOUTHERLY ON HAYHURST ROAD TO A GRAVEL ROAD ON LEFT. TURN LEFT ON THE GRAVEL ROAD AND PROCEED EASTERLY OVER CATTLE GUARD AND PAST A GRAVEL STOCK YARD ON RIGHT FOR 0.16 KM (0.10 MI) TO A LOCKED GATE. (KEY TO GATE CAN BE OBTAINED AT THE BLM DISTRICT OFFICE IN ROSEBURG, PHONE 672-4491, OR FROM WOOLLEY ENTERPRISES IN DRAIN, PHONE 836-2144)  
PROCEED THROUGH THE GATE AND CONTINUE FOR 2.25 KM (1.40 MI) TO A SHARP HAIRPIN FORK LEFT. TURN LEFT AND ASCEND FOR 1.13 KM (0.70 MI) TO STATION MARK AT SUMMIT OF HILL.

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**ALKALI**  
PID: NX0297

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LAKE

LATITUDE:	42° 57' 13.27875" N	±0.00020 SECONDS
LONGITUDE:	119° 59' 58.11547" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	1309.3	METERS
	4296.	FEET

GEOID HEIGHT:	-18.676	METERS
ELLIPSOIDAL HEIGHT:	1290.455	±0.053 METERS
X:	6043953.396	METERS
Y:	1426363.391	METERS
Z:	-1455737.134	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.46125"            +03.86747" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
						ALKALI AZ MK DEG MIN SEC
SPC	OR S	143,087.347	1,540,839.546	0.99990161	+ 0 20 32.8	182 22 40.2
UTM	11	4,760,038.114	255,325.932	1.00033654	- 2 02 41.6	184 45 54.6
UTM	10	4,760,041.164	744,759.477	1.00033705	+ 2 02 44.1	180 40 28.9

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
NX0299	ALKALI RM 1	11.569 METERS	035 02
	BM NR ALKALI	7.694 METERS	106 59
	ALKALI AZ MK		182 43 13.0

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN PARTIALLY EXPOSED BOULDER  
THE MARK IS STAMPED . . . ALKALI 1948

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1948	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**ALKALI**  
PID: NX0297

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1948 (MTP)  
THE STATION IS ABOUT 35 MILES, AIR LINE, NORTH NORTHEAST OF VALLEY FALLS, AND ALONG THE EAST SIDE OF U.S. HIGHWAY 395. IT IS ABOUT 1 MILE SOUTH OF THE HIGHWAY MAINTENANCE STATION, 1/2 MILE SOUTHEAST OF THE EDGE OF ALKALI LAKE, AND 0.35 MILE NORTH OF MILE POST 52.

THE STATION MARK, STAMPED ALKALI 1948, IS A STANDARD DISK SET IN A BOULDER, 2 FEET BY 2 FEET, PROTRUDING 1 FOOT ABOVE THE GROUND. IT IS 44.7 METERS EAST OF THE CENTER LINE OF THE HIGHWAY, 42 METERS NORTHWEST OF THE LARGEST BOULDER IN THE IMMEDIATE AREA, AND 1.8 METERS NORTHEAST OF A WHITE WITNESS POST.

REFERENCE MARK NO. 1, STAMPED ALKALI NO 1 1948, IS A STANDARD DISK SET IN A BOULDER, 4 FEET BY 6 FEET, PROTRUDING 4 FEET ABOVE THE GROUND. IT IS 50 METERS EAST OF THE CENTER LINE OF THE HIGHWAY AND 3 FEET HIGHER THAN THE STATION MARK.

A STANDARD OREGON STATE HIGHWAY DEPARTMENT BENCH MARK, UNSTAMPED, SERVES AS REFERENCE MARK NO. 2. IT IS SET IN A BOULDER, 4 FEET BY 5 FEET, PROTRUDING 4-1/2 FEET ABOVE THE GROUND. IT IS 52 METERS EAST OF THE CENTER LINE OF THE HIGHWAY AND 4 FEET HIGHER THAN THE STATION MARK.

THE AZIMUTH MARK, STAMPED ALKALI 1948, IS A STANDARD DISK SET IN THE TOP OF A BOULDER, 6 FEET SQUARE, PROTRUDING 5 FEET ABOVE THE GROUND. IT IS 0.1 MILE EAST OF THE HIGHWAY, 100 YARDS EAST OF SOME HIGHWAY STOCK PILES, AND 3 METERS EAST OF A WHITE WITNESS POST. TO REACH THE AZIMUTH MARK FROM THE STATION GO SOUTH ON THE HIGHWAY FOR 0.8 MILE TO TRACK ROAD ON LEFT LEADING TO THE HIGHWAY STOCK PILES. TURN LEFT ON TRACK ROAD AND DRIVE EAST 0.1 MILE TO THE LARGEST BOULDER IN THE IMMEDIATE VICINITY AND THE MARK.

TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 31 AND U.S. HIGHWAY 395 AT VALLEY FALLS GO NORTHEASTERLY, TOWARDS BURNS, FOR 38.4 MILES TO THE STATION ON RIGHT.

**STATION RECOVERY (1989)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TO REACH FROM THE HIGHWAY MAINTENANCE STATION AT ALKALI LAKE GO SOUTH 1.65 KM (1.03 MI) TO THE MARK ON THE LEFT.  
THE STATION IS 44.7 M (146.7 FT) EAST OF THE CENTERLINE OF THE HIGHWAY, 42 M (137.8 FT) NW OF THE LARGEST BOULDER IN THE AREA, 7.594 M (24.915 FT) FROM BENCH MARK A 331, AND 1 M (3.3 FT) WEST OF A WITNESS POST.  
DESCRIBED BY L.L. RIGGERS.

**ALTAMONT**

PID: NY0977

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: KLAMATH

LATITUDE:	42° 12' 32.56785" N	±0.00010 SECONDS
LONGITUDE:	121° 44' 50.17053" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1249.0 METERS  
4098. FEET

GEOID HEIGHT:	-21.150		METERS
ELLIPSOIDAL HEIGHT:	1227.633	±0.032	METERS
X:	4535265.067		METERS
Y:	2896838.630		METERS
Z:	3414339.060		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                   -00.5                   +04.0                   (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	61,017.894	1,397,002.023	1.00003361	- 0 51 11.9
SPC	CA 1	819,376.608	2,020,874.027	1.00018313	+ 0 09 54.9
UTM	10	4,673,746.418	603,408.710	0.99973157	+ 0 50 30.1

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . ALTAMONT

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ALTAMONT

## ALTAMONT

PID: NY0977

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN KLAMATH FALLS AT THE FAIRGROUNDS IN THE NE 1/4 OF SECTION 3, T.39S., R.9E., W.M. TO REACH FROM THE CITY HALL IN KLAMATH FALLS PROCEED SOUTHEAST ALONG SOUTH FIFTH STREET AND SOUTH SIXTH STREET 3.52 KM (2.19 MI) TO ARTHUR STREET, TURN LEFT AND PROCEED NORTH ON ARTHUR STREET .16 KM (0.10 MI) TO A PAVED ENTRANCE ROAD INTO THE KLAMATH COUNTY FAIRGROUNDS, TURN RIGHT AND PROCEED EAST ON THE FAIRGROUNDS ENTRANCE ROAD AND ITS EXTENSION APPROXIMATELY 375 FEET TO THE STATION. THE STATION IS A STANDARD ORDOT PRIMARY GPS DISK SET INTO A CONCRETE MONUMENT THAT IS 5 CM BELOW THE SURFACE OF THE GROUND. IT IS 6.40 M (21.00 FT) EAST OF THE CENTERLINE OF A PAVED ROADWAY AND 8.53 M (27.99 FT) SOUTH OF A PAVED ROADWAY. BOTH ROADS ARE ACCESS ROADS WITHIN THE KLAMATH COUNTY FAIRGROUNDS. DESCRIBED BY FRANCIS ROBERTS, KLAMATH COUNTY SURVEYOR.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ASHLAND

**ASH**  
PID: NZ1326

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 12' 56.39242"	N	±0.00010	SECONDS
LONGITUDE:	122° 42' 25.16768"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	556.69			METERS
	1826.4			FEET

GEOID HEIGHT:	-22.379			METERS
ELLIPSOIDAL HEIGHT:	534.059	±0.044		METERS
X:	1958755.812			METERS
Y:	2947318.492			METERS
Z:	5289215.095			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.1                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	63,387.129	1,317,783.144	1.00003170	- 1 30 35.7
SPC	CA 1	820,317.291	1,941,613.236	1.00018592	- 0 27 44.2
UTM	10	4,673,763.216	524,184.207	0.99960720	+ 0 11 48.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . ASH 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	JACKSON COUNTY OREGON

(Continued on Next Page)

**ASH**  
PID: NZ1326

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED NEAR ASHLAND, SE 1/4 SECTION 33, TOWNSHIP 38 SOUTH, RANGE 1 EAST, WILLAMETTE MERIDIAN.  
TO REACH THE STATION FROM THE JACKSON COUNTY COURTHOUSE IN MEDFORD, PROCEED NORTHEASTERLY ON 8TH STREET 0.64 KM (0.40 MI) TO SOUTH CENTRAL AVENUE, TURN RIGHT AND PROCEED SOUTHEASTERLY ON SOUTH CENTRAL AVENUE 1.28 KM (0.80 MI) TO BARNETT ROAD, TURN LEFT AND PROCEED EAST ON BARNETT ROAD 0.48 KM (0.30 MI) TO THE SOUTH BOUND APPROACH TO THE I 5 FREEWAY, PROCEED SOUTHERLY ON I 5 FREWAY 13.28 KM (8.25 MI) TO EXIT NO 19. EXIT THE FREEWAY AND TURN RIGHT ONTO VALLEY VIEW ROAD FOR 0.32 KM (0.20 MI) , TURN LEFT AND PROCEED SOUTHEASTERLY ALONG EAGLE MILL ROAD 2.72 KM (1.69 MI) TO THE Y INTERSECTION WITH OAK STREET. CONTINUE ALONG EAGLE MILL ROAD, THROUGH THE I 5 UNDERPASS 0.32 KM (0.20 MI) TO A CONCRETE BLOCK (TELEPHONE COMPANY MICROWAVE) BUILDING ON THE RIGHT.  
THE STATION IS 40.23 M (131.99 FT) SOUTH OF EAGLE MILL ROAD.  
DESCRIBED BY VERLYN THOMAS, JACKSON COUNTY SURVEYOR.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ASTORIA

**ASTO**  
PID: SC2795

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CLATSOP

LATITUDE:	46° 10' 24.21360"	N	±0.00020	SECONDS
LONGITUDE:	123° 49' 55.48438"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	{	3.06		METERS
		10.0		FEET

GEOID HEIGHT:	-21.526		METERS
ELLIPSOIDAL HEIGHT:	-18.930	±0.055	METERS
X:	3281946.970		METERS
Y:	3193070.038		METERS
Z:	-4425135.800		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.5                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	283,873.877	2,242,754.017	1.00004873	- 2 21 47.0
SPC	WA S	98,805.962	242,785.501	0.99994026	- 2 25 13.5
UTM	10	5,113,649.374	435,771.840	0.99965071	- 0 36 1.1

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . . . ASTO

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ASTORIA

**ASTO**  
PID: SC2795

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN ASTORIA AT THE OFFICE OF THE CLATSOP COUNTY SURVEYOR.

TO REACH FROM THE SOUTH END OF THE ASTORIA MEGLER BRIDGE, GO SOUTH ON US 101 FOR 0.64 KM (0.40 MI) TO ITS INTERSECTION WITH STATE HIGHWAY 202, TURN LEFT ON HIGHWAY 202 AND GO 2.72 KM (1.69 MI) TO THE ADDRESS 1100 OLNEY AVENUE ON THE LEFT.

THE STATION IS LOCATED 0.91 M (2.99 FT) NORTH OF THE SOUTHEAST END OF THE CONCRETE WALK AROUND THE CLATSOP COUNTY SURVEYORS OFFICE. IT IS A 4 INCH BRASS CAP SET IN CONCRETE 18 INCHES BELOW THE GROUND SURFACE, INSIDE AN 8 INCH DIAMETER MONUMENT BOX. THE STATION IS 25.12 M (82.41 FT) NORTH OF THE CENTERLINE OF STATE HIGHWAY 202, 12.8 M (42.0 FT) SOUTHEAST OF THE SOUTHWEST CORNER OF THE CLATSOP COUNTY SURVEYORS OFFICE AND 14.2 M (46.6 FT) SOUTHWEST OF THE SOUTHEAST CORNER OF THE SURVEYORS OFFICE.

DESCRIBED BY STEVEN D. THORNTON, CLATSOP COUNTY SURVEYORS OFFICE.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: QUINES CREEK

**AZAL**  
PID: NZ1329

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DOUGLAS

LATITUDE:	42° 47' 56.60346"	N	±0.00010	SECONDS
LONGITUDE:	123° 15' 10.17752"	W	±0.00020	SECONDS

ORTHOMETRIC HEIGHT:	{	508.5		METERS
		1668.		FEET
GEOID HEIGHT:		-22.082		METERS
ELLIPSOIDAL HEIGHT:		486.017	±0.049	METERS
X:		3373073.268		METERS
Y:		-3189370.996		METERS
Z:		-4359966.102		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.2                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE FACTOR	DEG MIN SEC
SPC	OR S	129,489.308	1,274,861.355	0.99991529	- 1 53 0.0
UTM	10	4,738,531.749	479,325.449	0.99960526	- 0 10 18.4

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF IRREGULAR CONCRETE MASS  
THE MARK IS STAMPED . . . AZAL 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: QUINES CREEK

**AZAL**  
PID: NZ1329

### STATION DESCRIPTION

**DESCRIBED 1989**

THE STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED AZAL 1989 SET IN THE TOP OF A MASS OF CONCRETE, 8 INCHES DIAMETER AT GROUND SURFACE. STATION IS LOCATED IN SE QUADRANT OF AZALIA INTERCHANGE AT MILEPOST 88.12 OF INTERSTATE HIGHWAY 5, 14.32 KM (8.90 MI) NORTH OF THE JOSEPHINE-DOUGLAS COUNTY LINE AND 47.80 KM (29.70 MI) NORTH OF THE NORTHERN CITY LIMITS OF GRANTS PASS, OREGON. IS IS LOCATED 10.52 M (34.51 FT) SOUTH OF THE CENTERLINE OF THE COW CREEK/GALESVILL RESERVOIR ROAD, 18.4 M (60.4 FT) SOUTH OF COW CR ROAD, GALESVILLE RES, AZALEA SIGN, 10.8 M (35.4 FT) NNE OF A DO NOT ENTER SIGN, 8.6 M (28.2 FT) SE OF EAST END OF A PAINTED TRIANGLE IN ROAD (TRAFFIC DIRECTOR), 1.8 M (5.9 FT) ESE OF A GUARD RAIL, 0.7 M (2.3 FT) NORTHWEST OF A WITNESS POST AND AT THE NORTH END OF THE NORTH BOUND OFFRAMP (EXIT 88) OF INTERSTATE HIGHWAY 5.

**BALD**  
PID: QE1161

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LINCOLN

LATITUDE:	44° 49' 49.17785" N	±0.00020	SECONDS
LONGITUDE:	124° 03' 56.23407" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	16.12		METERS
	52.9		FEET

GEOID HEIGHT:	-22.050		METERS
ELLIPSOIDAL HEIGHT:	-6.433	±0.059	METERS
X:	6154022.605		METERS
Y:	-1176408.439		METERS
Z:	-1189692.120		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.73915"                    +04.38307" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES		POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO TRAIN DEG MIN SEC
		NORTHING METERS	EASTING METERS			
SPC	OR N	135,528.244	2,218,149.945	0.99991193	- 2 31 43.3	191 51 47.4
UTM	10	4,964,654.465	415,765.253	0.99968725	- 0 45 4.7	190 05 08.8

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	BALD WM 1	4.530 METERS	032 45
QE2417	BOILER BAY HOUSE CHIMNEY	APPROX. 0.9 KM	043 41 04.4
QE2436	BALD A 1952	233.845 METERS	163 00
QE2435	BALD PRIME 1927	325.909 METERS	170 55
QE2437	BOIL	372.083 METERS	184 07
QE2434	TRAIN	APPROX. 3.7 KM	189 20 04.1
	BALD WP		225 06
	BALD WM 2	16.151 METERS	225 10
QE1162	BALD RM 1	17.630 METERS	234 47
QE1163	BALD RM 2	23.823 METERS	305 55

(Continued on Next Page)

**BALD**  
 PID: QE1161

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
 WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
 THE MARK IS STAMPED . . . BALD 1927

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1927	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1932		COAST AND GEODETIC SURVEY (LAM)
1941		COAST AND GEODETIC SURVEY (LAM)
1951		COAST AND GEODETIC SURVEY (ANS)
1952		COAST AND GEODETIC SURVEY (HGC)
1965		COAST AND GEODETIC SURVEY (PAS)
1966		COAST AND GEODETIC SURVEY (JCL)
1972		NATIONAL GEODETIC SURVEY (LFS)
1987	GOOD	NATIONAL GEODETIC SURVEY
1988		EAGLE GPS SURVEYING CORPORATION (WLC)
1989	GOOD	NATIONAL GEODETIC SURVEY
1990	GOOD	NATIONAL GEODETIC SURVEY

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1927 (GLB)  
 THIS STATION IS ON THE MOST NORTHERLY PROMINENT POINT OF CAPE  
 FOULWEATHER AT NW CORNER OF THE POINT ABOUT 15 METERS OUT FROM  
 THE EXTREME GRASSLINE. ABOUT 200 METERS W OF ROOSEVELT HIGHWAY.

STATION AND REFERENCE MARKS ARE STANDARD BRONZE DISKS WEDGED  
 IN DRILL HOLES IN OUTCROPPING BEDROCK.

REFERENCE MARK NO.1 IS ABOUT 2 METERS FROM THE GRASSLINE.

REFERENCE MARK NO.2 IS ABOUT 6 METERS FROM THE GRASSLINE.

WITNESS MARK NO.1 IS A 3/4-INCH IRON PIN DRIVEN INTO GROUND AND  
 PROJECTING ABOUT 10 INCHES.

WITNESS MARK NO.2 IS A 5- BY 5-INCH POST, PROJECTING 1 FOOT,  
 NEAR EDGE OF GRASSLINE AND PAINTED WHITE.

**STATION RECOVERY (1932)**

RECOVERED BY COAST AND GEODETIC SURVEY 1932 (LAM)  
 STATION IS ON THE NORTHERLY END OF GOVERNMENT POINT, ABOUT 1.3  
 MILES N OF DEPOE BAY POST OFFICE. THIS LOW, GRASS COVERED  
 PROMONTORY IS THE MOST NORTHERLY PROMINENT POINT OF CAPE  
 FOULWEATHER. THE STATION IS ABOUT 700 FEET N OF THE OREGON COAST  
 HIGHWAY AND MAY BE REACHED BY A SECONDARY ROAD.

(Continued on Next Page)



**BALD**  
PID: QE1161

IRON PIN WITNESS MARK NO.1 NO LONGER RELIABLE. THE DISTANCES FROM THE STATION TO WITNESS MARK NO.2 AND REFERENCE MARK NO.1 ARE APPARENTLY REVERSED AS THE REFERENCE MARK IS FURTHER FROM THE STATION, BUT THE AZIMUTHS SHOWN ON THE CARD APPEAR TO BE CORRECT.

**STATION RECOVERY (1941)**

RECOVERED BY COAST AND GEODETIC SURVEY 1941 (LAM)  
FOLLOWING ARE DESCRIPTIONS FROM BENCH MARK LISTS FOR THIS STATION AS RECOVERED IN 1941 BY GEORGE R. SHELTON.

TRIANGULATION STATION BALD--ABOUT 2 MILES S OF LINCOLN BEACH ON OREGON COAST HIGHWAY, 1.3 MILES N OF DEPOE BAY, AT GOVERNMENT POINT, ABOUT 700 FEET NW OF HIGHWAY ON SECONDARY ROAD, NW END OF POINT, IN ROCK OUTCROP. DISK STAMPED BALD 1927.

REFERENCE MARK 1 BALD--ABOUT 2 MILES S OF LINCOLN BEACH ON OREGON COAST HIGHWAY, 1.3 MILES N OF DEPOE BAY, AT GOVERNMENT POINT, ABOUT 700 FEET NW OF HIGHWAY ON SECONDARY ROAD, NW END OF POINT, ABOUT 58 FEET SW OF TRIANGULATION STATION BALD, IN BEDROCK. DISK STAMPED BALD NO.1 1927.

REFERENCE MARK 2 BALD--ABOUT 2 MILES S OF LINCOLN BEACH ON OREGON COAST HIGHWAY, 1.3 MILES N OF DEPOE BAY, AT GOVERNMENT POINT, ABOUT 700 FEET NW OF HIGHWAY ON SECONDARY ROAD, NW END OF POINT, ABOUT 78 FEET NW OF TRIANGULATION STATION BALD, ABOUT 20 FEET FROM GRASS LINE, IN BEDROCK. DISK STAMPED BALD NO.2 1927.

**STATION RECOVERY (1951)**

RECOVERED BY COAST AND GEODETIC SURVEY 1951 (ANS)  
STATION, REFERENCE MARKS 1 AND 2, AND WITNESS MARK 2 WERE RECOVERED AS DESCRIBED, EXCEPT THAT WITNESS MARK 2 IS A 4 BY 6 NOW WHITTLED DOWN TO ABOUT GROUND LEVEL. WITNESS MARK 1 COULD NOT BE FOUND AND IS CONSIDERED LOST ON ACCOUNT OF THE L.A.MC A. 1932 RECOVERY NOTE. VERIFIED APPARENT REVERSAL OF DISTANCES TO REFERENCE MARKS.

STATION IS LOCATED 1.3 MILES N OF DEPOE BAY BY HIGHWAY 101, IN BOILER BAY STATE PARK, NEAR INDEFINITE GRASS LINE ON LOW GRASS-COVERED PROMONTORY FORMING THE S POINT AT ENTRANCE TO BOILER BAY. STATION IS APPROACHED BY SECONDARY ROAD THROUGH THE PARK.

**STATION RECOVERY (1952)**

RECOVERED BY COAST AND GEODETIC SURVEY 1952 (HGC)  
STATION RECOVERED AND REOCCUPIED. REVISED AND CORRECTED DESCRIPTION FOLLOWS--

STATION LIES NEAR THE EXTREMITY OF GOVERNMENT POINT, IN BOILER BAY STATE PARK, ABOUT 200 METERS W OF U.S. HIGHWAY 101, THE OREGON COAST HIGHWAY.

(Continued on Next Page)

**BALD**  
PID: QE1161

STATION MARK IS A STANDARD STATION DISK, STAMPED BALD 1927, CEMENTED IN A DRILL HOLE IN OUTCROPPING BEDROCK, ABOUT 15 METERS OUT FROM THE EXTREME LIMITS OF THE GRASSLINE.

REFERENCE MARK 1 IS A STANDARD REFERENCE DISK, STAMPED BALD 1927 NO 1, AND SET SW OF THE STATION IN A DRILL HOLE IN OUTCROPPING BEDROCK. THE SLOPE DISTANCE TO REFERENCE MARK 1 IS 17.710 METERS OR 58.10 FEET.

REFERENCE MARK 2 IS A STANDARD REFERENCE MARK, THE STAMPING ON WHICH IS ILLEGIBLE. IT IS CEMENTED IN A DRILL HOLE IN OUTCROPPING BEDROCK NW OF THE STATION. THE SLOPE DISTANCE TO REFERENCE MARK 2 IS 23.880 METERS OR 78.34 FEET.

WITNESS POST IS THE STUMP OF A 5 BY 5 POST WHICH PROJECTS SEVERAL INCHES ABOVE THE GROUND, NEAR THE GRASSLINE SW OF THE STATION.

**STATION RECOVERY (1965)**

RECOVERED BY COAST AND GEODETIC SURVEY 1965 (PAS)  
THE STATION MARK, STAMPED BALD 1927, REFERENCE MARK NO. 1, STAMPED BALD NO 1 1927 AND REFERENCE MARK NO. 2, STAMPED BALD NO 2 1927 WERE RECOVERED AS DESCRIBED. WITH YELLOW PAINT THE LETTERS B M WERE PAINTED AT EACH MARK. THE ORIGINAL DESCRIPTION IS ADEQUATE FOR RECOVERY.

**STATION RECOVERY (1966)**

RECOVERED BY COAST AND GEODETIC SURVEY 1966 (JCL)  
THE STATION MARK, REFERENCE MARK NO. 1 AND REFERENCE MARK NO. 2 WERE RECOVERED AND FOUND IN GOOD CONDITION. EACH DISK WAS SLIGHTLY EFFACED BUT EACH ONE WAS SOLID IN THEIR MOORINGS. A DIFFERENCE IN THE HORIZONTAL DISTANCE TO THE REFERENCE MARKS WAS FOUND. A NEW AND COMPLETE RECOVERY NOTE FOLLOWS.

THE STATION IS 1-1/2 MILES NORTH OF DEPOE BAY NEAR THE NORTH END OF DEPOE BAY STATE PARK.

TO REACH THE STATION FROM THE DEPOE BAY POST OFFICE GO NORTH ON U.S. HIGHWAY 101 FOR 1.0 MILE TO THE ENTRANCE TO DEPOE BAY STATE PARK ON THE LEFT, TURN LEFT AND ENTER THE PARK BY GOING NORTH ON THE MACADAM CIRCULAR DRIVE FOR 0.3 MILE TO THE END OF TRUCK TRAVEL. THEN PACK NORTH 150 METERS TO THE STATION.

THE STATION MARK, STAMPED BALD 1927, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN OUTCROPPING BEDROCK, 93 FEET WEST OF THE NORTHWEST CORNER OF THE FENCE AROUND THE SPOUTING HORN, 85 FEET SOUTHEAST OF THE EDGE OF THE LEDGE AND 80 FEET NORTH OF A PARK BENCH THAT IS NEAR THE GRASS-LINE. THE LETTERS B M WERE PAINTED ON THE BEDROCK NEAR THE STATION MARK. (NOTE 2)

REFERENCE MARK NO. 1, STAMPED BALD NO 1 1927, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN OUTCROPPING BEDROCK, 40 FEET EAST OF THE EDGE OF THE LEDGE AND 3 FEET BELOW STATION ELEVATION. (NOTE 12A)

(Continued on Next Page)

**BALD**  
PID: QE1161

REFERENCE MARK NO. 2, STAMPED BALD NO 2 1927, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN OUTCROPPING BEDROCK, 6 FEET SOUTHEAST OF THE EDGE OF THE LEDGE AND 2 FEET BELOW STATION ELEVATION. (NOTE 12A)

STATION RECOVERY (1972)

RECOVERED BY NATIONAL GEODETIC SURVEY 1972 (LFS)  
THE STATION MARK, AND BOTH REFERENCE MARKS WERE RECOVERED IN GOOD CONDITION AS DESCRIBED BY J. C. L. THE HORIZONTAL DISTANCE TO THE REFERENCE MARKS WAS NOT VERIFIED THE HORIZONTAL DISTANCES SHOWN ABOVE WERE TAKEN FROM THE 1966 OBSERVATIONS. A CYCLONE FENCE HAS BEEN CONSTRUCTED AROUND THE PARK, AND THE REFERENCE MARKS ARE ON THE OCEAN SIDE OF THE FENCE.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
1 MILE NORTH OF DEPOE BAY.

STATION RECOVERY (1987)

RECOVERED BY NATIONAL GEODETIC SURVEY 1987  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

STATION RECOVERY (1988)

RECOVERED BY EAGLE GPS SURVEYING CORPORATION 1988 (WLC)  
THIS MARK IS AN OLD USC+GS THIRD ORDER MARK. IT IS BEING UPDATED TO A FIRST ORDER MARK. THE OLD REFERENCE MARKS WERE NOT OBSERVED AT THIS TIME. THE STATION IS 2.4 KM (1.5 MI) NORTH OF DEPOE BAY NEAR THE NORTH END OF DEPOE BAY STATE PARK.

TO REACH THE STATION FROM THE DEPOE BAY POST OFFICE GO NORTH ON US 101 FOR 1.6 KM (1.0 MI) TO THE ENTERANCE TO DEPOE BAY STATE PARK ON THE LEFT, TURN LEFT AND ENTER THE PARK BY GOING NORTH ON THE PAVED CIRCULAR DRIVE FOR 0.5 KM (0.3 MI) TO THE END OF TRUCK TRAVEL. PACK NORTH 150 METERS TO THE STATION.

THE STATION IS A STANDARD USC+GS DISK STAMPED---BALD 1927---, CEMENTED IN TO A DRILL HOLE IN OUTCROPPING OF BEDROCK, 28.3 METERS (93 FT) WEST OF THE NORTHWEST CORNER OF THE FENCE AROUND THE HORN, 25.9 METERS (85 FT) SOUTHEAST OF THE EDGE OF THE LEDGE AND 24.4 METERS (80.0 FT) NORTH OF A PARK BENCH THAT IS NEAR THE GRASS LINE. THE LETTERS BM WERE PAINTED ON THE BEDROCK NEAR THE STATION.

REFERENCE MARK 1 IS A STANDARD USC+GS DISK STAMPED---BALD NO 1 1927---, CEMENTED INTO AN OUTCROPPING OF BEDROCK 12.2 METERS EAST OF THE EDGE OF THE LEDGE AND ONE METER BELOW THE STATION ELEVATION.

REFERENCE MARK 2 IS A STANDAGD USC+GS DISK STAMPED---BALD NO 2 1927---, SET IN DRILL HOLE IN OUTCROPPING OF BEDROCK, 1.8 METERS SE OF THE EDGE OF THE LEDGE, AND 0.6 METER BELOW THE STATION.

DESCRIBED BY TOM HAMILTON.

(Continued on Next Page)

**BALD**

PID: QE1161

**STATION RECOVERY (1989)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

**STATION RECOVERY (1990)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1990  
STATION IS LOCATED ABOUT 10 KM (6.2 MI) SOUTH OF LINCOLN CITY, 1.3 KM (0.8 MI) NORTH OF DEPOE BAY, AT THE BOILER BAY WAYSIDE, INSIDE A PERIMETER FENCE, ON A POINT OF LAND PROJECTING INTO THE SEA. OWNERSHIP--STATE DEPARTMENT OF PARKS AND RECREATION.  
TO REACH FROM THE HIGHWAY BRIDGE OVER DEPOE BAY AT DEPOE BAY, GO NORTH ON US HIGHWAY 101 FOR 0.93 KM (0.58 MI) TO THE POST OFFICE ON THE RIGHT. CONTINUE AHEAD FOR 0.98 KM (0.61 MI) TO THE SOUTH ENTRANCE OF THE BOILER BAY WAYSIDE. BEAR LEFT ON ROAD FOR 0.37 KM (0.23 MI) TO THE PARKING LOT AND A GRASSY AREA ON THE LEFT. WALK NORTHWEST INSIDE THE PERIMETER FENCE FOR ABOUT 90 M (295.3 FT) TO END OF FENCE AND THE STATION.  
STATION MARK IS SET IN A DRILL HOLE IN A CHUNKY 3 M (9.8 FT) BY 8 M (26.2 FT) OUTCROP 0.5 M (1.6 FT) HIGH. LOCATED 7.6 M (24.9 FT) SOUTH OF THE NORTH FENCE CORNER, 8.8 M (28.9 FT) EAST OF THE WEST FENCE CORNER, AND 3.6 M (11.8 FT) SOUTHEAST OF THE NORTHWEST END OF THE OUTCROP.  
NOTE--THIS AREA CAN HAVE VERY HIGH WINDS AND STATION IS IN THE OPEN. SANDBAGS AND GUY ROPES ARE RECOMMENDED.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WICKIUP SPRING

**BALD MTN**  
PID: PB0722

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: KLAMATH

LATITUDE:	43° 16' 27.53771" N	±0.00010 SECONDS
LONGITUDE:	121° 21' 19.64730" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 2253.1 METERS  
7392. FEET

GEOID HEIGHT:	-18.976	METERS
ELLIPSOIDAL HEIGHT:	2233.868	±0.037 METERS
X:	6084214.012	METERS
Y:	-1344637.166	METERS
Z:	-1367868.203	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.53029" +04.04730" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
						SPRING BUTTE DEG MIN SEC
SPC	OR S	178,936.346	1,430,564.682	0.99989630	- 0 35 6.9	001 48 56.5
UTM	10	4,792,590.862	633,447.228	0.99981906	+ 1 07 39.0	000 06 10.6

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
PB0702	SPRING BUTTE	APPROX.27.7 KM	001 13 49.6
	BALD MTN RM 1	8.115 METERS	093 13
PB0724	BALD MT LOOKOUT TOWER 1933	10.651 METERS	103 55
PB0723	BALD MT LO TOWER USFS 1953	14.803 METERS	124 14
	BALD MTN RM 2	13.533 METERS	173 49

(Continued on Next Page)

### BALD MTN

PID: PB0722

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN A BOULDER  
THE MARK IS STAMPED . . . BALD MT 1932

#### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1933	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1935		US FOREST SERVICE (NS )
1937		US FOREST SERVICE
1953		COAST AND GEODETIC SURVEY (HSC)
1968		US GEOLOGICAL SURVEY
1974		NATIONAL GEODETIC SURVEY (CLN)
1989	GOOD	NATIONAL GEODETIC SURVEY

#### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1933 (FGJ)  
THE STATION IS ON THE HIGHEST PART OF THE MOUNTAIN, 10.94 METERS  
W OF THE CENTER OF THE LOOKOUT TOWER, IN A BURIED BOULDER  
PROJECTING ABOUT 2 INCHES ABOVE THE GROUND.

STATION AND REFERENCE MARK NO.2 ARE STANDARD BRONZE DISKS IN  
A BOULDER AS DESCRIBED IN NOTES 4 AND 12C.

REFERENCE MARK NO.1 IS A STANDARD BRONZE DISK IN THE CONCRETE  
FOUNDATION OF THE LOOKOUT TOWER ON THE NW CORNER.

STATION BEST REACHED FROM LAPINE BY GOING S ON U.S. HIGHWAY 97,  
1.5 MILES TO THE JUNCTION OF THE FREMONT HIGHWAY. TURN LEFT  
ON THE FREMONT HIGHWAY AND GO 31.5 MILES TO A BALD MOUNTAIN  
LOOKOUT ROAD LEADING TO THE RIGHT, SIGN READING BALD MT. 14  
MILES. TURN RIGHT AND GO 2.8 MILES, TAKE LEFT FORK AND GO 1.2  
MILES, TAKE LEFT FORK GO 0.3 MILE ON THE MAIN-TRAVELED ROAD  
AROUND SOME OLD SHEEP PENS TO A CROSS ROAD, TURN RIGHT AND GO  
1.1 MILES, TAKE RIGHT FORK AND GO 3.1 MILES, TAKE RIGHT FORK  
GO 1.3 MILES, TURN LEFT AND GO 1.9 MILES TO TOP OF MOUNTAIN,  
LOOKOUT, AND STATION.

NOTE--THE STATION WAS BUILT IN 1932 AND OBSERVED IN 1933.

HEIGHT OF LIGHT ABOVE STATION MARK 1.4 METERS.

#### STATION RECOVERY (1935)

RECOVERED BY US FOREST SERVICE 1935 (NS )  
ON THE HIGHEST SUMMIT OF BALD MOUNTAIN, WHICH LIES ABOUT 15  
MILES NW OF THE TOWN OF SILVER LAKE.

STATION MARKED BY DISK IN BURIED BOULDER, NOTE 4.

(Continued on Next Page)

## BALD MTN

PID: PB0722

REFERENCE MARKS CONSIST OF STANDARD DISKS. NO.1 IS 8.115 METERS (23.96 FEET) EASTERLY FROM STATION IN AZIMUTH 273 DEG 13 MIN 21.6 SEC. IT IS IN THE NW CONCRETE FOOTING OF THE LOOKOUT TOWER. NO.2 IS 13.530 METERS (44.39 FEET) SOUTHERLY IN AZIMUTH 353 DEG 47 MIN 50.6 SEC. IT IS IN A BOULDER.

BALD MOUNTAIN LOOKOUT TOWER IS 10.94 METERS (35.9 FEET) E OF STATION IN AZIMUTH 284 DEG 08 MIN 16 SEC. MEASUREMENTS ARE TO CENTER OF TOWER, WHICH IS MARKED BY A U.S.F.S. DISK. CONDITION SAID TO BE POOR.

STATION IS REACHED BY TURNING WESTWARD FROM FREMONT STATE HIGHWAY 31 NEAR MILEAGE 31.5, AT SIGN FOR BALD MOUNTAIN LOOKOUT. FOLLOWED SIGNED FOREST ROADS FOR 14 MILES TO SUMMIT AND STATION.

### STATION RECOVERY (1937)

RECOVERED BY US FOREST SERVICE 1937  
RECOVERY CARD SUBMITTED BY LEWIS A. MC ARTHUR AND DATED 1935 GIVES ALL ESSENTIAL FACTS AND MAY BE USED WITH EXCEPTION OF LAST LINE WHICH SHOULD READ--

MEASUREMENTS ARE TO CENTER OF TOWER, WHICH IS MARKED BY U.S.F.S. DISK SET IN CONCRETE CYLINDER EXTENDING 3 FEET BELOW GROUND.

THIS POST WAS INSTALLED IN 1937 BY U.S.F.S. TO TAKE PLACE OF FORMER DISK IN SMALL ROCK WHICH WAS INADEQUATE. ON SAME CENTER.

### STATION RECOVERY (1953)

RECOVERED BY COAST AND GEODETIC SURVEY 1953 (HSC)  
THE STATION WAS RECOVERED AS DESCRIBED BY F.G.J. IN 1933 AND ALL MARKS WERE FOUND IN GOOD CONDITION. ADDITIONAL NOTES FOLLOW--

THE LOOKOUT HOUSE THAT WAS LOCATED BY F.G.J. IN 1933 HAS BEEN DESTROYED AND A NEW ONE ERECTED TO THE SOUTH OF THE OLD ONE. TRAVERSES WERE MADE TO THE MARK AT THE CENTER OF THE OLD LOOKOUT HOUSE AND TO THE NEW U.S.F.S. MARKER IN THE CENTER OF THE NEW LOOKOUT. THIS MARK IS IN POOR CONDITION AND IS NOT STAMPED.

(Continued on Next Page)

## BALD MTN

PID: PB0722

TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 98 AND STATE ROUTE 31, WHICH IS ABOUT 1 MILE SOUTH OF LAPINE, GO SOUTHEAST ON ROUTE 31 FOR 28.1 MILES TO FORT ROCK JUNCTION. CONTINUE STRAIGHT AHEAD FOR 3.9 MILES TO A SIDE ROAD RIGHT AND SIGN BALD MTN. L.O. 14 FT ON THE LEFT. TURN RIGHT AND GO 0.7 MILE TO THE ENTRANCE TO THE FREEMONT NATIONAL FOREST. CONTINUE STRAIGHT AHEAD FOR 1.9 MILES TO A CROSSROAD. CONTINUE STRAIGHT AHEAD, AS PER SIGN BALD MTN 10, FOR 0.4 MILE TO A FORK. TAKE THE LEFT ROAD AND GO 2.2 MILES TO A CROSSROAD AT EMBODY FLATS. CONTINUE STRAIGHT AHEAD FOR 0.1 MILE TO A FORK. TAKE THE LEFT ROAD AND FOLLOW THE WELLGRADED ROAD FOR 0.7 MILE TO A SIDE ROAD RIGHT AND SIGN BALD MTN L.O. 7. TURN RIGHT, FOLLOWING THE TELEPHONE LINE, AND GO 3.4 MILES TO A FORK AND SIGN BALD MTN. L.O. 3. TAKE THE RIGHT ROAD AND GO 1.4 MILES TO A FORK AND SIGN BALD MTN L.O. 2. TURN LEFT AND GO 2 MILES TO THE BALD MOUNTAIN LOOKOUT TOWER AND THE STATION.

### STATION RECOVERY (1968)

RECOVERED BY US GEOLOGICAL SURVEY 1968  
TO REACH FROM THE SCHOOL HOUSE IN SILVER LAKE, DRIVE WEST ON OREGON STATE HIGHWAY 31 FOR 1.7 MILES TO THE SILVER LAKE ROAD, TURN LEFT ON THE SILVER LAKE ROAD (PAVED) AND DRIVE FOR 4.9 MILES TO A BRIDGE AND THE END OF THE PAVEMENT, CONTINUE FOR 1.6 MILES TO USFS ROAD 2516 AND TURN RIGHT, FOLLOW USFS ROAD 2516 FOR 3.2 MILES TO A X-ROAD, CONTINUE STRAIGHT AHEAD ON USFS ROAD 2516 FOR 1.8 MILES TO A X-ROAD, CONTINUE STRAIGHT AHEAD ON USFS 2516 FOR 0.8 MILES TO A ROAD FORK, TAKE THE RIGHT FORK AND CONTINUE FOR 7.8 MILES TO A ROAD JUNCTION TO THE LEFT AND A SIGN INDICATING USFS ROAD 2516D, TURN LEFT AND DRIVE FOR 1.9 MILES TO THE TOP OF BALD MOUNTAIN AND THE STATION SITE.

RM NO. 2 WAS RECOVERED IN POOR CONDITION AND RM NO. 3 WAS ESTABLISHED. A STANDARD USGS RM TABLET STAMPED NO 3 1968, SET IN THE SW CONCRETE FOOTING OF BALD MTN. LOT, 14.673 METERS FROM THE STATION MARK IN AZIMUTH.

### STATION RECOVERY (1974)

RECOVERED BY NATIONAL GEODETIC SURVEY 1974 (CLN)  
DISTANCE BETWEEN R.M. 1, AND BALD MTN. L.O.T. CENTER 1933 IS 11.00 FEET OR 3.353 METERS.

THE STATION MARK, BOTH REFERENCE MARKS, AND THE U.S.F.S. DISK WAS RECOVERED IN GOOD CONDITION. REFERENCE MARK NO. 3 WAS ESTABLISHED. NEW DESCRIPTIONS TO THE MARKS FOLLOW.

THE STATION MARK, STAMPED BALD MT 1932, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A BOULDER THAT PROJECTS 3-INCHES, 40 FEET NORTHWEST OF THE NORTHWEST LEG OF THE LOOKOUT TOWER, 28.5 FEET EAST-NORTHEAST OF THE NORTHEAST CORNER OF THE CAR SHED, 26 FEET WEST OF THE NORTHWEST FOOTING FOR THE ORIGINAL LOOKOUT TOWER, AND 16 FEET NORTH OF THE CENTER OF THE DRIVEWAY TO THE CAR SHED. (NOTE 4)

(Continued on Next Page)



**BALD MTN**

PID: PB0722

REFERENCE MARK NO. 1, STAMPED BALD MT NO 1 1932, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN THE NORTHWEST CONCRETE FOOTING FOR THE ORIGINAL LOOKOUT TOWER, 21 FEET NORTH-NORTHWEST OF THE NORTHWEST LEG OF THE LOOKOUT TOWER.

REFERENCE MARK NO. 2, STAMPED BALD MT NO 2 1932, IS A STANDARD DISK IN A BOULDER THAT PROJECTS 7-INCHES, 43 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF THE CAR SHED, AND 31 FEET SOUTHWEST OF THE SOUTHWEST LEG OF THE LOOKOUT TOWER.

REFERENCE MARK NO. 3, STAMPED NO 3 1968, IS A U.S. GEOLOGICAL SURVEY REFERENCE MARK DISK CEMENTED IN A DRILL HOLE IN THE SOUTHWEST CONCRETE FOOTING FOR THE LOOKOUT TOWER.

BALD MTN. L.O.T. CENTER 1933 IS A U.S. DEPARTMENT OF AGRICULTURE DISK SET IN A CONCRETE CYLINDER THAT PROJECTS 2-INCHES, 11 FEET SOUTHEAST OF THE NORTHWEST FOOTING FOR THE ORIGINAL LOOKOUT TOWER.

THE TO REACH IS ADEQUATE, BUT IT IS ADVISABLE TO INQUIRE ABOUT THE ROADS AT THE DISTRICT RANGERS OFFICE TO MAKE CERTAIN ALL THE ROADS ARE PASSABLE.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
30 MILES SOUTHEAST OF LAPINE.

**STATION RECOVERY (1989)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION, RM 3, AND RM1 WERE RECOVERED IN GOOD CONDITION. RM 2 WAS FOUND LOOSE IN THE GROUND. A NEW TO REACH DESCRIPTION FOLLOWS.  
TO REACH FROM THE INTERSECTION OF HIGHWAYS 97 AND 31 GO SOUTHEAST ON HIGHWAY 31 FOR 28.32 KM (17.60 MI) , TURN RIGHT TOWARD MOWICH SPRINGS (USFS ROAD 2516) FOR 10.08 KM (6.26 MI) TO MOWICH SPRINGS CROSSROADS, CONTINUE STRAIGHT AHEAD FOR 12.8 KM (8.0 MI) TO A DIRT ROAD RIGHT (WELL MARKED WITH FLAGGING) TURN RIGHT AND GO 1.44 KM (0.89 MI) TO TOP OF HILL AND STATION.  
DESCRIBED BY L.L. RIGGERS.

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**BARKLEY**  
PID: OH1450

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 58' 58.63372"	N	±0.00010	SECONDS
LONGITUDE:	117° 14' 08.14779"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	682.36			METERS
	2238.7			FEET

GEOID HEIGHT:	-16.981			METERS
ELLIPSOIDAL HEIGHT:	665.544	±0.043		METERS
X:	248558.551			METERS
Y:	1236468.285			METERS
Z:	-6231932.898			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.6                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	262,413.290	1,761,832.881	0.99999571	+ 2 13 60.0
SPC	ID W	258,370.751	680,819.291	1.00010797	- 1 01 54.4
UTM	11	4,870,006.537	481,105.842	0.99960439	- 0 09 49.0

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . BARKLEY 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: VALE EAST

## BARKLEY

PID: OH1450

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN VALE AT THE JOHN BARKLEY MEMORIAL PARK.  
TO REACH FROM THE POST OFFICE IN VALE GO 4.5 BLOCKS EAST AND 2.5  
BLOCKS NORTH.

THE STATION IS 36.3 M (119.1 FT) NORTH OF THE CENTERLINE OF HIGHWAY  
20/26 WESTBOUND (WASHINGTON STREET), 8.2 M (26.9 FT) WEST OF THE  
CENTERLINE OF 10TH STREET N, 7.6 M (24.9 FT) SOUTH OF THE CENTERLINE  
OF THE PARKS EAST ENTRANCE AND IS SET INTO A CONCRETE POST LEVEL WITH  
THE GROUND.

DESCRIBED BY JIM KIMBERLING, MALHEUR COUNTY SURVEYOR.

**BEAVER 2**

PID: QB1252

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BAKER

LATITUDE:	44° 35' 57.79705" N	±0.00010 SECONDS
LONGITUDE:	117° 47' 02.89027" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1950.7 METERS  
6400. FEET

GEOID HEIGHT:	-15.871	METERS
ELLIPSOIDAL HEIGHT:	1934.908	±0.045 METERS
X:	3988709.963	METERS
Y:	3093631.674	METERS
Z:	3888863.941	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.42269"                    +03.79423" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO BEAVER 2 AZ MK	
						DEG	MIN SEC
SPC	OR N	107,269.821	2,715,571.441	0.99994362	+ 1 55 33.8	197	36 54.8
SPC	OR S	329,309.519	1,715,631.222	1.00020785	+ 1 51 29.0	197	40 54.8
UTM	11	4,938,748.071	437,768.900	0.99964762	- 0 33 2.1	200	05 30.7

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	BEAVER 2 RM 3	11.700 METERS	012 56
	BEAVER 2 RM 1	14.995 METERS	066 23
	BEAVER 2 RM 2	12.485 METERS	151 26
	BEAVER 2 AZ MK		199 32 28.6
QB1253	DOOLEY MOUNTAIN LOOKOUT HOUSE	APPROX. 9.1 KM	252 09 08.9
QB1257	COYOTE POINT AIRWAY BEACON	APPROX. 37.5 KM	344 36 17.8

(Continued on Next Page)

**BEAVER 2**  
 PID: QB1252

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
 WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
 THE MARK IS STAMPED . . . BEAVER NO 2 1946

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1946	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1952		LOCAL ENGINEER (INDIVIDUAL OR FIRM) (LGH)
1968		US GEOLOGICAL SURVEY (JJW)
1970		NATIONAL GEODETIC SURVEY (LFS)
1989	GOOD	NATIONAL GEODETIC SURVEY

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1946 (DHK)  
 THE STATION IS LOCATED ON THE HIGHEST POINT OF A BARE, OVAL-SHAPED MOUNTAIN. IT IS ABOUT 13 MILES AIR LINE SOUTHEAST OF BAKER, 5.6 MILES EAST OF STATE HIGHWAY 7 AND THE SUMMIT OF DIXIE MOUNTAIN PASS, 19 PACES WEST OF THE NORTHWEST LEG OF THE FOREST SERVICE OBSERVATION TOWER, SET IN A CONCRETE POST WHICH PROJECTS 6 INCHES AND IS STAMPED BEAVER NO 2 1946.

REFERENCE MARK NO. 1 IS APPROXIMATELY 2 FEET LOWER THAN THE STATION, 3 FEET NORTHWEST OF THE NORTHWEST LEG OF THE FOREST SERVICE OBSERVATION TOWER, SET IN A DEPRESSION IN A BOULDER FLUSH WITH THE GROUND AND IS STAMPED BEAVER NO 2 NO 1 1946.

REFERENCE MARK NO. 2 IS APPROXIMATELY 8 INCHES LOWER THAN THE STATION, SET IN A CONCRETE POST WHICH PROJECTS 4 INCHES AND IS STAMPED BEAVER NO 2 NO 2 1946.

ADDITIONAL MARK IS 11 PACES WEST OF A TELEPHONE LINE, 18 INCHES NORTHEAST OF A WHITE POST, SET IN A CONCRETE POST WHICH PROJECTS 4 INCHES AND IS STAMPED BEAVER NO 2 1946.

TO REACH FROM BAKER, GO SOUTH ON STATE HIGHWAY 7 FOR 15.4 MILES TO SUMMIT OF DIXIE MOUNTAIN PASS AND INTERSECTION OF THREE DIRT ROADS ON LEFT. TURN LEFT (E) ON CENTER ROAD CROSSING CATTLE GUARD, AND GO 2.5 MILES TO A ROAD LEFT. CONTINUE STRAIGHT AHEAD ON THE MAIN TRAVELED ROAD FOR 2.3 MILES TO A Y INTERSECTION. TAKE LEFT FORK FOR 0.8 MILE TO SUMMIT OF MOUNTAIN AND STATION AS DESCRIBED. ADRIVE STATION.

**STATION RECOVERY (1952)**

RECOVERED BY LOCAL ENGINEER (INDIVIDUAL OR FIRM) 1952 (LGH)  
 LETTER OF MR. L. G. HASKELL, CHIEF ENGR., SALT LAKE PIPE LINE CO., SALT LAKE CITY, UTAH DATED OCTOBER 13, 1952--

REFERENCE MARK NO. 2 WAS DESTROYED DUE TO CONSTRUCTION OF A RADIO RELAY STATION ON BALD RIDGE.

(Continued on Next Page)

## BEAVER 2

PID: OB1252

REFERENCE MARK DISK STAMPED BEAVER NO 2 NO 1 1946 RECEIVED AT THIS OFFICE 11/6/52.

### STATION RECOVERY (1968)

RECOVERED BY US GEOLOGICAL SURVEY 1968 (JJW)  
ALL MARKS WERE FOUND AS DESCRIBED AND IN GOOD CONDITION EXCEPT FOR RM 1 WHICH WAS DESTROYED.

LOCATED ABOUT 13 MI. S. OF BAKER AND 8 MI. N. OF BRIDGEPORT, ON THE NORTHERN AND HIGHEST OF TWO GRASSY KNOBS KNOWN AS BEAVER RIDGE. STATION IS 0.5 MI. N. OF A LARGE RADAR DOME.

TO REACH FROM THE POST OFFICE AT BAKER, GO S. 15.4 MI. ALONG STATE HIGHWAY 7 TO SUMMIT OF DOOLEY MTN.. TURN LEFT ONTO GRAVEL RD. LEADING TO RADAR INSTALLATIONS AND GO 2.5 MI. TO A CROSSROAD. CONTINUE ON MAIN RD. FOR 1.7 MI. TO A Y-RD. POSTED EAST END DIVIDE. TAKE LEFT FORK AND CONTINUE N. 0.8 MI. TO TOP OF RIDGE TO STEEL FENCE AND LOCKED GATE AND STATON. STATION IS INSIDE THIS STEEL FENCE ENCLOSURE AND PERMISSION TO ENTER THE RESTRICTED AREA MUST BE OBTAINED FROM THE BAKER AIR FORCE BASE.

REFERENCE MARK NO. 3--A STANDARD USGS REFERENCE MARK STAMPED NO 3 1968 SET IN A CONCRETE POST, AND IS 1.8 FT. BELOW STATION MARK.

### STATION RECOVERY (1970)

RECOVERED BY NATIONAL GEODETIC SURVEY 1970 (LFS)  
THE STATION MARK, REFERENCE MARK NO. 2, AND THE AZIMUTH MARK WERE RECOVERED IN GOOD CONDITION. REFERENCE MARK NO. 1 HAD BEEN DESTROYED. REFERENCE MARK NO. 3 WAS ESTABLISHED. LANDMARKS HAVE CHANGED. A NEW AND COMPLETE DESCRIPTION FOLLOWS.

THE STATION IS 13 MILES SOUTH OF BAKER, AND 3/4 MILE NORTHEAST OF THE BAKER RADAR DOME ON A BARE ROCKY RIDGE OF GOVERNMENT OWNED LAND.

TO REACH THE STATION FROM THE BAKER POST OFFICE GO SOUTH ON STATE HIGHWAY 7 FOR 16.9 MILES TO A CROSSROAD ON THE SUMMIT OF DOOLEY MOUNTAIN, AND SIGN, BAKER AFB, TURN LEFT AS PER SIGN, AND GO EAST ON THE DIRT ROAD FOR 2.4 MILES TO THE JUNCTION OF FIVE ROADS, CONTINUE STRAIGHT AHEAD, EASTERLY, FOR 1.9 MILES TO A FORK, TAKE THE LEFT FORK AS PER SIGN, RADAR STATION, AND GO NORTHWEST 0.8 MILE TO A GATE, PASS THRU THE GATE, AND GO NORTH ON THE MACADAM ROAD FOR 0.5 MILE TO THE AZIMUTH MARK ON THE RIGHT, CONTINUE NORTHEAST FOR 0.25 MILE TO THE CINDER BLOCK BUILDING, AND THE STATION.

(Continued on Next Page)

## BEAVER 2

PID: QB1252

THE STATION MARK, STAMPED BEAVER NO 2 1946, IS A STANDARD DISK SET IN A 10-INCH SQUARE CONCRETE MONUMENT THAT PROJECTS 5 INCHES, 79 FEET SOUTH OF THE EAST-WEST FENCE LINE, 63 FEET SOUTHWEST OF THE NORTHWEST CORNER OF THE CINDER BLOCK BUILDING, 25 FEET WEST OF THE EDGE OF THE CUT, AND 2 FEET SOUTH OF A METAL WITNESS POST. (NOTE 1A)

REFERENCE MARK NO. 2, STAMPED BEAVER NO 2 NO 2 1946, IS A STANDARD DISK SET IN A 10-INCH SQUARE CONCRETE MONUMENT THAT PROJECTS 2 INCHES, 64 FEET SOUTH-SOUTHWEST OF THE NORTHWEST CORNER OF THE CINDER BLOCK BUILDING, 42 FEET SOUTH-SOUTHEAST OF THE WITNESS POST, AND 5 FEET WEST OF THE EDGE OF THE CUT. (NOTE 11A)

REFERENCE MARK NO. 3, STAMPED NO 3 1968, IS A U.S. GEOLOGICAL SURVEY DISK SET IN A CYLINDRICAL CONCRETE MONUMENT THAT IS 6-INCHES IN DIAMETER AND PROJECTS 3 INCHES, 59 FEET NORTHWEST OF THE NORTHWEST CORNER OF THE CINDER BLOCK BUILDING, 41 FEET SOUTH OF THE EAST-WEST FENCE LINE, AND 39 FEET NORTH OF THE WITNESS POST.

THE AZIMUTH MARK, STAMPED BEAVER NO 2 1946, IS A STANDARD DISK SET IN A 10-INCH SQUARE CONCRETE MONUMENT THAT PROJECTS 3 INCHES, 200 FEET EAST OF THE MACADAM ROAD, 29 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF A CINDER BLOCK BUILDING, AND 2 FEET NORTHEAST OF A WITNESS POST. (NOTE 16A)

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
13 MILES SOUTH OF BAKER.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

THE STATION IS LOCATED ABOUT 49 KM (30.45 MI) WEST OF THE JUNCTION OF STATE HIGHWAY 7 AND U.S. HIGHWAY 26 AND 27.7 KM (17.20 MI) SOUTH OF BAKER. OWNERSHIP--(ASSUMED) U.S. FOREST SERVICE.  
TO REACH THE STATION FROM THE INTERSECTION OF HIGHWAYS 7 AND 30, IN BAKER, GO SOUTH ON HIGHWAY 7 FOR 15.1 KM (9.40 MI) TO A ROAD FORK. BEAR LEFT ONTO HIGHWAY 245 AND GO 12.5 KM (7.75 MI) TO DOOLEY MTN SUMMIT AND SIDE ROAD LEFT. TURN LEFT ONTO FOREST SERVICE ROAD 11, TO EBELL CREEK, CROSS CATTLE GUARD AND GO FOR 1.9 KM (1.20 MI) TO FOREST SERVICE ROAD 1120, TRAIL CREEK ROAD. CONTINUE AHEAD ON FOREST SERVICE ROAD 11 FOR 1.9 KM (1.20 MI) TO A 5 WAY FORK. CONTINUE STRAIGHT AHEAD ON FOREST SERVICE ROAD 11 FOR 2.9 KM (1.80 MI) TO FOREST SERVICE ROAD 210. CONTINUE AHEAD ON FOREST SERVICE ROAD 11 AND GO DOWNHILL 0.32 KM (0.20 MI) TO A CATTLE GUARD. CONTINUE AHEAD FOR 0.5 KM (0.30 MI) TO A ROAD FORK, BEAR LEFT, LEAVING FOREST SERVICE ROAD 11, AND GO UPHILL FOR 0.6 KM (0.35 MI) TO A CROSSROADS. BEAR RIGHT ONTO FOREST SERVICE ROAD 209 AND GO UPHILL FOR 0.64 KM (0.40 MI) TO TOP OF HILL AND A BUILDING. THE STATION IS ABOUT 26 M (85.3 FT) BEYOND THE BUILDING TO THE WEST-NORTHWEST AND ON HIGHEST PART OF HILL.  
LOCATED 25.9 M (85.0 FT) WEST-NORTHWEST OF THE BUILDING AND UNDERNEATH GUY WIRES WHICH ARE ABOUT ONE METER ABOVE THE STATION. NOTE - SETUP REQUIRES USE OF 8-FOOT TRIPOD.



**BEAVER MARSH**

PID: PB0632

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: KLAMATH

LATITUDE:	43° 08' 00.33708" N	±0.00010 SECONDS
LONGITUDE:	121° 48' 17.21915" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	1412.87	METERS
	4635.4	FEET

GEOID HEIGHT:	-19.914	METERS
ELLIPSOIDAL HEIGHT:	1392.663	±0.044 METERS
X:	1566458.240	METERS
Y:	2750428.063	METERS
Z:	-5520386.977	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.53212"            +04.06925" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO MARSH
						DEG MIN SEC
SPC	OR S	163,757.944	1,393,852.689	0.99989480	- 0 53 33.6	185 19 31.4
UTM	10	4,776,325.075	597,209.570	0.99971625	+ 0 49 2.0	183 36 55.8

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
PB0630	BEAVER MARSH RM 1	29.520 METERS	177 32
	MARSH	453.933 METERS	184 25 57.8
PB0374	T 61		189 59 33.2
	BEAVER MARSH RM 2	23.266 METERS	311 10

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . BEAVER MARSH 1953

(Continued on Next Page)

## BEAVER MARSH

PID: PB0632

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1953	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1971		NATIONAL GEODETIC SURVEY (WMLJ)
1988	GOOD	NATIONAL GEODETIC SURVEY
1989	GOOD	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1953 (HSC)  
THE STATION IS LOCATED AT THE BEAVER MARSH AIRPORT WHICH IS  
WEST OF U.S. HIGHWAY 97 AT THE SMALL SETTLEMENT OF BEAVER MARSH.

THE STATION MARK IS STAMPED BEAVER MARSH 1953. IT IS A STANDARD  
DISK SET IN A CONCRETE MONUMENT THAT IS FLUSH WITH THE GROUND  
LEVEL, 51 FEET NORTHEAST OF THE AIRPORT BEACON, 45 FEET SOUTHWEST  
OF A FENCE CORNER AND 33 FEET WEST NORTHWEST OF A WITNESS POST.

REFERENCE MARK 1 IS STAMPED BEAVER MARSH NO 1 1953. IT IS A  
STANDARD DISK SET IN A CONCRETE MONUMENT THAT PROJECTS 2 INCHES  
AND IS IN FENCE LINE 25 FEET SOUTH OF A GATE.

REFERENCE MARK 2 IS STAMPED BEAVER MARSH NO 2 1953. IT IS A  
STANDARD DISK SET IN A CONCRETE MONUMENT THAT PROJECTS 2 INCHES  
AND IS IN A FENCELINE.

THE AZIMUTH MARK WHICH IS A STANDARD BENCH MARK IS SET IN A  
SQUARE CONCRETE MONUMENT THAT PROJECTS 8 INCHES. IT IS 30 FEET  
EAST OF THE CENTER LINE OF U.S. HIGHWAY 97, 75 FEET NORTHEAST OF  
HIGHWAY MARKER NO.214 AND 3 FEET SOUTHEAST OF A WITNESS  
POST. THE MARK IS STAMPED T 61 1931.

HEIGHT OF LIGHT ABOVE STATION MARK 22.27 METERS.

### STATION RECOVERY (1971)

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (WMLJ)  
THE STATION MARK AND REFERENCE MARKS ONE AND TWO WERE RECOVERED  
IN GOOD CONDITION AS DESCRIBED IN 1953. U.S.C. AND G.S. BENCH  
MARK T 61 USED AS THE AZIMUTH MARK IN 1953 WAS FOUND  
DESTROYED. TRIANGULATION STATION MARSH MAY NOW BE USED AS AN  
AZIMUTH MARK. DIRECTION BETWEEN THE REFERENCE MARKS COMPARED  
FAVORABLY WITH THE 1953 DATUM. A DISTANCE .011 METER LONGER WAS  
NOTED TO REFERENCE MARK NUMBER ONE AND DOUBLE CHECKED IN THE  
FIELD. A COMPLETE DESCRIPTION FOLLOWS--

THE STATION IS LOCATED ON THE STATE-OWNED AIRSTRIP IN THE SMALL  
COMMUNITY OF BEAVER MARSH.

(Continued on Next Page)

## BEAVER MARSH

PID: PB0632

TO REACH THE STATION GO WEST 0.1 MILE ON THE GRAVELED ROAD JUST SOUTH OF MILLER CREEK, ALONG THE SOUTH SIDE OF SOME TRAILER HOMES, TO THE AIRSTRIP AND THE MARK JUST NORTH OF THE ENTRANCE GATE.

THE STATION MARK IS A STANDARD DISK STAMPED BEAVER MARSH 1953 CEMENTED IN THE TOP OF A 12-INCH DIAMETER CYLINDRICAL CONCRETE MONUMENT SET FLUSH WITH THE GROUND SURFACE. IT IS 63 FEET NORTHWEST OF THE NORTH GATE POST OF THE ENTRANCE GATE, 51 FEET NORTH OF THE CENTER OF THE AIRPORT BEACON TOWER, AND 45 FEET SOUTHWEST OF A FENCE CORNER POST IN THE PROPERTY FENCE.

REFERENCE MARK NUMBER ONE IS A STANDARD DISK STAMPED BEAVER MARSH NO 1 1953 CEMENTED IN THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT FLUSH WITH THE SURFACE OF THE GROUND. IT IS 38 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF THE BEACON POWER HOUSE, 24.7 FEET SOUTH OF THE SOUTH GATE POST OF THE ENTRANCE GATE, AND AT ABOUT THE SAME ELEVATION AS THE STATION.

REFERENCE MARK NUMBER TWO IS A STANDARD DISK STAMPED BEAVER MARSH NO 2 1953 CEMENTED IN THE TOP OF A 10-INCH SQUARE CONCRETE MONUMENT FLUSH WITH THE SURFACE OF THE GROUND. IT IS 87 FEET NORTH-NORTHWEST OF THE NORTHWEST LEG OF THE BEACON TOWER AND 1 FOOT SOUTH OF THE EAST-WEST PROPERTY FENCE, AT ABOUT THE SAME ELEVATION AS THE STATION.

STATION MARSH WHICH MAY BE USED AS AN AZIMUTH MARK IS 0.3 MILE SOUTH ON THE WEST SIDE OF U.S. HIGHWAY 97. IT IS A STANDARD TRIANGULATION STATION DISK STAMPED MARSH 1971 CEMENTED IN THE TOP OF A 12-INCH DIAMETER CYLINDRICAL CONCRETE MONUMENT PROJECTING 3 INCHES ABOVE THE GROUND. IT IS 65 FEET WEST OF THE CENTERLINE OF U.S. HIGHWAY 97 AND 4 FEET NORTHEAST OF A METAL WITNESS POST WITH SIGN.

HEIGHT OF LIGHT ABOVE STATION MARK 1 FOOT.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN AT THE SOUTHWEST EDGE OF BEAVER MARSH.

### STATION RECOVERY (1988)

RECOVERED BY NATIONAL GEODETIC SURVEY 1988  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

### STATION RECOVERY (1989)

RECOVERED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989  
POINT IS LOCATED AT THE STATE AIRPORT IN BEAVER MARSH.  
TO REACH FROM THE GROCERY STORE IN BEAVER MARSH, FOLLOW HIGHWAY 97 SOUTH 0.1 KM (0.1 MI) , TURN WEST ONTO GRAVEL LANE AND FOLLOW IT 0.1 KM (0.1 MI) TO THE AIRPORT BEACON TOWER. THE STATION IS 15.24 M (50.00 FT) NE. A WITNESS POST IS ALONGSIDE.  
DESCRIBED BY D.K. BATEMAN OF DAVID EVANS AND ASSOCIATES.

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991  
USGS QUAD SHEET: STEELHEAD FALLS

**BIG FALLS**  
PID: QD1711

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DESCHUTES

LATITUDE:	44° 23' 31.36580" N	
LONGITUDE:	121° 17' 46.93527" W	
ORTHOMETRIC HEIGHT:	{ 891.5 2925.	METERS FEET
GEOID HEIGHT:	-20.023	METERS
ELLIPSOIDAL HEIGHT:	871.266	METERS
X:	653240.611	METERS
Y:	1937239.273	METERS
Z:	-6022291.207	METERS

HORIZONTAL NETWORK ORDER: A  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.58220"                    +04.14527" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES				CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO BIG FALLS AZ MK 2 DEG MIN SEC
		NORTHING METERS	EASTING METERS	POINT SCALE FACTOR			
SPC	OR S	303,070.5	1,436,541.3	1.00012336	- 0 32 41.4	246 03 00.8	
SPC	OR N	80,919.5	2,436,550.1	0.99998573	- 0 33 53.2	246 04 12.6	
UTM	10	4,916,829.4	635,684.8	0.99982641	+ 1 11 31.1	244 18 48.3	

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
QD1884	BIG FALLS RM 1	3.523 METERS	117 35
QD1724	TERREBONNE DICALITE CARBON TK	APPROX. 4.1 KM	178 24 59.1
	BIG FALLS AZ MK		187 35 38.1
	BIG FALLS AZ MK 2		245 30 19.4
QD1885	BIG FALLS RM 2	6.499 METERS	257 07
QD1714	BIG FALLS RM A	26.405 METERS	288 30

(Continued on Next Page)

**BIG FALLS**  
PID: QD1711

STATION MARK IS A .... HORIZONTAL CONTROL DISK  
WITH SETTING ..... DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED ... BIG FALLS 1945

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1945	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1971		NATIONAL GEODETIC SURVEY (LDF)
1974		NATIONAL GEODETIC SURVEY (JDS)
1976		NATIONAL GEODETIC SURVEY (CLN)
1989	GOOD	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)

**STATION DESCRIPTION**

**DESCRIBED BY COAST AND GEODETIC SURVEY 1945**

THE STATION IS LOCATED ON THE SUMMIT OF A BARE HILL ABOUT 2 MILES NORTH OF THE BIG FALLS AND 2.5 MILES NORTH OF THE DICOLITE MINES AT LOWER FALLS. IT IS SET IN A ROCK OUTCROPPING WITH AN EXPOSED SURFACE OF ABOUT 6 BY 7 FEET AND IS FLUSH WITH THE GROUND SURFACE. IT IS STAMPED BIG FALLS 1945.

REFERENCE MARK NO. 1 IS SET IN A LARGE BOULDER THAT PROJECTS ABOUT 2.5 FEET AND IS ABOUT 1 FOOT ABOVE STATION ELEVATION. IT IS STAMPED BIG FALLS NO 1 1945.

REFERENCE MARK NO. 2 IS SET IN A LARGE BOULDER THAT PROJECTS ABOUT 3 FEET AND IS ABOUT 2.5 FEET ABOVE STATION ELEVATION. IT IS STAMPED BIG FALLS NO 2 1945.

AZIMUTH MARK IS 23 FEET EAST OF AN INTERSECTION OF TWO TRACK ROADS AND 3.5 FEET EAST OF A 4 BY 4 INCH WHITE WITNESS POST. IT IS A STANDARD DISK BRAZED TO THE TOP OF A 2 INCH CAST IRON SOIL PIPE THAT PROJECTS 8 INCHES. IT IS STAMPED BIG FALLS 1945.

TO REACH THE STATION FROM THE POST OFFICE IN TERREBONE, GO NORTH ON U.S. HIGHWAY NO. 97 FOR 0.6 MILE TO A PAVED ROAD LEFT, WEST, GO WEST ON PAVED ROAD FOR 6.3 MILES TO THE SOUTH END OF A BRIDGE ACROSS THE DESCHUTES RIVER. TURN RIGHT AFTER CROSSING BRIDGE AND FOLLOW THE MAIN TRAVELED ROAD DOWN THE WEST SIDE OF THE RIVER FOR 1.6 MILES TO TOP OF A GRADE AND A WIRE GATE ON THE RIGHT, TURN RIGHT THROUGH WIRE GATE, BY AN OLD BUILDING WITH A FALSE FRONT, AND GO 0.15 MILE, PASS THROUGH GATE AT HAYSTACK AND TURN LEFT, NORTH, AND GO 1.35 MILES TO A FORK, \* SEE BELOW, TAKE LEFT FORK AND GO 0.5 MILE TO A FENCE CORNER AND A SALT LICK. TURN LEFT THROUGH GATE AND CONTINUE, NORTH, CROSSCOUNTRY FOR 0.35 MILE TO FOOT OF HILL AND THE END OF TRUCK TRAVEL, PACK NORTHERLY UP HILL TO THE SUMMIT AND THE STATION AS DESCRIBED.

\*THE AZIMUTH MARK IS SET AT THIS JUNCTION AS DESCRIBED IN DESCRIPTION.

(Continued on Next Page)

## BIG FALLS

PID: QD1711

### STATION RECOVERY (1971)

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (LDF)  
STATION MARK, REFERENCE MARKS 1 AND 2 WERE RECOVERED AND FOUND IN GOOD CONDITION. THE AZIMUTH MARK WAS SEARCHED FOR BUT WAS NOT FOUND. A NEW AZIMUTH MARK WAS ESTABLISHED AT THIS TIME. A LONGER DISTANCE WAS NOTED TO BOTH REFERENCE MARKS AND WAS CHECKED IN THE FIELD.

STATION IS LOCATED ABOUT 14-1/2 MILES NORTHEAST OF SISTERS, 10 MILES NORTHWEST OF REDMOND AND 6-1/2 MILES NORTHWEST OF TERREBONNE AND IS ON PROPERTY OF MR. DONALD WILLIAMS WHO LIVED IN THE FARM HOUSE MENTIONED IN THE TO REACH.

TO REACH FROM THE POST OFFICE IN TERREBONNE, GO NORTH ON U.S. HIGHWAY 97 FOR 0.5 MILE TO A PAVED ROAD ON THE LEFT. TURN LEFT AND GO WEST ON LOWER BRIDGE WAY FOR 6.3 MILES TO A BRIDGE OVER THE DESCHUTES RIVER. CONTINUE WEST ON THE PAVED ROAD FOR 4.6 MILES TO WHERE THE PAVED ROAD TURNS SHARP TO THE LEFT. KEEP RIGHT AND CONTINUE NORTH ON A GRAVEL ROAD FOR 0.4 MILE TO A SIDE ROAD RIGHT WHICH LEADS TO A FARM HOUSE. TURN RIGHT AND GO EAST ON THE ROAD FOR 0.2 MILE TO A WIRE GATE JUST EAST OF THE FARM HOUSE. (MR. DONALD WILLIAMS WHO OWNS THE PROPERTY WHERE THE STATION IS LOCATED, LIVES IN THE FARM HOUSE.) PASS THROUGH THE GATE AND GO EAST ON TRACK ROAD THROUGH FIELD FOR 0.5 MILE TO A FORK. KEEP THE RIGHT FORK AND CONTINUE EAST ON A TRACK ROAD FOR 0.7 MILE TO SOME OLD BUILDINGS AND A TRACK ROAD RIGHT. TURN RIGHT AND GO SOUTH ON A TRACK ROAD FOR 0.1 MILE TO A WIRE GATE. PASS THROUGH THE GATE AND GO ABOUT 100 FEET TO A TRACK ROAD ON THE LEFT. BEAR LEFT AND FOLLOW TRACK ROAD, UPHILL, FOR 0.3 MILE TO THE TOP OF A RIDGE. CONTINUE EAST ON A TRACK ROAD FOR 0.5 MILE TO A SADDLE. (TO REACH THE AZIMUTH MARK, BEAR RIGHT AND GO SOUTH, ACROSS COUNTRY FOR 0.1 MILE TO THE TOP OF A RIDGE AND THE MARK.) CONTINUE EAST ON THE TRACK ROAD FOR 0.5 MILE TO WHERE THE TRACK ROAD BEARS TO THE RIGHT. TURN RIGHT AND FOLLOW THE TRACK ROAD SOUTH, UPHILL, FOR 0.05 MILE TO THE TOP OF A RIDGE AND THE STATION.

STATION MARK IS A STANDARD DISK, STAMPED BIG FALLS 1945, CEMENTED IN A DRILL HOLE IN AN OUTCROP WHICH IS FLUSH WITH THE GROUND SURFACE. IT IS 120 FEET SOUTH OF A LONE TREE AND ON THE HIGHEST PART OF THE HILL.

REFERENCE MARK 1 IS A STANDARD DISK, STAMPED BIG FALLS NO 1 1945, CEMENTED IN A DRILL HOLE IN THE TOP OF A BOULDER WHICH PROJECTS ABOUT 18 INCHES ABOVE THE GROUND SURFACE. IT IS 122 FEET SOUTH OF THE TREE AND ABOUT 1 FOOT HIGHER THAN THE STATION.

REFERENCE MARK 2 IS A STANDARD DISK, STAMPED BIG FALLS NO 2 1945, CEMENTED IN A DRILL HOLE IN A BOULDER WHICH PROJECTS ABOUT 2 FEET. IT IS 133 FEET SOUTHWEST OF THE LONE TREE AND ABOUT 2 FEET HIGHER THAN THE STATION.

(Continued on Next Page)

## BIG FALLS

PID: QD1711

RM A IS A STANDARD DISK, STAMPED BIG FALLS 1945 RM A 1971, CEMENTED IN A DRILL HOLE IN AN OUTCROP WHICH PROJECTS ABOUT 2 INCHES ABOVE THE GROUND SURFACE. IT IS ON THE HIGHEST PART OF THE HILL AND ABOUT 149 FEET SOUTHWEST OF THE TREE AND ABOUT 2 FEET LOWER THAN THE STATION.

AZIMUTH MARK IS A STANDARD DISK, STAMPED BIG FALLS 1945 1971, CEMENTED IN A DRILL HOLE IN AN OUTCROP WHICH PROJECTS ABOUT 6 INCHES ABOVE THE GROUND SURFACE ON THE NORTH AND IS FLUSH ON THE SOUTH. IT IS ON THE EAST END OF THE RIDGE AND 16.6 FEET NORTH OF A METAL WITNESS POST.

THE DISTANCE BETWEEN REFERENCE MARK 1 AND 2 IS 31.05 FEET OR 9.465 M.

