

**SURVEY NARRATIVE**

THE PURPOSE OF THIS METRIC SURVEY WAS TO ESTABLISH HORIZONTAL CONTROL FOR AN OREGON DEPARTMENT OF TRANSPORTATION (ODOT) PROJECT CALLED "WINSTON - INTERSTATE 5". THE CONTROL NETWORK WAS CONDUCTED BY AN ODOT SURVEY CREW FROM ROSEBURG BETWEEN DECEMBER 11, 2000 TO DECEMBER 18, 2000. THE ORIGINAL FIELD NOTES ARE ARCHIVED IN SALEM AS BOOK #3750.

THE BASIS OF BEARING OF N 53°34'46" E COMES FROM TWO FOUND RIGHT OF WAY MONUMENTS ALONG THE COOS BAY-ROSEBURG HIGHWAY 42 AT ENGLISH STATION 1267+80, 100 FEET LEFT (POINT #1113), AND ENGLISH STATION 1284+54.02 P.S., 110 FEET RIGHT (POINT #1116). REFER TO ODOT DRAWING NO. 9B-7-5. THESE POINTS ARE LOCATED ALONG THE HIGHWAY BETWEEN S.W. JACKIE STREET AND S.W. LANDERS AVE. 1.65 MILES NORTHEAST OF WINSTON.

THE COORDINATES FOR THIS SURVEY ARE ON A LOCAL DATUM PLANE REPRESENTING TRUE GROUND DISTANCES AND WERE DERIVED FROM THE OREGON STATE PLANE COORDINATE SYSTEM OF 1927, SOUTH ZONE. TO CONVERT METRIC COORDINATES AND DISTANCES TO ENGLISH, DIVIDE BY 0.30480061 (OR, 1 METER = 3937 US SURVEY FEET / 1200).

A LEICA "TCA 1800" TOTAL STATION (SERIAL #418939) WAS USED TO RUN THE NETWORK AND TIE EXISTING MONUMENTS. THE LEICA TCA 1800 HAS THE FOLLOWING ACCURACY: STANDARD ANGULAR ERROR OF +/- 1 SECOND, AND A STANDARD DISTANCE ERROR OF +/- 2 MM, +/- 2 PPM.

THE NETWORK WAS ADJUSTED USING A LEAST SQUARES ROUTINE WITH LISCAD SOFTWARE. THIS ADJUSTMENT PRODUCED ANGULAR AND DISTANCE RESIDUALS (THE AMOUNT THE FIELD OBSERVED MEASUREMENTS WERE CHANGED DUE TO THE ADJUSTMENT): ANGULAR RESIDUALS: 94% WERE WITHIN 3 SECONDS, AND 100% WERE WITHIN 9 SECONDS. DISTANCE RESIDUALS: 100% WERE WITHIN 4 MM. THERE IS A 95% PROBABILITY THAT THE FINAL POSITIONS OF THE NETWORK POINTS ARE WITHIN THE ERROR ELLIPSES AS SHOWN ON THE "CONFIDENCE LEVEL LIMITS" TABLE. (NOTE: SEE SHEET 3 FOR LIST OF REFERENCED SURVEYS.)

**ALIGNMENT RETRACEMENT NARRATIVE**

**ALIGNMENT "RW1" (HIGHWAY 42 FROM DILLARD END TO RAILROAD)**

REFERRING TO ODOT DRAWING NO. 9B-7-5 THE ALIGNMENT WAS RETRACED USING A BEST FIT ANALYSIS OF TIED MONUMENTS. THE RECORD RADIUS AND SPIRAL LENGTHS WERE USED. THE RECORD ENGLISH STATION AT 1178+91.51 WAS HELD FOR STATIONING AS METRIC STATION 35+933.404.

**ALIGNMENT "RW2" (HIGHWAY 42 FROM RAILROAD TO FREEWAY)**

REFERRING TO ODOT DRAWING NO. 9B-7-5 THE ALIGNMENT WAS RETRACED USING A BEST FIT OF THREE TIED MONUMENTS (POINTS 1174, 1175, 1176). THE RECORD STATION AT POINT 1176 OF "A"1300+20.00 WAS HELD FOR STATIONING AS METRIC STATION 39+630.175.

