

NE 1/4 SEC 21, T 22 S, R 7 W, WM
NW 1/4 SEC 22, T 22 S, R 7 W, WM

NARRATIVE

THE PURPOSE OF THIS SURVEY WAS TO 1. RECOVER THE CENTER LINE AND RIGHT-OF-WAY OF HIGHWAY 38 (UMPUQA HIGHWAY NO. 45) FROM ENGINEER'S CENTER LINE STATION 1160+00.00 P.O.T. TO ENGINEER'S CENTER LINE STATION 1210+73.90 P.O.T. AS SHOWN IN OREGON DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTED LINE DRAWING NO. 4B-16-12; AND 2. RECOVER AND RECORD THE POSITIONS OF EXISTING MONUMENTATION WHICH MAY BE SUBJECT TO DISTURBANCE OR REMOVAL RESULTING FROM THE REPLACEMENT OF ELK CREEK BRIDGE NO. 01601, IN CONFORMANCE WITH THE REQUIREMENTS OF O.R.S. 209.155(1)(b) AND O.R.S. 209.155(5).

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE OREGON COORDINATE SYSTEM OF 1983, SOUTH ZONE, BASED ON GPS MEASUREMENTS MADE FROM NATIONAL GEODETIC SURVEY (NGS) HORIZONTAL CONTROL POINT "WELK" (PID PC1117). THIS SURVEY HELD THE NAD83(CORS96) POSITION AND NAVD88 ELEVATION OF STATION "WELK" AS DETERMINED BY D. WELLMAN SURVEYING (90686 NORTHROP, EUGENE, OR, 97402 (541) 984-1442) FOR THE OREGON BRIDGE DELIVERY PARTNERS (OBDP) ON MAY 1, 2006 (LATITUDE=43°38'37.77104" NORTH, LONGITUDE=123°34'57.22596" WEST, ELEVATION=146.16 INTERNATIONAL FEET).

THE COORDINATES SHOWN IN THIS SURVEY ARE IN UNITS OF INTERNATIONAL FEET, AND ARE ON A LOCAL DATUM PLANE (LDP) SYSTEM IN ORDER TO REPRESENT GROUND SURFACE VALUES. TO CONVERT THE LDP COORDINATES SHOWN IN THIS SURVEY TO OREGON STATE PLANE, SOUTH ZONE VALUES (NAD 83(CORS96)), DIVIDE THE LOCAL DATUM PLANE COORDINATE BY THE D. WELLMAN SURVEYING DERIVED PROJECT SCALE FACTOR OF 1.0000746317.

HORIZONTAL AND VERTICAL NETWORK AND EXISTING MONUMENT TIES WERE ACCOMPLISHED USING A COMBINATION OF REAL-TIME KINEMATIC GPS, AND TERRESTRIAL EQUIPMENT AND PROCEDURES. GPS MEASUREMENTS WERE MADE USING TRIMBLE MODEL 5700 AND 5800 RECEIVERS. TERRESTRIAL MEASUREMENTS WERE ACCOMPLISHED USING A GEODIMETER MODEL 610 SERVO-DRIVEN TOTAL STATION (+/- 3" ANGULAR PRECISION, 3 MM +/- 2 PPM EDM). ALL MONUMENTS WERE "DOUBLE TIED": FOR REAL-TIME KINEMATIC GPS MEASUREMENTS, THIS MEANS THAT EACH MONUMENT WAS TIED FROM TWO DIFFERENT BASE STATION LOCATIONS; FOR TERRESTRIAL MEASUREMENTS, THIS MEANS THAT EACH MONUMENT WAS TIED FROM TWO DIFFERENT CONTROL POINTS, OR FROM ONE CONTROL POINT USING TWO DIFFERENT BACKSIGHT CONTROL POINTS. VERTICAL MEASUREMENTS WERE BY GPS AND/OR TRIGONOMETRIC METHODS-NO LEVEL LINES WERE RUN. THE GPS AND TERRESTRIAL MEASUREMENT DATA WERE SIMULTANEOUSLY ADJUSTED USING "STAR*NET" VERSION 6.0.25 LEAST SQUARES ADJUSTMENT SOFTWARE. THE NETWORK WAS CONSTRAINED HORIZONTALLY AND VERTICALLY TO THE D. WELLMAN SURVEYING NAD83(CORS96) POSITION AND NAVD 88 ELEVATION OF STATION "WELK". ELLIPSOIDAL HEIGHTS WERE CALCULATED USING "GEOID03".