THE STATION IS IN THE NORTHEAST 1/4 OF SECTION 4, T 14 S, R 12 E.  
HEIGHT OF LIGHT ABOVE STATION MARK 33 FEET.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
6-1/2 MILES NORTHWEST OF TERREBONNE.

### STATION RECOVERY (1974)

RECOVERED BY NATIONAL GEODETIC SURVEY 1974 (JDS)  
THE STATION MARK, REFERENCE MARKS 1, 2, BIG FALLS 1945 RM A 1971 AND THE AZIMUTH MARK WERE RECOVERED IN GOOD CONDITION AS DESCRIBED IN 1971 BY L. D. FAIR. THE TO REACH IS ADEQUATE AND THE PROPERTY OWNER IS THE SAME, MR. DONALD WILLIAMS WHO LIVES ENROUTE TO THE STATION.

THE DIRECTIONS TO ALL MARKS CHECKED THE 1971 DATA WITH THE EXCEPTION OF REFERENCE MARK 1 WHICH WAS LOCATED TOO CLOSE TO STATION TO FOCUS ON CLEARLY WITH THE INSTRUMENT. THE DISTANCE TO REFERENCE MARK 1 AND REFERENCE MARK A CHECKED THE 1971 DATA. THE DISTANCE TO REFERENCE MARK 2 WAS SHORTER BY 0.05 FOOT OR 0.014 METERS ALTHOUGH THIS DISTANCE CHECKS THE 1945 DATA.

THIS STATION WAS USED AS GEOCEIVER STATION 51066, FOR SATELLITE OBSERVATION.

HEIGHT OF LIGHT ABOVE STATION MARK 4.27 FEET.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
6.5 MILES NORTHWEST OF TERREBONNE.

### STATION RECOVERY (1976)

RECOVERED BY NATIONAL GEODETIC SURVEY 1976 (CLN)  
THE STATION MARK, BOTH REFERENCE MARKS, AND THE AZIMUTH MARK ESTABLISHED IN 1971 WERE RECOVERED IN GOOD CONDITION. THE RECOVERY NOTE SUBMITTED BY L.D.F. IS CORRECT, AND ADEQUATE.

(Continued on Next Page)



## BIG FALLS

PID: QD1711

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
6-1/2 MILES NORTHWEST OF TERREBONNE.

THE STATION MARK, REFERENCE MARKS 1, 2, BIG FALLS 1945 RM A 1971 AND THE AZIMUTH MARK WERE RECOVERED IN GOOD CONDITION AS DESCRIBED BY L.D. FAIR IN 1971 AND J.D. SWINNEY IN 1974. THE TO REACH IS ADEQUATE AND THE PROPERTY OWNER, MR. DONALD WILLIAMS, IS THE SAME AND LIVES ENROUTE TO THE STATION.

THE DISTANCES AND DIRECTIONS TO ALL MARKS CHECKED WITH THE 1974 DATA.

RM 1 IS TOO CLOSE TO THE STATION TO FOCUS CLEARLY.

THIS STATION WAS USED AS GEOCEIVER STATION 52066, FOR SATELLITE OBSERVATION.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
6.5 MILES NW OF TERREBONNE.

### STATION RECOVERY (1989)

RECOVERED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989  
RECOVERED IN GOOD CONDITION. A NEW TO REACH DESCRIPTION FOLLOWS.  
TO REACH FROM TERREBONE, TRAVEL NORTH ON HIGHWAY 97 FOR 0.96 KM  
(0.60 MI) , TURN WEST ONTO LOWER BRIDGE ROAD AND FOLLOW IT WEST  
ACROSS THE DESCHUTES RIVER AND NORTHERLY 17.8 KM (11.1 MI) TO A FARM  
LANE, FOLLOW FARM LANE NORTHEAST 0.32 KM (0.20 MI) TO THE FARM HOME  
OF DONALD WILLIAMS. OBTAIN PERMISSION HERE OR THE DWELLING 1000 FEET  
SOUTH. FOLLOW FARM LANE NE PASSING THRU N-S FENCE AT 0.8 KM  
(0.5 MI) . TURN RIGHT AT Y 0.16 KM (0.10 MI) , BEYOND THIS FENCE AND  
GO DOWNHILL 0.32 KM (0.20 MI) TO A DITCH. FOLLOW THIS DITCH EASTERLY  
0.64 KM (0.40 MI) TO AN OLD HOMESTEAD, TURN RIGHT AT HOMESTEAD FOR  
0.16 KM (0.10 MI) TO A N-S FENCE. THIS TRACK ROAD YS 100 FEET  
BEYOND THE FENCE, TAKE THE LEFT FORK, WHICH IS DIFFICULT TO SEE, AND  
FOLLOW IT 2.4 KM (1.5 MI) TO THE STATION.  
DESCRIBED BY DAVID BATEMAN OF DAVID EVANS AND ASSOCIATES.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991  
USGS QUAD SHEET: CABBAGE HILL

### BIG HILL RESET

PID: RB1488

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: UMATILLA

LATITUDE:	45° 35' 58.22343" N
LONGITUDE:	118° 31' 48.55294" W

ORTHOMETRIC HEIGHT: { 1168.8 METERS  
3835. FEET

GEOID HEIGHT:	-18.459	METERS
ELLIPSOIDAL HEIGHT:	1150.453	METERS
X:	3553074.126	METERS
Y:	-3174201.382	METERS
Z:	-4227907.864	METERS

HORIZONTAL NETWORK ORDER: A  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.53174" +03.89118" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES				*GRID AZIMUTH TO BIG HILL AZ MK DEG MIN SEC
		NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	
SPC	OR N	216,656.2	2,653,660.9	0.99992282	+ 1 23 49.2	231 54 25.8
UTM	11	5,050,690.1	380,665.0	0.99977508	- 1 05 36.1	234 23 51.1

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

#### STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	BIG HILL WM IN TREE W	21.800 METERS	001 09
	BIG HILL RM OLD	59.620 METERS	010 24
	BIG HILL WM IN TREE E	20.700 METERS	014 27
	BIG HILL RM	19.090 METERS	020 18
RB1505	BIG HILL RM 2	19.117 METERS	020 35
RB1361	DEADMAN PASS ORFS RADIO MAST	APPROX. 0.6 KM	091 26 16.8
RB1504	BIG HILL AZ MK		233 18 15.0
RB1360	AIRWAY BCN 48 SE OF PENDLETON	APPROX. 4.0 KM	253 49 03.5
RB1506	BIG HILL RM 3	21.219 METERS	276 23

STATION MARK IS A .... TRIANGULATION STATION DISK  
WITH SETTING ..... TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED ... BIG HILL 1916 1963

(Continued on Next Page)

## BIG HILL RESET

PID: RB1488

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1963	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY NATIONAL GEODETIC SURVEY 1989

TEXT WAS SUPERSEDED BY LATER RECOVERY.

THE STATION IS LOCATED ABOUT 22.5 KM (14.0 MI) SOUTHEAST OF PENDLETON, 15.3 KM (9.5 MI) SOUTHEAST OF MISSION, 15.3 KM (9.5 MI) NORTHWEST OF MEACHAM AND ON A LOW BARE HILL WITH SPARSE PINES ON THE NORTH SLOPE. TO REACH FROM THE JUNCTION OF INTERSTATE HIGHWAY 84 AND STATE ROUTE 11 IN PENDLETON, GO SOUTHEAST ON INTERSTATE HIGHWAY 84 FOR 28.49 KM (17.70 MI) TO THE DEAD MANS PASS EXIT, TURN RIGHT ON THE EXIT RAMP FOR 0.08 KM (0.05 MI) TO A T-INTERSECTION. TURN LEFT, PASSING UNDER THE HIGHWAY FOR 0.20 KM (0.12 MI) TO A STOP SIGN. CONTINUE WESTERLY ON THE OLD ALIGNMENT OF THE HIGHWAY FOR 2.90 KM (1.80 MI) TO A SIDE ROAD RIGHT. TURN SHARP FOR 0.08 KM (0.05 MI) TO A FORK. TAKE THE RIGHT FORK AND GO EASTERLY FOR 0.32 KM (0.20 MI) TO A FORK. TAKE THE RIGHT FORK AND CONTINUE EASTERLY FOR 0.32 KM (0.20 MI) TO THE HIGHEST POINT AND THE STATION.

THE MARK IS SET IN THE TOP OF AN IRREGULAR MASS OF CONCRETE THAT PROJECTS 15 CM (6 INCHES) ABOVE THE GROUND SURFACE. IT IS 26.5 M (86.9 FT) NORTHEAST OF THE NORTHEAST CORNER OF A METAL BUILDING AND 1.7 M (5.6 FT) NORTHWEST OF A WITNESS POST.

DEPARTMENT OF COMMERCE  
 NOAA - NOS - C&GS  
 NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
 USGS QUAD SHEET: SIXES

**BLCO**  
 PID: OA1625

HORIZONTAL DATUM: NAD 83 (1991)  
 VERTICAL DATUM: NGVD 29

STATE: OREGON  
 COUNTY: CURRY

LATITUDE:	42° 48' 03.95462"	N	±0.00010	SECONDS
LONGITUDE:	124° 29' 08.58357"	W	±0.00020	SECONDS

ORTHOMETRIC HEIGHT: { 52.0 METERS  
 170. FEET

GEOID HEIGHT:	-25.364		METERS
ELLIPSOIDAL HEIGHT:	26.214	±0.055	METERS
X:	6347953.075		METERS
Y:	438840.043		METERS
Z:	436942.671		METERS

HORIZONTAL NETWORK ORDER: B  
 ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
 NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	133,772.042	1,174,105.135	0.99991506	- 2 43 36.5
UTM	10	4,739,797.878	378,510.655	0.99978158	- 1 00 34.6

STATION MARK IS A . . . . SURVEY DISK  
 WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
 THE MARK IS STAMPED . . . BLCO 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**BLCO**  
PID: OA1625

### STATION DESCRIPTION

**DESCRIBED 1989**

STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED BLCO 1989 SET IN THE TOP OF A MASS OF CONCRETE 30 CENTIMETERS IN DIAMETER FLUSH WITH THE GROUND.

THE STATION IS LOCATED ON THE EAST SIDE OF U.S. HIGHWAY 101 AT A POINT 7.24 KM (4.50 MI) NORTH OF PORT ORFORD, OREGON. THE STATION IS ADJACENT TO MCKENZIE ROAD, WHICH GOES TO CAPE BLANCO.

TO REACH FROM THE INTERSECTION OF JACKSON STREET AND US 101 (1 BLOCK SOUTH OF THE POST OFFICE) GO WEST THEN NORTH ON US 101 FOR 6.4 KM (4.0 MI) TO MILE POST 297 ON THE LEFT, CONTINUE NORTH .16 KM

(0.10 MI) TO THE STATION ON THE RIGHT AND MCKENZIE ROAD ON THE LEFT. THE STATION IS 24.7 M (81.0 FT) EAST OF THE CENTERLINE US 101, 16.8 M (55.1 FT) SOUTH OF RIGHT OF WAY POINT 1183+36.99, 15.6 M (51.2 FT) SOUTH OF THE CENTERLINE OF MCKENZIE ROAD EXTENDED AND 0.7 M (2.3 FT) WEST OF A WITNESS POST.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BROTHERS

**BROTHERS**

PID: PB0791

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DESCHUTES

LATITUDE:	43° 48' 49.79156" N	±0.00010	SECONDS
LONGITUDE:	120° 36' 01.00060" W	±0.00010	SECONDS
ORTHOMETRIC HEIGHT:	1412.74		METERS
	4635.0		FEET

GEOID HEIGHT:	-18.332		METERS
ELLIPSOIDAL HEIGHT:	1394.222	±0.030	METERS
X:	4768562.584		METERS
Y:	-2776310.160		METERS
Z:	-3191074.265		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.0                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	238,523.649	1,491,932.322	0.99995802	- 0.04 7.0
UTM	10	4,853,994.766	692,998.579	1.00005816	+ 1 39 42.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . BROTHERS 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	DESCHUTES COUNTY OREGON

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BROTHERS

## BROTHERS

PID: PB0791

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED ON EAST SIDE OF BROTHERS, OREGON.  
TO REACH FROM BROTHERS START AT THE INTERSECTION OF US HIGHWAY 20 AND  
CAMP CREEK ROAD (COUNTY ROAD NUMBER 5114) GO NORTH ON CAMP CREEK  
ROAD ABOUT .10 KM (0.06 MI) AND THE STATION ON THE RIGHT.  
THE STATION IS 10.7 M (35.1 FT) SOUTHEAST OF THE CENTER OF CAMP CREEK  
ROAD, 1 M (3.3 FT) SOUTHEAST OF A FENCE AND IN THE NORTHEAST CORNER  
OF THE BROTHERS OASIS REST AREA.  
DESCRIBED BY WILLIAM C. KAUFFMAN OF DESCHUTES COUNTY.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ARCH CAPE

**CANN**  
PID: RD4216

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CLATSOP

LATITUDE:	45° 51' 41.99940" N	±0.00010 SECONDS
LONGITUDE:	123° 57' 37.19597" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 29.4 METERS  
96. FEET

GEOID HEIGHT:	-21.405		METERS
ELLIPSOIDAL HEIGHT:	7.635	±0.052	METERS
X:	276570.702		METERS
Y:	-1301229.854		METERS
Z:	6216979.156		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.5 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	249,672.798	2,231,374.855	0.99996777	- 2 27 14.5
UTM	10	5,079,126.242	425,454.262	0.99966832	- 0 41 21.2

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN PAVEMENT  
THE MARK IS STAMPED . . . CANN 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ARCH CAPE

**CANN**  
PID: RD4216

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED AT THE SOUTH ENTRANCE TO CANNON BEACH AND IN A SMALL PARK.

THE STATION IS AN ORDOT PRIMARY GPS MARK STAMPED...CANN 1989...SET INTO A DRILL HOLE IN A 3 METER SQUARE CONCRETE BASE FOR A SMALL CANNON. IT IS 25.6 M (84.0 FT) NORTH OF HIGHWAY 101, 18.0 M (59.1 FT) EAST OF CENTERLINE OF SOUTH HEMLOCK, 12.0 M (39.4 FT) NE OF ENTERING CANNON BEACH SIGN, AND 0.65 M (2.13 FT) SW OF THE NE CORNER OF THE CONCRETE BASE.

DESCRIBED BY L.L. RIGGERS

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: HEPNER

**CBL 1**  
PID: RB1491

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MORROW

LATITUDE:	45° 20' 38.60641" N	±0.00010 SECONDS
LONGITUDE:	119° 32' 56.48180" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 664.9 METERS  
2181. FEET

GEOID HEIGHT:	-19.530		METERS
ELLIPSOIDAL HEIGHT:	645.445	±0.044	METERS
X:	1735134.302		METERS
Y:	2843321.558		METERS
Z:	-5421794.229		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.5 +04.1 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	186,833.108	2,574,522.214	0.99989925	+ 0 40 27.9
UTM	11	5,024,332.856	300,304.712	1.00009034	- 1 48 49.7

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . CBL 1 1980

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1980	STATION MONUMENTED	US ARMY CORPS OF ENGINEERS
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**CBL 1**

PID: RB1491

**STATION DESCRIPTION**

DESCRIBED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION IS LOCATED ABOUT 1.5 MILES SOUTHEAST OF HEPPNER AND AT THE WILLOW CREEK DAM.  
TO REACH FROM THE JUNCTION OF HIGHWAY 207 AND HIGHWAY 74 (MAIN AND WEST MAY STREET) GO SOUTH ON HIGHWAY 207 FOR 1.44 KM (0.89 MI) TO WILLOW CREEK ROAD, GO EAST ON WILLOW CREEK ROAD 0.96 KM (0.60 MI) TO THE ACCESS ROAD TO THE CORPS OF ENGINEERS WILLOW CREEK DAM MAINTENANCE YARD, TURN LEFT AND GO 0.08 KM (0.05 MI) ON THE LEFT. THE STATION IS LOCATED IN THE BANK ABOUT 1.2 M (3.9 FT) ABOVE THE WEST EDGE OF THE ACCESS ROAD, 1.8 M (5.9 FT) EAST OF A FIELD FENCE, 3.51 M (11.52 FT) WEST OF THE EDGE OF THE PAVEMENT, AND 12.13 M (39.80 FT) WEST OF A DOUBLE GATE AT A POINT 28.44 M (93.31 FT) NORTH OF THE SOUTHWEST CORNER OF THE MAINTENANCE YARD FENCE. FOUR GREEN STEEL FENCE POSTS ARE SET AROUND THIS MONUMENT.  
DESCRIBED BY ROD HANLEY, ORDOT.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: HILLSBORO

**CHAS**  
PID: RD4221

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASHINGTON

LATITUDE:	45° 31' 27.75482" N	±0.00010	SECONDS
LONGITUDE:	122° 59' 27.42615" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	58.04		METERS
	190.4		FEET

GEOID HEIGHT:	-21.281		METERS
ELLIPSOIDAL HEIGHT:	36.483	±0.046	METERS
X:	916728.692		METERS
Y:	2241321.397		METERS
Z:	-5880848.551		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	209,432.846	2,305,443.664	0.99991382	- 1 45 59.6
UTM	10	5,041,204.690	500,706.609	0.99960001	+ 0 00 23.2

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . CHAS 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: HILLSBORO

**CHAS**  
PID: RD4221

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN HILLSBORO ABOUT 500 FEET NW OF THE COURTHOUSE.

TO REACH FROM THE INTERSECTION OF N 1ST AVE AND NW LINCOLN STREET IN HILLSBORO GO WEST 308 FEET ALONG LINCOLN STREET TO THE MARK ON THE RIGHT.

THE STATION IS SET INTO A CONCRETE POST 0.2 M (0.7 FT) BELOW THE SURFACE OF THE PARKING LOT. IT IS 45.72 M (150.00 FT) NORTH OF THE CENTERLINE OF LINCOLN STREET IN PARKING SPACE B 77. ACCESS IS THROUGH AN IRON MONUMENT COVER.

DESCRIBED BY R. CHARLES PERSON, WASHINGTON COUNTY, SURVEYOR.

**CLATS**  
PID: SC2794

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: COLUMBIA

LATITUDE:	46° 06' 18.53281"	N	±0.00020	SECONDS
LONGITUDE:	123° 12' 19.69271"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	3.56			METERS
	11.7			FEET

GEOID HEIGHT:	-19.621			METERS
ELLIPSOIDAL HEIGHT:	-16.284	±0.056		METERS
X:	6373973.100			METERS
Y:	-163255.903			METERS
Z:	162216.189			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	POINT		SCALE FACTOR	CONVERGENCE DEG MIN SEC
		NORTHING METERS	EASTING METERS		
SPC	OR N	274,484.499	2,290,855.834	1.00002844	- 1 55 7.3
SPC	WA S	89,373.859	290,874.272	0.99994946	- 1 57 54.9
UTM	10	5,105,750.783	484,120.133	0.99960310	- 0 08 53.0

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . CLATS 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CLATSKANIE

**CLATS**  
PID: SC2794

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED IN THE CITY OF CLATSKANIE ON THE EAST SIDE OF US 30 AT THE INTERSECTION OF SW BRYANT ST AND N COLUMBIA RIVER HIGHWAY (US 30) AT APPROXIMATELY MP 61.5.

TO REACH FROM THE POST OFFICE IN CLATSKANIE, GO NORTHEAST ON SW BELAIR DRIVE .08 KM (0.05 MI) TO N COLUMBIA RIVER HIGHWAY, TURN RIGHT HEADING SOUTHEAST AND GO 0.08 KM (0.05 MI) TO THE STATION ON THE LEFT.

THE STATION IS 13.11 M (43.01 FT) NORTHEAST OF THE HIGHWAY CENTERLINE, 6.53 M (21.42 FT) NORTHWEST OF A MANHOLE AND 8.41 M (27.59 FT) NORTHWEST OF A POWER POLE. IT IS 3 CM BELOW THE SURFACE OF THE GROUND.

DESCRIBED BY STEVE MUMA OF ORDOT.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: COVE

**COVE**  
PID: RA0822

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: UNION

LATITUDE:	45° 17' 48.36391" N	±0.00010	SECONDS
LONGITUDE:	117° 49' 12.11042" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	862.07		METERS
	2828.3		FEET

GEOID HEIGHT:	-16.282		METERS
ELLIPSOIDAL HEIGHT:	845.939	±0.036	METERS
X:	2462334.786		METERS
Y:	-3110716.478		METERS
Z:	-4978449.964		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.51386" +03.75970" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE			
				SCALE FACTOR	DEG	MIN	SEC	
SPC	OR N	184,625.259	2,710,153.264	0.99989707	+ 1	54	2.1	358 06
UTM	11	5,016,245.437	435,703.567	0.99965083	- 0	34	58.3	000 35

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	COVE RM 1	16.295 METERS	015 46
	COVE RM 2	20.965 METERS	296 34

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . COVE P.O.T.P. 98.50 P.I.

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1945	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION
1946		OREGON DEPARTMENT OF TRANSPORTATION
1964		US GEOLOGICAL SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)



**COVE**  
PID: RA0822

**STATION DESCRIPTION**

DESCRIBED BY NATIONAL GEODETIC SURVEY 1945  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

**STATION RECOVERY (1946)**

RECOVERED BY OREGON DEPARTMENT OF TRANSPORTATION 1946  
THE STATION IS LOCATED 5 MILES NORTH-NORTHWEST FROM UNION, 2 MILES  
SOUTHEAST FROM NIBLEY AND 0.45 MILE BY ROAD, EAST FROM THE POST  
OFFICE IN COVE. IT IS SITUATED 99.2 FEET NORTHEAST FROM A POWER  
LINE POLE NUMBERD K 162, 40 FEET WEST FROM A TELEPHONE POLE,  
27.4 FEET NORTH FROM THE APPROXIMATE CENTER OF THE ROAD AND 6  
FEET SOUTHEAST FROM A FENCELINE. IT IS A STANDARD BROZNE DISK OF  
THE OREGON STATE HIGHWAY DEPARTMENT, SET IN A CONCRETE POST  
WHICH IS 6 INCHES IN DIAMETER. THE DISK IS STAMPED COVE  
P.O.T.P. 1945 98.50 TO P.I. AND IT IS FLUSH WITH THE SURFACE  
OF THE GROUND.

REFERENCE MARK NO. 1 IS NORTH-NORTHEAST FROM THE STATION, 18  
FEET SOUTH FROM THE APPROXIMATE CENTER OF THE ROAD AND 2 FEET  
NORTH FROM THE T JUNCTION OF THE FENCELINES. THE DISK IS STAMPED  
COVE OSHD NO 1 1946 AND IT PROJECTS 6 INCHES.

REFERENCE MARK NO. 2 IS WEST-NORTHWEST FROM THE STATION, 19  
FEET SOUTH FROM THE APPROXIMATE CENTER OF THE ROAD, 15.6 FEET  
WEST FROM A POWERLINE POLE NUMBERED K 161 AND 1 FOOT NORTH FROM  
A FENCELINE. THE DISK IS STAMPED COVE OSHD NO 2 1946 AND IT  
PROJECTS 5 INCHES.

PHYS PT (AZIMUTH MARK) IS 0.45 MILE BY ROAD EAST FROM THE  
STATION. IT IS SITUATED 45 FEET WEST FROM A WIRE GATE, 31  
FEET NORTH FROM THE APPROXIMATE CENTER OF THE ROAD AND 3 FEET  
SOUTH FROM A FENCELINE. THE DISK IS STAMPED PHYS PT 1946  
AND IT PROJECTS 6 INCHES. IT IS WITNESSED BY A WHITE POST.

TO REACH THE STATION FROM THE POST OFFICE IN COVE GO EASTERLY  
FOR 0.45 MILE TO THE STATION ON THE LEFT AS DESCRIBED.

HEIGHT OF LIGHT ABOVE STATION MARK 0.00 METER.

**STATION RECOVERY (1964)**

RECOVERED BY US GEOLOGICAL SURVEY 1964  
STATION WAS RECOVERED.

REVISED DESCRIPTION--LOCATED ALONG UNION-COVE HWY, 0.4 MI W OF  
THE POST OFFICE IN COVE, 337 FT W-SW OF T-RD. JCT TO HIGH VALLEY,  
115 FT E OF SW END OF DOUBLE CURVE, 40 FT E OF A GUY WIRE ANCHORED  
TELEPHONE POLE, 31 FT S-SE OF CENTER OF HWY, 2.5 FT N OF WITNESS  
POST, BETWEEN FENCE AND IRRIGATION DITCH AT W END OF LINE OF WILD  
BLACKBERRY VINES.

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: COVE

**COVE**  
PID: RA0822

STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION WAS RECOVERED. THE REFERENCE MARKS WERE NOT FOUND. IN ALL DIRECTIONS IN THE ORIGINAL DESCRIPTION ARE 180 DEGREES OUT. A NEW DESCRIPTION FOLLOWS.  
TO REACH FROM THE POST OFFICE IN COVE GO WEST ON THE COVE UNION ROAD FOR 0.65 KM (0.40 MI) TO THE MARK ON THE LEFT.  
THE MARK IS 102.7 M (336.9 FT) WSW FROM THE INTERSECTION OF COVE UNION ROAD AND HIGH VALLEY ROAD, 12.2 M (40.0 FT) EAST FROM A GUY WIRED TELEPHONE POLE, 9.5 M (31.2 FT) SOUTH OF THE CENTERLINE OF THE COVE UNION ROAD, 0.8 M (2.6 FT) NORTH OF A WOODEN WITNESS POST, BETWEEN THE FENCE AND IRRIGATION DITCH AT THE WEST END OF A ROW OF WILD BLACKBERRY VINES. IT IS ABOUT 1 METER LOWER THAN THE ROAD.  
DESCRIBED BY L.L. RIGGERS.

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ODELL LAKE

**CREST**  
PID: PB0794

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: KLAMATH

LATITUDE:	43° 31' 48.72590" N	±0.00010 SECONDS
LONGITUDE:	121° 56' 37.59576" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT:	{	1453.0	METERS
		4767.	FEET

GEOID HEIGHT:	-19.504	METERS
ELLIPSOIDAL HEIGHT:	1433.203	±0.039 METERS
X:	842296.337	METERS
Y:	2163267.284	METERS
Z:	5922301.500	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.1                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	208,013.917	1,383,306.124	0.99991449	- 0 59 15.9
UTM	10	4,820,237.366	585,347.353	0.99968960	+ 0 43 39.0

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . CREST 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**CREST**  
PID: PB0794

**STATION DESCRIPTION**

**DESCRIBED 1989**

THE STATION IS LOCATED 0.16 KM (0.10 MI) NORTH OF THE CRESCENT LAKE JUNCTION, AND 0.25 MILE SOUTH OF MILE POST 69 ON HIGHWAY 58. TO REACH FROM THE CRESCENT LAKE JUNCTION ROAD AND HIGHWAY 58 GO NORTHERLY ON HIGHWAY 58 FOR 0.16 KM (0.10 MI) TO A ROAD LEADING TO A SNO PARK AREA, TURN RIGHT AND GO 56 METERS TO THE APPROXIMATE CENTER OF THE PARKING ARE AND THE STATION.

THE STATION IS 56.2 M (184.4 FT) EAST OF THE CENTERLINE OF HIGHWAY 58, 35.8 M (117.5 FT) WEST OF THE NORTHWEST CORNER OF A CHEMICAL TOILET, 30.0 M (98.4 FT) NORTH OF THE SOUTH EDGE OF THE PARKING AREA AND ABOUT 2 METERS SOUTH OF THE CENTERLINE EXTENDED OF THE ENTRANCE ROAD. THE STATION IS SET INTO A CONCRETE POST 27 CM BELOW THE SURFACE OF THE PARKING AREA. ACCESS IS THROUGH A 20 CM IN DIAMETER MONUMENT COVER.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: GREENBERRY

**E 141**  
PID: QE2269

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BENTON

LATITUDE:	44° 23' 28.35830" N	±0.00010	SECONDS
LONGITUDE:	123° 17' 27.95859" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	{ 80.57		METERS
	{ 264.3		FEET

GEOID HEIGHT:	-21.253		METERS
ELLIPSOIDAL HEIGHT:	59.078	±0.052	METERS
X:	870048.448		METERS
Y:	2192827.414		METERS
Z:	-5906022.764		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD (Vertical Network Order Unconfirmed)  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING, BUT THE EXACT VERTICAL FIELD PROCEDURES ARE UNKNOWN. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.58180"                    +04.32080" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
						ING DEG MIN SEC
SPC	OR N	84,354.917	2,277,660.074	0.99998593	- 1 58 45.9	187 28 05.0
SPC	OR S	306,381.888	1,277,626.518	1.00012304	- 1 54 34.3	187 24 05.0
UTM	10	4,915,366.440	476,815.244	0.99960661	- 0 12 13.1	185 41 32.2

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	E 141 RM 1	10.070 METERS	005 10
	ING		185 29 19.1
	E 141 RM 2	9.752 METERS	229 02

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . THE FOOTINGS OF SMALL/MEDIUM STRUCTURES  
THE MARK IS STAMPED . . . E 141 1929 1941 264  
(Continued on Next Page)

E 141  
PID: QE2269

STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1941	STATION MONUMENTED	US ARMY CORPS OF ENGINEERS
1945		US ARMY CORPS OF ENGINEERS (ANS)
1978	GOOD	NATIONAL GEODETIC SURVEY (CLN)
1989	GOOD	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)
1990	GOOD	NATIONAL GEODETIC SURVEY

STATION DESCRIPTION

DESCRIBED BY US ARMY CORPS OF ENGINEERS 1941

STATION RECOVERY (1945)

RECOVERED BY US ARMY CORPS OF ENGINEERS 1945 (ANS)  
STATION IS LOCATED ABOUT 11.4 MILES S OF CORVALLIS, 5-1/2 MILES  
N OF MONROE, AND 0.3 MILE W OF BRUCE STORE WHICH IS LOCATED ON  
U.S. HIGHWAY 99W.

STATION MARK IS A U.S.E. DISK SET IN THE TOP OF A SQUARE CONCRETE  
POST PROJECTING ABOUT 10 INCHES AND IS STAMPED E 141 1941 264. IT  
IS 48 FEET NORTHWEST OF A RAILROAD CROSSING, 23.7 FEET W OF THE W  
RAIL, 2 FEET E OF A WHITE REFERENCE POST AND THE SE ONE OF 9  
CONCRETE FOUNDATION PILLARS. NO UNDERGROUND MK. SET.

REFERENCE MARK 1 IS A BRONZE REFERENCE DISK SET IN THE TOP OF A  
14-INCH SQUARE CONCRETE PILLAR WHICH IS THE NE ONE OF NINE. IT  
IS STAMPED E 141 NO 1 1945 AND PROJECTS ABOUT 6 INCHES. IT IS 36  
FEET S OF A FENCE CORNER AND 23.7 FEET W OF THE W RAIL.

REFERENCE MARK 2 IS A BRONZE REFERENCE DISK SET IN THE TOP OF A  
12-INCH SQUARE CONCRETE POST PROJECTING ABOUT 3 INCHES ABOVE THE  
GROUND. IT IS STAMPED E 141 NO 2 1945, IS 23 FEET N OF THE  
CENTER OF THE GRAVEL ROAD, AND 17 FEET NE OF THE W END OF A TILE  
CULVERT.

AZIMUTH MARK IS A STANDARD U.S.E. DISK SET IN THE TOP OF A  
12-INCH SQUARE CONCRETE POST PROJECTING ABOUT 5 INCHES ABOVE  
GROUND AND IS STAMPED ING E1. 269 SOT 1936. IT IS 73 FEET NW OF  
INTERSECTION OF THE RAILROAD AND THE GRAVEL ROAD, 23 FEET W OF THE  
W RAIL, AND 5 FEET E OF THE N-S FENCE LINE.

TO REACH THE STATION FROM THE S END OF BRIDGE IN THE S PART OF  
CORVALLIS, GO S ON U.S. HIGHWAY 99W FOR 11.4 MILES TO BRUCE STORE  
ON THE RIGHT. TURN RIGHT (W) AND GO 0.3 MILE TO RAILROAD CROSSING  
AND THE STATION.

(Continued on Next Page)

**E 141**  
PID: QE2269

**STATION RECOVERY (1978)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1978 (CLN)  
THE STATION MARK, AND REFERENCE MARK NO. 1 WERE RECOVERED IN GOOD  
CONDITION. REFERENCE MARK NO. 2 HAD BEEN DESTROYED. REFERENCE  
MARK NO. 3, AND AN AZIMUTH MARK WERE ESTABLISHED. A NEW AND  
COMPLETE DESCRIPTION FOLLOWS.

THE STATION IS ON RAILROAD RIGHT-OF-WAY.

TO REACH THE STATION FROM THE MONROE POST OFFICE, GO EAST FOR  
0.05 MILE TO U.S. HIGHWAY 99W, TURN LEFT, AND GO NORTH ON U.S.  
HIGHWAY 99W FOR 5.4 MILES TO A CROSSROAD, MORRIES COUNTRY MARKET  
IS IN THE NORTHWEST ANGLE FORMED BY THIS CROSSROAD, TURN LEFT,  
AND GO WEST ON THE GRAVEL ROAD FOR 0.3 MILE TO THE RAILROAD  
TRACKS, AND THE STATION ON THE RIGHT.

THE STATION MARK, STAMPED E 141 1929 1941, IS A U.S. ENGINEERS DISK  
SET IN A 12-INCH SQUARE CONCRETE MONUMENT THAT PROJECTS 7-INCHES,  
50 FEET NORTHWEST OF RAILROAD CROSSING NO. 676.8, 46 FEET NORTH  
OF THE CENTER OF THE GRAVELED ROAD, 24 FEET WEST OF THE NEAREST  
RAIL OF THE RAILROAD TRACKS, AND 1-FOOT EAST OF A METAL WITNESS  
POST.

REFERENCE MARK NO. 1, STAMPED E 141 USE NO 1 1945, IS A STANDARD  
DISK SET IN A 12-INCH SQUARE CONCRETE MONUMENT THAT PROJECTS  
5-INCHES, 80 FEET NORTH OF THE CENTER OF THE GRAVELED ROAD, AND  
24 FEET WEST OF THE WEST RAIL.

REFERENCE MARK NO. 3, STAMPED E 141 USE 1945 NO 3 1978, IS A  
STANDARD DISK SET IN A 10-INCH SQUARE CONCRETE MONUMENT THAT  
PROJECTS 5-INCHES, 55 FEET NORTHEAST OF THE SIGN, ENTERING WILLIAM  
L. FINLEY NATIONAL WILDLIFE REFUGE, 48 FEET WEST OF THE WEST RAIL,  
AND 45 FEET NORTH OF THE CENTER OF THE GRAVEL ROAD.

TO REACH THE AZIMUTH MARK FROM THE STATION GO WEST, AND SOUTH  
ON THE GRAVEL ROAD FOR 0.3 MILE TO WHERE THE GRAVEL ROAD AGAIN  
TURNS WEST, AND THE AZIMUTH MARK ON THE RIGHT, 150 FEET SOUTHWEST  
OF A PARKING AREA, 39 FEET SOUTHWEST OF AN INFORMATION BILLBOARD,  
54 FEET WEST OF THE NORTH-SOUTH ROAD, 34 FEET NORTH OF THE  
EAST-WEST ROAD, AND 1-FOOT SOUTH OF A METAL WITNESS  
POST.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
5-1/2 MILES NORTH OF MONROE.

**STATION RECOVERY (1989)**

RECOVERED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

(Continued on Next Page)



**E 141**  
PID: QE2269

STATION RECOVERY (1990)

RECOVERED BY NATIONAL GEODETIC SURVEY 1990  
THE STATION IS LOCATED ABOUT 12 MI (19.3 KM) SOUTH OF CORVALLIS, 5.5 MI (8.9 KM) NORTH OF MONROE AND IN THE NORTHWEST QUADRANT OF THE INTERSECTION OF BRUCE ROAD AND RAILROAD. OWNERSHIP--DEPARTMENT OF INTERIOR, U.S. FISH AND WILDLIFE, WILLIAM L. FINLEY NATIONAL WILDLIFE REFUGE.  
TO REACH, FROM MONROE POST OFFICE, GO EAST ON MAIN STREET FOR 0.05 MI (0.08 KM) TO STATE ROUTE 99W. TURN LEFT ON STATE ROUTE 99W AND GO NORTHERLY FOR 5.5 MI (8.9 KM) TO THE INTERSECTION OF BRUCE ROAD. TURN LEFT ON BRUCE ROAD AND GO WEST FOR 0.3 MI (0.5 KM) TO THE STATION ON RIGHT.  
LOCATED 36 FT (11.0 M) NORTH OF THE APPROXIMATE CENTER OF BRUCE ROAD, 26.0 FT (7.9 M) WEST OF THE WEST RAIL OF RAILROAD TRACKS, 0.6 M (2.0 FT) WEST OF CARSONITE WITNESS POST, 0.3 M (1.0 FT) EAST OF METAL WITNESS POST AND IN THE MOST EASTERN OF SIX BUILDING FOOTINGS. THE MARK PROJECTS 0.2 M (0.7 FT) ABOVE GROUND.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CONDON

**E 40**  
PID: RC0290

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: GILLIAM

LATITUDE:	45° 14' 35.75182" N	±0.00020 SECONDS
LONGITUDE:	120° 10' 46.69180" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	882.42	METERS
	2895.1	FEET

GEOID HEIGHT:	-19.329	METERS
ELLIPSOIDAL HEIGHT:	863.199	±0.050 METERS
X:	6344131.863	METERS
Y:	-471247.802	METERS
Z:	-469383.138	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.1                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE FACTOR	DEG MIN SEC
SPC	OR N	175,243.648	2,525,149.828	0.99989543	+ 0 13 37.9
UTM	10	5,013,844.631	721,344.506	1.00020244	+ 2 00 12.8

STATION MARK IS A . . . . BENCH MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . E 40 1930 2895.211

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1930	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1963	GOOD	NATIONAL GEODETIC SURVEY
1989	GOOD	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CONDON

**E 40**  
PID: RC0290

**STATION DESCRIPTION**

DESCRIBED BY NATIONAL GEODETIC SURVEY 1963  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

**STATION RECOVERY (1989)**

RECOVERED BY OREGON DEPARTMENT OF TRANSPORTATION 1989  
THE STATION IS ABOUT .96 KM (0.60 MI) NORTH  
ALONG THE JOHN DAY HIGHWAY FROM CONDON, AT MILEAGE 37.4 ACROSS THE  
HIGHWAY FROM THE NORTHWEST CORNER OF THE FAIRGROUNDS, IN THE  
NORTHWEST QUADRANT OF A ROAD INTERSECTION, 11.3 M (37.1 FT) NORTH OF  
THE CENTERLINE OF THE CROSSROAD, ABOUT 12 M (39.4 FT) WEST OF THE  
CENTERLINE OF THE HIGHWAY.  
DESCRIBED BY PHILLIP V. LEWELLYN, ORDOT,

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: EUGENE WEST

**EZEL**  
PID: QE2665

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LANE

LATITUDE:	44° 04' 43.01278" N	±0.00010 SECONDS
LONGITUDE:	123° 09' 47.00367" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT:	{ 118.3	METERS
	388.	FEET

GEOID HEIGHT:	-21.677	METERS
ELLIPSOIDAL HEIGHT:	96.257	±0.049 METERS
X:	5835496.998	METERS
Y:	-1782667.281	METERS
Z:	1851515.364	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	271,330.168	1,286,720.084	1.00002093	- 1 49 18.9
UTM	10	4,880,617.381	486,944.357	0.99960210	- 0 06 48.3

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . EZEL 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	LANE COUNTY OREGON

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: EUGENE WEST

**EZEL**  
PID: QE2865

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN NORTHWEST EUGENE, LANE COUNTY OREGON. TO REACH THE STATION FROM THE INTERSECTION OF US HIGHWAY 99 AND BARGER AVENUE GO WEST ON BARGER AVENUE FOR 1.12 KM (0.70 MI) TO ECHO HOLLOW, TURN LEFT (SOUTH) ONTO ECHO HOLLOW AND GO 0.72 KM (0.45 MI) TO WILHI STREET, TURN EAST ON WILHI STREET AND GO 0.4 KM (0.2 MI) TO THE END OF WILHI STREET AND THE STATION ABOUT 49 METERS NORTH.

THE STATION IS AN ORDOT PRIMARY GPS STATION DISK STAMPED---EZEL 1989---, SET INTO A CONCRETE MONUMENT FLUSH WITH THE GROUND. IT IS ON THE GROUNDS OF THE CASCADE MIDDLE SCHOOL, SOUTH AND EAST OF THE BUILDINGS.

DESCRIBED BY LEE BROWN OF THE LANE COUNTY SURVEYORS OFFICE.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: DAMASCUS

**F 609**  
PID: RD4237

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MULTNOMAH

LATITUDE:	45° 28' 29.30535" N	± 0.00010 SECONDS
LONGITUDE:	122° 23' 46.92414" W	± 0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 140.6 METERS  
461. FEET

GEOID HEIGHT:	-21.302	METERS
ELLIPSOIDAL HEIGHT:	119.070	±0.047 METERS
X:	2564510.493	METERS
Y:	-3132622.721	METERS
Z:	-4912205.941	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.3 (Based on Nadcon Interpolation)

GRID	ZONE	PLANE COORDINATES		POINT	CONVERGENCE DEG MIN SEC
		NORTHING METERS	EASTING METERS	SCALE FACTOR	
SPC	OR N	202,664.646	2,351,744.612	0.99990883	- 1 20 41.6
SPC	WA S	17,507.917	351,716.863	1.00010049	- 1 22 39.0
UTM	10	5,035,874.840	547,180.865	0.99962737	+ 0 25 49.3

STATION MARK IS A . . . . BENCH MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . F 609 1967

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1967	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**F 609**  
PID: RD4237

STATION DESCRIPTION

DESCRIBED 1967

STATION IS LOCATED NEAR THE SOUTH EDGE OF GRESHAM, IN WIDE GRASS  
MEDIAN FOR US HIGHWAY 26, ALONGSIDE THE NORTHBOUND LANES.

OWNERSHIP--STATE DEPARTMENT OF TRANSPORTATION.

TO REACH FROM THE JUNCTION OF HIGHWAY 26 AND MAIN STREET AT CITY PARK  
IN GRESHAM, GO EAST ON HIGHWAY 26 (POWELL BOULEVARD) FOR 2.20 KM  
(1.37 MI) TO A SLANTED CROSSROAD (BURNSIDE AVENUE). BEAR RIGHT,  
SOUTHEAST, ON HIGHWAY 26 FOR 2.04 KM (1.27 MI) TO A CROSSROAD  
(HILLYARD ROAD). CROSS INTERSECTION FOR 15 M (49.2 FT) START OF  
HIGHWAY MEDIAN. BEAR LEFT ONTO MEDIAN, KEEPING TO THE EAST EDGE, FOR  
0.23 KM (0.14 MI) TO THE STATION.

MARK IS SET IN THE TOP OF A CHIPPED 30-CM SQUARE CONCRETE POST  
PROJECTING 5 CM. IT IS 15.4 M (50.5 FT) WEST OF THE CENTER OF THE  
NORTHBOUND LANES, 1 METER ABOVE THE HIGHWAY, 0.4 M (1.3 FT) EAST OF A  
STEEL SIGN WITH LETTERS -USBM-, AND 0.4 M (1.3 FT) NORTH OF A  
FIBERGLASS WITNESS POST.

NOTE--GROUND IS SOFT IN WET WEATHER. ROAD SHOULDER IS ALSO SOFT AND  
SANDY, MAY CAUSE PROBLEMS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: GRANTS PASS

**FAIR**  
PID: NZ1328

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JOSEPHINE

LATITUDE:	42° 25' 24.55714" N	±0.00010 SECONDS
LONGITUDE:	123° 20' 19.88180" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 288.4 METERS  
946. FEET

GEOID HEIGHT:	-22.977		METERS
ELLIPSOIDAL HEIGHT:	265.113	±0.043	METERS
X:	1180462.863		METERS
Y:	2481257.036		METERS
Z:	-5736931.159		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.2 (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	88,030.439	1,266,414.307	0.99997852	- 1 56 31.9
UTM	10	4,696,852.974	472,123.573	0.99960956	- 0 13 42.9

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . FAIR

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	JOSEPHINE COUNTY, OREGON

(Continued on Next Page)



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: GRANTS PASS

**FAIR**  
PID: NZ1328

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN GRANTS PASS ABOUT 3 KM (1.9 MI) SOUTHSEST OF DOWNTOWN AND AT AN ORDOT WEIGH STATION.

TO REACH FROM THE JUNCTION OF HIGHWAYS 99 AND 199 AT THE SOUTH EDGE OF GRANTS PASS GO WEST 0.7 KM (0.4 MI) TO THE WEIGHT STATION AND THE MARK ON THE LEFT.

THE MARK IS ABOUT 122 M (400.3 FT) EAST OF THE WEIGHT SCALES BUILDING, 2.44 M (8.01 FT) SOUTH OF REDWOOD HIGHWAY PAVEMENT AND IS IN A METAL MONUMENT CASE.

DESCRIBED BY ROGER REECE, JOSEPHINE COUNTY SURVEYOR.

**FAIRVIEW**

PID: PC0887

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LANE

LATITUDE:	43° 35' 08.82130" N	±0.00020 SECONDS
LONGITUDE:	122° 39' 11.65322" W	±0.00040 SECONDS

ORTHOMETRIC HEIGHT: { 1808.7 METERS  
5934. FEET

GEOID HEIGHT:	-20.992		METERS
ELLIPSOIDAL HEIGHT:	1787.436	±0.069	METERS
X:	835155.138		METERS
Y:	2155534.918		METERS
Z:	5926486.887		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.57170" +04.17522" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO FAIRVIEW AZ MK DEG MIN SEC
						DEG MIN SEC
SPC	OR S	215,418.144	1,326,132.974	0.99992108	- 1 28 23.3	202 11 32.0
UTM	10	4,825,926.826	527,994.109	0.99960964	+ 0 14 20.7	200 28 48.0

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
PC0886	FAIRVIEW RM E COPPER BOLT	52.457 METERS	086 03
	FAIRVIEW AZ MK		200 43 08.7
	FAIRVIEW RM 1	8.520 METERS	205 12
PC0965	SAN FRANCISCO PORTLAND BCN 43	APPROX.54.7 KM	276 23 36.2
PC0888	FAIRVIEW RM 2	5.429 METERS	283 16

(Continued on Next Page)

**FAIRVIEW**

PID: PC0887

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . FAIRVIEW 1904 1981

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1904	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1934		OREGON GEODETIC SURVEY
1938		COAST AND GEODETIC SURVEY (ACT)
1940		COAST AND GEODETIC SURVEY (ANS)
1953		COAST AND GEODETIC SURVEY (CTH)
1976		US GEOLOGICAL SURVEY
1989	GOOD	US BUREAU OF LAND MANAGEMENT

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1904 (OBP)  
ON THE W SIDE OF THE SUMMIT OF FAIRVIEW PEAK IN THE BOHEMIA  
MOUNTAINS, ABOUT 25 MILES SE OF COTTAGE GROVE AND 6 MILES BY ROAD  
FROM MINERAL POST OFFICE. THE STATION IS MARKED BY A 3/8-INCH  
COPPER BOLT 3 INCHES LONG CEMENTED INTO A DRILL HOLE IN THE ROCK,  
AND DIRECTLY ABOVE THE BOLT IN THE SAME DRILL HOLE AN OLD-TYPE  
BRONZE TABLET. A CROSS IN THE TOP OF THE COPPER BOLT AND  
ANOTHER IN THE POLISHED CENTER OF THE DISK MARK THE STATION.  
THREE REFERENCE MARKS, EACH CONSISTING OF A DRILL OR PUNCH  
HOLE IN THE TOP OF A 3/8-INCH COPPER BOLT 3 INCHES LONG, WHICH  
IS LEADED OR CEMENTED INTO A DRILL HOLE IN A ROCK WITH THE TOP  
OF THE BOLT FLUSH WITH THE SURFACE, ARE AT THE FOLLOWING  
DISTANCES AND AZIMUTHS FROM THE STATION. 6.69 METERS  
(21.9 FEET), 47 DEG 29 MIN. 2.92 METERS (9.6 FEET), 181 DEG  
39 MIN. AND ABOUT 175 FEET, 266 DEG 09 MIN.

**STATION RECOVERY (1934)**

RECOVERED BY OREGON GEODETIC SURVEY 1934  
OLD-TYPE BRONZE STATION DISK AND THREE REFERENCE MARKS FOUND  
AS DESCRIBED.

**STATION RECOVERY (1938)**

RECOVERED BY COAST AND GEODETIC SURVEY 1938 (ACT)  
STATION LIES UNDER FAIRVIEW LOOKOUT TOWER, ABOUT 3 FEET NW OF  
CENTER. TOWER IS OF TIMBER, 40 FEET HIGH.

STATION MARK AND ONE REFERENCE MARK WERE RECOVERED IN GOOD  
CONDITION. STATION MARK IS AN OLD-TYPE BRONZE DISK SET IN  
BEDROCK. AN AZIMUTH MARK AND TWO NEW REFERENCE MARKS WERE SET.

REFERENCE MARK 1 IS SET IN BEDROCK ABOUT 10 FEET BELOW STATION.

(Continued on Next Page)

## FAIRVIEW

PID: PC0887

REFERENCE MARK 2 IS SET IN BEDROCK ABOUT 4 FEET BELOW STATION.

AZIMUTH MARK IS SET IN BEDROCK ON N SLOPE OF BOHEMIA MOUNTAIN,  
ABOUT 3/8 MILE SSW OF STATION.

REACHED FROM COTTAGE GROVE BY DRIVING E FROM POST OFFICE ON  
DISSTON ROAD 16.15 MILES TO FORKS, TAKE RIGHT FORK 3.95 MILES TO  
DISSTON POST OFFICE. CONTINUE ON MAIN ROAD UP GRADE 16.1 MILES  
TO FORK ON BOHEMIA SADDLE, PASSING LUND PARK ON LEFT ENROUTE. AT  
SADDLE, TURN SHARP RIGHT AND FOLLOW FAIRVIEW LOOKOUT ROAD 1.1  
MILES UP STEEP GRADE TO END OF TRUCK TRAVEL ABOUT 50 YARDS BELOW  
FAIRVIEW LOOKOUT TOWER AND STATION.

### STATION RECOVERY (1940)

RECOVERED BY COAST AND GEODETIC SURVEY 1940 (ANS)  
STATION RECOVERED AND FOUND TO BE IN GOOD CONDITION. REFERENCE  
MARKS 1 AND 2, 1938, RECOVERED. ALSO ONE 1904 COPPER BOLT.

STATION IS LOCATED ABOUT 25 MILES SE OF COTTAGE GROVE. IT IS IN  
THE UMPQUA NATIONAL FOREST ON THE HIGHEST PART OF FAIRVIEW PEAK,  
WHICH IS IN THE BOHEMIA MOUNTAINS. STATION IS UNDER THE FAIRVIEW  
LOOKOUT TOWER, 3 FEET NW OF THE CENTER. IT IS AN OLD-TYPE BRONZE  
DISK WITH A CROSS IN THE CENTER AND SET IN A BOULDER.

REFERENCE MARK 1 IS STAMPED FAIRVIEW NO. 1 1938.

REFERENCE MARK 2 IS STAMPED FAIRVIEW NO. 2 1938.

AZIMUTH MARK IS ABOUT 0.4 MILE S OF THE STATION, ON THE N SLOPE  
OF BOHEMIA PEAK. IT IS ABOUT 300 FEET BELOW THE TOP OF THE PEAK,  
SET IN A ROCK OUTCROP. THERE IS A 20-INCH CAIRN ABOUT 2 FEET S  
OF THE MARK. THE DISK IS STAMPED FAIRVIEW 1938. TO REACH  
AZIMUTH MARK, GO S FOR 0.4 MILE TO BOHEMIA PEAK.

COPPER BOLT IS 16 FEET N OF THE NW CORNER OF A SMALL BUILDING,  
WHICH IS ABOUT 175 FEET E OF THE FAIRVIEW LOOKOUT TOWER. IT IS  
SET IN BEDROCK AND PROJECTS 1/4 INCH. THERE IS A WHITE SPACE  
ABOUT 1-FOOT SQUARE PAINTED WHITE AT THE BOLT.

STATION REACHED AS IN 1938.

### STATION RECOVERY (1953)

RECOVERED BY COAST AND GEODETIC SURVEY 1953 (CTH)  
THE STATION AND BOTH REFERENCE MARKS WERE RECOVERED, FOUND IN  
GOOD CONDITION AND AS PREVIOUSLY DESCRIBED. THE AZIMUTH MARK  
WAS SEARCHED FOR BUT WAS NOT FOUND.

(Continued on Next Page)

## FAIRVIEW

PID: PC0887

### STATION RECOVERY (1976)

RECOVERED BY US GEOLOGICAL SURVEY 1976  
STATION MARK AND RM 1 AND RM 2 RECOVERED IN GOOD CONDITION. THE  
LOOKOUT TOWER HAS BEEN REBUILT IN A DIFFERENT LOCATION.

### STATION RECOVERY (1989)

RECOVERED BY US BUREAU OF LAND MANAGEMENT 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.  
THE STATION IS LOCATED ABOUT 32.2 KM (20.00 MI) SOUTHEAST OF COTTAGE  
GROVE, 14.5 KM (9.00 MI) SOUTHEAST OF CULP CREEK, 11.3 KM (7.00 MI)  
SOUTH OF DISSTON AND IN THE UMPQUA NATIONAL FOREST ON THE HIGHEST  
POINT OF FAIRVIEW PEAK. OWNERSHIP--U.S. FOREST SERVICE  
TO REACH THE STATION FROM THE POST OFFICE, IN CULP CREEK, GO EAST ON  
GOVERNMENT ROAD FOR 1.21 KM (0.75 MI) TO SIDE ROAD RIGHT, WITH SIGN  
FOR SHARPS CR AND BOHEMIA MINES. TURN RIGHT AND GO SOUTHERLY FOR  
16.41 KM (10.20 MI) TO A Y INTERSECTION, MARTIN CR ROAD (RIGHT) AND  
SHARPS CR ROAD (LEFT). KEEP LEFT AND CONTINUE EAST ON SHARPS CR ROAD  
FOR 7.72 KM (4.80 MI) TO A SIGN SHANE SADDLE, STATE HIGHWAY 138,  
BOHEMIA SADDLE AND SIDE ROAD LEFT. TURN LEFT AND CONTINUE UP HILL ON  
FOREST SERVICE ROAD 2460 FOR 4.18 KM (2.60 MI) TO A SIGN BOHEMIA  
SADDLE, CHAMPION SADDLE, CHAMPION MINES, FAIRVIEW LOOKOUT AND SIDE  
ROAD LEFT, FAIRVIEW ROAD (FS 773). TURN LEFT ONTO FAIRVIEW ROAD (FS  
773) AND CONTINUE UP HILL FOR 1.93 KM (1.20 MI) TO THE TOP AND  
TURN-AROUND NEAR LOOKOUT TOWER. THE STATION IS LOCATED ON THE HIGHEST  
POINT OF A ROCK PILE WEST OF THE LOOKOUT TOWER.  
THE STATION IS LOCATED 14.1 M (46.3 FT) WEST OF THE SOUTHWEST TOWER  
LEG, 11.8 M (38.7 FT) EAST OF THE APPROXIMATE EDGE OF THE WEST SIDE OF  
ROCKS, 9.8 M (32.2 FT) WEST-NORTHWEST OF THE SOUTHWEST GUIDE WIRE TO  
TOWER AND 3.9 M (12.8 FT) SOUTH OF THE APPROXIMATE EDGE OF THE  
NORTHEAST SIDE OF ROCKS.

**FISH**  
PID: OA1623

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CURRY

LATITUDE:	42° 02' 46.24584"	N	±0.00010	SECONDS
LONGITUDE:	124° 16' 04.92699"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	4.69			METERS
	15.4			FEET

GEOID HEIGHT:	-26.602			METERS
ELLIPSOIDAL HEIGHT:	-22.353	±0.057		METERS
X:	2234527.163			METERS
Y:	-3047974.575			METERS
Z:	5120616.805			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	49,176.580	1,188,120.071	1.00008464	- 2 34 40.4
SPC	CA 1	803,683.473	1,812,226.175	1.00011858	- 1 28 58.9
UTM	10	4,655,681.275	395,059.399	0.99973551	- 0 50 57.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN PAVEMENT  
THE MARK IS STAMPED . . . FISH 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**FISH**  
PID: OA1623

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED IN BROOKINGS, IN THE HARBOR AREA, NEAR TH US COAST GUARD STATION.

TO REACH FROM THE INTERSECTION OF CENTER STREET AND US 101 IN BROOKINGS GO SOUTH ON US 101 FOR 1.44 KM (0.89 MI) TURN RIGHT TOWARD US COAST GUARD STATION, GO 0.16 KM (0.10 MI) TO A ROAD FORK, KEEP LEFT FORK AND GO 1.3 KM (0.8 MI) TURN RIGHT ONTO BOAT BASIN ROAD AND GO 0.64 KM (0.40 MI) TO EAST ENTRANCE TO PARKING LOT, THE US COAST GUARD STATION ENTRANCE IS ABOUT 50 METERS EAST OF THIS POINT, TURN RIGHT INTO PARKING LOT AND GO ABOUT 50 METERS TO FISHERMANS WIVES ASSOCIATION MEMORIAL AND STATION ON THE LEFT.

THE STATION IS SET INTO A DRILL HOLE IN CENTER OF A LARGE TRIANGULAR SHAPED CONCRETE SLAB THAT HOLDS THREE LARGE ANCHORS. IT IS 29.5 M (96.8 FT) ENE FROM THE MARINERS MEMORIAL, 7.2 M (23.6 FT) NE FROM A LIGHT POLE, 13.3 M (43.6 FT) NW FROM THE EAST END OF AN ANCHOR CHAIN FENCE, AND 1 M (3.3 FT) SOUTH FROM THE LARGEST OF 3 ANCHORS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: UKIAH

**FORE**  
PID: RB1489

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: UMATILLA

LATITUDE:	45° 08' 15.86357" N	±0.00010 SECONDS
LONGITUDE:	118° 57' 27.86563" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1010.0 METERS  
3314. FEET

GEOID HEIGHT:	-17.420		METERS
ELLIPSOIDAL HEIGHT:	992.689	±0.037	METERS
X:	66798.691		METERS
Y:	-650442.040		METERS
Z:	6324276.007		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.5 +03.9 (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	164,625.221	2,621,290.441	0.99989473	+ 1 05 37.5
UTM	11	5,000,116.128	346,070.347	0.99989135	- 1 23 16.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . FORE 1989

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: UKIAH

**FORE**  
PID: RB1489

STATION DESCRIPTION

DESCRIBED 1989

THE MARK IS LOCATED ON US FOREST SERVICE PROPERTY ABOUT 1.3 MILES WEST OF UKIAH.

TO REACH FROM THE POST OFFICE IN UKIAH GO WEST ON HIGHWAY 244 2.1 KM (1.3 MI) TO ITS INTERSECTION WITH HIGHWAY 395. THE STATION IS IN THE SE QUADRANT OF THIS INTERSECTION.

THE STATION IS 31 M (101.7 FT) WEST OF THE CENTERLINE OF HIGHWAY 395, 22 M (72.2 FT) S OF CENTERLINE OF USFS ROAD 53, 5.2 M (17.1 FT) WEST OF A FENCE ON THE TOP OF A CUTBANK AND ON LINE WITH THE WEST EDGE OF A CATTLE GUARD.

DESCRIBED BY L.L. RIGGERS.

**FOSS**  
PID: QD1878

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WHEELER

LATITUDE:	44° 59' 59.12840" N	±0.00010	SECONDS
LONGITUDE:	120° 13' 13.42365" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	803.82		METERS
	2637.2		FEET

GEOID HEIGHT:	-18.978		METERS
ELLIPSOIDAL HEIGHT:	784.852	±0.038	METERS
X:	161078.096		METERS
Y:	-1002462.101		METERS
Z:	-6276507.293		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.1                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE	
SPC	OR N	148,172.863	2,522,043.753	0.99989891	+ 0 11 53.8
UTM	10	4,986,682.576	719,076.393	1.00019019	+ 1 57 58.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . FOSS 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: FOSSIL SOUTH

**FOSS**  
PID: QD1878

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN FOSSIL.

TO REACH FROM THE INTERSECTION OF FIRST STREET AND THE JOHN DAY  
HIGHWAY IN FOSSIL GO EAST ON FIRST STREET 0.35 KM (0.22 MI) TO THE MARK  
ON THE RIGHT.

THE STATION IS 1.35 M (4.43 FT) NORTH OF THE NORTH FENCE AROUND THE  
ARTHUR GLOVER CITY PARK, 13.72 M (45.01 FT) SOUTH OF THE CENTERLINE  
OF FIRST STREET, 5.64 M (18.50 FT) EAST OF THE NORTHEAST CORNER OF  
THE FENCE AROUND THE CONCRETE TENNIS COURT AND IS SET INTO A CONCRETE  
POST FLUSH WITH THE GROUND.

DESCRIBED BY PHIL LEWELLYN OF ORDOT.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: JUNTURA

**GENT**  
PID: PA0746

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 44' 37.58572" N	±0.00010	SECONDS
LONGITUDE:	118° 04' 38.49578" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	899.96		METERS
	2952.6		FEET

GEOID HEIGHT:	-17.126		METERS
ELLIPSOIDAL HEIGHT:	882.928	±0.042	METERS
X:	111531.439		METERS
Y:	-837481.395		METERS
Z:	-6301643.116		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.6                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	233,557.499	1,695,107.051	0.99994497	+ 1 39 26.8
UTM	11	4,843,978.955	413,252.538	0.99969256	- 0 44 41.9

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . GENT 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: JUNTURA

**GENT**  
PID: PA0746

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED IN JUNTURA ON PROPERTY OWNED BY ORDOT.  
TO REACH THE STATION FROM THE POST OFFICE IN JUNTURA GO EAST ON GRAVEL  
ROAD 0.08 KM (0.05 MI) TO THE MARK ON THE LEFT.

THE STATION IS 31.8 M (104.3 FT) NORTH OF THE CENTERLINE OF A GRAVEL  
ROAD, 25.4 M (83.3 FT) WEST OF A NORTH-SOUTH GRAVEL ROAD, 24.7 M  
(81.0 FT) FROM A POWER POLE NUMBER 05 MOSE 1985, 2.9 M (9.5 FT) EAST  
OF THE SE CORNER OF A PUMP HOUSE, AND 1.2 M (3.9 FT) SOUTH OF A  
WITNESS POST.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: FRENCHGLEN

**GLEN**  
PID: NX0302

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: HARNEY

LATITUDE:	42° 49' 48.41907" N	±0.00020 SECONDS
LONGITUDE:	118° 54' 58.34308" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1275.8 METERS  
4186. FEET

GEOID HEIGHT:	-17.925	METERS
ELLIPSOIDAL HEIGHT:	1257.940	±0.043 METERS
X:	4634023.501	METERS
Y:	-2848744.605	METERS
Z:	3321602.958	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.4 +03.7 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	130,463.253	1,629,480.163	0.99991196	+ 1 05 0.8
UTM	11	4,743,730.597	343,381.309	0.99990178	- 1 18 10.6

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN PAVEMENT  
THE MARK IS STAMPED . . . GLEN 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: FRENCHGLEN

**GLEN**  
PID: NX0302

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN FRENCHGLEN AT A HIGHWAY MAINTENCE YARD. TO REACH FROM THE POST OFFICE IN FRENCHGLEN GO NORTH HIGHWAY 205 FOR 0.32 KM (0.20 MI) , TURN RIGHT INTO YARD AND MARK ABOUT 50 METERS NE. THE STATION IS AN OTDOT PRIMARY GPS DISK SET INTO A DRILL HOLE IN THE NW CORNER OF A CONCRETE PAD THAT IS ABOUT 10 METERS BY 24 METERS. IT IS 50 M (164.0 FT) EAST OF CENTERLINE OF HIGHWAY, 20.1 M (65.9 FT) WSW FROM A POWER POLE, 9.8 M (32.2 FT) SSE OF AN EAST WEST FENCE, 1.3 M (4.3 FT) EAST OF WEST EDGE OF CONCRETE PAD AND 1.1 M (3.6 FT) SOUTH OF THE NORTH EDGE OF THE CONCRETE PAD.  
DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: GOLD BEACH

**GOLD**  
PID: OA1624

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CURRY

LATITUDE:	42° 25' 14.52352" N	±0.00010 SECONDS
LONGITUDE:	124° 25' 39.17367" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 6.0 METERS  
20. FEET

GEOID HEIGHT:	-26.023		METERS
ELLIPSOIDAL HEIGHT:	-20.342	±0.055	METERS
X:	2153120.866		METERS
Y:	3021186.684		METERS
Z:	-5170784.836		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 " +04.4 " (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	91,339.658	1,176,877.002	0.99997914	- 2 41 13.3
UTM	10	4,697,474.960	382,554.664	0.99976971	- 0 57 47.1

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . DRILL HOLE IN PARTIALLY EXPOSED BOULDER  
THE MARK IS STAMPED . . . GOLD 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	CURRY COUNTY, OREGON

(Continued on Next Page)



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: GOLD BEACH

**GOLD**  
PID: OA1624

STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN GOLD BEACH AT THE GOLD BEACH AIRPORT ABOUT 0.25 MILE WEST OF HIGHWAY 101. TO REACH FROM THE INTERSECTION OF WEST MOORE ST AND N ELLENSBURG AVE, (US 101) WHICH IS ON THE NE SIDE OF CURRY COUNTY COURTHOUSE, GO WEST ON W MOORE ST, FOR 0.32 KM (0.20 MI) , TURN RIGHT ON AIRPORT WAY AND GO 0.16 KM (0.10 MI) TO A ROAD FORK, TAKE A LEFT ON SOUTH JETTY ROAD AND GO .36 K TO OCEANSIDE RV PART ON THE LEFT, TURN RIGHT INTO PARKING LOT AND GO ABOUT 50 METERS TO A BLUE RESTROOM AND STATION. THE STATION IS SET INTO A DRILL HOLE 17.3 M (56.8 FT) NNE OF THE NE CORNER OF A BLUE REST ROOM AND 8.0 M (26.2 FT) SOUTH OF THE NORTH EDGE OF THE SOUTH JETTY. THE MARK IS IN LINE WITH THE CENTER ONE OF THREE, PILE BREAKWATERS.  
DESCRIBED BY DARRYL NEIMI, CURRY COUNTY SURVEYOR.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991  
USGS QUAD SHEET: COLONY RANCH

**H 118**  
PID: NX0049

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: HARNEY

LATITUDE:	42° 05' 38.88417" N	
LONGITUDE:	118° 34' 22.47161" W	
ORTHOMETRIC HEIGHT:	{ 1273.40	METERS
	4177.8	FEET

GEOID HEIGHT:	-18.481	METERS
ELLIPSOIDAL HEIGHT:	1255.053	METERS
X:	1707822.795	METERS
Y:	2829322.513	METERS
Z:	5438369.794	METERS

HORIZONTAL NETWORK ORDER: A  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.37983"            +03.63161" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES				*GRID AZIMUTH TO H 118 AZ MK DEG MIN SEC
		NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	
SPC	OR S	49,320.5	1,659,422.3	1.00006879	+ 1 19 6.3	034 21 12.2
SPC	NV W	4,815,153.0	800,862.3	0.99990001	+ 0 00 25.2	035 39 53.3
UTM	11	4,661,425.0	369,925.9	0.99980819	- 1 03 16.4	036 43 34.9

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	H 118 AZ MK		035 40 18.5
	H 118 RM 1	19.124 METERS	087 44
	H 118 RM 2	9.748 METERS	176 22

STATION MARK IS A .... BENCH MARK DISK  
WITH SETTING ..... TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED ... H 118 1934

(Continued on Next Page)

**H 118**

PID: NX0049

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1934	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1950		COAST AND GEODETIC SURVEY (EBL)
1956		COAST AND GEODETIC SURVEY (LSB)
1984	GOOD	NATIONAL GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1950 (EBL)  
THE STATION IS ABOUT 7.5 MILES NORTH OF DENIO, OREGON. 100 YARDS SOUTH OF THE OLD COTTONWOOD SCHOOL HOUSE, ALSO KNOWN LOCALLY AS THE RED POINT SCHOOL. 20 YARDS EAST OF THE MAIN ROAD AND 20 YARDS NORTHWEST OF A FENCE CORNER. THE STATION MARK IS A U.S. COAST AND GEODETIC SURVEY BENCH MARK, STAMPED H 118 1934, SET IN THE TOP OF A 12-INCH SQUARE CONCRETE POST THAT PROJECTS APPROXIMATELY 10 INCHES.

REFERENCE MARK NO. 1, STAMPED BM H 118 NO 1 1950, IS 11 YARDS NORTH OF THE FENCE CORNER AND 1 FOOT WEST OF THE FENCELINE.

REFERENCE MARK NO. 2, STAMPED BM H 118 NO 2 1950, IS 13 YARDS WEST OF THE FENCE CORNER AND 12 YARDS EAST OF THE CENTER LINE OF THE MAIN ROAD.

THE AZIMUTH MARK, STAMPED BM H 118 1950, IS 15 YARDS NORTHWEST OF THE CENTER LINE OF THE ROAD. 4 FEET SOUTHWEST OF A FENCE CORNER AND 2 FEET SOUTHWEST OF A WHITE WITNESS POST. THE MARK PROJECTS ABOUT 2 INCHES.

TO REACH THE STATION FROM THE POST OFFICE AND CROSS ROADS IN DENIO, OREGON, GO NORTH ON THE ROAD TOWARDS FIELDS FOR 8.2 MILES TO THE COTTONWOOD SCHOOL HOUSE AND THE STATION.

TO REACH THE AZIMUTH MARK FROM THE STATION, FOLLOW THE ROAD NORTHEAST, PASSING TO THE EAST OF THE SCHOOL HOUSE, FOR 0.3 MILE TO A FENCE CORNER AND THE MARK ON THE LEFT.

**STATION RECOVERY (1956)**

RECOVERED BY COAST AND GEODETIC SURVEY 1956 (LSB)  
THE STATION WAS RECOVERED AND ALL MARKS WERE FOUND IN GOOD CONDITION.

THE ORIGINAL DESCRIPTION IS ADEQUATE WITH THE FOLLOWING EXCEPTION--THE DISTANCE TO R.M. 1 WAS FOUND TO BE 19.124 METERS, 62.75 FEET INSTEAD OF 19.130 METERS, 62.76 FEET.

ALL OTHER DISTANCES AND DIRECTIONS WERE CHECKED.  
(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991  
USGS QUAD SHEET: COLONY RANCH

H 118  
PID: NX0049

A 4 FOOT STAND WAS USED FOR ALL OBSERVATIONS.

STATION RECOVERY (1984)

RECOVERED BY NATIONAL GEODETIC SURVEY 1984  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION WAS RECOVERED IN GOOD CONDITION. THE RMS WERE SEARCHED FOR BUT WERE NOT FOUND. THE AZIMUTH MARK WAS NOT SEARCHED FOR. TO REACH THE STATION FROM THE BORDER AT DENIO GO NORTH 13 KM (8.1 MI) TO THE MARK ON THE RIGHT. ITS POSSIBLE TO DRIVE CLOSER TO THE STATION BY TAKING FARM LANE 0.16 KM (0.10 MI) SOUTH THEN EAST 0.16 KM (0.10 MI) THEN NORTH .16 KM (0.10 MI) .  
THE STATION IS LOCATED ABOUT 100 METERS SOUTH OF THE OLD SCHOOL, 30 METERS EAST OF THE CENTERLINE OF THE HIGHWAY, 19.2 M (63.0 FT) WNW OF A FENCE CORNER, 12.6 M (41.3 FT) WEST OF THE CENTERLINE OF A DIRT ROAD, 2.2 M (7.2 FT) EAST OF A FENCE, 1.9 M (6.2 FT) EAST OF A WITNESS POST AND IS ABOUT 5 M (16.4 FT) LOWER THAT THE MAIN ROAD. DESCRIBED BY L.L. RIGGERS.

**HAMILTON**

PID: QE2663

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LINCOLN

LATITUDE:	44° 36' 05.83589" N	±0.00020 SECONDS
LONGITUDE:	124° 03' 53.89116" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 5.2 METERS  
17. FEET

GEOID HEIGHT:	-22.268		METERS
ELLIPSOIDAL HEIGHT:	-17.466	±0.075	METERS
X:	33742.664		METERS
Y:	463462.094		METERS
Z:	6339864.054		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.4 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	110,137.339	2,217,080.332	0.99994324	- 2 31 41.6
UTM	10	4,939,248.660	415,484.415	0.99968784	- 0 44 52.2

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . HAMILTON 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: NEWPORT SOUTH

## HAMILTON

PID: QE2663

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 2 MILES SSW OF NEWPORT AND AT THE SOUTH BEACH STATE PARK.

TO REACH THE STATION FROM THE SOUTH END OF THE YAQUINA BAY BRIDGE IN NEWPORT, GO SOUTH ON HIGHWAY 101 FOR 2.24 KM (1.39 MI) TO THE ENTRANCE TO SOUTH BEACH STATE PARK. FOLLOW ENTRANCE ROAD 0.64 KM (0.40 MI) WEST TO DAY USE AREA. MONUMENT IS SET IN CONCRETE NEAR NORTH END OF WESTERNMOST PARKING ISLAND IN A LANDSCAPED AREA. FROM THE MONUMENT THE NORTHEAST CORNER OF THE PUBLIC RESTROOMS BEARS SOUTH 54.5 DEGREES WEST, 58.89 M (193.21 FT) . OREGON STATE HIGHWAY DIVISION TRIANGULATION STATION BEND BEARS SOUTH 8.5 DEGREES WEST, 93.60 M (307.09 FT) .

DESCRIBED BY TOM HAMILTON, LINCOLN COUNTY SURVEYOR.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: MAY 1, 1991  
USGS QUAD SHEET: BEND

**HAY**  
PID: QD1881

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JEFFERSON

LATITUDE:	44° 30' 00.00491" N	±0.00020 SECONDS
LONGITUDE:	121° 09' 13.88676" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	874.6	METERS
	2869.	FEET

GEOID HEIGHT:	-19.725	METERS
ELLIPSOIDAL HEIGHT:	854.712	±0.067 METERS
X:	5634664.989	METERS
Y:	2051397.187	METERS
Z:	-2168506.762	METERS

HORIZONTAL NETWORK ORDER: FIRST  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.1                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	92,812.953	2,448,001.539	0.99996220	- 0 27 49.3
UTM	10	4,929,066.902	646,764.660	0.99986489	+ 1 17 39.2

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . HAY 1990

STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**HAY**  
PID: QD1881

**STATION DESCRIPTION**

DESCRIBED 1990

THE STATION IS LOCATED ABOUT MIDWAY BETWEEN MADRAS AND REDMOND AND AT THE NE END OF HAYSTACK DAM.

TO REACH FROM THE INTERSECTION OF US 97 AND JERICHO LANE, THIS ROAD IS LOCATED MIDWAY BETWEEN REDMOND AND MADRAS, GO EASTERLY ON JERICHO LANE FOR 2.48 KM (1.54 MI) TURN RIGHT, (DAMTENDERS HOUSE ON LEFT AFTER TURNING) CONTINUE 0.56 KM (0.35 MI) TO THE SOUTHWEST END OF THE DAM, TURN LEFT ONTO DAM AND GO 0.32 KM (0.20 MI) TO THE NORTHEAST END OF THE DAM AND STATION IN ROCK OUTCROP ABOUT 9 M (29.5 FT) HIGHER THAN THE DAM.

THE STATION IS 16.5 M (54.1 FT) NORTH OF THE NORTHEAST END OF THE DAM, 7.2 M (23.6 FT) WEST OF THE CENTERLINE OF A TRACK ROAD, 6.6 M (21.7 FT) WEST OF A GATE POST AND 3.3 M (10.8 FT) WSW OF A FENCE. DESCRIBED BY L.L. RIGGERS.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: MAY 1, 1991  
USGS QUAD SHEET: OPAL CITY

**HAY AZ MK**

PID: QD1882

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JEFFERSON

LATITUDE:	44° 29' 51.8071" N	±0.00020 SECONDS
LONGITUDE:	121° 09' 27.6103" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 871.5 METERS  
2859. FEET

GEOID HEIGHT:	-19.730		METERS
ELLIPSOIDAL HEIGHT:	1504.839	±0.066	METERS
X:	4958915.755		METERS
Y:	-2658152.835		METERS
Z:	2995772.258		METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.1 (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	92,562.39	2,447,696.33	0.99996266	- 0 27 59.1
UTM	10	4,928,807.12	646,467.31	0.99986382	+ 1 17 29.3

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**HAY AZ MK**

PID: QD1882

**STATION DESCRIPTION**

DESCRIBED 1990

THE STATION IS LOCATED ABOUT MIDWAY BETWEEN MADRAS AND REDMOND AND AT THE SW END OF HAYSTACK DAM.

