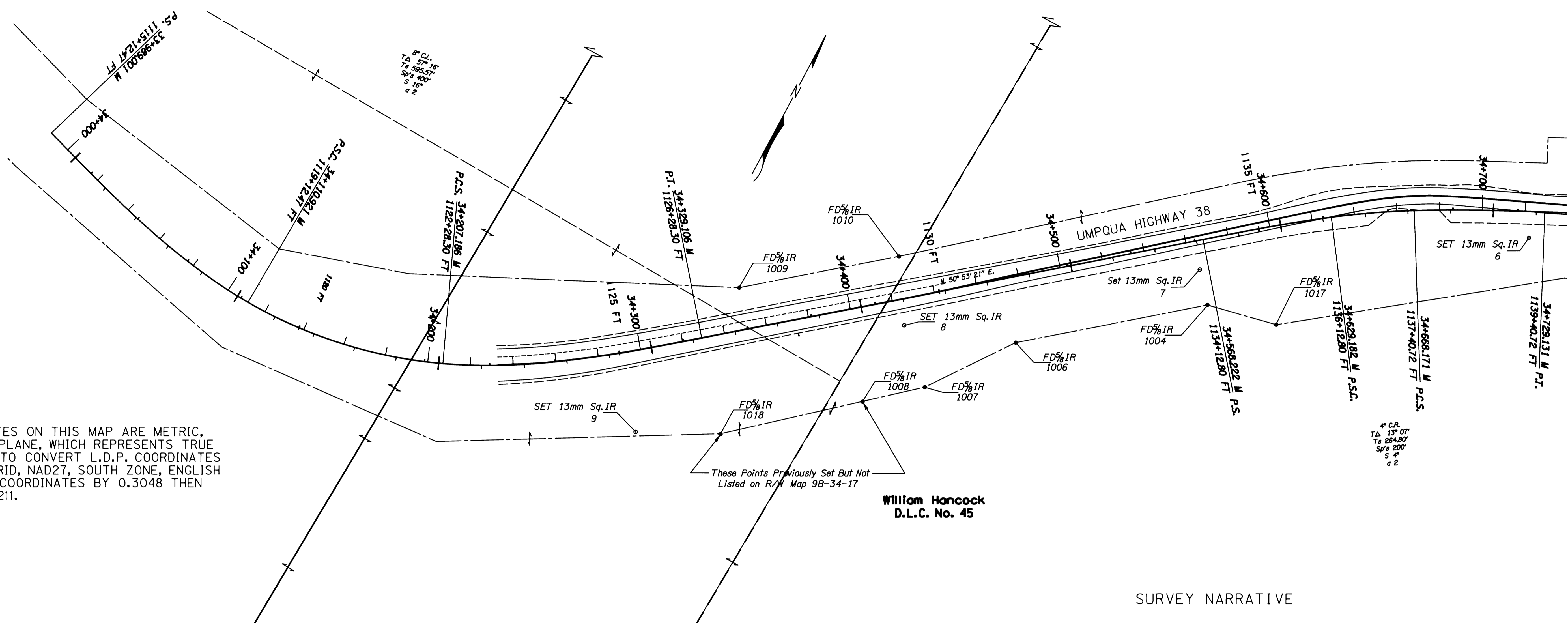


LOCATION HORIZONTAL CONTROL SURVEY AND RECOVERY MAP

FOR THE OREGON DEPARTMENT OF TRANSPORTATION
IN SECTION 21, T. 22 S., R. 7 W., W.M.
DOUGLAS COUNTY

Date: 4-23-96 By: JC
This survey contains:
Map: M 124-17 A+B
Narrative:
Corner Rpt:
DOUGLAS COUNTY SURVEYOR



NOTE: ALL COORDINATES ON THIS MAP ARE METRIC, ON A LOCAL DATUM PLANE, WHICH REPRESENTS TRUE GROUND DISTANCES. TO CONVERT L.D.P. COORDINATES TO OREGON STATE GRID, NAD27, SOUTH ZONE, ENGLISH UNITS, DIVIDE L.D.P. COORDINATES BY 0.3048 THEN MULTIPLY BY 0.9999211.

These Points Previously Set But Not Listed on R/W Map 9B-34-17

William Hancock
D.L.C. No. 45

SURVEY NARRATIVE

The purpose of the control network was to establish horizontal and vertical control for a highway project named "HANCOCK HILL SLIDE CORRECTION" on the Umpqua Highway 38 from mile points 37.60 to 37.80.

Basis of Bearing was established from two Oregon State Hwy. R/W monuments with known coordinates (Points #1 and #2). Coordinates for points #1 and #2 can be found on Hancock Hill Passing Lane Sec., Umpqua Hwy, Douglas County, Oregon map. Orig. No. 9B-34-17.

Coordinates for points #1 and #2 were first converted to meters by multiplying by 0.3048. Point #2 was occupied and point #1 was backsighted (Basis of Bearing). A network of "Set" Horizontal Control Monuments was then observed. Each point in the network was observed from more than one control point in the network. These observations were adjusted using a Least Squares adjustment technique. "Found" State Right of Way monuments were then located by double tying to network control points.

A Wild T1610 Electronic Theodolite and DI1600 Distomat were used to make all observations. The T1610 Theodolite has a standard angular error of +/- 1.5 seconds and the DI1600 has a standard distance error of +/- 3mm +/- 2 ppm.

