ORIGINAL

BENTON COUNTY CONTROL
CCR # CCR 12
FILE DATE DATE 12-11-95
FILE SIZE SIZE 8½x11
VERTICAL ☒
HORIZONTAL ☒
SURVEYOR'S OFFICE REPORT

NARRATIVE

This project was performed for Region 2, Oregon State Department of Transportation under Contract No. 13720 dated July, 1995. There are three separate areas - North Fork Alsea River Bridge Project, Mary's River Bridge Project and Sweet Home WCL to Foster Dam Road.

The GPS field observations took place in October, 1995 using two Trimble model 4000 SSE GPS receivers. Differential levels were performed using a Leica NA 2000 electronic level.

Post processing of the GPS field data was accomplished with Trimble's GPSurvey version 2.0 software using broadcast Ephemerides. The baselines were incorporated into Geolab least squares adjustment software. Post processing of the differential level loops were accomplished with Star-lev least squares adjustment software.

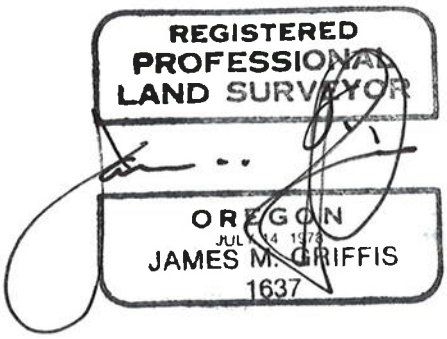
The North Fork Alsea River Bridge Project was constrained to one HPGN station - Mary's RM 5 for horizontal control and vertically to the GRS 80 Ellipsoid. A USDA Forest Service monument was incorporated into the GPS network as a check. Orthometric elevations for the four new GPS stations were differentially leveled to.

Mary's River Bridge Project was constrained horizontally and vertically to Benton County GPS Station's 94-07-21 and 94-10-07. The horizontal constraints were to NAD 83/91 and the vertical constraints were to the GRS 80 Ellipsoid. The orthometric elevations for the two new GPS stations were differentially leveled to.

In both of these projects, orthometric heights and geoid separations will not algebraically sum to the ellipsoidal elevation for the point.

The final constrained NAD 83 (1991 adjustment) GPS network for the North Fork Alsea River Bridge Project yielded 2 sigma Station confidence levels (95%) of less than 0.6 centimeters horizontally and 0.9 centimeters vertically. The Mary's River Bridge Project resulted in less than 0.7 centimeters horizontally and 1.1 centimeters vertically.

It is imperative that the correct application of state plane values for theta, scale and elevation factors are applied to the state plane coordinate values to arrive at true bearings and ground distances. The NAD 83 (1991 adjustment) values provided in this report for each point are Oregon North Zone coordinate values and the elevations are on the GRS 80 Ellipsoid. All values in this report are in meters unless stated otherwise.



Expires 6/30/97

DAVID EVANS AND ASSOCIATES, INC.
A PROFESSIONAL SERVICES CONSULTING FIRM
OFFICES IN OREGON, WASHINGTON, CALIFORNIA AND ARIZONA
1980 N.W. NINTH STREET, SUITE 201
CORVALLIS, OREGON 97330
(503) 754-0043 FAX (503) 754-7649

A MEMBER OF S|T|A|R - THE STRATEGIC TEAM OF ALLIED RESOURCES.
PRINTED ON RECYCLABLE PAPER

GPGD

HORIZONTAL CONTROL DATA

State Plane in Meters, Elevations in Meters

Station Number: 0001
Station Name: CROOKED CREEK
Section: 21 Township: 13S Range: 7W
1/4 Section: SW County: BENTON
Date Set: 10/02/1995 State: OR
Firm: David Evans and Associates, Inc.

Addr: 1980 NW Ninth ST., Suite 201

Corvallis,Oregon 97330

GPS: YES Type: FAST STATIC
Group: C Order: 1
PPM: 10

GEODETIC DATUM: **NAD 83/91**
LAT.: 44° 25' 08.88902" N
LONG: 123° 33' 01.70892" W

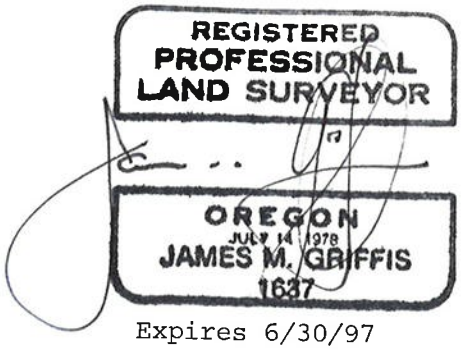
SPCS DATUM: **ORN3601**
Northing: 88202.668+/-0.002
Easting: 2257124.703+/-0.004

VERTICAL DATUM: **NGVD 29/47**
GEOID MODEL:GEOID93W
Orthometric Elev.: 123.824
+/-0.004
Separation: -21.445
Convergence: -2°9'48.074408"
Scale Factor: 0.99997950

Statement per ORS 209.250(6)(g)
THIS WORK WAS PERFORMED FOR REGION 2, OREGON STATE DEPARTMENT OF TRANSPORTATION IN OCTOBER 1995 USING TRIMBLE 4000SSE GPS RECEIVERS. HPGN STATION MARY RM 5 WAS USED FOR HORIZONTAL CONTROL AND ELLIPSOIDAL ELEVATION. DIFFERENTIAL LEVELS WERE RUN FROM O.S.H.D. BM TB 232-1928-34 (ELEV. 112.323 METERS) TO STATION 0001 THRU STATION 0004.