CENTERLINE AND RIGHT OF WAY RECOVERY

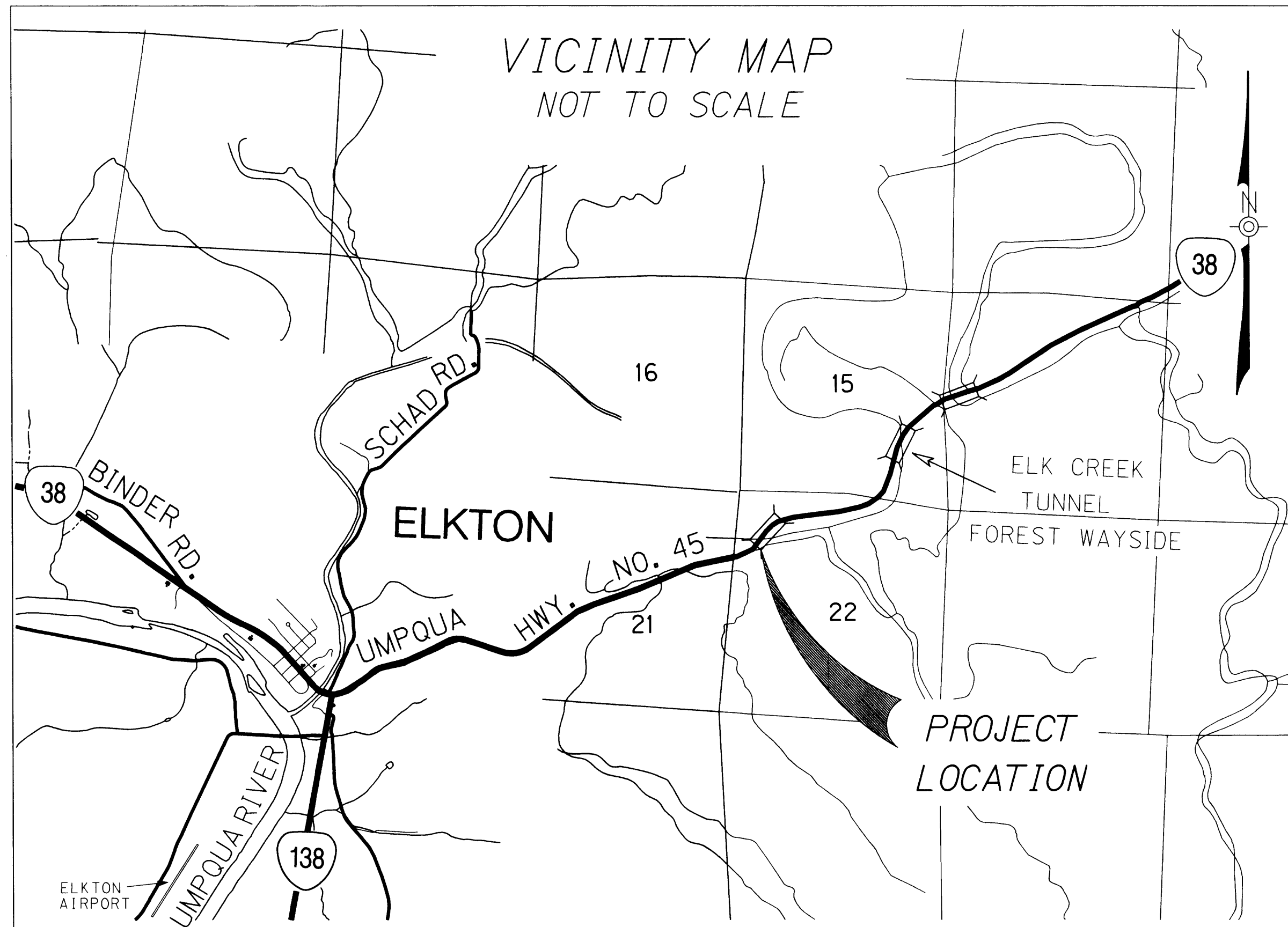
THE CENTER LINE AND RIGHTS-OF-WAY OF HIGHWAY NO. 38 BETWEEN ENGINEER'S CENTER LINE STATION 1160+00.00 P.O.T. AND ENGINEER'S CENTER LINE STATION 1210+73.90 P.O.T. ARE SHOWN ON ODOT CONSTRUCTED LINE DRAWING NO. 4B-16-12, DATED DECEMBER, 1932 (REVISED JULY, 1971).