**ALIGNMENT "RW3" (HIGHWAY 42 FROM WINSTON INTERSECTION TO THE WEST)**

REFERRING TO ODOT DRAWING NOS. 9B-7-5 AND 6B-28-22 (PART 2 OF 2) THE ALIGNMENT TANGENT WAS RETRACED BY HOLDING POINT 1040 ON THE EAST END, AND HOLDING A SPLIT OF POINTS 1009 AND 1036 FOR THE WEST END. FOR STATIONING THE ENGLISH STATION 1497+13.66 WAS HELD AS METRIC STATION 45+632.815.

**ALIGNMENT "OS1" (OAKLAND - SHADY HIGHWAY)**

REFERRING TO ODOT DRAWING NO. 9B-7-5 THE RECORD DATA WAS HELD FOR RETRACING THIS ALIGNMENT. THE RECORD OFFSET TO POINT 1173 WAS HELD. THE ENGLISH STATION AT EQUATION 1315+11.83 POT BK. = 1315+00.00 POT AH. (20 FT. LT.) WAS HELD FOR STATIONING AS METRIC STATION 40+081.280.

**ALIGNMENT "OS2" (OAKLAND - SHADY HIGHWAY "T" INTERSECTION)**

REFERRING TO ODOT DRAWING NO. 1A-22-13 THE RECORD DATA FOR THIS ALIGNMENT, INCLUDING THE RADIUS AND SPIRAL LENGTHS, WAS USED TO RETRACE IT. SOME ADJUSTMENTS AT THE TERMINI WERE DONE TO MATCH INTO ALIGNMENTS "RW2" AND "OS1". THE ENGLISH STATION 1327+24.69 POT WAS HELD FOR STATIONING AS METRIC STATION 40+454.566.

**CONFIDENCE LEVEL LIMITS**

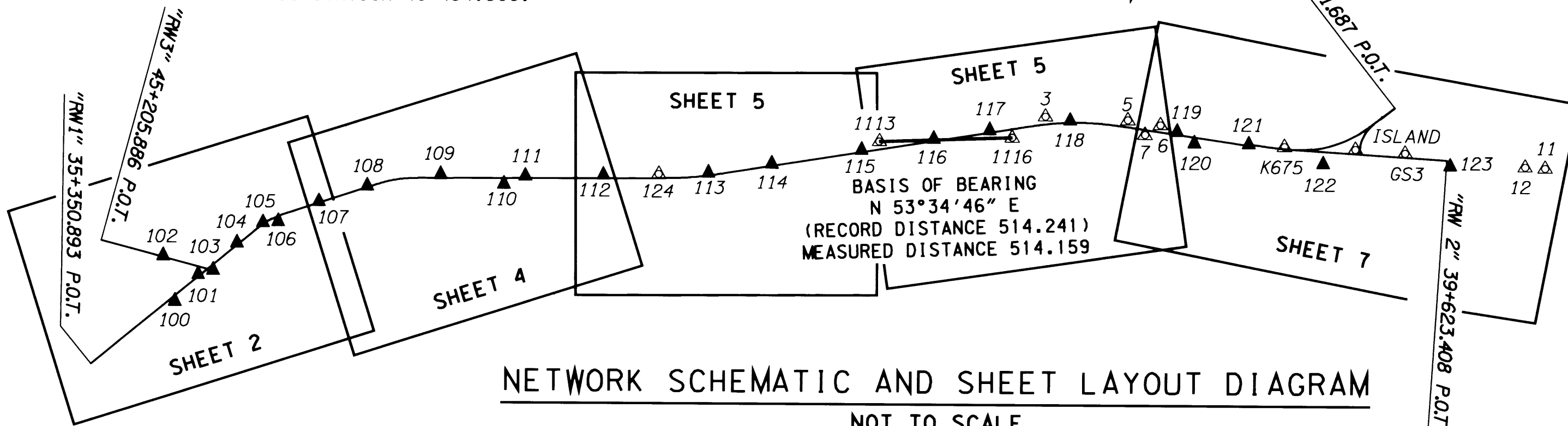
POINT	SEMI MAJOR	SEMI MINOR	ORIENTATION
117	0.001 m	0.001 m	S 42°27'02" E
116	0.002 m	0.001 m	S 39°55'57" E
115	0.002 m	0.001 m	S 41°07'33" E
114	0.007 m	0.001 m	S 44°25'45" E
113	0.010 m	0.001 m	S 44°00'03" E
3	0.002 m	0.001 m	S 50°16'10" E
124	0.014 m	0.002 m	S 42°27'37" E
112	0.019 m	0.002 m	S 40°01'02" E
111	0.026 m	0.002 m	S 38°30'55" E
110	0.028 m	0.002 m	S 39°48'39" E
108	0.043 m	0.002 m	S 38°18'02" E
109	0.035 m	0.002 m	S 37°08'54" E
107	0.048 m	0.003 m	S 40°02'01" E
106	0.053 m	0.003 m	S 42°09'41" E
105	0.055 m	0.003 m	S 42°06'42" E
104	0.059 m	0.004 m	S 44°19'50" E
103	0.063 m	0.006 m	S 47°20'11" E
101	0.065 m	0.006 m	S 47°33'59" E
100	0.069 m	0.008 m	S 60°19'58" E
102	0.069 m	0.005 m	S 44°34'45" E
118	0.003 m	0.001 m	S 43°05'02" E
5	0.006 m	0.001 m	S 37°14'57" E
7	0.007 m	0.001 m	S 30°25'17" E
119	0.008 m	0.001 m	S 32°57'23" E
121	0.013 m	0.001 m	S 30°00'00" E
K675	0.015 m	0.002 m	S 29°29'20" E
122	0.017 m	0.002 m	S 27°04'02" E
120	0.009 m	0.002 m	S 29°02'38" E
6	0.008 m	0.001 m	S 34°39'14" E
ISLAND	0.019 m	0.002 m	S 30°24'31" E
GS3	0.023 m	0.002 m	S 30°36'05" E
123	0.026 m	0.002 m	S 29°23'06" E
12	0.033 m	0.002 m	S 30°04'59" E
11	0.035 m	0.002 m	S 30°10'25" E