Directions to the Monument:
FROM JUNCTION OF HIGHWAY 20 AND HIGHWAY 34 IN PHILOMATH, OREGON, GO WEST ON HIGHWAY 34 APPROX. 14 MILES TO CROOKED CREEK TRAILER PARK (MILE POST 43.7) AND THE STATION ON THE LEFT (SOUTH) SIDE OF ROAD.

Monument Type: 3" BRASS CAP ON GALV. IRON PIPE SET IN CONC.
Stamping: DAVID EVANS & ASSOC. INC. GPS STA. CROOKED CREEK
Description of the Monument:
MONUMENT IS 6.5 FT. SOUTH OF EDGE OF PAVEMENT, 40 FT N45E OF A SATELITE DISH AND 150 FT EAST OF CROOKED CREEK MOBILE HOME PARK SIGN.



Expires 6/30/97

SURVEYOR'S STAMP

1 meter = 3.28083333... U.S. Feet = 39.37 inches exactly
1 meter = 3.280839895 Intl. Feet or 1 inch = 2.54 cm. exactly
To calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet

HORIZONTAL CONTROL DATA

State Plane in Meters, Elevations in Meters

Station Number: 0002
Station Name: WEBB
Section: 29 Township: 13S Range: 7W
1/4 Section: NE County: BENTON
Date Set: 10/02/1995 State: OR
Firm: David Evans and Associates, Inc.

Addr: 1980 NW Ninth ST., Suite 201

Corvallis,Oregon 97330

GPS: YES Type: FAST STATIC
Group: C Order: 1
PPM: 10

GEODETIC DATUM: **NAD 83/91**
LAT.: 44° 25' 02.41898" N
LONG: 123° 33' 23.12499" W

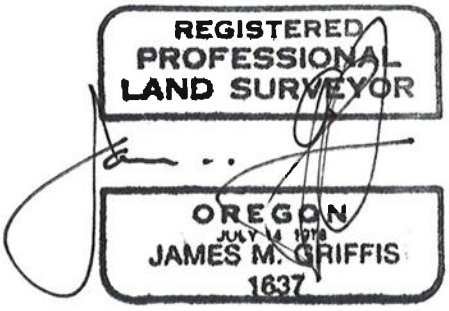
SPCS DATUM: **ORN3601**
Northing: 88021.007+/-0.004
Easting: 2256643.730+/-0.002

VERTICAL DATUM: **NGVD 29/47**
GEOID MODEL:GEOID93W
Orthometric Elev.: 116.870
+/-0.006
Separation: -21.451
Convergence: -2°10'3.262388"
Scale Factor: 0.99997991

Statement per ORS 209.250(6)(g)
THIS WORK WAS PERFORMED FOR REGION 2, OREGON STATE DEPARTMENT OF TRANSPORTATION IN OCTOBER 1995 USING TRIMBLE 4000SSE GPS RECEIVERS. HPGN STATION MARY RM 5 WAS USED FOR HORIZONTAL CONTROL AND ELLIPSOIDAL ELEVATION. DIFFERENTIAL LEVELS WERE RUN FROM O.S.H.D. BM TB 232-1928-34 (ELEV. 112.323 METERS) TO STATION 0001 THRU STATION 0004.

Directions to the Monument:
FROM THE JUNCTION OF HIGHWAY 20 AND HIGHWAY 34 IN PHILOMATH, OREGON GO WEST APPROX. 14.5 MILES ON HIGHWAY 34 TO MILE POST 43.4 AND THE STATION ON THE RIGHT (NORTH) SIDE OF THE ROAD.

Monument Type: 3" BRASS CAP ON GALV. IRON PIPE SET IN CONC.
Stamping: DAVID EVANS & ASSOC. INC. GPS STA. WEBB
Description of the Monument:
MONUMENT IS 7.0 FT.NORTH OF EDGE OF PAVEMENT, 6.5 FT. SOUTH OF FENCELINE, AND 40 FT. EAST OF CENTERLINE OF GRAVEL DRIVEWAY.



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SURVEYOR'S STAMP

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1 meter = 3.280839895 Intl. Feet or 1 inch = 2.54 cm. exactly
To calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet

CP 692

HORIZONTAL CONTROL DATA

State Plane in Meters, Elevations in Meters

Station Number: 0003
Station Name: SEELEY
Section: 29 Township: 13S Range: 7W
1/4 Section: SW County: BENTON
Date Set: 10/02/1995 State: OR
Firm: David Evans and Associates, Inc.

Addr: 1980 NW Ninth ST., Suite 201

Corvallis,Oregon 97330

GPS: YES Type: FAST STATIC
Group: C Order: 1
PPM: 10

GEODETIC DATUM: **NAD 83/91**
LAT.: 44° 24' 38.62122" N
LONG: 123° 34' 18.06269" W

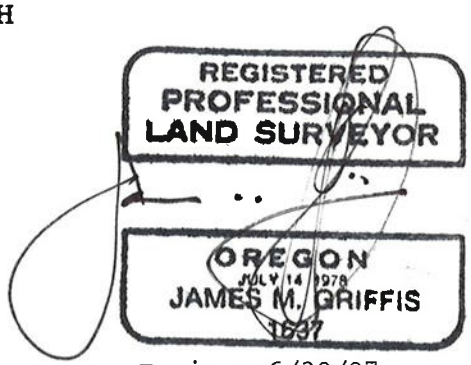
SPCS DATUM: **ORN3601**
Northing: 87333.074+/-0.004
Easting: 2255401.336+/-0.004

VERTICAL DATUM: **NGVD 29/47**
GEOID MODEL:GEOID93W
Orthometric Elev.: 112.817 +/-0.008
Separation: -21.473
Convergence: -2°10'42.22343"
Scale Factor: 0.99998141

Statement per ORS 209.250(6)(g)
THIS WORK WAS PERFORMED FOR REGION 2, OREGON STATE DEPARTMENT OF TRANSPORTATION IN OCTOBER 1995 USING TRIMBLE 4000SSE GPS RECEIVERS. HPGN STATION MARY RM 5 WAS USED FOR HORIZONTAL CONTROL AND ELLIPSOIDAL ELEVATION. DIFFERENTIAL LEVELS WERE RUN FROM O.S.H.D. BM TB 232-1928-34 (ELEV. 112.323 METERS) TO STATION 0001 THRU STATION 0004.