TO REACH FROM THE INTERSECTION OF US 97 AND JERICHO LANE, THIS ROAD IS LOCATED MIDWAY BETWEEN REDMOND AND MADRAS, GO EASTERLY ON JERICHO LANE FOR 2.4 KM (1.5 MI) TURN RIGHT AND GO 0.16 KM (0.10 MI) TURN LEFT AND GO ALONG WEST SIDE OF CANAL FOR 0.64 KM (0.40 MI) TO A POINT ON THE PROLONGATION OF THE DOWNSTREAM SIDE OF THE DAM AND THE STATION ON THE RIGHT.

THE STATION IS A 3 CM SQUARE IRON PIN SET INTO CONCRETE MONUMENT. THE IRON PIN PROJECTS ABOUT 7 CM ABOVE THE GROUND. IT IS 22.2 M (72.8 FT) WEST OF THE CENTERLINE OF A TRACK ROAD GOING UP THE HILL, 8.1 M (26.6 FT) SE OF THE EDGE OF THE CANAL 2.9 M (9.5 FT) SE OF THE CENTERLINE OF THE TRACK ROAD ON THE SOUTH SIDE OF THE CANAL AND 0.7 M (2.3 FT) ENE OF A WITNESS POST.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: MAY 1, 1991  
USGS QUAD SHEET: ST HELENS

**HELEN**  
PID: RD4218

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: COLUMBIA

LATITUDE:	45° 51' 24.77890"	N	±0.00010	SECONDS
LONGITUDE:	122° 48' 04.23632"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	22.84			METERS
	74.9			FEET

GEOID HEIGHT:	-20.950			METERS
ELLIPSOIDAL HEIGHT:	1.742	±0.043		METERS
X:	52992.957			METERS
Y:	579928.341			METERS
Z:	6330223.965			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	245,932.491	2,321,314.334	0.99996676	- 1 37 55.1
SPC	WA S	60,799.688	321,310.521	0.99999474	- 1 40 17.6
UTM	10	5,078,165.633	515,434.987	0.99960293	+ 0 08 33.6

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . A DRILL HOLE IN BEDROCK  
THE MARK IS STAMPED . . . HELEN 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**HELEN**

PID: RD4218

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED IN ST HELENS.

TO REACH STATION FROM OREGON HIGHWAY US 30 AND GABLE ROAD (ON THE SOUTH SIDE OF THE CITY OF ST. HELENS) TURN EAST ON GABLE ROAD, TRAVEL EAST 0.72 KM (0.45 MI) TO JUNCTION WITH OLD PORTLAND ROAD, STAY LEFT AND TRAVEL NORTHEAST ON OLD PORTLAND ROAD 1.44 KM (0.89 MI) TO INTERSECTION OF PLYMOTH STREET SOUTHWEST OF COUNTY COURT HOUSE ALONG OLD PORTLAND ROAD), TURN RIGHT (EAST) ON PLYMOTH AND GO 0.56 KM (0.35 MI) TO SOUTH 6TH STREET AND STATION ON THE RIGHT.

THE STATION IS A 4 INCH OREGON PRIMARY GPS DISK STAMPED---HELEN 1989---, SET IN DRILL HOLE IN BEDROCK FLUSH WITH GROUND, 12.8 M (42.0 FT) NORTHERLY OF ROCK BLUFF, 11.98 M (39.30 FT) NORTHEAST OF CYCLONE FENCE CORNER, 20.91 M (68.60 FT) SOUTHEAST OF CYCLONE FENCE CORNER, 22.40 M (73.49 FT) FEET SOUTHWESTERLY OF CENTERLINE OF PLYMOTH STREET, 27.74 M (91.01 FT) FEET SOUTHWESTERLY OF PLASTIC YELLOW PLUG INSCRIBED, HERTEL PLS 1896, IN EAST FACE OF POWER POLE NUMBER 590 (POLE AT NORTHEAST QUAD OF STREET INTERSECTION).

**HORSE HILL**  
PID: NW0330

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	42° 08' 01.74983" N	±0.00020 SECONDS
LONGITUDE:	117° 27' 00.38144" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1979.4 METERS  
6494. FEET

GEOID HEIGHT:	-16.395		METERS
ELLIPSOIDAL HEIGHT:	1963.097	±0.044	METERS
X:	3939800.203		METERS
Y:	-3105907.000		METERS
Z:	-3928513.974		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.42917" +03.49344" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES		POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO HORSE HILL AZ MK DEG MIN SEC
		NORTHING METERS	EASTING METERS			
SPC	OR S	56,485.749	1,752,114.364	1.00005619	+ 2 05 11.7	299 55 59.8
SPC	NV W	4,820,182.089	893,683.034	1.00000796	+ 0 45 37.1	301 15 59.8
UTM	11	4,664,732.236	462,801.460	0.99961703	- 0 18 7.1	302 19 18.6

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	HORSE HILL RM 1	11.389 METERS	019 43
	HORSE HILL RM 2	9.727 METERS	099 52
	HORSE HILL AZ MK		302 01 11.5

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . ROCK OUTCROP  
THE MARK IS STAMPED . . . HORSE HILL 1934  
(Continued on Next Page)

## HORSE HILL

PID: NW0330

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1934	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1956		COAST AND GEODETIC SURVEY (LSB)
1975	GOOD	US GEOLOGICAL SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1934 (CP )  
STATION IS NEAR THE HIGHEST POINT OF WHAT IS LOCALLY KNOWN AS HORSE HILL, BEING THE HIGHEST GROUND LAYING NORTH OF LOUSE CANYON, AT A POINT ABOUT 3-1/2 MILES NORTH OF WHERE THE CANYON SWINGS FARTHEST TO THE SOUTHWARD IN A U. STATION IS 18 MILES N.E. OF MC DERMITT, NEVADA AND 10 MILES NORTH OF THE OREGON-NEVADA STATE LINE. THE STATION BEING ON SOUTHWESTERN OF TWO HILLS OF NEARLY THE SAME HEIGHT WHICH FORM THE SUMMIT OF HORSE HILL.

BEST REACHED FROM PARADISE VALLY, NEV. BY GOING NORTH ON THE DESERT ROAD 41 MILES TO THE CALICO RANCH AND SPRING. FROM THE WEST GATE OF THE RANCH TAKE THE MAIN TRAVELED ROAD, QUINN RIVER ROAD. FOLLOW THIS ROAD IN A WESTERLY DIRECTION TO WHERE IT STARTS DOWN TO QUINN RIVER CANYON, HERE TAKE A SHARP RIGHT FORK AND GO 0.1 MILES AND TAKE LEFT FORK, FOLLOW THIS ROAD 8.5 MILES TO THE DEER CREEK VALLEY. GO DOWN STREAM 2 MILES, FROM HERE THE STATION IS 8 MILES NORTH AND IS THE HIGHEST POINT THAT CAN BE SEEN FROM THE NORTH RIM OF THE CANYON. LOUSE CANYON IS CROSSED ABOUT HALF WAY BETWEEN DEER CREEK AND THE STATION.

R.M.NO.3 (AZIMUTH) IS 3/8 MILES N.W. SET IN A ROCK LEDGE.

### STATION RECOVERY (1956)

RECOVERED BY COAST AND GEODETIC SURVEY 1956 (LSB)  
THE STATION, REFERENCE MARKS 1, 2 AND 3 (AZIMUTH MARK) WERE RECOVERED AS DESCRIBED AND IN GOOD CONDITION. THE DIRECTIONS AND DISTANCES TO THE MARKS CHECKED THE 1934 DATA.

A TRUCK WAS DRIVEN TO THE STATION. THE FOLLOWING IS AN ADAPTATION OF THE ORIGINAL DESCRIPTION WITH ANY CHANGES OR ADDITIONS NOTED..

THE STATION IS NEAR THE HIGHEST POINT OF WHAT IS LOCALLY KNOWN AS HORSE HILL, WHICH IS THE HIGHEST GROUND LYING NORTH OF LOUSE CANYON. AT A POINT ABOUT 3-1/2 MILES NORTH OF WHERE THE CANYON SWINGS FARTHEST TO THE SOUTHWARD IN A U, AND ON THE SOUTHWEST ONE OF TWO HILLS OF APPROXIMATELY THE SAME HEIGHT WHICH FORMS THE SUMMIT OF HORSE HILL. IT IS ABOUT 18 MILES NORTHEAST OF MC DERMITT, NEVADA AND 10 MILES NORTH OF THE OREGON-NEVADA STATE LINE.

(Continued on Next Page)

## HORSE HILL

PID: NW0330

TO REACH FROM THE POST OFFICE IN MC DERMITT, GO NORTH ON U.S. HIGHWAY 95 FOR 14.8 MILES TO A CROSSROAD AT SIGNS MC DERMITT 15, JORDAN VALLEY 86 AND OREGON CANYON. TURN RIGHT, EAST, ON BLADED ROAD FOR 1.9 MILES TO A FORK, TAKE LEFT FORK ON MAIN ROAD UP GRADE, EASTERLY, FOR 6.1 MILES TO A WIRE GATE. GO THROUGH GATE AND CONTINUE EASTERLY, DOWN GRADE FOR 1.3 MILES TO A FORK, KEEP LEFT FORK, NORTHEAST AND EAST FOR 6.4 MILES TO A CROSSROAD. TURN RIGHT, SOUTH, FOR 0.2 MILE TO A FORK, TAKE RIGHT FORK, SOUTH AND SOUTHEAST FOR 3.2 MILES TO A WIRE GATE. GO THROUGH GATE AND CONTINUE EASTERLY FOR 1.0 MILE TO WHERE THE ROAD CROSSES ANTELOPE CREEK IN THE BOTTOM OF A DRAW, THENCE CONTINUE ON MAIN ROAD EAST FOR 0.3 MILE TO A TRACK ROAD ON THE RIGHT. TURN RIGHT, SOUTH, FOR 1.3 MILES TO A DIM FORK, KEEP LEFT FORK AND GO SOUTH AND SOUTHEAST FOR 7.3 MILES TO A SMALL CAIRN ON THE RIGHT, AT A LOW ROCK LEDGE. FROM THIS POINT THE TRACK ROAD IS DIM, VERY ROUGH AND WASHED OUT. CONTINUE SOUTH FOR 0.9 MILE TO ANOTHER SMALL CAIRN ON THE LEFT. LEAVE THE ROAD, TURN LEFT AND GO EAST UP A SHALLOW DRAW FOR 0.35 MILE TO THE CREST OF THE RIDGE. TURN RIGHT AND GO SOUTH AND SOUTHWEST ALONG THE RIDGE FOR 0.35 MILE TO THE STATION ON THE SUMMIT OF THE BOULDER-COVERED HILL. THIS IS ABOUT A 2 1/2-HOUR DRIVE FROM MC DERMITT.

THE STATION AND ALL MARKS ARE STANDARD DISKS CEMENTED IN DRILL HOLES IN BEDROCK.

THE STATION MARK (NOTE 2), STAMPED HORSE HILL 1934, IS IN BEDROCK PROJECTING ABOUT 6 INCHES, AND 7 FEET SOUTH-SOUTHEAST OF A WITNESS POST.

REFERENCE MARK 1 (NOTE 12A), STAMPED HORSE HILL NO 1 1934, IS IN BEDROCK PROJECTING ABOUT 6 INCHES.

REFERENCE MARK 2 (NOTE 12A), STAMPED HORSE HILL NO 2 1934, IS IN BEDROCK PROJECTING ABOUT 12 INCHES.

REFERENCE MARK 3 (NOTE 12A) (AZIMUTH), STAMPED HORSE HILL NO 3 1934, IS A REFERENCE MARK DISK SET IN A ROCK LEDGE PROJECTING ABOUT 18 INCHES. IT IS ABOUT 250 FEET WEST OF AN OLD DIM ROAD AND 2 FEET SOUTH OF A WITNESS POST. FROM THE STATION, PACK NORTHWEST FOR ABOUT 0.3 MILE TO A LOWER HILL, THE LEDGE AND THE MARK.

### STATION RECOVERY (1975)

RECOVERED BY US GEOLOGICAL SURVEY 1975  
RECOVERED AS DESCRIBED. ALL MARKS IN GOOD CONDITION. STATION REACHED BY HELICOPTER.

INSTRUMENT STAND 5.0 FT ABOVE STATION MARK.

(Continued on Next Page)

## HORSE HILL

PID: NW0330

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989

THE STATION, REFERENCE MARKS 1 AND 2 AND THE AZIMUTH MARK WERE RECOVERED IN GOOD CONDITION. BECAUSE OF NEW ROADS IN AREA A NEW TO REACH FOLLOWS.

TO REACH FROM THE OREGON-NEVADA BORDER AT MC DERMITE GO NORTH ON US 95 FOR 24.3 KM (15.1 MI) , TURN RIGHT TOWARD ANTELOPE FLATS AND GO 26.4 KM (16.4 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 6.4 KM (4.0 MI) TO CROSSING OF ANTELOPE CREEK, CONTINUE ON 1.44 KM (0.89 MI) TO A ROAD FORK (LEFT FORK GOES TO LUCKY SEVEN COW CAMP) TAKE RIGHT FORK AND GO 10.9 KM (6.8 MI) TO A DIM TRACK ROAD RIGHT, TURN RIGHT AND FOLLOW TRACK ROAD 0.32 KM (0.20 MI) TO A CROSSROADS, TURN RIGHT AND FOLLOW ROUGH TRACK ROAD FOR 3.5 KM (2.2 MI) TO WHERE ROAD BEGINS TO CLIMB A VERY STEEP PITCH AND END OF TRUCK TRAVEL. THE AZIMUTH MARK IS AT THE TOP OF THIS PITCH ABOUT 100 METERS WEST. THE STATION IS ABOUT A 10 MINUTE PACK EASTERLY.  
DESCRIBED BY L.L. RIGGERS



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: MAY 1, 1991  
USGS QUAD SHEET: HYATT RESERVOIR

**HOWARD**  
PID: NZ1333

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 12' 57.16278" N	±0.00010 SECONDS
LONGITUDE:	122° 22' 38.25172" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1383.7 METERS  
4540. FEET

GEOID HEIGHT:	-21.492		METERS
ELLIPSOIDAL HEIGHT:	1361.875	±0.057	METERS
X:	1880278.751		METERS
Y:	2913463.282		METERS
Z:	5336913.950		METERS

HORIZONTAL NETWORK ORDER: FIRST  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.5 +04.1 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	62,747.112	1,344,999.803	1.00003164	- 1 17 3.6
UTM	10	4,673,933.096	551,396.608	0.99963250	+ 0 25 6.3

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . A LARGE STRUCTURE WITH DEEP FOUNDATIONS  
THE MARK IS STAMPED . . . HOWARD 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## HOWARD

PID: NZ1333

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 19 MILES EAST OF ASHLAND AND AT HOWARD PRAIRIE DAM.

TO REACH FROM THE JUNCTION OF HIGHWAY 66 AND I-5 AT THE SOUTH END OF ASHLAND GO EAST ON HIGHWAY 66 ABOUT 15 MILES TO THE TOP OF THE DIVIDE, CONTINUE EAST ON HIGHWAY 66 3.04 KM (1.89 MI) TO A ROAD LEFT, TURN LEFT TOWARD HYATT RES. AND GO 4.96 KM (3.08 MI) TO A ROAD FORK, TAKE LEFT FORK, HYATT PRAIRE RD, AND GO 1.44 KM (0.89 MI) TO HYATT LAKE RESORT, KEEP LEFT AND GO 7.84 KM (4.87 MI) TO A ROAD FORK, THIS IS AT MP 4.9, TURN RIGHT AND GO 5.92 KM (3.68 MI) TO A CROSSROADS, TURN LEFT AND GO .32 KM (0.20 MI) TO THE SOUTH END OF THE DAM AND A LOCKED GATE. ITS POSSIBLE TO HOLD THE CABLE GATE DOWN AND DRIVE ACROSS. THE MARK IS ABOUT 40 METERS NORTH OF THIS POINT.

THE STATION IS SET INTO A DRILL HOLE IN A CONCRETE PLATFORM ON THE ANORTH SIDE OF A FISH SCREEN. IT IS 8.2 M (26.9 FT) WEST OF A POWER POLE. THE CONCRETE PLATFORM IS ABOUT 1 METER SQUARE AND IS ABOUT 0.5 M (1.6 FT) HIGHER THAT THE TOP OF THE DAM.

DESCRIBED BY L.L. RIGGERS.

**HOWARD AZ MK**  
PID: NZ1334

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 12' 38.8975" N	± 0.00020 SECONDS
LONGITUDE:	122° 23' 29.9610" W	± 0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 1377.6 METERS  
4520. FEET

GEOID HEIGHT:	-21.512		METERS
ELLIPSOIDAL HEIGHT:	1355.758	± 0.079	METERS
X:	3869207.515		METERS
Y:	3121783.725		METERS
Z:	3984336.832		METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.5 +04.1 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	62,210.35	1,343,801.33	1.00003310	- 1 17 39.0
UTM	10	4,673,361.19	550,215.08	0.99963103	+ 0 24 31.4

STATION MARK IS AN . . . . . AZIMUTH MARK DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . HOWARD AZ MK 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**HOWARD AZ MK**

PID: NZ1334

**STATION DESCRIPTION**

**DESCRIBED 1990**

THE STATION IS LOCATED ABOUT 15 MILES EAST OF ASHLAND ON THE WEST SHORE OF HOWARD PRAIRIE LAKE IN AN AREA RESERVED FOR WIND SURFERS. TO REACH FROM THE INTERSECTION OF I-5 AND HIGHWAY 66 IN ASHLAND, GO EAST ON HIGHWAY 66, 24.8 KM (15.4 MI) TO THE TOP OF GREEN SPRINGS SUMMIT, CONTINUE EASTERLY 3.04 KM (1.89 MI) TURN LEFT TOWARD HYATT PRAIRIE RESERVOIR AND GO 4.96 KM (3.08 MI) TO A ROAD FORK, TAKE LEFT FORK TO RESORT ON THE RIGHT, CONTINUE ON MAIN ROAD 7.84 KM (4.87 MI) TO APPROXIMATE MP 4.9 AND A ROAD FORK, TAKE RIGHT FORK AND GO 3.04 KM (1.89 MI) TO A SIGN WIND SURFING AND A ROAD LEFT, TAKE ROAD LEFT AND GO 0.32 KM (0.20 MI) TO A ROAD FORK, KEEP LEFT AND GO 0.32 KM (0.20 MI) TO ROAD FORK, KEEP LEFT AND GO 0.16 KM (0.10 MI) TO A GROVE OF TREES ON THE RIGHT, TURN RIGHT KEEPING THE TREES ON THE LEFT GO 0.08 KM (0.05 MI) TO THE POINT AND THE STATION.

THE STATION IS SET INTO A DRILL HOLE IN ROCKOUTCROP THAT PROJECTS 0.3 M (1.0 FT) ABOVE THE BEACH. IT IS 46.3 M (151.9 FT) EAST OF THE EAST SIDE OF A GROVE OF TREES, 28.0 M (91.9 FT) NW OF THE EAST END OF A POINT, 20.4 M (66.9 FT) EAST OF A WITNESS POST, 8.5 M (27.9 FT) WEST OF THE HIGHWATER LINE AND 0.6 M (2.0 FT) NW OF A CARIN.  
DESCRIBED BY L.L. RIGGERS.

**HOWELL**  
PID: QE1851

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MARION

LATITUDE:	44° 59' 23.90333" N	± 0.00010 SECONDS
LONGITUDE:	122° 52' 46.81588" W	± 0.00020 SECONDS

ORTHOMETRIC HEIGHT:	{ 61.2	METERS
	201.	FEET
GEOID HEIGHT:	-21.577	METERS
ELLIPSOIDAL HEIGHT:	39.324 ±0.063	METERS
X:	1237530.082	METERS
Y:	2526484.847	METERS
Z:	-5705037.646	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.59022" +04.31832" (Based on Adjusted Positions)

PLANE COORDINATES						
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO HOWELL RM 3 AZIMUTH DEG MIN SEC
SPC	OR N	149,810.722	2,312,383.750	0.99989943	- 1 41 15.5	283 59 44.6
UTM	10	4,981,843.587	509,485.414	0.99960111	+ 0 05 6.3	282 13 22.8

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
RD2661	MT ANGEL ST BENEDICT E TANK	APPROX.11.2 KM	048 28 00.6
	HOWELL RM 1	149.910 METERS	091 20
	HOWELL RM 2	147.540 METERS	270 18
	HOWELL RM 3 AZIMUTH		282 18 29.1

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . HOWELL 1972

(Continued on Next Page)

**HOWELL**

PID: QE1851

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1972	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1980	GOOD	NATIONAL GEODETIC SURVEY (CLN)
1986	GOOD	NATIONAL GEODETIC SURVEY (LLR)
1989	GOOD	NATIONAL GEODETIC SURVEY

**STATION DESCRIPTION**

DESCRIBED BY NATIONAL GEODETIC SURVEY 1972 (LDF)  
THE STATION IS ABOUT 8.5 MILES NORTHEAST OF SALEM, 5.8 MILES  
SOUTHEAST OF BROOKS, 5.0 MILES WEST OF SILVERTON, AND LOCATED ON  
THE CENTRAL HOWELL SCHOOL PLAYGROUND IN THE SOUTHWEST QUARTER OF  
SECTION 1, R-2-W, T-7-S, WILLAMETTE MERIDIAN.

TO REACH THE STATION FROM WHERE INTERSTATE 5 PASSES OVER THE STATE  
HIGHWAY 213 (SILVERTON ROAD) IN NORTH SALEM GO NORTHEAST ON  
SILVERTON ROAD FOR 0.35 MILE TO A CROSSROAD - LANCASTER  
DRIVE. CONTINUE STRAIGHT AHEAD ON SILVERTON ROAD NORTHEAST FOR  
5.1 MILES TO A CROSSROAD AND RM 3 ON THE RIGHT. CONTINUE  
STRAIGHT AHEAD EAST ON SILVERTON ROAD FOR 0.4 MILE TO A CROSSROAD  
(HOWELL-PRAIRIE ROAD). CONTINUE STRAIGHT AHEAD EAST ON  
SILVERTON ROAD FOR 0.05 MILE TO THE EAST EDGE OF THE CENTRAL  
HOWELL SCHOOL BUILDING. TURN RIGHT AND GO SOUTH ALONG THE EAST  
SIDE OF THE SCHOOL BUILDING FOR 0.10 MILE TO THE SOUTH EDGE  
OF THE PLAYGROUND AND THE STATION SITE.

THE STATION MARKS ARE STANDARD NGS DISKS STAMPED HOWELL  
1972. THE SURFACE STATION MARK DISK IS SET IN THE TOP OF A  
12-INCH CYLINDRICAL CONCRETE MONUMENT THAT IS 2 INCHES BELOW THE  
GROUND SURFACE. THE STATION IS 174 FEET EAST OF THE CENTER OF  
HOWELL-PRAIRIE ROAD, 1.0 FOOT NORTH OF THE SOUTH EDGE OF THE  
PLAYGROUND. THE UNDERGROUND STATION MARK DISK IS SET 43 INCHES  
BELOW THE GROUND SURFACE.

REFERENCE MARK 1, A STANDARD NGS REFERENCE MARK DISK STAMPED  
HOWELL NO 1 1972, IS SET IN THE TOP OF A 12-INCH CYLINDRICAL  
CONCRETE MONUMENT THAT IS 3 INCHES BELOW THE GROUND SURFACE. THE  
DISK IS 1.5 FEET NORTHWEST OF A IRON POST SET IN THE SOUTHEAST  
CORNER OF THE SCHOOL YARD, AND 1.0 FOOT NORTH OF THE SOUTH EDGE  
OF THE SCHOOL YARD.

REFERENCE MARK 2, A STANDARD NGS REFERENCE MARK DISK STAMPED  
HOWELL NO 2 1972, IS SET IN THE TOP OF A 12-INCH CYLINDRICAL  
CONCRETE MONUMENT THAT IS 4 INCHES BELOW THE GROUND SURFACE. THE  
DISK IS 26.4 FEET EAST OF THE CENTER OF HOWELL-PRAIRIE ROAD, 9.9  
FEET NORTH-NORTHEAST OF POWER POLE (PGE C72-90), AND 1.0 FOOT  
NORTH OF THE SOUTH EDGE OF THE SCHOOLYARD.

(Continued on Next Page)

## HOWELL

PID: QE1851

REFERENCE MARK 3, A STANDARD NGS REFERENCE MARK DISK STAMPED HOWELL NO 3 1972, IS SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT THAT PROJECTS 2 INCHES. THE DISK IS 44.4 FEET SOUTHWEST OF A CENTERLINE MONUMENT SET IN THE INTERSECTION OF 81ST STREET AND SILVERTON ROAD, 30.8 FEET SOUTH OF THE CENTER OF SILVERTON ROAD, 2.0 FEET SOUTHEAST OF POWER POLE (NO. 21-164-1), AND 1.7 FEET SOUTH OF A METAL WITNESS POST WITH A SIGN ON IT.

### STATION RECOVERY (1980)

RECOVERED BY NATIONAL GEODETIC SURVEY 1980 (CLN)  
THE STATION AND REFERENCE MARK 3, AZIMUTH MARK, WERE RECOVERED IN GOOD CONDITION. REFERENCE MARKS 1 AND 2 HAD BEEN REMOVED FROM THERE CONCRETE MONUMENTS. REFERENCE MARKS 4 AND 5 WERE ESTABLISHED AT THIS TIME.

THE STATION IS LOCATED ABOUT 8.5 MILES NORTHEAST OF SALEM, 5.8 MILES SOUTHEAST OF BROOKS, 5.0 MILES WEST OF SILVERTON ON THE PLAYGROUND OF THE CENTRAL HOWELL SCHOOL.

TO REACH THE STATION FROM THE INTERSECTION OF LANCASTER DRIVE AND SILVERTON ROAD GO EASTERLY ON SILVERTON ROAD 5.6 MILES TO A CROSSROAD, HOWELL-PRARIE ROAD, CONTINUE STRAIGHT AHEAD 0.05 MILE, TURN RIGHT BETWEEN THE SCHOOL HOUSE AND THE GYM AND GO 0.1 MILE ACROSS THE PLAYGROUND TO THE SOUTH EDGE AND THE STATION.

THE STATION IS A STANDARD NATIONAL GEODETIC SURVEY DISK STAMPED ---HOWELL 1972---SET INTO THE TOP OF A ROUND CONCRETE MONUMENT 30 CM (12 INCHES) IN DIAMETER RECESSED 10 CM (4 INCHES) BELOW THE GROUND LOCATED 78.88 METERS (258.8 FEET) SSW FROM THE SOUTHWEST CORNER OF THE GYM, 53.0 METERS (174 FEET) E FROM THE CENTERLINE OF THE HOWELL-PRARIE RD, AND 1.5 METERS (5 FEET) N FROM THE SOUTH EDGE OF THE PLAYGROUND.

REFERENCE MARK NO. 4 IS A STANDARD NATIONAL GEODETIC SURVEY DISK STAMPED---HOWELL 1972 NO 4 1980---SET INTO THE TOP OF A ROUND CONCRETE MONUMENT 25 CM (10 INCHES) IN DIAMETER FLUSH WITH THE GROUND LOCATED 0.3 METER (1 FOOT) N FROM THE SOUTH EDGE OF THE PLAYGROUND AND 1/2 FOOT LOWER THAN THE STATION.

REFERENCE MARK NO. 5 IS A STANDARD NATIONAL GEODETIC SURVEY DISK STAMPED---HOWELL 1972 NO 5 1980---SET INTO THE TOP OF A ROUND CONCRETE MONUMENT 25 CM (10 INCHES) IN DIAMETER FLUSH WITH THE GROUND LOCATED 41.8 METERS (137 FEET) E FROM THE CENTERLINE OF HOWELL-PRARIE RD, 0.3 METER (1 FOOT) N FROM THE SOUTH EDGE OF THE PLAYGROUND, AND 1/2 FOOT HIGHER THAN THE STATION.

AZIMUTH MARK IS A STANDARD REFERENCE MARK DISK STAMPED---HOWELL NO 3 1972---SET INTO THE TOP OF A ROUND CONCRETE MONUMENT 30 CM (12 INCHES) IN DIAMETER PROJECTING 5 CM (2 INCHES) ABOVE THE GROUND LOCATED 9.1 METERS (30 FEET) S FROM THE CENTERLINE OF SILVERTON ROAD, 6.7 METERS (22 FEET) W FROM THE CENTERLINE OF 81ST, 1.2 METERS (4 FEET) E FROM A POWER POLE, AND 0.34 METER (1.1 FEET) E FROM A METAL WITNESS POST.

(Continued on Next Page)

## HOWELL

PID: QE1851

TO REACH THE AZIMUTH MARK FROM THE STATION GO NORTH ON HOWELL-PRARIE RD FOR 0.10 MILE, TURN LEFT ON THE SILVERTON ROAD AND GO 0.4 MILE TO A CROSSROAD, THE INTERSECTION OF 81ST ST AND THE MARK IN THE SOUTHWEST QUADRANT.

### STATION RECOVERY (1986)

RECOVERED BY NATIONAL GEODETIC SURVEY 1986 (LLR)  
THE STATION, REFERENCE MARKS 4 AND 5, AND THE AZIMUTH MARK (RM 3) WERE RECOVERED AS DESCRIBED BY CLN IN 1980.

THE STATION WAS USED AS A GPS SITE.  
DESCRIBED BY L.L. RIGGERS.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION IS LOCATED ABOUT 8.5 MILES NORTHEAST OF SALEM, 5.8 MILES SOUTHEAST OF BROOKS, 5.0 MILES WEST OF SILVERTON ON THE PLAYGROUND OF THE CENTRAL HOWELL SCHOOL.  
TO REACH THE STATION FROM THE INTERSECTION OF LANCASTER DRIVE AND SILVERTON ROAD GO EASTERLY ON SILVERTON ROAD 5.6 MILES TO A CROSSROAD, HOWELL-PRARIE ROAD, CONTINUE STRAIGHT AHEAD 0.05 MILE, TURN RIGHT BETWEEN THE SCHOOL HOUSE AND THE GYM AND GO 0.1 MILE ACROSS THE PLAYGROUND TO THE SOUTH EDGE AND THE STATION.  
THE STATION IS A STANDARD NATIONAL GEODETIC SURVEY DISK STAMPED ---HOWELL 1972---SET INTO THE TOP OF A ROUND CONCRETE MONUMENT 30 CM (12 INCHES) IN DIAMETER RECESSED 10 CM (4 INCHES) BELOW THE GROUND LOCATED 78.88 METERS (258.8 FEET) SSW FROM THE SOUTHWEST CORNER OF THE GYM, 53.0 METERS (174 FEET) E FROM THE CENTERLINE OF THE HOWELL-PRARIE RD, AND 1.5 METERS (5 FEET) N FROM THE SOUTH EDGE OF THE PLAYGROUND.



**HYATT DAM**  
PID: NZ1335

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 10' 18.04458" N	± 0.00020 SECONDS
LONGITUDE:	122° 28' 05.45214" W	± 0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1530.5 METERS  
5021. FEET

GEOID HEIGHT:	-21.644		METERS
ELLIPSOIDAL HEIGHT:	1508.613	±0.066	METERS
X:	6372264.428		METERS
Y:	-217560.411		METERS
Z:	216230.244		METERS

HORIZONTAL NETWORK ORDER: FIRST  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.5 +04.1 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	58,011.019	1,337,381.451	1.00004462	- 1 20 47.5
UTM	10	4,668,974.702	543,925.450	0.99962374	+ 0 21 25.4

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . HYATT DAM 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## HYATT DAM

PID: NZ1335

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 13 MILES EAST OF ASHLAND AND ON HYATT DAM.

TO REACH FROM THE JUNCTION OF HIGHWAY 66 AND I-5 AT THE SOUTH END OF ASHLAND GO EAST ON HIGHWAY 66 ABOUT 12 MILES TO THE TOP OF THE DIVIDE, CONTINUE EAST ON HIGHWAY 66 3.04 KM (1.89 MI) TO A ROAD LEFT, TURN LEFT TOWARD HYATT RES. AND GO 4.96 KM (3.08 MI) TO A ROAD FORK, TAKE LEFT FORK, HYATT PRAIRE RD, AND GO 1.44 KM (0.89 MI) TO HYATT LAKE RESORT, TURN RIGHT AND KEEP TO LEFT OF RESORT AND GO 0.48 KM (0.30 MI) TO A BRIDGE, CROSS OVER BRIDGE ONTO DAM AND GO 0.08 KM (0.05 MI) TO THE APPROXIMATE CENTER OF THE DAM AND STATION.

THE STATION IS SET INTO A ROUND CONCRETE MONUMENT FLUSH WITH THE GROUND. IT IS 26.25 M (86.12 FT) WSW OF WEST END OF WALK TO OUTLET TOWER, 24.0 M (78.7 FT) SSE OF A POLE, 2.2 M (7.2 FT) WEST OF THE CENTERLINE OF THE DAM AND 0.7 M (2.3 FT) EAST OF A WITNESS POST. DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: MAY 1, 1991  
USGS QUAD SHEET: HYATT RESERVOIR

### HYATT DAM AZ MK

PID: NZ1336

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 10' 38.3501" N	±0.00020 SECONDS
LONGITUDE:	122° 28' 02.8615" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	1526.7	METERS
	5009.	FEET

GEOID HEIGHT:	-21.617		METERS
ELLIPSOIDAL HEIGHT:	851.616	±0.066	METERS
X:	5749259.874		METERS
Y:	1906967.928		METERS
Z:	-1995684.804		METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE			
NAD83 minus NAD27	-00.5	+04.1	(Based on Nadcon Interpolation)

#### PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	58,636.00	1,337,455.62	1.00004293	- 1 20 45.7
UTM	10	4,669,601.34	543,980.98	0.99962380	+ 0 21 27.2

STATION MARK IS AN . . . . AZIMUTH MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)

#### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## HYATT DAM AZ MK

PID: NZ1336

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 13 MILES EAST OF ASHLAND AND ABOUT 0.5 MILE NORTH OF HYATT DAM.

TO REACH FROM THE JUNCTION OF HIGHWAY 66 AND I-5 AT THE SOUTH END OF ASHLAND GO EAST ON HIGHWAY 66 ABOUT 12 MILES TO THE TOP OF THE DIVIDE, CONTINUE EAST ON HIGHWAY 66 3.04 KM (1.89 MI) TO A ROAD LEFT, TURN LEFT TOWARD HYATT RES. AND GO 4.96 KM (3.08 MI) TO A ROAD FORK, TAKE LEFT FORK, HYATT PRAIRE RD, AND GO 1.44 KM (0.89 MI) TO HYATT LAKE RESORT, KEEP LEFT AND GO 0.48 KM (0.30 MI) . THE MARK IS ABOUT 100 METERS SOUTH OF THIS POINT AT THE HIGH WATER LINE.

THE STATION IS SET INTO A ROUND CONCRETE MONUMENT FLUSH WITH THE GROUND. IT IS 0.6 M (2.0 FT) WEST OF A WITNESS POST.  
DESCRIBED BY L.L. RIGGERS.

**ILLA**  
PID: NZ1330

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JOSEPHINE

LATITUDE:	42° 06' 16.06202" N	±0.00010 SECONDS
LONGITUDE:	123° 40' 53.50884" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 418.4 METERS  
1373. FEET

GEOID HEIGHT:	-23.920		METERS
ELLIPSOIDAL HEIGHT:	394.147	±0.050	METERS
X:	3312824.693		METERS
Y:	-3192234.755		METERS
Z:	4403422.261		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.2 (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	53,631.803	1,236,885.420	1.00006547	- 2 10 35.9
SPC	CA 1	809,062.435	1,860,900.991	1.00014073	- 1 05 58.3
UTM	10	4,661,599.304	443,649.558	0.99963907	- 0 27 25.1

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.  
THE MARK IS STAMPED . . . ILLA 1989

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

ILLA  
PID: NZ1330

STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS AN ORDOT PRIMARY GPS DISK STAMPED ILLA 1989 SET INTO A DRILL HOLE IN THE SE CORNER OF A CONCRETE SLAB OVER GAS TANKS AT ILLINOIS VALLEY AIRPORT.  
TO REACH FROM THE INTERSECTION OF US HIGHWAY 199 AND STATE HIGHWAY 46 GO SOUTH ON 199 FOR 8.16 KM (5.07 MI) , TURN RIGHT AT SIGN ILLINOIS VALLEY AIRPORT AND GO WEST THEN NORTH 0.48 KM (0.30 MI) TO THE CARPENTARY SHOP ON THE RIGHT AND THE STATION ABOUT 50 METERS NW.  
STATION IS LOCATED APPROXIMATELY 7.24 KM (4.50 MI) SOUTHWEST OF CAVE JUNCTION, OREGON, AT THE ILLINOIS VALLEY AIRPORT AT MILEPOST 33.67 OF THE REDWOOD HIGHWAY. THE STATION MARK IS LOCATED AT THE SOUTHEAST CORNER OF A CONCRETE SLAB COVERING FUEL TANKS AT THE AIRPORT, 49.7 M (163.1 FT) WNW OF THE NW CORNER OF THE CARPENTARY SHOP, 41.7 M (136.8 FT) WEST OF THE SW CORNER OF A METAL BUILDING, 41.5 M (136.2 FT) SW OF A PHONE STAND, AND 32.1 M (105.3 FT) EAST OF THE EAST EDGE OF THE RUNWAY.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: SALEM EAST

**JAIL**  
PID: QE2672

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MARION

LATITUDE:	44° 52' 35.23178" N	±0.00010 SECONDS
LONGITUDE:	122° 58' 15.52782" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	96.0	METERS
	315.	FEET

GEOID HEIGHT:	-21.519	METERS
ELLIPSOIDAL HEIGHT:	74.187	±0.059 METERS
X:	53209.976	METERS
Y:	-581107.985	METERS
Z:	-6330188.166	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	137,418.435	2,304,801.301	0.99990753	- 1 45 8.6
UTM	10	4,969,226.483	502,292.134	0.99960006	+ 0 01 13.7

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . JAIL 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	MARION COUNTY OREGON

(Continued on Next Page)

**JAIL**  
PID: QE2672

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 5.1 MILES SOUTHEAST OF THE CENTER OF SALEM IN THE NE 1/4 OF SEC 18, T 8 S, R 2 W. TO REACH FROM THE OVERPASS AT STATE HIGHWAY 22 AND INTERSTATE 5, GO EAST ON HIGHWAY 22 FOR 0.8 KM (0.5 MI) TO LANCASTER DRIVE AND TURN RIGHT, THEN SOUTH AND EAST ON LANCASTER DRIVE 1.44 KM (0.89 MI) TO CORDON ROAD AND AUMSVILLE HWY, THEN ON AUMSVILLE HWY GO 1.76 KM (1.09 MI) TO DEER PARK DRIVE, THEN GO 1.84 KM (1.14 MI) ON DEER PARK DRIVE TO THE FORK IN DEER PARK DRIVE, TAKE RIGHT FORK AND GO ABOUT 50 METERS TO THE MARK ON EASTERLY RIGHT OF WAY LINE. THE STATION MARK IS A BRASS DISK SET INTO THE TOP OF A 12 INCH CYLINDRICAL CONCRETE POST THAT IS FLUSH WITH THE GROUND. IT IS 8.53 M (27.99 FT) EAST OF THE EDGE OF THE PAVEMENT AND 0.33 M (1.08 FT) NORTH OF A STEEL FENCE POST WITNESS MARKER. BEARING FROM THE ANNEX-CITY OF SALEM MON, QUAD 441224, STA 1025 SOUTH 39 DEGREES 52 MINUTES 44.6 SECONDS, WEST 220.58 FT (67.23 M) . DESCRIBED BY PERSONEL FROM THE MARION COUNTY SURVEYORS OFFICE.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: JORDAN VALLEY

**JORD**  
PID: NW0588

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	42° 58' 46.63600"	N	±0.00020	SECONDS
LONGITUDE:	117° 03' 11.65729"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	1339.04			METERS
	4393.2			FEET

GEOID HEIGHT:	-15.767			METERS
ELLIPSOIDAL HEIGHT:	1323.357	±0.047		METERS
X:	4454503.638			METERS
Y:	-2933189.904			METERS
Z:	-3488482.452			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.5                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	151,630.003	1,781,037.700	0.99990002	+ 2 21 29.1
SPC	ID W	146,656.912	693,704.012	1.00007229	- 0 53 18.8
UTM	11	4,758,553.134	495,659.213	0.99960023	- 0 02 10.7

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN PAVEMENT  
THE MARK IS STAMPED . . . JORD 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: JORDAN VALLEY

**JORD**  
PID: NW0588

### STATION DESCRIPTION

**DESCRIBED 1989**

THE STATION IS LOCATED IN JORDAN VALLEY, 0.4 MILE NORTH OF THE POST OFFICE, ACROSS STREET FROM THE CITY PARK (WEST) ON ORDOT PROPERTY AT AN OLD SCALE SITE AND ON EAST SIDE OF HIGHWAY MAINTENCE STATION. TO REACH FROM THE POST OFFIC IN JORDAY VALLEY GO NORTH ON US 95 FOR 0.64 KM (0.40 MI) TO THE MARK ON THE LEFT. THE STATION IS 63.9 M (209.6 FT) SOUTH OF MP 20, 24.7 M (81.0 FT) NORTH OF A POWER POLE, 13.8 M (45.3 FT) WEST OF THE CENTERLINE OF THE HIGHWAY, 1.1 M (3.6 FT) EAST OF A WITNESS POST THAT IS IN A FENCE LINE, AND 0.5 M (1.6 FT) WEST OF WEST EDGE OF OLD SCALE PLATFORM. DESCRIBED BY L.L. RIGGERS.

**JOSEPH AIRPORT**

PID: RA1158

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WALLOWA

LATITUDE:	45° 20' 56.76472" N	±0.00010	SECONDS
LONGITUDE:	117° 15' 08.29468" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	1261.64		METERS
	4139.2		FEET

GEOID HEIGHT:	-14.737		METERS
ELLIPSOIDAL HEIGHT:	1247.015	±0.044	METERS
X:	335462.358		METERS
Y:	1426300.075		METERS
Z:	-6188040.373		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD (Vertical Network Order Unconfirmed)  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING, BUT THE EXACT VERTICAL FIELD PROCEDURES ARE UNKNOWN. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.46204"                    +03.59784" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO JOSEPH AIRPORT AZ MK
						DEG MIN SEC
SPC	OR N	192,069.341	2,754,416.675	0.99989953	+ 2 18 11.6	263 37 48.0
UTM	11	5,021,763.279	480,235.705	0.99960480	- 0 10 46.2	266 06 45.8

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
RA0694	JOSEPH AIRPORT RM 1	10.150 METERS	089 02
	G 407	10.000 METERS	243 13
	JOSEPH AIRPORT AZ MK		265 55 59.6

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . JOSEPH AIRPORT 1946

(Continued on Next Page)

## JOSEPH AIRPORT

PID: RA1158

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1946	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1968		COAST AND GEODETIC SURVEY (NET)
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1946 (JTJ)  
THE STATION IS LOCATED ABOUT 1 MILE WEST OF JOSEPH ON THE SOUTH  
SIDE OF THE OFFICE BUILDING OF THE JOSEPH MUNICIPAL AIRPORT.

THE MARK IS A STANDARD BRONZE DISK SET IN A SQUARE BLOCK OF  
CONCRETE PROJECTING ABOUT 2 INCHES, AND IS 3.5 METERS NORTH OF  
THE FENCE LINE, 36.9 METERS EAST OF CENTER OF GATEWAY, BETWEEN  
THE FENCE AND THE PARKING AREA. STAMPED JOSEPH AIRPORT 1946.

TO REACH FROM THE JUNCTION OF MAIN STREET AND THE IMNAHA ROAD  
IN JOSEPH GO WEST ON PAVED ROAD FOR 1.2 MILE TO AIRPORT ON RIGHT,  
PASS THROUGH GATE ONTO PARKING AREA AND STATION.

REFERENCE MARK NO 1 IS A STANDARD BRONZE REFERENCE DISK SET  
IN A SQUARE BLOCK OF CONCRETE PROJECTING ABOUT 8 INCHES, AND  
IS ABOUT 1 FOOT NORTH OF THE FENCE LINE. STAMPED JOSEPH AIRPORT  
NO 1 1946.

BENCH MARK G 407 IS A STANDARD UNITED STATES COAST AND GEODETIC  
SURVEY BRONZE BENCH MARK BRAZED TO THE TOP OF A 3 INCH IRON PIPE  
PROJECTING ABOUT 4 INCHES, AND IS ABOUT 2 FEET NORTH OF A FENCE  
LINE. STAMPED G 407 1945.

AZIMUTH MARK IS A STANDARD BRONZE DISK SET IN A SQUARE BLOCK  
OF CONCRETE PROJECTING ABOUT 6 INCHES, 5 FEET SOUTH OF A WHITE  
HIGHWAY MARKER, 1 FOOT NORTH OF A FENCE LINE, ON THE SOUTH SIDE OF  
ROAD 0.45 MILE WEST OF THE STATION. STAMPED JOSEPH AIRPORT 1946.

### STATION RECOVERY (1968)

RECOVERED BY COAST AND GEODETIC SURVEY 1968 (NET)  
THE STATION MARK, STAMPED JOSEPH AIRPORT 1946, REFERENCE MARK  
NO. 1, STAMPED JOSEPH AIRPORT NO 1 1946, REFERENCE MARK NO. 2,  
STAMPED G 407 1945 AND THE AZIMUTH MARK, STAMPED JOSEPH AIRPORT  
1946 WERE RECOVERED AS DESCRIBED. A METAL WITNESS POST WAS  
PLACED 0.5 FOOT EAST OF REFERENCE MARK NO. 2. A METAL WITNESS  
POST WAS PLACED 1 FOOT WEST OF THE AZIMUTH MARK.

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CHIEF JOSEPH MTN

## JOSEPH AIRPORT

PID: RA1158

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989

TEXT WAS SUPERSEDED BY LATER RECOVERY.

THE STATION IS LOCATED 83.0 KM (51.60 MI) NORTH-NORTHEAST OF BAKER, 66.0 KM (41.00 MI) WEST OF LA GRANDE, AND 2.0 KM (1.25 MI) WEST OF JOSEPH IN THE VICINITY OF JOSEPH STATE AIRPORT. OWNERSHIP--STATE RIGHT-OF-WAY.

TO REACH FROM THE POST OFFICE IN JOSEPH GO NORTH 0.16 KM (0.10 MI) ON STATE HIGHWAY 82 TO SIDE ROAD LEFT. TURN LEFT ONTO HURRICANE CREEK ROAD AND GO 1.9 KM (1.20 MI) TO THE AIRPORT AND THE MARK ON RIGHT. LOCATED 27.3 M (89.6 FT) SOUTH OF SOUTHEAST CORNER OF A HANGER, 26.7 M (87.6 FT) SOUTHEAST OF A GRANITE MONUMENT TO WORLD WAR II VETERANS, 17.7 M (58.1 FT) SOUTHEAST OF A POLE WITH A WIND SPEED INDICATOR ON TOP, 11.4 M (37.4 FT) NORTH OF THE CENTERLINE OF A PAVED ROAD, AND 10.2 M (33.5 FT) EAST-NORTHEAST OF A WITNESS POST. THE MARK IS PROTECTED BY TWO METAL POST ON EACH SIDE OF THE MARK.

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**JUNIPER**  
PID: NX0300

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LAKE

LATITUDE:	42° 55' 47.45019" N	±0.00010 SECONDS
LONGITUDE:	119° 55' 59.93098" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 2035.5 METERS  
6678. FEET

GEOID HEIGHT:	-18.462	METERS
ELLIPSOIDAL HEIGHT:	2016.902 ±0.040	METERS
X:	5027961.700	METERS
Y:	2611838.142	METERS
Z:	2923511.647	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.46081" +03.86298" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES		POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO JUNIPER AZ MK DEG MIN SEC
		NORTHING METERS	EASTING METERS			
SPC	OR S	140,473.498	1,546,255.817	0.99990325	+ 0 23 15.7	299 21 55.1
UTM	11	4,757,199.772	260,630.862	1.00030495	- 1 59 55.8	301 45 06.6
UTM	10	4,757,588.292	750,253.499	1.00037052	+ 2 05 23.3	297 39 47.5

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	JUNIPER RM		187 12
	JUNIPER RM 1	19.178 METERS	187 12
	JUNIPER RM 2	6.750 METERS	298 42
	JUNIPER AZ MK		299 45 10.8

STATION MARK IS A ..... HORIZONTAL CONTROL DISK  
WITH SETTING ..... DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED ... JUNIPER 1920

(Continued on Next Page)

## JUNIPER

PID: NX0300

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1920	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1948		COAST AND GEODETIC SURVEY (MTP)
1971		US GEOLOGICAL SURVEY
1974		US GEOLOGICAL SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1920 (EWE)  
ABOUT 60 MILES NORTHEAST FROM LAKEVIEW, ABOUT 20 MILES SOUTH FROM BUTTE, AND 5 MILES EAST FROM ALKALI LAKE, ON THE HIGHEST POINT OF BIG JUNIPER BUTTE. THE STATION IS MARKED BY A BRONZE TABLET IN BEDROCK AS DESCRIBED IN NOTE 2. TWO REFERENCE MARKS, BRONZE TABLETS IN BEDROCK, NOTE 12A, ARE IN AZIMUTHS 7 DEG 12 MIN AND 118 DEG 35 MIN, RESPECTIVELY, FROM THE STATION.

### STATION RECOVERY (1948)

RECOVERED BY COAST AND GEODETIC SURVEY 1948 (MTP)  
STATION WAS RECOVERED AS DESCRIBED AND ALL MARKS FOUND IN GOOD CONDITION. AN AZIMUTH MARK WAS ESTABLISHED. A NEW DESCRIPTION FOLLOWS.

STATION IS LOCATED ABOUT 38 MILES NORTHEAST OF VALLEY FALLS, 20 MILES SOUTH FROM BUTTE, 5 MILES EAST OF ALKALI LAKE, AND ON THE HIGHEST POINT OF JUNIPER BUTTE. IT IS SET IN A 4 X 4 FOOT BOULDER ABOUT FLUSH WITH THE SURFACE. IT IS STAMPED JUNIPER 1920.

REFERENCE MARK NO. 1 IS A STANDARD DISK SET IN A 4 X 4 X 2 FOOT BOULDER AND IS STAMPED JUNIPER NO 1 1920.

REFERENCE MARK NO. 2 IS A STANDARD DISK SET IN A 3 X 3 X 2 FOOT BOULDER ON THE NORTH EDGE OF THE RIM. IT IS STAMPED JUNIPER NO 2 1920.

THE AZIMUTH MARK IS A STANDARD DISK SET IN A BURIED BOULDER, 48 FEET EAST OF Y-INTERSECTION OF ROAD ON WAY TO STATION, AND 2 FEET NORTHEAST OF A WITNESS POST. IT IS STAMPED JUNIPER 1948.

TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY NO. 395 AND STATE HIGHWAY NO. 31, IN VALLEY FALLS, GO NORTH ON HIGHWAY NO. 395 FOR ABOUT 41 MILES TO MILE POST NO. 49, CONTINUE AHEAD 1/2 MILE TO A GRAVEL ROAD RIGHT, GO RIGHT FOLLOWING GRAVEL ROAD FOR 5.4 MILES, CONTINUE AHEAD FOR 1/2 MILE TO TRACK ROAD RIGHT. GO RIGHT FOR 3.1 MILES TO A Y-INTERSECTION AND AZIMUTH MARK, HERE TAKE LEFT FORK TO END OF ROAD AND END OF TRUCK TRAVEL. PACK RIGHT TO MOST EASTERLY AND HIGHEST POINT OF BUTTE AND STATION SITE.

(Continued on Next Page)



**JUNIPER**  
PID: NX0300

STATION RECOVERY (1971)

RECOVERED BY US GEOLOGICAL SURVEY 1971  
RM 1 TO RM 2 NOT MEASURED.

INSTRUMENT STAND 4.7 FT ABOVE STATION MARK.

ALL MARKS IN GOOD CONDITION.

REACHED BY HELICOPTER.

STATION RECOVERY (1974)

RECOVERED BY US GEOLOGICAL SURVEY 1974  
RM 1 TO RM 2 NOT MEASURED.

INSTRUMENT STAND 4.2 FT ABOVE STATION MARK.

GEODETIC AZIMUTH 184 DEG 07 MIN 00.0 SEC TO STATION WAGONTIRE

ALL MARKS IN GOOD CONDITION.

STATION REACHED BY HELICOPTER.

IN 1974 THIS STATION CAN BE DRIVEN TO. TRACK RD. FOUND ON TOP.

STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
A REVISED TO REACH DESCRIPTION FOLLOWS.  
TO REACH FROM THE JUNCTION OF US HIGHWAY 395 AND HIGHWAY 31 IN VALLEY  
FALLS GO NORTH ON HIGHWAY 31 ABOUT 40 MILES TO MILE POST 49.2, TURN  
RIGHT AND FOLLOW GRAVEL ROAD FOR 8.64 KM (5.37 MI) TO A ROAD FORK,  
TAKE LEFT FORK AND GO 0.8 KM (0.5 MI) TO A TRACK ROAD RIGHT, TAKE  
RIGHT FORK AND GO 4.96 KM (3.08 MI) TO A ROAD FORK, TAKE LEFT FORK UP  
DRAW TO TOP OF RIDGE A DISTANCE OF 3.2 KM (2.0 MI) , TURN RIGHT AND  
FOLLOW TRACK ROAD 1.6 KM (1.0 MI) TO END OF ROAD AND STATION.  
DESCRIBED BY L.L. RIGGERS.

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**JUSTICE**

PID: NZ1325

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 19' 21.42830"	N	±0.00010	SECONDS
LONGITUDE:	122° 52' 36.72874"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	423.83			METERS
	1390.5			FEET

GEOID HEIGHT:	-22.736			METERS
ELLIPSOIDAL HEIGHT:	400.785	±0.043		METERS
X:	6374611.065			METERS
Y:	158942.658			METERS
Z:	157927.774			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.1                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE FACTOR	DEG MIN SEC
SPC	OR S	75,646.722	1,304,098.191	1.00000272	- 1 37 34.1
UTM	10	4,685,604.590	510,145.738	0.99960127	+ 0 04 58.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN PAVEMENT  
THE MARK IS STAMPED . . . JUSTICE 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	JACKSON COUNTY OREGON

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MEDFORD WEST

**JUSTICE**  
PID: NZ1325

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED IN MEDFORD NEAR THE SOUTHWESTERLY CORNER OF SOUTH OAKDALE AVENUE AND WEST EIGHTH STREET, IN THE RAISED PATIO AREA OF THE MAYORS FOUNTAIN, N28 DEGREES EAST, 6.858 M (22.500 FT) FROM THE FOUNTAIN HEAD.

TO REACH THE STATION FROM THE COURHOUSE IN MEDFORD, PROCEED SOUTHERLY ON SOUTH OAKDALE AVENUE TO WEST EIGHTH STREET. CONTINUE ALONG SOUTH OAKDALE TO THE STEPS ASCENDING TO THE FOUNTAIN. IT IS ABOUT 4.27 M (14.01 FT) SOUTHWESTERLY OF THE TOP STEP.

DESCRIBED BY VERLYN THOMAS, JACKSON COUNTY SURVEYOR.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: LA GRANDE

**LA GRANDE CBL 0 PT**

PID: RB1490

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: UNION

LATITUDE:	45° 18' 39.41551" N	±0.00010 SECONDS
LONGITUDE:	118° 03' 52.25917" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 835.4 METERS  
2741. FEET

GEOID HEIGHT:	-16.690		METERS
ELLIPSOIDAL HEIGHT:	818.804	±0.042	METERS
X:	3812447.360		METERS
Y:	3133308.309		METERS
Z:	4028591.375		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +03.8                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	185,593.468	2,690,940.197	0.99989766	+ 1 43 38.0
UTM	11	5,018,044.940	416,554.911	0.99968561	- 0 45 24.6

STATION MARK IS AN . . . . . ASTRO PIER  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: LA GRANDE

## LA GRANDE CBL 0 PT

PID: RB1490

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED ON THE SOUTHEAST SIDE OF LA GRANDE AND ALONG THE SOUTHWEST SIDE OF US HIGHWAY 30 AT THE INTERSECTION OF GEKELER LANE. THIS MARK IS THE 0 END OF THE BLUE MOUNTAIN BASE LINE IN LA GRANDE.

TO REACH FROM THE INTERSTATE HIGHWAY 84 EXIT 265 GO WESTERLY ON US HIGHWAY 30 2.65 KM (1.65 MI) TO A FARM LANE NEAR GEKELER LANE, TURN LEFT ONTO FARM LANE AND STATION.

THE STATION IS A PLSO DISK 39.32 M (129.00 FT) SW FROM THE CENTER OF HIGHWAY 30, 7.1 M (23.3 FT) SE FROM THE CENTERLINE OF THE FIELD ROAD AND 6.5 M (21.3 FT) FROM A FENCE, DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: LEBANON

**LANG**  
PID: QE2671

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LINN

LATITUDE:	44° 33' 57.56361" N	±0.00010 SECONDS
LONGITUDE:	122° 57' 20.07484" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 93.2 METERS  
306. FEET

GEOID HEIGHT:	-21.796		METERS
ELLIPSOIDAL HEIGHT:	71.108	±0.054	METERS
X:	5799185.077		METERS
Y:	1835556.841		METERS
Z:	-1912421.374		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.3 (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	102,899.161	2,304,969.374	0.99994953	- 1 44 29.3
UTM	10	4,934,740.178	503,527.595	0.99960015	+ 0 01 52.2

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . LANG 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	LINN COUNTY OREGON

(Continued on Next Page)

**LANG**  
PID: QE2671

**STATION DESCRIPTION**

**DESCRIBED 1989**

THE STATION IS LOCATED ABOUT 6 MILES SE OF ALBANY ON LINN COUNTY LAND. IT IS ON THE WEST SIDE OF LANGMACK ROAD (COUNTY ROAD NUMBER 662) IN THE W 1/4, SW 1/4, SE 1/4 SECTION 32, TOWNSHIP 11 SOUTH, RANGE 2 WEST, WILLAMETTE MERIDIAN, LINN COUNTY OREGON.

TO REACH FROM EXIT NUMBER 228 ON I 5, GO EAST ON HIGHWAY 34 8.72 KM (5.42 MI) TO LANGMARK ROAD (COUNTY ROAD NUMBER 704), TURN LEFT (NORTH) ONTO LANGMACK ROAD, GO 1.84 KM (1.14 MI) TO GORE ROAD (COUNTY ROAD NUMBER 701) TURN LEFT AND GO 55 M (180.4 FT) ON GORE ROAD THEN RIGHT ON LANGMACK ROAD (COUNTY ROAD 662) AND GO 0.53 KM (0.33 MI) TO THE STATION ON THE RIGHT.

THE STATION IS 10.67 M (35.01 FT) WEST OF THE CENTERLINE, 1.52 M (4.99 FT) WEST OF THE RIGHT OF WAY FENCE AND 15.54 M (50.98 FT) NORTH OF A LARGE STEEL GATE POST.

DESCRIBED BY B. OSBURN SHAW, LINN COUNTY SURVEYOR.



**LAST**  
PID: RC2729

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASCO

LATITUDE:	45° 36' 19.01272" N	±0.00020	SECONDS
LONGITUDE:	121° 11' 27.96649" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	37.64		METERS
	123.5		FEET

GEOID HEIGHT:	-20.268		METERS
ELLIPSOIDAL HEIGHT:	17.325	±0.061	METERS
X:	5703276.793		METERS
Y:	1965212.073		METERS
Z:	2064692.968		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	215,655.172	2,446,090.358	0.99992359	- 0 29 24.4
SPC	WA S	30,463.883	446,083.064	1.00005948	- 0 30 7.2
UTM	10	5,051,784.389	641,059.345	0.99984464	+ 1 17 33.9

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . A DRILL HOLE IN BEDROCK  
THE MARK IS STAMPED . . . LAST 1989

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: THE DALLES SOUTH

**LAST**  
PID: RC2729

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 0.6 KM (0.4 MI) WEST OF DOWNTOWN THE DALLES IN THE NORTHEAST CORNER OF A LEWIS AND CLARK MEMORIAL. TO REACH THE STATION FROM THE POST OFFICE IN THE DALLES, GO WEST ON WEST 2ND STREET 0.64 KM (0.40 MI) TO THE MARK ON THE LEFT. IT IS ABOUT 50 METERS WEST OF THE NW CORNER OF THE NATATORIUM PARKING AREA. THE STATION IS 24.15 M (79.23 FT) NNW FROM A POWER POLE, 22.0 M (72.2 FT) NNE FROM THE NE CORNER OF THE OPEN MEMORIAL BUILDING, 15.3 M (50.2 FT) SOUTH OF THE CENTERLINE OF W 2ND ST, 5.3 M (17.4 FT) SOUTH OF A WITNESS POST, 5.2 M (17.1 FT) SOUTH OF BM N 719 AND 1.3 M (4.3 FT) EAST OF THE TOP EDGE OF A 3 METER HIGH BLUFF.  
DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: LAUREL MTN

**LAUREL**  
PID: QE2309

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: POLK

LATITUDE:	44° 55' 23.84764" N	±0.00010 SECONDS
LONGITUDE:	123° 34' 23.51400" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1093.7 METERS  
3588. FEET

GEOID HEIGHT:	-19.608		METERS
ELLIPSOIDAL HEIGHT:	1073.824	±0.050	METERS
X:	5339382.434		METERS
Y:	2360253.373		METERS
Z:	-2563300.465		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY VERTICAL ANGLE OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.61069" +04.37591" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO LAUREL RM 3
						DEG MIN SEC
SPC	OR N	144,251.502	2,257,446.800	0.99990371	- 2 10 46.1	222 22 20.6
UTM	10	4,974,588.854	454,762.960	0.99962516	- 0 24 17.2	220 35 51.7

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
QE2306	DORN	APPROX. 6.6 KM	013 48 34.5
	LAUREL RM 1	13.880 METERS	101 23
	LAUREL RM 3		220 11 34.5
QE2308	LAUREL MTN RADAR DOME	77.032 METERS	236 48
QE2679	LAUREL RM 2	14.309 METERS	310 00

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . ALUMINUM ALLOY ROD IN SLEEVE (10 FT.+)   
THE MARK IS STAMPED . . . LAUREL 1972

(Continued on Next Page)

## LAUREL

PID: QE2309

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1972	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1978	GOOD	NATIONAL GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY NATIONAL GEODETIC SURVEY 1972 (LDF)  
THE STATION IS LOCATED ON THE SUMMIT OF LAUREL MOUNTAIN NEAR A  
LARGE RADAR DOME. IT IS 12-1/2 MILES WEST OF DALLAS, 8 MILES  
NORTHWEST OF FALLS CITY, 9-1/2 MILES SOUTH-SOUTHEAST OF GRANDE  
RONDE AND 7 MILES NORTHEAST OF VALSETZ. IT IS ON PROPERTY OWNED  
BY WILLAMETTE INDUSTRIES INC. OF DALLAS, OREGON. THE F.A.A. HAS  
THE SUMMIT LEASED AND THEY SHOULD BE CONTACTED BEFORE ENTERING  
THE RADAR DOME AREA. IT IS IN THE NE 1/4 SEC 32, R-7-W, T-7-S.

TO REACH THE STATION FROM THE POST OFFICE IN FALLS CITY, GO  
WEST FOR 0.1 MILE TO A FORK, TAKE RIGHT FORK AND GO 0.35 MILE TO  
A FORK. TAKE LEFT FORK AND CONTINUE WESTERLY FOR 1.45 MILES TO  
A SIDE ROAD RIGHT (THIS IS THE ENTRANCE TO GEORGE T. GERLINGER  
STATE PARK), CONTINUE WESTERLY FOR 1.4 MILES TO A SIDE ROAD  
RIGHT AND SIGN TAPAWINGO. CONTINUE WESTERLY FOR 0.55 MILE TO A  
FORK, TAKE RIGHT FORK FOR 0.2 MILE TO A BRIDGE AND THE ENTRANCE  
TO GEORGE T. GERLINGER TREE FARM. CONTINUE WESTERLY AND  
NORTHWESTERLY FOR 0.55 MILE TO A FORK, TAKE RIGHT FORK FOR  
3.35 MILES TO A FORK. TAKE RIGHT FORK AND CONTINUE WESTERLY  
FOR 3.0 MILES TO A FORK, TAKE RIGHT FORK FOR 1.85 MILES TO THE  
AZIMUTH ON THE RIGHT. CONTINUE NORTHERLY FOR 0.9 MILE TO A  
FORK, TAKE RIGHT FORK FOR 1.0 MILE TO THE BEGINNING OF THE  
PAVEMENT. CONTINUE NORTHERLY FOR 1.35 MILES TO THE SUMMIT  
OF THE MOUNTAIN AND THE STATION ON RIGHT AS DESCRIBED.

THE STATION IS A STANDARD DISK STAMPED LAUREL 1972, CEMENTED IN  
A DRILL HOLE IN A SMALL OUTCROP THAT IS FLUSH WITH THE SURFACE  
OF THE GROUND. IT IS 34 FEET NORTH OF THE APPROXIMATE CENTER OF  
THE ROAD, 31-1/2 FEET WEST OF A 3-FOOT STUMP AND 12-1/2 FEET  
NORTHEAST OF A METAL WITNESS POST.

RM 1 IS A STANDARD DISK STAMPED LAUREL NO 1 1972, CEMENTED IN A  
DRILL HOLE IN A SMALL OUTCROP THAT IS FLUSH WITH THE GROUND. IT  
IS 56 FEET EAST OF THE WITNESS POST, 32 FEET NORTH OF THE  
APPROXIMATE CENTER OF THE ROAD, 14 FEET EAST OF THE 3-FOOT STUMP  
AND 11 FEET WEST OF A 3-FOOT STUMP.

RM 2 IS A STANDARD DISK STAMPED LAUREL NO 2 1972, CEMENTED IN  
THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT THAT PROJECTS  
6 INCHES. IT IS 45-1/2 FEET NORTHWEST OF THE WITNESS POST, 39  
FEET NORTH OF A WOODEN TANK AND 7-1/2 FEET SOUTHEAST OF A 3-FOOT  
STUMP.

(Continued on Next Page)

**LAUREL**  
PID: QE2309

RM 3 IS A STANDARD DISK STAMPED LAUREL NO 3 1972, CEMENTED IN A DRILL HOLE IN A OUTCROP THAT IS IN A CUT BANK THAT IS 10 FEET ABOVE THE SURFACE OF THE ROAD. IT IS 30 FEET SOUTH OF THE APPROXIMATE CENTER OF THE ROAD AND 4.8 FEET SOUTH OF A METAL WITNESS POST.

HEIGHT OF LIGHT ABOVE STATION MARK 14.7 METERS.

STATION RECOVERY (1978)

RECOVERED BY NATIONAL GEODETIC SURVEY 1978  
THE STATION IS LOCATED ON U.S. GOVERNMENT PROPERTY ATOP LAUREL MOUNTAIN. IT IS APPROXIMATELY 12 AIRLINE MILES WEST OF DALLAS, OREGON.

TO REACH THE STATION FROM THE FALLS CITY HIGH SCHOOL PROCEED SOUTHWEST ON NORTH MAIN STREET FOR 0.31 MILE (0.5 KM) TO A Y INTERSECTION. TAKE THE RIGHT FORK (WEST-NORTHWEST) ON MITCHELL STREET, (THIS STREET EVENTUALLY BECOMES STATE ROUTE 8612, BLACKROCK ROAD), AND CONTINUE FOR 0.39 MILE (0.63 KM) TO ANOTHER Y INTERSECTION. TAKE THE LEFT FORK (WEST-NORTHWEST) AND CONTINUE ON A WINDING DIRT AND GRAVEL ROAD FOR 3.69 MILES (5.94 KM). AT THIS Y INTERSECTION TAKE THE RIGHT FORK (NORTHWEST) AND PROCEED THROUGH THE ENTRANCE OF THE GEORGE T. GERLINGER TREE FARM. FOLLOW THIS ROAD FOR 4.19 MILES (6.74 KM). TAKE THE LEFT FORK AT THE Y INTERSECTION AND CONTINUE (NORTH-NORTHWEST) FOR 3.11 MILES (5.00 KM). AT THIS Y INTERSECTION TAKE THE RIGHT FORK (WEST-NORTHWEST) FOR 2.51 MILES (4.04 KM). AT THIS Y INTERSECTION TAKE THE RIGHT FORK (NORTHWEST) AND CONTINUE FOR 8.29 MILES (13.34 KM) TO THE CREST OF THE MOUNTAIN AND THE STATION ON RIGHT.

THE STATION IS APPROXIMATELY 60 METERS NORTHEAST OF THE NORTHEAST CORNER OF BUILDING 12 AND 10 METERS NORTH OF THE NORTH EDGE OF THE ROAD. THE STATION MARK IS A STANDARD NATIONAL GEODETIC SURVEY BRONZE DISK EPOXIED IN ROCK AT GROUND LEVEL. THE DISK IS STAMPED LAUREL 1972.

REFERENCE MARK NUMBER 2 IS A STANDARD NATIONAL GEODETIC SURVEY BRONZE REFERENCE DISK MONUMENTED IN CONCRETE WHICH PROJECTS APPROXIMATELY 20 CENTIMETERS ABOVE GROUND LEVEL. IT IS 14.312 METERS NORTHWEST OF LAUREL 1972. THE DISK IS STAMPED LAUREL NO. 2 1972.

(Continued on Next Page)

**LAUREL**  
PID: QE2309

STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION AND RM 2 WERE RECOVERED IN GOOD CONDITION. REFERENCE MARK 1 WAS SEARCHED FOR BUT WAS NOT RECOVERED. THE AZIMUTH MARK WAS NOT SEARCHED FOR. THE STATION HAS A GOOD FIELD OF VIEW FOR A GPS STATION BUT NOT KNOWN WHAT NEARBY FAA RADAR WILL DO TO SIGNAL. THERE IS A GATE ABOUT 1 MILE FROM THE TOP THAT IS OPEN 8 AM TILL 4 PM MONDAY THRU FRIDAY. FOR ANY AFTER HOURS OR WEEKEND VISITS CALL LON JACKSON AT 503-787-3582. A NEW DESCRIPTION FOLLOWS.  
TO REACH FROM THE FALLS CITY HIGH SCHOOL GO SOUTHWEST ON MAIN STREET FOR 0.5 KM (0.3 MI) TO A Y FORK. TAKE RIGHT FORK AND GO 0.63 KM (0.39 MI) TO FORK. TAKE LEFT FORK 5.94 KM (3.69 MI) TO A ROAD FORK. TAKE RIGHT FORK AND PROCEED THROUGH THE ENTRANCE OF THE GEORGE T GERLINGER TREE FARM AND GO 6.74 KM (4.19 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 5.0 KM (3.1 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 4.04 KM (2.51 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 1.6 KM (1.0 MI) TO A GATE (SEE ABOVE) PASS THROUGH GATE AND GO 2.2 KM (1.4 MI) TO THE TOP OF HILL AND STATION ON THE RIGHT.  
THE STATION IS LOCATED 27.2 M (89.2 FT) ENE OF A FLAGPOLE, 16.3 M (53.5 FT) EAST OF THE EAST FACE OF A WOODEN TOWER, 14.3 M (46.9 FT) SW OF A WITNESS POST, 13.7 M (44.9 FT) NORTH OF THE CENTERLINE OF THE ROAD, AND 14.3 METERS SE OF RM 2.  
REFERENCE MARK 2 IS A STANDARD NGS DISK STAMPED---LAUREL NO 2 1972---, SET INTO A CONCRETE MONUMENT ABOUT 11.9 M (39.0 FT) NORTH OF A WOODENWATER TANK AND 0.5 M (1.6 FT) NORTH OF A WITNESS POST.

**LONG CREEK**

PID: QC0956

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: GRANT

LATITUDE:	44° 39' 55.07295" N	±0.00020 SECONDS
LONGITUDE:	119° 02' 41.70085" W	±0.00030 SECONDS
ORTHOMETRIC HEIGHT:	{ 1889.9 6201.	METERS FEET
GEOID HEIGHT:	-16.841	METERS
ELLIPSOIDAL HEIGHT:	1873.230	±0.046 METERS
X:	424656.927	METERS
Y:	1592951.158	METERS
Z:	6142694.275	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.45605"                    +03.88485" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
						LONG CREEK AZ MK DEG MIN SEC
SPC	OR N	112,008.984	2,615,380.700	0.99993294	+ 1 01 54.9	172 20 05.4
UTM	11	4,947,804.347	337,893.246	0.99992316	- 1 26 16.1	174 48 16.4

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
QC0954	LONG USGS 1936 LONG CREEK AZ MK	11.290 METERS	064 58 173 22 00.3
QC0955	LONG CREEK BU LO USFS 1936 LONG CREEK RM 1	3.964 METERS 3.932 METERS	232 15 322 18

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . TOP OF IRREGULAR CONCRETE MASS  
THE MARK IS STAMPED . . . LONG CREEK 1941

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1941	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1946		COAST AND GEODETIC SURVEY (DHK)
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## LONG CREEK

PID: QC0956

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1941 (ANS)  
STATION IS LOCATED ON THE SUMMIT OF LONG CREEK BUTTE, A HIGH  
TIMBERED RIDGE ABOUT 4 MILES SE OF THE VILLAGE OF LONG CREEK IN THE  
LONG CREEK VALLEY, AND IS DIRECTLY BENEATH THE CENTER OF THE  
ELEVATED LOOKOUT HOUSE.

SURFACE MARK IS A STANDARD DISK, STAMPED LONG CREEK 1941, SET  
IN A MASS OF CONCRETE ABOUT 6 INCHES BELOW THE SURFACE OF THE  
GROUND AND IS MIDWAY BETWEEN THE FOUR CORNER POSTS SUPPORTING THE  
LOOKOUT HOUSE.

UNDERGROUND MARK IS A STANDARD DISK SET IN CONCRETE, AS DESCRIBED  
IN NOTE 7A.

STATION LONG (U.S.G.S.) IS A STANDARD GEOLOGICAL SURVEY MARK,  
STAMPED LONG 1898, SET IN BEDROCK FLUSH WITH THE SURFACE AND IS  
ABOUT 6 FEET W OF THE RIM OF HILL. MARK IS AT AN ELEVATION ABOUT  
2 FEET HIGHER THAN STATION MARK.

THE U.S. FOREST SERVICE MARK IS A STANDARD U.S.F.S. DISK,  
STAMPED LONG CREEK BU LO 1933, SET IN THE TOP OF THE CONCRETE  
FOUNDATION SUPPORTING THE SW LEG OF THE LOOKOUT HOUSE AND IS ON THE  
SW SIDE OF THE LEG. MARK IS ABOUT 1-1/2 FEET HIGHER IN ELEVATION  
THAN THE STATION MARK.

REFERENCE MARK NO. 1, 1941, IS A STANDARD DISK, STAMPED LONG  
CREEK NO. 1 1941, SET IN THE CONCRETE FOUNDATION SUPPORTING THE NW  
LEG OF THE LOOKOUT HOUSE. IT IS ON THE SE SIDE OF THE LEG AND  
AT AN ELEVATION ABOUT 1.0 FOOT HIGHER THAN THE STATION MARK.

THE AZIMUTH MARK IS A STANDARD DISK, STAMPED LONG CREEK 1941,  
SET IN BEDROCK FLUSH WITH THE GROUND AND IS ABOUT 10.0 FEET LOWER  
THAN THE STATION MARK IN ELEVATION. IT IS APPROXIMATELY 100 YARDS  
S OF THE STATION AT THE EDGE OF THE RIM.

TO REACH STATION FROM LONG CREEK GO S UP GRADE ON U.S. HIGHWAY  
395 TOWARDS JOHN DAY 3.0 MILES. TURN LEFT OFF HIGHWAY, CROSS  
CATTLE GUARD, AND GO SE AS PER SIGN, LONG CREEK L.O. 1/2 AND  
CONTINUE 1/2 MILE TO LOOKOUT HOUSE AND STATION AT END OF ROAD.

HEIGHT OF LIGHT ABOVE STATION MARK 7.7 METERS.

### STATION RECOVERY (1946)

RECOVERED BY COAST AND GEODETIC SURVEY 1946 (DHK)  
THE STATION WAS RECOVERED AS DESCRIBED BY A.N.S. IN 1941 AND ALL  
MARKS WERE FOUND IN GOOD CONDITION. DISTANCES TO REFERENCE MARKS  
WERE FOUND TO BE CORRECT. A COMPLETE NEW DESCRIPTION FOLLOWS.

(Continued on Next Page)



## LONG CREEK

PID: QC0956

THE STATION IS LOCATED ON THE SUMMIT OF LONG CREEK BUTTE, A HIGH, TIMBERED RIDGE ABOUT 4 MILES SOUTHEAST OF THE TOWN OF LONG CREEK, AND IS DIRECTLY BENEATH THE CENTER OF THE LOOKOUT TOWER. IT IS A U.S.C. AND G. SURVEY TRIANGULATION STATION DISK, SET IN THE TOP OF A MASS OF CONCRETE ABOUT 6 INCHES BELOW THE SURFACE OF THE GROUND. NOTE 1C. THE UNDERGROUND MARK IS A STANDARD DISK SET IN CONCRETE. NOTE 7A.

