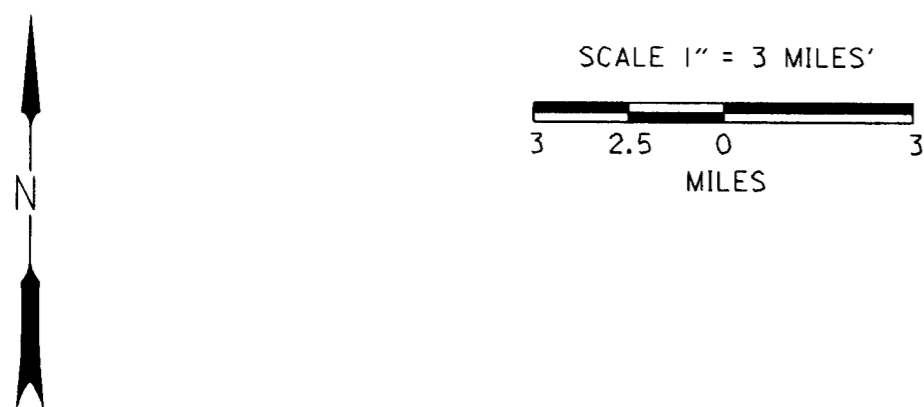
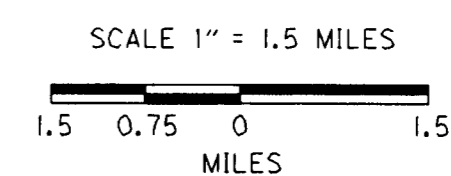
