

# NARRATIVE

**PURPOSE**

THE PURPOSE OF THIS SURVEY WAS TO PROVIDE TOPOGRAPHIC MAPPING; A DIGITAL TERRAIN MODEL; AND A CONTROL, RECOVERY, RETRACEMENT MAP FOR A PROJECT NAMED "I-5: ROBERTS CREEK RD. SOUTH UMPQUA RIVER". ODOT SURVEY CREWS COMPLETED FIELD WORK BETWEEN FEBRUARY 22, 2016 AND JUNE 20, 2016.

**COORDINATES & BASIS OF BEARING**

THE BEARINGS ARE BASED ON THE OREGON COORDINATE REFERENCE SYSTEM (OCRS) COTTAGE GROVE - CANYONVILLE, NAD83 (2011) EPOCH 2010. THE OCRS COORDINATES ARE EQUAL TO OR CLOSE TO TRUE GROUND DISTANCES. ALL COORDINATES ARE IN INTERNATIONAL FEET.

**HORIZONTAL CONTROL**

A RAPID STATIC GPS NETWORK WAS COMPLETED AND USED AS PRIMARY CONTROL FOR THE PROJECT. 3 POINTS WERE SET NAMED "GPS1", "RBTS" AND "CLARK". THESE POINTS WERE DOUBLE OCCUPIED FOR MINIMUM OF 4 HOURS PER OCCUPATION. COORDINATES WERE CALCULATED ON THESE CONTROL POINTS BY HOLDING OREGON REAL TIME NETWORK (ORGN) STATIONS P363, R5BG, AND SUHS AND USING RINEX FILES DOWNLOADED FROM THESE STATIONS. ADDITIONAL CONTROL POINTS WERE FOUND AND SET AND A TERRESTRIAL NETWORK WAS COMPLETED HOLDING "GPS1", "RBTS" AND "CLARK".

**HORIZONTAL CONTROL EQUIPMENT**

A LEICA MSS0 MULTI STATION WAS USED FOR GATHERING TOPOGRAPHIC DATA AND RUNNING THE CONTROL NETWORK. IT HAS THE FOLLOWING ACCURACY: STANDARD ANGULAR ERROR OF +/- 1 SECOND, STANDARD DISTANCE ERROR OF +/- 1 MM, + 1.5 PPM.

A LEICA GX1230 DUAL FREQUENCY GPS AND LEICA GS14 DUAL FREQUENCY GPS RECEIVERS WERE USED FOR GPS OBSERVATIONS. THEY HAVE THE FOLLOWING ACCURACY: PHASED DIFFERENTIAL STATIC METHOD HORIZONTAL ERROR OF 5 MM + 0.5 PPM, AND A VERTICAL ERROR OF 10 MM, + 0.5 PPM; PHASED DIFFERENTIAL RTK METHOD HORIZONTAL ERROR OF 10 MM + 1 PPM, AND A VERTICAL ERROR OF 20 MM, + 1 PPM.

**VERTICAL CONTROL**

POINTS GPS1, "RBTS" AND "CLARK" AND THEIR NAVD 88 DATUM ELEVATIONS DERIVED BY LONG OCCUPATION RAPID STATIC GPS METHODS USING GEOID 12A WERE HELD FOR VERTICAL CONTROL. AS AN ELEVATION CHECK REFERENCE POINTS NEAR BENCH MARKS J554 AND F747 WERE SIMULTANEOUS OCCUPIED DURING PRIMARY GPS CONTROL POINT OCCUPATIONS. WE THEN USED A SINGLE TURN LEVEL CIRCUIT FROM THE BENCH MARK TO THE REFERENCE POINT AND BACK. ELEVATIONS CHECKED WITHIN 0.04' ON THE REFERENCE POINT FOR J554 AND WITHIN 0.07' FOR THE REFERENCE POINT FOR F747. LEVEL CIRCUITS WERE RUN TO ESTABLISH ELEVATIONS ON CONTROL.

**VERTICAL CONTROL EQUIPMENT**

A LEICA DNA10 DIGITAL LEVEL AND A LEICA GBNL4C ALUMINUM LEVEL ROD WAS USED TO COMPLETE THE LEVEL CIRCUITS. THIS INSTRUMENT HAS THE FOLLOWING STANDARD DEVIATION OF 1.5MM IN A 1 KILOMETER DOUBLE RUN LEVEL CIRCUIT.