REFERENCE MARK NO.1 IS SET IN THE NORTHEAST CORNER OF THE NORTHWEST TOWER LEG FOUNDATION, WHICH IS NORTHWEST OF THE STATION AND 14 INCHES HIGHER. IT IS STAMPED LONG CREEK NO.1 1941. NOTE 11C.

STATION LONG (USGS 1898) IS A U.S.G.S. BENCH MARK DISK SET IN BEDROCK, FLUSH WITH THE GROUND, AND IS 6 FEET WEST OF THE RIM. IT IS STAMPED LONG 1898 AND IS 2 FEET HIGHER THAN THE STATION.

THERE IS A STANDARD U.S.F.S. MARK STAMPED LONG CREEK BU LO 1933 WHICH IS SET ON THE SOUTHWEST CORNER OF THE SOUTHWEST TOWER LEG FOUNDATION. IT IS 1.5 FEET HIGHER THAN THE STATION. IT COULD NOT BE MEASURED TO OR CUT IN FROM THE STATION AS IT IS DIRECTLY BEHIND THE TOWER LEG.

THE AZIMUTH MARK IS A U.S.C. AND G. SURVEY DISK SET IN BEDROCK SOUTH OF AND APPROXIMATELY 10 FEET LOWER THAN THE STATION. IT IS 100 PACES SOUTHEAST OF THE STATION ON THE EDGE OF THE RIM. STAMPED LONG CREEK 1941.

TO REACH THE STATION FROM LONG CREEK, GO SOUTH ON U.S. HIGHWAY 395 TOWARDS JOHN DAY, FOR 3.0 MILES TO A SIDE ROAD RIGHT. TURN RIGHT, ACROSS A CATTLE GUARD, AND FOLLOW THE FOREST SERVICE SIGNS TO THE TOP OF THE MOUNTAIN AND THE STATION SITE. THIS IS 5.2 MILES FROM THE HIGHWAY.

OBSERVATIONS MADE FROM A 4.3 METER TRIPOD.

(Continued on Next Page)

## LONG CREEK

PID: QC0956

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989

TEXT WAS SUPERSEDED BY LATER RECOVERY.

THE STATION IS LOCATED ABOUT 30 KM (18.65 MI) NORTH OF JOHN DAY AND 6.4 KM (4.00 MI) SOUTHEAST OF LONG CREEK IN THE MALHEUR NATIONAL FOREST ON THE SUMMIT OF LONG CREEK BUTTE. OWNERSHIP-- U.S. FOREST SERVICE.

TO REACH FROM THE POST OFFICE IN LONG CREEK, GO SOUTH ON US 395 FOR 8.3 KM (5.15 MI) TO TOP OF GRADE AND FOREST SERVICE ROAD 3940 ON LEFT. TURN LEFT ON USFS ROAD 3940 AND GO EASTERLY FOR 0.13 KM (0.10 MI) TO CATTLE GUARD. CONTINUE AHEAD, CROSSING OVER CATTLE GUARD, EASTERLY FOR 0.64 KM (0.40 MI) TO SIDE ROAD RIGHT. CONTINUE AHEAD, EASTERLY, FOR 6.12 KM (3.80 MI) TO A REVERSE FORK, FOREST SERVICE 179 ON RIGHT. CONTINUE AHEAD, EASTERLY FOR 1.6 KM (1.00 MI) TO A FORK. TAKE LEFT FORK AND GO EASTERLY 1.77 KM (1.10 MI) ON FOREST SERVICE 3940 TO DIM TRACK ROAD ON LEFT. CONTINUE AHEAD ON FOREST SERVICE 3940, SOUTHERLY, FOR 0.40 KM (0.25 MI) TO CATTLE GUARD AND FOREST SERVICE ROUTE TO LANTERN SPRING JUST BEYOND ON RIGHT. CROSS CATTLE GUARD, AND CONTINUE SOUTHERLY FOR 0.16 KM (0.10 MI) TO A FORK. TAKE LEFT LEFT FORK, FOREST SERVICE 119, WINDING UPHILL FOR 0.24 KM (0.15 MI) TO WOODEN POSTS ON BOTH SIDES OF ROAD. CONTINUE UPHILL FOR 0.48 KM (0.30 MI) TO TOP OF MOUNTAIN AND STATION.

LOCATED 11.1 M (36.4 FT) SOUTHEAST OF ANTENNA, 10.4 M (34.1 FT) SOUTHEAST OF SOUTHEASTERN CORNER OF COMMUNICATION SHED AND 9.3 M (30.5 FT) NORTHWEST OF SOUTHEASTERN MOST GUIDE WIRE TO ANTENNA.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: SAGE HEN HILLS

**LOPE**  
PID: MV0514

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: HARNEY

LATITUDE:	41° 59' 49.07794" N	±0.00010 SECONDS
LONGITUDE:	119° 21' 15.23917" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1864.2 METERS  
6116. FEET

GEOID HEIGHT:	-18.764	METERS
ELLIPSOIDAL HEIGHT:	1845.304	±0.036 METERS
X:	4699426.809	METERS
Y:	-2815006.956	METERS
Z:	3259441.550	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.4 +03.7 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	37,341.872	1,594,938.854	1.00010162	+ 0 47 1.9
SPC	NV W	4,804,648.607	736,133.515	0.99995017	- 0 30 57.0
UTM	11	4,652,120.502	305,012.913	1.00006785	- 1 34 32.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . A DRILL HOLE IN BEDROCK  
THE MARK IS STAMPED . . . LOPE 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: SAGE HEN HILLS

**LOPE**  
PID: MV0514

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 35 MILES SE OF ADEL, ABOUT 5 MILES NW OF THE NEVADA BORDER AND 0.25 MILE EAST OF THE LAKE-HARNEY COUNTY LINE. TO REACH FROM ADEL GO SOUTHEAST ON HIGHWAY 140 FOR 55.68 KM (34.60 MI) TO MILE POST 63. THE STATION IS ABOUT 65 M (213.3 FT) SSE OF THIS POINT.

THE STATION IS 65 M (213.3 FT) SOUTH OF THE CENTERLINE OF THE HIGHWAY, 30.3 M (99.4 FT) ESE OF THE EAST END OF A SNOW FENCE, 2.3 M (7.5 FT) WEST OF THE TOP EDGE OF A REVINE, 1.0 M (3.3 FT) WEST OF A WITNESS POST AND 0.2 M (0.7 FT) NORTH OF AN IRON RAILROAD SPIKE CEMENTED INTO BEDROCK.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MC MINNVILLE

**MACK**  
PID: RD4219

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: YAMHILL

LATITUDE:	45° 11' 25.69789" N	±0.00010 SECONDS
LONGITUDE:	123° 07' 50.47261" W	±0.00010 SECONDS
ORTHOMETRIC HEIGHT:	{ 47.3 155.	METERS FEET
GEOID HEIGHT:	-20.812	METERS
ELLIPSOIDAL HEIGHT:	26.198 ±0.041	METERS
X:	3116758.311	METERS
Y:	3193625.607	METERS
Z:	4541891.884	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	172,692.357	2,293,325.353	0.99989465	- 1 51 56.3
UTM	10	5,004,118.045	489,734.062	0.99960130	- 0 05 33.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . MACK 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	YAMHILL COUNTY OREGON

(Continued on Next Page)

**MACK**  
PID: RD4219

STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN MCMINNVILLE AT AIRPORT.  
TO REACH FROM MCMINNVILLE GO EAST ON THRID STREET (TOWN CENTER)  
EXTENDED TO DAYTON-SALEM ROAD, CROSS YAMHILL RIVER BRIDGE, TAKE TURN  
OFF LEFT TO THREE MILE LANE (DAYTON-SALEM, HIGHWAY 18 EAST). FROM  
SIGNAL LIGHT AT OVERPASS RAMP AND THREE MILE LANE, TURN RIGHT (EAST  
PAST AIRPORT), 4.0 KM (2.5 MI) MILES TO SALEM AMITY TURNOFF, BEING TO  
THE RIGHT ON CRUICKSHANK ROAD, GO SOUTHERLY 0.32 KM (0.20 MI) TO  
AIRPORT ROAD (A RIGHT TURN) THENCE SOUTHERLY 1.12 KM (0.70 MI) TO THE  
STATION SITE. MONUMENT IS ON THE RIGHT SIDE OF AIRPORT ROAD, 7.92 M  
(25.98 FT) SOUTHERLY OF A METAL GATE ACCESS TO AIRSTRIP.  
THE STATION IS A BRASS CAP SET FLUSH TO THE GROUND IN CONCRETE POST  
BACK OF ROADSIDE DITCH, AND 1.52 M (4.99 FT) INSIDE OF ROAD RIGHT OF  
WAY. AN IN LINE FENCE BRACE POST IS WESTERLY 1.62 M (5.31 FT) . A  
CARSONITE REFERENCE POST IS SET 1.14 M (3.74 FT) WESTERLY OF THE  
MONUMENT. THE BRASS CAP WAS PLACED ABOVE AN IRON PIPE IMBEDDED IN  
THE CONCRETE FOR LOCATING WITH MAGNETIC FINDING DEVICE.  
DESCRIBED BY NORRIS JONES, YAMHILL COUNTY SURVEYOR.

**MAHOGANY MOUNTAIN**

PID: OH1198

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 14' 05.91510" N	±0.00020	SECONDS
LONGITUDE:	117° 15' 21.06669" W	±0.00030	SECONDS
ORTHOMETRIC HEIGHT:	1988.03		METERS
	6522.4		FEET

GEOID HEIGHT:	-15.894		METERS
ELLIPSOIDAL HEIGHT:	1971.960	±0.060	METERS
X:	2200126.208		METERS
Y:	-3037669.387		METERS
Z:	5143902.734		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD (Vertical Network Order Unconfirmed)  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING, BUT THE EXACT VERTICAL FIELD PROCEDURES ARE UNKNOWN. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.44290"                    +03.56369" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE			
				SCALE FACTOR	DEG	MIN	SEC	
SPC	OR S	179,314.476	1,763,427.229	0.99989528	+ 2	13	10.1	357 47
SPC	ID W	175,300.578	677,687.582	1.00011730	- 1	01	53.8	001 01
UTM	11	4,786,940.838	479,225.575	0.99960531	- 0	10	30.9	000 11

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	MAHOGANY MOUNTAIN RM 2	9.745 METERS	122 53
	MAHOGANY MOUNTAIN RM 1	5.424 METERS	350 39

STATION MARK IS A ..... HORIZONTAL CONTROL DISK  
WITH SETTING ..... ROCK OUTCROP  
THE MARK IS STAMPED ... MAHOGANY MOUNTAIN 1933  
(Continued on Next Page)

## MAHOGANY MOUNTAIN

PID: OH1198

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1933	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1967	GOOD	US GEOLOGICAL SURVEY
1969	GOOD	US GEOLOGICAL SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1933 (CP )  
STATION IS ON THE HIGHEST POINT OF MAHOGANY MOUNTAIN, A LONG  
RANGE OF MOUNTAINS RUNNING NORTHEAST AND SOUTHWEST. THE POINT  
IS ABOUT 20 MILES NORTHWEST OF JORDAN VALLEY AND ABOUT 10 MILES  
WEST OF THE OREGON-IDAHO STATE LINE.

BEST REACHED FROM JORDAN VALLEY BY GOING NORTH ON THE  
IDAHO-OREGON-NEVADA CUTOFF 8.9 MILES, TURN LEFT ON THE COW CREEK  
ROAD AND GO WEST 5.0 MILES OR 0.3 MILE PAST THE SCHOOLHOUSE,  
TURN RIGHT AND GO 2.9 MILES, TAKE RIGHT FORK AND GO 4.8 MILES ON  
MAIN-TRAVELED ROAD, TAKE LEFT FORK (THROUGH GATE) AND GO 0.7  
MILE, TURN SHARP LEFT, FOLLOW THIS ROAD TO THE TOP OF THE GRADE  
THEN FOLLOW THE RIDGE WEST AND THEN SOUTH TO THE HIGHEST POINT,  
A DISTANCE OF 6.8 MILES. FROM THE END OF TRUCK TRAVEL THE  
STATION LIES ABOUT 100 YARDS NORTH.

SURFACE MARK AND REFERENCE MARKS ARE STANDARD BRONZE DISKS SET  
AS DESCRIBED IN NOTES 4 AND 12A RESPECTIVELY.

AN AZIMUTH MARK WAS ESTABLISHED IN 1933 BUT WAS NOT FOUND BY  
OBSERVING PARTY.

A TWENTY FOOT TOWER WAS USED AT THIS STATION TO AVOID CLEARING  
AND TO SEE STATION NYSSA.

### STATION RECOVERY (1967)

RECOVERED BY US GEOLOGICAL SURVEY 1967  
RECOVERED AS DESCRIBED.

NEW TO REACH FOLLOWS--TO REACH FROM HOMEDALE, ID, DRIVE S. ON  
U.S. HWY. 95 36.6 MI TO JCT. OF GRAVEL RD. AT SUCCOR CREEK  
CROSSING. TURN W. ON GRAVEL RD. 3 MI TO RD. FORK. TURN LEFT 6.2  
MI TO DIM Y-RD. FORK ABOUT 0.2 MI PAST LOW SADDLE. TAKE RIGHT  
FORK 1.4 MI TO RD. FORK. TAKE LEFT FORK 0.9 MI TO RD. FORK. TAKE  
RIGHT FORK 0.2 MI TO GATE, CONTINUE UP ROCKY GRADE 1 MI TO Y-RD.  
FOR 3.3 MI TO RD. FORK AT GATE. DRIVE THROUGH GATE 0.7 MI THROUGH  
HEAVY BRUSH TO POINT WHERE CLEARED AREA RUNS W. UP SLOPE TO RIDGE  
TOP. STATION LIES ABOUT 150 YARDS W. OF THIS POINT ON RIDGE TOP.

(Continued on Next Page)



## MAHOGANY MOUNTAIN

PID: OH1198

### STATION RECOVERY (1969)

RECOVERED BY US GEOLOGICAL SURVEY 1969  
RECOVERED AS RE-DESCRIBED.

HEIGHT OF INSTRUMENT ABOVE STATION MARK--5.15 FT

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.  
STATION IS LOCATED ABOUT 40.2 KM (25.0 MI) NORTHWEST OF JORDAN VALLEY,  
OREGON, 24.1 KM (15.0 MI) WEST OF THE IDAHO-OREGON BORDER ON THE  
HIGHEST POINT OF A WOODED RIDGE. OWNERSHIP--BUREAU OF LAND  
MANAGEMENT.

TO REACH FROM THE POST OFFICE IN JORDAN VALLEY, GO NORTH ON US 95 FOR  
15.7 KM (9.8 MI) TO MAHOGANY GAP ROAD ON LEFT. TURN LEFT ONTO  
MAHOGANY GAP ROAD AND PASS THROUGH BALTZOR CATTLE RANCH WITH RANCH  
HOUSE ON RIGHT. GO WESTERLY FOR 0.64 KM (0.40 MI) TO CATTLE GUARD.  
CROSS CATTLE GUARD AND GO WESTERLY FOR 1.05 KM (0.65 MI) TO ROAD  
FORK. KEEP LEFT AND GO WESTERLY FOR 0.24 KM (0.15 MI) TO CATTLE  
GUARD. CROSS CATTLE GUARD AND GO WESTERLY FOR 0.32 KM (0.20 MI) TO  
FORK. KEEP RIGHT AND GO WESTERLY 1.6 KM (1.0 MI) TO CATTLE GUARD.  
CROSS CATTLE GUARD AND GO WESTERLY FOR 1.13 KM (0.70 MI) TO FORK.  
KEEP LEFT AND GO WESTERLY TO CATTLE GUARD. CROSS CATTLE GUARD  
AND GO WESTERLY FOR 2.09 KM (1.30 MI) TO GATE. PASS THROUGH GATE AND  
GO WESTERLY FOR 2.01 KM (1.25 MI) TO GATE. PASS THROUGH GATE AND GO  
1.53 KM (0.95 MI) TO CATTLE GUARD. CROSS CATTLE GUARD AND GO 1.45 KM  
(0.90 MI) TO CATTLE GUARD. CROSS CATTLE GUARD AND GO 0.97 KM  
(0.60 MI) TO CATTLE GUARD. CROSS CATTLE GUARD AND GO 0.24 KM  
(0.15 MI) TO FORK. TAKE RIGHT FORK AND GO NORTHWESTERLY FOR 2.74 KM  
(1.70 MI) TO CATTLE GUARD. CROSS CATTLE GUARD AND GO NORTHWESTERLY  
FOR 1.77 KM (1.10 MI) TO RANCH HOUSE ON LEFT. CONTINUE NORTHWESTERLY  
FOR 0.24 KM (0.15 MI) TO FORK. BERA RIGHT AND GO NORTHWESTERLY FOR  
1.21 KM (0.75 MI) TO CATTLE GUARD. CROSS CATTLE GUARD AND GO  
NORTHWESTERLY FOR 1.13 KM (0.70 MI) TO CATTLE GUARD. CROSS CATTLE  
GUARD AND GO NORTHWESTERLY FOR 1.05 KM (0.65 MI) TO FORK. TAKE LEFT  
FORK AND GO 0.08 KM (0.05 MI) TO FORK. BEAR LEFT AND GO WESTERLY FOR  
0.4 KM (0.2 MI) TO DOUBLE GATE. GO THROUGH RIGHT GATE AND GO  
WESTERLY FOR 0.48 KM (0.30 MI) TO FORK. BEAR RIGHT AND GO WESTERLY  
FOR 2.82 KM (1.75 MI) TO FORK. TAKE RIGHT FORK AND GO WESTERLY FOR  
0.4 KM (0.2 MI) TO METAL GATE. PASS THROUGH GATE AND GO WESTERLY FOR  
1.6 KM (1.0 MI) TO FORK. TAKE LEFT FORK AND GO WESTERLY FOR 1.6 KM  
(1.0 MI) TO FORK. TAKE RIGHT FORK AND GO WESTERLY FOR 2.09 KM  
(1.30 MI) TO ROAD ON RIGHT LEADING TO RELAY STATION ON RIGHT.  
CONTINUE STRAIGHT AND GO WESTERLY FOR 0.08 KM (0.05 MI) TO DIM FORK.  
TAKE LEFT FORK AND GO WESTERLY FOR 0.16 KM (0.10 MI) TO FORK. BEAR  
LEFT AND GO WESTERLY FOR 0.16 KM (0.10 MI) TO FORK. TAKE RIGHT FORK  
AND GO WESTERLY FOR 0.16 KM (0.10 MI) TO FORK. TAKE LEFT FORK AND GO  
WESTERLY FOR 0.72 KM (0.45 MI) TO FENCE AND FORK JUST BEYOND. PASS  
THROUGH FENCE LINE AND TAKE RIGHT FORK AND GO WESTERLY 0.81 KM  
(0.50 MI) TO TOP OF RIDGE AND STATION AHEAD 0.2 KM (0.1 MI) ON RIGHT  
IN A ROCKY, OPEN AREA AT TOP OF RIDGE. NOTE--GATES ALONG THIS ROUTE  
MAYBE LOCKED.

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MANN CREEK NW

**MANN CREEK DAM MON 2**

PID: QB1365

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: IDAHO  
COUNTY: WASHINGTON

LATITUDE:	44° 23' 23.30713" N	±0.00020 SECONDS
LONGITUDE:	116° 53' 43.76376" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 894.4 METERS  
2934. FEET

GEOID HEIGHT:	-15.743		METERS
ELLIPSOIDAL HEIGHT:	878.846	±0.059	METERS
X:	1290662.354		METERS
Y:	2566992.202		METERS
Z:	-5676237.273		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.6                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	ID W	303,140.788	708,734.216	1.00003573	- 0 48 4.9
SPC	OR S	308,700.499	1,787,151.015	1.00012252	+ 2 27 57.7
SPC	OR N	86,763.720	2,787,105.285	0.99998626	+ 2 33 22.6
UTM	11	4,915,174.699	508,323.948	0.99960085	+ 0 04 23.2

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	US BUREAU OF RECLAMATION (NOW WPRS)

(Continued on Next Page)

## MANN CREEK DAM MON 2

PID: QB1365

### STATION DESCRIPTION

#### DESCRIBED 1990

THE STATION IS LOCATED ABOUT 13 MILES NORTH OF WEISER, ON THE WEST SIDE OF SPANGLER DAM, AND AT THE SW END OF MANN CREEK RESERVOIR, TO REACH THE STATION FROM THE MANN CREEK STORE WHICH IS ABOUT 24 MILES NORTH ON HIGHWAY 95 FROM WEISER, GO NORTH ON 95 2.4 KM (1.5 MI) TO A SIGN MANN CREEK RESERVOIR, TURN LEFT AND GO 0.24 KM (0.15 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 1.92 KM (1.19 MI) TO THE NORTH END OF THE DAM TURN LEFT ONTO DAM AND GO 0.32 KM (0.20 MI) TO THE SOUTH END OF THE DAM AND STATION ON THE LEFT ABOUT 10 M (32.8 FT) HIGHER THAN THE TOP OF THE DAM.

THE STATION IS A THEODLITE PIER ON A PIPE THAT IS PROTECTED BY A 30 CM IN DIAMETER STEEL PIPE WITH A LOCKED COVER. KEY 0356 WILL OPEN THE COVER. THE STATION IS 32.0 M (105.0 FT) EAST OF THE CENTERLINE OF THE ROAD, 21.8 M (71.5 FT) ESE OF SOUTH END OF A GUARD RAIL ON THE EAST SIDE OF THE DAM. ALL DISTANCES ARE SLOPE.  
DESCRIBED BY L.L. RIGGERS.

**MANN CREEK DAM MON 4**

PID: QB1366

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: IDAHO  
COUNTY: WASHINGTON

LATITUDE:	44° 23' 24.3302" N	± 0.00020 SECONDS
LONGITUDE:	116° 54' 09.6198" W	± 0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 892.5 METERS  
2928. FEET

GEOID HEIGHT:	-15.738	METERS
ELLIPSOIDAL HEIGHT:	876.985	±0.071 METERS
X:	1200286.127	METERS
Y:	2497373.705	METERS
Z:	-5726558.760	METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.6                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	ID W	303,180.39	708,162.42	1.00003702	- 0 48 23.0
SPC	OR S	308,707.45	1,786,577.84	1.00012262	+ 2 27 40.0
SPC	OR N	86,769.77	2,786,532.18	0.99998619	+ 2 33 4.2
UTM	11	4,915,205.56	507,751.86	0.99960074	+ 0 04 5.1

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	US BUREAU OF RECLAMATION (NOW WPRS)

(Continued on Next Page)

**MANN CREEK DAM MON 4**

PID: QB1366

**STATION DESCRIPTION**

**DESCRIBED 1990**

THE STATION IS LOCATED ABOUT 13 MILES NORTH OF WEISER, AND ON THE WESTSIDE OF MANN CREEK RESERVOIR, TO REACH THE STATION FROM THE MANN CREEK STORE WHICH IS ABOUT 24 MILES NORTH ON HIGHWAY 95 FROM WEISER, GO NORTH ON 95 2.4 KM (1.5 MI) TO A SIGN MANN CREEK RESERVOIR, TURN LEFT AND GO 0.24 KM (0.15 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 1.92 KM (1.19 MI) TO THE NORTH END OF THE DAM TURN LEFT ONTO DAM AND GO 0.32 KM (0.20 MI) TO THE SOUTH END OF THE DAM, CONTINUE ON ROAD AROUND RESERVOIR AND GO 1.92 KM (1.19 MI) TO A ROAD FORK, TAKE RIGHT FORK DOWNHILL 0.48 KM (0.30 MI) TO THE MARK ON THE RIGHT.

THE STATION IS A THEODLITE PIER ON A PIPE THAT IS PROTECTED BY A 30 CM IN DIAMETER STEEL PIPE WITH A LOCKED COVER. KEY 0356 WILL OPEN THE COVER. THE STATION IS 15 M (49.2 FT) SOUTH OF THE CENTERLINE OF THE DIRT ROAD AND PROJECTS ABOUT 1.5 M (4.9 FT) . DESCRIBED BY L.L. RIGGERS.

**MARY RM 5**  
PID: QE2316

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BENTON

LATITUDE:	44° 30' 16.05036" N	±0.00020 SECONDS
LONGITUDE:	123° 33' 08.19724" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	1249.0	METERS
	4098.	FEET

GEOID HEIGHT:	-20.437	METERS
ELLIPSOIDAL HEIGHT:	1228.225	±0.059 METERS
X:	4174869.549	METERS
Y:	3038830.346	METERS
Z:	-3733445.955	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.59606" +04.34723" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO MARY AZ MK
						DEG MIN SEC
SPC	OR N	97,682.194	2,257,339.375	0.99996130	- 2 09 52.7	009 30 40.9
SPC	OR S	319,685.494	1,257,285.329	1.00016751	- 2 05 17.5	009 26 40.9
UTM	10	4,928,052.727	456,098.553	0.99962370	- 0 23 13.7	007 44 01.9

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	MARY AZ MK		007 20 48.2
QE2678	MARY AZ MK 2		007 20 46.5
QE2317	MARY ECC	15.417 METERS	043 13
QE2319	MARY RM 3	27.264 METERS	191 39
QE2320	MARYS PEAK ANTENNA	58.941 METERS	230 27
QE2315	MARY	18.273 METERS	234 50

(Continued on Next Page)

**MARY RM 5**

PID: QE2316

STATION MARK IS A . . . . REFERENCE MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . MARY 1903 NO 5 1972

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1972	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1980	GOOD	NATIONAL GEODETIC SURVEY (CLN)
1988	GOOD	EAGLE GPS SURVEYING CORPORATION (WLC)
1989	GOOD	NATIONAL GEODETIC SURVEY
1990	GOOD	NATIONAL GEODETIC SURVEY

**STATION DESCRIPTION**

DESCRIBED BY NATIONAL GEODETIC SURVEY 1972 (LDF)  
THE STATION IS ABOUT 24-1/2 MILES NORTHWEST OF HARRISBURG, 1-1/2  
MILES WEST-SOUTHWEST OF CORVALLIS, 9-1/2 MILES WEST-SOUTHWEST OF  
PHILOMATH NEAR THE MARYS PEAK LOOKOUT TOWER AND IN THE NORTHWEST  
QUARTER SECTION 28 R-7-W,T-12-S. IT IS ON PROPERTY OF THE  
U.S. FOREST SERVICE.

TO REACH THE STATION FROM THE POST OFFICE IN PHILOMATH, GO WESTERLY  
ON U.S. HIGHWAY 20 FOR 0.8 MILE TO THE JUNCTION OF STATE HIGHWAY  
34. TURN LEFT AND GO SOUTHWEST ON HIGHWAY 34 FOR 5.0 MILES TO  
DECKER ROAD ON THE LEFT, CONTINUE SOUTHWEST ON HIGHWAY 34 FOR 4.0  
MILES TO A PAVED SIDE ROAD ON THE RIGHT AND SIGN MARYS PEAK  
ROAD. TURN RIGHT AND GO WESTERLY UP HILL ON MARYS PEAK ROAD FOR  
5.5 MILES TO A PAVED SIDE ROAD ON THE LEFT AT SIGN MARY 5 PK  
C.G.S. HARLAN 13 U.S. HIGHWAY 20 21, CONTINUE NORTHERLY ON  
MAIN TRAVELED ROAD FOR 4.15 MILES TO A LOCKED RAIL GATE. (KEY  
CAN BE OBTAINED FROM THE FOREST SERVICE). TO REACH THE AZIMUTH  
MARK FROM THIS POINT, TURN RIGHT AND GO NORTH ON A GRAVELED ROAD  
THROUGH PICNIC AREA FOR 0.1 MILE TO THE NORTH END OF PICNIC  
AREA AND THE MARK NEAR A CABLE FENCE.) PASS THROUGH THE GATE  
AND GO SOUTHERLY UPHILL ON MARYS PEAK ROAD FOR 0.6 MILE TO THE  
MARYS PEAK LOOKOUT TOWER AND THE STATION.

STATION MARK IS A STANDARD REFERENCE MARK DISK, STAMPED MARY 1903  
NO 5 1972, SET IN THE TOP OF A 12 INCH CYLINDRICAL CONCRETE  
MONUMENT THAT IS FLUSH WITH THE GROUND. THE UNDERGROUND STATION  
MARK IS A STANDARD REFERENCE MARK DISK SET 32 INCHES BELOW THE  
GROUND. IT IS 49.6 FEET NORTHEAST OF THE NORTHEAST LEG OF THE  
LOOKOUT TOWER, 34.3 FEET NORTHWEST OF THE FLAG POLE AND 18 FEET  
EAST OF THE APPROXIMATE CENTER OF A GRAVELED ROAD.

MARY 1903 IS AN OLD TYPE BRASS TRIANGULATION STATION DISK, STAMPED  
MARY 1903, CEMENTED IN A DRILL HOLE IN A BURIED BOULDER 2 INCHES  
BELOW THE GROUND SURFACE. IT IS IN THE APPROXIMATE CENTER OF THE  
LOOKOUT TOWER.

(Continued on Next Page)



## MARY RM 5

PID: QE2316

REFERENCE MARK 3 IS A STANDARD DISK, STAMPED MARY NO 3 1940, CEMENTED IN A DRILL HOLE IN A 1 BY 2 FOOT ROCK OUTCROP THAT IS FLUSH WITH THE GROUND. IT IS 69.6 FEET SOUTHWEST OF THE FLAG POLE AND 51.8 FEET SOUTHEAST OF THE SOUTHEAST LEG OF THE LOOKOUT TOWER.

AZIMUTH MARK IS A STANDARD DISK, STAMPED MARY 1903 1972, SET IN THE TOP OF A 12 INCH CYLINDRICAL CONCRETE MONUMENT THAT IS 2 INCHES BELOW THE GROUND SURFACE. IT IS 9.0 FEET NORTH OF THE APPROXIMATE CENTER OF A GRAVELED ROAD, 3.0 FEET EAST OF A METAL WITNESS POST AND 1.5 FEET SOUTHWEST OF A GUARD FENCE CONCRETE POST.

MARY ECC (OSHD) IS A BRONZE STATION MARK DISK OF THE OREGON STATE HIGHWAY DEPARTMENT, STAMPED MARY ECC 1963, SET IN THE TOP OF A RECTANGULAR CONCRETE MONUMENT THAT PROJECTS 2 INCHES. IT IS 56.2 FEET NORTH-NORTHEAST OF THE FLAG POLE AND 100 FEET NORTHEAST OF THE NORTHEAST LEG OF THE LOOKOUT TOWER.

### STATION RECOVERY (1980)

RECOVERED BY NATIONAL GEODETIC SURVEY 1980 (CLN)  
THE STATION, REFERENCE MARK 3 AND MARY 1905 AND THE AZIMUTH MARK WERE RECOVERED IN GOOD CONDITION. DISTANCES TO THESE MARKS CHECKED FAVORABLY. MARY ECC OSHO WAS SEARCHED FOR BUT NOT RECOVERED. A FEW PIECES OF CONCRETE WERE FOUND WHERE THE MARK WAS SUPPOSED TO BE.

THE LOOKOUT TOWER HAS BEEN REMOVED. THERE ARE TWO OTHER BUILDINGS ON THE TOP OF THE HILL. THE 1972 DESCRIPTION AND TO REACH IS ADEQUATE FOR RECOVERY.

### STATION RECOVERY (1988)

RECOVERED BY EAGLE GPS SURVEYING CORPORATION 1988 (WLC)  
THE STATION WAS RECOVERED AT THIS DATE.  
ALL MARKS WERE RECOVERED AS DESCRIBED.

DESCRIBED BY LAYNE CASWELL.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

(Continued on Next Page)

**MARY RM 5**

PID: QE2316

**STATION RECOVERY (1990)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1990

STATION IS LOCATED ABOUT 15 KM (9.3 MI) SOUTHWEST OF PHILOMATH, 13 KM (8.1 MI) NORTH OF ALSEA, 2 KM (1.2 MI) EAST OF THE LINCOLN-BENTON COUNTY LINE, IN THE SIUSLAW NATIONAL FOREST, ON THE TOP OF MARYS PEAK, A LARGE GRASSY HILL, AT THE SITE OF THE NOW-REMOVED LOOKOUT TOWER, IN THE NORTHWEST 1/4 OF SECTION 28, T 12 S, R 7 W. OWNERSHIP--US FOREST SERVICE. CALL 503-487-5811 FOR LOCK COMBINATION.

TO REACH FROM THE CITY FIRE STATION IN THE WEST SECTION OF PHILOMATH, GO WEST ON US HIGHWAY 20 AND STATE HIGHWAY 34 FOR 1.08 KM (0.67 MI) TO A FORK IN THE HIGHWAY. BEAR LEFT, SOUTHWEST, ON HIGHWAY 34 FOR 14.26 KM (8.86 MI) TO A PAVED CROSSROAD JUST BEFORE REACHING ROAD SUMMIT OF THE COASTAL RANGE, AND SIGN -MARYS PEAK ROAD-. TURN RIGHT, NORTHWEST, ON USFS ROAD 30 FOR 8.61 KM (5.35 MI) TO A GRAVEL ROAD LEFT. CONTINUE AHEAD, UPGRADE, ON USFS ROAD 3010 FOR 6.51 KM (4.05 MI) TO ROAD END AT A PARKING LOT AND A LOCKED POLE GATE (LOCK COMBINATION CHANGED REGULARLY). PASS THROUGH GATE, SOUTHERLY, ON GRAVEL ROAD FOR 1.04 KM (0.65 MI) TO ITS END AT HIGH GROUND AND THE STATION ON THE LEFT.

STATION MARK IS SET IN THE TOP OF A 25-CM ROUND CONCRETE POST FLUSH WITH THE GROUND. IT IS 5.5 M (18.0 FT) EAST OF, AND LEVEL WITH THE ROAD CENTER, 15.4 M (50.5 FT) NORTHEAST OF THE NORTHEAST LEG OF OLD LOOKOUT TOWER, AND 19.5 M (64.0 FT) NORTH-NORTHEAST OF THE NORTHEAST CORNER OF A SMALL CONCRETE BUILDING.

**MASON**  
PID: QB1364

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BAKER

LATITUDE:	44° 40' 24.70716" N	±0.00030 SECONDS
LONGITUDE:	117° 59' 40.96796" W	±0.00040 SECONDS

ORTHOMETRIC HEIGHT: { 1251.8 METERS  
4107. FEET

GEOID HEIGHT:	-15.903	METERS
ELLIPSOIDAL HEIGHT:	1236.029 ±0.075	METERS
X:	4254694.288	METERS
Y:	-3011693.310	METERS
Z:	3665155.523	METERS

HORIZONTAL NETWORK ORDER: FIRST  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.4 +03.8 (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	114,964.217	2,698,607.054	0.99993170	+ 1 46 36.2
UTM	11	4,947,165.935	421,157.393	0.99967644	- 0 41 57.8

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . MASON 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**MASON**

PID: QB1364

**STATION DESCRIPTION**

**DESCRIBED 1990**

THE STATION IS LOCATED ABOUT 11 MILES SOUTHWEST OF BAKER CITY AND ABOUT 11 MILES SOUTHEAST OF SUMPSTER.

TO REACH FROM THE POST OFFICE IN BAKER CITY (IT IS 0.1 MILE SOUTH OF THE JUNCTION OF HIGHWAY 30 AND HIGHWAY 7) GO SOUTH ON HIGHWAY 7 FOR 14.88 KM (9.25 MI) TO JUNCTION OF HIGHWAYS 7 AND 245, KEEP RIGHT ON HIGHWAY 7 AND GO 9.52 KM (5.92 MI) TO MILEPOST 36, CONTINUE ON FOR 1.36 KM (0.85 MI) TO A ROAD LEADING TO MASON DAM PICNIC AREA, KEEP RIGHT AND GO 0.96 KM (0.60 MI) TO A ROAD FORK, KEEP RIGHT AND GO 0.08 KM (0.05 MI) TO THE STATION ON THE LEFT.

THE STATION IS LOCATED ABOUT 0.48 KM (0.30 MI) EAST OF THE NORTH END OF THE DAM, 69 M (226.4 FT) WEST OF THE EAST END OF A GUARD RAIL, 13.4 M (44.0 FT) SOUTH OF THE CENTERLINE OF A PAVED ROAD, 8.0 M (26.2 FT) SOUTH OF A GUARD RAIL, 2.4 M (7.9 FT) EAST OF A WITNESS POST AND 2.3 M (7.5 FT) NORTH OF THE TOP EDGE OF A CUT. THE ROAD BELOW THIS MARK LEADS TO THE DAM.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BLUE CANYON

**MASON AZ MK**  
PID: QC1052

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BAKER

LATITUDE:	44° 40' 22.5230" N	±0.00030 SECONDS
LONGITUDE:	118° 00' 03.0978" W	±0.00040 SECONDS

ORTHOMETRIC HEIGHT:	{ 1252.0	METERS
	4108.	FEET

GEOID HEIGHT:	-15.900	METERS
ELLIPSOIDAL HEIGHT:	1236.285	±0.090 METERS
X:	4022706.203	METERS
Y:	-3084168.446	METERS
Z:	3860302.159	METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.8                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	114,881.74	2,698,121.98	0.99993179	+ 1 46 20.5
UTM	11	4,947,104.51	420,669.33	0.99967739	- 0 42 13.3

STATION MARK IS A . . . . BENCH MARK DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . 4106.86

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**MASON AZ MK**

PID: QC1052

**STATION DESCRIPTION**

**DESCRIBED 1990**

THE STATION IS LOCATED ABOUT 11 MILES SOUTHWEST OF BAKER CITY AND ABOUT 11 MILES SOUTHEAST OF SUMPTER AND AT THE NORTH END OF MASON DAM.

TO REACH FROM THE POST OFFICE IN BAKER CITY (IT IS 0.1 MILE SOUTH OF THE JUNCTION OF HIGHWAY 30 AND HIGHWAY 7) GO SOUTH ON HIGHWAY 7 FOR 14.88 KM (9.25 MI) TO JUNCTION OF HIGHWAYS 7 AND 245, KEEP RIGHT ON HIGHWAY 7 AND GO 9.52 KM (5.92 MI) TO MILEPOST 36, CONTINUE ON FOR 1.36 KM (0.85 MI) TO A ROAD LEADING TO MASON DAM PICNIC AREA, KEEP RIGHT AND GO 0.96 KM (0.60 MI) TO A ROAD FORK, TURN LEFT AND GO 0.48 KM (0.30 MI) TO THE STATION ON THE RIGHT. WALK WESTERLY DOWN HILL TO SPILLWAY AND CONTINUE WESTERLY ABOUT 30 M (98.4 FT) TO A ROCK RIDGE, CONTINUE UP RIDGE ABOUT 30 METERS TO THE STATION. THE STATION IS LOCATED ABOUT 45 M (147.6 FT) EAST OF THE NORTH END OF THE DAM, 6.2 M (20.3 FT) WSW OF B-6 BRASS CAP, 4.2 M (13.8 FT) SOUTH OF A ROCK FACE AND 2.3 METERS E OF A WITNESS POST.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MILL CITY NORTH

**MILL**  
PID: QE2670

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MARION

LATITUDE:	44° 45' 06.27920" N	±0.00010 SECONDS
LONGITUDE:	122° 28' 47.90225" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 252.2 METERS  
828. FEET

GEOID HEIGHT:	-21.309		METERS
ELLIPSOIDAL HEIGHT:	230.702	±0.043	METERS
X:	26951.327		METERS
Y:	414433.968		METERS
Z:	-6343514.759		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	122,496.621	2,343,240.824	0.99992091	- 1 24 15.0
UTM	10	4,955,504.448	541,162.704	0.99962084	+ 0 21 58.0

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . MILL 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MILL CITY NORTH

**MILL**  
PID: QE2670

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN MILL CITY, AT THE SANTIAM HIGH SCHOOL ON THE SOUTH SIDE, AT JUNCTION OF SIDEWALKS. ONE RUNS EAST-WEST THE OTHER NORTH-SOUTH BETWEEN HIGH SCHOOL AND SANTIAM AUDITORIUM. IT IS 19.3 M (63.3 FT) NORTH OF THE CENTERLINE OF SW EVERGREEN STREET, 16.95 M (55.61 FT) EAST OF EAST SIDE OF STEPS LEADING TO THE AUDITORIUM, 7.5 M (24.6 FT) SOUTHWEST OF SOUTHWEST CORNER OF THE HIGH SCHOOL AND 7.3 M (24.0 FT) ESE OF A LIGHTPOLE. TO REACH FROM THE POST OFFICE IN MILL CITY WHICH IS AT THE INTERSECTION OF SW KINGWOOD AND SW 1ST AVE GO NORTH ON SW 1ST AVE FOR 0.40 KM (0.25 MI) , TURN LEFT ON SW EVERGREEN AND GO 0.32 KM (0.20 MI) TO THE MARK ON THE RIGHT.  
DESCRIBED BY L.L. RIGGERS.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: NESTUCCA BAY

**NESK**  
PID: RD4215

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: TILLAMOOK

LATITUDE:	45° 08' 03.59204"	N	±0.00010	SECONDS
LONGITUDE:	123° 57' 58.27959"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	33.99			METERS
	111.5			FEET

GEOID HEIGHT:	-21.245			METERS
ELLIPSOIDAL HEIGHT:	12.290	±0.049		METERS
X:	79711.190			METERS
Y:	709751.118			METERS
Z:	6316806.660			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	168,936.160	2,227,453.666	0.99989476	- 2 27 29.4
UTM	10	4,998,327.093	424,027.704	0.99967097	- 0 41 5.4

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . A DRILL HOLE IN BEDROCK  
THE MARK IS STAMPED . . . NESK 1989

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**NESK**  
PID: RD4215

STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED ON THE EAST SIDE OF HIGHWAY 101 ABOUT 4.3 KM (2.7 MI) NORTH OF NESKOWIN, TO REACH FROM THE JUNCTION OF HIGHWAY 18 AND US 101 GO NORTH ON US 101 FOR 3.8 KM (2.4 MI) TO THE TILLAMOOK-LINCOLN COUNTY LINE, CONTINUE NORTH ON 101 FOR 8.3 KM (5.2 MI) TO ROAD LEADING TO NESKOWIN, CONTINUE NORTH ON 101 FOR 3.2 KM (2.0 MI) TO INTERSECTION WITH AEOLIAN WAY, TURN RIGHT ON AEOLIAN WAY AND GO 1.1 KM (0.7 MI) TO THE MARK ON THE LEFT.

THE STATION IS AN ORDOT DISK STAMPED---NESK 1989---, SET INTO A DRILL HOLE IN A ROCK OUTCROP. IT IS 41.2 M (135.2 FT) WEST OF THE CENTERLINE OF AEOLIAN WAY, 12.6 M (41.3 FT) WNW OF S.H.R.W. SIGN 112-00 POS-RT 120, 11.0 M (36.1 FT) EAST OF TOP EDGE OF A ROCK CUT, AND 0.7 M (2.3 FT) NORTH OF A WITNESS POST THAT IS ALSO SET IN A ROCK OUTCROP.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: RICKREALL

**NESMITH**  
PID: QE2664

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: POLK

LATITUDE:	44° 55' 30.09361" N	±0.00020 SECONDS
LONGITUDE:	123° 13' 40.98113" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	{ 62.91	METERS
	{ 206.4	FEET

GEOID HEIGHT:	-20.909	METERS
ELLIPSOIDAL HEIGHT:	41.700 ±0.070	METERS
X:	4778639.888	METERS
Y:	2769368.670	METERS
Z:	-3179387.757	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	143,466.132	2,284,683.221	0.99990358	- 1 56 4.9
UTM	10	4,974,647.087	482,002.722	0.99960398	- 0 09 39.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . NESMITH 1989

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	POLK COUNTY OREGON

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: RICKREALL

## NESMITH

PID: QE2664

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED 1 KM (0.6 MI) SOUTH OF RICKREALL AT THE FAIRGROUNDS IN THE NORTHEAST QUARTER OF THE NW QUARTER OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 4 WEST OF THE WILLAMETTE MERIDIAN. TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 99W AND STATE HIGHWAY 22 IN RICKREALL, GO SOUTH OF STATE HIGHWAY 99W FOR 1.04 KM (0.65 MI) TO THE MAIN GATE OF THE POLK COUNTY FAIRGROUNDS ON THE LEFT (EASTERLY) SIDE OF THE HIGHWAY. THE STATION IS 27.43 M (89.99 FT) SOUTHERLY, ALONG A 4 FOOT HIGH CHAIN-LINK FENCE, FROM THE CENTER OF THE MAIN GATE AND 1.52 M (4.99 FT) EASTERLY OF THE FENCE. DESCRIBED BY JOHN NEMECEK, POLK COUNTY ASSISTANT SURVEYOR.

**NICKOLAI RIDGE**  
PID: SC1760

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CLATSOP

LATITUDE:	46° 06' 00.64476" N	±0.00020 SECONDS
LONGITUDE:	123° 26' 41.64634" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 807.6 METERS  
2650. FEET

GEOID HEIGHT:	-19.714		METERS
ELLIPSOIDAL HEIGHT:	787.706	±0.055	METERS
X:	5680357.281		METERS
Y:	-1995383.078		METERS
Z:	2100757.847		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.61811" +04.47204" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO JIM CROW POINT DEG MIN SEC
				SCALE FACTOR		
SPC	OR N	274,579.775	2,272,334.508	1.00002702	- 2 05 18.5	334 47 00.0
SPC	WA S	89,484.843	272,354.477	0.99995019	- 2 08 21.0	334 50 00.0
UTM	10	5,105,274.377	465,612.465	0.99961454	- 0 19 14.1	333 00 55.6

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	NICKOLAI RIDGE RM 1	12.122 METERS	194 27
	NICKOLAI RIDGE RM 2	15.416 METERS	289 55
SC1875	JIM CROW POINT	APPROX.20.1 KM	332 41 41.5

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN PARTIALLY EXPOSED BOULDER  
THE MARK IS STAMPED . . . NICOLAI RIDGE 1934  
(Continued on Next Page)

## NICKOLAI RIDGE

PID: SC1760

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1934	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1935		COAST AND GEODETIC SURVEY (CP)
1967		BONNEVILLE POWER ADMINISTRATION
1970		NATIONAL GEODETIC SURVEY (LFS)
1989	GOOD	US GEOLOGICAL SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1934 (CP )  
STATION IS ON THE HIGHEST POINT OF NICKOLAI RIDGE, ABOUT 1 MILE  
AIR LINE N OF NICKOLAI MOUNTAIN. IT IS ABOUT 200 YARDS SE OF THE  
END OF THE OLD RAILROAD GRADE AND 40 FEET N OF A LARGE SPAR  
TREE. THE RIDGE HAS RECENTLY BEEN LOGGED-OFF AND BURNED AND IS  
COVERED WITH LARGE DEAD SNAGS.

STATION AND REFERENCE MARKS ARE STANDARD BRONZE DISKS WEDGED IN  
A DRILL HOLE IN A BOULDER AS DESCRIBED IN NOTES 4 AND 12C.

REACHED FROM BRADWOOD POST OFFICE (BRADLEY-WOODWARD LUMBER COMPANY)  
AS FOLLOWS--BOARD THE LOGGING TRAIN AT THE LUMBER MILL AND RIDE TO  
THE SPUR AT WATER TANK, ABOUT 6 MILES, FROM HERE FOLLOW THE OLD  
SPUR (TRACKS ARE BEING TAKEN UP) TO THE END, ABOUT 2 MILES, FROM  
THIS POINT THE STATION LIES ABOUT 200 YARDS SE. THE  
BRADLEY-WOODWARD LUMBER COMPANY IS 23 MILES E OF ASTORIA AND  
2.5 MILES N OF THE HIGHWAY.

### STATION RECOVERY (1935)

RECOVERED BY COAST AND GEODETIC SURVEY 1935 (CP )  
STATION IS ON THE HIGHEST POINT OF NICKOLAI RIDGE ABOUT 1 MILE N  
OF NICKOLAI MOUNTAIN. IT IS ABOUT 200 YARDS NE OF THE END OF THE  
OLD RAILROAD GRADE AND 40 FEET NNW OF A LARGE SPAR TREE (THE  
HIGHEST ONE ON THE RIDGE). THE RIDGE HAS RECENTLY BEEN LOGGED-OFF  
AND BURNED AND IS COVERED WITH DEAD SNAGS.

REACHED FROM BRANWOOD POST OFFICE (BRADLEY-WOODWARD LUMBER COMPANY)  
AS FOLLOWS--BOARD THE LOGGING TRAIN AT MILL AND RIDE TO THE WATER  
TANK ABOUT 6 MILES, FROM HERE FOLLOW THE OLD SPUR GRADE (TRACKS ARE  
BEING TAKEN UP) TO THE END ABOUT 3 MILES, TURN SE AT A SPAR TREE  
THAT IS JUST S OF THE RAILROAD GRADE (THE ONLY SPAR TREE THAT IS  
CLOSE TO THE RAILROAD), FOLLOW THE DITCH MADE BY DRAGGING LOGS  
TO THE NEXT SPAR TREE ABOUT 300 YARDS SE TO STATION.

### STATION RECOVERY (1967)

RECOVERED BY BONNEVILLE POWER ADMINISTRATION 1967  
ORIGINAL DESCRIPTION ON PAGE 5.

(Continued on Next Page)

## NICKOLAI RIDGE

PID: SC1760

A NEW TO REACH DESCRIPTION FOLLOWS--

TO REACH FROM BRADWOOD AND CLIFTON JUNCTION WITH U.S. HWY 30 (LOCATED ABOUT 20 MILES EAST OF ASTORIA, OREGON), TURN RIGHT, SOUTHERLY, ON GRAVEL ROAD OPPOSITE BRADWOOD ROAD (SIGNS ON RIGHT BRADWOOD, CLIFTON). TRAVEL 0.3 MILE TO A Y INTERSECTION (SIGN--HUNT CREEK ROAD). GO RIGHT. CROSS UNDER POWER LINES AND THROUGH STEEL LOGGING GATE 1.0 MILE TO CROSS TELEPHONE CABLE ROAD. CONTINUE 0.3 MILE TO SIDE ROAD LEFT. STAY RIGHT AND GO 0.7 MILE TO ANOTHER SIDE ROAD LEFT. STAY RIGHT AND GO ABOUT 50 FEET TO A SIDE ROAD RIGHT. STAY LEFT AND GO 0.2 MILE TO CROSS A CREEK AND A SIDE ROAD LEFT. STAY RIGHT AND GO 0.2 MILE TO A ROAD RIGHT. STAY LEFT AND GO 0.2 MILE TO CROSS ANOTHER CREEK (SIGN--WATER HOLE). CONTINUE 0.1 MILE TO A Y INTERSECTION (SIGN--SPUR 160, SHINGLE MILL ROAD). GO LEFT ON SHINGLE MILL ROAD 0.4 MILE TO A Y INTERSECTION, (SIGNS--SHINGLE MILL ROAD, NICOLAI MT.). GO LEFT ON NICOLAI MT. ROAD 0.3 MILE TO PASS THROUGH A STEEL LOGGING GATE. CONTINUE 0.8 MILE TO JUNCTION WITH E-W ROAD. CROSS ROAD AND GO STRAIGHT (SOUTHERLY) FOR 2.0 MILES TO A THREE PRONGED INTERSECTION. GO HARD LEFT (SIGN--FIRE ROAD 2) ON FIRE ROAD 2 0.5 MILE TO A Y INTERSECTION. GO RIGHT. TRAVEL 0.1 MILE TO STATION + OR - 20 FEET RIGHT OF ROAD.

STATION AND R.M.S RECOVERED IN GOOD CONDITION. A MICROWAVE STATION IS NOW BEING CONSTRUCTED IN THE GENERAL AREA OF STATION. THE USC AND GS STATION IS STAMPED NICKOLAI RIDGE. IT IS ABOUT ONE MILE NORTH OF A HIGHER RIDGE AND LOOKOUT TOWER.

### STATION RECOVERY (1970)

RECOVERED BY NATIONAL GEODETIC SURVEY 1970 (LFS)  
THE STATION MARK, AND REFERENCE MARK NO. 2 WERE RECOVERED IN GOOD CONDITION. REFERENCE MARK NO. 1 HAD BEEN DESTROYED BY HEAVY MACHINERY. REFERENCE MARK NO. 3 WAS ESTABLISHED. THE STAMPING ON THE MARKS IS DIFFERENT THAN THE SPELLING IN THE DESCRIPTION. LANDMARKS HAVE CHANGED. A NEW AND COMPLETE DESCRIPTION FOLLOWS.

THE STATION IS 5 MILES SOUTHWEST OF WESTPORT, 1 MILE NORTHEAST OF NICOLAI MOUNTAIN, ON STATE OWNED LAND, NEAR THE SECTION LINE BETWEEN SECTIONS 9, AND 16, IN TOWNSHIP 7 N, RANGE 6 W. A TELEPHONE MICROWAVE INSTALLATION OCCUPIES THE SAME SUMMIT.

TO REACH THE STATION FROM THE WESTPORT POST OFFICE, GO WEST ON U.S. HIGHWAY 30 FOR 5.2 MILES TO A CROSSROAD, TURN LEFT, AND GO SOUTH AND SOUTHWEST ON SHINGLE MILL ROAD FOR 3.4 MILES TO A FORK, TAKE THE LEFT FORK, LEAVING SHINGLE MILL ROAD, AND GO SOUTH, AND SOUTHEAST ON THE MAIN TRAVELED ROAD FOR 3.0 MILES TO TWO ROADS TO THE LEFT, TURN SHARP LEFT, AND GO NORTHEAST ON THE GRAVELED ROAD FOR 0.6 MILE TO THE TELEPHONE MICROWAVE INSTALLATION, AND THE STATION AT THE END OF THE ROAD.

(Continued on Next Page)

## NICKOLAI RIDGE

PID: SC1760

THE STATION MARK, STAMPED NICOLAI RIDGE 1934, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A BOULDER THAT IS 1-FOOT SQUARE, AND PROJECTS 2 INCHES. IT IS 76 FEET SOUTHWEST OF THE SOUTHEAST CORNER OF THE FENCE AROUND THE TELEPHONE MICROWAVE INSTALLATION, 62 FEET SOUTHEAST OF THE SOUTHWEST FENCE CORNER, 24 FEET SOUTH OF THE FENCE, 23 FEET SOUTHWEST OF A HIGH VOLTAGE MANHOLE, 1 FOOT SOUTH OF A ROCK CAIRN, AND 1 FOOT NORTHWEST OF A METAL WITNESS POST. (NOTE 4)

REFERENCE MARK NO. 2, STAMPED NICOLAI RIDGE NO 2 1934, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A 2 BY 3 FOOT BOULDER THAT PROJECTS 4 INCHES, 51 FEET NORTHWEST OF THE WITNESS POST, 12 FEET SOUTHEAST OF THE SOUTHWEST CORNER OF THE FENCE, 7 FEET SOUTH OF THE FENCE, 1 FOOT SOUTH OF A ROCK CAIRN, AND 1 FOOT HIGHER THAN THE STATION. (NOTE 12C)

REFERENCE MARK NO. 3, STAMPED NICOLAI RIDGE 1934 NO 3 1970, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A 1-1/2 BY 2 FOOT BOULDER THAT PROJECTS 1 INCH, 35 FEET SOUTHWEST OF THE WITNESS POST, 2 FEET NORTH OF A ROCK CAIRN, AND 1.5 FEET LOWER THAN THE STATION. (NOTE 12C)

THE DISTANCE BETWEEN R.M. NO. 2, AND R.M. NO. 3 IS 61.11 FEET OR 18.626 METERS.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
5 MILES SOUTHWEST OF WESTPORT.

### STATION RECOVERY (1989)

RECOVERED BY US GEOLOGICAL SURVEY 1989

TEXT WAS SUPERSEDED BY LATER RECOVERY.

THE STATION IS LOCATED ABOUT 28.97 KM (18.00 MI) EAST-SOUTHEAST OF ASTORIA, 22.7 KM (14.00 MI) NORTH OF SEWELL, 11.3 KM (7.00 MI) SOUTH OF WAUNA AND 5.44 KM (4.00 MI) WEST OF WESTPORT. OWNERSHIP--UNKNOWN. TO REACH FROM THE WESTPORT POST OFFICE (COMBINED WITH WEST MARKET AND SHORE GROCERY) GO WEST ON US HIGHWAY 30 FOR 8.48 KM (5.25 MI) TO A CROSSROAD (ROAD RIGHT SIGNED BRADWOOD CLIFTON ROAD, ROAD LEFT NOT SIGNED) TURN LEFT AND GO SOUTHERLY FOR 5.44 KM (3.40 MI) TO A FORK, TAKE LEFT FORK AND GO SOUTH AND SOUTHWEST ON MAIN TRAVELED ROAD FOR 4.96 KM (3.10 MI) TO TWO ROADS TO THE LEFT, TURN SHARP LEFT AND GO NORTHEAST ON THE GRAVELED ROAD FOR 0.8 KM (0.50 MI), TURN RIGHT (SOUTHEAST) AT Y ROAD INTERSECTION AND GO 0.16 KM (0.10 MI) TO THE TELEPHONE MICROWAVE INSTALLATION. BEAR RIGHT ON DIM TRACK ROAD FOR 0.1 KM (0.05 MI) ALONG FENCE ENCLOSURE TO THE SOUT SIDE OF INSTALLATION AND STATION ON LEFT BY METAL WITNESS POST.

THE STATION IS LOCATED 23.2 M (76.1 FT) WEST-SOUTHWEST OF THE SOUTHEAST CORNER OF FENCE ENCLOSURE, 19.0 M (62.3 FT) EAST OF THE SOUTH WEST CORNER OF FENCE ENCLOSURE, 3.4 M (11.2 FT) NORTH OF THE APPROXIMATE CENTERLINE OF DIM TRACK ROAD AND 0.4 M (1.3 FT) WEST OF METAL WITNESS POST.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CAPE DISAPPOINTMENT

**NORTH HEAD RM 4**

PID: SD0854

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: WASHINGTON  
COUNTY: PACIFIC

LATITUDE:	46° 18' 01.27675" N	±0.00020 SECONDS
LONGITUDE:	124° 04' 33.35756" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	{ 76.69	METERS
	{ 251.6	FEET

GEOID HEIGHT:	-22.829	METERS
ELLIPSOIDAL HEIGHT:	53.518	±0.058 METERS
X:	244686.110	METERS
Y:	-1227125.670	METERS
Z:	-6233301.502	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD (Vertical Network Order Unconfirmed)  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING, BUT THE EXACT VERTICAL FIELD PROCEDURES ARE UNKNOWN. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.6                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	WA S	113,727.376	224,613.608	0.99992688	- 2 35 51.2
SPC	OR N	298,778.457	2,224,564.180	1.00009031	- 2 32 9.6
UTM	10	5,127,982.335	417,140.197	0.99968440	- 0 46 40.5

STATION MARK IS A . . . . . REFERENCE MARK DISK  
THE MARK IS STAMPED . . . NORTH HEAD 1942 NO 4 1987

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1987	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## NORTH HEAD RM 4

PID: SD0854

### STATION DESCRIPTION

DESCRIBED BY NATIONAL GEODETIC SURVEY 1987 (DAW)  
THE STATION IS LOCATED ABOUT 3.2 KM (2 MI) SOUTHWEST OF ILWACO,  
0.3 KM (0.2 MI) NORTHEAST OF THE NORTH HEAD LIGHT HOUSE, AT THE WEST  
EDGE OF CAPE DISAPPOINTMENT AND ON PROPERTY CONTROLLED BY THE PARK  
SERVICE.

TO REACH THE STATION FROM THE INTERSECTION OF FIRST STREET AND  
SPRUCE STREET IN ILWACO GO WEST FOR 1 BLOCK. CONTINUE AHEAD ON THE  
FORT CANBY STATE PARK-NORTH HEAD ROAD FOR 3.54 KM (2.2 MI) TO A SIDE  
ROAD RIGHT. TURN RIGHT ON THE NORTH HEAD LIGHT HOUSE ROAD FOR  
0.64 KM (0.4 MI) TO A SIDE ROAD RIGHT, TURN RIGHT ON THE NARROW  
ROAD FOR 0.48 KM (0.3 MI) TO AN ANTENNA SITE AND THE STATION ON THE  
HIGHEST ONE OF THE THREE ROOF LINES OF THE CONCRETE BUNKER.

THE STATION MARK IS A STANDARD NGS REFERENCE MARK DISK STAMPED---  
---NORTH HEAD 1942 NO 4 1987---SET IN A DRILL HOLE ON THE HIGHEST  
ROOF LEVEL OF THE CONCRETE BUNKER. IT IS 1.2 M (4 FT) SOUTH OF THE  
NORTH EDGE OF THE ROOF AND 1.1 M (3.5 FT) EAST OF THE WEST EDGE OF  
THE ROOF.

THIS STATION WAS ESTABLISHED FOR BETTER GPS VISABILITY AND CONVENTIO  
CONVENTIONALLY TIED TO STATIONS NORTH HEAD 1942 AND NORTH HEAD RM 3  
1976, LEVELS HAVE BEEN RUN TO THIS POINT.

DESCRIBED BY DA WEGENAST.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION IS LOCATED ABOUT 3.2 KM (2 MI) SOUTHWEST OF ILWACO,  
0.3 KM (0.2 MI) NORTHEAST OF THE NORTH HEAD LIGHT HOUSE, AT THE WEST  
EDGE OF CAPE DISAPPOINTMENT AND ON PROPERTY CONTROLLED BY THE PARK  
SERVICE.

TO REACH THE STATION FROM THE INTERSECTION OF FIRST STREET AND  
SPRUCE STREET IN ILWACO GO WEST FOR 1 BLOCK. CONTINUE AHEAD ON THE  
FORT CANBY STATE PARK-NORTH HEAD ROAD FOR 3.54 KM (2.2 MI) TO A SIDE  
ROAD RIGHT. TURN RIGHT ON THE NORTH HEAD LIGHT HOUSE ROAD FOR  
0.64 KM (0.4 MI) TO A SIDE ROAD RIGHT, TURN RIGHT ON THE NARROW  
ROAD FOR 0.48 KM (0.3 MI) TO AN ANTENNA SITE AND THE STATION ON THE  
HIGHEST ONE OF THE THREE ROOF LINES OF THE CONCRETE BUNKER.

THE STATION MARK IS A STANDARD NGS REFERENCE MARK DISK STAMPED---  
---NORTH HEAD 1942 NO 4 1987---SET IN A DRILL HOLE ON THE HIGHEST  
ROOF LEVEL OF THE CONCRETE BUNKER. IT IS 1.2 M (4 FT) SOUTH OF THE  
NORTH EDGE OF THE ROOF AND 1.1 M (3.5 FT) EAST OF THE WEST EDGE OF  
THE ROOF.

THE STATE PARKS DEPARTMENT PLAN ON LOCKING  
THE GATE AT NIGHT. CALL LARRY CHATMAN AT 206 642-3078 FOR A KEY.  
ALSO PACIFIC COUNTY WILL HAVE A KEY.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WESTFIR EAST

**OAKR**  
PID: PC1120

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LANE

LATITUDE:	43° 45' 06.31854" N	±0.00010 SECONDS
LONGITUDE:	122° 29' 54.59981" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	418.7	METERS
	1374.	FEET

GEOID HEIGHT:	-21.196	METERS
ELLIPSOIDAL HEIGHT:	397.209	±0.038 METERS
X:	6022844.863	METERS
Y:	-1466146.767	METERS
Z:	-1498861.607	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.2                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	233,542.341	1,339,065.012	0.99994638	- 1 22 2.2
UTM	10	4,844,423.626	540,374.608	0.99962005	+ 0 20 48.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF IRREGULAR CONCRETE MASS  
THE MARK IS STAMPED . . . OAKR 1989

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

**STATION DESCRIPTION**

DESCRIBED 1989  
STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED OAKR 1989 SET IN THE TOP OF A MASS OF CONCRETE, 8 INCHES DIAMETER AT GROUND SURFACE.  
(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WESTFIR EAST

**OAKR**  
PID: PC1120

THE STATION IS LOCATED AT THE STATE AIRPORT AT OAKRIDGE, OREGON,  
BETWEEN THE PARKING AREA AND THE RUNWAY.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: JOHN DAY

**OGILVIE**  
PID: QC1049

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: GRANT

LATITUDE:	44° 24' 35.72996"	N	±0.00010	SECONDS
LONGITUDE:	118° 57' 40.70207"	W	±0.00020	SECONDS

ORTHOMETRIC HEIGHT: { 1117.7 METERS  
3667. FEET

GEOID HEIGHT:	-17.141		METERS
ELLIPSOIDAL HEIGHT:	1100.635	±0.040	METERS
X:	6344006.551		METERS
Y:	-473672.340		METERS
Z:	-471811.606		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.8                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	83,760.474	2,622,550.239	0.99998159	+ 1 05 28.4
UTM	11	4,919,274.691	343,840.036	0.99989990	- 1 22 22.0

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . OGILVIE 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**OGILVIE**  
PID: QC1049

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED AT THE JOHN DAY AIRPORT. TO REACH FROM THE INTERSECTION OF HIGHWAY 26 AND CANYON BOULEVARD IN JOHN DAY GO SOUTH ON CANYON BOULEVARD 0.64 KM (0.40 MI) TO SW 4TH AVENUE, GO WEST ON SW 4TH AVE 2.56 KM (1.59 MI) ALONG WINDING ROAD TO THE JOHN DAY AIRPORT.

THE STATION IS LOCATED 37.8 M (124.0 FT) WEST OF THE AIRPORT BOUNDARY FENCE, 94.79 M (310.99 FT) NORTH OF THE NW CORNER OF THE STEEL MICROWAVE TOWER, 73.15 M (239.99 FT) EASTERLY OF THE NE CORNER OF THE NORTH-SOUTH TAXIWAY, 16.15 M (52.99 FT) EASTERLY OF A SMALL SPRUCE TREE, AND 69.8 M (229.0 FT) SOUTHWEST OF THE 1/4 COR COMMON TO SECTIONS 26 AND 27, TOWNSHIP 13 SOUTH, RANGE 31 EAST OF THE WILLAMETTE MERIDIAN, WHICH IS LOCATED ADJACENT TO THE ANGLE POINT IN THE AIRPORT BOUNDARY FENCE.

DESCRIBED BY ROD HANLEY OF ORDOT.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: OWYHEE DAM

**OWYHEE DAM MON 1**

PID: OH1451

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 38' 33.53386" N	±0.00020 SECONDS
LONGITUDE:	117° 14' 27.13406" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 826.9 METERS  
2713. FEET

GEOID HEIGHT:	-16.770		METERS
ELLIPSOIDAL HEIGHT:	810.087	±0.061	METERS
X:	4436774.692		METERS
Y:	2940409.253		METERS
Z:	3503922.141		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.6                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	224,616.115	1,762,881.096	0.99992880	+ 2 13 47.0
SPC	ID W	220,569.489	679,714.939	1.00011124	- 1 01 44.6
UTM	11	4,832,212.003	480,572.883	0.99960464	- 0 09 58.5

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**OWYHEE DAM MON 1**

PID: OH1451

**STATION DESCRIPTION**

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 14 MILES SOUTHWEST OF OWYHEE AND IS AT THE OWYHEE DAM.

TO REACH FROM THE NE END OF OWYHEE DAM GO EASTERLY 0.16 KM (0.10 MI) TO A ROAD ON THE LEFT, TURN HARD LEFT AND GO ABOUT 100 M (328.1 FT) TO THE MARK ON THE RIGHT.

THE STATION IS A THEODOLITE PIER PROJECTING 1.2 M (3.9 FT) . IT IS 7.3 METERS EAST OF THE CENTERLINE OF THE ROAD AND 3.0 M (9.8 FT) SOUTHEAST OF A POWER POLE. ACCESS IS THROUGH A LOCKED CAP. IT TAKES KEY NUMBER 0356. KEY CAN ALSO BE OBTAINED FROM THE DAMTENDER WH LIVES BELOW THE DAM.

DESCRIBED BY L.L. RIGGERS.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: OWYHEE DAM

**OWYHEE DAM MON 4**

PID: OH1452

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 38' 31.9489" N	±0.00030 SECONDS
LONGITUDE:	117° 14' 46.8841" W	±0.00040 SECONDS

ORTHOMETRIC HEIGHT: {	817.0	METERS
	2680.	FEET

GEOID HEIGHT:	-16.769	METERS
ELLIPSOIDAL HEIGHT:	800.212	±0.087 METERS
X:	4597075.939	METERS
Y:	2866870.852	METERS
Z:	3356054.304	METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.6                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	224,550.03	1,762,440.71	0.99992874	+ 2 13 33.5
SPC	ID W	220,528.54	679,271.43	1.00011255	- 1 01 58.2
UTM	11	4,832,164.40	480,130.26	0.99960486	- 0 10 12.1

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: OWYHEE DAM

## OWYHEE DAM MON 4

PID: OH1452

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 14 MILES SW OF OWYHEE AND IS ON THE SW SIDE OF OWYHEE DAM.

TO REACH FROM THE NORTHEAST END OF OWYHEE DAM. THERE IS A LOCKED GATE AT THE NORTHEAST END OF THE DAM. IT TAKES KEY NUMBER 2004. A KEY CAN ALSO BE OBTAINED FROM THE DAMTENDER. OPEN GATE AND GO SOUTHWEST ACROSS DAM 0.1 KM (0.1 MI) TO THE WEST END OF THE DAM, CONTINUE NORTHERLY FOR 0.20 KM (0.12 MI) TO THE MARK ON THE LEFT AT THE TOP OF A BANK.

THE STATION IS A THEODLITE PIER PROJECTING 1.5 METERS. IT IS 14.0 M (45.9 FT) WEST OF THE CENTERLINE OF A GRAVEL ROAD. ACCESS IS THROUGH A LOCKED CAP. IT TAKES KEY NUMBER 0356. THE DAMTENDER WILL HAVE A KEY TO THIS LOCK.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MYRTLE POINT

**P 750**  
PID: OA0733

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: COOS

LATITUDE:	43° 07' 25.04941" N	±0.00010 SECONDS
LONGITUDE:	124° 10' 30.55842" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	27.94	METERS
	91.7	FEET

GEOID HEIGHT:	-23.746	METERS
ELLIPSOIDAL HEIGHT:	3.814	±0.053 METERS
X:	5954981.736	METERS
Y:	-1590129.733	METERS
Z:	1634825.887	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	168,402.679	1,201,053.194	0.99989491	- 2 30 51.7
UTM	10	4,775,213.446	404,406.849	0.99971241	- 0 48 12.1

STATION MARK IS A . . . . METAL ROD  
WITH SETTING . . . . . STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)  
THE MARK IS STAMPED . . . P 750 1987

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1987	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MYRTLE POINT

**P 750**  
PID: OA0733

#### STATION DESCRIPTION

DESCRIBED BY NATIONAL GEODETIC SURVEY 1989  
RECOVERED IN GOOD CONDITION. AT MP 15.9 ALONG HIGHWAY 42. IT  
IS 4.0 MILES SOUTH ALONG HIGHWAY 42 FROM THE JUNCTION OF HIGHWAYS 42  
AND 42S IN COQUILLE. IT IS 26.0 M (85.3 FT) WEST OF THE CENTERLINE  
OF THE HIGHWAY, 11.5 M (37.7 FT) NORTH OF A PAVED ROAD AND 0.2 M  
(0.7 FT) EAST OF A WITNESS POST.  
NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.  
DESCRIBED BY L.L. RIGGERS.

**PAISLEY SOUTH BASE**

PID: NY0200

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LAKE

LATITUDE:	42° 42' 13.93195" N	±0.00010 SECONDS
LONGITUDE:	120° 32' 55.81264" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	1354.07	METERS
	4442.5	FEET

GEOID HEIGHT:	-19.179	METERS
ELLIPSOIDAL HEIGHT:	1334.658	±0.036 METERS
X:	3076196.771	METERS
Y:	-3193075.750	METERS
Z:	4571473.782	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.46305"                    +03.89564" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE					
				SCALE FACTOR	DEG	MIN	SEC			
SPC	OR S	115,216.698	1,495,999.017	0.99992730	-	0	02	0.3	000	02
UTM	10	4,730,844.194	700,752.048	1.00009585	+	1	39	46.6	358	20

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	PAISLEY SOUTH BASE RM	7.970 METERS	251 14

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . SOUTH BASE 1920

(Continued on Next Page)

**PAISLEY SOUTH BASE**

PID: NY0200

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1920	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1931		COAST AND GEODETIC SURVEY
1937		OREGON DEPARTMENT OF TRANSPORTATION (JT)
1966		US GEOLOGICAL SURVEY
1971		NATIONAL GEODETIC SURVEY (WMJ)
1980	GOOD	NATIONAL GEODETIC SURVEY (RM)
1989	GOOD	NATIONAL GEODETIC SURVEY

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1920 (EWE)

**STATION RECOVERY (1931)**

RECOVERED BY COAST AND GEODETIC SURVEY 1931  
ABOUT THREE-FOURTHS MILE N OF PAISLEY, ON THE FREMONT HIGHWAY, AT  
THE JUNCTION WITH THE ROAD TO BURNS, 70 FEET S OF THE LATTER,  
63 FEET E OF THE CENTER LINE OF THE FREMONT HIGHWAY, AND 25 FEET  
E OF THE FENCE CORNER, AT THE FENCE LINE. THE STATION IS MARKED  
BY A BRONZE TABLET IN CONCRETE, AS DESCRIBED IN NOTE 1A, AND  
UNDERGROUND BY A SIMILAR MARK, NOTE 7A.

THE REFERENCE MARK, A BRONZE TABLET IN CONCRETE, NOTE 11A,  
IS 7.97 METERS (26.1 FEET) FROM THE STATION IN AZIMUTH 71 DEG  
14 MIN. THE STATION WAS USED AS A SECOND-ORDER BENCH MARK IN 1931.

**STATION RECOVERY (1937)**

RECOVERED BY OREGON DEPARTMENT OF TRANSPORTATION 1937 (JTB)  
ABOUT 0.70 MILE N OF PAISLEY ON FREMONT HIGHWAY, 140 FEET S OF  
JUNCTION OF HIGHWAY AND ROAD NE TO BURNS, 107 FEET SW OF HIGHWAY  
CENTER AT SURVEY STATION 2414 PLUS 62, 63 FEET E OF FORMER  
HIGHWAY LOCATION. STATION AND REFERENCE MARK RECOVERED IN  
DECEMBER 1937 AS DESCRIBED.

FREMONT HIGHWAY HAS BEEN RECONSTRUCTED N OF PAISLEY AND IN  
CONSEQUENCE, THE ABOVE NEW DESCRIPTION IS SUBMITTED BY OREGON  
STATE HIGHWAY DEPARTMENT.

**STATION RECOVERY (1966)**

RECOVERED BY US GEOLOGICAL SURVEY 1966  
STATION CONCRETE POST WAS LAYING LOOSE ON ITS SIDE BY A 4X4-INCH  
MARKER POST. THE REFERENCE MARK WAS SEARCHED FOR BUT NOT  
FOUND. THE LAND HAS BEEN LEVELED AND THE STATION COULD HAVE BEEN  
DISTURBED.

(Continued on Next Page)

## PAISLEY SOUTH BASE

PID: NY0200

### STATION RECOVERY (1971)

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (WMJ)  
THE STATION MARK WAS RECOVERED IN GOOD CONDITION. HOWEVER,  
IT WAS FOUND DESTROYED IN 1966 BY MR. INGRAM, LANE COUNTY FIELD  
SUPERVISOR, SURVEYORS OFFICE, EUGENE, OREGON. MR. INGRAM  
RECOVERED THE UNDERGROUND STATION MARK AND RE-POSITIONED THE  
SURFACE MARK OVER THE UNDERGROUND MARK. REFERENCE MARK 2,  
REFERENCE MARK 3, AND AN AZIMUTH MARK WERE ESTABLISHED AT THIS  
TIME. A COMPLETE NEW DESCRIPTION FOLLOWS.

THE STATION IS ABOUT 0.75 MILE NORTH OF PAISLEY, 124 FEET WEST  
OF THE CENTER OF STATE HIGHWAY 31, AND ON PROPERTY OWNED BY  
ROSS COLAHAN.

TO REACH THE STATION FROM 50 YARDS WEST OF THE POST OFFICE IN  
PAISLEY, GO NORTH ON STATE HIGHWAY 31 FOR 0.75 MILE TO A CROSSROAD  
AND THE STATION ON THE LEFT.

THE STATION MARK IS A STANDARD DISK STAMPED SOUTH BASE 1920, SET  
IN THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT AND IS FLUSH  
WITH THE GROUND. IT IS 62 FEET WEST-SOUTHWEST OF THE EAST END  
OF A FENCE AND 37.5 FEET SOUTHEAST OF THE WEST END OF THE FENCE.