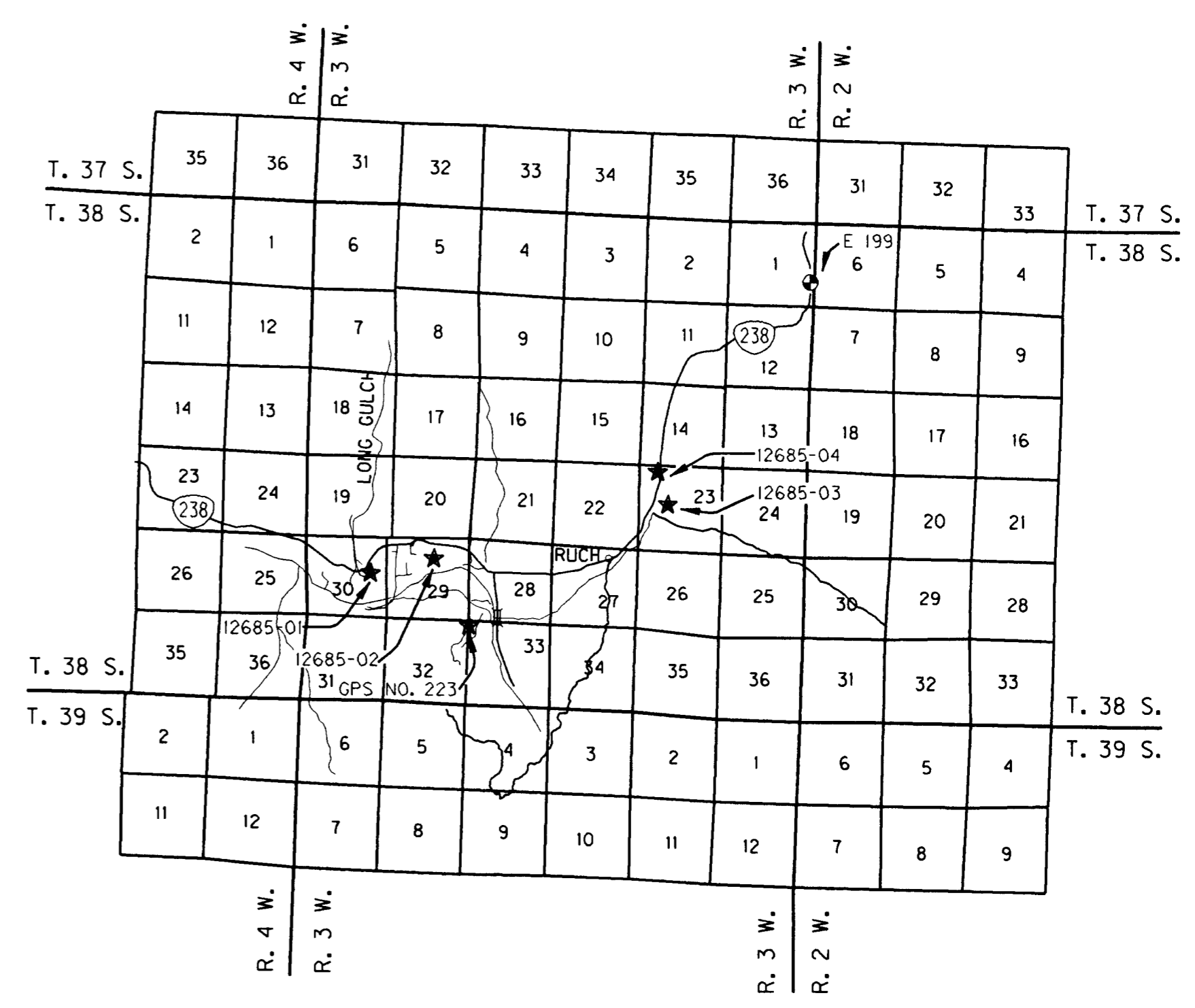
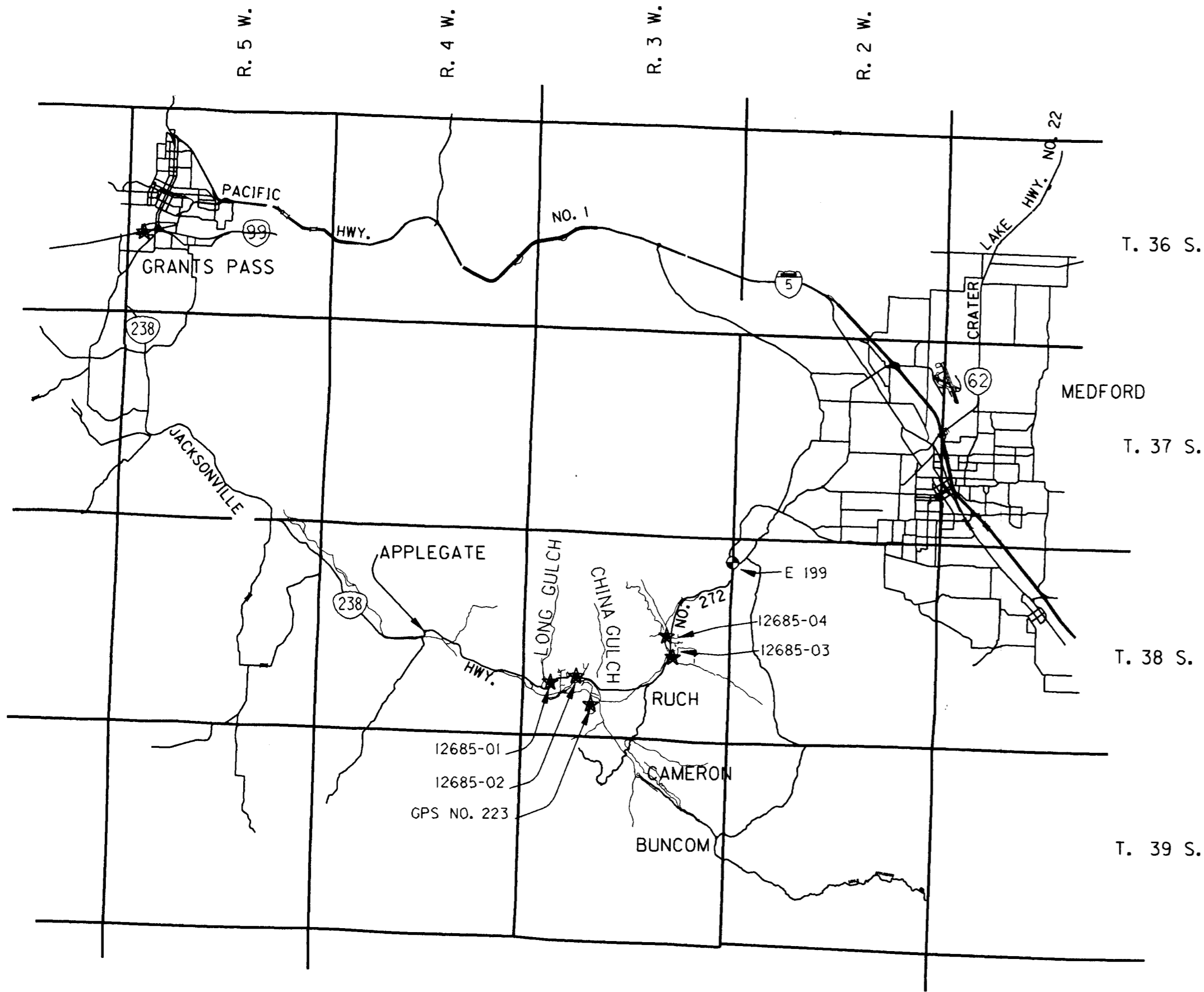