A level circuit through the Horizontal Control points was made using a Wild NA2002 level, starting from BM #N 246, a Brass Disk stamped "145 N246 1932" set in the N.E. corner of a bridge over Elk Cr., Elev. = 145.252 Ft. = 44.273 m (1947 Adj. of NGVD 1929). Procedures used for this survey meet the requirements for First Order, Class 2 Precision.

The survey was started June 29, 1995 and completed July 20, 1995.

The Least Squares adjustment produced; angular residuals (the amount the field observed angles were changed due to the adjustment) of no greater than 6 seconds; distance residuals (the amounts the field observed distances were changed due to the adjustment) of no greater than 31 mm. There is a 95% probability that the final positions of the control points are within the error ellipses as shown in the tables below.

Location Control Network				
Point #	Description	LDP North(m)	LDP East(m)	Elev.(m)
6	Set 13mm Sq.Iron Rod 762mm Long W/38mm Alum. Cap Stamped "000T Horiz. Control 6"	223790.107	364453.055	77.213
7	Set 13mm Sq.Iron Rod 762mm Long W/38mm Alum. Cap Stamped "000T Horiz. Control 7"	223704.709	364324.070	84.941
8	Set 13mm Sq.Iron Rod 762mm Long W/38mm Alum. Cap Stamped "000T Horiz. Control 8"	223616.835	364214.057	92.260
9	Set 13mm Sq.Iron Rod 762mm Long W/38mm Alum. Cap Stamped "000T Horiz. Control 9"	223513.642	364126.711	98.840
10	Set 13mm Sq.Iron Rod 762mm Long W/38mm Alum. Cap Stamped "000T Horiz. Control 10"	223168.846	364014.490	

Found Monuments				
Point #	Description	LDP North(m)	LDP East(m)	Elev.(m)
1004	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD RW". R/W Station 1134+00 Ft. 100' Rt.	223691.809	364334.905	75.520
1006	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD RW". R/W Station 1131+00 Ft. 100' Rt.	223633.996	364264.029	79.668
1007	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD RW". R/W Station 1129+50 Ft. 140' Rt.	223595.686	364236.317	78.151
1008	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD RW". (Station Unknown.)	223576.099	364213.671	81.624
1009	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD RW". R/W Station 1127+00 Ft. 65' Lt.	223596.133	364137.700	99.897
1010	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD" R/W Station 1129+50 Ft. 65' Lt.	223644.183	364196.771	100.650
1017	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD RW". R/W Station 1135+00 Ft. 150' Rt.	223698.575	364367.878	64.634
1018	FD 16mm (5/8") Iron Rod W/Plastic Cap Stamped "OSHD RW". R/W Station 1126+28.30 P.T. FT 150' Rt.	223531.444	364162.166	84.484
1019	FD 50mm (2") Iron Pipe. Section Corner 20,21,28,29 T22S, R7W, W.M.	223187.959	364004.510	

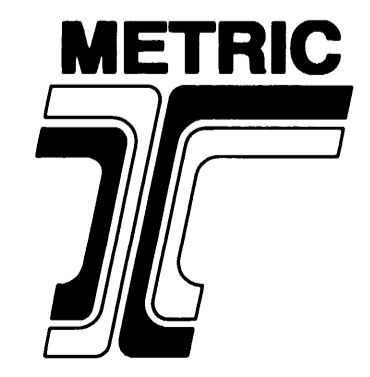
LDP = Local Datum Plane

Pt.	Adjusted Coordinates		Standard Deviations		Standard Error Ellipse		
	East	North	East	North	Semi Major	Semi Minor	Orientation
6	364453.055	223790.107	0.002	0.004	0.004	0.002	S9 29 12E
3	364686.656	223894.035	0.003	0.004	0.005	0.002	S36 41 44E
9	364126.711	223513.642	0.010	0.014	0.016	0.002	S34 21 20E
7	364324.070	223704.709	0.004	0.008	0.008	0.002	S24 07 42E
11	364572.485	223853.729	0.003	0.001	0.003	0.001	N79 45 26E
10	364014.490	223168.846	0.021	0.018	0.027	0.003	S49 38 47E
8	364214.057	223616.835	0.006	0.011	0.012	0.002	S29 11 40E
5	364756.854	223915.597	0.004	0.006	0.007	0.002	S29 55 15E
4	364986.955	224004.234	0.007	0.014	0.015	0.003	S24 35 23E

REGISTERED PROFESSIONAL LAND SURVEYOR
Michael J. Gardner
OREGON JANUARY 21, 1988
MICHAEL J. GARDNER 2318

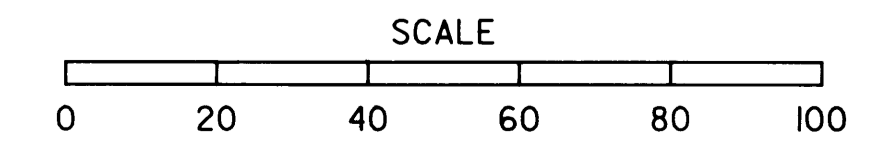
RENEWAL DATE: JUNE 30, 1997

MICHAEL J. GARDNER P.L.S.
Oregon Department of Transportation
3500 N.W. Stewart Parkway
Roseburg, Oregon 97470



LEGEND

- MONUMENT SET
- FOUND MONUMENT



COUNTY SURVEYORS FILE DATA
DO NOT REMOVE FROM OFFICE

ST. HWY. 38-002A

Scale 1:1000
MAP FILE M 124-17 A