REFERENCE MARK 2 IS A STANDARD DISK STAMPED PAISLEY SOUTH BASE  
1920 NO 2 1971, SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE  
POST WHICH PROJECTS 4 INCHES ABOVE THE GROUND. IT IS 73 FEET WEST  
OF THE CENTER OF STATE HIGHWAY 31, 15 FEET WEST OF THE EAST END  
OF THE FENCE, AND 1.5 FEET SOUTH OF THE FENCE.

REFERENCE MARK 3 IS A STANDARD DISK STAMPED PAISLEY SOUTH BASE  
1920 NO 3 1971, SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE  
POST WHICH PROJECTS 4 INCHES ABOVE THE GROUND. IT IS 14 FEET  
SOUTHEAST OF THE FENCE OPENING AND 2.5 FEET SOUTHEAST OF THE WEST  
END OF THE FENCE.

THE AZIMUTH MARK IS A STANDARD DISK STAMPED PAISLEY SOUTH BASE  
1920 1971, SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE POST  
WHICH PROJECTS 6 INCHES ABOVE THE GROUND. IT IS 42 FEET NORTH  
OF THE CENTER OF A GRAVEL ROAD, 2.0 FEET WEST OF A METAL WITNESS  
POST WITH SIGN ATTACHED AND 1.6 FEET SOUTH OF A FENCE.

TO REACH THE AZIMUTH MARK FROM THE CROSSROAD AT THE STATION  
SITE, GO EAST ON GRAVEL ROAD FOR 0.2 MILE TO THE AZIMUTH MARK ON  
THE LEFT.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
0.75 MILE NORTH OF PAISLEY.

### STATION RECOVERY (1980)

RECOVERED BY NATIONAL GEODETIC SURVEY 1980 (RM )  
THE STATION MARK RECOVERED IN GOOD CONDITION. THE TO REACH IS  
ADEQUATE. ADDITIONAL NOTES FOLLOW.

(Continued on Next Page)

## PAISLEY SOUTH BASE

PID: NY0200

THE STATION MARK IS 61.5 FEET SOUTHWEST OF A NORTHEAST CORNER STONE FENCE POST, 58.0 FEET SOUTH OF THE CENTER OF TRACK ROAD, 26.5 FEET SOUTH OF AN EAST WEST FENCELINE AND FLUSH WITH THE SURFACE.

REFERENCE MARKS AND WERE RECOVERED AS DESCRIBED.

THE STATION WAS OCCUPIED FOR ASTRO PURPOSES ONLY.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989

THE STATION AND REFERENCE MARKS 4 AND 5 WERE RECOVERED IN GOOD CONDITION. THE AZIMUTH MARK WAS NOT SEARCHED FOR. MR. ROSS COLAHAN OWNS THE PROPERTY THAT THE STATION IS ON. HIS PHONE NUMBER IS 503-943-3127.

TO REACH FROM THE POST OFFICE IN PAISLEY GO NORTH ON HIGHWAY 31 FOR 1.2 KM (0.7 MI) TO A T-JUNCTION AND THE MARK ON THE LEFT. THE STATION IS 37.7 M (123.7 FT) WSW OF INTERSECTION OF HIGHWAY AND A PAVED ROAD EAST, 20.015 M (65.666 FT) WEST OF RM 4, 19.0 M (62.3 FT) WEST OF THE CENTER OF A ROCK CRIB IN FENCE LINE, 27.452 M (90.065 FT) NNW OF RM 5, AND 0.3 M (1.0 FT) E OF A WITNESS POST.

REFERENCE MARK 4 IS SET INTO A CONCRETE POST 2.9 M (9.5 FT) NNE OF CENTER OF A ROCK CRIB AND 1.3 M (4.3 FT) E OF A FENCE.

REFERENCE MARK 5 IS SET INTO A CONCRETE POST 16.5 M (54.1 FT) SOUTH OF THE CENTER OF THE ROCK CRIB AND 0.6 M (2.0 FT) E OF A FENCE. DESCRIBED BY L.L. RIGGERS.



**PENDLETON**  
PID: RB1366

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: UMATILLA

LATITUDE:	45° 40' 01.47543" N	±0.00010 SECONDS
LONGITUDE:	118° 46' 38.96035" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT: {	402.9	METERS
	1322.	FEET
GEOID HEIGHT:	-19.748	METERS
ELLIPSOIDAL HEIGHT:	383.279	±0.043 METERS
X:	3585927.375	METERS
Y:	3169820.189	METERS
Z:	4202394.934	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.53274"                    +03.94055" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO PENDLETON AZ MK DEG MIN SEC
SPC	OR N	223,723.052	2,634,210.132	0.99993239	+ 1 13 17.7	250 10 37.5
UTM	11	5,058,594.960	361,542.270	0.99983569	- 1 16 17.8	252 40 13.0

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
RB1500	PENDLETON RM 1	12.799 METERS	016 17
RB1501	PENDLETON RM 2	8.038 METERS	075 59
RB1368	PENDLETON RADIO STA KTX MAST	APPROX. 1.0 KM	239 55 32.6
	PENDLETON AZ MK		251 23 55.2
RB1367	PENDLETON HARRIS MILLS STACK	APPROX. 2.6 KM	274 53 31.5
RB1365	AIRPORT BCN PENDLETON MUN APT	APPROX. 5.5 KM	296 04 14.5
RB1371	PENDLETON MORMON CHURCH SPIRE	APPROX. 2.2 KM	303 01 18.6
RB1370	RNG PENDLETON PN	APPROX. 2.8 KM	340 40 34.6

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . PENDLETON 1963

(Continued on Next Page)

## PENDLETON

PID: RB1366

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1963	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1963 (JCC)  
THE STATION IS LOCATED AT THE SOUTH EDGE OF PENDLETON ON A LOW HILL NEAR THE CITY WATER RESERVOIR AT THE SOUTH END OF SE 6TH ST.

TO REACH THE STATION FROM THE PENDLETON RAILWAY STATION AND CROSSING ON MAIN ST. IN PENDLETON, GO SOUTH ON MAIN ST. FOR 0.2 MILE TO ISAAC AVE. TURN LEFT ON ISAAC AVE. AND GO EAST FOR 0.1 MILE TO 2ND ST. (THE AZIMUTH MARK IS 0.05 MILE SOUTH OF THIS POINT.) CONTINUE EAST ON ISAAC AVE. FOR 0.05 MILE TO THE END OF PAVEMENT. CONTINUE EASTERLY AND NORTHERLY ON GRAVELLED STREET FOR 0.25 MILE TO A T-STREET LEADING SOUTH. TURN RIGHT AND GO SOUTH ON SE 6TH ST. FOR 0.25 MILE TO THE STATION.

THE STATION IS A STANDARD DISK, STAMPED PENDLETON 1963, SET IN THE TOP OF A 12-INCH SQUARE CONCRETE POST WHICH PROJECTS 2 INCHES. IT IS 41.1 FEET WEST OF A POWERLINE POLE, 37.5 FEET SOUTHWEST OF THE NORTHWEST GATEPOST OF A GATE LEADING INTO THE RESERVOIR, 20.2 FEET NORTHEAST OF A T-FENCE CORNER POST AND 5.3 FEET NORTH OF A FENCELINE.

REFERENCE MARK 1 IS A STANDARD DISK, STAMPED PENDLETON NO 1 1963, SET IN THE TOP OF A 12-INCH SQUARE CONCRETE POST WHICH PROJECTS 2 INCHES. IT IS 7.3 FEET NORTH OF THE GATEPOST, 1 FOOT WEST OF A FENCE AROUND THE RESERVOIR AND ABOUT 4 FEET HIGHER THAN THE STATION.

REFERENCE MARK 2 IS A STANDARD DISK, STAMPED PENDLETON NO 2 1963, SET IN THE TOP OF A 12-INCH SQUARE CONCRETE POST WHICH PROJECTS 2 INCHES. IT IS 14.9 FEET WEST OF THE POWERLINE POLE, 2.8 FEET NORTH OF THE FENCELINE AND ABOUT 2 FEET HIGHER THAN THE STATION.

THE AZIMUTH MARK IS A STANDARD DISK, STAMPED PENDLETON 1963, CEMENTED IN A DRILL HOLE IN THE EAST CURB OF 2ND ST. IT IS 74.8 FEET EAST-SOUTHEAST OF THE SOUTHEAST CORNER OF THE LINMAR MANOR APARTMENT BUILDING AND 15 FEET EAST OF THE CENTERLINE OF 2ND ST.

(Continued on Next Page)

## PENDLETON

PID: RB1366

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989

THE STATION AND REFERENCE MARKS 1 AND 2 WERE RECOVERED IN GOOD CONDITION. THE AZIMUTH MARK WAS NOT SEARCHED FOR.

THIS STATION IS WHERE THE UMATILLA COUNTY SURVEYOR WANTED HIS COUNTY'S PRIMARY GPS POINT. THE MARK IS STABLE SO THIS MARK IS IT. A COMPLETE DESCRIPTION FOLLOWS.

THE STATION IS LOCATED AT THE SOUTH EDGE OF PENDLETON ON A LOW HILL NEAR THE CITY WATER RESERVOIR AT THE SOUTH END OF SE 6TH STREET, TO REACH FROM I-84 EXIT 210 GO NORTH ON SE 3RD 0.5 KM (0.3 MI) TO SE GOODWIN STREET, TURN RIGHT ON SE GOODWIN AND GO 0.32 KM (0.20 MI) TO SE 8TH, TURN RIGHT ON SE 8TH AND GO 0.64 KM (0.40 MI) TO INTERSECTION OF SE 6TH AND SE ISAAC, CONTINUE SOUTH ON SE 6TH 0.32 KM (0.20 MI) TO END OF ROAD AND STATION.

THE STATION IS A STANDARD USC+GS DISK STAMPED---PENDLETON 1963---, SET INTO THE TOP OF A SQUARE CONCRETE MONUMENT THAT PROJECTS 10 CM. IT IS 12.53 METERS WEST OF A POWER POLE, 11.43 METERS SW OF THE NW GATEPOST OF A GATE LEADING INTO THE RESERVOIR AND 1 METER WEST OF A WITNESS POST.

REFERENCE MARK 1 IS A STANDARD DISK, STAMPED---PENDLETON NO 1 1963---, SET INTO THE TOP OF A CONCRETE MONUMENT WHICH PROJECTS 10 CM. IT IS 2.23 METERS NORTH FROM A GATEPOST, 0.3 METER WEST OF THE FENCE AROUND THE RESERVOIR AND ABOUT 1 METER HIGHER THAN THE STATION.

REFERENCE MARK 2 IS A STANDARD DISK, STAMPED---PENDLETON NO 2 1963---. IT IS 4.54 METERS (14.9 FEET) WEST OF THE POWERLINE POLE AND ABOUT 0.6 METER HIGHER THAN THE STATION.

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BEND

**PILOT BUTTE**

PID: QD1681

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DESCHUTES

LATITUDE:	44° 03' 37.94301" N	±0.00010 SECONDS
LONGITUDE:	121° 16' 59.64811" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT:	1261.4	METERS
	4138.	FEET

GEOID HEIGHT:	-19.433	METERS
ELLIPSOIDAL HEIGHT:	1241.747	±0.034 METERS
X:	1801468.589	METERS
Y:	2876581.605	METERS
Z:	5383440.509	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY VERTICAL ANGLE OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.58599"            +04.10711" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO PILOT BUTTE AZ MK
						DEG MIN SEC
SPC	OR S	266,223.939	1,437,243.481	1.00001595	- 0 32 9.1	267 51 56.9
SPC	OR N	44,073.993	2,437,239.542	1.00007981	- 0 33 19.7	267 52 56.9
UTM	10	4,880,029.657	637,500.737	0.99983253	+ 1 11 38.6	266 08 09.2

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

(Continued on Next Page)

**PILOT BUTTE**

PID: QD1681

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
QD1680	PILOT BUTTE USGS 1932	10.270 METERS	030 17
	PILOT BUTTE RM 1	184.670 METERS	151 40
QD1679	SCENIC PIER ARROW PIVOT S 1945	7.814 METERS	158 27
QD1678	BEND WATER TANK	APPROX. 4.0 KM	188 02 02.9
	PILOT BUTTE RM 2	127.580 METERS	247 32
QD1683	BEND BROOKS SCANLON INC TANK	APPROX. 3.5 KM	247 41 28.4
	PILOT BUTTE AZ MK		267 19 47.8
QD1687	BEND PACIFIC GAS MICROWAVE	APPROX. 4.3 KM	295 30 55.1
QD1688	BEND BONNVILLE POW ADM RD MST	APPROX. 4.3 KM	295 50 23.0
QD1685	BEND RAD STA KBND NW MAST	APPROX. 1.9 KM	329 34 53.6
QD1686	BEND RAD STA KBND SE MAST	APPROX. 1.9 KM	331 20 53.0
QD1682	SCENIC PIER ARROW PIVOT N 1945	6.209 METERS	338 44
QD1689	BEND RAD STA KGRL MAST	APPROX. 2.1 KM	358 24 40.9

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . PILOT BUTTE 1932

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1932	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1945		COAST AND GEODETIC SURVEY (CAG)
1958	GOOD	US GEOLOGICAL SURVEY
1959		BONNEVILLE POWER ADMINISTRATION
1966	GOOD	US GEOLOGICAL SURVEY
1971		NATIONAL GEODETIC SURVEY (LDF)
1987	GOOD	NATIONAL GEODETIC SURVEY (LLR)
1989	GOOD	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1932

STATION IS LOCATED ABOUT 1.0 MILE E OF BEND ON THE TOP OF PILOT BUTTE.

STATION MARK IS A STANDARD BRONZE DISK SET IN CONCRETE AS DESCRIBED IN NOTE 1A. REFERENCE MARKS ARE STANDARD BRONZE DISKS IN OUTCROPPING BEDROCK AS DESCRIBED IN NOTE 12A.

U.S.G.S., PILOT BUTTE IS A U.S.G.S. STANDARD DISK IN OUTCROPPING BEDROCK NNE OF STATION.

REFERENCE MARK NO.1 IS WNW OF STATION.

SCENIC PIERS ARE NW AND SE OF STATION.

WATER TANK, (AZIMUTH MARK) IS S OF STATION.

(Continued on Next Page)

## PILOT BUTTE

PID: QD1681

REFERENCE MARK NO.2 IS WSW OF STATION.

STATION IS REACHED FROM BEND BY GOING E ON THE GREENWOOD AVENUE OR BURNS HIGHWAY FOR ABOUT 3/4 MILE TO THE JUNCTION WITH THE PILOT BUTTE ROAD. TAKE THE PILOT BUTTE ROAD AND FOLLOW THE CORKSCREW ROAD TO THE TOP OF THE BUTTE AND THE STATION.

HEIGHT OF SIGNAL ABOVE STATION MARK - 1-1/2 METERS.

### STATION RECOVERY (1945)

RECOVERED BY COAST AND GEODETIC SURVEY 1945 (CAG)  
THE STATION AND ALL MARKS WERE RECOVERED AS DESCRIBED AND FOUND IN GOOD CONDITION WITH THE EXCEPTION OF REFERENCE MARK NO. 1 WHICH COULD NOT BE RECOVERED AND IS BELIEVED TO HAVE BEEN DESTROYED BY ROAD CONSTRUCTION. AN AZIMUTH MARK WAS ESTABLISHED.

A COMPLETE NEW DESCRIPTION FOLLOWS.

THE STATION IS LOCATED ABOUT 1 MILE EAST OF BEND ON THE HIGHEST PART OF PILOT BUTTE AND IS IN THE CENTER OF A TRAFFIC CIRCLE. IT IS DESCRIBED BY NOTE 1A AND IS FLUSH WITH THE SURFACE OF THE GROUND. IT IS STAMPED PILOT BUTTE 1932.

U.S.G.S. MARK IS A STANDARD DISK B.M. TABLET SET IN A SMALL LAVA BOULDER THAT IS FLUSH WITH THE GROUND SURFACE. IT IS STAMPED PILOT BUTTE 4136 1916.

REFERENCE MARK NO. 2 IS SET IN A LARGE BOULDER THAT PROJECTS ABOUT 3 FEET. IT IS ABOUT 5 FEET BELOW STATION ELEVATION. IT IS DESCRIBED BY NOTE 12C AND IS STAMPED PILOT BUTTE NO 2 1932.

SCENIC PIER, ARROW PIVOT, NORTH. IT IS A SMALL TOWER 3.5 FEET HIGH AND 2X2 FEET SQUARE. IT IS CONSTRUCTED OF ROCK AND HAS A FLAT TOP WITH A POINT IN THE CENTER FOR A ARROW PIVOT TO BE PLACED.

SCENIC PIER, ARROW PIVOT, SOUTH. IT IS A SMALL TOWER 3.5 FEET HIGH AND 2X2 FEET SQUARE. IT IS CONSTRUCTED OF ROCK AND HAS A FLAT TOP WITH A POINT IN THE CENTER FOR A ARROW PIVOT TO BE PLACED.

AZIMUTH MARK IS ABOUT 0.8 MILE WEST OF THE STATION. IT IS A STANDARD DISK CEMENTED INTO A DRILL HOLE IN A CONCRETE CURB. IT IS 141 FEET WEST OF THE CENTER OF THE INTERSECTION OF THIRD ST. AND U.S. HIGHWAY NO. 20, 125 FEET EAST OF THE NORTHEAST CORNER OF THE MISSIONARY BAPTIST CHURCH AND 28 FEET SOUTH OF THE CENTERLINE OF U.S. HIGHWAY NO. 20. IT IS STAMPED PILOT BUTTE 1945. TO REACH FROM THE JUNCTION OF U.S. HIGHWAY NO. 97 AND U.S. HIGHWAY NO. 20. GO EAST ON U.S. HIGHWAY NO. 20, TOWARDS BURNS, FOR 0.45 MILE TO THE AZIMUTH MARK ON THE RIGHT AS DESCRIBED.

TO REACH FROM THE JUNCTION OF U.S. HIGHWAY NO. 97 AND U.S. HIGHWAY NO. 20 IN BEND, GO EAST, TOWARDS BURNS, ON U.S. HIGHWAY NO. 20 FOR 1.7 MILES TO A ROAD FORKS. TURN LEFT ON TO PILOT BUTTE ROAD AND CONTINUE 1.1 MILES TO TOP OF BUTTE AND THE STATION AS DESCRIBED.

(Continued on Next Page)

## PILOT BUTTE

PID: QD1681

### STATION RECOVERY (1958)

RECOVERED BY US GEOLOGICAL SURVEY 1958  
RECOVERED AS DESCRIBED BY NGS. RMS NOT OBSERVED.

### STATION RECOVERY (1959)

RECOVERED BY BONNEVILLE POWER ADMINISTRATION 1959  
STATION RECOVERED AS DESCRIBED. THE HIGHWAY IS NOW UNITED STATES  
HIGHWAY NO. 20.

### STATION RECOVERY (1966)

RECOVERED BY US GEOLOGICAL SURVEY 1966  
RECOVERED AS DESCRIBED BY NGS. RMS NOT OBSERVED.

### STATION RECOVERY (1971)

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (LDF)  
STATION MARK, REFERENCE MARKS 1,2 AND THE AZIMUTH MARK WERE  
RECOVERED AND FOUND IN GOOD CONDITION. SCENIC PIER ARROW PIVOT  
NORTH WAS RECOVERED IN GOOD CONDITION BUT SCENIC PIER ARROW PIVOT  
SOUTH HAD BEEN REMOVED. A SLIGHT DIFFERENCE WAS NOTED IN THE  
DISTANCE AND DIRECTION TO BOTH REFERENCE MARKS AND A NOTICEABLE  
DIFFERENCE WAS NOTED IN THE DIRECTION TO THE AZIMUTH MARK AND  
WAS CHECKED IN THE FIELD.

FOLLOWING IS A NEW AND COMPLETE DESCRIPTION--

STATION IS LOCATED ABOUT 1 MILE EAST OF BEND AND IS ON THE HIGHEST  
POINT OF WHAT IS LOCALLY KNOWN AS PILOT BUTTE.

TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 97 AND 20  
IN BEND, (THE AZIMUTH MARK IS LOCATED AT THIS JUNCTION) GO EAST ON  
U.S. HIGHWAY 20 FOR 0.75 MILE TO A FORK AND SIGN PILOT BUTTE STATE  
PARK. TAKE THE LEFT FORK AND GO EAST UP WINDING PAVED ROAD FOR  
1.0 MILE TO THE HIGHEST POINT AND THE STATION.

STATION MARK IS A STANDARD DISK, STAMPED PILOT BUTTE 1932, SET IN  
THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT WHICH PROJECTS ABOUT  
2 INCHES ABOVE THE SURFACE OF THE GROUND. IT IS IN THE CENTER OF  
A TRAFFIC CIRCLE AND IS 59 FEET NORTH OF A SET OF ROCK STEPS  
LEADING TO THE TOP OF THE HILL, 24.5 FEET NORTHWEST OF A ROCK  
MONUMENT AND 19 FEET EAST-SOUTHEAST OF A ROCK MONUMENT.

REFERENCE MARK 1 IS A STANDARD DISK, STAMPED PILOT BUTTE NO 1  
1932, CEMENTED IN A DRILL HOLE IN THE TOP OF A 1 X 2 FOOT OUTCROP  
WHICH PROJECTS ABOUT 2 INCHES ABOVE THE SURFACE OF THE GROUND. IT  
IS 93 FEET EAST-SOUTHEAST OF THE APPROXIMATE CENTER OF THE CIRCLE  
DRIVE ROAD AND 41 FEET WEST OF THE CENTER OF THE PAVED ROAD  
LEADING UP THE HILL.

(Continued on Next Page)



## PILOT BUTTE

PID: QD1681

REFERENCE MARK 2 IS A STANDARD DISK, STAMPED PILOT BUTTE NO 2 1932, CEMENTED IN A DRILL HOLE IN THE TOP OF A LARGE BOULDER WHICH PROJECTS ABOUT 2-1/2 FEET ABOVE THE SURFACE OF THE GROUND. IT IS 88 FEET SOUTHWEST OF THE ROCK STEPS AND 47 FEET SOUTHWEST OF THE APPROXIMATE CENTER OF THE ROAD CIRCLING THE TOP OF THE HILL.

SCENIC PIER ARROW PIVOT NORTH IS A PUNCH HOLE IN THE TOP OF A ROUND METAL PLATE FASTENED TO THE TOP OF A ROCK AND CONCRETE MONUMENT WHICH PROJECTS ABOUT 3-1/2 FEET. IT IS ON THE HIGHEST PART OF THE HILL.

AZIMUTH MARK IS A STANDARD DISK, STAMPED PILOT BUTTE 1945, CEMENTED IN A DRILL HOLE IN THE SOUTH CURB OF U.S. HIGHWAY 20 (BUSINESS). IT IS 145 FEET WEST OF THE CENTER OF THIRD STREET, 125 FEET EAST OF THE NORTHEAST CORNER OF A CHURCH AND 28 FEET SOUTH OF THE CENTER OF THE ROAD.

STATION IS IN THE NORTHWEST 1/4 OF SECTION 34, T 17 S, R 12 E.

HEIGHT OF LIGHT ABOVE STATION MARK 30 FEET.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
1 MILE EAST OF BEND.

### STATION RECOVERY (1987)

RECOVERED BY NATIONAL GEODETIC SURVEY 1987 (LLR)  
THE STATION WAS RECOVERED AT THIS DATE.  
NONE OF THE OTHER MARKS WERE SEARCHED FOR AT THIS DATE. THE 1971 RECOVERY NOTE IS ADEQUATE FOR RECOVERY.

### STATION RECOVERY (1989)

RECOVERED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.  
STATION IS LOCATED ABOUT 3.2 KM (2.00 MI) EAST OF DOWNTOWN BEND ON THE TOP OF PILOT BUTTE. OWNERSHIP--PILOT BUTTE STATE PARK, DISTRICT MANAGER-STEVE WEINMEYER, 62796 O B RILEY RD, BEND OR 97701, PHONE 503-388-6055.  
TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 20 AND U.S. HIGHWAY 97, IN BEND, GO EAST ON U.S. HIGHWAY 20 FOR 0.72 KM (0.45 MI) TO N.E. 8TH STREET. CONTINUE AHEAD, EAST, FOR 0.48 KM (0.30 MI) ON U.S. HIGHWAY 20 TO THE ENTRANCE OF PILOT BUTTE STATE PARK ON THE LEFT. TURN LEFT AND FOLLOW PARK ROAD PAST GATE (GATE MAYBE LOCKED BY HIGHWAY DEPARTMENT DURING WINTER MONTHS) GOING UPHILL, CIRCLING BUTTE FOR 1.8 KM (1.10 MI) TO TOP OF BUTTE AND STATION IN THE CENTER OF VIEWING AREA.  
STATION IS LOCATED 11.9 M (39.0 FT) WEST OF STONE MONUMENT PROJECTING 1.3 M (4.3 FT) ABOVE GROUND WITH PLAQUE HONORING TERRANCE FOLEY, 8.2 M (26.9 FT) NORTHWEST OF STONE MONUMENT PROJECTING 1.1 M (3.6 FT) ABOVE GROUND AND 6.1 M (20.0 FT) SOUTHEAST OF STONE MONUMENT WITH PLAQUE IDENTIFYING LOCAL MOUNTAIN PEAKS.

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: HECETA HEAD

**PON**  
PID: QE1597

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LANE

LATITUDE:	44° 10' 12.11445"	N	±0.00010	SECONDS
LONGITUDE:	124° 06' 59.36918"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	7.05			METERS
	23.1			FEET

GEOID HEIGHT:	-22.487			METERS
ELLIPSOIDAL HEIGHT:	-15.929	±0.054		METERS
X:	6098128.073			METERS
Y:	1308934.100			METERS
Z:	1329785.478			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.58376"                    +04.37158" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO HECETA 2	
						DEG MIN SEC	DEG MIN SEC
SPC	OR S	284,341.392	1,210,840.753	1.00004767	- 2 28 27.2	193 00	04.0
SPC	OR N	62,409.501	2,210,848.193	1.00004510	- 2 33 53.2	193 05	04.0
UTM	10	4,891,364.188	410,742.151	0.99969798	- 0 46 40.8	191 18	17.6

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
QE2573	HECETA 2	APPROX. 3.4 KM	190 31 36.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE IMBEDDED IN GROUND  
THE MARK IS STAMPED . . . . . PON 1965

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1965	STATION MONUMENTED	OR HIGHWAY DEPT
1971		NATIONAL GEODETIC SURVEY (LFS)
1989	GOOD	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**PON**  
PID: QE1597

#### STATION DESCRIPTION

DESCRIBED BY OREGON DEPARTMENT OF TRANSPORTATION 1965 (PAS)  
THE STATION IS ABOUT 11 MILES SOUTH OF YACHATS IN THE WEST PART  
OF THE MURIEL O. PONSLER STATE PARK.

TO REACH THE STATION FROM THE YACHATS POST OFFICE GO SOUTH ON  
U.S. HIGHWAY 101 FOR 11.1 MILES TO THE ENTRANCE TO THE PARK ON  
THE RIGHT, TURN RIGHT (WEST) AND GO SOUTHWEST FOR 0.05 MILE TO  
PARKING AREA AND THE STATION.

THE STATION MARK, STAMPED PON USC AND GS 1965, IS A STATE HIGHWAY  
DEPT. STATION MARK DISK BRAZED TO THE TOP OF A 3-INCH STEELE PIPE,  
SET IN CONCRETE, THAT PROJECTS 4 INCHES. IT IS 72 FEET WEST OF A  
WATER FOUNTAIN, 20 FEET NORTHEAST OF EDGE OF BLUFF ABOVE CHINA  
CREEK, 15 FEET WEST OF WEST EDGE OF PARKING AREA, AND 1 FOOT  
NORTH OF WHITE WOODEN WITNESS POST.

THERE WERE NO REFERENCE MARKS ESTABLISHED FOR THIS STATION.

#### STATION RECOVERY (1971)

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (LFS)  
THE STATION WAS RECOVERED IN GOOD CONDITION AS DESCRIBED.

#### STATION RECOVERY (1989)

RECOVERED BY OREGON DEPARTMENT OF TRANSPORTATION 1989  
RECOVERED IN GOOD CONDITION.  
STATION IS IN THE MURIEL O. PONSLER WAYSIDE STATE PARK.

**PONDER 2**

PID: RC1674

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: HOOD RIVER

LATITUDE:	45° 42' 39.36936" N	±0.00020 SECONDS
LONGITUDE:	121° 32' 59.76104" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	101.61	METERS
	333.4	FEET

GEOID HEIGHT:	-20.220	METERS
ELLIPSOIDAL HEIGHT:	81.245	±0.065 METERS
X:	169597.916	METERS
Y:	-1027868.963	METERS
Z:	-6271489.369	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.58435"                    +04.25389" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO F 533
				SCALE FACTOR		DEG MIN SEC
SPC	OR N	227,697.915	2,418,253.453	0.99993935	- 0 44 40.6	063 38 39.3
SPC	WA S	42,515.267	418,246.157	1.00002999	- 0 45 45.6	063 39 39.3
UTM	10	5,062,953.772	612,864.974	0.99975661	+ 1 02 17.2	061 51 41.5

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
RC1675	Q 579		030 57
RC1668	F 533	413.761 METERS	062 53 58.7
RC1673	PONDER 2 RM 3	11.665 METERS	351 46

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . PONDER 2 1975

(Continued on Next Page)

## PONDER 2

PID: RC1674

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1975	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1984	GOOD	UNITED STATES POWER SQUADRON
1987	GOOD	NATIONAL GEODETIC SURVEY (MRM)
1989	GOOD	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)
1990	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY NATIONAL GEODETIC SURVEY 1975 (CLN)  
THE STATION IS 1-1/2 MILES NORTHWEST OF HOOD RIVER ON HIGHWAY  
RIGHT-OF-WAY.

TO REACH THE STATION FROM THE HOOD RIVER POST OFFICE GO WEST ON  
CASCADE STREET FOR 0.7 MILE TO U.S. HIGHWAY 30, GO NORTHWEST ON U.S.  
30 FOR 1.0 MILE TO THE STATION ON THE LEFT.

THE STATION MARK, STAMPED PONDER 2 1975, IS A STANDARD DISK SET IN A  
12-INCH SQUARE CONCRETE MONUMENT THAT PROJECTS 2-INCHES, 43 FEET  
WEST OF THE CENTER OF U.S. HIGHWAY 30, 36 FEET SOUTHWEST OF THE  
SOUTHWEST CORNER OF THE OVERPASS OVER INTERSTATE 80N, 32 FEET NORTH  
OF THE CENTER OF THE EXIT FROM THE FREEWAY, 14 FEET WEST OF THE  
GUARD RAIL, AND 1 FOOT EAST OF A METAL WITNESS POST.

REFERENCE MARK NO. 3, STAMPED PONDER 2 NO 3 1975, IS A STANDARD DISK  
CEMENTED IN A DRILL HOLE IN THE SIDEWALK OF THE OVERPASS, 17 FEET  
WEST OF THE CENTER OF THE OVERPASS, 1.5 FEET NORTH OF THE SOUTH END  
OF THE SIDEWALK, AND 1.5 FEET WEST OF THE EAST EDGE OF THE SIDEWALK.

B.M. Q 579 (OSHD) (R.M. NO. 4) IS AN UNSTAMPED OREGON STATE HIGHWAY  
BENCH MARK DISK SET IN THE SIDEWALK AT THE SOUTHEAST CORNER OF THE  
OVERPASS, 18 FEET EAST OF THE CENTER OF THE OVERPASS, 2 FEET EAST  
OF THE EAST EDGE OF THE SIDEWALK, 5 FEET NORTH OF THE SOUTH END OF  
THE SIDEWALK, AND 0.5 FOOT HIGHER THAN THE ROAD.

THE DISTANCE BETWEEN R.M. NO. 3, AND B.M. Q 579 (OSHD) IS 39.05 FEET  
OR 11.902 METERS.

TO REACH B.M. F 533 (OSHD) (AZIMUTH MARK) FROM THE STATION GO NORTH  
OVER INTERSTATE 80N FOR 0.05 MILE TO WESTCLIFF DRIVE AT A T  
INTERSECTION, TURN RIGHT, AND GO EAST ON WESTCLIFF DRIVE FOR 0.3  
MILE TO THE MARK ON THE LEFT, MIDWAY BETWEEN TWO DRIVEWAYS.

B.M. F 533 (OSHD), STAMPED F 533 1954, IS AN OREGON STATE HIGHWAY  
BENCH MARK DISK SET IN BEDROCK THAT PROJECTS 2- FEET, 27 FEET NORTH  
OF THE CENTER OF WESTCLIFF DIRVE, AND 2 FEET NORTHEAST OF A WITNESS  
POST.

(Continued on Next Page)

**PONDER 2**  
PID: RC1674

STATION RECOVERY (1984)

RECOVERED BY UNITED STATES POWER SQUADRON 1984  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

STATION RECOVERY (1987)

RECOVERED BY NATIONAL GEODETIC SURVEY 1987 (MRM)  
THE STATION WAS RECOVERED AT THIS DATE.  
NO OTHER MARKS WERE SEARCHED FOR AT THIS DATE.

THE STATION IS LOCATED ABOUT 30.6 KM (19 MI)  
EAST OF CASCADE LOCKS,  
8.0 KM (5 MI) WEST OF MOSIER AND  
2.4 KM (1.5 MI) NORTHWEST OF HOOD RIVER.  
OWNERSHIP--HIGHWAY RIGHT-OF-WAY.

TO REACH THE STATION FROM THE POST OFFICE IN HOOD RIVER, GO  
WEST FOR 1.1 KM (0.7 MI) ON CASCADE STREET TO U.S. HIGHWAY 30.  
TURN RIGHT AND GO NORTHWEST FOR 1.6 KM (1.0 MI) ON HIGHWAY 30 TO  
THE STATION ON THE LEFT.

THE STATION IS A STANDARD NGS DISK  
STAMPED---PONDER 2 1975---,  
SET INTO THE TOP OF A SQUARE CONCRETE MONUMENT  
28 CM ON SIDE PROJECTING 3 CM ABOVE GROUND. LOCATED  
13.1 METERS (43.0 FT) SOUTHWEST FROM THE APPROXIMATE CENTER OF  
HIGHWAY 30,  
11.0 METERS (36.0 FT) SOUTH-SOUTHEAST FROM THE SOUTHWEST CORNER OF  
BRIDGE OVERPASS OF INTERSTATE HIGHWAY 84 EASTBOUND LANES,  
9.8 METERS (32.0 FT) NORTHWEST FROM THE APPROXIMATE CENTER OF  
EASTBOUND LANES EXIT RAMP,  
4.3 METERS (14.0 FT) SOUTHWEST FROM A METAL GUARDRAIL AND  
0.9 METERS (3.0 FT) SOUTHEAST FROM A CARSONITE WITNESS POST.

COLUMBIA RIVER CG SURVEY, WASHINGTON, SEPT-OCT 1987.

THIS STATION SUITABLE FOR GPS SURVEYS.

DESCRIBED BY D.L. SPRANGERS.

STATION RECOVERY (1989)

RECOVERED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

(Continued on Next Page)

**PONDER 2**  
PID: RC1674

**STATION RECOVERY (1990)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1990  
STATION IS LOCATED ABOUT 2 KM (1.2 MI) WEST OF HOOD RIVER, ON TOP OF AN OVERPASS AT EXIT 62 OF INTERSTATE HIGHWAY 84 (WEST HOOD RIVER, WESTCLIFF DRIVE) IN A GRASSY SECTION AT SOUTHEAST END OF THE BRIDGE, AT THE JUNCTION OF THE ENTRANCE RAMP FROM EASTBOUND HIGHWAY 84 AND A PAVED ROAD. OWNERSHIP--STATE DEPARTMENT OF TRANSPORTATION.  
STATION IS AT THE JUNCTION OF THE EASTBOUND RAMP OF INTERSTATE HIGHWAY 84 AND A PAVED ROAD AT EXIT 62 OF INTERSTATE HIGHWAY 84.  
STATION MARK IS SET IN THE TOP OF A SQUARE CONCRETE POST PROJECTING 1 CM. IT IS 10.7 M (35.1 FT) SOUTH OF THE SOUTH CORNER OF THE CONCRETE END OF BRIDGE RAILING, 13.4 M (44.0 FT) SOUTHWEST OF THE PAVED ROAD CENTER, 9.8 M (32.2 FT) NORTHWEST OF THE CENTER OF THE ENTRANCE ROAD, 3.1 M (10.2 FT) WEST OF THE CURVED GUARDRAIL, AND 0.7 M (2.3 FT) SOUTH OF A FIBERGLASS WITNESS POST.



**PRAIRIE CITY N BASE RESET**

PID: QC0135

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: GRANT

LATITUDE:	44° 26' 41.10620" N	± 0.00010 SECONDS
LONGITUDE:	118° 42' 13.25136" W	± 0.00020 SECONDS
ORTHOMETRIC HEIGHT:	1115.90	METERS
	3661.1	FEET

GEOID HEIGHT:	-16.831	METERS
ELLIPSOIDAL HEIGHT:	1099.264	±0.045 METERS
X:	5554463.553	METERS
Y:	2143979.681	METERS
Z:	-2282770.186	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.43880"                    +03.81536" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO PRAIRIE CITY N BASE AZ MK DEG MIN SEC
SPC	OR N	88,052.895	2,642,979.784	0.99997381	+ 1 16 26.1	342 54 18.4
UTM	11	4,922,683.895	364,432.942	0.99982602	- 1 11 35.3	345 22 19.8

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
QC0137	PRAIRIE CITY NB RM 2	13.887 METERS	067 36
QC0136	PRAIRIE CITY NB RM 1	17.332 METERS	330 25
	PRAIRIE CITY N BASE AZ MK		344 10 44.5

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . PRAIRIE CITY N BASE

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1946	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1963		COAST AND GEODETIC SURVEY (FN)
1985	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## PRAIRIE CITY N BASE RESET

PID: QC0135

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1946 (DHK)  
STATION IS ONE MILE SOUTH OF PRAIRIE CITY, 0.1 MILE SOUTH OF  
WHERE THE ROAD CROSSES AN IRRIGATION DITCH AND 25 FEET WEST OF  
CENTER OF GRAVEL ROAD. THE STATION IS NOW BEING USED BY THE  
FOREST SERVICE AS A FIRE FINDING STATION AND A POLE FENCE HAS  
BEEN BUILT AROUND IT. MARK IS A BRONZE DISK SET IN CONCRETE  
PROJECTING 3 INCHES AND STAMPED--PRAIRIE CITY N. BASE 1946.

UNDERGROUND MARK IS A STANDARD DISK STAMPED--PRAIRIE CITY 1941.

REFERENCE MARK NO. 1 IS A BRONZE DISK SET IN CONCRETE PROJECTING  
2 INCHES AND IS STAMPED PRAIRIE CITY N. B. NO 1 1946. IT IS 25  
FEET WEST OF THE CENTER OF THE ROAD AND DOWN THE HILL TOWARD  
PRAIRIE CITY.

REFERENCE MARK NO. 2 IS ON THE EAST SIDE OF THE ROAD, 20 FEET  
FROM THE CENTER. A BRONZE DISK SET IN CONCRETE AND  
STAMPED--PRAIRIE CITY N. BASE NO 2 1946.

THE AZIMUTH MARK IS ABOUT 0.4 MILE NORTH OF THE STATION ON EAST  
SIDE OF ROAD, 20 FEET EAST OF RAIL FENCE, AND NEAR A 4X4 INCH  
WHITE STAKE. THE MARK IS A BRONZE DISK STAMPED--PRAIRIE CITY  
NORTH BASE 1946.

STATION AND REFERENCE MARKS WERE TIED INTO A PRECISE LEVEL LINE.

### STATION RECOVERY (1963)

RECOVERED BY COAST AND GEODETIC SURVEY 1963 (FN )  
THE STATION MARK, REFERENCE MARK NO. 1, REFERENCE MARK NO. 2 AND  
AZIMUTH MARK WERE RECOVERED AND FOUND IN GOOD CONDITION. ROADS  
AND LANDMARKS HAVE CHANGED. A NEW TO REACH FOLLOWS.

TO REACH THE STATION FROM THE PRARIE CITY POST OFFICE GO EAST ON  
U.S. HIGHWAY 26 FOR 0.05 MILE TO MAIN STREET, TURN RIGHT AND GO  
SOUTH ON MAIN STREET FOR 0.4 MILE TO A T INTERSECTION, TURN LEFT  
AND GO EAST FOR 0.05 MILE TO A SIDE ROAD RIGHT AND A SIGN ON THE  
LEFT, STRAWBERRY LAKE, TURN RIGHT AS PER SIGN AND GO SOUTHEAST ON  
THE GRAVELED ROAD FOR 0.5 MILE TO THE AZIMUTH MARK ON THE  
LEFT. CONTINUE SOUTHEAST ON THE GRAVELED ROAD FOR 0.4 MILE TO  
THE STATION ON THE RIGHT.

A METAL WITNESS POST WAS PLACED 0.5 FOOT EAST OF THE AZIMUTH MARK.

### STATION RECOVERY (1985)

RECOVERED BY NATIONAL GEODETIC SURVEY 1985  
RECOVERED IN GOOD CONDITION. BUT NOT LEVELLED TO DURING THIS SURVEY.  
STAMPING READS--PRAIRIE CITY NORTH BASE 1941 1946

**PRESCOTT RESET**

PID: SC1419

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: COLUMBIA

LATITUDE:	46° 02' 24.23185" N	±0.00020 SECONDS
LONGITUDE:	122° 55' 28.28669" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	362.1	METERS
	1188.	FEET

GEOID HEIGHT:	-20.353	METERS
ELLIPSOIDAL HEIGHT:	341.460	±0.067 METERS
X:	4204107.064	METERS
Y:	-3028546.432	METERS
Z:	3707560.546	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.60681"                    +04.39720" (Based on Adjusted Positions)

**PLANE COORDINATES**

ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO BAKER POINT DEG MIN SEC
			SCALE FACTOR		
OR N	266,563.858	2,312,350.176	1.00001044	- 1 43 10.0	224 49 38.0
WA S	81,437.176	312,361.110	0.99995954	- 1 45 40.2	224 51 38.0
UTM	10	5,098,501.706	0.99960042	+ 0 03 15.6	223 03 12.4

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

(Continued on Next Page)

**PRESCOTT RESET**

PID: SC1419

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	PRESCOTT RM 3 AZIMUTH		070 09 44.6
	PRESCOTT RM 3 AZIMUTH		070 10
SC1338	KALAMA AIRWAY BEACON	APPROX. 5.5 KM	113 17 34.8
SC1344	KALAMA CATHOLIC CHURCH SPIRE	APPROX. 7.4 KM	117 50 05.9
SC1370	KALAMA CHAN S F RNG LT	APPROX. 7.0 KM	121 10 40.7
SC1333	KALAMA CHAN S R RNG LT	APPROX. 7.3 KM	121 53 31.9
RD3801	AHLE POINT LIGHT	APPROX. 7.7 KM	127 03 01.9
	PRESCOTT RM 1	9.874 METERS	133 52
	PRESCOTT RM 2	8.801 METERS	220 39
RD1630	BAKER POINT	APPROX. 20.5 KM	223 06 28.0
SC1452	LONGVIEW BRIDGE SW LIGHT	APPROX. 7.6 KM	336 58 58.7
SC1450	LONGVIEW BRIDGE NE LIGHT	APPROX. 7.8 KM	339 11 07.0
SC1432	LONGVIEW LNG BELL LMBR SW STK	APPROX. 7.2 KM	349 33 03.1
SC1431	LONGVIEW LONG BELL LUMBER CO	APPROX. 7.2 KM	349 44 27.8

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . . . PRESCOTT 1934 1980

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1980	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1989	GOOD	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)
1990	GOOD	NATIONAL GEODETIC SURVEY

**STATION DESCRIPTION**

DESCRIBED BY NATIONAL GEODETIC SURVEY 1980 (CLN)  
THE SURFACE MARK WAS FOUND TILTED. THE UNDERGROUND MARK WAS RECOVERED  
IN GOOD CONDITION. THE REFERENCE MARKS 1 AND 2 WERE SEARCHED FOR  
BUT NOT RECOVERED. THE SURFACE MARK WAS REPLUMBED AND REFERENCE  
MARKS 3 AND 4 WERE ESTABLISHED AT THIS TIME.

THE STATION IS LOCATED ABOUT 3-1/2 MILES SOUTH OF RAINIER, 3 MILES  
NORTH OF GOBEL AND IN THE RIGHT OF WAY OF A POWER TRANSMISSION LINE.

TO REACH THE STATION FROM THE STORE IN GOBLE GO NORTHWEST ON U.S.  
HIGHWAY 30 FOR 0.35 MILE. TURN LEFT ON NEER CITY ROAD AND GO 1.8  
MILES TO A FORK. TAKE RIGHT FORK, STILL NEER CITY ROAD AND GO .7  
MILES TO A FORK, CONTINUE STRAIGHT AHEAD ON NEER CITY ROAD FOR 0.3  
MILE TO A ROAD LEFT, THIS ROAD IS ABOUT 100 FEET SOUTH OF A MICROWAVE  
TOWER, TURN HARD LEFT AND GO 0.05 MILE TO A GATE, PASS THROUGH GATE  
AND FOLLOW ROAD ALONG TRANSMISSION LINE 0.05 MILE TO STATION ON THE  
RIGHT. NOTE, KEY TO GATE IF LOCKED MIGHT BE OBTAINED FROM THE CITY  
HALL IN RAINIER.

(Continued on Next Page)

## PRESCOTT RESET

PID: SC1419

THE STATION IS A STANDARD NATIONAL GEODETIC SURVEY DISK STAMPED ---PRESCOTT 1934 1980---SET INTO THE TOP OF A SQUARE CONCRETE MONUMENT 25 CM (10 INCHES) ON SIDE PROJECTING 13 CM (5 INCHES) ABOVE THE GROUND LOCATED 29.29 METERS (96.1 FEET) E FROM THE EAST LEG OF A POWER TRANSMISSION LINE, 7.47 METERS (24.5 FEET) NE FROM A GRAVEL ROAD, AND 0.3 METER (1 FOOT) S FROM A METAL WITNESS POST.

THE UNDERGROUND MARK IS A STANDARD US COAST AND GEODETIC SURVEY (NOW NOS) DISK STAMPED---PRESCOTT 1934---SET INTO AN IRREGULAR MASS OF CONCRETE 0.9 METER (3 FEET) BELOW THE SURFACE.

REFERENCE MARK NO. 3 IS A STANDARD NATIONAL GEODETIC SURVEY DISK STAMPED---PRESCOTT 1934 NO 3 1980---SET INTO THE TOP OF A ROUND CONCRETE MONUMENT 30 CM (12 INCHES) IN DIAMETER PROJECTING 5 CM (2 INCHES) ABOVE THE GROUND LOCATED 10.1 METERS (33 FEET) ESE FROM A METAL WITNESS POST, 10.7 METERS (35 FEET) NE FROM THE CENTERLINE OF A GRAVEL ROAD, AND 1/2 FOOT HIGHER THAN THE STATION.

REFERENCE MARK NO. 4 IS A STANDARD NATIONAL GEODETIC SURVEY DISK STAMPED---PRESCOTT 1934 NO 4 1980---SET INTO THE TOP OF A ROUND CONCRETE MONUMENT 25 CM (10 INCHES) IN DIAMETER PROJECTING 8 CM (3 INCHES) ABOVE THE GROUND LOCATED 22.80 METERS (74.8 FEET) ESE FROM THE EAST LEG OF A STEEL TRANSMISSION TOWER, 3.87 METERS (12.7 FEET) SW FROM THE CENTERLINE OF A GRAVEL ROAD, AND 1/2 FOOT LOWER THAN THE STATION.

### STATION RECOVERY (1989)

RECOVERED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

(Continued on Next Page)

## PRESCOTT RESET

PID: SC1419

### STATION RECOVERY (1990)

RECOVERED BY NATIONAL GEODETIC SURVEY 1990  
STATION IS LOCATED ABOUT 5.5 KM (3.4 MI) SOUTH OF RAINIER, 5 KM (3.1 MI) NORTHWEST OF GOBLE LANDING, ON THE CLEARED RIGHT-OF-WAY OF A STEEL TOWER POWERLINE, ON THE SOUTH EDGE OF SECTION 34, T 7 N, R 2 W. OWNERSHIP--BONNEVILLE POWER ADMINISTRATION. KEY FOR LOCKED GATE CAN BE OBTAINED FROM THE SUPERINTENDENT OF PUBLIC WORKS, RAINIER CITY HALL, PHONE 503-556-7301. CALL A WEEK IN ADVANCE FOR THE KEY.  
TO REACH FROM THE JUNCTION OF US HIGHWAY 30 AND NICOLAI ROAD AT THE GOBLE LANDING AND RAILROAD SIDING, GO NORTH ON HIGHWAY 30 FOR 0.51 KM (0.32 MI) TO A PAVED ROAD LEFT. TURN LEFT, WESTERLY, ON NEER ROAD FOR 1.18 KM (0.73 MI) TO END OF PAVEMENT AT FORK. KEEP LEFT, MAIN ROAD, ON GRAVEL FOR 1.62 KM (1.01 MI) TO A FORK AND NICK THOMAS ROAD ON THE LEFT. KEEP RIGHT, UPGRADE, ON NEER CITY ROAD FOR 2.51 KM (1.56 MI) TO BROWNLEE ROAD ON THE LEFT. CONTINUE AHEAD, NORTH, FOR 0.57 KM (0.35 MI) TO A TRACK ROAD LEFT INTO WOODS JUST BEFORE REACHING A MICROWAVE TOWER. TURN LEFT, SOUTHWEST, ON ROAD FOR 0.17 KM (0.11 MI) TO A LOCKED BAR GATE. PASS THROUGH GATE, KEEPING RIGHT AT A FORK, FOR 70 M (229.7 FT) TO HIGH GROUND AND THE STATION ON THE RIGHT IN A CLUMP OF BUSHES.  
STATION MARK IS SET IN THE TOP OF A 25-CM SQUARE CONCRETE POST PROJECTING 12 CM. LOCATED 29.0 M (95.1 FT) WEST OF THE WEST LEG OF TRANSMISSION TOWER 232, 9.0 M (29.5 FT) SOUTHWEST OF THE ROAD CENTER, AND 0.3 M (1.0 FT) NORTHWEST OF A METAL WITNESS POST.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: PRINEVILLE

**PRINEVILLE**

PID: QD1782

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CROOK

LATITUDE:	44° 18' 04.56691" N	±0.00010 SECONDS
LONGITUDE:	120° 51' 54.05792" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT:	{ 972.0	METERS
	{ 3189.	FEET

GEOID HEIGHT:	-19.193	METERS
ELLIPSOIDAL HEIGHT:	952.540	±0.032 METERS
X:	57378.829	METERS
Y:	603285.617	METERS
Z:	6328970.746	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY VERTICAL ANGLE OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.56209"                    +04.09692" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	292,744.119	1,470,869.451	1.00009057	- 0 14 59.0
SPC	OR N	70,585.485	2,470,871.856	1.00000823	- 0 15 31.9
UTM	10	4,907,551.579	670,302.948	0.99995670	+ 1 29 29.4

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . PRINEVILLE 1938

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1939	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION
1958	GOOD	US GEOLOGICAL SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## PRINEVILLE

PID: QD1782

### STATION DESCRIPTION

DESCRIBED BY OREGON DEPARTMENT OF TRANSPORTATION 1939 (LAM)  
STATION IS AT THE VERY EDGE OF THE PROMINENT HIGH RIMROCK W OF  
PRINEVILLE, ABOUT 1000 FEET W OF CROOKED RIVER BRIDGE, AND ABOUT  
500 FEET ABOVE THE RIVER. STATION MAY BE MOST EASILY REACHED  
FROM SW AND W. STATION IS MARKED BY O.S.H.D. DISK, STAMPED  
PRINEVILLE 1938, SET IN SOLID ROCK.

### STATION RECOVERY (1958)

RECOVERED BY US GEOLOGICAL SURVEY 1958  
RECOVERED AS DESCRIBED BY NGS. ALL MARKS IN GOOD CONDITION.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
AT A VIEWPOINT ON THE TOP OF A BLUFF OVERLOOKING PRINEVILLE,  
TO REACH FROM THE COURTHOUSE IN PRINEVILLE GO WESTERLY ON E. THIRD ST.  
TO JUNCTION WITH STATE HIGHWAY 126, TURN LEFT ONTO HIGHWAY 126 AND GO  
1.6 KM (1.0 MI) TO A ROAD RIGHT LEADING TO OCHOCO WAYSIDE VIEW POINT,  
TURN RIGHT AND GO TOWARD WAYSIDE FOR 0.48 KM (0.30 MI) TO NORTH END  
OF A PARKING AREA. THE STATION IS ABOUT 41 METERS NORTH OF THIS  
POINT.  
THE STATION IS 40.7 M (133.5 FT) NNW OF NORTHERN MOST END OF A ROCK  
GUARDRAIL FOR VIEWPOINT, 1.8 M (5.9 FT) WEST OF THE TOP EDGE OF BLUFF  
AND 1.4 M (4.6 FT) ESE OF A WITNESS POST.  
DESCRIBED BY L.L. RIGGERS.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CASCADE GORGE

**PROS**  
PID: NZ1327

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 44' 26.41739" N	±0.00010 SECONDS
LONGITUDE:	122° 30' 37.80897" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 771.4 METERS  
2531. FEET

GEOID HEIGHT:	-21.706		METERS
ELLIPSOIDAL HEIGHT:	749.388	±0.043	METERS
X:	6028204.276		METERS
Y:	-1456439.519		METERS
Z:	-1488315.462		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.1                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	121,279.217	1,335,402.522	0.99992233	- 1 22 31.7
UTM	10	4,732,133.617	540,065.555	0.99961975	+ 0 19 56.0

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . ROCK OUTCROP  
THE MARK IS STAMPED . . . PROS 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CASCADE GORGE

**PROS**

PID: NZ1327

**STATION DESCRIPTION**

DESCRIBED 1989

THE MARK IS LOCATED ABOUT 30 MILES SW OF CRATER LAKE, AT THE JUNCTION OF HIGHWAY 62 AND THE PROSPECT-MILL CREEK FALLS ROAD AND AT MILE POST 42.55 OF HIGHWAY 62.

THE STATION IS AN ORDOT PRIMARY GPS DISK STAMPED---PROS 1989---SET INTO A DRILL HOLE IN A ROCK OUTCROP. IT IS 44.0 M (144.4 FT) WEST OF THE CENTERLINE OF THE PROSPECT-MILL CREEK FALLS ROAD. IT IS 20.0 M (65.6 FT) SE OF THE EAST END OF A GUARD RAIL, 17.0 M (55.8 FT) SOUTH OF THE CENTERLINE OF HIGHWAY 62, 16.5 M (54.1 FT) NORTH OF A FENCE AND 1.3 M (4.3 FT) WEST OF A WITNESS POST.  
DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
 NOAA - NOS - C&GS  
 NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
 USGS QUAD SHEET: REEDSPORT

**REED**  
 PID: OA1622

HORIZONTAL DATUM: NAD 83 (1991)  
 VERTICAL DATUM: NGVD 29

STATE: OREGON  
 COUNTY: DOUGLAS

LATITUDE:	43° 42' 11.25618"	N	±0.00010	SECONDS
LONGITUDE:	124° 06' 16.41984"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	2.49			METERS
	8.2			FEET

GEOID HEIGHT:	-23.212			METERS
ELLIPSOIDAL HEIGHT:	-21.027	±0.052		METERS
X:	2503259.373			METERS
Y:	3119685.804			METERS
Z:	4951432.751			METERS

HORIZONTAL NETWORK ORDER: B  
 VERTICAL NETWORK ORDER: THIRD  
 ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
 NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	232,470.679	1,209,561.904	0.99993810	- 2 27 57.8
UTM	10	4,839,493.391	411,002.170	0.99969742	- 0 45 47.6

STATION MARK IS A . . . . SURVEY DISK  
 WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
 THE MARK IS STAMPED . . . REED 1989

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: REEDSPORT

**REED**  
PID: OA1622

#### STATION DESCRIPTION

DESCRIBED 1989  
STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED REED 1989 SET IN A MASS OF CONCRETE, 8 INCHES DIAMETER AT GROUND SURFACE.  
STATION IS LOCATED IN REEDSPORT, OREGON, AT THE INTERSECTION OF U.S. HIGHWAY 101 AND STATE HIGHWAY 38, ON THE TRAFFIC ISLAND EAST OF HIGHWAY 101. THE STATION MARK IS 67.02 M (219.88 FT) EAST OF THE CENTERLINE OF HIGHWAY 101, 3.66 M (12.01 FT) WEST OF THE EAST EDGE OF THE TRAFFIC ISLAND, AND 3.35 M (10.99 FT) SOUTH OF THE NORTH EDGE OF THE ISLAND.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: SUNSET SPRING

**REST 26**  
PID: RD4220

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CLATSOP

LATITUDE:	45° 47' 48.46077" N	±0.00020 SECONDS
LONGITUDE:	123° 27' 39.88269" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	435.45	METERS
	1428.6	FEET

GEOID HEIGHT:	-19.087	METERS
ELLIPSOIDAL HEIGHT:	416.153	±0.065 METERS
X:	862271.270	METERS
Y:	2184615.469	METERS
Z:	5910558.674	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	240,927.244	2,269,848.836	0.99995468	- 2 05 59.8
UTM	10	5,071,573.747	464,167.164	0.99961578	- 0 19 49.9

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . REST 26

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**REST 26**  
PID: RD4220

**STATION DESCRIPTION**

**DESCRIBED 1989**

THE STATION IS LOCATED ABOUT 11.04 KM (6.86 MI) MILES EAST OF THE INTERSECTION OF HWY 26 AND THE JEWELL, AND MIST JUNCTION. THE STATION IS ALSO LOCATED ABOUT 14.56 KM (9.05 MI) MILES WEST OF THE INTERSECTION OF HWY 26 NW TIMBER ROAD.

FROM THE TILMBER POST OFFICE ON NW TIMBER ROAD GO NORTH 5.28 KM (3.28 MI) TO THE INTERSECTION OF HWY 26 AND NW TIMBER ROAD. TURN LEFT HEADING WEST ON HWY 26 AND GO 14.62 KM (9.08 MI) TO THE STATE REST AREA AT MILE POST 28.7 AND THE STATION.

THE STATION IS 45.42 M (149.02 FT) NORTH OF THE HIGHWAY CENTERLINE, 39.17 M (128.51 FT) NORTHEAST OF THE TOP OF A CORRIGATED PIPE UNDER THE HIGHWAY, 32.31 M (106.00 FT) NORTHWEST OF A TELEPHONE POLE AND 7.74 M (25.39 FT) SOUTH OF THE REST AREA FOG LINE. IT IS .25 CM BELOW THE SURFACE OF THE GROUND.

DESCRIBED BY STEVE MUMA OF ORDOT.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: COQUILLE

**RINK**  
PID: OA1427

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: COOS

LATITUDE:	43° 09' 38.33398" N	±0.00020 SECONDS
LONGITUDE:	124° 08' 01.07622" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 330.2 METERS  
1083. FEET

GEOID HEIGHT:	-23.512	METERS
ELLIPSOIDAL HEIGHT:	306.313	±0.076 METERS
X:	5749253.113	METERS
Y:	1905167.019	METERS
Z:	1993611.283	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.58902"                    +04.33922" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
				SCALE FACTOR		RINK AZ MK DEG MIN SEC
SPC	OR S	172,364.136	1,204,607.024	0.99989462	- 2 29 9.4	264 28 37.8
UTM	10	4,779,278.471	407,840.194	0.99970448	- 0 46 31.8	262 46 00.2

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	RINK RM 1	5.966 METERS	101 34
	RINK RM 2	7.242 METERS	182 53
	RINK AZ MK		261 59 28.4

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN A BOULDER  
THE MARK IS STAMPED . . . RINK 1942 . . .

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1942	STATION MONUMENTED	US GEOLOGICAL SURVEY
1969		COAST AND GEODETIC SURVEY (NET)
1976	GOOD	NATIONAL GEODETIC SURVEY (WFP)
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## RINK

PID: OA1427

### STATION DESCRIPTION

DESCRIBED BY US GEOLOGICAL SURVEY 1942 (JCS)  
STATION IS LOCATED ABOUT 3 MILES ESE OF COQUILLE, 5 MILES SW OF FAIRVIEW, AND 3 MILES WSW OF LEE ON THE HILL, COVERED WITH STUMPS AND DEAD TREES, THAT LIES JUST ENE OF THE HEAD OF GLEN AIKEN CREEK. STATION ELEVATION IS APPROXIMATELY 1000 FEET.

STATION MARK IS A BRONZE U.S.G.S. MARK SET IN A BURIED BOULDER ABOUT 10 INCHES IN DIAMETER AND FLUSH WITH THE SURFACE OF THE GROUND. IT IS ON THE NORTHERN PORTION OF THE FLAT SUMMIT AND ABOUT 26 METERS NNW OF A DEAD TREE WITH A TRIANGULAR BLAZE ON ITS BASE. THE TREE IS ABOUT 5 FEET IN DIAMETER AND 125 FEET HIGH. MARK IS STAMPED RINK 1942.

NO UNDERGROUND OR WITNESS MARKS WERE ESTABLISHED.

REFERENCE MARK NO.1 IS A BRONZE U.S.C. AND G.S. DISK SET IN THE TOP OF A 3-INCH IRON PIPE PROJECTING ABOUT 6 INCHES. IT IS AT ABOUT THE SAME ELEVATION AS THE STATION MARK. MARK IS STAMPED RINK NO.1 1942.

REFERENCE MARK NO.2 IS A BRONZE U.S.C. AND G.S. DISK SET IN THE TOP OF A 3-INCH IRON PIPE PROJECTING ABOUT 4 INCHES. IT IS AT ABOUT THE SAME ELEVATION AS THE STATION MARK. MARK IS STAMPED RINK NO.2 1942.

THE AZIMUTH MARK IS A BRONZE U.S.C. AND G.S. MARK SET IN THE TOP OF AN IRON PIPE PROJECTING ABOUT 6 INCHES. IT IS ABOUT 1/4 MILE WESTERLY FROM THE RANCH BUILDINGS AT THE END OF TRUCK TRAVEL AND IS ON THE HIGHEST POINT AT THE N END OF THE RIDGE. MARK IS STAMPED RINK 1942.

TO REACH FROM THE JUNCTION OF HIGHWAYS 101 AND 42 IN COQUILLE GO SOUTHERLY ON HIGHWAY 42, TOWARDS MYRTLE POINT, 3.4 MILES TO SIGN ON RIGHT READING GLEN AIKEN RD. TURN LEFT ONTO GLEN AIKEN ROAD. GO 2.1 MILES TO GATE AND OLD RAILROAD TRESTLE ON RIGHT. PASS THROUGH GATE AND CONTINUE ON TRACK ROAD 0.3 MILE TO ITS END AT OLD RANCH BUILDINGS. FROM RANCH BUILDINGS PACK NORTHERLY ABOUT 150 YARDS, FOLLOWING OLD ROAD BED AROUND POINT OF BARE RIDGE. THENCE TURN RIGHT AND FOLLOW TRAIL, JUST TO LEFT OF RIDGE, ABOUT 200 YARDS TO FENCE. PASS THROUGH FENCE AT POINT WHERE IT JOGS, AND CONTINUE ENE ON STOCK TRAIL ABOUT 1/2 MILE TO THE FLAT SUMMIT OF THE HILL AND STATION.

### STATION RECOVERY (1969)

RECOVERED BY COAST AND GEODETIC SURVEY 1969 (NET)  
THE STATION MARK, STAMPED RINK 1942, REFERENCE MARK NO. 1, STAMPED RINK NO 1 1942, REFERENCE MARK NO. 2, STAMPED RINK NO 2 1942 AND THE AZIMUTH MARK, STAMPED RINK 1942 WERE RECOVERED AS DESCRIBED. A TV INSTALLATION HAS BEEN CONSTRUCTED 300 FEET SOUTH-SOUTHEAST OF THE STATION. GENEROUS PORTIONS OF SIGNAL CLOTH WAS USED TO MARK EACH MONUMENT. A NEW TO REACH FOLLOWS.

(Continued on Next Page)



**RINK**

PID: OA1427

TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAYS 42 AND 42S, JUST SOUTH OF THE COQUILLE POST OFFICE, GO SOUTHEAST OF STATE HIGHWAY 42 FOR 3.3 MILES TO A SIDE ROAD AND SIGN, TO GLEN AIKEN ROAD, TURN LEFT AS PER SIGN AND GO SOUTHEAST ON THE MACADAM FOR 0.9 MILE TO A SIDE ROAD LEFT, WHERE MAIN ROAD CURVES SOUTH, TURN LEFT AND GO NORTHEAST ON THE GRAVELED ROAD FOR 1.1 MILES TO THE END OF THE ROAD AT A DWELLING OWNED BY MR. VIRGIL E. MC KINNEY AND THE END OF TRUCK TRAVEL FOR THIS PARTY. FROM HERE PACK EASTERLY ON THE TRACK ROAD, (POWER LINE ROAD), FOR 3/4-HOUR TO THE SUMMIT AND STATION.

TO REACH THE AZIMUTH MARK FROM THE DWELLING OWNED BY MR. MC KINNEY, PACK NORTH FOR ABOUT 1/2-HOUR TO THE FIRST SUMMIT AND AZIMUTH MARK.

NOTE--DURING DRY WEATHER IT WOULD BE POSSIBLE TO DRIVE TO THE STATION ON THE POWER LINE ROAD.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
5 MILES SOUTHEAST.

**STATION RECOVERY (1976)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1976 (WFP)  
THE STATION MARK, REFERENCE MARK 1, REFERENCE MARK 2 AND THE AZIMUTH MARK WERE RECOVERED IN GOOD CONDITION. DISTANCES TO THE REFERENCE MARKS COMPARED FAVORABLY WITH THE 1942 DESCRIPTION. A DIFFERENCE IN DIRECTION TO REFERENCE MARK 1 OF 4 MINUTES AND 22 SECONDS WAS NOTED. A DIFFERENCE TO REFERENCE MARK 2 OF 2 MINUTES AND 50 SECONDS WAS NOTED. THE STATION MARK WAS USED AS THE ANTENNA SITE FOR GEOCEIVER STATION 51155.

DUE TO CHANGES IN THE AREA A NEW DESCRIPTION FOLLOWS.

THE STATION IS LOCATED ABOUT 5 MILES SOUTHWEST OF FAIRVIEW, ABOUT 3 MILES EAST-SOUTHEAST OF COQUILLE ON THE SUMMIT OF A HILL THAT HAS BEEN LOGGED-OFF AND PLANTED WITH SMALL PINE TREES. THE PROPERTY IS OWNED BY THE WEYERHAUSER TIMBER CORPORATION.

TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAYS 42 AND 42S AT THE SOUTH SIDE OF COQUILLE, GO SOUTH ON STATE HIGHWAY 42 FOR 5.0 MILES TO A PAVED ROAD ON THE LEFT AND A SIGN ON THE RIGHT READING GOLF COURSE, MCKINLEY 12, FAIRVIEW 16 INCH. TURN LEFT AND GO EASTERLY ON PAVED ROAD FOR 5.0 MILES TO A GRAVELED ROAD AND A LOCKED WIRE GATE ON THE LEFT. (KEY TO THE GATE CAN BE OBTAINED FROM THE FARMHOUSE JUST WEST OF THE GATE). TURN LEFT ON GRAVELED ROAD PASSING THROUGH THE GATE AND GO NORTH AND UPHILL FOR 0.6 MILE TO THE HERVEY GRAVEL PITS. BEAR LEFT AROUND THE GRAVEL PIT ON GRAVELED ROAD AND GO WESTERLY AND UPHILL FOR 0.7 MILE TO A FORK, KEEP TO THE RIGHT FORK AND CONTINUE ON GRAVELED ROAD FOR 1.3 MILES TO A TRACK ROAD ON THE RIGHT, CONTINUE AHEAD ON GRAVEL ROAD FOR 0.7 MILE TO A SHARP RIGHT TURN IN THE ROAD, TURN RIGHT AND GO NORTH AND UPHILL FOR 0.2 MILE TO THE TOP OF HILL AND STATION.

(Continued on Next Page)

**RINK**  
PID: OA1427

THE STATION MARK IS U.S.G.S. DISK STAMPED RINK 1942, SET IN THE TOP OF A 10-INCH DIAMETER BOULDER THAT IS FLUSH WITH THE GROUND. IT IS 145 FEET NORTHWEST OF THE NORTHWEST CORNER OF A TV RELAY BUILDING, 44.5 FEET WEST OF A TREE STUMP WHICH IS 4 FEET IN DIAMETER, 28.5 FEET NORTH OF THE CENTER OF A TRACK ROAD AND 2 FEET EAST OF A METAL WITNESS POST. THERE IS NO UNDERGROUND MARK.

REFERENCE MARK 1 IS A STANDARD DISK STAMPED RINK NO 1 1942, SET IN THE TOP OF A 3-INCH IRON PIPE WHICH PROJECTS 6 INCHES. IT IS 36.0 FEET NORTH OF THE CENTER OF THE TRACK ROAD AND 27.0 FEET WEST OF THE TREE STUMP. IT IS ABOUT THE SAME ELEVATION AS THE STATION MARK.

REFERENCE MARK 2 IS A STANDARD DISK STAMPED RINK NO 2 1942, SET IN THE TOP OF A 3-INCH IRON PIPE WHICH PROJECTS 4 INCHES. IT IS 127.5 FEET NORTHWEST OF THE NORTHWEST CORNER OF THE TV RELAY BUILDING, 39.5 FEET SOUTHWEST OF THE TREE STUMP AND 8.5 FEET NORTH OF THE TRACK ROAD. IT IS ABOUT THE SAME ELEVATION AS THE STATION.

THE AZIMUTH MARK IS A STANDARD DISK STAMPED RINK 1942, SET IN THE TOP OF A 3-INCH IRON PIPE THAT PROJECTS 6 INCHES. IT IS LOCATED ABOUT 1.0 MILE WEST-SOUTHWEST OF THE STATION ON THE NORTH END AND HIGHEST POINT OF A NORTH-SOUTH RIDGE. IT IS ABOUT 300 YARDS NORTH OF A CLEARED AREA ON THE SOUTH END OF THE RIDGE AND ABOUT 100 YARDS NORTH OF A DEAD PINE TREE ABOUT 75 FEET HIGH. TO REACH FROM THE STATION PACK WEST-SOUTHWEST AND DOWNHILL TO A LARGE CLEARING AND PASTURE, THENCE UPHILL AND WESTERLY TO THE TOP OF THE RIDGE AND AZIMUTH MARK. (IN DRY WEATHER THE MARK MAY BE DRIVEN TO HALFWAY BY FOLLOWING A DOULBE-POLE POWER LINE ROAD DOWNHILL AND SOUTHWEST TO A LOCKED GATE JUST BEFORE REACHING THE LARGE CLEARING.) PACK IS ABOUT 45 MINUTES.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN--3 MILES EAST-SOUTHEAST OF COQUILLE.

**STATION RECOVERY (1989)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION, REFERENCE MARK 1 AND REFERENCE MARK 2 WERE RECOVERED IN GOOD CONDITION. THE AZIMUTH MARK WAS NOT SEARCHED FOR.  
TO REACH THE STATION FROM THE JUNCTION OF HIGHWAYS 42 AND 42S IN COQUILLE GO SOUTH ON HIGHWAY 42 FOR 3.5 KM (2.2 MI) , TURN LEFT AT SIGN TO GLEN AKIN ROAD AND GO 1.44 KM (0.89 MI) TO A T JUNCTION, TURN LEFT ONTO GLEN AKIN ROAD AND GO 3.2 KM (2.0 MI) TO A BUS TURNAROUND AND A GATE (LOWER ROAD) PASS THROUGH GATE AND GO 0.08 KM (0.05 MI) TO A ROAD FORK (PROPERTY OWNERS HOME IS RIGHT AT THIS FORK. PROPERTY OWNER IS DENNIS SCHAD. PHONE NUMBER IS 396-5928.) TAKE LEFT FORK AND GO 0.08 KM (0.05 MI) TO A GREENHOUSE ON RIGHT AND A TRAILER ON LEFT, CONTINUE NORTH ON TRACK ROAD 1.1 KM (0.7 MI) TO AN OPEN GATE, PASS THROUGH GATE AND GO 0.64 KM (0.40 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 0.32 KM (0.20 MI) TO A TV CABLE ANTENNA BUILDING AND THE MARK ABOUT 50 METERS NNW.  
DESCRIBED BY L.L. RIGGERS.

**RIVER RM 3**

PID: RD1910

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: TILLAMOOK

LATITUDE:	45° 28' 29.82556"	N	±0.00020	SECONDS
LONGITUDE:	123° 50' 35.63385"	W	±0.00030	SECONDS
ORTHOMETRIC HEIGHT:	5.53			METERS
	18.1			FEET

GEOID HEIGHT:	-20.532			METERS
ELLIPSOIDAL HEIGHT:	-15.552	±0.084		METERS
X:	2621361.976			METERS
Y:	-3143403.876			METERS
Z:	-4875242.705			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD (Vertical Network Order Unconfirmed)  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING, BUT THE EXACT VERTICAL FIELD PROCEDURES ARE UNKNOWN. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.64769"                    +04.44043" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO WILSON		
						DEG MIN SEC		
SPC	OR N	206,348.267	2,238,682.078	0.99990884	- 2 22 15.5	070	53	49.6
UTM	10	5,036,059.484	434,091.842	0.99965341	- 0 36 4.3	069	07	38.4

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
RD1908	WILSON	APPROX. 5.5 KM	068 31 34.1
RD1001	S 237		185 30 12.4
RD0999	RIVER RM 1		320 45
RD0997	RIVER RM 2		327 13
RD0998	RIVER	127.796 METERS	327 35

STATION MARK IS A . . . . REFERENCE MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . RIVER 1941 NO 3 1974  
(Continued on Next Page)

### RIVER RM 3

PID: RD1910

#### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1974	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY
1990	GOOD	NATIONAL GEODETIC SURVEY

#### STATION DESCRIPTION

DESCRIBED BY NATIONAL GEODETIC SURVEY 1974

#### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

#### STATION RECOVERY (1990)

RECOVERED BY NATIONAL GEODETIC SURVEY 1990  
STATION MARK IS LOCATED ABOUT 2.2 KM (1.4 MI) NORTH OF TILLAMOOK,  
ALONG THE EAST SIDE OF THE HIGHWAY 101 ON THE SOUTH LEVEE OF A  
SLOUGH, BEHIND THE RESTAURANT OF THE SHILO INN, IN THE WEST PART OF  
SECTION 19 T 1 S, R 9 W. OWNERSHIP--STATE OF OREGON. SHILO INN  
PROPERTY IS CROSSED TO REACH THE STATION.  
TO REACH FROM THE JUNCTION OF US HIGHWAY 101 NORTH AND STATE HIGHWAY 6  
EAST (THIRD STREET) NEAR THE NORTH END OF THE TILLAMOOK BUSINESS  
DISTRICT, GO NORTH ON HIGHWAY 101 FOR 1.20 KM (0.75 MI) TO THE BRIDGE  
OVER HALL SLOUGH. CONTINUE AHEAD FOR 0.83 KM (0.52 MI) TO THE NORTH  
ENTRANCE TO THE SHILO INN. TURN RIGHT, EAST, THEN LEFT INTO A PARKING  
AREA FOR 0.13 KM (0.08 MI) TO NORTH END OF THE PARKING LOT. WALK  
EAST FOR ABOUT 30 M (98.4 FT) TO THE STATION.  
STATION MARK IS SET IN THE TOP OF A 30-CM SQUARE CONCRETE POST 5 CM  
BELOW GROUND, NEAR THE TOP CENTER OF THE LEVEE. LOCATED 4.3 M  
(14.1 FT) SOUTHWEST OF A METAL WITNESS POST ON THE SLOUGH SIDE OF THE  
LEVEE, 16.5 M (54.1 FT) SOUTHEAST OF A METAL SIGN FOR DEPOSITING  
TRASH, 16.2 M (53.1 FT) NORTH OF THE NORTH CORNER OF ELECTRICAL BOX  
6, 19.7 M (64.6 FT) NORTH-NORTHWEST OF THE TOP CENTER OF THE  
NORTHWEST ONE OF THREE PROPANE TANKS, AND 15.5 M (50.9 FT)  
EAST-NORTHEAST OF THE NORTH CORNER OF A SMALL ADJUNCT TO THE MAIN  
BUILDING.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MOUNT TABOR

**ROCKY BUTTE RESET**

PID: RD2899

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MULTNOMAH

LATITUDE:	45° 32' 48.16646" N	±0.00010 SECONDS
LONGITUDE:	122° 33' 57.38971" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	185.7	METERS
	609.	FEET

GEOID HEIGHT:	-21.346	METERS
ELLIPSOIDAL HEIGHT:	164.178	±0.049 METERS
X:	6250042.638	METERS
Y:	896910.572	METERS
Z:	900033.225	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.58854"                    +04.33371" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
						ME DEG MIN SEC
SPC	OR N	210,978.164	2,338,694.663	0.99991632	- 1 27 54.5	097 13 32.4
SPC	WA S	25,830.667	338,669.563	1.00007726	- 1 30 2.5	097 16 32.4
UTM	10	5,043,777.811	533,883.536	0.99961412	+ 0 18 35.4	095 27 02.5

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

(Continued on Next Page)

**ROCKY BUTTE RESET**

PID: RD2899

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	ROCKY BUTTE RM 1	24.003 METERS	016 04
RD2898	ROCKY BUTTE 2	10.006 METERS	025 05
RD2933	ME	APPROX. 4.4 KM	095 45 37.9
	ROCKY BUTTE 2 RM 2	14.678 METERS	175 52
RD2866	ROCKY BUTTE AWY BN FLASH RED M	14.206 METERS	176 12
RD2446	PORTLAND ARLETA BAP CH BELFRY	APPROX. 6.9 KM	200 39 27.0
RD2575	PORTLAND LIBBYS ELEVATED TANK	APPROX. 8.1 KM	226 22 02.2
RD2881	PORTLAND ST STEPHENS CH BELFRY	APPROX. 5.5 KM	229 38 18.9
RD3239	PORTLAND NW ELECTRIC CO STACK	APPROX. 9.4 KM	242 47 15.5
RD3246	PORTLAND PUBLIC MARKET S TWR	APPROX. 9.0 KM	247 48 09.4
RD3012	PORTLAND CENT WILBUR METH CH	APPROX. 7.7 KM	248 03 39.7
RD3249	PORTLAND PUBLIC MARKET N TWR	APPROX. 9.0 KM	248 10 20.1
RD3191	PORTLAND PUB SERVICE BLDG FP	APPROX. 9.4 KM	249 48 36.7
RD3074	PORTLAND BENSON POLYTECH STACK	APPROX. 7.1 KM	252 18 26.2
RD3228	PORTLAND DOERNBECHER MFG STACK	APPROX. 5.8 KM	252 54 11.7
RD2883	PORTLAND MILK BOTTLE STORE	APPROX. 4.8 KM	253 15 02.6
RD3251	PORTLAND SEARS ROEBUCK FP	APPROX. 7.7 KM	253 21 45.8
RD3188	PORTLAND HONEYMAN HARDWARE TK	APPROX. 9.2 KM	256 11 52.2
RD3047	PORTLAND MARSHALL WELLS TANK	APPROX. 9.5 KM	258 44 41.2
RD3144	PORTLAND CROWN MILLS BLACK TK	APPROX. 9.1 KM	260 57 27.1
RD3217	PORTLAND CROWN MILLS BLUE TK	APPROX. 8.6 KM	262 19 42.9
RD3250	PORTLAND THIRD BAP CH STEEPLE	APPROX. 8.0 KM	266 07 36.9
RD3007	PORTLAND ST MARYS CATH CHURCH	APPROX. 7.9 KM	267 49 41.5
RD3280	PORTLAND NE PRESCOTT NE 19 TK	APPROX. 6.3 KM	278 22 05.1
	ROCKY BUTTE RM 3 RESET	20.164 METERS	278 42
RD3248	PORTLAND GAS TANK	APPROX. 8.4 KM	279 03 43.7

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN PARTIALLY EXPOSED BOULDER  
THE MARK IS STAMPED . . . ROCKY BUTTE 1889

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1934	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1935		COAST AND GEODETIC SURVEY (CP )
1937		OREGON GEODETIC SURVEY
1938		COAST AND GEODETIC SURVEY (WMS)
1946		COAST AND GEODETIC SURVEY (EHB)
1961		COAST AND GEODETIC SURVEY (NES)
1989	GOOD	CITY OF PORTLAND OREGON

(Continued on Next Page)

## ROCKY BUTTE RESET

PID: RD2899

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1934 (CP )  
STATION IS ON A SMALL BUTTE ON THE  
EASTERN LIMITS OF THE CITY OF PORTLAND, OREGON. AT THE EXTREME  
EASTERN END OF FREMONT AVENUE, AT ABOUT WHERE 92ND AVENUE WOULD  
CROSS IT.