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RECEIVED  
 Date 5-10-04 By AD  
 This survey consists of:  
 4 sheet(s) Map  
 0 page(s) Narrative  
 JACKSON COUNTY SURVEYOR



LEGEND

- ☆ FOUND GPS GEODETIC CONTROL STATION
- ★ SET GEODETIC CONTROL STATION
- FOUND BENCH MARK
- GPS CONNECTION

REGISTERED PROFESSIONAL LAND SURVEYOR  
*J. David Brinton*  
 OREGON  
 DECEMBER 2, 1983  
 J. DAVID BRINTON  
 2065

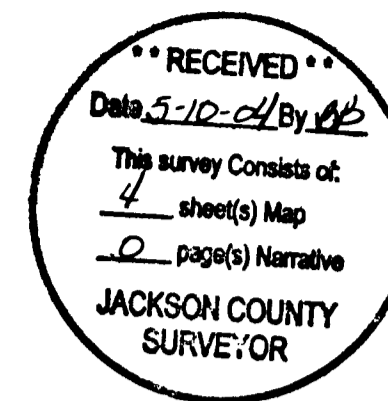
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**METRIC SURVEY** OREGON DEPARTMENT OF TRANSPORTATION  
 GEOMETRONICS UNIT  
 200 HAWTHORNE AVE. SE. • B-250  
 SALEM, OR 97301-5193  
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GEODETIC SURVEY REPORT  
 LONG GULCH-HANLEY SECTION  
 ALSO KNOWN AS HWY 238  
 JACKSONVILLE HIGHWAY  
 GEOMETRONICS CONTROL FILE 04-003  
 FOR OREGON DEPARTMENT OF TRANSPORTATION REGION 3

COUNTY : JACKSON	DRAWN BY: J.D.B.	KEY : 12685	SHEET	OF
SURVEY DATE: JANUARY 30, 2004		FILE NAME: 12685GPS.DGN	1	4

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 S.E. 1/4 SEC. 1, T. 38 S., R. 3 W., W.M. (E 199)



