



COUNTY SURVEYORS FILE DATA  
DO NOT REMOVE FROM OFFICE

# HORIZONTAL CONTROL, RECOVERY, AND RETRACEMENT MAP

## IN THE NE 1/4 OF SECTION 9, T. 29 S., R. 8 W., W.M., AND THE NW 1/4 OF SECTION 10, T. 29 S., R. 8 W., W.M. DOUGLAS COUNTY

### SURVEY NARRATIVE

THE PURPOSE OF THIS SURVEY WAS TO ESTABLISH HORIZONTAL AND VERTICAL CONTROL FOR AN OREGON DEPARTMENT OF TRANSPORTATION HIGHWAY PROJECT CALLED "MP 59.1 SLIDE". THE BASIS OF BEARING OF N 77°46'47" E FOR THE HORIZONTAL CONTROL NETWORK WAS ESTABLISHED FROM RIGHT OF WAY MONUMENTS FOUND ON ODOT'S RIGHT OF WAY DRAWING NO. 1A-15-46. CONTROL NETWORK POINTS WERE SET, AND FOUND MONUMENTS WERE TIED FROM THESE NETWORK POINTS USING ODOT'S STANDARD DOUBLE-TIE PROCEDURE. COORDINATES USED ON THIS MAP ARE ON A LOCAL DATUM PLANE WHICH REPRESENTS TRUE GROUND DISTANCES. TO CONVERT LDP COORDINATES TO OREGON STATE GRID SOUTH ZONE (1927 DATUM), MULTIPLY LDP COORDINATES BY 0.9998639. TO CONVERT COORDINATES TO ENGLISH UNITS, DIVIDE COORDINATE BY 0.30480061.

THE SURVEY WORK BEGAN ON APRIL 20, 1998 AND WAS COMPLETED ON APRIL 27, 1998.

A LEICA TCA 1800 TOTAL STATION WAS USED TO MAKE ALL OBSERVATIONS. THE TCA 1800 HAS A STANDARD ANGULAR ERROR OF +/- 1 SECOND AND A STANDARD DISTANCE ERROR OF +/- 2 MM, +/- 2 PPM. THE WILD NA2002 WAS USED TO SURVEY VERTICAL CONTROL; THE NA2002 HAS A STANDARD DEVIATION OF 0.9 MM IN A 1 KM DOUBLE-RUN LEVEL CIRCUIT.

THE LEAST SQUARES ADJUSTMENT WAS USED ON THE HORIZONTAL CONTROL NETWORK AND IT PRODUCED THE FOLLOWING:

ANGULAR RESIDUALS (THE AMOUNTS THE FIELD OBSERVED ANGLES WERE CHANGED DUE TO THE ADJUSTMENT) OF NO GREATER THAN 4 SECONDS; AND,  
DISTANCE RESIDUALS (THE AMOUNTS THE FIELD OBSERVED DISTANCES WERE CHANGED DUE TO THE ADJUSTMENT) OF NO GREATER THAN 2 MM.  
THERE IS A 95% PROBABILITY THAT THE FINAL POSITIONS OF THE CONTROL POINTS ARE WITHIN THE ERROR ELLIPSES AS SHOWN IN THE TABLE "ERROR ANALYSIS".

A LEVEL CIRCUIT THROUGH THE HORIZONTAL CONTROL POINTS WAS MADE USING A WILD NA2002 LEVEL, STARTING FROM AN ODOT TBM. A 13 MM SQUARE IRON ROD WITH A 38 MM ALUMINUM CAP STAMPED "Vert Cont. ODOT TBM" ELEV 402.374 M. THIS TBM WAS PREVIOUSLY SET FROM BM "P 76" WITH ELEVATIONS BASED ON 1929 DATUM (ADJUSTMENT OF 1956).

THE EXISTING RIGHT OF WAY CENTERLINE WAS RETRACED USING THE ALIGNMENT P.I. COORDINATES FROM RIGHT OF WAY DRAWINGS NO. 1A-15-45 AND 1A-15-46.

- 1000 FD. 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD" 50 MM ABOVE SURFACE IN GOOD CONDITION. A METAL WITNESS POST AND PADDLE BOARD NEARBY MARKED "SHRW 1873 110 LT" (ACTUAL POINT IS OFF THIS DRAWING)  
N = 160293.512  
E = 354090.833
- 1001 FD. 3" (76 MM) BRASS DISK SET IN CONC. FLUSH WITH SURFACE. STAMPED "OREGON STATE HIGHWAY DIVISION REFERENCE", A METAL WITNESS POST AND PADDLE BOARD NEARBY MARKED "SHRP 1872 77.95" (ACTUAL POINT IS OFF THIS DRAWING)  
N = 160229.914  
E = 354103.476
- 1004 FD. 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD R/W" 0.07 M ABOVE SURFACE IN GOOD CONDITION. A METAL WITNESS POST AND PADDLE BOARD NEARBY MARKED "1866 70 LT"  
N = 160193.148  
E = 353916.155
- 1003 FD. 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD R/W", A METAL WITNESS POST AND PADDLE BOARD NEARBY MARKED "SHRW 1867+50 65 RT"  
N = 160171.226  
E = 353973.632
- 5 SET A 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM DIA. ALUM. CAP STAMPED "ODOT HORIZ. CONTROL 5" ELEVATION 402.391 M  
N = 160176.645  
E = 353902.393