STATION IS IN A BURIED BOULDER ABOUT 2 FEET ACROSS AND PROJECTING  
ABOUT 1 FOOT ABOVE THE SURFACE. IT WAS RE-MARKED BY A STANDARD  
DISK STATION MARK CEMENTED IN A DRILL HOLE.

REACHED AS FOLLOWS--FROM UNION AVENUE, GO E ON FREMONT AVENUE TO  
ITS END, AND THEN UP THE SMALL BUTTE TO THE S TO THE STATION,  
ABOUT 5-MINUTE WALK.

ROCKY BUTTE 2, 1934 REFERENCE MARK NO.2 IS 14.680 METERS FROM  
ROCKY BUTTE 1889.

ROCKY BUTTE 2, 1934 IS 9.577 METERS FROM ROCKY BUTTE 1889.

### STATION RECOVERY (1935)

RECOVERED BY COAST AND GEODETIC SURVEY 1935 (CP )  
STATION WAS FOUND AS DESCRIBED.

STATION WAS FOUND AS DESCRIBED.

### STATION RECOVERY (1937)

RECOVERED BY OREGON GEODETIC SURVEY 1937  
ON A SUMMIT OF ROCKY BUTTE, WELL-KNOWN LANDMARK IN NE PART OF  
PORTLAND, ELEVATION ABOUT 610 FEET. TO REACH SUMMIT, SECURE  
DIRECTIONS TO NE EIGHTY-SECOND AVENUE AND NE FREMONT STREET, FROM  
WHICH POINT DRIVE E ON NE FREMONT STREET AND ON SCENIC DRIVE ABOUT  
1.5 MILES TO PARKING AREA AT FOOT OF MASONRY WALL FORMING LARGE  
OBSERVATION SPACE. STATION ORIGINALLY MARKED BY DRILL HOLE IN  
BOULDER, AND RE-MARKED IN 1934 BY BRONZE DISK, STAMPED ROCKY  
BUTTE 1889. DISK IS ABOUT 1 FOOT BELOW GROUND LEVEL AND IS  
PROTECTED BY MANHOLE AND CAST-IRON COVER WITH INITIALS MC.  
STATION ROCKY BUTTE 2, MARKED BY DISK, STAMPED ROCKY BUTTE 2 1934  
AND SET IN MASSIVE BOULDER PROJECTING ABOUT 18 INCHES ABOVE  
OBSERVATION SPACE, IS 9.577 METERS (31.42 FEET) NORTHERLY IN  
AZIMUTH ABOUT 207 DEG 00 MIN 13 SEC.

REFERENCE MARK NO.2 FOR STATION ROCKY BUTTE 2, DISK IN CENTER OF  
CONCRETE PLATFORM UNDER AIRWAY BEACON, IS 14.680 METERS (48.16  
FEET) S IN AZIMUTH 355 DEG 52 MIN. THIS REFERENCE MARK IS UNDER  
CENTER OF AIRWAY BEACON FLASHING RED M. ALL OF ABOVE MARKS ARE IN  
NORTHERLY PART OF OBSERVATION SPACE ON SUMMIT.

(Continued on Next Page)

## ROCKY BUTTE RESET

PID: RD2899

ON A SUMMIT OF ROCKY BUTTE, WELL-KNOWN LANDMARK IN NE PART OF PORTLAND, ELEVATION ABOUT 610 FEET. TO REACH SUMMIT, SECURE DIRECTIONS TO NE EIGHTY-SECOND AVENUE AND NE FREMONT STREET, FROM WHICH POINT DRIVE E ON NE FREMONT STREET AND ON SCENIC DRIVE ABOUT 1.5 MILES TO PARKING AREA AT FOOT OF MASONRY WALL FORMING LARGE OBSERVATION SPACE. STATION ORIGINALLY MARKED BY DRILL HOLE IN BOULDER, AND RE-MARKED IN 1934 BY BRONZE DISK, STAMPED ROCKY BUTTE 1889. DISK IS ABOUT 1 FOOT BELOW GROUND LEVEL AND IS PROTECTED BY MANHOLE AND CAST-IRON COVER WITH INITIALS MC. STATION ROCKY BUTTE 2, MARKED BY DISK, STAMPED ROCKY BUTTE 2 1934 AND SET IN MASSIVE BOULDER PROJECTING ABOUT 18 INCHES ABOVE OBSERVATION SPACE, IS 9.577 METERS (31.42 FEET) NORTHERLY IN AZIMUTH ABOUT 207 DEG 00 MIN 13 SEC.

REFERENCE MARK NO.2 FOR STATION ROCKY BUTTE 2, DISK IN CENTER OF CONCRETE PLATFORM UNDER AIRWAY BEACON, IS 14.680 METERS (48.16 FEET) S IN AZIMUTH 355 DEG 52 MIN. THIS REFERENCE MARK IS UNDER CENTER OF AIRWAY BEACON FLASHING RED M. ALL OF ABOVE MARKS ARE IN NORTHERLY PART OF OBSERVATION SPACE ON SUMMIT.

### STATION RECOVERY (1938)

RECOVERED BY COAST AND GEODETIC SURVEY 1938 (WMS)  
OLD DESCRIPTION AND RECOVERY NOTES ARE INADEQUATE. STATION NOW DESCRIBED AS FOLLOWS--THE STATION IS IN THE NORTHERLY PART OF THE LARGE OBSERVATION SPACE ON THE SUMMIT OF ROCKY BUTTE, WELL-KNOWN LANDMARK IN THE NE PART OF PORTLAND, OREGON, ELEVATION ABOUT 610 FEET. THE ORIGINAL STATION WAS MARKED BY DRILL HOLE IN BOULDER, AND RE-MARKED IN 1934 BY STANDARD DISK, STAMPED ROCKY BUTTE 1889. IT IS NOW ABOUT 1 FOOT BELOW THE SURFACE OF THE GROUND AND PROTECTED BY A MANHOLE AND COVER MARKED MC. THE MANHOLE COVER IS SET FLUSH WITH THE SURFACE OF THE PAVED SPACE WITHIN THE OBSERVATION AREA.

ROCKY BUTTE 2 1934, MARKED BY A STANDARD DISK, STAMPED ROCKY BUTTE 2 1934, AND SET IN MASSIVE BOULDER PROJECTING ABOUT 18 INCHES ABOVE THE SURFACE OF THE GROUND WITHIN THE OBSERVATION SPACE WAS USED AS A REFERENCE MARK.

REFERENCE MARK NO.2 (1934) IS WITHIN THE LOCKED FENCE AROUND THE BASE OF THE AERO BEACON ON THE SUMMIT.

STATION IS REACHED FROM NE 82ND AND NE FREMONT STREETS BY DRIVING E ON NE FREMONT STREET AND SCENIC DRIVE 1.5 MILES TO PARKING AREA AT THE FOOT OF THE MASONARY WALL AROUND THE OBSERVATION SPACE AT THE SUMMIT AND STATION.

(Continued on Next Page)



## ROCKY BUTTE RESET

PID: RD2899

OLD DESCRIPTION AND RECOVERY NOTES ARE INADEQUATE. STATION NOW DESCRIBED AS FOLLOWS--THE STATION IS IN THE NORTHERLY PART OF THE LARGE OBSERVATION SPACE ON THE SUMMIT OF ROCKY BUTTE, WELL-KNOWN LANDMARK IN THE NE PART OF PORTLAND, OREGON, ELEVATION ABOUT 610 FEET. THE ORIGINAL STATION WAS MARKED BY DRILL HOLE IN BOULDER, AND RE-MARKED IN 1934 BY STANDARD DISK, STAMPED ROCKY BUTTE 1889. IT IS NOW ABOUT 1 FOOT BELOW THE SURFACE OF THE GROUND AND PROTECTED BY A MANHOLE AND COVER MARKED MC. THE MANHOLE COVER IS SET FLUSH WITH THE SURFACE OF THE PAVED SPACE WITHIN THE OBSERVATION AREA.

ROCKY BUTTE 2 1934, MARKED BY A STANDARD DISK, STAMPED ROCKY BUTTE 2 1934, AND SET IN MASSIVE BOULDER PROJECTING ABOUT 18 INCHES ABOVE THE SURFACE OF THE GROUND WITHIN THE OBSERVATION SPACE WAS USED AS A REFERENCE MARK.

REFERENCE MARK NO.2 (1934) IS WITHIN THE LOCKED FENCE AROUND THE BASE OF THE AERO BEACON ON THE SUMMIT.

STATION IS REACHED FROM NE 82ND AND NE FREMONT STREETS BY DRIVING E ON NE FREMONT STREET AND SCENIC DRIVE 1.5 MILES TO PARKING AREA AT THE FOOT OF THE MASONARY WALL AROUND THE OBSERVATION SPACE AT THE SUMMIT AND STATION.

### STATION RECOVERY (1946)

RECOVERED BY COAST AND GEODETIC SURVEY 1946 (EHB)  
RECOVERED AS DESCRIBED. IN THE EXTREME NE PART OF PORTLAND ON THE NORTH END OF THE HIGHEST PART OF ROCKY BUTTE, AND ABOUT 90 FEET N OF AN AIRWAY BEACON. THE STATION IS MARKED BY A STANDARD BRONZE DISK, STAMPED ROCKY BUTTE 1889, CEMENTED IN THE TOP OF LARGE ROUND TOPPED BOULDER.

REFERENCE MARK IS A STANDARD BRONZE DISK (ALSO USED FOR ROCKY BUTTE 2, 1934), IS SET IN CENTER OF CONCRETE PLATFORM UNDER AIRWAY BEACON AND IS SOUTH OF THE STATION.

RECOVERED AS DESCRIBED. IN THE EXTREME NE PART OF PORTLAND ON THE NORTH END OF THE HIGHEST PART OF ROCKY BUTTE, AND ABOUT 90 FEET N OF AN AIRWAY BEACON. THE STATION IS MARKED BY A STANDARD BRONZE DISK, STAMPED ROCKY BUTTE 1889, CEMENTED IN THE TOP OF LARGE ROUND TOPPED BOULDER.

REFERENCE MARK IS A STANDARD BRONZE DISK (ALSO USED FOR ROCKY BUTTE 2, 1934), IS SET IN CENTER OF CONCRETE PLATFORM UNDER AIRWAY BEACON AND IS SOUTH OF THE STATION.

### STATION RECOVERY (1961)

RECOVERED BY COAST AND GEODETIC SURVEY 1961 (NES)  
THE STATION MARK, REFERENCE MARK NO. 1 AND ROCKY BUTTE 2 1934 WERE RECOVERED AND FOUND IN GOOD CONDITION. REFERENCE MARK NO. 2 AND THE AZIMUTH MARK WERE SEARCHED FOR BUT NOT RECOVERED. A NEW AND COMPLETE DESCRIPTION FOLLOWS.

(Continued on Next Page)

## ROCKY BUTTE RESET

PID: RD2899

THE STATION IS IN THE NORTH PART OF AN OBSERVATION SPACE ON THE SUMMIT OF ROCKY BUTTE, A WELL KNOWN LANDMARK IN THE NORTHEAST PART OF PORTLAND.

TO REACH THE STATION FROM THE INTERSECTION OF N.E. 82ND AVENUE AND N.E. FREMONT STREET, GO EAST ON N.E. FREMONT STREET FOR 0.5 MILE TO N.E. 91ST AVENUE, TURN LEFT AND GO NORTH ON N.E. 91ST AVENUE AND ROCKY BUTTE ROAD (WINDING ROAD) FOR 1.3 MILES TO A PARKING AREA AT THE BASE OF THE MASONRY WALL, THEN PACK UP THE STEPS TO THE SUMMIT AND STATION.

THE STATION MARK, STAMPED ROCKY BUTTE 1889, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A BOULDER AND PROTECTED BY AN IRON CASING WITH A COVER BEARING THE INITIALS MC. IT IS 66 FEET EAST OF THE WEST WALL, 50 FEET WEST OF THE EAST WALL, 48 FEET NORTH OF THE BEACON AND 6 INCHES BELOW THE SURFACE OF THE GROUND. (NOTE 4)

REFERENCE MARK NO. 1, STAMPED ROCKY BUTTE NO 1 1934, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A BOULDER THAT PROJECTS 2 FEET. IT IS 3 FEET NORTHEAST OF THE WALL, ON THE OUTSIDE OF THE MASONRY WALL AND 10 FEET BELOW STATION ELEVATION. (NOTE 12C)

ROCKY BUTTE 2, STAMPED ROCKY BUTTE 2 1934, IS A STANDARD STATION MARK DISK CEMENTED IN A DRILL HOLE IN A BOULDER THAT PROJECTS 2 FEET. IT IS 77 FEET NORTHEAST OF THE BEACON AND 24 FEET WEST OF THE EAST WALL. (NOTE 4)

TRIANGULATION STATION ME MAY BE USED FOR THE AZIMUTH MARK. SEE DESCRIPTION THEREOF.

THE STATION MARK, REFERENCE MARK NO. 1 AND ROCKY BUTTE 2 1934 WERE RECOVERED AND FOUND IN GOOD CONDITION. REFERENCE MARK NO. 2 AND THE AZIMUTH MARK WERE SEARCHED FOR BUT NOT RECOVERED. A NEW AND COMPLETE DESCRIPTION FOLLOWS.

THE STATION IS IN THE NORTH PART OF AN OBSERVATION SPACE ON THE SUMMIT OF ROCKY BUTTE, A WELL KNOWN LANDMARK IN THE NORTHEAST PART OF PORTLAND.

TO REACH THE STATION FROM THE INTERSECTION OF N.E. 82ND AVENUE AND N.E. FREMONT STREET, GO EAST ON N.E. FREMONT STREET FOR 0.5 MILE TO N.E. 91ST AVENUE, TURN LEFT AND GO NORTH ON N.E. 91ST AVENUE AND ROCKY BUTTE ROAD (WINDING ROAD) FOR 1.3 MILES TO A PARKING AREA AT THE BASE OF THE MASONRY WALL, THEN PACK UP THE STEPS TO THE SUMMIT AND STATION.

THE STATION MARK, STAMPED ROCKY BUTTE 1889, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A BOULDER AND PROTECTED BY AN IRON CASTING WITH A COVER BEARING THE INITIALS MC. IT IS 66 FEET EAST OF THE WEST WALL, 50 FEET WEST OF THE EAST WALL, 48 FEET NORTH OF THE BEACON AND 6 INCHES BELOW THE SURFACE OF THE GROUND. (NOTE 4)

(Continued on Next Page)

## ROCKY BUTTE RESET

PID: RD2899

REFERENCE MARK NO. 1, STAMPED ROCKY BUTTE NO 1 1934, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A BOULDER THAT PROJECTS 2 FEET. IT IS 3 FEET NORTHEAST OF THE WALL, ON THE OUTSIDE OF THE MASONRY WALL AND 10 FEET BELOW STATION ELEVATION. (NOTE 12C)

ROCKY BUTTE 2, STAMPED ROCKY BUTTE 2 1934, IS A STANDARD STATION MARK DISK CEMENTED IN A DRILL HOLE IN A BOULDER THAT PROJECTS 2 FEET. IT IS 77 FEET NORTHEAST OF THE BEACON AND 24 FEET WEST OF THE EAST WALL. (NOTE 4)

TRIANGULATION STATION ME MAY BE USED FOR THE AZIMUTH MARK. SEE

### STATION RECOVERY (1989)

RECOVERED BY CITY OF PORTLAND OREGON 1989

THE STATION IS IN THE NORTHEAST PART OF PORTLAND AND IN THE NORTH PART OF AN OBSERVATION SPACE ON THE SUMMIT OF ROCKY BUTTE. TO REACH THE STATION FROM THE INTERSECTION OF NE 82ND AVENUE AND NE FREMONT STREET IN THE EAST PART OF PORTLAND, GO EAST ON NE FREMONT STREET FOR 0.5 MILE TO NE 91ST AVENUE. TURN LEFT AND GO NORTH ON NE 91ST AVENUE AND ROCKY BUTTE ROAD FOR 1.3 MILES TO A METAL GATE AT THE BASE OF THE HILL. PASS THROUGH THE GATE AND GO NORTHEAST UPHILL ON A PAVED ROAD FOR 0.05 MILE TO TOP OF HILL AND THE STATION.

STATION MARK IS A STANDARD DISK, STAMPED ROCKY BUTTE 1889, CEMENTED IN A DRILL HOLE IN THE TOP OF A BOULDER WHICH IS 10-INCHES BELOW THE GROUND SURFACE AND PROTECTED BY A 15-INCH METAL CASTING WITH THE INITIALS MON ON THE TOP OF THE CAP. IT IS 50 FEET WEST OF THE EAST MASONRY WALL AND 66 FEET EAST OF THE WEST MASONRY WALL. THE PROPERTY IS OWNED BY THE PORTLAND PARKS BUREAU. FOR PERMISSION TO DRIVE RIGHT TO THE STATION AND A KEY TO A LOCKED GATE CALL CITY OF PORTLAND, BUREAU OF PARKS AND RECREATION, PARKS DISTRICT SUPERVISOR, AT 248-4716. A KEY CAN ALSO BE OBTAINED FROM CITY OF PORTLAND, BUREAU OF WATER WORKS, ENGINEERING SURVEY MGR. AT 796-7518, OR CITY OF PORTLAND, BUREAU OF POLICE, EAST PRECINCT AT 248-5696.

DESCRIBED BY KRISTIE HARTFEIL OF BUREAU OF WATER WORKS.

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DEPARTMENT OF COMMERCE  
 NOAA - NOS - C&GS  
 NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
 USGS QUAD SHEET: ROSEBURG EAST

**ROSEBURG CBL 1440.**

PID: PC1116

HORIZONTAL DATUM: NAD 83 (1991)  
 VERTICAL DATUM: NGVD 29

STATE: OREGON  
 COUNTY: DOUGLAS

LATITUDE:	43° 14' 44.10722"	N	±0.00010	SECONDS
LONGITUDE:	123° 21' 18.97548"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	163.29			METERS
	535.7			FEET

GEOID HEIGHT:	-22.117			METERS
ELLIPSOIDAL HEIGHT:	140.893	±0.043		METERS
X:	5901490.405			METERS
Y:	-1680279.786			METERS
Z:	1735364.521			METERS

HORIZONTAL NETWORK ORDER: B  
 VERTICAL NETWORK ORDER: THIRD  
 ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
 NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	179,342.365	1,268,176.987	0.99989551	- 1 57 12.3
UTM	10	4,788,148.482	471,158.033	0.99961023	- 0 14 36.3

STATION MARK IS A . . . . SURVEY DISK  
 WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
 THE MARK IS STAMPED . . . 1440 1989

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**ROSEBURG.CBL 1440**

PID: PC1116

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED IN ROSEBURG, AT THE NORTH END OF THE ROSEBURG AIRPORT.

TO REACH FROM THE INTERSECTION OF GARDEN VALLEY ROAD AND NW MULHOLLAND GO NORTH ON NW MULLHOLLAND PASS THE WINDMILL INN FOR 0.8 KM (0.5 MI) TO STEWART PARKWAY, TURN LEFT ONTO STEWART PARKWAY AND GO 0.3 KM (0.2 MI) TO A FRONTAGE ROAD, TURN RIGHT ON FRONTAGE ROAD AND GO 1.3 KM (0.8 MI) TO JUNCTION OF SWEETBRIER AVE AND BOWER STREET, TURN LEFT ON BOWER AND GO ABOUT 50 METERS, TURN RIGHT ON GRAVEL ROAD TOWARD GOLDEN HELICOPTERS AND GO 0.2 KM (0.1 MI) AND THE MARK ON THE SOUTH SIDE OF THE FENCE.

THE STATION IS 33.0 M (108.3 FT) EAST OF PROLONGATION OF EAST SIDE OF THE RUNWAY, 38.2 M (125.3 FT) WNW OF A JOG IN FENCE, 27.1 M (88.9 FT) WSW OF A NE FENCE CORNER, 8.1 M (26.6 FT) SOUTH OF A FENCE AND 8.1 M (26.6 FT) SOUTH OF A WITNESS POST. THE MARK IS FLUSH WITH THE GROUND.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: RUSTLER PEAK

**RUST RM 4**  
PID: NZ1050

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 37' 09.31189" N	±0.00010 SECONDS
LONGITUDE:	122° 20' 52.93180" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT:	1891.2	METERS
	6205.	FEET

GEOID HEIGHT:	-21.076	METERS
ELLIPSOIDAL HEIGHT:	1869.821	±0.045 METERS
X:	6161287.302	METERS
Y:	-1162863.136	METERS
Z:	-1175473.731	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY VERTICAL ANGLE OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT	LATITUDE	LONGITUDE
NAD83 minus NAD27	-00.52697"	+04.09558" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO BUNKER HILL DEG MIN SEC
SPC	OR S	107,489.099	1,348,403.570	0.99994026	- 1 15 51.6	056 07 40.1
UTM	10	4,718,740.920	553,467.496	0.99963517	+ 0 26 29.3	054 25 19.2

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
NZ1047	BUNKER HILL	APPROX. 18.5 KM	054 51 48.5
	RUST RM S	7.821 METERS	178 23
NZ1048	RUST	4.401 METERS	288 40

STATION MARK IS A . . . . REFERENCE MARK DISK  
WITH SETTING . . . . . A BOULDER  
THE MARK IS STAMPED . . . RUST 1904 NO 4 1967

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1967	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## RUST RM 4

PID: NZ1050

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1967 (CAA)  
STATION IS LOCATED ABOUT 42 MILES NORTHWEST OF KLAMATH FALLS AND  
ABOUT 34 MILES NORTHEAST OF MEDFORD ON A MOUNTAIN PEAK KNOWN AS  
RUSTLERS PEAK.

TO REACH FROM THE JUNCTION OF STATE HIGHWAY 97 BY-PASS AND  
STATE HIGHWAY 140 IN THE NORTHWEST EDGE OF KLAMATH FALLS, GO  
WESTERLY ON STATE HIGHWAY 140 FOR 36 MILES TO THE JACKSON-KLAMATH  
COUNTY LINE, CONTINUE FOR 4.4 MILES TO A SIDE ROAD RIGHT AND SIGN  
WILLOW LAKE 10 BUTTE FALLS 19, TURN RIGHT AND GO NORTHERLY FOR  
2.3 MILES TO A SIDE ROAD RIGHT, CONTINUE FOR 0.8 MILES TO FORK,  
KEEP THE LEFT FORK AND CONTINUE NORTHERLY ON MAIN ROAD FOR 1.6  
MILES TO A SIDE ROAD RIGHT, CONTINUE FOR 1.7 MILES TO A SIDE  
ROAD LEFT, CONTINUE 1.2 MILES TO WHERE SURFACED ROAD STARTS,  
CONTINUE FOR 1.1 MILES TO A SIDE ROAD RIGHT AND SIGN RUSTLER  
PEAK L.O., TURN RIGHT PER SIGN AND GO EASTERLY FOR 1.5 MILES TO  
FORK, KEEP LEFT AND CONTINUE FOR 2.5 MILES TO FORK, KEEP LEFT  
AND CONTINUE FOR 2.9 MILES TO CROSSROAD, TURN RIGHT AND  
FOLLOW MAIN ROAD FOR 3.4 MILES TO A SIDE ROAD LEFT, CONTINUE  
FOR 0.8 MILE TO FORK, KEEP THE LEFT FOR 0.7 MILE TO A SIDE  
ROAD LEFT AND SIGN RUSTLER PEAK L.O. 3, TURN LEFT AND FOLLOW  
MAIN ROAD UPHILL FOR 3 MILES TO LOOKOUT TOWER AND STATION.

STATION MARK, A STANDARD REFERENCE MARK DISK STAMPED RUST 1904  
NO 4 1967, IS SET IN A DRILL HOLE IN TOP OF 12 INCH BOULDER WHICH  
PROJECTS 2 INCHES. THE MARK IS 20.6 FEET SOUTHEAST OF THE  
NORTHEAST LEG OF LOOKOUT, 19.2 FEET WEST OF NORTHWEST CORNER OF  
SMALL METAL BUILDING AND 15.9 FEET EAST OF THE SOUTHEAST LEG  
OF LOOKOUT.

RUST 1904, A 3/8 INCH COPPER BOLT WITH CROSS IN TOP SET IN A  
DRILL HOLE IN TOP OF A BOULDER WITH AN OLD TYPE COAST AND GEODETIC  
SURVEY DISK SET IN THE SAME DRILL HOLE. THE MARK IS 7.7 FEET  
SOUTHEAST OF THE NORTHEAST LEG OF LOOKOUT AND 6.4 FEET SOUTHEAST  
OF THE NORTHEAST LEG OF LOOKOUT.

REFERENCE MARK 3, A COPPER BOLT SET IN A DRILL HOLE IN TOP OF A  
BOULDER WHICH IS FLUSH. THE MARK IS 30 FEET SOUTHEAST OF THE  
SOUTHEAST LEG OF LOOKOUT.

(Continued on Next Page)



**RUST RM 4**

PID: NZ1050

**STATION RECOVERY (1989)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1989

THE STATION IS LOCATED ABOUT 37.0 KM (23.00 MI) EAST OF SHADY COVE, 19.2 KM (11.95 MI) NORTHEAST OF BUTTE FALLS, 19.2 KM (11.95 MI) SOUTHEAST OF PROSPECT AN ON THE TOP OF RUSTIC PEAK IN THE ROGUE RIVER NATIONAL FOREST. OWNERSHIP--U.S. FOREST SERVICE. NOTE - KEY FOR LOCKED GATE CAN BE OBTAINED FROM THE USFS RANGER STATION IN BUTTE FALLS, PHONE 503-865-3581.

TO REACH FROM THE STATION FROM THE FLASHING RED LIGHTS AT CROSSROADS IN BUTTE FALLS GO EASTERLY FOR 1.7 KM (1.05 MI) TO PROSPECT ROAD ON LEFT. TURN LEFT ONTO PROSPECT ROAD AND GO NORTHERLY 2.72 KM (1.70 MI) TO USFS ROAD 32 ON RIGHT. TURN RIGHT ONTO USFS ROAD 32 AND GO 20.96 KM (13.00 MI) ON THE GRAVEL ROAD TO A T INTERSECTION OF USFS ROADS 32, 37 AND PUMPER 600. BEAR LEFT ON USFS ROAD 37 AND GO 0.7 KM (0.45 MI) TO USFS ROAD 640 ON LEFT. TURN LEFT ONTO USFS ROAD 640, AND GO 0.40 KM (0.25 MI) TO A UNLOCKED GUARD RAIL GATE. CONTINUE AHEAD FOR 1.04 KM (0.65 MI) TO A ROAD FORK. TAKE RIGHT FORK, USFS 642, AND GO 1.52 KM (0.95 MI) TO USFS ROAD 644 ON RIGHT. CONTINUE AHEAD ON USFS 640 FOR 1.6 KM (1.00 MI) TO USFS ROAD 647 ON RIGHT. CONTINUE AHEAD ON USFS ROAD 640 FOR 0.96 KM (0.60 MI) TO USFS ROAD 600 ON RIGHT. CONTINUE AHEAD ABOUT 0.045 KM (0.05 MI) TO A FORK IN ROAD (RIGHT FORK CLOSED BY LOCKED GATE) AND SIGN ROAD CLOSED AHEAD. TAKE LEFT FORK AND CONTINUE UP HILL 0.09 KM (0.05 MI) TO A LOCKED GATE. (NOTE - KEY AT USFS RANGER STATION IN BUTTE FALLS.) CONTINUE UP HILL FOR 0.24 KM (0.15 MI) TO A FORK. BEAR LEFT AND CONTINUE FOR 1.92 KM (1.20 MI) TO TOP OF HILL AND LOOKOUT TOWER. THE STATION IS LOCATED EAST OF THE LOOKOUT TOWER NEAR A ROCK FIRE PIT. LOCATED 6.6 M (21.7 FT) NORTH-NORTHWEST FROM THE BOTTOM OF THE SOUTHEAST GUIDE WIRE TO THE LOOKOUT TOWER, 6.2 M (20.3 FT) EAST-SOUTH EAST FROM THE NORTHWEST LEG OF THE LOOKOUT TOWER, 4.9 M (16.1 FT) EAST-NORTHEAST FROM THE SOUTHEAST LEG OF LOOKOUT TOWER, 4.3 M (14.1 FT) EAST FROM STATION RUST 1904, 3.3 M (10.8 FT) SOUTH-SOUTHWEST FROM THE APPROXIMATE CENTER OF A ROCK FIRE PIT AND PROJECTING 0.12 M (0.4 FT) ABOVE GROUND.

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: ALSEA

**SALS**  
PID: QE2669

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BENTON

LATITUDE:	44° 23' 02.59600" N	±0.00010 SECONDS
LONGITUDE:	123° 36' 53.96515" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 97.6 METERS  
320. FEET

GEOID HEIGHT:	-20.803		METERS
ELLIPSOIDAL HEIGHT:	76.440	±0.057	METERS
X:	3461731.418		METERS
Y:	3182779.220		METERS
Z:	-4294637.124		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.4 (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	84,503.380	2,251,840.301	0.99998761	- 2 12 32.8
SPC	OR S	306,497.046	1,251,803.091	1.00012037	- 2 07 52.0
UTM	10	4,914,714.257	451,012.840	0.99962951	- 0 25 48.6

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN PAVEMENT  
THE MARK IS STAMPED . . . SALS 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**SALS**  
PID: QE2669

STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN ALSEA, AT THE ALSEA RANGER STATION AND IS ON USFS PROPERTY.

TO REACH FROM THE POST OFFICE IN ALSEA GO WEST 1.6 KM (1.0 MI) TO THE ALSEA RANGER STATION ON THE RIGHT, TURN RIGHT AND GO .16 KM (0.10 MI) TO A ROAD RIGHT, TURN RIGHT AND GO 0.1 KM (0.1 MI) TO ENTRANCE TO EMPLOYEES PARKING LOT, TURN RIGHT AND GO ABOUT 100 METERS TO THE MARK ON THE RIGHT.

THE MARK IS SET INTO A DRILL HOLE IN THE CONCRETE BASE FOR A WEATHER BALLOON TRACKING THEODOLITE. IT IS AT THE SE CORNER OF EMPLOYEES PARKING LOT BETWEEN OFFICIAL PARKING LOT AND EMPLOYEES PARKING LOT. IT IS 16.3 M (53.5 FT) SSE OF THE TOP OF STEPS BETWEEN PARKING LOTS, 12.5 M (41.0 FT) SSE OF A POWER POLE, AND 0.6 M (2.0 FT) NNW OF STAND FOR THE THEODOLITE. THE STAND CAN BE RAISED OR LOWERED.

DESCRIBED BY L.L. RIGGERS.

**SAN**  
PID: QD1356

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LINN

LATITUDE:	44° 26' 02.54698"	N	±0.00020	SECONDS
LONGITUDE:	121° 56' 56.00532"	W	±0.00030	SECONDS
ORTHOMETRIC HEIGHT:	1136.95			METERS
	3730.1			FEET

GEOID HEIGHT:	-19.810			METERS
ELLIPSOIDAL HEIGHT:	1116.832	±0.053		METERS
X:	5807179.786			METERS
Y:	-1825763.106			METERS
Z:	1901061.739			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.2                    (Based on Nadcon Interpolation)

GRID	ZONE	PLANE COORDINATES			
		NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	86,307.503	2,384,649.482	0.99997616	- 1 01 39.1
SPC	OR S	308,433.912	1,384,630.224	1.00013939	- 0 59 28.5
UTM	10	4,920,619.874	583,655.104	0.99968606	+ 0 44 9.3

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE IMBEDDED IN MASS OF CONCRETE  
THE MARK IS STAMPED . . . SAN 1987

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1987	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**SAN**  
PID: QD1356

**STATION DESCRIPTION**

DESCRIBED BY OR HIGHWAY DEPT 1987 (LLR)  
THE STATION IS LOCATED ON SANTIAM PASS AT THE WEST END OF THE  
SANTIAM AIR STRIP.

TO REACH THE STATION FROM THE JUNCTION OF HIGHWAYS 22 AND 20 GO EAST  
ON HIGHWAY 22 FOR 0.1 MILE TO THE ROAD LEADING INTO HIGHWAY  
MAINTENANCE YARD, TURN LEFT INTO YARD AND GO 0.1 MILE TO AIR STRIP,  
TURN RIGHT AND GO 0.3 MILE ALONG EDGE OF STRIP TO THE WEST END AND  
THE MARK ON THE RIGHT.

THE STATION IS A STANDARD ORHD DISK STAMPED---SAN 1987---SET INTO A  
METAL PIPE THAT PROJECTS 10 CENTIMETERS ABOVE THE GROUND. LOCATED  
100 METERS (320 FEET) WEST-NORTHWEST FROM THE WEST END OF THE  
RUNWAY, 30 METERS (100 FEET) EAST FROM THE WEST END OF A CLEARED  
AREA, 4.5 METERS (14.8 FEET) NORTH OF A TRACK ROAD AND 0.7 METER  
(2.3 FEET) SOUTH FROM A WITNESS POST.

**STATION RECOVERY (1989)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.  
THE STATION IS ABOUT 98.5 KM (61.20 MI) NORTHEAST OF EUGENE, 95.4 KM  
(59.30 MI) EAST-SOUTHEAST OF ALBANY, 36.9 KM (22.95 MI) WEST-NORTHWEST  
OF SISTERS AT THE WEST END OF THE SANTIAM AIRSTRIP AT SANTIAM  
PASS. OWNERSHIP--STATE OF OREGON. MAINTENANCE YARD MANAGER - JACK  
WILLS, PHONE 503-373-7670.  
TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 20 AND STATE  
HIGHWAY 22, WEST OF SISTERS, GO WEST FOR 0.16 KM (0.10 MI) ON U.S.  
HIGHWAY 20 TO THE WEST ENTRANCE TO SANTIAM JUNCTION STATE HIGHWAY  
MAINTENANCE YARD ON THE LEFT. TURN LEFT AND GO SOUTHEAST FOR 0.16 KM  
(0.10 MI) THROUGH MAINTENANCE YARD TO PAVED ROAD RIGHT. TURN RIGHT  
AND GO SOUTH FOR 0.08 KM (0.05 MI) TO END OF PAVEMENT AND DIRT ROAD  
WITH DIRT RUNWAY STRAIGHT AHEAD. TURN RIGHT AND GO WEST 0.48 KM  
(0.30 MI) ON DIRT ROAD TO THE STATION ON THE RIGHT.  
LOCATED ABOUT 100 M (328.1 FT) WEST-NORTHWEST FROM THE WEST END OF  
RUNWAY, 4.2 M (13.8 FT) NORTH-NORTHWEST FROM APPROXIMATE CENTERLINE OF  
DIRT ROAD AND 0.7 M (2.3 FT) WEST-SOUTHWEST FROM CARSONITE WITNESS  
POST.

**SCOGGINS**  
PID: RD4228

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASHINGTON

LATITUDE:	45° 28' 31.07298" N	±0.00010 SECONDS
LONGITUDE:	123° 11' 55.06745" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 96.9 METERS  
318. FEET

GEOID HEIGHT:	-20.270	METERS
ELLIPSOIDAL HEIGHT:	76.277	±0.053 METERS
X:	2758576.785	METERS
Y:	-3165227.946	METERS
Z:	-4785303.308	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	204,502.696	2,289,046.568	0.99990887	- 1 54 49.8
UTM	10	5,035,771.381	484,474.902	0.99960296	- 0 08 29.8

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . A LARGE STRUCTURE WITH DEEP FOUNDATIONS  
THE MARK IS STAMPED . . . SCOGGINS 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## SCOGGINS

PID: RD4228

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 7 MILES SOUTHWEST OF FOREST GROVE AND ABOUT 5 MILES NORTHWEST OF GASTRON.

TO REACH FROM THE INTERSECTION OF HIGHWAYS 47 AND 8 IN IN FOREST GROVE GO SOUTH ON HIGHWAY 47 FOR 4.96 KM (3.08 MI) TURN RIGHT TOWARD HENRY HAGG LAKE AND GO 6.4 KM (4.0 MI) TO ROAD TO DAM, TURN LEFT AND GO 0.32 KM (0.20 MI) TO THE NORTH END OF THE DAM AND THE STATION.

THE STATION IS ON THE TOP OF A RAISED CONCRETE PLATFORM WHICH IS PART OF THE FLOODGATE FOR THE DAM. IT IS IN AN ENCLOSED, LOCKED AREA.

THE KEY CAN BE OBTAINED FROM THE DAMTENDER WHOSE NAME IS WALLY OTTO.

HIS PHONE NUMBER IS 357-5000. HE LIVES BELOW THE DAM NEAR THE

BOTTOM OF THE SPILLWAY AT THE NE END OF THE DAM.

THE MARK IS SET INTO A DRILL HOLE 6.7 M (22.0 FT) E OF THE SW CORNER OF THE PLATFORM, 1 M (3.3 FT) NNE OF THE SOUTH EDGE OF THE PLATFORM AND 1 M (3.3 FT) HIGHER THAN THE ROAD.

DESCRIBED L.L. RIGGERS.



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: GASTON

**SCOGGINS AZ MK**

PID: RD4229

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASHINGTON

LATITUDE:	45° 28' 08.9386"	N	±0.00020	SECONDS
LONGITUDE:	123° 12' 14.0657"	W	±0.00020	SECONDS

ORTHOMETRIC HEIGHT: { 98.5 METERS  
323. FEET

GEOID HEIGHT:	-20.238		METERS
ELLIPSOIDAL HEIGHT:	77.949	±0.061	METERS
X:	673875.946		METERS
Y:	-1963914.414		METERS
Z:	-6010602.508		METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.4 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	203,833.59	2,288,611.33	0.99990831	- 1 55 3.3
UTM	10	5,035,089.34	484,060.69	0.99960312	- 0 08 43.3

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . 200 U/S

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## SCOGGINS AZ MK

PID: RD4229

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 7 MILES SOUTHWEST OF FOREST GROVE AND ABOUT 5 MILES NORTHWEST OF GASTON. TO REACH FROM THE INTERSECTION OF HIGHWAYS 47 AND 8 IN IN FOREST GROVE GO SOUTH ON HIGHWAY 47 FOR 4.96 KM (3.08 MI). TURN RIGHT TOWARD HENRY HAGG LAKE AND GO 6.4 KM (4.0 MI) TO ROAD TO DAM, TURN LEFT AND GO 0.32 KM (0.20 MI) TO THE NORTH END OF THE DAM, CONTINUE ACROSS DAM 0.8 KM (0.5 MI) TO THE MARK ON THE LEFT. IT IS ABOUT 2 METERS HIGHER THAN THE DAM.

THE STATION IS A US DEPT OF THE INTERIOR DISK SET INTO A CONCRETE MONUMENT FLUSH WITH THE GROUND. IT IS 60.96 M (200.00 FT) UPSTREAM FROM THE CENTERLINE OF THE DAM EXTENDED, 22.9 M (75.1 FT) WSW FROM THE CENTERLINE OF A PAVED ROAD, 15.0 M (49.2 FT) NNE OF THE CENTERLINE OF A GRAVEL ROAD, 8.2 M (26.9 FT) WEST OF THE SOUTHWEST CORNER OF A SMALL METAL BUILDING, 0.6 M (2.0 FT) NNW OF A WITNESS POST, 0.6 M (2.0 FT) WSW OF A FENCE LINE AND 0.4 M (1.3 FT) ENE OF A METAL FENCE POST.

DESCRIBED L.L. RIGGERS.

**SEXTON**

PID: NZ1210

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JOSEPHINE

LATITUDE:	42° 36' 00.52165" N	±0.00010 SECONDS
LONGITUDE:	123° 21' 55.74821" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	1168.8	METERS
	3835.	FEET

GEOID HEIGHT:	-22.493	METERS
ELLIPSOIDAL HEIGHT:	1145.926	±0.055 METERS
X:	1548727.312	METERS
Y:	2739781.289	METERS
Z:	-5530325.332	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.55678"            +04.20930" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
						BROOKSIDE DEG MIN SEC
SPC	OR S	107,716.405	1,264,895.312	0.99994349	- 1 57 37.5	185 28 22.8
UTM	10	4,716,477.853	470,017.411	0.99961106	- 0 14 50.6	183 45 35.9

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
NZ1208	GRANTS PASS HWY PAT MAST 1963	11.071 METERS	102 45
NZ1206	BROOKSIDE	APPROX.10.9 KM	183 30 45.3
	SEXTON RM 1	9.174 METERS	183 40
	SEXTON RM 2	9.244 METERS	258 52

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . A LIGHT STRUCTURE  
THE MARK IS STAMPED . . . SEXTON 1943

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1943	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1963		COAST AND GEODETIC SURVEY (FN)
1989	GOOD	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**SEXTON**  
PID: NZ1210

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1943 (JCS)  
STATION IS AT THE HIGHEST POINT OF SEXTON MOUNTAIN, A HIGH HILL  
E OF THE HIGHWAY AT TOP OF PASS, 14 MILES N OF GRANTS PASS ON  
U.S. HIGHWAY 99. IT IS 10 MILES N OF GRANTS PASS BY AIR LINE,  
AND 6 MILES S OF WOLF CREEK BY AIR LINE, 6 MILES NNE OF MERLIN  
BY AIR LINE, 2 MILES E OF HIGHWAY 99, AND IS ON THE SAME PEAK  
OCCUPIED BY THE SEXTON MOUNTAIN FOREST SERVICE LOOKOUT,  
AERONAUTICAL WEATHER BUREAU, AND BEACON. IT IS SET IN THE CONCRETE  
BASE OF THE REVOLVING BEACON AND IS 3.8 FEET SW OF THE NE LEG OF  
BEACON TOWER.

STATION MARK IS A BRONZE STATION DISK SET IN A DRILL HOLE,  
STAMPED SEXTON 1943.

REFERENCE MARK 1 IS S OF THE STATION AND IS IN THE SW CORNER  
OF A CONCRETE PLATFORM THAT FORMS THE S END OF A LARGE ARROW AT  
THE BASE OF THE BEACON. IT IS A BRONZE REFERENCE DISK SET IN A  
DRILL HOLE, STAMPED SEXTON NO 1 1943.

REFERENCE MARK 2 IS W OF THE STATION AND IS IN THE CONCRETE STEP  
AT THE SIDE, OR E ENTRANCE OF WEATHER BUREAU HOUSE. IT IS A BRONZE  
REFERENCE DISK SET IN A DRILL HOLE, STAMPED SEXTON NO 2 1943.

STATION BROOKSIDE WAS USED FOR AN AZIMUTH.

TO REACH FROM THE POST OFFICE AT GRANTS PASS, GO N ON U.S. HIGHWAY  
99 FOR 14.2 MILES TO A SHARP RIGHT TURN AT RED POST AND RED  
ARROW POINTING TOWARD SEXTON TRAIL. THIS TURN IS 0.4 MILE N OF THE  
CREST OF THE HILL AT THE N END OF A LARGE CUT. TURN SHARP RIGHT  
AND FOLLOW ROAD UP GRADE TO OLD PAVED HIGHWAY AND TWO GARAGES.  
THIS IS THE END OF TRUCK TRAVEL AND BEGINNING OF SEXTON LOOKOUT  
TRAIL. FROM THE END OF TRUCK TRAVEL AT THE GARAGES, FOLLOW  
TRAIL AS PER RED ARROW E UP MOUNTAIN FOR ABOUT 2 MILES TO TOP AND  
STATION.

A 4-FOOT STAND WAS USED OVER THE STATION.

HEIGHT OF LIGHT ABOVE STATION MARK 1 METER.

**STATION RECOVERY (1963)**

RECOVERED BY COAST AND GEODETIC SURVEY 1963 (FN )  
THE STATION WAS RECOVERED IN GOOD CONDITION. LANDMARKS HAVE  
CHANGED, THE ROUTE TO THE STATION HAS BEEN CHANGED. A NEW AND  
COMPLETE DESCRIPTION FOLLOWS.

THE STATION IS 10 MILES NORTH OF GRANTS PASS AND 3 MILES  
SOUTHEAST OF SUNNY VALLEY ON THE HIGHEST PART OF SEXTON MOUNTAIN  
BELOW THE REVOLVING BEACON.

(Continued on Next Page)

## SEXTON

PID: NZ1210

TO REACH THE STATION FROM THE POST OFFICE IN SUNNY VALLEY GO SOUTH ON INTERSTATE 5 FOR 2.0 MILES TO A SIDE ROAD AND SIGN ON THE LEFT, U.S. WEATHER BUREAU, OPPOSITE A HIGHWAY STOCKPILE ON THE WEST SIDE OF THE ROAD, TURN LEFT AS PER SIGN AND FOLLOW WINDING, GRADED ROAD EASTERLY UP THE MOUNTAIN FOR 3.0 MILES TO THE STATION.

THE STATION MARK, STAMPED SEXTON 1943, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN THE CONCRETE BASE OF THE REVOLVING BEACON, 33 FEET EAST OF THE EAST ENTRANCE TO THE WEATHER STATION AND 22 FEET WEST OF THE CENTER OF THE TRACK ROAD.

REFERENCE MARK NO. 1, STAMPED SEXTON NO 1 1943, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN THE CONCRETE PLATFORM THAT FORMS THE SOUTH END OF A LARGE ARROW AT THE BASE OF THE BEACON, 39 FEET SOUTHEAST OF THE EAST ENTRANCE TO THE WEATHER STATION AND 0.8 FOOT NORTHEAST OF THE SOUTHWEST CORNER OF THE PLATFORM.

REFERENCE MARK NO. 2, STAMPED SEXTON NO 2 1943, IS A STANDARD DISK CEMENTED IN A DRILL HOLE AT THE EAST ENTRANCE TO THE WEATHER STATION, 10-1/2 FEET NORTHEAST OF THE SOUTHEAST CORNER OF THE BUILDING AND 2 FEET EAST OF THE EAST ENTRANCE TO THE BUILDING.

DISTANCE BETWEEN R.M. 1 AND R.M. 2 IS 37.04 FEET.

TRIANGULATION STATION BROOKSIDE (OSHD) 1943 MAY BE USED FOR THE AZIMUTH MARK. SEE DESCRIPTION THEREOF.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION WAS RECOVERED IN GOOD CONDITION. THE REFERENCE MARKS WERE NOT SEARCHED FOR DUE TO A SNOW STORM. A NEW TO REACH DESCRIPTION FOLLOWS.

TO REACH FROM SUNNY VALLEY, GO SOUTH ON I-5 FOR 12.6 KM (7.8 MI) , TURN RIGHT AT EXIT 66 AND GO 0.2 KM (0.1 MI) TO JUMP OFF JOE ROAD. TURN LEFT AND GO 0.3 KM (0.2 MI) TO WHERE JUMP OFF JOE ROAD TURN 90 DEGREES TO THE RIGHT, TURN RIGHT AND GO 0.1 KM (0.1 MI) TO A ROAD LEFT. TURN LEFT AND GO 5.44 KM (3.38 MI) TO A ROAD LEADING TO A PRIVATE RESIDENCE ON THE RIGHT. (THIS IS THE HOME OF BILL AND SUE WHALEN. THEY HAVE A KEY THAT WILL OPEN A LOCKED GATE THAT YOU WILL INCOUNTER ABOUT A HALF MILE UP THE ROAD.) CONTINUE ON ROAD FOR 0.2 KM (0.1 MI) , TURN RIGHT AT OLD WEATHER BUREAU SIGN AND GO 0.5 KM (0.3 MI) TO A LOCKED GATE. PASS THROUGH GATE AND GO 0.64 KM (0.40 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 3.4 KM (2.1 MI) TO TOP OF HILL AND STATION.

NOTE, THE WATCHPERSON IS NOMECA HARTWELL AND HER PHONE NUMBER IS 503-474-3025. PLEASE CALL BEFORE GOING UP ESPECIALLY IF WORK IS AT NIGHT.

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991  
USGS QUAD SHEET: WORDEN

**SHORT**  
PID: NY0935

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: KLAMATH

LATITUDE:	42° 04' 48.68508" N
LONGITUDE:	121° 46' 09.78791" W

ORTHOMETRIC HEIGHT: { 1581.0 METERS  
5187. FEET

GEOID HEIGHT:	-21.451	METERS
ELLIPSOIDAL HEIGHT:	1559.236	METERS
X:	4660571.170	METERS
Y:	-2835334.226	METERS
Z:	-3296594.400	METERS

HORIZONTAL NETWORK ORDER: A  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.46892" +03.99391" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES			CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO MIDLAND DEG MIN SEC
		NORTHING METERS	EASTING METERS	POINT SCALE FACTOR		
SPC	OR S	46,733.4	1,394,958.9	1.00007333	- 0 52 6.4	315 27 23.1
SPC	CA 1	805,056.5	2,019,085.1	1.00013138	+ 0 09 2.9	314 26 13.8
UTM	10	4,659,412.4	601,789.3	0.99972749	+ 0 49 29.2	313 45 47.5

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
NY0937	SHORT RM A	25.960 METERS	111 55
	SHORT RM 3	7.154 METERS	215 21
	SHORT RM 1	5.374 METERS	225 51
	SHORT RM 2	7.208 METERS	293 59
	SHORT RM 4	8.193 METERS	312 26
NY0429	MIDLAND	APPROX. 6.7 KM	314 35 16.7

(Continued on Next Page)

**SHORT**  
PID: NY0935

STATION MARK IS A .... HORIZONTAL CONTROL DISK  
WITH SETTING ..... DRILL HOLE IN A BOULDER

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
UNKNOWN	STATION MONUMENTED	US GEOLOGICAL SURVEY
1948		US GEOLOGICAL SURVEY (WRH)
1953		COAST AND GEODETIC SURVEY (CTH)
1961		COAST AND GEODETIC SURVEY (MLO)
1971		NATIONAL GEODETIC SURVEY (WMJ)
1974		NATIONAL GEODETIC SURVEY (JDS)
1975		NATIONAL GEODETIC SURVEY (JDS)
1976		NATIONAL GEODETIC SURVEY (CLN)
1989	GOOD	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)

**STATION DESCRIPTION**

DESCRIBED BY US GEOLOGICAL SURVEY 1948 (WRH)  
THE STATION IS LOCATED ON THE HIGHEST POINT AND NEAR THE WEST END  
OF A RIDGE THAT LIES ALONG THE NORTHEAST SIDE OF LOWER KLAMATH  
LAKE. IT IS ABOUT 11 MILES AIRLINE SOUTH OF KLAMATH FALLS, ABOUT  
4 MILES AIRLINE SOUTHEAST OF MIDLAND AND ABOUT 0.75 MILE EAST OF  
THE OLD SHORE LINE ROAD.

THE STATION IS A STANDARD USGS STATION DISK THAT IS SET IN A  
DRILL HOLE IN A BOULDER THAT PROJECTS 2 INCHES ABOVE THE  
GROUND. THE DISK IS NOT STAMPED.

REFERENCE MARK NUMBER ONE IS A STANDARD REFERENCE MARK DISK THAT  
HAS BEEN MADE FROM A STANDARD AZIMUTH MARK DISK BY REMOVING THE  
WORD AZIMUTH AND STAMPING THE WORD REFERENCE IN ITS PLACE. IT  
IS SET IN A DRILL HOLE IN A BOULDER THAT PROJECTS 3 INCHES ABOVE  
THE GROUND AND IS ABOUT 2.5 FEET LOWER THAN THE STATION. THE  
DISK IS STAMPED SHORT USGS NO 1 1948.

REFERENCE MARK NUMBER TWO IS A STANDARD REFERENCE MARK DISK THAT  
IS SET IN A DRILL HOLE IN A BOULDER (NOTE 12C). IT IS ABOUT 2  
FEET LOWER THAN THE STATION AND PROJECTS 5 INCHES ABOVE THE  
GROUND. THE DISK IS STAMPED SHORT USGS NO 2 1948.

THE AZIMUTH MARK WILL BE STATION DRAKE, WHICH IS LOCATED ON THE  
OREGON-CALIFORNIA BORDER AND ON THE NORTH EDGE OF LOWER KLAMATH  
LAKE AND WILDLIFE REFUGE. FOR FURTHER INFORMATION SEE THE  
DESCRIPTION FOR STATION DRAKE.

(Continued on Next Page)



**SHORT**  
PID: NY0935

TO REACH THE STATION FROM THE U.S. POST OFFICE IN MIDLAND GO SOUTHWEST ON U.S. HIGHWAY 97 FOR 0.6 MILE TO A PAVED ROAD LEFT. TURN LEFT AS PER SIGN MALIN-MERRILL AND GO 1.5 MILES TO A GRAVELED ROAD RIGHT. TURN RIGHT AND GO 2.8 MILES TO A DIM ROAD ON THE LEFT. TURN LEFT AND FOLLOW THE DIM ROAD TOWARD THE BASE OF THE RIDGE AND THE END OF THE ROAD. FROM THIS POINT PACK UP THE STEEP SLOPE TO THE TOP OF THE RIDGE AND THE STATION ON THE HIGHEST POINT AS DESCRIBED.

STATION RECOVERY (1953)

RECOVERED BY COAST AND GEODETIC SURVEY 1953 (CTH)  
THE STATION WAS RECOVERED AS DESCRIBED AND THE STATION MARK AND REFERENCE MARK NO. 2 WAS FOUND IN GOOD CONDITION. REFERENCE MARK NO. 1 WAS FOUND LOOSE AND WAS REINFORCED, BUT APPARENTLY HAD MOVED AND THE MEASUREMENT AND THE ANGLE DOES NOT CHECK THE ORIGINAL DATA. TRIANGULATION STATION DRAKE WAS USED AS AN AZIMUTH MARK FOR THIS STATION. A NEW TO REACH IS NECESSARY DUE TO ROAD CHANGES.

TO REACH THE STATION FROM THE MIDLAND POST OFFICE, WHICH IS 8 MILES SOUTH OF KLAMATH FALLS. GO SOUTH ON U.S. HIGHWAY 97 FOR 0.55 MILE TO A PAVED ROAD LEFT. TURN LEFT AND GO EAST FOR 2.9 MILES TO A CROSS ROAD. TURN RIGHT AND GO SOUTH ON A DIRT ROAD FOR 0.55 MILE TO A POINT ABOUT 0.1 MILE BEFORE REACHING A FARM HOUSE. BEAR RIGHT ON A TRACK ROAD AND GO SOUTHERLY FOR 0.4 MILE TO THE SOUTH END OF A CULTIVATED FIELD. CONTINUE SOUTHERLY ACROSS COUNTRY FOR 0.1 MILE TO A FENCE LINE. CROSS THE FENCE LINE, WHICH CAN BE OPENED AT THIS POINT, AND GO SOUTHERLY UP A HILL, BEARING RIGHT OF AN OLD QUARRY TO A TRACK ROAD. TURN LEFT AND FOLLOW THE TRACK ROAD EASTERLY FOR 0.5 MILE TO A GATE. PASS THROUGH THE GATE AND CONTINUE EASTERLY ON THE TRACK ROAD FOR 0.45 MILE TO THE END OF THE BLADED ROAD. BEAR RIGHT AND GO WESTERLY FOR 0.4 MILE TO A SMALL SADDLE. THEN BEAR LEFT FOR 0.2 MILE TO THE HIGHEST POINT OF THE HILL AND THE STATION SITE. A 4-WHEEL DRIVE VEHICLE IS NEEDED TO MAKE THE LAST 100 YARDS.

STATION RECOVERY (1961)

RECOVERED BY COAST AND GEODETIC SURVEY 1961 (MLO)  
STATION RECOVERED IN GOOD CONDITION AS DESCRIBED.

RM NO. 1 RECOVERED IN GOOD CONDITION AS DESCRIBED.

RM NO. 2 RECOVERED IN GOOD CONDITION AS DESCRIBED.

AZIMUTH MARK (STATION DRAKE) WAS SEARCHED FOR AND NOT RECOVERED. MEASUREMENTS INDICATE THAT THE STATION WAS ABOUT 4 FEET BELOW THE LEVEL OF THE LAKE.

(Continued on Next Page)

**SHORT**  
PID: NY0935

**STATION RECOVERY (1971)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (WMJ)  
THE STATION MARK AND REFERENCE MARK 2 WERE RECOVERED AND FOUND TO BE IN GOOD CONDITION. REFERENCE MARK 1 WAS DESTROYED. A NEW REFERENCE MARK 3 WAS ESTABLISHED AT THIS TIME. THE DISTANCE TO REFERENCE MARK 2 COMPARED FAVORABLY WITH THE 1948 DATA. A COMPLETE NEW DESCRIPTION FOLLOWS--

THE STATION IS LOCATED ABOUT 11 MILES SOUTH OF KLAMATH FALLS, 4 MILES SOUTHEAST OF MIDLAND, 4 MILES EAST OF U.S. HIGHWAY 97 AND ON THE HIGHEST POINT OF A RIDGE THAT LIES ALONG THE NORTHEAST SIDE OF LOWER KLAMATH LAKE. THE PROPERTY IS OWNED BY MR. JACK OCCONOR OF KLAMATH FALLS. KEYS TO THE LOCKED GATES CAN BE OBTAINED FROM MR. L. P. GRAY OF KLAMATH FALLS, PHONE NUMBER 884-3985.

TO REACH THE STATION FROM THE POST OFFICE IN MIDLAND GO SOUTH ON U.S. HIGHWAY 97 FOR 0.6 MILE TO A SIDE ROAD LEFT AND SIGN MERRILL MALIN. TURN LEFT AND GO EASTERLY ON THE SURFACED ROAD FOR 1.7 MILES TO A SIDE ROAD RIGHT AND SIGN LOWER KLAMATH LAKE ROAD. CONTINUE EASTERLY ON THE SURFACED ROAD FOR 1.4 MILES TO A CROSSROAD. TURN RIGHT AND GO SOUTH ON THE BLADED ROAD FOR 0.5 MILE TO A SIDE ROAD RIGHT JUST BEFORE REACHING A BOARD GATE. TURN RIGHT GO WEST AND SOUTH ON THE DIRT ROAD FOR 0.4 MILE TO A LOCKED GATE AT A FENCE CORNER. PASS THROUGH THE GATE AND CONTINUE SOUTHERLY UPHILL FOR 0.3 MILE TO A GATE. PASS THROUGH THE GATE AND CONTINUE SOUTHERLY FOR 100 FEET TO A TRACK SIDE ROAD LEFT. TURN LEFT AND GO EASTERLY ON THE TRACK ROAD FOR 0.3 MILE TO A FORK. TAKE THE LEFT FORK, DOWNHILL EASTERLY FOR 0.4 MILE TO A LOCKED GATE. PASS THROUGH THE GATE AND CONTINUE EASTERLY UPHILL FOR 0.9 MILE TO THE TOP OF THE HILL AND THE STATION. A FOUR-WHEEL DRIVE IN WET WEATHER.

THE STATION MARK IS A U.S. GEOLOGICAL SURVEY BENCH MARK DISK UN-STAMPED CEMENTED IN A DRILL HOLE IN A BOULDER EXPOSED ABOUT 2 FEET SQUARE PROJECTING 2 INCHES ABOVE THE GROUND SURFACE. IT IS 15 FEET WEST-SOUTHWEST OF A METAL WITNESS POST WITH SIGN AND ON THE HIGHEST POINT OF THE RIDGE. NOTE DESC

REFERENCE MARK 2 IS A STANDARD DISK STAMPED SHORT NO 2 1948, CEMENTED IN A DRILL HOLE IN A BOULDER EXPOSED 1 FOOT LONG AND 10 INCHES WIDE PROJECTING 4 INCHES ABOVE THE GROUND SURFACE. IT IS ABOUT 1 FOOT LOWER THAN THE STATION. NOTE 12C

REFERENCE MARK 3 IS A STANDARD DISK STAMPED SHORT USGS 1948 NO 3 1971, CEMENTED IN A DRILL HOLE IN A BOULDER EXPOSED 1 FOOT LONG AND 10 INCHES WIDE PROJECTING 4 INCHES ON THE SOUTH SIDE AND FLUSH ON THE NORTH SIDE. IT IS ABOUT 2 FEET LOWER THAN THE STATION. NOTE 12C

TRIANGULATION STATION MIDLAND 1948 CAN BE USED AS AN AZIMUTH MARK FOR THIS STATION, FOR A ROUTE TO REACH SEE THE RECOVERY NOTE THEREOF.

(Continued on Next Page)

**SHORT**

PID: NY0935

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
4 MILES SOUTHEAST OF MIDLAND.

STATION RECOVERY (1974)

RECOVERED BY NATIONAL GEODETIC SURVEY 1974 (JDS)  
THE STATION MARK, REFERENCE MARK 3, AND RM A WERE RECOVERED IN  
GOOD CONDITION. REFERENCE MARK 2, SET IN A VERY SMALL BOULDER, HAD  
BEEN DISTURBED.

KEYS TO THE LOCKED GATES CAN BE OBTAINED FROM MR. L.F. GRAY WHO  
LIVES IN THE IMMEDIATE AREA OF THE LOCKED GATES.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
4 MILES SOUTHEAST OF MIDLAND.

STATION RECOVERY (1975)

RECOVERED BY NATIONAL GEODETIC SURVEY 1975 (JDS)  
THE STATION MARK, REFERENCE MARK A AND REFERENCE MARK 3 WERE FOUND  
IN GOOD CONDITION. THIS STATION WAS NOT OCCUPIED AND NO OTHER  
MARKS WERE SEARCHED FOR AT THIS TIME. AN ADDITIONAL TO REACH  
FOLLOWS.

TO REACH THE STATION FROM THE POST OFFICE IN MIDLAND, GO SOUTH ON  
U.S. HIGHWAY 97 FOR 0.55 MILE TO THE MERRILL-MALIN ROAD ON THE  
LEFT. TURN LEFT AND GO EASTERLY FOR 3.0 MILES TO THE JUNCTION WITH  
TINGLEY ROAD ON THE LEFT AND A GRAVEL LANE ON THE RIGHT. TURN  
RIGHT AND GO SOUTHERLY ON THE GRAVEL LANE FOR 0.5 MILE TO A SIDE  
ROAD RIGHT, (ABOUT 200 YARDS BEFORE THE FARMERS HOUSE), TURN  
RIGHT AND GO WESTERLY ON TRACK ROAD FOR 0.25 MILE TO A FENCE  
CORNER, TURN LEFT AND GO SOUTHERLY ALONG THE FENCE LINE FOR 0.1  
MILE TO A GATE, PASS THROUGH GATE AND CONTINUE SOUTHERLY FOR 0.05  
MILE TO A FORK, BEAR LEFT AND GO SOUTHEAST ON TRACK ROAD FOR  
0.35 MILE TO A Y, BEAR LEFT AND CONTINUE SOUTHEAST ON TRACK  
ROAD FOR 0.35 MILE TO A FENCE, PASS THROUGH FENCE AND CONTINUE  
SOUTHEAST FOR 0.1 MILE TO A FORK, BEAR RIGHT AND GO SOUTHERLY  
AND WESTERLY ON TRACK ROAD FOR 1.15 MILE TO TOP OF HILL AND  
STATION. A 4-WHEEL DRIVE VEHICLE IS RECOMMENDED.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
4.0 MILES SOUTHEAST OF MIDLAND.

STATION RECOVERY (1976)

RECOVERED BY NATIONAL GEODETIC SURVEY 1976 (CLN)  
THE STATION MARK, REFERENCE MARK NO. 3, AND SHORT (USGS) RMA WERE  
RECOVERED IN GOOD CONDITION. REFERENCE MARK NO. 2 WAS FOUND  
DESTROYED. REFERENCE MARK NO. 4 WAS ESTABLISHED. THE HORIZONTAL  
DISTANCE TO SHORT (USGS) RMA WAS NOT VERIFIED THIS DATE. THE  
DISTANCE SHOWN ABOVE WAS TAKEN FROM THE RECOVERY NOTE SUBMITTED  
BY W.M.J. DATED 1971. A NEW AND COMPLETE DESCRIPTION FOLLOWS.

(Continued on Next Page)

**SHORT**  
PID: NY0935

THE STATION IS ON RANGE LAND OWNED BY MR. JACK OCCONOR OF KLAMATH FALLS.

TO REACH THE STATION FROM THE MIDLAND POST OFFICE GO SOUTH ON U.S. HIGHWAY 97 FOR 0.6 MILE TO A SIDE ROAD LEFT, TURN LEFT, AND GO EASTERLY FOR 3.0 MILES TO MILEPOST NO. 3 AT THE JUNCTION WITH TINGLEY ROAD, TURN RIGHT, AND GO SOUTH FOR 0.5 MILE TO A TRACK ROAD RIGHT, AT THE ENTRANCE TO MR. LAWRENCE GRAYS FARMYARD. OBTAIN THE KEY TO THE LOCKED GATE FROM MR. GRAY, THEN GO WEST, AND SOUTH ON THE TRACK ROAD FOR 0.4 MILE TO THE LOCKED GATE, USING A 4-WHEEL DRIVE VEHICLE, PASS THRU THE GATE, AND GO SOUTH FOR 0.4 MILE TO A GATE, PASS THRU GATE, AND GO 100 FEET TO A FORK, TAKE THE LEFT FORK, AND GO SOUTHEAST, UP THE DRAW FOR 0.7 MILE TO A GATE, PASS THRU GATE, AND GO 0.1 MILE TO A FORK, TAKE THE RIGHT FORK, AND FOLLOW THE ROUGH, ROCKY ROAD, UPHILL FOR 1.0 MILE TO THE STATION AT THE END OF THE ROAD.

THE STATION MARK IS AN UNSTAMPED U.S. GEOLOGICAL SURVEY BENCH MARK DISK CEMENTED IN A DRILL HOLE IN A BOULDER THAT PROJECTS 3-INCHES, ON THE HIGHEST PART OF THE HILL, AND 15 FEET WEST OF A METAL WITNESS POST.

REFERENCE MARK NO. 3, STAMPED SHORT USGS 1945 NO 3 1971, IS A STANDARD DISK CEMENTED IN A DRILL HOLE IN A BOULDER, 6 FEET SOUTH OF THE CENTER OF THE TRACK ROAD, AND 2 FEET LOWER THAN THE STATION. (NOTE 12C)

REFERENCE MARK NO. 4, STAMPED SHORT USGS 1948 NO 4 1976, IS A STANDARD DISK IN A BOULDER THAT PROJECTS 2-INCHES, 20 FEET NORTH OF THE CENTER OF THE TRACK ROAD, AND 2 FEET LOWER THAN THE STATION. (NOTE 12C)

(Continued on Next Page)

**SHORT**  
PID: NY0935

STATION RECOVERY (1989)

RECOVERED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989

TEXT WAS SUPERSEDED BY LATER RECOVERY.

THE STATION IS ABOUT 19.2 KM (11.95 MI) SOUTH OF KLAMATH FALLS, 8.05 KM (5.00 MI) EAST-SOUTHEAST OF MIDLAND AND ON THE HIGHEST PART OF THE RIDGE. OWNERSHIP--CONTACT LAWRENCE GRAYS OF KLAMATH FALLS, PHONE 503-884-3985 ABOUT ENTERING PROPERTY. AFTER CONTACTING MR GRAYS, VISIT JOHN MCPHEARSON, WHO LIVES IN L.F. GRAYS OLD FARMHOUSE, ABOUT DRIVING ACROSS PROPERTY.

TO REACH FROM MIDLAND POST OFFICE GO SOUTH ON US 97 FOR 0.96 KM (0.60 MI) TO CROSSROADS. TURN LEFT, GO EAST, ON CROSSROAD FOR 4.8 KM (3.00 MI) TO MILEPOST 3.0 AND GRAVEL ROAD RIGHT. TURN RIGHT, GO SOUTH, ON GRAVEL ROAD FOR 0.8 KM (0.50 MI) TO SECOND METAL GATE ON RIGHT. (ROAD PASSES FARM HOUSE, OBTAIN PERMISSION FROM MR MCPHEARSON DRIVE ACROSS PASTURE.) DRIVE THROUGH METAL GATE INTO PASTURE AND GO WESTERLY FOR 0.08 KM (0.05 MI) TO NW CORNER OF PASTURE. TAKE SHARP LEFT AND FOLLOW FENCE SOUTH FOR 0.32 KM (0.20 MI) TO SOUTHWEST CORNER OF PASTURE AND GATE. PASS THROUGH GATE AND FOLLOW DIRT ROAD SOUTH-SOUTHWEST FOR 0.32 KM (0.20 MI) TO DIRT ROAD ON RIGHT. BEAR LEFT AND GO SOUTH FOR 0.032 KM (0.002 MI) TO DIRT ROAD ON RIGHT. CONTINUE AHEAD THROUGH FENCE LINE (NO GATE) SOUTH FOR 0.32 KM (0.20 MI) TO INTERSECTION. TAKE SHARP LEFT AND GO EAST FOR 0.16 KM (0.10 MI) TO DIRT ROAD ON LEFT GOING TO SEPTIC PONDS. CONTINUE STRAIGHT AHEAD TO VERY DIM TRACK ROAD AND SKIRT AROUND SOUTH EDGE OF SEPTIC PONDS. FOLLOW DIM TRACK ROAD SOUTHERLY FOR 0.96 KM (0.60 MI) TO WIRE GATE. PASS THROUGH GATE AND FOLLOW DIM TRACK ROAD SOUTHWESTERLY FOR 0.16 KM (0.10 MI) TO FORK. TAKE RIGHT FORK AND FOLLOW DIM TRACK ROAD (BECOMES ROCKY HERE) SOUTHERLY FOR 1.92 KM (1.20 MI) TO STATION ON HIGHEST POINT OF RIDGE. LOCATED 4.8 M (15.7 FT) WEST OF METAL WITNESS POST AND SET IN A SMALL BOULDER FLUSH WITH THE GROUND.  
NOTE - SLOW DRIVING, TOOK 45 MINUTES TO REACH THE STATION FROM THE CROSS ROAD.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: HAGER MTN

**SILVER**

PID: PB0793

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LAKE

LATITUDE:	43° 07' 29.32932" N	±0.00010 SECONDS
LONGITUDE:	121° 03' 41.33596" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	1335.0	METERS
	4380.	FEET

GEOID HEIGHT:	-19.283	METERS
ELLIPSOIDAL HEIGHT:	1315.451	±0.046 METERS
X:	6161454.887	METERS
Y:	-1160953.727	METERS
Z:	1173475.604	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.0                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	162,127.401	1,454,314.122	0.99989490	- 0 23 2.9
UTM	10	4,776,499.173	657,687.213	0.99990589	+ 1 19 31.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . SILVER 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: HAGER MTN

**SILVER**

PID: PB0793

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 0.8 KM (0.5 MI) WEST OF SILVER LAKE AND AT THE SILVER LAKE RANGER STATION OF THE USFS.

THE MARK IS LOCATED 30.78 M (100.98 FT) SOUTHEAST OF THE CENTERLINE OF CATTLE GUARD, 30.5 M (100.1 FT) NE OF THE NORTHEAST CORNER OF USFS OFFICE, 12.2 M (40.0 FT) WEST OF A FENCE, 9.8 M (32.2 FT) NORTH OF NORTHERN MOST CORNER OF FENCE AROUND WEATHER STATION, AND 1.0 METER WEST OF A WITNESS POST.

DESCRIBED BY PHIL LEWELLYN OF ORDOT.

**SISK**  
PID: RD4238

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: TILLAMOOK

LATITUDE:	45° 28' 57.29427"	N	±0.00010	SECONDS
LONGITUDE:	123° 41' 48.65981"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	38.08			METERS
	124.9			FEET

GEOID HEIGHT:	-19.604			METERS
ELLIPSOIDAL HEIGHT:	18.039	±0.054		METERS
X:	5430569.830			METERS
Y:	-2272294.725			METERS
Z:	-2446704.017			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD (Vertical Network Order Unconfirmed)  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING, BUT THE EXACT VERTICAL FIELD PROCEDURES ARE UNKNOWN. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	206,732.444	2,250,151.184	0.99990956	- 2 16 1.8
UTM	10	5,036,797.537	445,540.579	0.99963646	- 0 29 48.8

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . SISK 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)



**SISK**  
PID: RD4238

**STATION DESCRIPTION**

DESCRIBED 1989

STATION IS LOCATED ABOUT 11 KM (6.8 MI) EAST OF TILLAMOOK, ALONG STATE HIGHWAY 6, 0.25 KM (0.16 MI) WEST OF AN EASTBOUND TURNOUT, JUST EAST OF MILEPOST 8 AND A ROAD LEADING SOUTH TO A BOAT RAMP, ALONG THE EDGE OF A TREE FARM, ON ROAD RIGHT-OF-WAY, IN T 1 S, R 8 W.

OWNERSHIP--STATE DEPARTMENT OF TRANSPORTATION.

TO REACH FROM THE JUNCTION OF US HIGHWAY 101 NORTH AND STATE HIGHWAY 6 IN THE NORTH SECTION OF THE TILLMOOK BUSINESS SECTION, GO EAST ON HIGHWAY 6 (THIRD STREET) FOR 8.64 KM (5.37 MI) TO THE CENTER OF THE BRIDGE OVER THE WILSON RIVER. CONTINUE AHEAD FOR 3.60 KM (2.24 MI) TO MILEPOST AND THE ROAD RIGHT. CONTINUE AHEAD FOR 0.19 KM (0.12 MI) TO THE END OF THE STEEL GUARDRAIL ON THE RIGHT AND THE STATION ON THE LEFT.