ODOT LOCATED LINE DRAWING NO. 9B-34-17, DATED AUGUST, 1989 (REVISED DECEMBER, 1989; REVISED JUNE, 1991; REVISED DECEMBER, 1999) AND ODOT LOCATED LINE DRAWING NO. 10B-8-34, DATED MARCH, 1996 (REVISED MARCH, 1996; REVISED JUNE, 1999; REVISED DECEMBER, 1999) SHOW RELOCATED CENTER LINES WESTERLY OF THIS SURVEY. AN ANALYSIS OF THE ALIGNMENT INFORMATION DETAILED IN THOSE DRAWINGS SHOWS THAT THOSE LOCATED LINES ARE NOT COINCIDENT WITH THE CONSTRUCTED CENTER LINE AS SHOWN IN DRAWING NO. 4B-16-12. DETAILS SHOWING THE RELATIONSHIPS BETWEEN THE THREE CENTER LINES ARE SHOWN ON SHEET 4 OF THIS SURVEY.

FOR THE TANGENT BETWEEN ENGINEER'S CENTER LINE STATION 1160+00.00 P.O.T. AND ENGINEER'S CENTER LINE STATION 1172+43.00 P.C., I HELD RECOVERED MONUMENT NO. 1028 AS 60' LEFT OF ENGINEER'S CENTER LINE STATION 1161+00; RECOVERED MONUMENT NOS. 1026 AND 1023 AS 70' LEFT AND 40' RIGHT, RESPECTIVELY, OF ENGINEER'S CENTER LINE STATION 1172+00; RECOVERED MONUMENT NOS. 1025 AND 1022 AS 70' LEFT AND 40' RIGHT, RESPECTIVELY, OF ENGINEER'S CENTER LINE STATION 1172+43.00 P.C.

FOR THE CURVE BETWEEN ENGINEER'S CENTER LINE STATION 1172+43.00 P.C. AND ENGINEER'S CENTER LINE STATION 1177+66.89 P.T., I HELD THE DRAWING NO. 4B-16-12 CENTER LINE CENTRAL ANGLE, DEGREE OF CURVE AND TANGENT DISTANCE. FURTHER, I HELD RECOVERED MONUMENT NO. 1000 AS 80' LEFT OF THE ENGINEER'S CENTER LINE; RECOVERED MONUMENT NOS. 1001 AND 1020 AS 75' LEFT AND 40' RIGHT, RESPECTIVELY, OF ENGINEER'S CENTER LINE STATION 1177+66.89 P.T.