**NETWORK OBSERVATIONS**

AT	TO
1113	1116, 117, 116, 115, 114, 113
115	1116, 3, 117, 116, 114, 113, 1113
114	3, 116, 1113, 115, 113, 124
113	1113, 115, 114, 124, 112, 111
124	114, 113, 112, 111, 110, 108
112	113, 124, 111, 110, 109, 108
111	113, 124, 112, 110, 109, 108
110	124, 112, 111, 109, 108
109	112, 111, 110, 108, 107
108	124, 112, 111, 110, 109, 107, 106
107	109, 108, 106, 105
106	108, 107, 105, 104
105	107, 106, 104, 103, 101, 100
104	106, 105, 103, 101, 100
103	105, 104, 102, 101, 100
101	105, 104, 103, 102, 100
100	105, 104, 103, 101
102	101, 103
116	1113, 115, 1116, 117, 3, 118
117	1113, 115, 116, 1116, 3, 118
1116	1113, 115, 116, 117, 3
3	115, 114, 116, 117, 1116, 118, 5, 7, 119, 115, 121, K675, 122
118	116, 117, 3, 5, 7, 119, 121, K675, 122, 116, 120
5	3, 118, 6, 7, 120, 121, 122
6	5, 7, 119, 120, 121, 122
7	3, 118, 5, 6, 119, 120
119	3, 118, 6, 7, 120, 121, 122, 3, 5
120	118, 5, 6, 119, 121, 122
121	3, 118, 5, 6, 119, 120, 122, K675
K675	3, 118, 121, 122, ISLAND, GS3, 123
ISLAND	K675, 122, 123
GS3	122, 123, 12, K675
123	K675, 122, ISLAND, GS3, 12, 11
12	122, GS3, 123, 11
11	123, 12
122	3, K675, ISLAND, GS3, 123, 12, 3, 118, 5, 6, 119, 120, 121

**LEGEND**

- ▲ SET MONUMENT
- △ FOUND MONUMENT USED AS NETWORK POINT
- R/W CENTER LINE



REGISTERED PROFESSIONAL LAND SURVEYOR  
 Christine V. Blewins  
 OREGON JULY 18, 1994  
 CHRISTINE V. BLEWINS 2669  
 EXPIRES: DEC. 31, 2003

METRIC SURVEY  
 1 METER = 3937 U.S. FEET / 1200  
 TO CONVERT A METRIC DISTANCE DIVIDE BY 0.30480061

OREGON DEPARTMENT OF TRANSPORTATION  
 HORIZONTAL CONTROL, RECOVERY,  
 AND RETRACEMENT MAP  
 WINSTON - INTERSTATE 5  
 COOS BAY - ROSEBURG HWY.  
 DOUGLAS COUNTY  
 3500 STEWART PARKWAY, SUITE 140  
 ROSEBURG, OREGON 97470