STATION MARK IS A PRIMARY GPS DISK SET IN THE TOP OF A 30-CM ROUND CONCRETE POST FLUSH WITH THE GROUND. IT IS 11.1 M (36.4 FT) NORTHWEST OF, AND 0.5 M (1.6 FT) HIGHER THAN THE HIGHWAY CENTER, 25.1 M (82.3 FT) WEST OF UTILITY POLE 173701 225, 24.9 M (81.7 FT) NORTH OF THE END OF THE GUARDRAIL, 16.7 M (54.8 FT) NORTHEAST OF A METAL WITNESS POST AT BENCH MARK L 223, AND 0.8 M (2.6 FT) SOUTHWEST OF A FIBERGLASS WITNESS POST.

**SISTERS**  
PID: QD1879

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DESCHUTES

LATITUDE:	44° 18' 20.44212"	N	±0.00010	SECONDS
LONGITUDE:	121° 33' 21.22157"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	967.45			METERS
	3174.0			FEET
GEOID HEIGHT:	-19.877			METERS
ELLIPSOIDAL HEIGHT:	947.349		±0.034	METERS
X:	210226.958			METERS
Y:	-1140713.029			METERS
Z:	6251734.512			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.2                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE FACTOR	DEG MIN SEC
SPC	OR S	293,701.864	1,415,741.181	1.00009210	- 0 43 20.6
SPC	OR N	71,560.264	2,415,748.511	1.00000708	- 0 44 55.8
UTM	10	4,906,838.788	615,184.075	0.99976317	+ 1 00 31.7

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . SISTERS 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	DESCHUTES COUNTY OREGON

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: SISTERS

## SISTERS

PID: QD1879

### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED 1.6 KM (1.0 MI) NORTH OF SISTERS, ON USFS LAND. TO REACH THE STATION FROM THE INTERSECTION OF US HIGHWAY 20 AND PINE STREET IN SISTERS, GO NORTH ON PINE STREET 0.91 KM (0.57 MI) TO THE END OF PAVEMENT, PROCEED NORTHERLY ON GRAVEL ROAD, (USFS RD NUMBER 2058) FOR 0.53 KM (0.33 MI) TO ROAD FORK, TURN LEFT ON DIRT ROAD AND GO 0.13 KM (0.08 MI) TO THE STATION ON THE LEFT IN A LARGE CLEARING. THE STATION IS AN ORDOT PRIMARY GPS STATION DISK STAMPED---SISTERS 1989---, SET INTO THE TOP OF A 40 CM DIAMETER POST THAT IS FLUSH WITH THE GROUND. IT IS ABOUT 30 M (98.4 FT) WEST OF THE CENTERLINE OF THE DIRT ROAD, AND 1.0 M (3.3 FT) SOUTH OF A WITNESS POST. DESCRIBED BY WILLIAM KAUFFMAN, DESCHUTES COUNTY PUBLIC WORKS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MADRAS WEST

**SKY**  
PID: QD1880

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JEFFERSON

LATITUDE:	44° 38' 02.20502" N	±0.00010 SECONDS
LONGITUDE:	121° 07' 40.23611" W	±0.00010 SECONDS

ORTHOMETRIC HEIGHT: { 683.6 METERS  
2243. FEET

GEOID HEIGHT:	-19.999		METERS
ELLIPSOIDAL HEIGHT:	663.405	±0.033	METERS
X:	286013.295		METERS
Y:	-1322302.977		METERS
Z:	-6212805.624		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.2 (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR N	107,679.698	2,450,185.946	0.99993786	- 0 26 42.9
UTM	10	4,943,992.486	648,491.459	0.99987116	+ 1 18 56.1

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . SKY

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1989	STATION MONUMENTED	LOCAL SURVEYOR (INDIVIDUAL OR FIRM)

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: MADRAS WEST

**SKY**  
PID: QD1880

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN MADRAS, IN ASPHALT PARKING LOT BEHIND COUNTY COURTHOUSE, AT 657 C STREET AND IN A NO PARKING TRIANGLE.

THE STATION IS LOCATED 42.67 M (139.99 FT) SOUTH AND 7.62 M (25.00 FT) WEST OF THE SE CORNER OF THE COUNTY COURTHOUSE. IT IS ALSO 40.54 M (133.00 FT) NORTH OF THE NORTH CURB FACE OF D STREET AND 19.66 M (64.50 FT) WEST OF THE WEST CURB FACE OF 7TH STREET. ACCESS IS THROUGH A PROTECTIVE MONUMENT WELL BOX.

DESCRIBED BY GARY L. DEJARNATT, JEFFERSON COUNTY SURVEYOR.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WALTON

**SOAM**  
PID: QE2673

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LANE

LATITUDE:	44° 02' 18.51325"	N	±0.00010	SECONDS
LONGITUDE:	123° 32' 59.47848"	W	±0.00020	SECONDS

ORTHOMETRIC HEIGHT:	{	158.5	METERS
		520.	FEET

GEOID HEIGHT:	-21.312		METERS
ELLIPSOIDAL HEIGHT:	136.894	±0.053	METERS
X:	1457221.546		METERS
Y:	-2682388.742		METERS
Z:	-5581576.189		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.4                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	267,929.671	1,255,592.451	1.00001001	- 2 05 11.6
UTM	10	4,876,293.241	455,944.329	0.99962387	- 0 22 56.0

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . SOAM 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WALTON

**SOAM**  
PID: QE2673

**STATION DESCRIPTION**

DESCRIBED 1989.  
STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED SOAM 1989 SET IN A  
MASS OF CONCRETE 8 INCHES DIAMETER AT GROUND SURFACE.  
STATION IS LOCATED 16.64 M (54.59 FT) NORTH OF THE CENTERLINE OF STATE  
HIGHWAY 126 AT MILEPOST 34.4, APPROXIMATELY 2.96 KM (1.84 MI) EAST OF  
WALTON OREGON. THE STATION MARK IS APPROXIMATELY 0.91 M (2.99 FT)  
ABOVE THE SURFACE OF THE HIGHWAY. THE STATION IS 2.38 M (7.81 FT)  
SOUTH OF A WIRE FENCE, AND 0.7 M (2.3 FT) SW OF A WITNESS POST.

**SODA RM 4**  
PID: NZ1063

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: JACKSON

LATITUDE:	42° 03' 52.99590" N	±0.00020 SECONDS
LONGITUDE:	122° 28' 44.90280" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	1855.4	METERS
	6087.	FEET

GEOID HEIGHT:	-21.899	METERS
ELLIPSOIDAL HEIGHT:	1833.264	±0.052 METERS
X:	2316100.919	METERS
Y:	3073112.167	METERS
Z:	-5071750.622	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.49178"                    +04.07063" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO ASHLAND PK	
						DEG	MIN SEC
SPC	OR S	46,154.529	1,336,195.435	1.00007843	- 1 21 14.5	276	35 59.0
SPC	CA 1	803,421.382	1,960,338.385	1.00012552	- 0 18 47.9	275	32 59.0
UTM	10	4,657,093.403	543,092.737	0.99962285	+ 0 20 56.3	274	53 48.2

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
NZ1064	SODA	8.120 METERS	063 07
NZ1080	ASHLAND PK	APPROX.19.8 KM	275 14 44.5

STATION MARK IS A . . . . REFERENCE MARK DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . SODA NO 4 1904 1968

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1968	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1989	GOOD	US BUREAU OF LAND MANAGEMENT

(Continued on Next Page)



## SODA RM 4

PID: NZ1063

### STATION DESCRIPTION

DESCRIBED BY JACKSON COUNTY OREGON 1968  
THE STATION IS 15 MILES SOUTHEAST OF ASHLAND AND 5 MILES SOUTH OF STATE HIGHWAY 66 ON THE SUMMIT OF SODA MOUNTAIN, WHICH IS OWNED BY THE NATIONAL FOREST SERVICE.

TO REACH THE STATION FROM THE ASHLAND POST OFFICE GO SOUTHEAST ON SISKIYOU BLVD. FOR 1.3 MILES TO THE JUNCTION WITH STATE HIGHWAY 66, TURN LEFT AND GO SOUTHEAST AND EAST ON STATE HIGHWAY 66 FOR 16.0 MILES TO A GRAVELED ROAD RIGHT, THIS IS 0.05 MILE BEFORE REACHING THE GREEN SPRING SUMMIT, TURN RIGHT AND GO SOUTH ON THE MAIN TRAVELED ROAD FOR 4.7 MILES TO A 3-WAY FORK, WHERE MAIN ROAD CURVES EASTERLY, TAKE EXTREME RIGHT FORK AND GO SOUTHERLY ON THE DIRT ROAD FOR 0.7 MILE TO A FORK IN A SADDLE, TAKE RIGHT FORK AND GO SOUTH, UPHILL, FOR 0.25 MILE TO A FORK, TAKE LEFT FORK AND CONTINUE SOUTH FOR 0.5 MILE TO THE SUMMIT, SODA MOUNTAIN LOOKOUT TOWER AND THE STATION.

THE STATION MARK, STAMPED SODA NO 4 1904 1968, IS A STANDARD REFERENCE MARK DISK CEMENTED IN A DRILL HOLE IN OUTCROPPING BEDROCK. IT IS 37.5 FEET NORTHEAST OF THE NORTHEAST CORNER OF A METAL BUILDING, 25 FEET SOUTHWEST OF THE SOUTHWEST LEG OF THE SODA MOUNTAIN LOOKOUT TOWER AND 19 FEET WEST OF THE FIRST STEP TO THE LOOKOUT.

TRIANGULATION STATION SODA 1904 MAY BE USED FOR A REFERENCE MARK. IT IS AN OLD TYPE, UNSTAMPED, BRONZE DISK CEMENTED IN A DRILL HOLE IN OUTCROPPING BEDROCK THAT PROJECTS 6 INCHES, 8.5 FEET SOUTHWEST OF THE SOUTHEAST LEG OF THE LOOKOUT TOWER, 5 FEET SOUTHEAST OF THE SOUTHWEST LEG OF THE LOOKOUT TOWER AND 3 FEET SOUTH OF THE SOUTH SIDE OF THE LOOKOUT.

(Continued on Next Page)

**SODA RM 4**  
PID: NZ1063

**STATION RECOVERY (1989)**

RECOVERED BY US BUREAU OF LAND MANAGEMENT 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.

THE STATION IS ABOUT 64.4 KM (40.00 MI) SOUTH-SOUTHWEST OF KLAMATH FALLS, 24.1 KM (15.00 MI) SOUTHEAST OF ASHLAND, 8.05 KM (5.00 MI) SOUTH OF STATE HIGHWAY 66 ON THE SUMMIT OF SODA MOUNTAIN. OWNERSHIP--U.S. FOREST SERVICE.

TO REACH THE STATION FROM THE JUNCTION OF HYATT AND HOWARD PRARIE RESERVOIR ROAD AND STATE HIGHWAY 66. GO EAST ON HIGHWAY 66 FOR 2.9 KM (1.80 MI) TO A GRAVEL ROAD, SODA MOUNTAIN ROAD, ON RIGHT.

(THIS IS ABOUT 0.08 KM (0.05 MI) WEST OF THE GREEN SPRING SUMMIT.) TURN RIGHT ON SODA MOUNTAIN ROAD AND GO SOUTH FOR 6.76 KM (4.20 MI) TO A SIDE ROAD LEFT WITH SIGN FOR SODA MT L.O. AND PILOT ROCK JEEP RD. (NOTE 4 WHEEL DRIVE IS NEEDED FROM THIS POINT.) TURN RIGHT AND CONTINUE UPHILL FOR 0.8 KM (0.50 MI) TO SODA AZ MK WITH WITNESS POST ON THE LEFT. CONTINUE UP HILL FOR 0.3 KM (0.20 MI) TO A FORK WITH SIGN FOR SODA MT LO (RIGHT), SODA MT ROAD (LEFT) AND AGATE FLAT (LEFT). TAKE RIGHT FORK, CONTINUE UPHILL, FOR 0.4 KM (0.25 MI) TO A FORK. TAKE LEFT FORK, CONTINUE UPHILL, FOR 0.85 KM (0.55 MI) TO THE SUMMIT, SODA MOUNTAIN LOOKOUT AND STATION JUST WEST OF THE STEPS LEADING UP THE LOOKOUT TOWER.

LOCATED 11.4 M (37.4 FT) NORTHEAST FROM THE NORTHEAST CORNER OF A METAL COMMUNICATION BUILDING, 7.6 M (24.9 FT) SOUTH-SOUTHWEST FROM THE SOUTHWEST LEG OF LOOKOUT TOWER, 5.2 M (17.1 FT) WEST FROM THE 1ST WOOD STEP LEADING UP TO LOOKOUT TOWER

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DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CHILCOOT MTN

**STAB**  
PID: PC1121

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DOUGLAS

LATITUDE:	43° 22' 35.50196" N	± 0.00020 SECONDS
LONGITUDE:	122° 39' 10.94254" W	± 0.00050 SECONDS

ORTHOMETRIC HEIGHT: { 427.5 METERS  
1402. FEET

GEOID HEIGHT:	-21.425		METERS
ELLIPSOIDAL HEIGHT:	405.783	±0.125	METERS
X:	2050809.434		METERS
Y:	2984164.930		METERS
Z:	-5233587.638		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.2 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	192,178.793	1,325,551.337	0.99990118	- 1 28 22.8
UTM	10	4,802,687.454	528,106.885	0.99960972	+ 0 14 17.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . STAB 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CHILCOOT MTN

**STAB**  
PID: PC1121

**STATION DESCRIPTION**

DESCRIBED 1989

STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED STAB 1989 SET IN THE TOP OF A MASS OF CONCRET, 8 INCHES DIAMETER AT GROUND SURFACE. STATION IS LOCATED 9.01 KM (5.60 MI) NORTHEAST OF THE NORTH UMPQUA HIGHWAY (STATE HIGHWAY 138) ON THE STEAM BOAT CREEK FOREST SERVICE ROAD (WHICH BEGINS AT MILEPOST 38.95 OF THE NORTH UMPQUA HIGHWAY). THE STATION IS AT THE SOUTHWEST CORNER OF THE BRIDGE TO STEAMBOAT FALLS C.G. AND IS 12.28 M (40.29 FT) SOUTH OF THE CENTERLINE OF THE ROAD TO STEAMBOAT FALLS C.G. AND 5.61 M (18.41 FT) FROM THE SOUTHWEST CORNER OF THE BRIDGE.

**STANFIELD EAST BASE RESET**

PID: RB1421

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: UMATILLA

LATITUDE:	45° 46' 17.27262"	N	±0.00020	SECONDS
LONGITUDE:	119° 17' 51.55703"	W	±0.00030	SECONDS

ORTHOMETRIC HEIGHT: { 230.2 METERS  
755. FEET

GEOID HEIGHT:	-20.718		METERS
ELLIPSOIDAL HEIGHT:	209.600	±0.050	METERS
X:	1342821.410		METERS
Y:	-2604722.120		METERS
Z:	-5646323.426		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.52565"                    +04.06404" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO STANFIELD EAST BASE AZ MK		
				SCALE FACTOR		DEG MIN SEC		
SPC	OR N	234,589.740	2,593,512.199	0.99994993	+ 0 51 9.7	222	51	13.5
SPC	WA S	49,411.607	593,518.078	1.00001460	+ 0 52 24.2	222	50	13.5
UTM	11	5,071,223.515	321,357.459	0.99999235	- 1 38 48.7	225	21	11.9

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
RB1422	HINKLE UP RR WATER TANK	APPROX. 2.7 KM	003 25 29.6
RB1390	STANFIELD MUNICIPAL TANK	APPROX. 6.2 KM	079 59 18.2
RB1405	ECHO CATHOLIC CHURCH SPIRE	APPROX. 8.3 KM	115 03 05.4
	STANFIELD EAST BASE RM 1	11.760 METERS	120 04
	STANFIELD EAST BASE RM 2	15.401 METERS	189 40
	STANFIELD EAST BASE AZ MK		223 42 23.2

(Continued on Next Page)

## STANFIELD EAST BASE RESET

PID: RB1421

STATION MARK IS A . . . . TRIANGULATION STATION DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . STANFIELD EAST BASE USC+GS 1941 1916

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1941	STATION MONUMENTED	US ARMY CORPS OF ENGINEERS
1942		COAST AND GEODETIC SURVEY (ANS)
1961		US GEOLOGICAL SURVEY
1962		COAST AND GEODETIC SURVEY (FN)
1963		COAST AND GEODETIC SURVEY (JCC)
1971		NATIONAL GEODETIC SURVEY (LDF)
1978	GOOD	NATIONAL GEODETIC SURVEY (CLN)
1989		NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1942 (ANS).  
STATION IS LOCATED ABOUT 14.0 MILES S OF UMATILLA, 4.0 MILES  
S OF HERMISTON, 4.0 MILES W OF STANFIELD ON THE MIDDLE MOUND OF A  
LOW PROMINENT HILL KNOWN AS EMIGRANT BUTTES, ELEVATION 759 FEET.

STATION MARK, STAMPED STANFIELD EAST BASE USC AND GS 1941 1916,  
IS A STANDARD U.S.E. BRONZE DISK SET IN THE TOP OF A 1-FOOT SQUARE  
CONCRETE MONUMENT THAT PROJECTS ABOUT 4 INCHES ABOVE THE GROUND.

REFERENCE MARK NO.1, STAMPED STANFIELD EAST BASE RM 1, IS  
A STANDARD U.S.E. BRONZE DISK SET IN THE TOP OF A 10-INCH CONCRETE  
MONUMENT THAT PROJECTS ABOUT 2 INCHES ABOVE THE GROUND. IT IS  
ABOUT THE SAME ELEVATION AS THE STATION.

REFERENCE MARK NO.2, STAMPED STANFIELD EAST BASE RM 2, IS  
A STANDARD U.S.E. BRONZE DISK SET IN THE TOP OF A 10-INCH SQUARE  
CONCRETE MONUMENT THAT IS ABOUT THE SAME ELEVATION AS THE STATION.

AZIMUTH MARK, STAMPED STANFIELD EAST BASE 1941, IS A STANDARD  
U.S.C. AND G.S. BRONZE DISK SET IN THE TOP OF A 1-FOOT SQUARE  
CONCRETE MONUMENT THAT PROJECTS ABOUT 1 INCH ABOVE THE GROUND. IT  
IS 0.7 FOOT E OF FENCE, AND 25.0 FEET N OF FENCE CORNER.

STATION IS REACHED AS FOLLOWS--

FROM THE JUNCTION OF U.S. HIGHWAYS 30 AND 207 IN HERMISTON GO  
S ON U.S. HIGHWAY 207, 6.8 MILES TO SIDE ROAD ON THE LEFT (E). TURN  
LEFT (E) AND GO 01.3 MILES TO SW CORNER OF FENCE. AZIMUTH MARK  
IS 25.0 FEET N OF FENCE CORNER IN FENCE LINE. FROM HERE GO NE  
1.0 MILE TO TOP OF MIDDLE HILL AND STATION.

(Continued on Next Page)

## STANFIELD EAST BASE RESET

PID: RB1421

### STATION RECOVERY (1961)

RECOVERED BY US GEOLOGICAL SURVEY 1961  
TO REACH STATION FROM P.O. AT STANFIELD, OREGON, GO W ALONG W. COE  
TO UNION PACIFIC RAILROAD TRACKS, CROSS TRACKS AND CONTINUE ALONG  
PAVED ROAD FOR 1.6 MILES TO U.S. HWY. 30. CROSS HIGHWAY 30 AND  
CONTINUE SOUTH ALONG GRAVEL ROAD FOR 0.4 MILES TO CROSSROADS.  
TURN RIGHT AND GO ALONG GRAVEL ROAD FOR 2.6 MILES TO DIRT ROAD  
LEADING NORTH. TURN RIGHT AND FOLLOW DIRT ROAD FOR 0.5 MILES TO  
POINT OPPOSITE TOP OF HILL KNOWN AS EMIGRANT BUTTE. TURN  
LEFT AND DRIVE CROSS COUNTRY UP HILL FOR 0.3 MILES TO TOP  
OF HILL AND STATION.

### STATION RECOVERY (1962)

RECOVERED BY COAST AND GEODETIC SURVEY 1962 (FN )  
STATION WAS RECOVERED AND FOUND IN GOOD CONDITION. TO REACH FROM  
THE JUNCTION OF STATE HIGHWAY 207 AND STATE HIGHWAY 32 AT HERMISTON,  
GO SOUTH-SOUTHWEST ON STATE HIGHWAY 207 FOR 5.0 MILES TO THE  
JUNCTION WITH U.S. HIGHWAY 30, CONTINUE AHEAD SOUTH ON STATE  
HIGHWAY 207 FOR 0.5 MILE TO A T-ROAD ON THE LEFT THAT IS JUST  
SOUTH OF A FEED LOT, TURN LEFT GO EAST ON THIS OLD ROAD ABOUT  
2-MILES TO THE HIGHEST PART OF THE HILL AND THE STATION.

### STATION RECOVERY (1963)

RECOVERED BY COAST AND GEODETIC SURVEY 1963 (JCC)  
THE STATION MARK, REFERENCE MARK 1 AND 2 WERE RECOVERED AS  
PREVIOUSLY DESCRIBED. THE AZIMUTH MARK WAS NOT RECOVERED. A NEW  
ROUTING TO THE STATION IS NOTED BECAUSE OF ROAD CHANGES. FOLLOWING  
IS A COMPLETE NEW DESCRIPTION.

THE STATION IS ABOUT 4 MILES WEST OF STANFIELD, ON THE SUMMIT OF  
THE CENTER ONE OF 3 BARE KNOLLS, KNOWN AS EMIGRANT BUTTES.

TO REACH THE STATION FROM THE POST OFFICE IN STANFIELD, GO  
NORTH ON MAIN STREET FOR 1 BLOCK TO WEST COE STREET. TURN LEFT  
AND GO WEST ON WEST COE STREET FOR 0.2 MILE TO A FORK. TAKE THE  
LEFT FORK AND CONTINUE WEST FOR 0.8 MILE TO A SIDE ROAD ON THE  
LEFT. TURN LEFT AND GO SOUTH FOR 0.6 MILE TO U. S. HIGHWAY  
30. CROSS THE HIGHWAY AND CONTINUE SOUTH FOR 0.45 MILE TO A  
CROSSROADS AT A SIGN EMIGRANT BUTTES 3. TURN RIGHT AND GO WEST  
FOR 2.2 MILES TO A SIDE ROAD ON THE LEFT. CONTINUE WEST FOR  
0.25 MILE TO A BRIDGE. CROSS THE BRIDGE AND CONTINUE WEST  
FOR 0.05 MILE TO A FORK. TAKE THE RIGHT FORK AND CONTINUE  
WEST FOR 0.2 MILE TO A GATE. PASS THROUGH THE GATE, TURN  
RIGHT AND GO NORTH FOR 0.25 MILE TO A FORK. TAKE THE LEFT  
FORK AND GO WESTERLY FOR 0.5 MILE TO A GATE. PASS THROUGH THE  
GATE AND CONTINUE WEST FOR 0.15 MILE TO A DIM TRACK ROAD ON THE  
RIGHT. TURN RIGHT AND GO NORTH ON A TRACK ROAD FOR 0.15 MILE  
TO A FORK. TAKE THE LEFT FORK AND CONTINUE NORTHERLY FOR  
0.35 MILE TO THE STATION.

(Continued on Next Page)



## STANFIELD EAST BASE RESET

PID: RB1421

THE STATION MARK IS A BRONZE DISK OF THE UNITED STATES ARMY ENGINEERS, STAMPED STANFIELD EAST BASE USC AND GS 1916 1941, SET IN THE TOP OF A 10 INCH SQUARE CONCRETE POST PROJECTING 10 INCHES.

REFERENCE MARK 1 IS A BRONZE DISK OF THE UNITED STATES ARMY ENGINEERS, STAMPED STANFIELD EAST BASE R M 1 1941, SET IN THE TOP OF A 10 INCH SQUARE CONCRETE POST PROJECTING 4 INCHES. IT IS AT ABOUT THE SAME ELEVATION AS THE STATION.

REFERENCE MARK 2 IS A BRONZE DISK OF THE UNITED STATES ARMY ENGINEERS, STAMPED STANFIELD EAST BASE R M 2 1941, SET IN THE TOP OF A 10 INCH SQUARE CONCRETE POST PROJECTING 10 INCHES. IT IS AT ABOUT THE SAME ELEVATION AS THE STATION.

### STATION RECOVERY (1971)

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (LDF)  
THE STATION MARK WAS RECOVERED AND FOUND THAT THE PLUMBING POINT HAD BEEN BATTERED AND WAS OVERSIZED. THE CENTER WAS DETERMINED AND A PUNCH MARK NOW DETERMINES THE PLUMBING POINT. REFERENCE MARKS 1 AND 2 WERE RECOVERED AND FOUND TO BE IN GOOD CONDITION, HOWEVER, A DIFFERENCE WAS NOTED IN THE DISTANCE TO BOTH MARKS. A DIFFERENCE OF 0.007 AND 0.012 METERS TO REFERENCE MARKS 1 AND 2 RESPECTIVELY. EACH MEASUREMENT WAS SHORTER THAN PREVIOUSLY MEASURED. THE AZIMUTH MARK WAS RECOVERED AT THIS TIME AND FOUND TO BE IN GOOD CONDITION. DUE TO THIS, A COMPLETE NEW DESCRIPTION FOLLOWS.

THE STATION IS LOCATED ABOUT 4 MILES WEST OF STANFIELD AND 1/2 MILE SOUTH OF U.S. HIGHWAY 30 AND INTERSTATE 80 N, ON THE SUMMIT OF THE CENTER ONE OF THREE BARE KNOLLS KNOWN AS EMIGRANT BUTTES. IT IS IN THE NE 1/4 SEC 3, T 3 N, R 28 E.

TO REACH THE STATION FROM THE POST OFFICE IN STANFIELD, GO NORTH ON MAIN STREET FOR 1 BLOCK TO WEST COE STREET, TURN LEFT AND GO WEST ON WEST COE STREET FOR 0.2 MILE TO A FORK. TAKE THE LEFT FORK AND CONTINUE WEST FOR 0.8 MILE TO A SIDE ROAD LEFT. TURN LEFT AND GO SOUTH FOR 0.6 MILE TO U.S. HIGHWAY 30 AND INTERSTATE 80 N. CROSS THE HIGHWAY AND CONTINUE SOUTH FOR 0.45 MILE TO WHERE THE PAVED ROAD BEARS LEFT. CONTINUE STRAIGHT AHEAD FOR 0.05 MILE TO A CROSSROAD. TURN RIGHT AND GO WEST FOR 2.2 MILES TO A SIDE ROAD LEFT. CONTINUE FOR 0.25 MILE TO A BRIDGE, CROSS THE BRIDGE AND CONTINUE WEST FOR 0.05 MILE TO A FORK, TAKE THE RIGHT FORK AND CONTINUE FOR 0.2 MILE TO A GATE. PASS THROUGH THE GATE, TURN RIGHT AND GO NORTH FOR 0.25 MILE TO A FORK, TAKE THE LEFT FORK AND GO WESTERLY FOR 0.5 MILE TO A GATE. PASS THROUGH THE GATE, TURN RIGHT AND PICK YOUR WAY IN A NORTHERLY DIRECTION FOR 0.45 MILE TO THE CENTER ONE OF THREE BARE KNOLLS AND THE STATION. THERE IS NOTHING IN THE IMMEDIATE VICINITY TO REFERENCE THE MARKS TO.

THE STATION MARK IS A U.S. ARMY ENGINEERS CONTROL STATION DISK STAMPED STANFIELD EAST BASE USC AND GS 1916 1941 SET IN THE TOP OF A 10 BY 12 INCH CONCRETE MONUMENT WHICH PROJECTS ABOUT 10 INCHES ABOVE THE GROUND SURFACE.

(Continued on Next Page)

## STANFIELD EAST BASE RESET

PID: RB1421

REFERENCE MARK 1 IS A U.S. ARMY ENGINEERS REFERENCE MARK DISK STAMPED STANFIELD EAST BASE RM 1 1941 SET IN THE TOP OF AN 8 INCH SQUARE CONCRETE MONUMENT WHICH PROJECTS ABOUT 4 INCHES ABOVE THE GROUND SURFACE AND IS ABOUT THE SAME ELEVATION AS THE STATION.

REFERENCE MARK 2 IS A U.S. ARMY ENGINEERS REFERENCE MARK DISK STAMPED STANFIELD EAST BASE RM 2 1941 SET IN THE TOP OF AN 8 INCH SQUARE CONCRETE MONUMENT THAT PROJECTS ABOUT 8 INCHES ABOVE THE GROUND SURFACE AND IS ABOUT THE SAME ELEVATION AS THE STATION.

THE AZIMUTH MARK IS A STANDARD DISK STAMPED STANFIELD EAST BASE 1941 SET IN THE TOP OF A 12 INCH SQUARE CONCRETE MONUMENT WHICH PROJECTS ABOUT 4 INCHES ABOVE THE GROUND SURFACE. IT IS SET NEAR A FENCE CORNER ABOUT 1 MILE SOUTHWEST OF THE STATION. IT IS 25 FEET NORTH OF A FENCE CORNER AND 0.7 FEET EAST OF A FENCE.

HEIGHT OF LIGHT ABOVE STATION MARK 4 FEET.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
4 MILES WEST OF STANFIELD.

### STATION RECOVERY (1978)

RECOVERED BY NATIONAL GEODETIC SURVEY 1978 (CLN)  
THE STATION MARK, AND BOTH REFERENCE MARKS WERE RECOVERED IN GOOD CONDITION AS DESCRIBED.

ROADS HAVE CHANGED. A NEW TO REACH FOLLOWS.

TO REACH THE STATION FROM THE STANFIELD POST OFFICE, GO NORTH ON MAIN STREET FOR 0.1 MILE TO A CROSS STREET, TURN LEFT, AND GO WEST ON COE STREET FOR 0.25 MILE TO A FORK, TAKE THE LEFT FORK, CROSS THE RAILROAD TRACKS, AND GO SOUTHWEST, AND WEST FOR 0.75 MILE TO A SIDE ROAD LEFT, TURN LEFT, AND GO SOUTH FOR 0.6 MILE TO THE OVERPASS OVER THE FREEWAY, CONTINUE SOUTH FOR 0.4 MILE TO A CROSSROAD, TURN RIGHT, AND GO WEST ON THE GRAVELED ROAD FOR 2.55 MILE TO A BRIDGE OVER A CANAL, 0.05 MILE AFTER PASSING MILEPOST NO. 3. CONTINUE WEST FOR 0.1 MILE TO A FORK, TAKE THE RIGHT FORK, THRU THE GATE, AND GO NORTHWEST ON THE SAND TRACK ROAD FOR 0.25 MILE TO A FORK, TAKE THE LEFT FORK, AND GO WEST FOR 0.3 MILE TO A DIM CROSSROAD, TURN RIGHT, AND GO NORTH, PASSING TWO OLD FENCE POSTS REMAINING IN THE OLD EAST-WEST FENCE LINE, AND PASSING THRU A SLIGHT SADDLE FOR 0.4 MILE TO THE STATION AT THE END OF THE ROAD.

LOCAL OBJECTS WILL SERVE FOR AZIMUTH CONTROL.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
4 MILES WEST-SOUTHWEST OF STANFIELD.

(Continued on Next Page)

## STANFIELD EAST BASE RESET

PID: RB1421

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989

THE STATION AND BOTH REFERENCE MARKS WERE RECOVERED IN GOOD CONDITION.  
A NEW TO REACH DESCRIPTION FOLLOWS.

TO REACH FROM THE POST OFFICE IN STANFIELD, GO NORTH 0.2 KM (0.1 MI)  
TO A CROSS STREET, TURN LEFT ON COE STREET AND GO 0.40 KM (0.25 MI) TO  
A FORK, TAKE THE LEFT FORK, CROSS RAILROAD TRACKS AND GO 1.3 KM  
(0.8 MI) TO A SIDE ROAD LEFT, TURN LEFT AND GO SOUTH FOR 1.0 KM  
(0.6 MI) TO THE OVERPASS OVER THE FREEWAY, CONTINUE SOUTH FOR 0.64 KM  
(0.40 MI) TO A CROSSROAD, TURN RIGHT AND GO WEST 4.1 KM (2.5 MI) TO A  
BRIDGE OVER A CANAL, 0.08 KM (0.05 MI) , AFTER PASSING MILEPOST 3.  
CONTINUE WEST FOR 0.16 KM (0.10 MI) TO A FORK, TAKE RIGHT FORK THRU  
GATE AND GO NORTHWEST ON THE SAND ROAD FOR 0.40 KM (0.25 MI) TO A  
FORK, TAKE LEFT FORK AND GO WEST 0.48 KM (0.30 MI) TO A FENCE. TURN  
RIGHT ON EAST SIDE OF FENCE AND FOLLOW FENCE LINE 0.32 KM (0.20 MI)  
TO A FENCE CORNER. FROM THIS POINT GO NNE ACROSS COUNTRY 0.32 KM  
(0.20 MI) TO THE HIGHEST PART OF THE HILL AND STATION.

NOTE. THE GATE WAS UNLOCKED AT TIME OF RECOVERY. I DID NOT FIND OUT  
THE PROPERTY OWNERS NAME.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: STEAMBOAT

**STEAM**  
PID: PC1122

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DOUGLAS

LATITUDE:	43° 20' 36.72921" N	±0.00010 SECONDS
LONGITUDE:	122° 44' 17.74936" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	362.6	METERS
	1190.	FEET

GEOID HEIGHT:	-21.592	METERS
ELLIPSOIDAL HEIGHT:	340.713	±0.053 METERS
X:	4102177.993	METERS
Y:	3060923.731	METERS
Z:	3793567.605	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.2                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	188,696.054	1,318,549.778	0.99989926	- 1 31 52.7
UTM	10	4,798,998.281	521,214.460	0.99960554	+ 0 10 46.7

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . STEAM 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**STEAM**  
PID: PC1122

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 40 MILES EAST OF ROSEBURG, 39 MILES WEST OF DIAMOND LAKE, AND AT THE STEAMBOAT, ORDOT MAINTENANCE STATION. TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 138, AND STEAMBOAT CREEK ROAD, (ABOUT 0.5 MILE EAST OF STEAMBOAT INN) GO EAST ON HIGHWAY 138 0.32 KM (0.20 MI) , TURN RIGHT CROSSOVER BRIDGE AND GO 0.4 KM (0.2 MI) TO ORDOT MAINTENANCE YARD PARKING LOT ON LEFT AND WEATHER STATION PARKING LOT ON THE RIGHT. THE STATION IS IN THE MAINTENANCE YARD PARKING LOT.

THE STATION IS SET INTO A CONCRETE MONUMENT ABOUT 0.2 M (0.7 FT) BELOW THE SURFACE OF THE PARKING LOT, ACCESS IS THROUGH AN IRON MONUMENT COVER. THE MARK IS 19.6 M (64.3 FT) NORTH OF THE NORTHWEST CORNER OF A FUEL BUILDING, 14.1 M (46.3 FT) WEST OF A LIGHTPOLE IN A DIVIDER BETWEEN PARKING LOTS, 14.1 M (46.3 FT) SW OF THE SOUTHEAST CORNER OF A USFS TOOL CACHE BUILDING AND 14.1 M (46.3 FT) SE OF THE SW CORNER OF THE TOOL CACHE BUILDING.

PLEASE NOTE, BEFORE OCCUPATION PLEASE CALL LENORAD OR ROBERT AT 672-2126 DURING REGULAR BUSINESS HOURS 8 AM TILL 4 PM.  
DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
 NOAA - NOS - C&GS  
 NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991  
 USGS QUAD SHEET: OREGON CITY

**TERM**  
 PID: RD4217

HORIZONTAL DATUM: NAD 83 (1991)  
 VERTICAL DATUM: NGVD 29

STATE: OREGON  
 COUNTY: CLACKAMAS

LATITUDE:	45° 21' 51.50712" N
LONGITUDE:	122° 35' 46.32198" W

ORTHOMETRIC HEIGHT:	{ 11.2	METERS
	37.	FEET
GEOID HEIGHT:	-21.308	METERS
ELLIPSOIDAL HEIGHT:	-10.420	METERS
X:	6239487.978	METERS
Y:	-931705.057	METERS
Z:	-935728.874	METERS

HORIZONTAL NETWORK ORDER: A  
 ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
 NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE
				SCALE FACTOR	DEG MIN SEC
SPC	ORN	190,775.1	2,335,806.7	0.99990040	- 1 29 11.7
UTM	10	5,023,500.9	531,623.2	0.99961230	+ 0 17 14.4

STATION MARK IS A .... SURVEY DISK  
 WITH SETTING ..... TOP OF CONCRETE MONUMENT (ROUND)  
 THE MARK IS STAMPED ... TERM 1989

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: JUNE 17, 1991  
USGS QUAD SHEET: OREGON CITY

**TERM**

PID: RD4217

**STATION DESCRIPTION**

**DESCRIBED 1989**

THE STATION IS LOCATED IN OREGON CITY, AT KELLY FIELD AND AT THE WEST END OF THE OREGON TRAIL.

TO REACH FROM THE COURTHOUSE IN OREGON CITY GO 6 BLOCKS EAST AND 1 BLOCK SOUTH. THE MARK IS ABOUT 100 M (328.1 FT) EAST OF THE INTERSECTION OF ABERNETHY RD (17TH STREET) AND WASHINGTON STREET. THE MARK IS SET IN THE PARKING AREA FOR A SMALL PARK. ACCESS TO MARK IS THROUGH AND IRON MONUMENT COVER. IT IS 14.9 M (48.9 FT) SE OF THE CENTERLINE OF WASHINGTON STREET, 13.4 M (44.0 FT) NNE OF EASTERLY ONE OF FIVE FLAG POLES, AND 11.8 M (38.7 FT) EAST OF POWER POLE 2045/1171.

DESCRIBED BY L, L, RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BURNS

**TOMB**  
PID: PA0745

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: HARNEY

LATITUDE:	43° 35' 07.63836"	N ±0.00010	SECONDS
LONGITUDE:	119° 03' 59.11068"	W ±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	1273.92		METERS
	4179.5		FEET

GEOID HEIGHT:	-17.755		METERS
ELLIPSOIDAL HEIGHT:	1256.202	±0.040	METERS
X:	926030.527		METERS
Y:	2250994.851		METERS
Z:	5877043.497		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +03.8                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	214,137.215	1,615,764.772	0.99992104	+ 0 58 50.8
UTM	11	4,827,906.442	333,175.647	0.99994233	- 1 25 30.0

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . TOMB 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BURNS

**TOMB**  
PID: PA0745

#### STATION DESCRIPTION

DESCRIBED 1989

THE STATION IS LOCATED IN BURNS AT THE ENTRANCE TO THE CEMETERY. TO REACH FROM THE POST OFFICE IN BURNS GO SOUTH ON BROADWAY (HIGHWAY 20) FOR .16 KM (0.10 MI) , TURN RIGHT (STILL HIGHWAY 20) AND GO 0.64 KM (0.40 MI) TO WHERE HIGHWAY TO TURNS SOUTH, KEEP STRAIT AHEAD ON MONROE STREET AND GO 0.4 KM (0.2 MI) TO ENTRANCE TO CEMETERY ON THE LEFT, TURN LEFT INTO CEMETERY AND MARK ON THE RIGHT. THE MARK IS 18.8 M (61.7 FT) SOUTH OF THE CENTERLINE OF MONROE STREET, 3.7 M (12.1 FT) SE OF CLARA HANLEY MEMORIAL, 3.1 M (10.2 FT) WEST OF TJE ROAD INTO CEMETERY, AND 3.0 M (9.8 FT) SOUTH OF WEST GATE POLE. THE MARK IS SET FLUSH WITH THE GROUND.  
DESCRIBED BY L.L. RIGGERS.

**TROUT**  
PID: PA0685

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: HARNEY

LATITUDE:	43° 48' 38.68857" N	±0.00010 SECONDS
LONGITUDE:	118° 52' 09.12609" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 2035.4 METERS  
6678. FEET

GEOID HEIGHT:	-16.895		METERS
ELLIPSOIDAL HEIGHT:	2018.567	±0.040	METERS
X:	3604953.766		METERS
Y:	-3168303.692		METERS
Z:	-4189807.806		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 . -00.45163" +03.77761" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	
SPC	OR S	239,453.621	1,631,201.296	0.99995741	+ 1 06 56.5	358 53
UTM	11	4,852,551.239	349,661.728	0.99987800	- 1 17 39.3	001 18

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
PA0684	TROUT RM 1	22.416 METERS	156 43
	KING MOUNTAIN LOOKOUT HOUSE	28.134 METERS	156 56
	TROUT RM 3		203 16
	TROUT RM 2	19.469 METERS	310 52

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . TROUT

(Continued on Next Page)

## TROUT

PID: PA0685

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1933	STATION MONUMENTED	US GEOLOGICAL SURVEY
1935		US FOREST SERVICE
1957		COAST AND GEODETIC SURVEY (WRH)
1968		US GEOLOGICAL SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY US GEOLOGICAL SURVEY 1933 (FGJ)  
STATION IS ON THE HIGHEST PART OF KING MOUNTAIN IN SEC. 27, T 20 S,  
R 32 E.

STATION AND REFERENCE MARKS ARE STANDARD BRONZE DISKS IN  
OUTCROPPING BEDROCK AS DESCRIBED IN NOTES 2 AND 12A.

REACHED FROM JOHN DAY AS FOLLOWS. -GO S ON THE BURNS HIGHWAY 49  
MILES TO THE CROW FLAT GUARD STATION, TURN LEFT HERE AND GO 0.4  
MILE, TAKE RIGHT FORK, GO 9.3 MILES TAKE LEFT FORK, TAKE LEFT  
AGAIN AT 9.4, CONTINUE ON THIS ROAD 2.7 MILES FARTHER TO TOP OF  
HILL AND STATION. STATION IS JUST N OF THE FOREST SERVICE LOOKOUT  
HOUSE.

### STATION RECOVERY (1935)

RECOVERED BY US FOREST SERVICE 1935  
THIS RECOVERY NOTE, WHICH REFERS TO ORIGINAL STATION DESCRIPTION,  
IS SUBMITTED FOR THE PURPOSE OF CORRECTING AN ERROR IN THE  
MEASUREMENT FROM STATION TROUT TO THE CENTER OF KING MOUNTAIN  
LOOKOUT HOUSE AS MENTIONED ABOVE. THE ORIGINAL MEASUREMENT WAS  
21.765 METERS OR 71.388 FEET. CAREFUL MEASUREMENTS IN 1934 AND  
1935 INDICATE THAT THE DISTANCE TO THE CENTER OF THE LOOKOUT IS  
24.32 METERS OR 79.78 FEET. THE C. AND G.S. PARTY MEASURED TO  
THE NEAREST CORNER OF THE LOOKOUT HOUSE, IN ERROR, INSTEAD OF  
TO THE CENTER, THE TAPE BEING HELD AT THE WRONG PLACE.

### STATION RECOVERY (1957)

RECOVERED BY COAST AND GEODETIC SURVEY 1957 (WRH)  
THE STATION WAS RECOVERED AS DESCRIBED AND ALL MARKS FOUND IN  
GOOD CONDITION. THE STATION IS LOCATED ABOUT 18 MILES NORTHEAST  
OF BURNS AND ABOUT 5 MILES EAST OF U.S. HIGHWAY 395 ON THE HIGHEST  
PART OF KING MOUNTAIN, NEAR THE KING MOUNTAIN LOOKOUT HOUSE.

(Continued on Next Page)

## TROUT

PID: PA0685

TO REACH THE STATION FROM THE POST OFFICE IN BURNS, GO NORTHERLY ON U.S. HIGHWAY 395 FOR 20.0 MILES TO A ROAD RIGHT AND SIGN LEFT CROW FLAT, KING MTN. TURN RIGHT PASSING THE CROW FLAT CAMP OF THE FOREST SERVICE, AND GO 0.5 MILE TO A FORK. KEEP STRAIGHT AHEAD FOR 6.5 MILES TO A FORK AND SIGN BAKER CORRAL 6. TAKE LEFT FORK AND GO 1.9 MILE TO A CROSS ROAD AND SIGN KING MTN LO 3. KEEP LEFT FORK AND GO 2.6 MILES TO THE LOOKOUT HOUSE AND STATION JUST NORTH OF IT.

THE MARK IS A STANDARD U.S. GEOLOGICAL SURVEY BENCH MARK STAMPED TROUT, SET IN A DRILL HOLE IN BEDROCK, 28.27 METERS NORTH OF THE NEW LOOKOUT HOUSE (NOW IN THE PROCESS OF BUILDING).

REFERENCE MARK 1 IS A STANDARD BRONZE DISK STAMPED TROUT NO 1 1933, SET IN A DRILL HOLE IN BEDROCK, AND IS ABOUT THE SAME ELEVATION AS THE STATION.

REFERENCE MARK 2 IS A STANDARD BRONZE DISK STAMPED TROUT NO 2 1933, SET IN A DRILL HOLE IN BEDROCK, AND IS ABOUT 3 FEET LOWER IN ELEVATION THAN THE STATION.

THE AZIMUTH MARK IS A STANDARD BRONZE REFERENCE DISK STAMPED TROUT NO 3 1933, SET IN A DRILL HOLE IN BEDROCK ON A SPUR RIDGE ABOUT 3/8 MILE FROM STATION.

THE KING MTN LOOKOUT HOUSE WILL BE AN ALL STEEL STRUCTURE WHEN COMPLETED AND THE OLD WOODEN HOUSE WILL BE REMOVED.

### STATION RECOVERY (1968)

RECOVERED BY US GEOLOGICAL SURVEY 1968  
RECOVERED AS DESCRIBED BY USC AND GS, ALL MARKS WERE FOUND IN GOOD CONDITION.

TO REACH AND LOCATION DESCRIPTIONS ARE ADEQUATE.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION, RM 1, AND RM 2 WERE RECOVERED IN GOOD CONDITION. A NEW TO REACH DESCRIPTION FOLLOWS.  
TO TEACH FROM THE POST OFFICE IN BURNS GO NORTHERLY ON HIGHWAY 395 FOR 28.2 KM (17.5 MI) TO MILE POST 53 AND A ROAD RIGHT, TURN RIGHT ONTO USFS 2820 AND GO 1.9 KM (1.2 MI) TO A ROAD FORK, KEEP RIGHT ON USFS ROAD NUMBER 2820 AND GO 5.1 KM (3.2 MI) TO A ROAD FORK, KEEP LEFT AND GO 10.6 KM (6.6 MI) TO A T JUNCTION, TURN LEFT ONTO USFS ROAD 503 AND GO 4.2 KM (2.6 MI) TO THE LOOKOUT TOWER AND STATION.

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**TUB**  
PID: QD1787

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASCO

LATITUDE:	44° 48' 58.85847" N	±0.00020 SECONDS
LONGITUDE:	120° 41' 19.69771" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT:	{ 1198.2	METERS
	3931.	FEET

GEOID HEIGHT:	-19.289	METERS
ELLIPSOIDAL HEIGHT:	1178.782	±0.054 METERS
X:	238969.530	METERS
Y:	1213381.803	METERS
Z:	-6237336.743	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.55153"                    +04.12171" (Based on Adjusted Positions)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO
				SCALE FACTOR		TUB AZ MK DEG MIN SEC
SPC	OR N	127,771.935	2,485,067.158	0.99991339	- 0 08 2.0	089 19 06.8
UTM	10	4,965,147.993	682,738.882	1.00001065	+ 1 37 46.1	087 33 18.7

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	TUB AZ MK		089 11 04.8
QD1886	TUB RM 1	13.896 METERS	208 14
QD1887	TUB RM 2	18.812 METERS	300 39
QD1788	TUB RM A	27.647 METERS	318 55

STATION MARK IS A ..... TRIANGULATION STATION DISK  
WITH SETTING ..... TOP OF METAL PIPE IMBEDDED IN GROUND  
THE MARK IS STAMPED ... TUB 1946

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1946	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1971		NATIONAL GEODETIC SURVEY (LDF)
1989	GOOD	US BUREAU OF LAND MANAGEMENT

**TUB**  
PID: QD1787

**STATION DESCRIPTION**

DESCRIBED BY COAST AND GEODETIC SURVEY 1946 (CAG)  
THE STATION IS LOCATED ON THE HIGHEST PART (SOUTHWEST END) OF A LONG RIDGE, SPARCELY COVERED WITH SMALL JUNIPER TREES, ABOUT 18 MILES EAST OF THE DESCHUTES RIVER, 13 MILES SOUTH SOUTHEAST OF SHANIKO AND 6 MILES SOUTH OF ANTELOPE AT THE WASCO AND JEFFERSON COUNTIES LINE.

TO REACH FROM THE POSTOFFICE IN ANTELOPE. GO SOUTH AND EAST ON THE GRADED ROAD WHICH LEADS TOWARD FOSSIL FOR 4.0 MILES, TAKE THE RIGHT HAND FORK AS PER THE SIGN READING MITCLEL 53 AND CONTINUE SOUTH FOR 3.1 MILES, TAKE THE RIGHT FORK AND CONTINUE SOUTH FOR 3.15 MILES TO A SIGN READING H H MINES, CONTINUE STRAIGHT AHEAD, WEST, FOR 0.45 MILE, TURN RIGHT, NORTH, PASS THROUGH A WIRE GATE AND FOLLOW THE MAIN TRAVELED ROAD ALONG THE BASE OF THE HILL FOR 0.85 MILE, TAKE THE LEFT FORK, WEST, AND GO 0.2 MILE, CROSS OVER A SMALL STREAM AND GO 0.15 MILE, TURN LEFT, SOUTHWEST, AND FOLLOW A TRACK ROAD FOR 0.2 MILE, TURN RIGHT THROUGH TWO GATES IN THE CORNER OF A HAY FIELD AND GO WEST FOR 0.2 MILE TO A POINT JUST BEFORE REACHING THREE WATER HOLES. AT THIS POINT TURN LEFT, SOUTH, AND FOLLOW THE CREST OF THE RIDGE FOR ABOUT 1.0 MILE TO THE HIGH GROUND AND THE STATION. THE LAST MILE OF TRAVEL WAS VERY STEEP AND ROCKY AND IT WAS NECESSARY FOR THE OBSERVING PARTY TO USE A JEEP FOR TRANSPORTATION.

THE STATION IS A STANDARD DISK, STAMPED TUB 1946, BRAZED TO THE TOP OF A 3 INCH CAST IRON SOIL PIPE WHICH PROJECTS ABOUT 1 FOOT.

REFERENCE MARK NUMBER 1 IS A STANDARD DISK, STAMPED TUB NO 1 1946, BRAZED TO THE TOP OF A 3 INCH CAST IRON SOIL PIPE WHICH PROJECTS ABOUT 8 INCHES AND IS LEVEL WITH THE STATION.

REFERENCE MARK NUMBER 2 IS A STANDARD DISK, STAMPED TUB NO 2 1946, BRAZED TO THE TOP OF A 3 INCH CAST IRON SOIL PIPE WHICH PROJECTS ABOUT 8 INCHES AND IS ABOUT 2 FEET LOWER THAN THE STATION.

THE AZIMUTH MARK IS A STANDARD DISK, STAMPED TUB 1946, BRAZED TO THE TOP OF A 3 INCH CAST IRON SOIL PIPE WHICH PROJECTS ABOUT 6 INCHES. THE AZIMUTH MARK IS LOCATED ON THE CREST OF THE RIDGE ABOUT 0.4 MILE EAST SOUTHEAST OF THE STATION, 50 FEET NORTHWEST OF A ROCK OUTCROP AND 40 FEET WEST OF A BLAZED TREE.

**STATION RECOVERY (1971)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (LDF)  
STATION MARK, REFERENCE MARKS 1, 2 AND THE AZIMUTH MARK WERE RECOVERED AND FOUND IN GOOD CONDITION. DUE TO CHANGES IN THE AREA, FOLLOWING IS A NEW AND COMPLETE DESCRIPTION.

(Continued on Next Page)

**TUB**

PID: QD1787

STATION IS LOCATED ON THE SOUTHWEST END OF AND ON THE HIGHEST POINT OF A LOW RIDGE THAT IS SPARSELY COVERED WITH SMALL JUNIPER TREES. IT IS ABOUT 18 MILES EAST OF THE DESCHUTES RIVER, 13 MILES SOUTH-SOUTHEAST OF SHANIKO, AT THE WASCO-JEFFERSON COUNTY LINE, ON PROPERTY OWNED BY MR. SANDY MC KAY AND IS IN THE NORTHEAST 1/4 OF SECTION 4, T 9 S, R 17 E.

TO REACH FROM THE POST OFFICE IN THE VILLAGE OF ANTELOPE, GO SOUTHEAST ON STATE HIGHWAY 218 FOR 4.0 MILES TO A GRAVEL ROAD ON THE RIGHT AND SIGN COLD CAMP ROAD. TURN RIGHT AND GO SOUTH ON COLD CAMP ROAD FOR 2.9 MILES TO A SIDE ROAD LEFT. KEEP THE RIGHT FORK AND CONTINUE SOUTHWEST FOR 0.3 MILE TO A FORK. KEEP THE RIGHT FORK AND GO WEST, AROUND THE NORTH SIDE OF A HILL, FOR 1.6 MILES TO A RANCH HOUSE ON THE LEFT. CONTINUE WEST FOR 0.05 MILE TO A WIRE GATE. PASS THROUGH THE GATE, TURN LEFT AND GO SOUTHEAST ON A FIELD ROAD FOR 0.6 MILE TO A DITCH. (FOUR-WHEEL DRIVE REQUIRED FROM HERE.) CROSS THE DITCH AND CONTINUE SOUTH ON A DIM TRACK ROAD FOR 0.1 MILE TO AN EAST-WEST FENCE. CROSS FENCE, PICKING WAY UP STEEP RIDGE IN A SOUTHEAST DIRECTION, TO THE TOP OF THE RIDGE. FOLLOW ALONG THE EAST EDGE OF THE RIDGE TO A LOW SADDLE. FROM HERE, PICK WAY UP THE RIDGE IN A WESTERLY DIRECTION TO THE HIGHEST POINT OF THE RIDGE AND THE STATION. A DISTANCE OF ABOUT 1.2 MILES FROM WHERE YOU CROSS THE FENCE TO THE STATION.

STATION MARK IS A STANDARD DISK, STAMPED TUB 1946, BRAZED TO THE TOP OF A 3-INCH IRON PIPE WHICH PROJECTS ABOUT 6 INCHES ABOVE THE GROUND SURFACE. IT IS 5.5 FEET WEST OF A METAL WITNESS POST.

REFERENCE MARK 1 IS A STANDARD DISK, STAMPED TUB 1946 NO 1, BRAZED TO THE TOP OF A 3-INCH IRON PIPE THAT PROJECTS ABOUT 6 INCHES ABOVE THE GROUND SURFACE.

REFERENCE MARK 2 IS A STANDARD DISK, STAMPED TUB 1946 NO 2, BRAZED TO THE TOP OF A 3-INCH IRON PIPE WHICH PROJECTS ABOUT 6 INCHES ABOVE THE GROUND SURFACE.

AZIMUTH MARK IS A STANDARD DISK, STAMPED TUB 1946, BRAZED TO THE TOP OF A 3-INCH IRON PIPE WHICH PROJECTS ABOUT 6 INCHES ABOVE THE GROUND SURFACE. IT IS 2 FEET WEST OF A METAL WITNESS POST AND ABOUT 200 FEET LOWER IN ELEVATION THAN THE STATION.

HEIGHT OF LIGHT ABOVE STATION MARK 34 FEET.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
13 MILES SOUTH-SOUTHEAST OF SHANIKO.

(Continued on Next Page)



**TUB**  
PID: QD1787

STATION RECOVERY (1989)

RECOVERED BY US BUREAU OF LAND MANAGEMENT 1989  
THE STATION MARK AND REFERENCE MARKS 2 AND A WERE RECOVERED AND FOUND IN GOOD CONDITION. THE DISTANCES TO REFERENCE MARKS 2 AND A CHECKED WITH THE 1971 DESCRIPTION. REFERENCE MARK 1 WAS DESTROYED, THE DISK FOUND ON A NEARBY STUMP. NO ATTEMPT WAS MADE TO RECOVER THE AZIMUTH MARK.

THERE IS NOW A NEW TRACK ROAD TO THE STATION AND THE FOLLOWING ARE REVISED HOW-TO-REACH DIRECTIONS. FROM THE POST OFFICE IN ANTELOPE, OREGON, PROCEED EASTERLY ON STATE HIGHWAY 218 FOR 6.28 KM (3.90 MI) TO THE INTERSECTION WITH COLD CAMP ROAD. TURN RIGHT AND PROCEED SOUTHERLY ON COLD CAMP ROAD FOR 4.67 KM (2.90 MI) TO A FORK. TAKE RIGHT FORK AND PROCEED SOUTHERLY FOR 4.83 KM (3.00 MI) TO A FORK. TAKE THE RIGHT FORK, FOLLOWING SIGN TO MCKAY RANCH, AND PROCEED SOUTHWESTERLY FOR 0.32 KM (0.20 MI) TO A CATTLE GUARD. CONTINUE AN ADDITIONAL 1.13 KM (0.70 MI) TO A TRACK ROAD LEFT. TURN LEFT AND PROCEED 0.08 KM (0.05 MI) TO A WIRE GATE. PROCEED THROUGH THE GATE AND CONTINUE FOR 0.08 KM (0.05 MI) TO A FORK. TAKE THE RIGHT (LOWER) FORK AND PROCEED 1.45 KM (0.90 MI) ON THE TRACK ROAD TO THE TOP OF A RIDGE. PROCEED NORTHWESTERLY ALONG THE RIDGE ON THE TRACK ROAD FOR 0.48 KM (0.30 MI) TO THE STATION WHICH IS APPROXIMATELY 40 FT (12.2 M) SOUTH OF THE TRACK ROAD.

VISIT THE MCKAY RANCH HOUSE OR CALL SANDY MCKAY AT 489-3253 TO OBTAIN PERMISSION TO DRIVE TO THE STATION.

GPS VISIBILITY HORIZON AROUND THE STATION IS ADEQUATE AT THE STATION MARK. ALTHOUGH SURROUNDED BY JUNIPER TREES, THERE IS UNOBSTRUCTED VISIBILITY TO 10 DEGREES VERTICAL ANGLE IN ALL DIRECTIONS EXCEPT SOUTHWEST, WHERE THE HORIZON IS 18 DEGREES. SOME JUNIPER TREES WOULD HAVE TO BE CUT TO UTILIZE REFERENCE MARK A FOR GPS OBSERVATIONS. PROPERTY OWNER SANDY MCKAY WOULD HAVE TO BE CONTACTED FOR PERMISSION TO CUT ANY TREES. (SEE ATTACHED GPS VISIBILITY DIAGRAMS.)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: JOHNNY CREEK SPRING

**TURN**  
PID: NX0301

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	42° 55' 22.00720" N	±0.00010 SECONDS
LONGITUDE:	118° 00' 26.14939" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1355.7 METERS  
4448. FEET

GEOID HEIGHT:	-17.116		METERS
ELLIPSOIDAL HEIGHT:	1338.701	±0.036	METERS
X:	6371692.804		METERS
Y:	223306.086		METERS
Z:	221947.688		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.6                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	142,560.211	1,703,464.850	0.99990376	+ 1 42 19.4
UTM	11	4,752,731.786	417,796.542	0.99968313	- 0 41 9.6

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . ROCK OUTCROP  
THE MARK IS STAMPED . . . . . TURN 1989

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: JOHNNY CREEK SPRING

**TURN**  
PID: NX0301

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 13 MILES NORTHWEST OF BURNS JUNCTION AT THE END OF A 13 MILE LONG TANGENT OF HIGHWAY 78.

TO REACH FROM THE JUNCTION OF HIGHWAY 78 AND US HIGHWAY 95 IN BURNS JUNCTION GO NW ON HIGHWAY 78 21.1 KM (13.1 MI) TO WHERE HIGHWAY 78 MAKES A TURN TO THE WEST AND THE MARK ON THE RIGHT.

THE STATION IS 47.8 M (156.8 FT) NE OF A TELEPHONE POLE WITH A GUY WIRE, 29.6 M (97.1 FT) NE OF THE CENTERLINE OF THE ROAD AND 1.0 M (3.3 FT) WEST OF A WITNESS POST.

DESCRIBED BY L.L. RIGGERS.

**TYGH RIDGE NE**

PID: RC2196

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASCO

LATITUDE:	45° 17' 56.77821" N	±0.00010 SECONDS
LONGITUDE:	121° 05' 17.19721" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1019.3 METERS  
3344. FEET

GEOID HEIGHT:	-19.972		METERS
ELLIPSOIDAL HEIGHT:	999.164	±0.048	METERS
X:	3392761.344		METERS
Y:	-3188443.957		METERS
Z:	-4346187.608		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.57879" +04.23821" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES				CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO TYGH RIDGE NE AZ MK DEG MIN SEC
		NORTHING METERS	EASTING METERS	POINT SCALE FACTOR			
SPC	OR N	181,566.985	2,453,876.406	0.99989716	- 0 25 1.5	358 38 38.7	
UTM	10	5,017,956.057	649,899.842	0.99987628	+ 1 21 33.1	356 52 04.1	

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETIC AZIMUTH
	TYGH RIDGE NE RM 1	32.403 METERS	024 50
	TYGH RIDGE NE RM 2	21.468 METERS	257 09
	TYGH RIDGE NE AZ MK		358 13 37.2

STATION MARK IS A . . . . BENCH MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . 3365

(Continued on Next Page)

## TYGH RIDGE NE

PID: RC2196

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1946	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1947		COAST AND GEODETIC SURVEY (WRH)
1959		BONNEVILLE POWER ADMINISTRATION
1965		COAST AND GEODETIC SURVEY (PAS)
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1946 (CAG)  
THE STATION IS LOCATED ON THE HIGHEST PART OF TYGH RIDGE, ABOUT  
6 MILES NORTHEAST OF THE VILLAGE OF TYGH VALLEY, 4 MILES SOUTHEAST  
OF STATE HIGHWAY NUMBER 23 AND ABOUT 125 YARDS EAST OF A WIRE  
FENCE.

TO REACH FROM TYGH VALLEY. GO NORTH ON STATE HIGHWAY NUMBER 23  
FOR 10.8 MILES, TURN RIGHT, AS PER THE SIGN READING TYGH RIDGE ROAD  
AND FOLLOW THE MAIN TRAVELED ROAD EASTERLY FOR 5.0 MILES, TAKE  
THE LEFT FORK AND CONTINUE EAST ON THE ROAD LEADING TOWARD TYGH  
RIDGE FOR 1.2 MILES TO A SCHOOLHOUSE. CONTINUE EAST FOR  
0.3 MILE, TURN RIGHT AND PASS THROUGH A WIRE GATE WHICH IS  
LOCATED JUST WEST OF AN OLD HOUSE AND GO SOUTH, ACROSS COUNTRY,  
TOWARD THE HIGHEST POINT OF THE RIDGE FOR 1.1 MILE TO AN  
EASTWEST WIRE FENCE AND THE END OF TRUCK TRAVEL. FROM THIS  
POINT, PASS OVER THE FENCE AND PACK SOUTH FOR ABOUT 0.2 MILE  
TO THE HIGHEST GROUND AND THE STATION.

THE STATION IS A STANDARD U.S.C. AND G.S. BENCH MARK,  
STAMPED 3365, SET IN THE TOP OF A CIRCULAR CONCRETE POST HAVING  
A DIAMETER OF ABOUT 6 INCHES AND PROJECTS 4 INCHES.

REFERENCE MARK NUMBER 1 IS A STANDARD DISK, STAMPED TYGH RIDGE  
N E NO 1 1946, BRAZED TO THE TOP OF A 3 INCH CAST IRON SOIL PIPE  
WHICH PROJECTS ABOUT 1 FOOT AND IS 8.4 FEET LOWER THAN THE STATION.

REFERENCE MARK NUMBER 2 IS A STANDARD DISK, STAMPED TYGH RIDGE  
N E NO 2 1946, BRAZED TO THE TOP OF A 3 INCH CAST IRON SOIL PIPE  
WHICH PROJECTS ABOUT 1 FOOT AND IS LOCATED ABOUT 2 FEET LOWER THAN  
THE STATION.

THE AZIMUTH MARK IS A STANDARD DISK, STAMPED TYGH RIDGE N E 1946,  
SET IN THE TOP OF A SQUARE CONCRETE POST WHICH PROJECTS ABOUT  
4 INCHES. THE DISK IS LOCATED ABOUT 1.1 MILE NORTH OF THE  
STATION, 29 FEET SOUTH OF THE CENTER OF A GRADED ROAD AND  
20.5 FEET WEST OF THE NORTHWEST CORNER OF THE OLD HOUSE  
MENTIONED IN THE ABOVE DESCRIPTION.

(Continued on Next Page)

## TYGH RIDGE NE

PID: RC2196

### STATION RECOVERY (1947)

RECOVERED BY COAST AND GEODETIC SURVEY 1947 (WRH)  
THE STATION WAS RECOVERED AS DESCRIBED. ALL MARKS WERE IN GOOD  
CONDITION. A COMPLETE DESCRIPTION FOLLOWS.

THE STATION IS LOCATED ON THE HIGHEST POINT OF TYGH RIDGE, ABOUT  
6 MILES AIRLINE NORTH EAST OF THE VILLAGE OF TYGH VALLEY, ABOUT  
9 MILES AIRLINE NORTH OF MAUPIN, ABOUT 6 MILES AIRLINE  
EAST OF POSTAGE STAMP LOOKOUT, ABOUT 125 YARDS EAST OF A WIRE  
FENCE.

THE STATION IS A STANDARD USC AND GS BENCH MARK, STAMPED 3365,  
SET IN THE TOP OF A ROUND CONCRETE POST HAVING A DIAMETER OF ABOUT  
6 INCHES AT ITS TOP, PROJECTS 8 INCHES ABOVE THE GROUND.

REFERENCE MARK NO.1 IS A STANDARD DISK, STAMPED TYGH RIDGE NE 1946  
NO 1. IT IS WELDED ONTO THE TOP OF A 3 INCH CAST IRON PIPE, ABOUT  
4 FEET LOWER THAN THE STATION, PROJECTS 1 FOOT ABOVE THE GROUND.

REFERENCE MARK NO.2 IS A STANDARD DISK, STAMPED TYGH RIDGE NE 1946  
NO 2. IT IS WELDED ONTO THE TOP OF A 3 INCH CAST IRON PIPE, ABOUT  
1 FOOT LOWER THAN THE STATION, PROJECTS 15 INCHES ABOVE THE GROUND.

AZIMUTH MARK IS A STANDARD DISK, STAMPED TYGH RIDGE NE 1946,  
SET IN THE TOP OF A SQUARE CONCRETE MONUMENT, 20.5 FEET WEST OF  
THE NORTHWEST CORNER OF AN OLD ABANDONED FARM HOUSE, 29 FEET  
SOUTH OF THE CENTERLINE OF A GRADED ROAD, PROJECTS 4 INCHES  
ABOVE THE GROUND.

TO REACH THE STATION FROM THE NORTH EDGE OF TYGH VALLEY GO  
NORTH ON STATE ROUTE 23 FOR 10.8 MILES TO SIGN TYGH RIDGE  
ROAD. TURN RIGHT AS PER SIGN AND FOLLOW A GRADED ROAD FOR 5.0  
MILES TO A FORK. TAKE THE LEFT FORK AND GO 1.2 MILES TO AN OLD  
SCHOOL HOUSE ON THE LEFT. CONTINUE EAST ON THE ROAD FOR 0.3  
MILE TO A GATE IN THE FENCE ON THE RIGHT, AZIMUTH MARK IS  
LOCATED IN THE FENCELINE AS DESCRIBED. TURN RIGHT THROUGH  
THE GATE AND GO SOUTH CROSS COUNTRY FOR 1.1 MILES TO AN EAST  
WEST FENCELINE AND THE END OF TRUCK TRAVEL. FROM THIS POINT  
PACK SOUTH UP THE RIDGE FOR ABOUT 0.2 MILE TO THE TOP AND  
THE STATION AS DESCRIBED.

DISTANCE TO R.M. 1 DID NOT CHECK, WAS NOTED IN THE FIELD AND  
CHECKED.

(Continued on Next Page)

## TYGH RIDGE NE.

PID: RC2196

### STATION RECOVERY (1959)

RECOVERED BY BONNEVILLE POWER ADMINISTRATION 1959  
TO REACH FROM TYGH VALLEY GO NORTH ON U.S. HIGHWAY 197 FOR 10.8  
MILES. TURN RIGHT ON TYGH RIDGE ROAD AND GO 6.3 MILES TO A  
SIDE ROAD RIGHT. (OLD COUNTY ROAD). TURN SHARP RIGHT AND GO  
0.1 MILE TO OLD HOUSE AND AZIMUTH MARK. PASS THROUGH GATE  
AND GO SOUTH ACROSS COUNTRY, TOWARD THE HIGHEST POINT OF THE  
RIDGE FOR 1.1 MILE TO AN EAST WEST FENCE. PACK SOUTH 0.2 MILE  
TO TOP OF RIDGE AND STATION.

### STATION RECOVERY (1965)

RECOVERED BY COAST AND GEODETIC SURVEY 1965 (PAS)  
THE STATION MARK, REFERENCE MARK NO. 1 AND REFERENCE MARK NO. 2  
WERE RECOVERED AS DESCRIBED. LANDMARKS HAVE CHANGED. A NEW TO  
REACH AND NEW REFERENCE MEASUREMENTS FOR THE AZIMUTH MARK FOLLOWS.

TO REACH THE STATION FROM THE TYGH VALLEY POST OFFICE GO  
NORTHWEST ON THE MACADAM ROAD FOR 0.4 MILE TO U.S. HIGHWAY 197,  
TURN LEFT AND CONTINUE NORTHWEST ON U.S. HIGHWAY 197 FOR 9.8 MILES  
TO A SIDE ROAD RIGHT AND SIGN, TYGH RIDGE ROAD, TURN RIGHT AND GO  
EAST ON WINDING GRAVELED ROAD FOR 4.7 MILES TO A SIDE ROAD  
RIGHT, CONTINUE EAST FOR 1.2 MILES TO DIM TRACK ROAD RIGHT, JUST  
AFTER CROSSING A FILL, TURN SHARP RIGHT AND GO SOUTHWEST ON THE  
TRACK ROAD FOR ABOUT 400 FEET TO A GATE, THE AZIMUTH MARK AND  
THE END OF TRUCK TRAVEL FOR THIS PARTY AT THE OLD HOUSE AT  
THE AZIMUTH MARK. DURING DRY WEATHER WITH A 4-WHEEL DRIVE  
VEHICLE IT COULD BE POSSIBLE TO PASS THRU THE GATE AND PICK YOUR  
WAY SOUTH ACROSS COUNTRY FOR 1 MILE TO A FENCE CORNER THEN  
CONTINUE SOUTH ON THE WEST SIDE OF THE FENCE FOR ABOUT  
1/4 MILE TO THE CREST OF THE RIDGE WHERE THE FENCE IS DOWN  
THEN DRIVE EAST ALONG THE CREST OF THE RIDGE FOR ABOUT  
300 FEET TO THE STATION.

THE AZIMUTH MARK IS 350 FEET SOUTH OF THE CENTER OF THE ROAD,  
WHERE FILL CROSSES A DRAW, 320 FEET SOUTH OF THE SOUTH END OF A  
3-FOOT CONCRETE CULVERT UNDER THE ROAD, 20 FEET WEST OF THE  
NORTHWEST CORNER OF THE OLD HOUSE, 6 FEET EAST OF THE WEST END OF  
THE GATE AND 2 FEET SOUTHEAST OF A METAL WITNESS POST.

(Continued on Next Page)

**TYGH RIDGE NE**

PID: RC2196

**STATION RECOVERY (1989)**

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE STATION AND REFERENCE MARKS 1 AND 2 WERE RECOVERED IN GOOD  
CONDITION. A NEW TO REACH FOLLOWS.  
TO REACH FROM MILE POST 21 ON HIGHWAY 197 (THIS IS ABOUT 21 MILES  
SOUTH OF THE DALLES) GO 0.32 KM (0.20 MI) TO TYGH RIDGE RD, TURN LEFT  
AND GO 4.48 KM (2.78 MI) TO A DRIVEWAY TO HULSE RESIDENCE ON THE  
RIGHT. (THESE ARE THE PROPERTY OWNERS.) CONTINUE EAST ON TYGH RIDGE  
ROAD 2.24 KM (1.39 MI) TO A GATE ON THE RIGHT, PASS THROUGH GATE AND  
GO SOUTH 1.8 KM (1.1 MI) TO A FENCE CORNER. THE STATION IS ABOUT 0.3  
KM (0.2 MI) SW OF THIS POINT ON HIGHEST PART OF HILL. NOTE, AT THE  
GATE ON TYGH RIDGE ROAD LOOK SOUTH ALONG FENCE LINE TO A CARIN AND  
FENCE CORNER. AT THIS CORNER A FENCE HAD BEEN TAKEN DOWN AND TRACKS  
LED TO THE TOP OF THE HILL AND STATION. WITH PROPERTY OWNERS  
PERMISSION AND A FOUR WHEEL DRIVE VEHICLE I BELIEVE IT POSSIBLE TO  
DRIVE TO THE TOP.  
THE PROPERTY OWNER IS MIKE HULSE. HIS PHONE NUMBER IS 503-467-2513.



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**UNITY DAM**  
PID: QC1053

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BAKER

LATITUDE:	44° 29' 50.58301" N	±0.00020 SECONDS
LONGITUDE:	118° 11' 10.78856" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	1180.5	METERS
	3873.	FEET

GEOID HEIGHT:	-16.442	METERS
ELLIPSOIDAL HEIGHT:	1164.233	±0.064 METERS
X:	4844282.272	METERS
Y:	-2731505.658	METERS
Z:	3114823.029	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.8                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	94,946.305	2,683,981.367	0.99996273	+ 1 38 27.0
SPC	OR S	317,017.861	1,684,020.257	1.00016461	+ 1 34 58.4
UTM	11	4,927,803.014	405,685.076	0.99970939	- 0 49 53.5

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . UNITY DAM 1990

STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**UNITY DAM**

PID: QC1053

**STATION DESCRIPTION**

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 4 MILES NNE OF UNITY ON UNITY LAKE STATE PARK.

TO REACH FROM THE TOWN OF UNITY GO NORTHERLY ON HIGHWAY 26 FOR 3.2 KM (2.0 MI) , TURN RIGHT ONTO HIGHWAY 245 (DOOLY MTN ROAD) AND GO 4.0 KM (2.5 MI) , TURN LEFT INTO UNITY LAKE STATE PARK AND GO 0.32 KM (0.20 MI) TO THE NORTHWEST CORNER OF A FENCE AROUND A MAINTENANCE YARD, TURN RIGHT AND FOLLOW OUTSIDE OF FENCE 0.05 KM (0.03 MI) TO THE MARK.

THE STATION IS 61.4 M (201.4 FT) EAST OF THE CENTERLINE OF THE PARK ROAD, 6.3 M (20.7 FT) WEST OF THE NORTHEAST CORNER OF THE FENCE, 5.6 M (18.4 FT) WSW FROM THE EAST ONE OF 2 VALVE COVERS FOR A WATER LINE, 0.9 M (3.0 FT) NORTH OF A FENCE AND 0.9 M (3.0 FT) NORTH OF A WITNESS POST.

DESCRIBED BY L.L. RIGGERS.

**UNITY DAM AZ MK**

PID: QC1054

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: BAKER

LATITUDE:	44° 30' 18.4751" N	±0.00030 SECONDS
LONGITUDE:	118° 10' 51.0940" W	±0.00050 SECONDS

ORTHOMETRIC HEIGHT: { 1168.8 METERS  
3835. FEET

GEOID HEIGHT:	-16.427		METERS
ELLIPSOIDAL HEIGHT:	1152.555	±0.092	METERS
X:	3914941.433		METERS
Y:	3111311.453		METERS
Z:	-3947595.670		METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.8                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	95,819.34	2,684,391.57	0.99996116	+ 1 38 40.9
SPC	OR S	317,890.66	1,684,431.42	1.00016778	+ 1 35 11.9
UTM	11	4,928,657.33	406,132.44	0.99970836	- 0 49 40.1

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## UNITY DAM AZ MK

PID: QC1054

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 6 MILES NNE OF UNITY ON UNITY DAM. TO REACH FROM THE TOWN OF UNITY GO NORTHERLY ON HIGHWAY 26 FOR 3.2 KM (2.0 MI) , TURN RIGHT ONTO HIGHWAY 245 (DOOLY MTN ROAD) AND GO 4.0 KM (2.5 MI) TO ROAD LEADIN INTO UNITY LAKE STATE PARK, CONTINUE ON FOR 1.2 KM (0.7 MI) TO THE SOUTH END OF THE DAM, CONTINUE ON MAIN ROAD FOR 0.4 KM (0.2 MI) TO THE EAST END OF A SMALL BRIDGE, TURN LEFT AND TAKE THE UPHILL TRACK ROAD AND GO 0.05 KM (0.03 MI) TO A LOCKED GATE, PASS THRU GATE AND GO .32 KM (0.20 MI) TO THE NORTH END OF THE DAM AND THE STATION.