**RIGHT OF WAY RETRACEMENT**

THE PACIFIC HIGHWAY NUMBER 1 (INTERSTATE 5) RIGHT OF WAY WAS RESOLVED USING ODOT RIGHT OF WAY DRAWINGS (DRG.) 7B-23-1, 7B-24-12, 8B-29-3, AND 7B-25-10. ALL OF THESE RIGHT OF DRAWINGS SHARE THE SAME BASIS OF BEARING AND WHERE THE MAPS OVERLAP THE RIGHT OF WAY CENTER LINE ALIGNMENT DATA IS IDENTICAL. THE FIRST TANGENT, LYING BETWEEN STATIONS 2759+00 AND 2893+21.25 P.S., WAS MOVED AND ROTATED IN FROM AN OLDER ODOT PROJECT NAMED "I-5: EXITS 119 & 120 INTERCHANGE IMPROVEMENTS", KEY NUMBER 17918, WHICH WILL BE FILED IN THE NEAR FUTURE. THE OLD PROJECT HAD A DIFFERENT DATUM REALIZATION AND WAS TRANSFORMED TO THIS PROJECTS DATUM BY MOVING IT TO MONUMENT "7GR" AND ROTATING TO MONUMENT "125". THE DIFFERENCE IN DISTANCE BETWEEN "7GR" AND "125" COMPARING SURVEYS WAS LESS THAN 0.02'. THE NEXT TANGENT, LYING BETWEEN STATIONS 2909+57.77 P.T. AND 2926+07.29 P.S., HELD THE PROPORTIONATE RECORD DISTANCE BETWEEN MONUMENTS 1049 AND 1108 AND THE RECORD DISTANCE FROM MONUMENT 1107. THE FIRST CURVE BETWEEN THE TANGENTS HELD THE RECORD DEGREE OF CURVE AND SPIRAL LENGTHS. THE NEXT TANGENT, LYING AT STATION 2935+92.86 P.R.S., HELD THE RECORD TOTAL DELTA FROM THE BACK TANGENT AND THE RECORD DISTANCE FROM MONUMENT 1053. THE CURVE HELD THE RECORD DEGREE OF CURVE AND BACK SPIRAL BUT, THE FORWARD SPIRAL LENGTH HAD TO BE SHORTENED. THE NEXT TANGENT, LYING BETWEEN STATIONS 2947+38.45 P.T. AND 2950+38.20 P.S., HELD THE RECORD DISTANCES FROM MONUMENTS 1058 AND 1059. THE CURVE HELD THE RECORD DEGREE OF CURVE AND FORWARD SPIRAL LENGTH BUT, THE BACK SPIRAL LENGTH HAD TO BE SHORTENED. THE NEXT TANGENT, LYING 2966+82.35 P.T. AND 2975+65.11 P.S., HELD THE PROPORTIONATE RECORD DISTANCE BETWEEN MONUMENTS 1061 AND 1092 AND THE RECORD DISTANCE FROM MONUMENT 1090. THE CURVE HELD THE RECORD DEGREE OF CURVE AND SPIRAL LENGTHS. THE NEXT TANGENT, LYING AT 2991+23.67 P.R.S., HELD THE RECORD TOTAL DELTA FROM THE FORWARD TANGENT AND THE RECORD DISTANCE FROM MONUMENT 1064. THE CURVE HELD THE RECORD DEGREE OF CURVE AND BACK SPIRAL LENGTH BUT, THE FORWARD SPIRAL LENGTH HAD TO BE SHORTENED. THE LAST TANGENT, LYING BETWEEN STATIONS 3010+59.64 P.T. AND 3047+16.59 P.S., HELD THE RECORD DISTANCE FROM MONUMENT 1080 AND THE PROPORTIONATE DISTANCE BETWEEN MONUMENTS 1071 AND 1072. THE LAST CURVE HELD THE RECORD TOTAL DELTA AND THE FORWARD SPIRAL LENGTH BUT, THE BACK SPIRAL HAD TO BE SHORTENED. RECORD STATION OF 2950+39.43 WAS HELD ON THE INTERSECTION OF THE CENTER LINE AND A LINE BETWEEN MONUMENTS 1059 AND 1109 BETWEEN STATIONS 2814+29.44 P.O.T. AHEAD AND 2966+82.35 P.T. BACK. RECORD STATION OF 2991+23.36 WAS HELD ON MONUMENT 1064 BETWEEN STATIONS 2966+74.71 P.O.T. AHEAD AND 2991+23.67 P.R.S. BACK. RECORD STATION OF 3047+16.59 WAS HELD ON THE INTERSECTION OF THE CENTER LINE AND A LINE BETWEEN MONUMENTS 1071 AND 1072 BETWEEN STATIONS 2990+73.81 P.R.S. AHEAD AND 3047+16.59 P.S.

**PLEASE NOTE:**

CONTROL MONUMENTS SHOWN ON THIS SURVEY DO NOT REPRESENT PROPERTY LINES OR RIGHT OF WAY LINES. THEY ARE INTENDED TO PERPETUATE THE ALIGNMENTS AND RIGHT OF WAY DEVELOPED FOR THIS PROJECT IN CONFORMANCE WITH ORS 209, SECTION 155.