FOR THE TANGENT BETWEEN ENGINEER'S CENTER LINE STATION 1177+66.89 P.T. AND ENGINEER'S CENTER LINE STATION 1183+84.49 P.C., I HELD THE DRAWING NO. 4B-16-12 TANGENT DISTANCE OF 617.6' BETWEEN THE P.T. AND P.C. FURTHER, I HELD RECOVERED MONUMENT NO. 1002 AS 60' LEFT OF ENGINEER'S CENTER LINE STATION 1181+00; RECOVERED MONUMENT NOS. 1003 AND 1008 AS 60' LEFT AND 40' RIGHT, RESPECTIVELY, OF ENGINEER'S CENTER LINE STATION 1183+84.49 P.C.



FOR THE CURVE BETWEEN ENGINEER'S CENTER LINE STATION 1183+84.49 P.C. AND ENGINEER'S CENTER LINE STATION 1191+29.21 P.T., I HELD THE DRAWING NO. 4B-16-12 CENTER LINE CENTRAL ANGLE, DEGREE OF CURVE AND TANGENT DISTANCE. FURTHER, I HELD RECOVERED MONUMENT NO. 1007 AS 60' LEFT OF ENGINEER'S CENTER LINE STATION 1188+00; RECOVERED MONUMENT NO. 1015 AS 40' LEFT OF ENGINEER'S CENTER LINE STATION 1190+42; RECOVERED MONUMENT NOS. 1017 AND 1011 AS 70' LEFT AND 40' RIGHT, RESPECTIVELY, OF ENGINEER'S CENTER LINE STATION 1191+29.21 P.T.

FOR THE INITIAL TANGENT, CURVE AND SECONDARY TANGENT BETWEEN ENGINEER'S CENTER LINE STATION 1191+29.21 P.T. AND ENGINEER'S CENTER LINE STATION 1210+73.90 P.O.T., I HELD THE DIRECTION OF THE INITIAL TANGENT AS CALCULATED FROM THE ABOVE-DESCRIBED DRAWING NO. 4B-16-12 CENTRAL ANGLE (CALCULATED INITIAL TANGENT BEARING= N 37°46'03" E). I DETERMINED THE DIRECTION OF THE SECONDARY TANGENT BASED ON HOLDING RECOVERED MONUMENT NOS. 1032 AND 1035 AS 40' RIGHT OF THE ENGINEER'S CENTER LINE, AND RECOVERED MONUMENT NOS. 1034, 1037 AND 1038 AS 50' RIGHT OF THE ENGINEER'S CENTER LINE. FOR THE CURVE, I HELD RECOVERED MONUMENT NOS. 1033 AND 1032 AS 40' LEFT AND RIGHT, RESPECTIVELY, OF THE END OF THE CURVE, THEN FIT A CURVE BETWEEN THE INITIAL AND SECONDARY TANGENTS. THE RESULTING CURVE CENTRAL ANGLE AND TANGENT DISTANCE WERE WITHIN 13" AND 0.1', RESPECTIVELY, OF THE RECORD DRAWING 4B-16-12 CURVE DATA.

FILED
Date: 1-15-2009 By: JC
This survey consists of:
Map: ST HWY 038-0174-1
Narrative:
Corner Rpt:
DOUGLAS COUNTY SURVEYOR

REGISTERED PROFESSIONAL LAND SURVEYOR

John A. Carlson
OREGON
JULY 15, 1983
JOHN A. CARLSON
2044

RENEWS 12/31/09



FILE NAME: 14221_01601RET.DGN

OREGON DEPARTMENT OF TRANSPORTATION
HORIZONTAL CONTROL, RECOVERY AND RETRACEMENT SURVEY
FOR ODOT THROUGH THE OREGON BRIDGE DELIVERY PARTNERS (OBDP)
OR 38: ELK CR. - HARDSCRABBLE CR. (D/B) - BUNDLE 401
DOUGLAS COUNTY, OREGON



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DECEMBER 12, 2008
KEY NO. 14221
PROJ. NO. 13855-9
NO SCALE
SHEET 2 OF 9

ST. HWY. 38-017B