FILED  
Date: 4/5/1999 By: J.P.  
This survey consists of:  
Map: M129-36  
Narrative:  
Corner Rpt:  
DOUGLAS COUNTY SURVEYOR

6" CR (R= 291.063 m)  
T<sub>2</sub> 47°36'28"  
Ts 183.327  
2 - 109.729 Sp  
S 10°48'  
a 1 2/3

- 1009 FD 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD R/W" 0.02 M ABOVE SURFACE IN GOOD CONDITION WITH A METAL WITNESS POST NEARBY (HAS NO PADDLE BOARD). ASSUMED TO BE STA 1859+55.40 150.0 LT.  
N = 160151.462  
E = 353723.679

- 1 SET A 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM DIA. ALUM. CAP STAMPED "ODOT HORIZ. CONTROL 1" ELEVATION 413.432 M  
N = 160093.560  
E = 353664.601

- 501 SET 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM DIA. ALUM. CAP STAMPED "ODOT HORIZ. CONTROL 501" N = 160052.346  
E = 353770.793

- 4 SET A 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM DIA. ALUM. CAP STAMPED "ODOT HORIZ. CONTROL 4" N = 160205.718  
E = 353928.434  
ELEVATION 401.598 M
- 1006 FD. 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD R/W" 0.07 M ABOVE SURFACE IN GOOD CONDITION. A METAL WITNESS POST AND PADDLE BOARD NEARBY MARKED "1863+50 95 LT"  
N = 160172.802  
E = 353842.341
- 1008 FD 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD R/W" FLUSH WITH SURFACE IN GOOD CONDITION. A METAL WITNESS POST NEARBY (HAS NO PADDLE BOARD). ASSUMED TO BE STA 1862+50 175.0 LT  
N = 160181.841  
E = 353797.937
- 500 SET 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM DIA. ALUM. CAP STAMPED "ODOT HORIZ. CONTROL 500" N = 160165.423  
E = 353779.867
- TBM FD 13 MM SQ. IRON ROD WITH A 38 MM ALUM. CAP STAMPED "VERT. CONT. ODOT TBM" ELEV. 402.374 M