NETWORK OBSERVATIONS	
OCCUPIED	MEASURED
CLARK	1,2,3
1	2,3,4
2	1,3,4
3	1,2,4,5
4	1,2,3,5,6
5	4,6,7,8, RBTS, 10
6	5,7,8,9, RBTS
7	6,7, RBTS, 11
8	6,9,10, RBTS, 11
9	7,8,10,11, RBTS, 12
RBTS	6,7,8,9,10,11,12,14
10	8,9,11, RBTS
11	8,9,10, RBTS, 12, 13
12	RBTS, 11, 13, 14
13	12, 14, 15
14	12, 13, 15, 16
15	14, 16, 18, 19
16	15, 17, 18, 19
17	18, 19, 20, GPS1
18	16, 17, 19, 20
19	16, 17, 18, 20, 21, 22
20	17, 19, 21
21	20, 22, 23, 24, 25, 26
22	21, 23, 24, 25, 26
24	22, 23, 25, 26
23	22, 24, 25, 26
25	23, 24, 26, 27
26	23, 24, 25, 27, GPS1
27	26, GPS1
GPS1	26, 27

REGISTERED  
 PROFESSIONAL  
 LAND SURVEYOR

*Marshall R. Wagstaff*

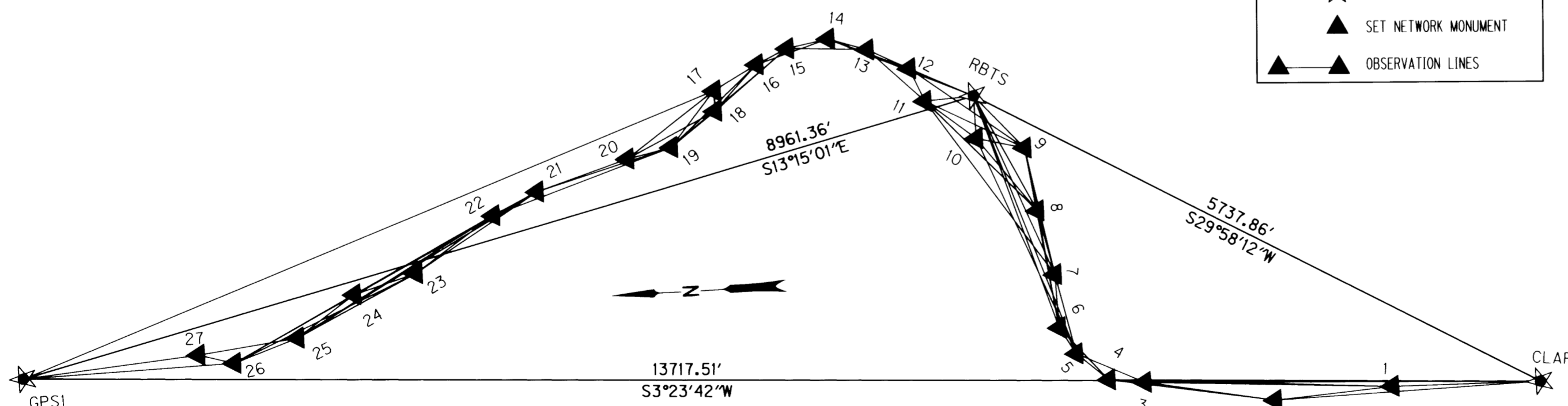
OREGON  
 JANUARY 9, 2001  
 MARSHALL R. WAGSTAFF  
 49476LS

RENEWS: JUNE 30, 2018

**BOUNDARY LINE LEGEND**

- EXISTING HIGHWAY ACCESS CONTROL / RIGHT OF WAY
- EXISTING STREET RIGHT OF WAY
- EXISTING EASEMENT
- EXISTING PROPERTY
- DONATION LAND CLAIM (THIS SIDE)
- DONATION LAND CLAIM (BOTH SIDES)
- SECTION
- 1/4 SECTION
- 1/16 SECTION OR GOVERNMENT LOT

POINT LEGEND	
★	SET GPS STATION
▲	SET NETWORK MONUMENT
▲—▲	OBSERVATION LINES



BASIS OF BEARING AND  
 CONTROL NETWORK SCHEMATIC  
 NOT TO SCALE

SI FEET  
**OREGON DEPARTMENT OF TRANSPORTATION**  
 HORIZONTAL CONTROL, RECOVERY AND RETRACEMENT MAP  
 I-5: ROBERTS CREEK RD. - SOUTH UMPQUA RIVER  
 PACIFIC HWY. NO. 1 (I-5) M.P. 114.8 TO 120.3  
 DOUGLAS COUNTY  
 CAD FILE: S\_K18967\_CRR\_01.DGN

FOR ODOT REGION 3  
 3500 NW. STEWART PKWY.  
 ROSEBURG, OR. 97470

JUNE 26, 2018  
 NOT TO SCALE  
 SHEET 2 OF 13