THE STATION IS A THEODLITE PIER PROJECTING ABOUT 1.5 M (4.9 FT) . IT IS ENCASED IN A METAL PIPE ABOUT 30 CM IN DIAMETER. IT IS LOCKED. BOTH KEYS, (TO THE LOCKED GATE AND THE THEODLITE PIER) CAN BE OBTAINED FROM THE DAMTENDER WHOSE RESIDENCE IS THE FIRST RESIDENCE BELOW THE DAM. HIS NAME IS FRANK HOWE AND HIS PHONE NUMBER IS 503-446-3313. THE MARK IS 11.6 M (38.1 FT) EAST OF THE NORTH END OF A ROCK WALL.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: KEYES MTN

**V 719**  
PID: QD1520

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WHEELER

LATITUDE:	44° 32' 56.58040"	N	±0.00010	SECONDS
LONGITUDE:	120° 02' 19.34460"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	1319.71			METERS
	4329.7			FEET

GEOID HEIGHT:	-18.049			METERS
ELLIPSOIDAL HEIGHT:	1301.747	±0.036		METERS
X:	84056.578			METERS
Y:	-728662.855			METERS
Z:	6315905.773			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.0                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE FACTOR	DEG MIN SEC
SPC	OR N	98,157.363	2,536,653.738	0.99995266	+ 0 19 37.7
UTM	10	4,937,123.756	735,220.473	1.00028046	+ 2 04 42.1
UTM	11	4,937,349.832	258,630.335	1.00031651	- 2 07 57.9

STATION MARK IS A . . . . BENCH MARK DISK  
WITH SETTING . . . . . STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)  
THE MARK IS STAMPED . . . V 719 1987

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1987	STATION MONUMENTED	NATIONAL GEODETIC SURVEY
1989	STATION MONUMENTED	

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: KEYES MTN

V 719  
PID: QD1520

#### STATION DESCRIPTION

DESCRIBED 1989

12.4 KM (7.70 MI) EASTERLY ALONG U.S. HIGHWAY 26 FROM THE JUNCTION OF STATE HIGHWAY 207 IN MITCHELL, 0.5 KM (0.30 MI) SOUTHEAST OF THE KEYES PASS SUMMIT, 13.6 M (44.6 FT) NORTHEAST OF THE CENTERLINE OF THE HIGHWAY, 0.7 M (2.3 FT) SOUTH OF A FENCE, 0.4 M (1.3 FT) WEST OF A WITNESS POST, AND LEVEL WITH THE HIGHWAY. NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH LOGO CAP.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: VIDA

**VIDA**  
PID: QE2666

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LANE

LATITUDE:	44° 08' 44.29477" N	±0.00010	SECONDS
LONGITUDE:	122° 34' 13.99983" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	242.72		METERS
	796.3		FEET

GEOID HEIGHT:	-21.281		METERS
ELLIPSOIDAL HEIGHT:	221.237	±0.043	METERS
X:	5301680.309		METERS
Y:	2393217.871		METERS
Z:	-2608175.183		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.5                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	277,434.211	1,334,345.597	1.00004028	- 1 24 59.6
SPC	OR N	55,348.833	2,334,344.827	1.00005253	- 1 28 6.3
UTM	10	4,888,138.326	534,346.008	0.99961451	+ 0 17 56.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF IRREGULAR CONCRETE MASS  
THE MARK IS STAMPED . . . VIDA 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: VIDA

**VIDA**  
PID: QE2666

#### STATION DESCRIPTION

DESCRIBED 1989

STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED VIDA 1989 SET IN THE TOP OF A MASS OF CONCRETE, 8 INCHES DIAMETER AT GROUND SURFACE. STATION IS LOCATED APPROXIMATELY 0.322 KM (0.200 MI) EAST OF VIDA, OREGON ALONG STATE HIGHWAY 126. THE STATION MARK IS 15.484 M (50.800 FT) SOUTH OF THE CENTERLINE OF THE HIGHWAY AND 0.762 M (2.500 FT) NORTH OF A WIRE FENCE. THE DISK IS APPROXIMATELY 0.610 M (2.001 FT) ABOVE THE SURFACE OF THE HIGHWAY.

**W 67 RM 1**  
PID: NY0975

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LAKE

LATITUDE:	42° 11' 20.78025" N	±0.00010	SECONDS
LONGITUDE:	120° 21' 22.55921" W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	1445.49		METERS
	4742.4		FEET

GEOID HEIGHT:	-19.423		METERS
ELLIPSOIDAL HEIGHT:	1425.729	±0.036	METERS
X:	223913.798		METERS
Y:	-1175999.442		METERS
Z:	-6245250.905		METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.9                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	58,046.015	1,511,873.573	1.00003943	+ 0 05 54.0
SPC	CA 1	818,404.859	2,135,796.387	1.00017478	+ 1 04 29.3
UTM	10	4,674,156.447	718,305.994	1.00018643	+ 1 46 34.2

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE IMBEDDED IN MASS OF CONCRETE  
THE MARK IS STAMPED . . . W 67 1931 RM 1 USFS 1988

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	US FOREST SERVICE

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: LAKEVIEW

**W 67 RM 1**  
PID: NY0975

**STATION DESCRIPTION**

DESCRIBED BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1989  
THE STATION IS LOCATED IN LAKEVIEW, ON LAKE COUNTY PROPERTY NEAR THE RAILROAD STATION.  
TO REACH GO TO THE WEST END OF CENTER STREET, TURN LEFT ON N STREET AND GO 1/2 BLOCK, TURN RIGHT AND GO WEST 42.67 METERS TO A GRAVEL ROAD ON THE WEST SIDE OF THE TRACKS, TURN RIGHT ON GRAVEL ROAD (M STREET) AND GO 27.4 METERS TO THE MARK ON THE LEFT.  
THE STATION IS SET INTO A PIPE THAT IS IMBEDDED IN CONCRETE. IT IS SOUTH 38 DEGREES WEST FROM BM W 67. IT IS ABOUT MIDWAY BETWEEN THE FENCELINE AND THE GRAVEL ROAD. TWO USFS WITNESS POSTS WERE SET 0.5 M (1.6 FT) NE AND SW.  
DESCRIBED BY CARL SUNDET, LAKE COUNTY SURVEYOR.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: EGLI RIM

**W 72**  
PID: PB0599

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: LAKE

LATITUDE:	43° 00' 39.37170" N	±0.00010 SECONDS
LONGITUDE:	120° 46' 24.73716" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	1347.87	METERS
	4422.1	FEET

GEOID HEIGHT:	-19.043	METERS
ELLIPSOIDAL HEIGHT:	1328.600	±0.043 METERS
X:	5679694.601	METERS
Y:	1996983.489	METERS
Z:	-2102656.252	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.48430"                    +03.93116" (Based on Adjusted Positions)

GRID	ZONE	PLANE COORDINATES		POINT	CONVERGENCE	*GRID AZIMUTH TO
		NORTHING METERS	EASTING METERS	SCALE FACTOR		DEG MIN SEC
SPC	OR S	149,360.908	1,477,701.701	0.99989838	- 0 11 13.7	187 47 20.5
UTM	10	4,764,434.739	681,446.295	1.00000503	+ 1 31 9.0	186 04 57.8

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

STATION MARKS AND REFERENCE OBJECTS

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	W 72 RM 1	8.566 METERS	079 54
	W 72 RM 2	5.977 METERS	162 57
	W 72 AZ MK		187 36 06.8

STATION MARK IS A . . . . . BENCH MARK DISK  
WITH SETTING . . . . . A BOULDER  
THE MARK IS STAMPED . . . W 72 1931  
(Continued on Next Page)

**W 72**  
PID: PB0599

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1931	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1948		COAST AND GEODETIC SURVEY (MTP)
1955		COAST AND GEODETIC SURVEY (BM)
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1948 (MTP)  
STATION IS LOCATED 24 MILES NORTHWEST OF PAISLEY. ON THE LEFT  
SIDE OF STATE HIGHWAY NO. 31, AND IN A GROUP OF LARGE BOULDERS  
ABOUT 8 FEET HIGHER THAN THE HIGHWAY ELEVATION.

THE STATION MARK IS A STANDARD DISK SET IN A LARGE BOULDER  
PROJECTING 3 FEET ABOVE THE SURFACE OF THE GROUND, 76 FEET WEST  
OF CENTERLINE OF HIGHWAY, AND 7 FEET WEST OF A WITNESS POST. IT  
IS STAMPED W 72 1931.

REFERENCE MARK NO. 1 IS A STANDARD DISK SET IN A HUGE BOULDER  
PROJECTING 5 FEET ABOVE THE SURFACE, 51 FEET WEST OF CENTERLINE  
OF HIGHWAY, 19 FEET EAST OF A WITNESS POST, AND THE SAME ELEVATION  
AS THE STATION MARK. IT IS STAMPED BM W 72 NO 1 1948.

REFERENCE MARK NO. 2 IS A STANDARD DISK SET FLUSH IN A 6 X 5 X 3  
FOOT BOULDER, 65 FEET WEST OF CENTERLINE OF HIGHWAY, 19 FEET  
SOUTH OF A WITNESS POST, AND AT STATION ELEVATION. IT IS  
STAMPED BM W 72 NO 2 1948.

THE AZIMUTH MARK IS A STANDARD DISK SET IN 5 X 4 X 3 FOOT  
BOULDER, 30.8 MILES BY HIGHWAY NORTHWEST OF PAISLEY, 71 FEET  
EAST OF THE CENTERLINE OF THE HIGHWAY, 81 FEET WEST OF A  
NORTH-SOUTH FENCELINE, AND 5-1/2 FEET EAST OF A WITNESS  
POST. THE MARK IS STAMPED BM W 72 1948.

TO REACH THE STATION FROM THE POST OFFICE IN PAISLEY GO NORTH  
ON STATE HIGHWAY 31 FOR 30.8 MILES (0.4 MILE NORTH OF MILE POST  
68) TO THE AZIMUTH MARK ON THE RIGHT SIDE OF THE HIGHWAY. CONTINUE  
AHEAD FOR 1.1 MILES (0.5 MILE NORTH OF MILE POST 67) TO THE  
STATION SITE ON THE LEFT.

### STATION RECOVERY (1955)

RECOVERED BY COAST AND GEODETIC SURVEY 1955 (BM )  
STATION WAS RECOVERED IN GOOD CONDITION AND AS DESCRIBED.

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: EGLI RIM

**W 72**

PID: PB0599

STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
RECOVERED IN GOOD CONDITION. THE MARK IS AT MP 66.45. BOTH RMS WERE  
FOUND BUT THE AZIMUTH MARK WAS NOT. IT LOOKS LIKE ALL THE BOULDERS  
IN THE DESCRIBED AREA OF THE AZIMUTH MARK HAVE BEEN MOVED TO THE  
FENCE LINE.  
DESCRIBED BY L.L. RIGGERS.

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**WAGONTIRE**

PID: PA0724

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: HARNEY

LATITUDE:	43° 20' 57.19129" N	± 0.00030 SECONDS
LONGITUDE:	119° 53' 31.04904" W	± 0.00060 SECONDS

ORTHOMETRIC HEIGHT:	{	1985.5	METERS
		6514.	FEET

GEOID HEIGHT:	-18.102		METERS
ELLIPSOIDAL HEIGHT:	1967.254	± 0.085	METERS
X:	1877559.526		METERS
Y:	2912429.668		METERS
Z:	5339141.157		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.46571"            +03.86904" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	
SPC	OR S	187,081.527	1,549,293.231	0.99989956	+ 0 24 57.6	359 35
UTM	11	4,803,658.487	265,614.724	1.00027583	- 1 59 9.8	001 59

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
PA0725	WAGONTIRE LOT	61.938 METERS	143 51
	WAGONTIRE RM 1	13.423 METERS	173 43
	WAGONTIRE RM 2	15.203 METERS	303 15

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . WAGONTIRE 1920

(Continued on Next Page)



## WAGONTIRE

PID: PA0724

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1920	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1959		BONNEVILLE POWER ADMINISTRATION
1971		US GEOLOGICAL SURVEY
1974		US GEOLOGICAL SURVEY
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1920 (EWE)  
LOCATED ABOUT 4 MILES WEST OF THE BURNS-BUTTE P.O. ROAD, ON  
WAGONTIRE MOUNTAIN ABOUT 100 METERS NORTH OF ITS HIGHEST  
POINT. THE HIGHEST POINT HAS SEVERAL MASSIVE ROCKS ON IT.

STATION IS MARKED BY A STANDARD DISC SET IN CENTER OF LARGE FLAT  
ROCK ABOUT 6 FT. X 10 FT. IN DIMENSIONS AND ELEVATED ABOUT 1  
FT. ABOVE LEVEL OF GROUND. REF. MARKS ARE MARKED BY STANDARD DISCS  
SET IN NATIVE ROCK.

HEIGHT OF SIGNAL ABOVE STATION MARK - 1.15 METERS.

### STATION RECOVERY (1959)

RECOVERED BY BONNEVILLE POWER ADMINISTRATION 1959  
TO REACH FROM THE MOTEL AT WAGONTIRE GO NORTHEAST ON U.S. HIGHWAY  
395 FOR 2.3 MILES TO A SIDE ROAD LEFT. TURN LEFT N. ON GRADED  
ROAD AND GO 0.6 MILE TO A ROAD LEFT. TURN LEFT ON TRACK ROAD  
ALONG THE NORTH SIDE OF AN EAST WEST FENCE AND GO 1.0 MILE TO A  
CROSSROAD AT FENCE CORNER. TURN RIGHT NORTHWESTERLY AND GO 2.4  
MILES TO A GATE IN AN EAST WEST FENCE. PASS THROUGH GATE AND  
CONTINUE NORTHWESTERLY ON TRACK ROAD 1.3 MILE TO ANOTHER GATE,  
PASS THROUGH GATE AND CONTINUE NORTHERLY 0.4 MILE TO A FORK.  
TAKE RIGHT FORK AND GO NORTHERLY 0.8 MILE TO AN OLD N-S FENCE  
LINE. CONTINUE NORTHEASTERLY 1.5 MILES TO A FORK, TAKE  
LEFT FORK AND GO NORTHWESTERLY 0.4 MILE TO TOP OF RIDGE AND END  
OF TRUCK TRAVEL. PACK NORTH TO TOP OF HILL AND STATION AS  
DESCRIBED. A 15 MINUTE PACK.

### STATION RECOVERY (1971)

RECOVERED BY US GEOLOGICAL SURVEY 1971  
NOT OCCUPIED, 1971.

NEW LOCATED AND TO REACH FOLLOWS--

LOCATED ABOUT 60 MI (AIRLINE) NW. OF FRENCHGLEN, ABOUT 47 MI  
WSW. OF BURNS. ABOUT 7 MI N. OF WAGONTIRE. ABOUT 300 FT W. OF  
A LOOKOUT TOWER. ON THE HIGHEST POINT OF WAGONTIRE MOUNTAIN.

(Continued on Next Page)

## WAGONTIRE

PID: PA0724

REACHED BY HELICOPTER, LANDING BETWEEN THE STATION AND THE LOOKOUT TOWER. A RD. OF FAIR QUALITY LEADS ALL THE WAY UP TO THE LOOKOUT TOWER FROM THE SOUTHEAST SIDE OF MOUNTAIN.

STATION MARK--A STANDARD USC AND GS DISK STAMPED WAGONTIRE 1920, CEMENTED IN DRILL HOLE IN LARGE FLAT BEDROCK ON HIGHEST POINT OF MOUNTAIN.

### STATION RECOVERY (1974)

RECOVERED BY US GEOLOGICAL SURVEY 1974  
RM 1 TO RM 2 NOT MEASURED.

INSTRUMENT STAND 5.1 FT ABOVE STATION MARK.

GEODETTIC AZIMUTH 4 DEG 08 MIN 41.9 SEC TO STATION JUNIPER.

ALL MARKS IN GOOD CONDITION. A REVISED TO REACH FOLLOWS--

TO REACH FROM WAGONTIRE ON U.S. HIGHWAY 395 ABOUT 56 MI SW. OF BURNS, PROCEED NE. ON U.S. HIGHWAY 395 FOR 2.3 MI TO GRAVEL RD. TO THE LEFT AT SIGN WAGONTIRE MTN 9 MI. TURN LEFT AND DRIVE 0.5 MI TO TRACK RD. LEFT ALONG FENCE LINE. TURN LEFT AND FOLLOW TRACK RD. THROUGH FIVE GATES AT MILEAGES AS FOLLOWS--0.3 MI TO FIRST GATE. 0.7 MI TO SECOND GATE. 0.4 MI TO THIRD GATE. 1.9 MI TO FOURTH GATE AND 1.2 MI TO FIFTH GATE. CONTINUE ON TRACK RD. FOR 0.3 MI TO A Y-RD. FORK. TAKE RIGHT FORK AND GO 0.2 MI TO ANOTHER GATE. CONTINUE FOR 1.4 MI TO A DIM Y-RD. FORK. KEEP RIGHT ON MAIN-TRAVELED RD. AND DRIVE 1.0 MI TO A Y-RD. FORK. TAKE RIGHT FORK AND GO 0.5 MI TO LOT AND STATION SITE.

REFERENCE MARKS--TWO UNSTAMPED REFERENCE MARKS WERE FOUND IN GOOD CONDITION. THEY WERE STAMPED AND ARE DESCRIBED AS FOLLOWS--

REFERENCE MARK NO. 1--A STANDARD NGS BRONZE DISK STAMPED WAGONTIRE 1920 1974 NO 1, CEMENTED IN DRILL HOLE IN ROCK OUTCROP 1.5 FT BELOW STATION MARK.

REFERENCE MARK NO. 2--A STANDARD NGS BRONZE DISK STAMPED WAGONTIRE 1920 1974 NO 2, CEMENTED IN DRILL HOLE IN ROCK OUTCROP 2.6 FT BELOW STATION MARK.

(Continued on Next Page)

**WAGONTIRE**  
PID: PA0724

STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
THE FOLLOWING INFORMATION IS NEEDED BEFORE  
RECOVERY. A KEY TO A LOCKED GATE CAN BE OBTAINED FROM THE BLM OFFICE  
IN BURNS. MY CONTACT WAS SKIP WRENCHER AT 573-5241. IF OCCUPATION  
IS TO BE AT NIGHT OR IN HUNTING SEASON CONTACT SHOULD BE MADE WITH  
THE PROPERTY OWNER. HIS NAME IS JACK PEILA, PHONE NUMBER IS  
493-2514. A COMPLETE NEW TO REACH DESCRIPTION FOLLOWS.  
TO REACH FROM THE STORE IN WAGONTIRE GO SOUTH ON HIGHWAY 395 1.28 KM  
(0.80 MI) TO A GATE ON THE RIGHT, TURN RIGHT PASS THROUGH GATE AND GO  
0.8 KM (0.5 MI) TO A ROAD FORK, KEEP RIGHT AND FOLLOW ALONG FENCELINE  
1.6 KM (1.0 MI) , CONTINUE ON MAIN TRAVELED ROAD 4.16 KM (2.58 MI) TO  
A GATE, PASS THROUGH GATE AND CONTINUE ON MAIN TRAVELED ROAD 2.08 KM  
(1.29 MI) TO A GATE, PASS THROUGH GATE AND GO 0.64 KM (0.40 MI) TO A  
ROAD FORK, TAKE RIGHT FORK AND GO 0.32 KM (0.20 MI) TO A LOCKED GATE,  
PASS THROUGH GATE AND GO 4.8 KM (3.0 MI) TO THE LOOKOUT AND THE  
STATION ABOUT 60 METERS WEST.  
DESCRIBED BY L.L. RIGGERS.

**WARM SPRINGS**

PID: PA0749

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 35' 05.52423" N	±0.00010 SECONDS
LONGITUDE:	118° 12' 37.29525" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: {	1080.3	METERS
	3544.	FEET

GEOID HEIGHT:	-17.188	METERS
ELLIPSOIDAL HEIGHT:	1063.147	±0.044 METERS
X:	1098050.057	METERS
Y:	2412153.672	METERS
Z:	5783152.330	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.7                    (Based on Nadcon Interpolation)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	215,608.587	1,684,881.269	0.99992097	+ 1 33 59.2
UTM	11	4,826,478.315	402,286.068	0.99971744	- 0 50 4.3

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF IRREGULAR CONCRETE MASS  
THE MARK IS STAMPED . . . WARM SPRINGS 1990

**STATION MARK HISTORY**

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## WARM SPRINGS

PID: PA0749

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 11 MILES SOUTHWEST OF JUNTURA, ON A POINT OF LAND ON THE SOUTH SIDE OF WARM SPRINGS DAM AND IS ABOUT 40 METERS HIGHER THAN THE DAM.

TO REACH FROM JUNTURA GO WESTERLY ON HIGHWAY 20 FOR 0.48 KM (0.30 MI) TO A ROAD LEFT, TURN LEFT TOWARD RIVERSIDE AND GO 27.05 KM (16.81 MI) TO A ROAD FORK, TURN HARD RIGHT AND GO 1.76 KM (1.09 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 4.08 KM (2.54 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 0.48 KM (0.30 MI) TO A CATTLE CROSSING, CONTINUE ON 0.32 KM (0.20 MI) TO A CROSSROADS, CONTINUE STRAIGHT AHEAD (UPPER ROAD) AND GO 0.64 KM (0.40 MI) TO A POINT ABOVE THE DAM AND THE STATION ON THE RIGHT.

THE STATION IS SET INTO AN IRREGULAR MASS OF CONCRETE, 8.4 M (27.6 FT) NORTH OF POLE NUMBER C487, 1.4 METERS NORTH OF A WITNESS POST AND 0.8 M (2.6 FT) NNW FROM A GUY WIRE.

DESCRIBED BY L.L. RIGGERS.

**WARM SPRINGS AZ MK**

PID: PA0750

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	- 43° 34' 40.4351" N	± 0.00020 SECONDS
LONGITUDE:	118° 12' 47.5628" W	± 0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 1016.1 METERS  
3334. FEET

GEOID HEIGHT:	-17.192		METERS
ELLIPSOIDAL HEIGHT:	998.992	±0.054	METERS
X:	6378786.531		METERS
Y:	48438.747		METERS
Z:	48115.919		METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.4 +03.7 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	214,828.34	1,684,672.17	0.99992009	+ 1 33 52.2
UTM	11	4,825,707.67	402,044.51	0.99971802	- 0 50 11.0

STATION MARK IS AN . . . . AZIMUTH MARK DISK  
WITH SETTING . . . . . A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN PAVEMENT  
THE MARK IS STAMPED . . . WARM SPRINGS AZ MK 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## WARM SPRINGS AZ MK

PID: PA0750

### STATION DESCRIPTION

#### DESCRIBED 1990

THE STATION IS LOCATED ABOUT 11 MILES SOUTHWEST OF JUNTURA, ABOUT 0.5 MILE SOUTH OF WARM SPRINGS DAM AND AT THE DAMTENERS HOME.

TO REACH FROM JUNTURA, GO WESTERLY ON HIGHWAY 20 FOR 0.48 KM (0.30 MI) TO A ROAD LEFT. TURN LEFT TOWARD RIVERSIDE AND GO 27.05 KM (16.81 MI) TO A ROAD FORK, TURN HARD RIGHT AND GO 1.76 KM (1.09 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 4.08 KM (2.54 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 0.48 KM (0.30 MI) TO A CATTLE GUARD, CONINUE ON FOR 0.24 KM (0.15 MI) TO OLD HOUSE ON THE LEFT. THE STATION IS BEHIND THE HOUSE ON A SLAB OF CONCRETE THAT HOLDS A RAIN GUAGE.

THE STATION IS 7.7 M (25.3 FT) SW OF SW CORNER OF A WHITE CINDERBLOCK BUILDING AND 0.6 M (2.0 FT) WEST OF A RAIN GUAGE.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WAPINITIA PASS

**WASCO DAM**  
PID: RC2734

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASCO

LATITUDE:	45° 10' 28.99868"	N	±0.00020	SECONDS
LONGITUDE:	121° 41' 16.36175"	W	±0.00020	SECONDS

ORTHOMETRIC HEIGHT:	{	1075.5	METERS
		3528.	FEET
GEOID HEIGHT:		-19.428	METERS
ELLIPSOIDAL HEIGHT:		1055.874	±0.051 METERS
X:		2531427.993	METERS
Y:		-3126200.490	METERS
Z:		-4934472.854	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	168,263.420	2,406,637.859	0.99989459	- 0 50 32.7
UTM	10	5,003,197.467	603,100.436	0.99973070	+ 0 55 50.6

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . WASCO DAM 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)



## WASCO DAM

PID: RC2734

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 11 MI (17.7 KM) SOUTH OF GOVERNMENT CAMP, 2.0 MI (3.2 KM) SOUTH OF BLUE BOX PASS ON HIGHWAY 26 AND AT THE NORTH END OF WASCO DAM AND AT THE SOUTHEAST CORNER OF CLEAR LAKE.

OWNERSHIP--DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION, CONTACT POINT IS JERRY HARROD, 509-488-2623.

TO REACH THE STATION FROM THE REST STOP AT GOVERNMENT CAMP, GO SOUTH ON HIGHWAY 26 FOR 14.72 KM (9.15 MI) TO MILEPOST 64, CONTINUE SOUTH FOR 0.8 KM (0.5 MI) TO FOREST SERVICE ROAD 2630 ON THE RIGHT. TURN RIGHT TOWARD CLEAR LAKE AND GO 1.12 KM (0.70 MI) TO A ROAD FORK. TAKE FOREST SERVICE ROAD 2630-220 AND GO 0.8 KM (0.5 MI) TO END OF PAVEMENT. CONTINUE ON GRAVEL ROAD 1.12 KM (0.70 MI) TO THE NORTH END OF THE DAM AND THE STATION ON THE RIGHT IN A ROCK OUTCROP.

THE STATION IS SET INTO A DRILL HOLE IN A ROCK OUTCROP THAT IS ABOUT 1 METER SQUARE AND PROJECTS 0.3 METER. LOCATED 27.8 M (91.2 FT) EAST-NORTHEAST OF THE SOUTHEAST CORNER OF A FENCED CONCRETE PLATFORM, 5.2 M (17.1 FT) NORTH OF THE NORTHEAST CORNER OF THE DAM AND 1.5 M (4.9 FT) WEST OF A WITNESS POST.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WAPINITIA PASS

**WASCO DAM AZ MK**  
PID: RC2732

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WASCO

LATITUDE:	45° 10' 31.3245" N	± 0.00030 SECONDS
LONGITUDE:	121° 41' 45.3399" W	± 0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	1069.1	METERS
	3508.	FEET

GEOID HEIGHT:	-19.426	METERS
ELLIPSOIDAL HEIGHT:	1049.516	±0.082 METERS
X:	2786760.671	METERS
Y:	-3169374.411	METERS
Z:	-4767613.413	METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	168,344.54	2,406,006.31	0.99989459	- 0 50 53.3
UTM	10	5,003,258.99	602,466.79	0.99972910	+ 0 55 30.1

STATION MARK IS AN . . . . . AZIMUTH MARK DISK  
WITH SETTING . . . . . DRILL HOLE IN ROCK OUTCROP  
THE MARK IS STAMPED . . . WASCO DAM AZ MK 1990

STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

## WASCO DAM AZ MK

PID: RC2732

### STATION DESCRIPTION

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 11 MILES SOUTH OF GOVERNMENT CAMP, AND ON THE SOUTH SHORE OF CLEAR LAKE.

TO REACH THE STATION FROM THE REST STOP AT GOVERNMENT CAMP, GO SOUTH ON HIGHWAY 26 FOR 14.72 KM (9.15 MI) TO MILEPOST 64, CONTINUE SOUTH FOR 0.8 KM (0.5 MI) TO A ROAD RIGHT, TURN RIGHT TOWARD CLEAR LAKE AND GO 1.12 KM (0.70 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 0.8 KM (0.5 MI) TO END OF PAVEMENT, CONTINUE ON GRAVEL ROAD 0.56 KM

(0.35 MI) TO A ROAD FORK, KEEP LEFT AND GO 0.48 KM (0.30 MI) TO THE NORTHEAST END OF THE DAM, CONTINUE ON ACROSS DAM TO SOUTHWEST END, TURN HARD RIGHT AND GO .05 KM (0.03 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 0.05 KM (0.03 MI) TO A ROAD FORK, TAKE LEFT FORK UPHILL AND GO 0.16 KM (0.10 MI) TO A ROAD FORK, TAKE RIGHT FORK AND GO 0.48 KM (0.30 MI) TO A CLEARING, ROAD FORK AND THE MARK ON THE RIGHT.

THE STATION IS SET INTO A DRILL HOLE IN A ROCK OUTCROP THAT IS BETWEEN 3 STUMPS. THE ROCK OUTCROP IS ABOUT 0.5 M (1.6 FT) TRIANGULAR SHAPED AND PROJECTS ABOUT 10 CM. THE STATION IS ABOUT MIDWAY BETWEEN THE PRESENT WATERLINE AND THE TREELINE. IT IS 29.1 M (95.5 FT) EAST OF THE CENTERLINE INTERSECTION OF THE TRACK ROADS, 1.4 M (4.6 FT) WSW OF THE NORTH ONE OF THE THREE STUMPS AND 1.4 METERS N OF A WITNESS POST. DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BEULAH

**WC 568 S 5 E**

PID: PA0748

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	43° 54' 34.7073" N	±0.00020 SECONDS
LONGITUDE:	118° 09' 02.0596" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	1035.8	METERS
	3398.	FEET

GEOID HEIGHT:	-16.913	METERS
ELLIPSOIDAL HEIGHT:	1018.934	±0.067 METERS
X:	5969287.901	METERS
Y:	1566824.050	METERS
Z:	-1609056.774	METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.7                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	251,810.85	1,688,695.57	0.99997829	+ 1 36 26.5
UTM	11	4,862,480.30	407,613.77	0.99970498	- 0 47 52.8

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE SURROUNDED BY MASS OF CONCRETE  
THE MARK IS STAMPED . . . WC 568-S5E 613 FT

STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**WC 568 S 5 E**

PID: PA0748

**STATION DESCRIPTION**

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 14 MILES NORTH OF JUNTURA ON THE EAST SIDE OF THE AGENCY VALLEY DAM AND ON THE EAST SIDE OF BEULAH RESERVOIR.

TO REACH FROM JUNTURA GO NORTHWEST ON HIGHWAY 20 FOR 0.48 KM (0.30 MI) TO A CROSSROADS, TURN RIGHT TOWARD BEULAH RES AND GO 0.32 KM (0.20 MI) TO A ROAD FORK, TAKE LEFT FORK AND GO 23.04 KM (14.32 MI) TO A THREE WAY FORK NEAR THE EAST END OF AGENCY VALLEY DAM. TAKE RIGHT FORK AND GO ABOUT 60 M (196.8 FT) TO A DIM CROSSROADS, TURN RIGHT AND GO 50 M (164.0 FT) . THE STATION IS ABOUT 20 M (65.6 FT) ON THE RIGHT. IT IS 1.3 M (4.3 FT) WEST OF THE PROLONGATION OF THE UPSTREAM EDGE OF THE DAM AND 1.0 M (3.3 FT) WEST OF A WITNESS POST.

THE STATION IS A GLO MARK RIVETED TO AN IRON PIPE THAT IS SET INTO CONCRETE.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CAMAS VALLEY

**WCAM**  
PID: PC1118

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DOUGLAS

LATITUDE:	43° 00' 36.90832"	N	±0.00010	SECONDS
LONGITUDE:	123° 41' 58.63498"	W	±0.00020	SECONDS
ORTHOMETRIC HEIGHT:	325.62			METERS
	1068.3			FEET

GEOID HEIGHT:	-22.591			METERS
ELLIPSOIDAL HEIGHT:	302.693	±0.054		METERS
X:	5840571.445			METERS
Y:	1775427.728			METERS
Z:	-1843222.968			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	154,230.448	1,239,233.153	0.99989841	- 2 11 20.4
UTM	10	4,762,190.754	442,984.441	0.99963999	- 0 28 38.1

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . WCAM 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)

**WCAM**  
PID: PC1118

**STATION DESCRIPTION**

**DESCRIBED 1989**

STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED WCAM 1989 SET IN THE TOP OF A CONCRETE MASS, 30 CENTIMETERS IN DIAMETER FLUSH WITH THE GROUND.

THE STATION IS LOCATED ABOUT 48 KM (29.8 MI) SW OF ROSEBURG, 46 KM (28.6 MI) AND 3.4 KM (2.1 MI) SW OF CAMAS VALLEY, AND ON THE NORTH SIDE OF HIGHWAY 42.

TO REACH THE STATION FROM THE POST OFFICE IN CAMAS VALLEY GO SOUTHWEST ON HIGHWAY 42 FOR 3.36 KM (2.09 MI) MILEPOST 54 ON THE LEFT, CONTINUE WESTERLY 0.3 KM (0.2 MI) TO THE MARK ON THE RIGHT.

THE STATION IS LOCATED ABOUT 150 M (492.1 FT) ENE OF THE INTERSECTION OF HARD CASH LANE AND HIGHWAY 42, 11.735 M (38.501 FT) NORTH OF THE HIGHWAY CENTERLINE 4.7 M (15.4 FT) SE OF THE EAST END OF A FENCE, 2.2 M (7.2 FT) EAST OF RIGHT-OF-WAY MARKER POT STAT 1598 + 00, AND 0.6 M (2.0 FT) SOUTH OF A WITNESS POST.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CAMAS VALLEY

**WELK**  
PID: PC1117

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DOUGLAS

LATITUDE:	43° 38' 37.76706"	N	± 0.00010	SECONDS
LONGITUDE:	123° 34' 57.22610"	W	± 0.00020	SECONDS
ORTHOMETRIC HEIGHT:	43.45			METERS
	142.6			FEET

GEOID HEIGHT:	-21.849			METERS
ELLIPSOIDAL HEIGHT:	21.328	±0.048		METERS
X:	3990749.477			METERS
Y:	3091869.465			METERS
Z:	3885064.255			METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.6                    +04.3                    (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING	EASTING	POINT	CONVERGENCE
		METERS	METERS	SCALE FACTOR	DEG MIN SEC
SPC	OR S	224,207.435	1,251,358.943	0.99992897	- 2 06 32.1
UTM	10	4,832,479.275	453,015.004	0.99962715	- 0 24 7.5

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . WELK 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	OREGON DEPARTMENT OF TRANSPORTATION

(Continued on Next Page)



DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: CAMAS VALLEY

**WELK**  
PID: PC1117

**STATION DESCRIPTION**

DESCRIBED 1989

STATION MARK IS AN ORDOT PRIMARY GPS DISK STAMPED WELK 1989 SET IN THE TOP OF A MASS OF CONCRETE, 30 CM DIAMETER AT GROUND SURFACE. STATION IS LOCATED APPROXIMATELY 1.61 KM (1.00 MI) WEST OF ELKTON ALONG STATE HIGHWAY 38 AT MILEPOST 35.34. THE STATION IS 9.144 M (30.000 FT) SOUTH OF THE CENTERLINE OF THE HIGHWAY, 35.0 M (114.8 FT) WEST OF A DRIVEWAY, 29.0 M (95.1 FT) WEST OF A FENCE CORNER WITH THE NUMBERS 15850 (ADDRESS), 9.2 M (30.2 FT) EAST OF POWER POLE NUMBER 6 E 21, 0.7 M (2.3 FT) NW OF A WITNESS POST AND 0.457 M (1.499 FT) NORTH OF A WIRE FENCE. THE DISK IS APPROXIMATELY 1.219 M (3.999 FT) ABOVE THE SURFACE OF THE HIGHWAY.

**WESTER BUTTE**

PID: RC2533

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: GILLIAM

LATITUDE:	45° 22' 11.01961" N	±0.00020 SECONDS
LONGITUDE:	120° 12' 18.95363" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: {	830.9	METERS
	2726.	FEET

GEOID HEIGHT:	-19.724	METERS
ELLIPSOIDAL HEIGHT:	811.209	±0.060 METERS
X:	2529338.088	METERS
Y:	3125659.176	METERS
Z:	4935563.123	METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.54339"                    +04.14663" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO WESTER BUTTE AZ MK DEG MIN SEC
SPC	OR N	189,289.303	2,523,086.644	0.99990072	+ 0 12 32.5	001 51 59.5
UTM	10	5,027,823.653	718,845.652	1.00018890	+ 1 59 22.8	000 05 09.2

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
	WESTER BUTTE AZ MK		002 04 32.0
	WESTER BUTTE RM 1	19.537 METERS	021 49
	WESTER BUTTE RM 2	19.136 METERS	122 10
	WESTER BUTTE RM 3	14.429 METERS	293 07

STATION MARK IS A . . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF METAL PIPE IMBEDDED IN MASS OF CONCRETE

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1932	STATION MONUMENTED	US GEOLOGICAL SURVEY
1971	GOOD	NATIONAL GEODETIC SURVEY (LDF)
1989	GOOD	US BUREAU OF LAND MANAGEMENT

(Continued on Next Page)

## WESTER BUTTE

PID: RC2533

### STATION DESCRIPTION

DESCRIBED BY US GEOLOGICAL SURVEY 1932 (FGJ)  
STATION IS LOCATED 3-1/2 MI. AIRLINE N.W. OF GWENDOLEN ON A SMALL AND PROMINENT ROCK COVERED BUTTE. STATION REACHED FROM THE GWENDOLEN P.O. BY GOING N. ON THE JOHN DAY HWY. FOR 1.3 MI. TURN LEFT THRU GATE, CROSS R.R. TRACKS, AND CONTINUE 0.1 MI. TO CROSSROADS. TURN RIGHT AND GO. N. ON RD. BETWEEN TELEPHONE POLES 0.6 MI. TURN LEFT ON RD. THAT CROSSES PLOUGHED FIELD AND GO 1.0 MI. TURN LEFT AND GO S. ON EAST SIDE OF FENCE FOR 0.5 MI. AND PASS THRU GATE AND TURN RIGHT. GO W. ALONG FENCE LINE 1.6 MI. AND TAKE LEFT FORK. GO 0.1 MI. AND TURN RIGHT ALONG FENCE AND GO 0.3 MI. THEN TURN LEFT LEAVING FENCE AND GO IN A WLY DIRECTION ABOUT 0.1 MI. TO THE TOP OF THE BUTTE AND THE STATION.

STATION MARK IS A U.S.G.S. PIPE WITH STANDARD BRASS CAP. THE PIPE WAS REENFORCED WITH A CONCRETE POST

R.M. 1 IS N.E. OF THE STATION.

R.M. 2 (AZ.MK.) IS S.E. OF THE STATION NEAR THE FENCE CORNER.

R.M. 3 IS N.W. OF THE STATION.

HEIGHT OF STATION MARK 18 IN.

### STATION RECOVERY (1971)

RECOVERED BY NATIONAL GEODETIC SURVEY 1971 (LDF)  
STATION MARK, REFERENCE MARKS 1 AND 2 WERE RECOVERED AND FOUND IN GOOD CONDITION. THE AZIMUTH MARK HAS BEEN DESTROYED AND A NEW AZIMUTH MARK WAS ESTABLISHED AT THIS TIME. DUE TO CHANGES IN THE AREA, A NEW AND COMPLETE DESCRIPTION FOLLOWS.

STATION IS LOCATED ABOUT 10 MILES NORTH OF CONDON, 10 MILES SOUTH OF OLEX, ON THE HIGHEST POINT OF WHAT IS LOCALLY KNOWN AS WESTER BUTTE, ON PROPERTY OWNED BY MR. CLEO BARNETT AND IS IN THE NORTHWEST 1/4 OF SECTION 28, T 4 S, R 21 E.

(Continued on Next Page)

## WESTER BUTTE

PID: RC2533

TO REACH FROM THE STORE AND SERVICE STATION IN THE VILLAGE OF OLEX, GO SOUTH ON STATE HIGHWAY 19 FOR 6.0 MILES TO CLEM ROAD ON THE RIGHT. TURN RIGHT AND GO WEST ON CLEM ROAD FOR 1.0 MILE TO SCOTT CANYON ROAD. TURN LEFT AND GO SOUTH ON SCOTT CANYON ROAD FOR 0.3 MILE TO A FORK. TAKE THE RIGHT FORK AS PER SIGN BARNETT HEREFORD RANCH AND GO WEST ON A GRAVEL ROAD FOR 0.5 MILE TO A FORK. TAKE THE LEFT FORK AND GO SOUTH ON A BLADED ROAD FOR 2.5 MILES TO THE BARNETT RANCH AND A GATE AT THE NORTHEAST CORNER OF A LARGE MACHINE SHED. PASS THROUGH THE GATE AND GO NORTH AND EAST IN THE CATTLE LANE FOR 0.2 MILE TO A FEED SHED AND THE AZIMUTH MARK ON THE LEFT. CONTINUE EAST ON A TRACK ROAD FOR 0.05 MILE TO A WIRE GATE. PASS THROUGH THE GATE AND CONTINUE EAST ON THE TRACK ROAD FOR 0.1 MILE TO A FORK AND A FENCE CORNER ON THE RIGHT. KEEP THE RIGHT FORK AND GO SOUTH ON A TRACK ROAD ALONG THE EAST SIDE OF A NORTH-SOUTH FENCE, FOR 0.4 MILE TO A FENCE CORNER. CONTINUE SOUTH, FOLLOWING TRACK ROAD, UPHILL, FOR 0.3 MILE TO THE HIGHEST POINT AND THE STATION. A FOUR-WHEEL DRIVE IS REQUIRED IN WET WEATHER.

STATION MARK IS A U.S. GEOLOGICAL SURVEY DISK WITH NO STAMPING. IT IS RIVETED TO THE TOP OF AN IRON PIPE WHICH PROJECTS ABOUT 1 FOOT ABOVE THE GROUND SURFACE. THE PIPE IS SET IN THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT WHICH PROJECTS ABOUT 3 INCHES ABOVE THE GROUND SURFACE.

REFERENCE MARK 1 IS A STANDARD DISK, STAMPED WESTER BUTTE USGS NO 1 1932, SET IN THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT WHICH PROJECTS ABOUT 4 INCHES ABOVE THE GROUND SURFACE.

REFERENCE MARK 3 IS A STANDARD DISK, STAMPED WESTER BUTTE USGS NO 3 1932, SET IN THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT WHICH PROJECTS ABOUT 4 INCHES ABOVE THE GROUND SURFACE.

AZIMUTH MARK IS A STANDARD DISK, STAMPED WESTER BUTTE USGS 1971 1932, CEMENTED IN A DRILL HOLE IN A CONCRETE SLAB ON THE SOUTH SIDE OF A FEED SHED. IT IS 5 FEET SOUTH OF THE SOUTH WALL OF THE SHED, 3 FEET WEST OF THE EAST EDGE OF THE CONCRETE SLAB, 0.6 FOOT NORTH OF THE SOUTH EDGE OF THE SLAB AND PROJECTS ABOUT 4 INCHES ABOVE THE GROUND SURFACE.

HEIGHT OF LIGHT ABOVE STATION MARK 34 FEET.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
10 MILES NORTH OF CONDON.

(Continued on Next Page)

## WESTER BUTTE

PID: RC2533

### STATION RECOVERY (1989)

RECOVERED BY US BUREAU OF LAND MANAGEMENT 1989  
THE DISTANCES TO THE REFERENCE MARKS CHECKED WITH THE 1971  
DESCRIPTION. NO ATTEMPT WAS MADE TO RECOVER THE AZIMUTH MARK.  
TO REACH THE STATION FROM THE GRAIN ELEVATOR IN GWENDOLEN, OREGON,  
PROCEED NORTHERLY ON STATE HIGHWAY 19 FOR 9.17 KM (5.70 MI) TO  
MILEPOST 24. CONTINUE NORTHERLY ON STATE HIGHWAY 19 FOR 1.29 KM  
(0.80 MI) TO THE INTERSECTION WITH CLEM ROAD. TURN LEFT AND PROCEED  
WESTERLY ON CLEM ROAD FOR 1.61 KM (1.00 MI) TO THE INTERSECTION WITH  
SCOTT CANYON ROAD AT CLEM. TURN LEFT AND PROCEED SOUTHERLY ON SCOTT  
CANYON ROAD FOR 0.48 KM (0.30 MI) TO A FORK WITH SIGN MARKED BARNETT  
HEREFORD RANCH 3 1/2 MILES. TAKE RIGHT FORK AND PROCEED WESTERLY FOR  
0.80 KM (0.50 MI) TO A FORK WITH SIGN MARKED BARNETT HEREFORD RANCH 2  
1/2 MILES. TAKE LEFT FORK AND PROCEED SOUTHERLY FOR 4.02 KM  
(2.50 MI) TO A RANCH HOUSE. OBTAIN PERMISSION AT THE RANCH HOUSE TO  
PROCEED PAST THIS POINT TO THE STATION. FROM THE RANCH HOUSE, PASS  
THROUGH THE GATE ADJACENT TO THE NORTHEAST CORNER OF A LARGE MACHINE  
SHED AND THEN PROCEED NORTHEASTERLY AND THEN EASTERLY IN THE CATTLE  
LANE BETWEEN TWO FENCES FOR 0.32 KM (0.20 MI) . CONTINUE EAST FOR AN  
ADDITIONAL 0.32 KM (0.20 MI) TO A GATE. PASS THROUGH GATE AND  
PROCEED EASTERLY ON TRACK ROAD FOR 0.078 KM (0.048 MI) TO A FORK WITH  
A FENCE CORNER ON THE RIGHT. TAKE RIGHT FORK AND PROCEED SOUTHERLY  
AND UPHILL ON TRACK ROAD FOR 1.29 KM (0.80 MI) TO STATION AT THE  
SUMMIT OF THE BUTTE. A FOUR WHEEL DRIVE VEHICLE IS REQUIRED FOR THIS  
STATION. GPS VISIBILITY HORIZON IS EXCELLENT AND UNOBSTRUCTED TO 0  
DEGREE VERTICAL ANGLE FOR ALL DIRECTIONS FROM THE STATION MARK.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: BRIGHTWOOD

**WHEY**  
PID: RD4213

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CLACKAMAS

LATITUDE:	45° 22' 34.20527" N	±0.00010 SECONDS
LONGITUDE:	122° 02' 05.44156" W	±0.00010 SECONDS

ORTHOMETRIC HEIGHT: { 322.9 METERS  
1059. FEET

GEOID HEIGHT:	-20.446		METERS
ELLIPSOIDAL HEIGHT:	302.269	±0.037	METERS
X:	474040.893		METERS
Y:	1675813.317		METERS
Z:	6115524.810		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.3 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR N	191,104.745	2,379,795.935	0.99990112	- 1 05 18.6
UTM	10	5,025,192.326	575,569.555	0.99967021	+ 0 41 13.1

STATION MARK IS A . . . . SURVEY DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . WHEY 1989

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**WHEY**  
PID: RD4213

**STATION DESCRIPTION**

DESCRIBED 1989

THE STATION IS LOCATED ABOUT 19.3 KM (12.0 MI) EAST OF SANDY, ABOUT 1.6 KM (1.0 MI) WEST OF BRIGHTWOOD AND AT THE EAST BOUND TRUCK WEIGH STATION ON HIGHWAY 26.

TO REACH FROM THE POST OFFICE IN BRIGHTWOOD GO SOUTH 0.08 KM (0.05 MI) TO BRIGHTWOOD LOOP ROAD. TURN RIGHT AND GO 1.04 KM (0.65 MI) TO HIGHWAY 26, TURN RIGHT AND GO 0.5 KM (0.3 MI) TO THE WEIGH STATION AND MARK ON THE LEFT.

THE STATION IS AN ORDOT PRIMARY GPS DISK, SET INTO THE TOP OF A 0.3 M (1.0 FT) SQUARE CONCRETE MONUMENT 0.5 CM BELOW THE SURFACE OF THE GROUND. THE MARK IS 22.2 M (72.8 FT) NORTHEAST OF EAST CORNER OF SCALE BUILDING, 21.3 M (69.9 FT) NORTH OF A LIGHT POLE, 20.0 M (65.6 FT) SOUTH OF CENTERLINE OF HIGHWAY 26, 7.1 M (23.3 FT) NORTHWEST OF THE NORTHEAST CORNER OF A CONCRETE MEASURING PAD, 6.0 M (19.7 FT) SSE OF SOUTH LEG OF BRIGHTWOOD JUNCTION 1/4 MILE SIGN, AND 0.35 M (1.15 FT) NORTH OF NORTH EDGE OF ASPHALT ROAD AT WEIGH STATION.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WICKIUP DAM

**WICKIUP**

PID: PB0795

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DESCHUTES

LATITUDE:	43° 40' 56.59981" N	±0.00020 SECONDS
LONGITUDE:	121° 41' 15.57620" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 1327.1 METERS  
4354. FEET

GEOID HEIGHT:	-19.437		METERS
ELLIPSOIDAL HEIGHT:	1307.409	±0.059	METERS
X:	343722.209		METERS
Y:	1442773.593		METERS
Z:	-6183862.513		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.1 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	224,594.403	1,404,245.081	0.99993478	- 0 48 45.1
UTM	10	4,837,434.179	605,775.779	0.99973762	+ 0 54 23.3

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . WICKIUP 1990

STATION MARK HISTORY

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)



**WICKIUP**  
PID: PB0795

**STATION DESCRIPTION**

**DESCRIBED 1990**

THE STATION IS LOCATED ABOUT 9 MILES WEST OF LAPINE AT THE SOUTHEAST END OF WICKIUP DAM.

TO REACH FROM THE INTERSECTION OF HIGHWAY 97 AND BURGESS ROAD (THIS INTERSECTION IS ABOUT 3 MILES NORTH OF LAPINE) GO WEST ON BURGESS ROAD FOR 16.96 KM (10.54 MI) TO A ROAD FORK, TAKE LEFT FORK (ROAD 4380) AND GO 5.92 KM (3.68 MI) TO A T JUNCTION ON WICKIUP DAM, TURN LEFT AND GO 2.72 KM (1.69 MI) TO THE SE END OF THE DAM, CONTINUE ON 0.05 KM (0.03 MI) TO THE STATION ON THE LEFT.

THE STATION IS SET INTO A ROUND CONCRETE MONUMENT FLUSH WITH THE GROUND. IT IS 14.7 M (48.2 FT) WEST OF THE SE CORNER OF A FENCE AROUND A WEATHER STATION, 13.8 M (45.3 FT) EAST OF THE CENTERLINE OF THE DAM EXTENDED, 9.1 M (29.9 FT) SW OF THE WEST STEEL GATE POST, AND 0.8 M (2.6 FT) EAST OF A WITNESS POST.

THE DAM TENDER HOUSE IS ABOUT 100 METERS EAST OF THIS STATION.

DESCRIBED BY L.L. RIGGERS.

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: WICKIUP DAM

**WICKIUP AZ MK**  
PID: PB0796

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: DESCHUTES

LATITUDE:	43° 42' 28.8423" N	±0.00020 SECONDS
LONGITUDE:	121° 43' 04.8465" W	±0.00030 SECONDS

ORTHOMETRIC HEIGHT: { 1325.9 METERS  
4350. FEET

GEOID HEIGHT:	-19.457		METERS
ELLIPSOIDAL HEIGHT:	1306.176	±0.059	METERS
X:	833514.234		METERS
Y:	2153641.442		METERS
Z:	5926882.376		METERS

HORIZONTAL NETWORK ORDER: SECOND  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27 -00.6 +04.1 (Based on Nadcon Interpolation)

PLANE COORDINATES

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC
				SCALE FACTOR	
SPC	OR S	227,475.94	1,401,839.46	0.99993890	- 0 49 59.9
UTM	10	4,840,241.68	603,285.30	0.99973121	+ 0.53 9.3

STATION MARK IS A . . . . HORIZONTAL CONTROL DISK

STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1990	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)

**WICKIUP AZ MK**

PID: PB0796

**STATION DESCRIPTION**

DESCRIBED 1990

THE STATION IS LOCATED ABOUT 9 MILES WEST OF LAPINE AT THE SOUTHEAST END OF WICKIUP DAM.

TO REACH FROM THE INTERSECTION OF HIGHWAY 97 AND BURGESS ROAD (THIS INTERSECTION IS ABOUT 3 MILES NORTH OF LAPINE) GO WEST ON BURGESS ROAD FOR 16.96 KM (10.54 MI) TO A ROAD FORK, TAKE LEFT FORK (ROAD 4380) AND GO 5.92 KM (3.68 MI) TO A T JUNCTION ON WICKIUP DAM, TURN RIGHT AND GO 1.12 KM (0.70 MI) TO THE NW END OF THE DAM AND THE STATION ON THE RIGHT.

THE STATION IS A THEODLITE PIER PROJECTING 1.23 M (4.04 FT) . IT IS PROTECTED BY AN IRON PIPE WITH A LOCKED CAP. THE KEY CAN BE OBTAINED FROM THE DAMTENDER WHOSE NAME IS RAY AMES. HE LIVES AT THE SOUTHEAST END OF THE DAM AND HIS PHONE NUMBER IS 503 385 3032. THE STATION IS ABOUT 100 METERS SOUTHEAST OF THE NORTHWEST END OF THE DAM, 4.1 METERS EAST OF THE CENTERLINE OF THE DAM, 0.6 M (2.0 FT) NE OF A GUARD PIPE, AND 0.6 M (2.0 FT) SE OF A GUARD PIPE.  
DESCRIBED BY L.L. RIGGERS.

**WILDHORSE**

PID: OA0933

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: CURRY

LATITUDE:	42° 28' 15.42188" N	±0.00030 SECONDS
LONGITUDE:	124° 09' 37.49183" W	±0.00040 SECONDS

ORTHOMETRIC HEIGHT:	{	1151.1	METERS
		3777.	FEET

GEOID HEIGHT:	-24.431		METERS
ELLIPSOIDAL HEIGHT:	1126.351	±0.100	METERS
X:	6338781.075		METERS
Y:	-507569.979		METERS
Z:	505786.472		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.59112"                    +04.30483" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO WILDHORSE AZ MK
				SCALE FACTOR		DEG MIN SEC
SPC	OR S	95,920.345	1,199,083.724	0.99996819	- 2 30 15.3	196 29 11.9
UTM	10	4,702,719.771	404,608.527	0.99971196	- 0 47 0.9	194 45 57.5

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETTIC AZIMUTH
OA0934	WILDHORSE LOOKOUT TOWER	8.910 METERS	052 05
	WILDHORSE RM 2	9.823 METERS	113 22
	WILDHORSE AZ MK		193 58 56.6
	WILDHORSE RM 1	8.277 METERS	285 10

STATION MARK IS A ..... TRIANGULATION STATION DISK  
WITH SETTING ..... PREFABRICATED CONCRETE POST IMBEDDED IN GROUND  
THE MARK IS STAMPED ... WILDHORSE 1942

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1942	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1989	GOOD	US BUREAU OF LAND MANAGEMENT

(Continued on Next Page)

## WILDHORSE

PID: OA0933

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1942 (JCS)  
STATION IS ON WILDHORSE MOUNTAIN AND IS ABOUT 14 MILES, AIR LINE,  
ENE OF GOLD BEACH, 8 MILES SW OF AGNESS, 13-1/2 MILES SE OF OPHIR,  
AND 10-1/2 MILES NE OF THE PYRAMID ROCK LOOKOUT HOUSE. STATION  
OVERLOOKS ALL THE COUNTRY W, N, AND E, BUT THERE ARE HIGHER  
MOUNTAINS TO THE S AND SE.

SURFACE MARK IS A BRONZE DISK SET IN A 10-INCH BLOCK OF CONCRETE  
PROJECTING 4 INCHES ABOVE THE GROUND, STAMPED WILDHORSE 1942.

LOCATED 4.313 METERS (14.150 FEET) FROM SW LEG OF LOOKOUT TOWER,  
10.753 METERS (35.280 FEET) FROM NW LEG, AND 11.394 METERS (37.380  
FEET) FROM THE SE LEG.

UNDERGROUND MARK IS A BRONZE DISK SET IN A 6-INCH BLOCK OF CONCRETE  
SET 30 INCHES BELOW THE SURFACE OF THE GROUND, STAMPED WILDHORSE  
1942.

REFERENCE MARK NO.1 IS A BRONZE DISK SET IN A DRILL HOLE IN A  
ROCK OUTCROP FLUSH WITH THE GROUND, AND IS 2 FEET LOWER THAN THE  
STATION, STAMPED WILDHORSE NO.1 1942.

REFERENCE MARK NO.2 IS A BRONZE DISK SET IN A DRILL HOLE IN A  
ROCK OUTCROP FLUSH WITH THE GROUND, AND IS THE SAME ELEVATION AS  
THE STATION, STAMPED WILDHORSE NO.2 1942.

AZIMUTH MARK IS A BRONZE DISK SET IN A DRILL HOLE IN A ROCK  
OUTCROP SET FLUSH WITH THE GROUND, STAMPED WILDHORSE 1942. TRAVEL  
0.9 MILE S ON ROAD FROM THE WILDHORSE LOOKOUT TOWER AT THE S END  
OF AN OPEN GRASSY FLAT, AND W FROM ROAD AT THIS POINT UP A STEEP  
SIDE HILL TO CREST OF RIDGE AT THE S END OF AN OPEN GRASSY RIDGE,  
A DISTANCE OF ABOUT 100 YARDS, TO THE AZIMUTH MARK. A SMALL  
ROCK CAIRN IS LOCATED AT THE SIDE OF THE MARK.

TO REACH FROM THE PISTOL RIVER POST OFFICE GO E ON THE MAIN GRADED  
ROAD AS PER THE SIGN PISTOL RIVER RD., SNOW CAMP RD., PYRAMID ROCK  
L.O. FOR 1.5 MILES TO FORKS AT BRIDGE. TAKE THE LEFT FORK OR THE  
PISTOL RIVER ROAD AND GO E AND N ON THE MAIN TRAVELED ROAD FOR  
15.6 MILES TO THE PYRAMID ROCK L.O. SIGN AND ROAD. CONTINUE NE  
ON THE MAIN ROAD FOR 7.0 MILES TO FORKS AND SIGN HUNTER CREEK  
RD., END OF ROAD. TAKE THE RIGHT FORK AND GO 0.5 MILE TO  
FORKS AND SIGN SNOWCAMP TR. 5, WILDHORSE L.O. 7. TAKE THE  
LEFT FORK AND GO 7.0 MILES TO THE TOP OF THE HILL, THE WILDHORSE  
LOOKOUT TOWER, AND THE STATION.

HEIGHT OF LIGHT ABOVE STATION MARK 1.3 METERS.

(Continued on Next Page)

DEPARTMENT OF COMMERCE  
NOAA - NOS - C&GS  
NATIONAL GEODETIC SURVEY

PUBLICATION DATE: APRIL 26, 1991  
USGS QUAD SHEET: QUOSATANA BUTTE

## WILDHORSE

PID: OA0933

### STATION RECOVERY (1989)

RECOVERED BY US BUREAU OF LAND MANAGEMENT 1989  
FROM THE JUNCTION OF U.S. HIGHWAY 101 AND JERRYS FLAT  
ROAD AT THE SOUTH END OF THE BRIDGE ACROSS THE ROGUE RIVER IN GOLD  
BEACH, OREGON, PROCEED EASTERLY ON JERRYS FLAT ROAD FOR 29.29 KM  
(18.20 MI) TO FOREST SERVICE ROAD 3318 ON THE RIGHT. TURN RIGHT AND  
PROCEED ON ROAD 3318 FOR 16.42 KM (10.20 MI) TO FOREST SERVICE ROAD  
3318-200 ON RIGHT. TURN RIGHT AND PROCEED ON ROAD 3318-200 FOR 0.80  
KM (0.50 MI) TO LOOKOUT TOWER. STATION MARK IS LOCATED APPROXIMATELY  
20 FT (6.1 M) . SOUTHWEST OF THE SOUTHWEST LEG OF THE LOOKOUT TOWER.  
THE STATION MAY BE USABLE FOR GPS OBSERVATIONS DEPENDING ON SATELLITE  
SELECTION. HOWEVER THE LOOKOUT TOWER RISES TO A VERTICAL ANGLE OF 65  
DEGREES IN THE NORTHEAST QUADRANT. SEE ATTACHED GPS VISIBILITY  
DIAGRAM.

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**Y 129 RESET**  
PID: NW0589

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: MALHEUR

LATITUDE:	42° 00' 47.11357" N	±0.00020 SECONDS
LONGITUDE:	117° 42' 56.87026" W	±0.00020 SECONDS
ORTHOMETRIC HEIGHT:	1361.26	METERS
	4466.1	FEET

GEOID HEIGHT:	-17.553	METERS
ELLIPSOIDAL HEIGHT:	1343.732	±0.044 METERS
X:	554115.511	METERS
Y:	-1799663.885	METERS
Z:	-6074825.613	METERS

HORIZONTAL NETWORK ORDER: B  
VERTICAL NETWORK ORDER: THIRD  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY DIFFERENTIAL LEVELING. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.4                    +03.5                    (Based on Nadcon Interpolation)

PLANE COORDINATES					
GRID	ZONE	NORTHING METERS	EASTING METERS	POINT SCALE FACTOR	CONVERGENCE DEG MIN SEC
SPC	OR S	42,316.826	1,730,605.693	1.00009598	+ 1 54 17.3
SPC	NV W	4,806,515.661	871,854.397	0.99996351	+ 0 34 50.4
UTM	11	4,651,477.069	440,731.355	0.99964322	- 0 28 44.8

STATION MARK IS A . . . . BENCH MARK DISK  
WITH SETTING . . . . . TOP OF CONCRETE MONUMENT (ROUND)  
THE MARK IS STAMPED . . . Y 129 1956 RESET 1989

**STATION MARK HISTORY**

YEAR MONUMENTED OR RECOVERED	CONDITION OF MARK	RECOVERED OR DESCRIBED BY
1989	STATION MONUMENTED	NATIONAL GEODETIC SURVEY

(Continued on Next Page)



**Y 129 RESET**  
PID: NW0589

**STATION DESCRIPTION**

DESCRIBED 1989

TO REACH FROM THE POST OFFICE IN MCDERMITT GO NORTH ON US 95 FOR 1.68 KM (1.04 MI) TO THE MARK ON THE RIGHT.

THE STATION IS 18.5 M (60.7 FT) EAST OF THE CENTERLINE OF THE ROAD, 18.634 M (61.135 FT) NW OF RM 2, 17.382 M (57.027 FT) SW OF RM 1, 14.3 M (46.9 FT) WEST OF A FENCE, 1.1 M (3.6 FT) EAST OF A TELEPHONE LINE AND 1 M (3.3 FT) WEST OF A WITNESS POST.

LEVELS WERE RUN TO THE RMS AND THE CENTER MARK WAS REFERENCED OUT. THE MARK THEN WAS PULLED OUT OF THE GROUND AND WAS REPLACED WITH NEW CONCRETE. THE NEW MARK WAS REPLACED INTO THE SAME HORIZONTAL POSITION AS THE OLD ONE. LEVELS WERE THEN RUN OVER THE NEW MARK FROM THE REFERENCE MARKS.

DESCRIBED BY L.L. RIGGERS.

**ZUMWALT ASTRO**

PID: RA1398

HORIZONTAL DATUM: NAD 83 (1991)  
VERTICAL DATUM: NGVD 29

STATE: OREGON  
COUNTY: WALLOWA

LATITUDE:	45° 36' 13.90625" N	±0.00010 SECONDS
LONGITUDE:	116° 58' 57.76691" W	±0.00020 SECONDS

ORTHOMETRIC HEIGHT: { 1420.7 METERS  
4661. FEET

GEOID HEIGHT:	-15.027		METERS
ELLIPSOIDAL HEIGHT:	1405.795	±0.042	METERS
X:	6012234.110		METERS
Y:	1488573.538		METERS
Z:	1523256.927		METERS

HORIZONTAL NETWORK ORDER: B  
ELLIPSOIDAL HEIGHT ORDER: SECOND CLASS III

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS AND ADJUSTED BY THE NATIONAL GEODETIC SURVEY IN FEBRUARY 1991. THE ORTHOMETRIC HEIGHT WAS DETERMINED BY GPS OBSERVATIONS. THE GEOID HEIGHT WAS DETERMINED BY GEOID90. THE ELLIPSOIDAL HEIGHT WAS DETERMINED BY GPS OBSERVATIONS.

HORIZONTAL DATUM SHIFT-----LATITUDE-----LONGITUDE  
NAD83 minus NAD27                    -00.44364"                    +03.57427" (Based on Adjusted Positions)

**PLANE COORDINATES**

GRID	ZONE	NORTHING METERS	EASTING METERS	POINT	CONVERGENCE DEG MIN SEC	*GRID AZIMUTH TO ZUMWALT ASTRO AZ MK DEG MIN SEC
				SCALE FACTOR		
SPC	OR N	221,238.614	2,774,290.766	0.99992340	+ 2 29 39.9	179 14 46.5
SPC	ID W	438,152.802	703,837.393	1.00004698	- 0 52 51.1	182 37 06.3
UTM	11	5,050,035.615	501,348.090	0.99960002	+ 0 00 44.5	181 43 41.9

(\*ARC-TO-CHORD CORRECTION NOT APPLIED)

**STATION MARKS AND REFERENCE OBJECTS**

PID	REFERENCE OBJECT	DISTANCE	GEODETHIC AZIMUTH
	ZUMWALT ASTRO AZ MK		181 44 26.4
	ZUMWALT ASTRO RM 2	20.964 METERS	241 56
	ZUMWALT ASTRO RM 1	22.423 METERS	326 05

STATION MARK IS AN . . . . ALUMINUM MARKER  
WITH SETTING . . . . . DRILL HOLE IN A BOULDER  
THE MARK IS STAMPED . . . ZUMWALT ASTRO 1946

(Continued on Next Page)

## ZUMWALT ASTRO

PID: RA1398

### STATION MARK HISTORY

<u>YEAR MONUMENTED OR RECOVERED</u>	<u>CONDITION OF MARK</u>	<u>RECOVERED OR DESCRIBED BY</u>
1945	STATION MONUMENTED	COAST AND GEODETIC SURVEY
1954	GOOD	US GEOLOGICAL SURVEY
1962	GOOD	US GEOLOGICAL SURVEY
1976	GOOD	NATIONAL GEODETIC SURVEY (WFP)
1980	GOOD	NATIONAL GEODETIC SURVEY (RM)
1989	GOOD	NATIONAL GEODETIC SURVEY

### STATION DESCRIPTION

DESCRIBED BY COAST AND GEODETIC SURVEY 1945 (JTJ)  
THE STATION IS LOCATED ALONG THE E SIDE OF THE ROAD BETWEEN  
ENTERPRISE AND ZUMWALT, APPROXIMATELY 15 MILES AIRLINE AND 26  
MILES BY ROAD FROM ENTERPRISE. IT IS 185.5 FEET E OF A N-S FENCE  
LINE AND APPROXIMATELY 200 FEET NE OF A WIRE GATE. IT IS A BRONZE  
TRAVERSE DISK SET FLUSH IN A BOULDER PROJECTING 1 FOOT. THE DISK  
IS STAMPED ZUMWALT ASTRO 1944.

REFERENCE MARK 1 IS 73.58 FEET NW OF THE STATION. IT IS A BRONZE  
REFERENCE DISK IN OUTCROPPING BEDROCK STAMPED ZUMWALT ASTRO NO 1  
1945 AND PROJECTS 14 INCHES.

REFERENCE MARK 2 IS 68.78 FEET E OF THE STATION. IT IS A BRONZE  
REFERENCE DISK IN OUTCROPPING BEDROCK STAMPED ZUMWALT ASTRO NO 2  
1945 AND PROJECTS 6 INCHES.

THE AZIMUTH MARK IS APPROXIMATELY 0.45 MILE BY ROAD SW OF THE  
STATION, 60.6 FEET W OF THE APPROXIMATE CENTER OF THE ROAD, AND  
28.4 FEET W OF A FENCE LINE. IT IS A BRONZE AZIMUTH DISK IN  
OUTCROPPING BEDROCK STAMPED ZUMWALT ASTRO 1945 AND PROJECTS 6  
INCHES.

TO REACH THE STATION FROM THE POST OFFICE IN ENTERPRISE, GO S ON  
U.S. HIGHWAY 82 FOR 3.3 MILES TO A ROAD FORKS AT A SIGN BUCKHORN  
SPRING, RED HILL L.O., TURN LEFT AND GO 1.15 MILES TO A FORK, TAKE  
THE RIGHT FORK AND GO 2.8 MILES TO A T-INTERSECTION AND A SIGN RED  
HILL L.O., 26 CHICO, 21 ZUMWALT. TURN LEFT AND GO 0.25  
MILE. THENCE RIGHT FOR 1.0 MILE TO A FORKS, TAKE THE RIGHT FORK  
AND GO 9.5 MILES TO A SIDE ROAD RIGHT AND A ROAD SIGN  
ENTERPRISE 16, ZUMWALT 10, IMNAHA 16. CONTINUE STRAIGHT AHEAD  
FOR 3.55 MILES TO A RANCH HOUSE ON THE RIGHT, CONTINUE STRAIGHT  
AHEAD FOR 4.3 MILES TO A WIRE GATE AND THE STATION ON THE  
RIGHT AS DESCRIBED.

TO REACH THE AZIMUTH MARK FROM THE STATION, FOLLOW THE MAIN  
TRAVELED ROAD SW FOR 0.45 MILE TO THE MARK ON THE RIGHT AS  
DESCRIBED.

HEIGHT OF LIGHT ABOVE STATION MARK 0 METERS.

(Continued on Next Page)

## ZUMWALT ASTRO

PID: RA1398

### STATION RECOVERY (1954)

RECOVERED BY US GEOLOGICAL SURVEY 1954  
RECOVERED AS DESCRIBED BY NGS. ALL MARKS IN GOOD CONDITION. RMS  
AGREE WITH NGS.

### STATION RECOVERY (1962)

RECOVERED BY US GEOLOGICAL SURVEY 1962  
RECOVERED AS DESCRIBED BY USGS AND NGS. ALL MARKS IN GOOD  
CONDITION. RMS AGREE WITH NGS.

### STATION RECOVERY (1976)

RECOVERED BY NATIONAL GEODETIC SURVEY 1976 (WFP)  
THE STATION MARK, REFERENCE MARK 1, REFERENCE MARK 2 AND THE AZIMUTH  
MARK WERE RECOVERED IN GOOD CONDITION. DISTANCES AND DIRECTIONS  
TO THE AZIMUTH MARK AND REFERENCE MARKS CHECKED THE 1945  
DESCRIPTION. THE STATION MARK WAS USED AS THE ANTENNA SITE FOR  
GEOCEIVER STATION 51160.

A NEW DESCRIPTION FOLLOWS.

THE STATION IS LOCATED ABOUT 18 MILES NORTHEAST OF ENTERPRISE, 4  
MILES NORTH OF FINDLEY BUTTE, ON THE HIGHEST POINT OF A LOW  
GRASS-COVERED HILL. IT IS ON PROPERTY OWNED BY MR. GRANT SCHAPPER,  
ROUTE 1, JOSEPH. 432-4555.

TO REACH STATION FROM THE POST OFFICE IN ENTERPRISE, GO  
SOUTHERLY ON STATE HIGHWAY 82 FOR 3.3 MILES TO A FORK AND A SIGN  
BUCKHORN SPRINGS, RED HILL L.O. TURN LEFT AND GO NORTHERLY FOR  
1.25 MILES TO A SIDE ROAD. CONTINUE STRAIGHT AHEAD, NORTHEAST,  
FOR 3.95 MILES TO A FORK AND SIGN, IMNAHA, THOMPSON G.S., TAKE  
RIGHT FORK ONTO GRAVELLED ROAD AND GO NORTH EASTERLY FOR 10.9  
MILES TO A RANCH HOUSE ON THE LEFT. CONTINUE AHEAD ON GRAVELLED  
ROAD FOR 5.6 MILES TO THE TOP OF A SMALL RISE AND THE AZIMUTH  
MARK ON THE LEFT, CONTINUE STRAIGHT AHEAD FOR 0.45 MILE TO THE  
TOP OF A LOW HILL AND THE STATION ON THE RIGHT.

THE STATION IS A STANDARD TRAVERSE DISK, STAMPED ZUMWALT ASTRO  
1944, SET IN OUTCROPPING BEDROCK THAT PROJECTS 1 FOOT. IT IS 211  
FEET NORTHEAST OF A WIRE GATE, 181 FEET EAST OF THE CENTER OF THE  
GRAVELLED ROAD, AND 150 FEET EAST OF A WITNESS SIGN IN A FENCE  
LINE.

REFERENCE MARK 1 IS A STANDARD DISK, STAMPED ZUMWALT ASTRO NO 1  
1945, SET IN OUTCROPPING BEDROCK THAT PROJECTS 14 INCHES. IT IS  
110 FEET EAST OF THE FENCE LINE AND ABOUT THE SAME ELEVATION AS THE  
STATION.

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## ZUMWALT ASTRO

PID: RA1398

REFERENCE MARK 2 IS A STANDARD DISK, STAMPED ZUMWALT ASTRO NO 2 1945, SET IN OUTCROPPING BEDROCK THAT PROJECTS 6 INCHES. IT IS 88 FEET EAST OF THE FENCE LINE AND ABOUT 1 FOOT LOWER THAN THE STATION.

THE AZIMUTH MARK IS A STANDARD DISK, STAMPED ZUMWALT ASTRO 1945, SET IN OUTCROPPING BEDROCK THAT PROJECTS 6 INCHES. IT IS 61 FEET SOUTHWEST OF THE GRAVELLED ROAD, AND 27 FEET SOUTHWEST OF A WITNESS SIGN IN A NORTH SOUTH FENCE LINE.

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN--18 MILES NORTHEAST OF ENTERPRISE.

### STATION RECOVERY (1980)

RECOVERED BY NATIONAL GEODETIC SURVEY 1980 (RM )  
THE STATION MARK RECOVERED AS DESCRIBED IN 1976. THE TO REACH IS ADEQUATE.

REFERENCE MARKS 1 AND 2 RECOVERED AS DESCRIBED AND IN GOOD CONDITION.

STATION OCCUPIED FOR ASTRO PURPOSES ONLY.

### STATION RECOVERY (1989)

RECOVERED BY NATIONAL GEODETIC SURVEY 1989  
TEXT WAS SUPERSEDED BY LATER RECOVERY.  
THE STATION IS LOCATED ABOUT 41.8 KM (25.95 MI) NORTH EAST OF ENTERPRISE IN A PASTURE OFF OF ZUMWALT ROAD. OWNERSHIP--UNKNOWN.  
TO REACH FROM THE POST OFFICE IN ENTERPRISE GO EAST AND SOUTH ON HIGHWAY 82 FOR 5.8 KM (3.60 MI) TO A SIDE ROAD LEFT. TURN LEFT, SIGN FOR BUCKHORN SPRINGS, AND GO 1.85 KM (1.15 MI) TO A FORK FOR SWAMP CREEK ROAD. BEAR RIGHT AND GO 4.5 KM (2.80 MI) TO A Y JUNCTION AND SIGN FOR LIBERTY ROAD. BEAR LEFT AND GO 0.4 KM (0.25 MI) TO SIGN FOR ELK MT LOOKOUT. BEAR RIGHT, GOING TOWARD RED HILL LOOKOUT, FOR 1.6 KM (1.00 MI) TO A FORK AND SIGN FOR ZUMWALT ROAD. TAKE THE RIGHT FORK, ZUMWALT ROAD, AND GO 3.9 KM (2.40 MI) TO END OF PAVED ROAD. CONTINUE AHEAD ON GRAVEL ROAD FOR 11.3 KM (7.00 MI) TO A SIDE ROAD RIGHT, SIGN FOR IMNAHA. CONTINUE AHEAD, TOWARD ZUMWALT, FOR 2.7 KM (1.70 MI) TO A RANCH HOUSE ON THE LEFT. CONTINUE AHEAD FOR 5.6 KM (3.50 MI) TO A SIDE ROAD RIGH, (2ND ROAD TO IMNAHA). CONTINUE AHEAD FOR 4.05 KM (2.50 MI) TO A WIRE GATE IN FENCE LINE ON THE RIGHT. TURN RIGHT, PASSING THROUGH WIRE GATE. TURN LEFT AND FOLLOW FENCE LINE, PARALLELING ZUMWALT ROAD, FOR 1.05 KM (0.65 MI) TO WIRE GATE ON LEFT AND STATION ON RIGHT ABOUT 50 M (164.0 FT) NORTHEAST OF FENCE LINE.  
NOTE - ACCESS TO STATION CANNOT BE OBTAIN AT SECOND GATE FROM ZUMWALT ROAD DUE TO DRAINAGE DITCH BETWEEN ROAD AND FENCE LINE.  
LOCATED 45.72 M (150.0 FT) NORTHEAST OF NGS SURVEY MARKER NAILED TO A FENCE POST ALONG SIDE THE ROAD AND 0.91 M (3.0 FT) SOUTH OF A USFS WITNESS POST.