Directions to the Monument:
FROM THE JUNCTION OF HIGHWAY 20 AND HIGHWAY 34 IN PHILOMATH, OREGON, GO WEST ON HIGHWAY 34 APPROX. 15 MILES TO MILEPOST 42.45 AND STATION ON THE RIGHT (NORTH) SIDE OF ROAD.

Monument Type: 3" BRASS CAP ON GALV. IRON PIPE SET IN CONC.
Stamping: DAVID EVANS & ASSOC. INC. GPS STA. SEELEY
Description of the Monument:
MONUMENT IS S40E 8.0 FT. OF A POWER POLE, N40W 4.5 FT. OF A HIGHWAY REFLECTOR POST, 37 FT. NORTH OF THE CENTERLINE OF SEELEY ROAD, 12.5 NW OF THE FOG STRIPE AND 15 FT. NE OF THE CENTERLINE OF A GRAVEL DRIVEWAY TO HOUSE #19793.



Expires 6/30/97
SURVEYOR'S STAMP

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1 meter = 3.280839895 Intl. Feet or 1 inch = 2.54 cm. exactly
To calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet

SP 693

HORIZONTAL CONTROL DATA

State Plane in Meters, Elevations in Meters

Station Number: 0004
Station Name: STOLEN BAG
Section: 29 Township: 13S Range: 7W
1/4 Section: SW County: BENTON
Date Set: 10/02/1995 State: OR
Firm: David Evans and Associates, Inc.

Addr: 1980 NW Ninth ST., Suite 201

Corvallis,Oregon 97330

GPS: YES Type: FAST STATIC
Group: C Order: 1
PPM: 10

GEODETIC DATUM: **NAD 83/91**
LAT.: 44° 24' 16.79678" N
LONG: 123° 34' 21.62025" W

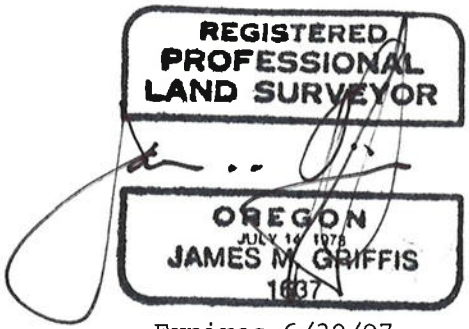
SPCS DATUM: **ORN3601**
Northing: 86662.917+/-0.004
Easting: 2255297.069+/-0.004

VERTICAL DATUM: **NGVD 29/47**
GEOID MODEL:GEOID93W
Orthometric Elev.: 104.254 +/-0.008
Separation: -21.487
Convergence: -2°10'44.74640"
Scale Factor: 0.99998280

Statement per ORS 209.250(6)(g)
THIS WORK WAS PERFORMED FOR REGION 2, OREGON STATE DEPARTMENT OF TRANSPORTATION IN OCTOBER 1995 USING TRIMBLE 4000SSE GPS RECEIVERS. HPGN STATION MARY RM 5 WAS USED FOR HORIZONTAL CONTROL AND ELLIPSOIDAL ELEVATION. DIFFERENTIAL LEVELS WERE RUN FROM O.S.H.D. BM TB 232-1928-34 (ELEV. 112.323 METERS) TO STATION 0001 THRU STATION 0004.

Directions to the Monument:
FROM THE JUNCTION OF HIGHWAY 20 AND HIGHWAY 34 IN PHILOMATH, OREGON, GO WEST ON HIGHWAY 34 APPROX. 15.5 MILES TO MILEPOST 42.05 AND THE STATION ON THE RIGHT (NW) SIDE OF ROAD.

Monument Type: 3" BRASS CAP ON GALV. IRON PIPE SET IN CONC.
Stamping: DAVID EVANS & ASSOC. INC. GPS STA. STOLEN BAG
Description of the Monument:
MONUMENT IS 9.0 FT. WEST OF THE EDGE OF PAVEMENT, 6.0 FT. EAST OF FENCE LINE AND S10E 40.0 FT. OF POWER POLE #A 634.



Expires 6/30/97

SURVEYOR'S STAMP

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1 meter = 3.280839895 Intl. Feet or 1 inch = 2.54 cm. exactly
To calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet

69-90

HORIZONTAL CONTROL DATA

State Plane in Meters, Elevations in Meters

Station Number: 0005
Station Name: CHAPMAN
Section: 2 Township: 12S Range: 5W
1/4 Section: SW County: BENTON
Date Set: 10/02/1995 State: OR
Firm: David Evans and Associates, Inc.