STATION DESCRIPTIONS

<p>JUSTICE</p> <p>THE MARK IS A BRASS DISK STAMPED "JUSTICE 1989". IT WAS RECOVERED IN GOOD CONDITION AND AS DESCRIBED IN THE NGS DATA SHEET BY NGS IN 2001.</p>	<p>12685-03</p> <p>THE MARK IS LOCATED APPROXIMATELY 1.194 MILES EAST OF RUCH ALONG HWY, 238 TO THE MARK ON THE EAST SIDE OF THE HWY. THE MARK IS 1.5 FEET WEST OF AN ORANGE CARSONITE POST, 4 FEET EAST OF THE EDGE OF PAVEMENT, 14.5 FEET EAST OF S.W. 26.814.</p> <p>THE MARK IS A 3" BRASS DISK STAMPED OREGON DOT DO NOT DISTURB GEODETIC CONTROL PT. 12685-03, IN CONCRETE, SET FLUSH WITH THE GROUND WITH A MAGNET.</p>
<p>FAIR</p> <p>THE MARK IS A BRASS DISK STAMPED "FAIR 1989". IT HAS BEEN REFERENCED AND RESET BY THE CITY OF GRANTS PASS USING THE ORIGINAL DISK.</p>	<p>12685-04</p> <p>THE MARK IS LOCATED APPROXIMATELY 1.601 MILES EAST OF RUCH ALONG HWY, 238 TO THE MARK ON THE WEST SIDE OF THE HWY. THE MARK IS 9 FEET EAST OF AN ORANGE CARSONITE POST, 5 FEET WEST OF THE EDGE OF PAVEMENT, 15 FEET S.E. OF A TELEPHONE RISER, 50 FEET N.E. OF A POWER POLE, 2700 FEET NORTH OF BISHOP CREEK RD. AND AT MILE POST 27.707.</p> <p>THE MARK IS A 3" BRASS DISK STAMPED OREGON DOT DO NOT DISTURB GEODETIC CONTROL PT. 12685-04, IN CONCRETE, SET FLUSH WITH THE GROUND WITH A MAGNET.</p>
<p>12685-01</p> <p>THE MARK IS LOCATED APPROXIMATELY 3.165 MILES WEST OF RUCH ALONG HWY. 238 TO THE MARK ON THE SOUTH SIDE OF HWY. THE MARK IS 2.5 FEET WEST OF AN ORANGE CARSONITE POST, 10 FEET EAST OF THE EDGE OF PAVEMENT, 114 FEET NORTH OF TELEPHONE RISER *F10845, 3.648 MILES EAST OF HUMBUG CREEK ROAD AND AT MILE POST 22.455.</p> <p>THE MARK IS A 3" BRASS DISK STAMPED OREGON DOT DO NOT DISTURB GEODETIC CONTROL PT. 12685-01, IN CONCRETE, SET FLUSH WITH THE GROUND WITH A MAGNET.</p>	<p>GPS NO. 223</p> <p>FOUND 1" GALVANIZED IRON PIPE WITH A JACKSON COUNTY BRASS DISK STAMPED, GPS NO. 223 1994 AND IS DESCRIBED AS SHOWN ON THE GPS REPORT FILED IN THE JACKSON COUNTY SURVEYORS OFFICE.</p>
<p>12685-02</p> <p>THE MARK IS LOCATED APPROXIMATELY 2.257 MILES WEST OF RUCH ALONG HWY, 238 TO THE MARK ON THE SOUTH SIDE OF THE HWY. THE MARK IS 4 FEET NORTH OF AN ORANGE CARSONITE POST, 7 FEET SOUTH OF THE EDGE OF PAVEMENT, 1035 FEET EAST OF GYDA LN. AND AT MILE POST 23.363</p> <p>THE MARK IS A 3" BRASS DISK STAMPED OREGON DOT DO NOT DISTURB GEODETIC CONTROL PT. 12685-02, IN CONCRETE, SET FLUSH WITH THE GROUND WITH A MAGNET.</p>	<p>E 199</p> <p>FOUND USC&amp;GS BRASS DISK, 3.1 MILES S.W. OF JACKSONVILLE ON THE PROVOLT HWY. 27 FEET EAST OF HWY. STAMPED E 199 1939</p>



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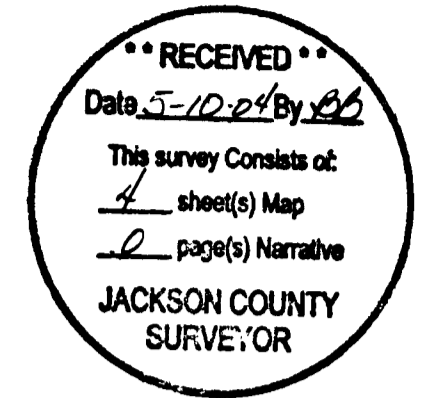
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GEODETIC SURVEY REPORT  
 LONG GULCH-HANLEY SECTION  
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 JACKSONVILLE HIGHWAY  
 GEOMETRONICS CONTROL FILE 04-003  
 FOR OREGON DEPARTMENT OF TRANSPORTATION REGION 3

COUNTY : JACKSON	DRAWN BY: J.D.B.	KEY * : 12685	SHEET	OF
SURVEY DATE: JANUARY 30, 2004		FILE NAME: 12685GPS.DGN	4	4

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 S.E. 1/4 SEC. 1, T. 38 S., R. 3 W., W.M. (E 199)



MONUMENT INFORMATION

GRID COORDINATES ARE OREGON COORDINATE SYSTEM SOUTH  
 HORIZONTAL DATUM IS NAD83 (1991)  
 VERTICAL DATUM IS NGVD (1929)  
 ALL LINEAR VALUES ARE EXPRESSED IN FEET.  
 VALUES MARKED WITH AN ASTERISK (\*) WERE HELD  
 ORIENTATION AZIMUTHS ARE EXPRESSED IN WHOLE DEGREES TO THE RIGHT FROM LOCAL GEODETIC NORTH.  
 CONVERGENCE ANGLES FROM GEODETIC NORTH TO GRID NORTH ARE EXPRESSED IN DEGREES, MINUTES, AND SECONDS IN THE CLOCKWISE DIRECTION.  
 REFERENCE ELLIPSOID IS WGS84  
 GEOID SEPARATIONS ARE BASED ON GEOID99