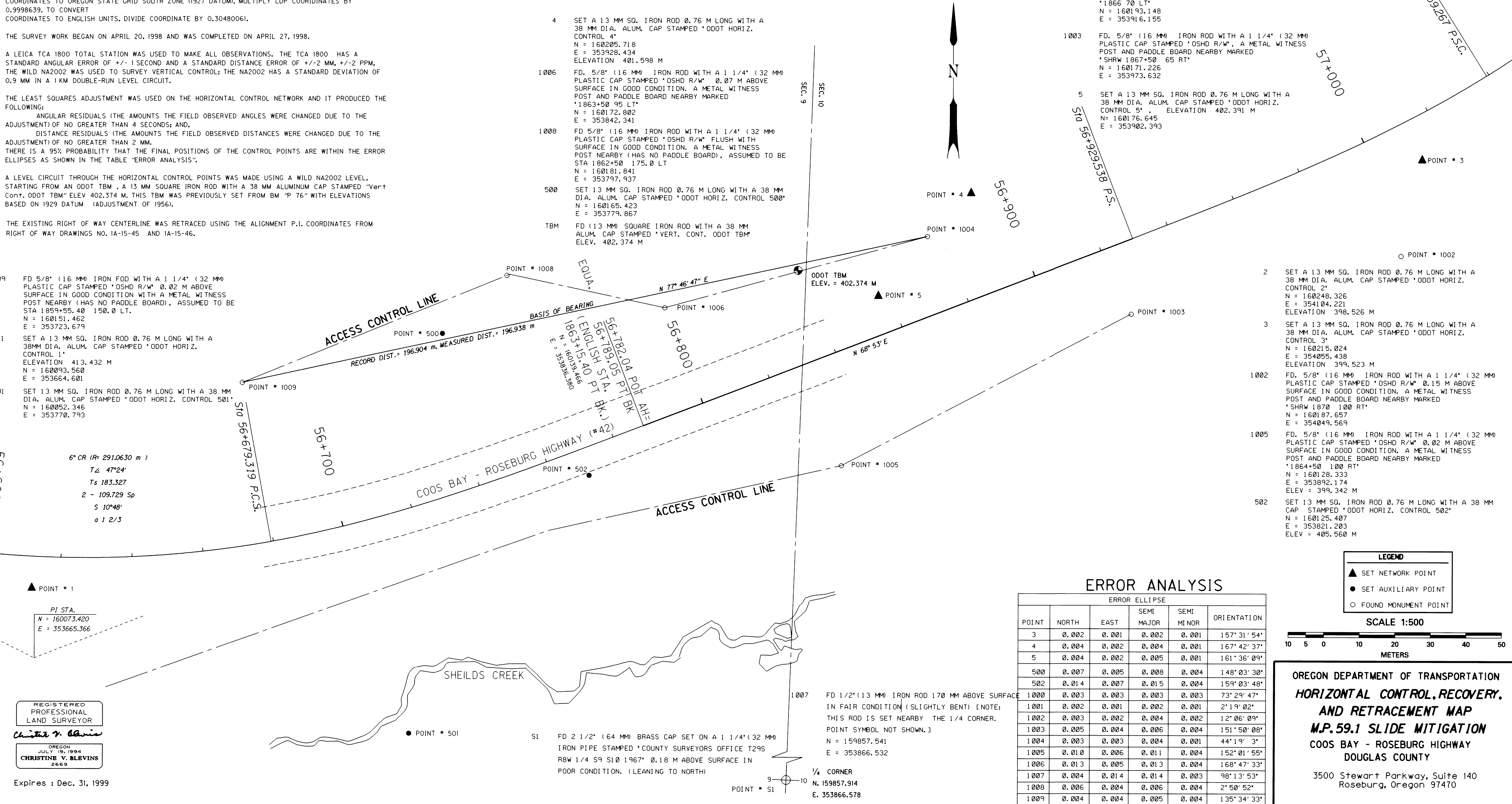
- 2 SET A 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM DIA. ALUM. CAP STAMPED "ODOT HORIZ. CONTROL 2" N = 160248.326  
E = 354104.221  
ELEVATION 398.526 M
- 3 SET A 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM DIA. ALUM. CAP STAMPED "ODOT HORIZ. CONTROL 3" N = 160215.024  
E = 354055.438  
ELEVATION 399.523 M
- 1002 FD. 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD R/W" 0.15 M ABOVE SURFACE IN GOOD CONDITION. A METAL WITNESS POST AND PADDLE BOARD NEARBY MARKED "SHRW 1870 100 RT"  
N = 160187.657  
E = 354049.569
- 1005 FD. 5/8" (16 MM) IRON ROD WITH A 1 1/4" (32 MM) PLASTIC CAP STAMPED "OSHD R/W" 0.02 M ABOVE SURFACE IN GOOD CONDITION. A METAL WITNESS POST AND PADDLE BOARD NEARBY MARKED "1864+50 100 RT"  
N = 160128.333  
E = 353892.174  
ELEV = 399.342 M
- 502 SET 13 MM SQ. IRON ROD 0.76 M LONG WITH A 38 MM CAP STAMPED "ODOT HORIZ. CONTROL 502" N = 160125.407  
E = 353821.203  
ELEV = 405.560 M

6" CR (R= 291.0630 m)  
T<sub>2</sub> 47°24'  
Ts 183.327  
2 - 109.729 Sp  
S 10°48'  
a 1 2/3

PI STA.  
N = 160073.420  
E = 353665.366

REGISTERED PROFESSIONAL LAND SURVEYOR  
Christine V. Blevins  
OREGON JULY 19, 1994  
CHRISTINE V. BLEVINS 2669

Expires : Dec. 31, 1999



### ERROR ANALYSIS

POINT	ERROR ELLIPSE				ORIENTATION
	NORTH	EAST	SEMI MAJOR	SEMI MINOR	
3	0.002	0.001	0.002	0.001	157° 31' 54"
4	0.004	0.002	0.004	0.001	167° 42' 37"
5	0.004	0.002	0.005	0.001	161° 36' 09"
500	0.007	0.005	0.008	0.004	148° 03' 30"
502	0.014	0.007	0.015	0.004	159° 03' 48"
1000	0.003	0.003	0.003	0.003	73° 29' 47"
1001	0.002	0.001	0.002	0.001	2° 19' 02"
1002	0.003	0.002	0.004	0.002	12° 06' 09"
1003	0.005	0.004	0.006	0.004	151° 50' 08"
1004	0.003	0.003	0.004	0.001	44° 19' 3"
1005	0.010	0.006	0.011	0.004	152° 01' 55"
1006	0.013	0.005	0.013	0.004	168° 47' 33"
1007	0.004	0.014	0.014	0.003	98° 13' 53"
1008	0.006	0.004	0.006	0.004	2° 50' 52"
1009	0.004	0.004	0.005	0.004	135° 34' 33"

LEGEND  
▲ SET NETWORK POINT  
● SET AUXILIARY POINT  
○ FOUND MONUMENT POINT

SCALE 1:500  
10 5 0 10 20 30 40 50  
METERS

OREGON DEPARTMENT OF TRANSPORTATION  
**HORIZONTAL CONTROL, RECOVERY,  
AND RETRACEMENT MAP**  
**M.P. 59.1 SLIDE MITIGATION**  
COOS BAY - ROSEBURG HIGHWAY  
DOUGLAS COUNTY  
3500 Stewart Parkway, Suite 140  
Roseburg, Oregon 97470

KEY # 10047