Addr: 1980 NW Ninth ST., Suite 201

Corvallis,Oregon 97330

GPS: YES Type: FAST STATIC
Group: C Order: 1
PPM: 10

GEODETIC DATUM: **NAD 83/91**
LAT.: 44° 33' 14.80669" N
LONG: 123° 15' 53.09769" W

SPCS DATUM: **ORN3601**
Northing: 102373.515+/-0.004
Easting: 2280377.647+/-0.004

VERTICAL DATUM: **NGVD 29/47**
GEOID MODEL:GEOID93W
Orthometric Elev.: 67.341
+/-0.010
Separation: -21.831
Convergence: -1°57'38.59770"
Scale Factor: 0.99995171

Statement per ORS 209.250(6)(g)
THIS WORK WAS PERFORMED FOR REGION 2, OREGON STATE DEPARTMENT OF TRANSPORTATION, IN OCTOBER 1995 USING TRIMBLE 4000SSE GPS RECEIVERS. TWO BENTON COUNTY GPS STATIONS WERE HELD AS HORIZONTAL AND ELLIPSOIDAL CONSTRAINTS (94-07-21 AND 94-10-07). DIFFERENTIAL LEVELS WERE RUN FROM ODOT BM W-156 1941 (ELEV. 69.016 METERS)

Directions to the Monument:
FROM THE BRIDGE OVER MARY'S RIVER (NORTHBOUND 99W) IN CORVALLIS, OREGON, GO SOUTH 0.1 MILES TO SE CHAPMAN PLACE AND THE STATION ON THE LEFT (IN THE SIDEWALK AT THE SE CORNER OF THE INTERSECTION OF 99W AND SE CHAPMAN PLACE).

Monument Type: 2" BRASS CAP GROUTED IN SIDEWALK
Stamping: CHAPMAN
Description of the Monument:
MONUMENT IS 55 FT. SOUTH OF THE CENTERLINE OF SE CHAPMAN PLACE, 3.0 FT. EAST OF THE EASTERLY FACE OF CURB OF 99W, AND 1 FT. SOUTH OF WATER METER.

Expires 6/30/97

SURVEYOR'S STAMP

1 meter = 3.28083333... U.S. Feet = 39.37 inches exactly
1 meter = 3.280839895 Intl. Feet or 1 inch = 2.54 cm. exactly
To calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet

GP 695

HORIZONTAL CONTROL DATA

State Plane in Meters, Elevations in Meters

Station Number: 0006
Station Name: LILLY
Section: 11 Township: 12S Range: 5W
1/4 Section: NW County: BENTON
Date Set: 10/02/1995 State: OR
Firm: David Evans and Associates, Inc.

Addr: 1980 NW Ninth ST., Suite 201

Corvallis,Oregon 97330

GPS: YES Type: FAST STATIC
Group: C Order: 1
PPM: 10

GEODETIC DATUM: **NAD 83/91**
LAT.: 44° 32' 53.09574" N
LONG: 123° 15' 56.66101" W

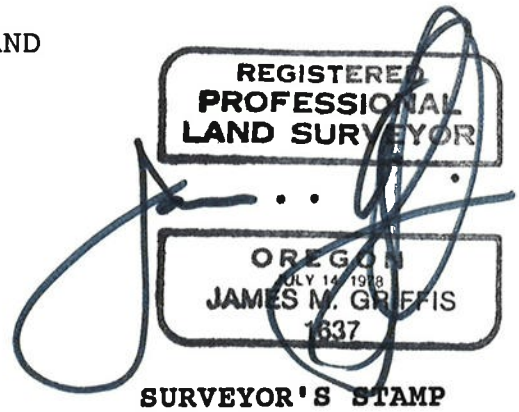
SPCS DATUM: **ORN3601**
Northing: 101706.468+/-0.006
Easting: 2280276.114+/-0.004

VERTICAL DATUM: **NGVD 29/47**
GEOID MODEL:GEOID93W
Orthometric Elev.: 67.304 +/-0.010
Separation: -21.836
Convergence: -1°57'41.12476"
Scale Factor: 0.99995284

Statement per ORS 209.250(6)(g)
THIS WORK WAS PERFORMED FOR REGION 2, OREGON STATE DEPARTMENT OF TRANSPORTATION, IN OCTOBER 1995 USING TRIMBLE 4000SSE GPS RECEIVERS. TWO BENTON COUNTY GPS STATIONS WERE HELD AS HORIZONTAL AND ELLIPSOIDAL CONSTRAINTS (94-07-21 AND 94-10-07). DIFFERENTIAL LEVELS WERE RUN FROM ODOT BM W-156 1941 (ELEV. 69.016 METERS)

Directions to the Monument:
FROM THE BRIDGE OVER MARY'S RIVER (NORTHBOUND 99W) IN CORVALLIS, OREGON, GO SOUTH 0.6 MILES TO LILLY STREET AND THE STATION ON THE RIGHT (AT THE NW CORNER OF THE SLANTED PARAPET WALL OF THE STRUCTURE ACROSS THE OLD MILL RACE).

Monument Type: 2 1/2" BRASS CAP GROUTED IN SLANTED PARAPET WALL
Stamping: LILLY
Description of the Monument:
MONUMENT IS 15 FT. SOUTH OF EDGE OF ASPHALT DRIVEWAY, 0.5' SOUTH OF THE NORTH END OF THE SLANTED PARAPET WALL ON THE WEST SIDE OF 99W, AND 6 FT WEST OF THE WESTERLY CURB OF 99W.



SURVEYOR'S STAMP

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1 meter = 3.280839895 Intl. Feet or 1 inch = 2.54 cm. exactly
To calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet

HORIZONTAL CONTROL DATA

State Plane in Meters, Elevations in Meters

Station Number: 9998
Station Name: E1/4 COR SEC 2 T14S R8W
Section: 2 Township: 14S Range: 8W
1/4 Section: NE County: BENTON
Date Set: State: OR
Firm: David Evans and Associates, Inc.