STATION	NORTHING	EASTING	LATITUDE	LONGITUDE	ELL. HT.	GEOID-SEP	ORTH. HT.
12685-01	218362.399	4218278.559	42 14 09.29380	123 05 46.17324	1297.384*	-78.921	1376.305
12685-02	219755.717	4222320.763	42 14 24.28483	123 04 53.03686	1318.827*	-78.908	1397.734
12685-03	223433.230	4236965.213	42 15 05.00720	123 01 39.92030	1549.798*	-78.776	1628.574
12685-04	225554.206	4237042.101	42 15 25.97209	123 01 39.74950	1630.193*	-78.773	1708.966
E 199	237699.214	4246517.285	42 17 28.69548	122 59 38.61814	2088.961*	-78.770	2167.731
GPS NO 223	215563.486	4224501.333	42 13 43.55541	123 04 22.35058	1449.931	-78.898	1528.819
FAIR	288814.006	4154902.412	42 25 24.55935*	123 20 19.88417*	864.857	---	---
JUSTICE	248185.001	4278537.196	42 19 21.43039*	122 52 36.73116*	1311.164	-79.203	1390.500

STATION	<----- 95% CONFIDENCE REGIONS ----->				CONVERGENCE	PROJECTION S.F.	COMBINED S.F.
	SEMI-MAJ	SEMI-MIN	ORIENT.	HEIGHT			
12685-01	0.010	0.008	-10	0.000	-1 46 34	1.00002595	0.99996390
12685-02	0.010	0.008	-07	0.000	-1 45 58	1.00002478	0.99996170
12685-03	0.010	0.007	-12	0.000	-1 43 46	1.00002164	0.99994751
12685-04	0.010	0.008	03	0.000	-1 43 46	1.00002004	0.99994206
E 199	0.009	0.006	-04	0.000	-1 42 23	1.00001085	0.99991094
GPS NO 223	0.012	0.009	-12	0.024	-1 45 37	1.00002797	0.99995862
FAIR	0.000	0.000	-02	0.029	-1 56 32	0.99997852	0.99993715
JUSTICE	0.000	0.000	-02	0.021	-1 37 34	1.00000272	0.99994000

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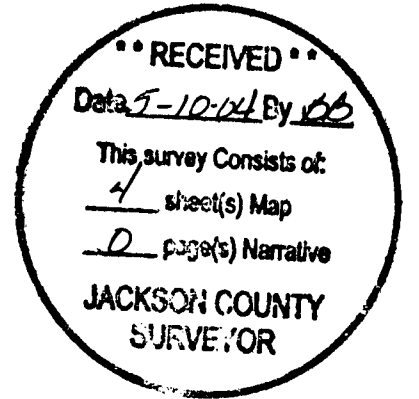
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COUNTY : JACKSON	DRAWN BY: J.D.B.	KEY : 12685	SHEET	OF
SURVEY DATE: JANUARY 30, 2004		FILE NAME: 12685GPS.DGN	3	4

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SURVEY NARRATIVE

THIS SURVEY WAS PERFORMED FOR AND AT THE REQUEST OF JOHN PARIANI REPRESENTING REGION 3 OF THE OREGON DEPARTMENT OF TRANSPORTATION. THE PURPOSE OF THIS SURVEY IS TO ESTABLISH GEODETIC CONTROL FOR THE ODOT PRELIMINARY ENGINEERING PROJECT LONG GULCH-HANLEY NEAR RUCH LOCATED ALONG THE JACKSONVILLE HIGHWAY NUMBER 272, ALSO KNOWN AS STATE ROUTE NUMBER 238.

THE GPS PORTION OF THIS SURVEY WAS COMPLETED IN JANUARY OF 2004. GPS SESSIONS WERE OBSERVED USING THREE LEICA SYSTEM 500 DUAL FREQUENCY GPS RECEIVERS MODEL SR530 AND ANTENNAS MODEL AT502 AND CONTROLLERS MODEL TR500. THE SYSTEM 500 HAS A STATED ACCURACY SPECIFICATION OF FIVE MILLIMETERS PLUS ONE PART-PER-MILLION WHEN USED IN STATIC OR RAPID-STATIC POST-PROCESSED MODE.