Addr: 1980 NW Ninth ST., Suite 201

Corvallis,Oregon 97330

GPS: YES Type: FAST STATIC
Group: C Order: 1
PPM: 10

GEODETIC DATUM: **NAD 83/91**
LAT.: 44° 22' 56.66204" N
LONG: 123° 36' 49.61750" W

SPCS DATUM: **ORN3601**
Northing: 84316.648+/-0.002
Easting: 2251929.407+/-0.002

VERTICAL DATUM: **NGVD 29/47**
GEOID MODEL:GEOID93W
Orthometric Elev.:

Separation: -21.554
Convergence: -2°12'29.70398"
Scale Factor: 0.99998800

Statement per ORS 209.250(6)(g)
THIS WORK WAS PERFORMED FOR REGION 2, OREGON STATE DEPARTMENT OF TRANSPORTATION IN OCTOBER 1995 USING TRIMBLE 4000SSE GPS RECEIVERS. HPGN STATION MARY RM 5 WAS USED FOR HORIZONTAL CONTROL AND ELLIPSOIDAL ELEVATION. DIFFERENTIAL LEVELS WERE RUN FROM O.S.H.D. BM TB 232-1928-34 (ELEV. 112.323 METERS) TO STATION 0001 THRU STATION 0004.

Directions to the Monument:
FROM THE POST OFFICE IN THE TOWN OF ALSEA, OREGON, TRAVEL WEST 0.9 MILES TO MILE POST 39 AND GRAVEL ROAD ON THE LEFT, TURN LEFT AND PARK AT GATE. STATION IS ON THE LEFT (SE OF GATE).

Monument Type: 3 1/4" ALUMINUM CAP SET 8" BELOW GROUND
Stamping: S2/S1 T14S R8W 1987 RLS 1922 USDA FOREST SERVICE
Description of the Monument:
MONUMENT IS 1.5 FT. SOUTH OF WITNESS POST, S25E 20.0 FEET FROM A GATE POST, 20.0 FT. EAST OF A GRAVEL ROAD AND APPROX. 50' SOUTH OF CENTERLINE HIGHWAY 34.

Expires 6/30/97

SURVEYOR'S STAMP

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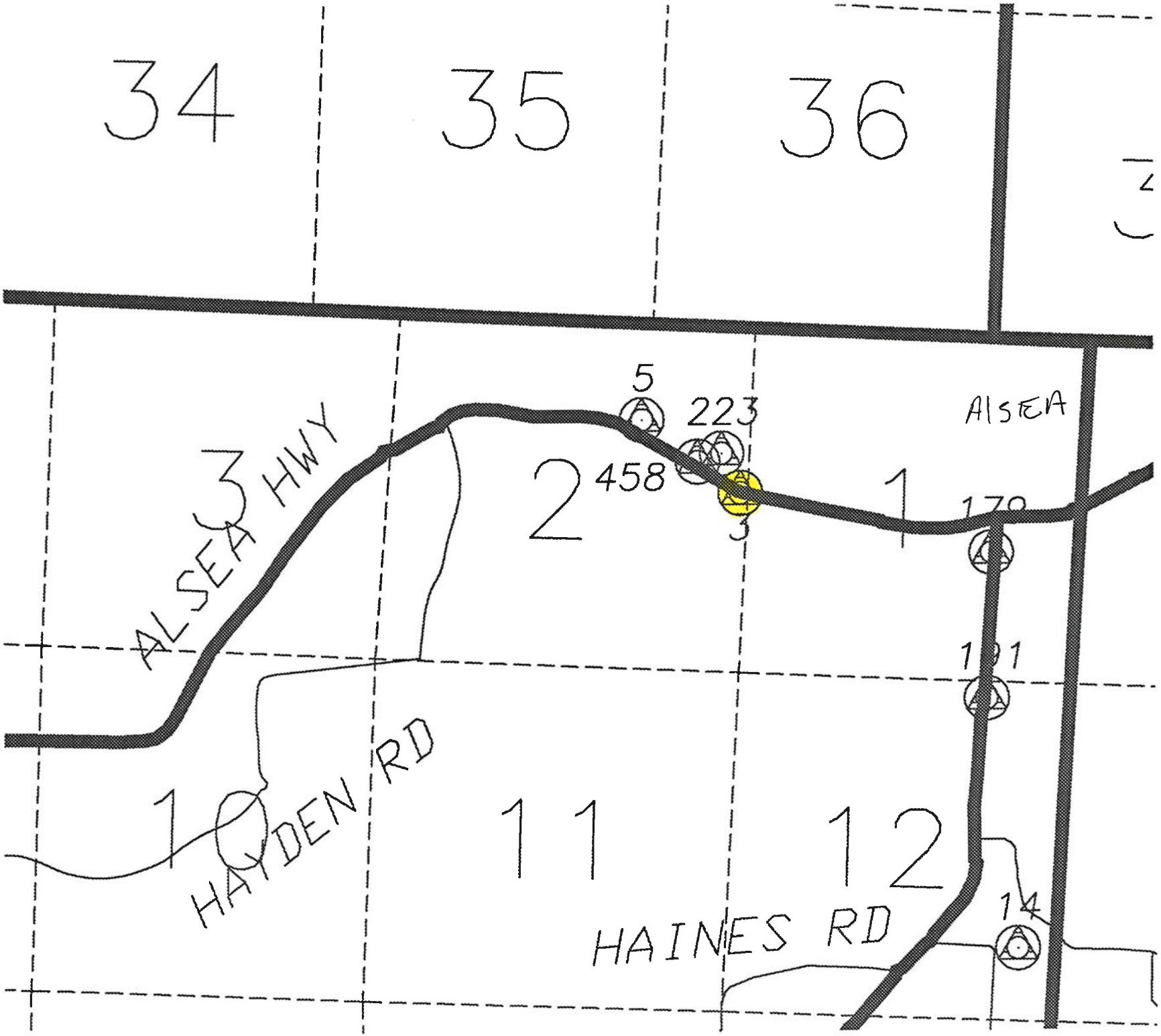
To calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet


34
35
36
5
223
ALSEA
ALSEA HWY
458
3
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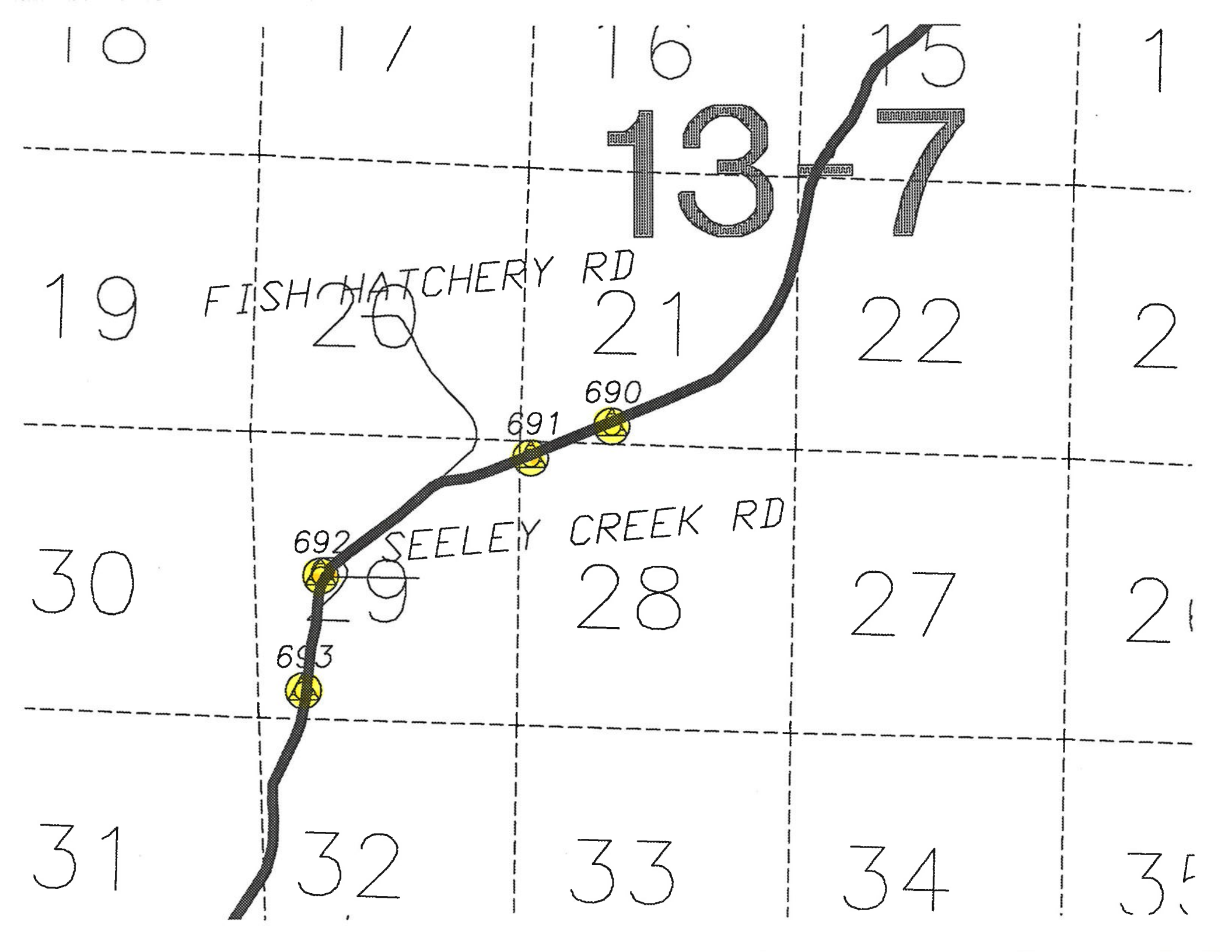
1
170
191
HAYDEN RD
10
11
12
HAINES RD
14


10
11
16
15
1
13
7
FISH HATCHERY RD
19
20
21
22
2
690
691
SEELEY CREEK RD
692
30
29
28
27
2
693
31
32
33
34
3

David Evans and Associates, Inc.
1980 NW Ninth Street, Suite 201
Corvallis, Oregon 97330
(206) 455-3571

Datum: NAD 83/91
Zone : ORN3601
State Plane in: METERS - ELEVATION IN METERS
Coordinate Source [GEOLAB]: C:\GEOLAB2\ODOT134\ALSEA-