ORTHOMETRIC ELEVATIONS WERE ESTABLISHED ON SELECTED POINTS USING DIFFERENTIAL LEVELING PROCEDURES. LEICA DIGITAL LEVEL MODEL NA2002 AND SECTIONAL FIBERGLASS BAR CODE RODS WERE USED.

THE FIELD PROCEDURES ARE SUMMARIZED AS FOLLOWS. BRASS DISKS WERE SET IN FOUR CONCRETE MONUMENTS BY REGION 3 STAFF. TWO EXISTING MONUMENTS WERE USED IN THE VICINITY OF THE PROJECT. THE NEW STATIONS ARE IDENTIFIED BY PROJECT "KEY" NUMBER FOLLOWED BY A SERIAL NUMBER.

STATIC TIES WERE MADE ON EACH OF JANUARY 29 AND JANUARY 30, 2004 TO THE PROJECT FROM ONE OR BOTH OF OREGON HIGH ACCURACY REFERENCE NETWORK (HARN) STATIONS "JUSTICE" (PID NZ1325) AND "FAIR" (PID NZ1328). ADDITIONAL TIES WERE MADE TO GPS NO. 223, WHICH IS A JACKSON COUNTY MONUMENT AND E 199 WHICH IS A BENCH MARK. THERE WERE A TOTAL OF FOURTEEN TIES BETWEEN THESE CONTROL STATIONS AND THE PROJECT. RAPID STATIC SESSIONS WERE OBSERVED ON A TOTAL OF FIFTEEN ADDITIONAL BASELINES BETWEEN THE STATIONS WITHIN THE PROJECTS. EACH OF THE STATIONS IN THE GPS NETWORK WERE OCCUPIED TWO OR MORE TIMES. ALL GPS OBSERVATIONS WERE COMPLETED BY ODOT GEOMETRONICS STAFF.

ONE ODOT PUBLISHED BENCH MARK WAS INCLUDED IN THE GPS NETWORK. THE ODOT BENCH MARK IS "E 199" WITH AN ELEVATION OF 2167.73 FEET. GPS VERTICAL CONTROL CONSISTED OF THIS BENCHMARK PLUS ELEVATIONS DERIVED FROM LEVEL LOOPS TO FOUR OF THE NEW STATIONS FROM NEARBY NGS OR ODOT PUBLISHED BENCH MARKS. A LEVEL CIRCUIT WAS RUN BETWEEN EACH OF THE FOLLOWING COMBINATIONS OF BENCH MARKS AND GPS STATIONS; BENCH MARK "Y 203" TO STATION "12685-01", "12685-02", "12685-03" AND "12685-04". ALL LEVELING OBSERVATIONS WERE COMPLETED BY ODOT REGION 3.

ANALYSIS AND ADJUSTMENT PROCEDURES ARE SUMMARIZED AS FOLLOWS. THE HORIZONTAL POSITIONS FOR THE SURVEY ARE BASED ON REFERENCE ELLIPSOID WGS84 AND NAD83(1991) PUBLISHED VALUES FOR OREGON HARN STATIONS. ELEVATIONS ARE BASED ON PUBLISHED NGVD29 VALUES. REMAINING ORTHOMETRIC HEIGHTS WERE ESTABLISHED USING THE GPS DATA AND THE GEOID99 MODEL BY CONSTRAINING VERTICALLY TO THE INDICATED STATIONS.

ALL POST PROCESSING INCLUDING CONVERSION TO BOTH ORTHOMETRIC ELEVATIONS AND THE OREGON COORDINATE SYSTEM WAS COMPLETED USING VERSION 2.0 OF LEICA SKI PRO SOFTWARE. SKI PRO VERSION 3.0 CONTAINS A THIRD PARTY LEAST SQUARES ADJUSTMENT ROUTINE IDENTIFIED AS "MOVE3" VERSION 3.2.2. AN ADJUSTMENT WAS APPLIED TO A NETWORK OF 29 TOTAL BASELINES. DURING THE FINAL ADJUSTMENT, STATIONS "JUSTICE" AND "FAIR", WERE HELD HORIZONTALLY. STATIONS "12685-01", "12685-02", "12685-03", "12685-04" AND "E199" WERE HELD VERTICALLY.

POSITIONAL ACCURACIES PUBLISHED ARE RELATIVE TO THE FIXED POINTS AND ARE STATED AT A 95% CONFIDENCE LEVEL.



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