NAME	LATITUDE	LONGITUDE	NORTHING	EASTING	ELLIPSOID ELEVATION	GEOID HEIGHT	ORTHOMETRIC ELEVATION	SCALE FACTOR	CONVERGENCE
0001	44°25' 8.88902" N	123°33' 1.70892" W	88202.668	2257124.703	102.578	-21.445	123.824	0.99997950	-2°9'48.07440
0002	44°25' 2.41898" N	123°33'23.12499" W	88021.007	2256643.730	95.616	-21.451	116.870	0.99997991	-2°10'3.26238
0003	44°24'38.62122" N	123°34'18.06269" W	87333.074	2255401.336	91.548	-21.473	112.817	0.99998141	-2°10'42.2234
0004	44°24'16.79678" N	123°34'21.62025" W	86662.917	2255297.069	82.962	-21.487	104.254	0.99998280	-2°10'44.7464
9998	44°22'56.66204" N	123°36'49.61750" W	84316.648	2251929.407	63.797	-21.554	0.000	0.99998800	-2°12'29.7039
9999	44°30'16.05036" N	123°33' 8.19724" W	97682.194	2257339.375	1228.225	-21.185	0.000	0.99996130	-2°9'52.67583

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1 Meter = 3.280839895 International Feet or 1 inch = 2.54 centimeters exactly
To Calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet (US or International, error introduced is negligible)

David Evans and Associates, Inc.
1980 NW Ninth Street, Suite 201
Corvallis, Oregon 97330
(206) 455-3571

Datum: NAD 83/91
Zone : ORN3601
State Plane in: METERS - ELEVATION IN METERS
Coordinate Source [GEOLAB]: C:\GEOLAB2\ODOT134\MARY-H

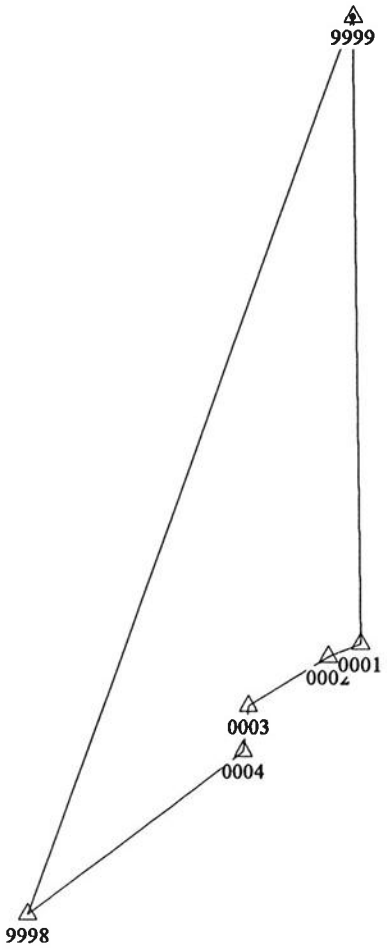
NAME	LATITUDE	LONGITUDE	NORTHING	EASTING	ELLIPSOID ELEVATION	GEOID HEIGHT	ORTHOMETRIC ELEVATION	SCALE FACTOR	CONVERGENCE
0005	44°33'14.80669" N	123°15'53.09769" W	102373.515	2280377.647	45.756	-21.831	67.341	0.99995171	-1°57'38.5977
0006	44°32'53.09574" N	123°15'56.66101" W	101706.468	2280276.114	45.710	-21.836	67.304	0.99995284	-1°57'41.1247
9996	44°34'35.63396" N	123°18'33.77298" W	104989.130	2276920.383	66.500	-21.688	87.946	0.99994762	-1°59'32.5463
9997	44°33'48.39417" N	123°13'51.76122" W	103318.570	2283089.037	43.159	-21.896	64.805	0.99995000	-1°56'12.5475

1 Meter = 3.28083333... US Feet or 1 Meter = 39.37 inches exactly
1 Meter = 3.280839895 International Feet or 1 inch = 2.54 centimeters exactly
To Calculate Elevation Factor (in the North American Continent)
Divide 20,906,000 by 20,906,000 + Ellipsoid Elevation in feet (US or International, error introduced is negligible)

FILE: ALSEA.PTS GPS DERIVED

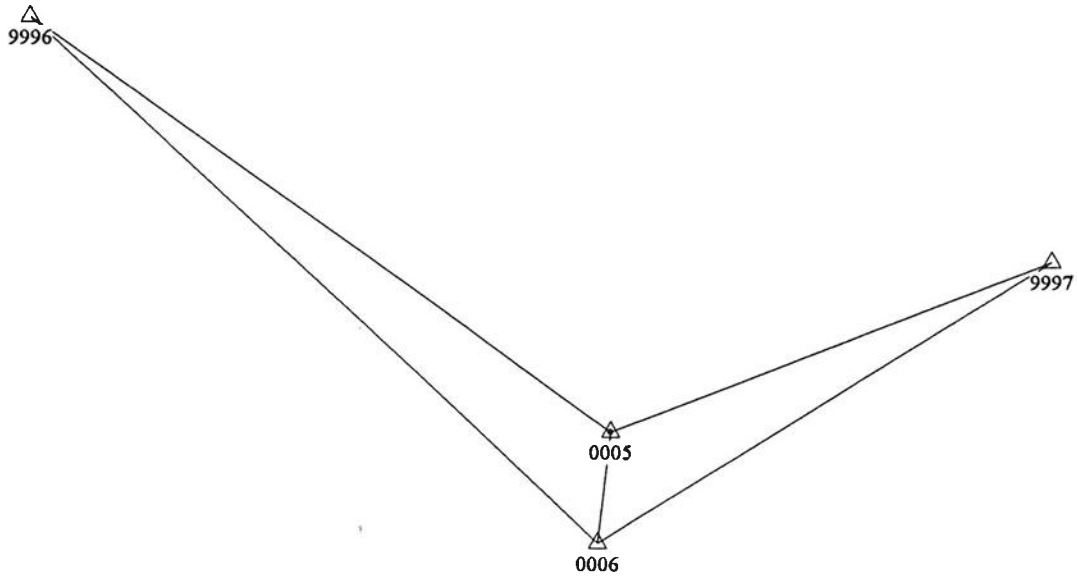
TB232	368.51400	TB232 ODOT B.C.	
1	367.81350	ROCK NAIL	
2	370.95200	ROCK NAIL	
3	378.85900	ROCK NAIL	
4	383.42950	DEA B.C. WEBB	383.43
5	389.59000	ROCK NAIL	
6	393.80350	ROCK NAIL	
7	402.04950	ROCK NAIL	
8	406.24600	DEA B.C. CROOKED CREEK	406.25
17	371.21987	ROCK NAIL	
18	377.68042	ROCK NAIL	
19	383.93548	ROCK NAIL	
20	378.62598	ROCK NAIL	
21	370.51998	ROCK NAIL	
22	364.43348	ROCK NAIL	
23	364.10148	ROCK NAIL	
24	369.67798	ROCK NAIL	
25	372.87648	ROCK NAIL	
26	370.13498	DEA B.C. SEELEY	370.13
27	365.34098	ROCK NAIL	
28	357.15649	ROCK NAIL	
29	349.52699	ROCK NAIL	
30	346.71699	ROCK NAIL	
31	346.82299	ROCK NAIL	
32	342.03899	DEA B.C. STOLEN BAG	342.04
46	379.91233	ROCK NAIL	
47	372.19697	ROCK	

Network Map: ODOT134

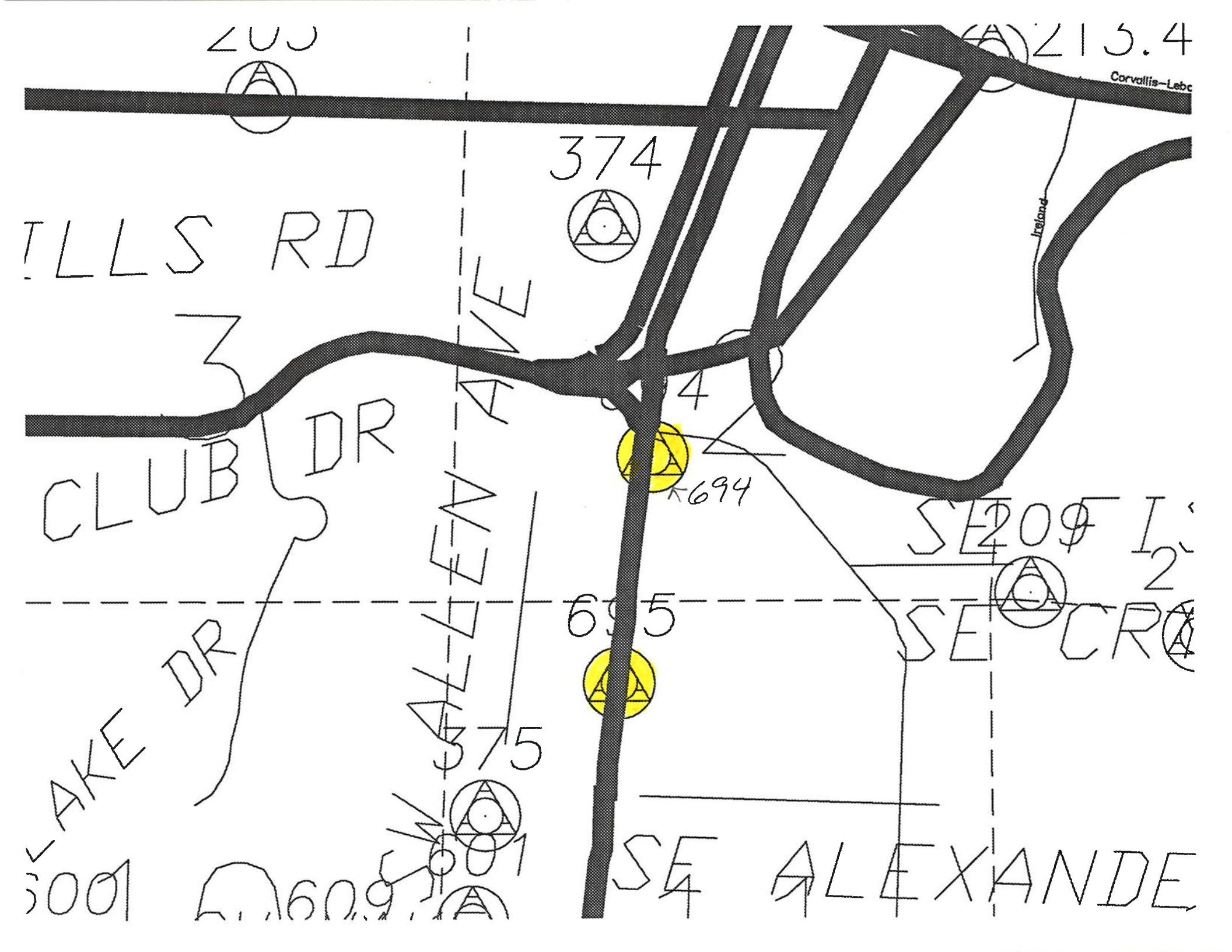


2000m

Network Map: ODOT134



1000m


203
213.4
Corvallis–Lebc
374
TLLS RD
Ireland
3
4
CLUB DR
ALLEN AVE
694
SE 209 I
695
SE CR
LAKE DR
375
601
SE ALEXANDE
609