

FILED

Date: 10/8/2009 By: JC

This survey consists of:

Map: M159-79

Narrative: CS 65/67-6A-F

Corner Rpt: _____

BOULDER CREEK WILDERNESS BOUNDARY LOCATION
Soda Springs Dam Segment – Angle Point 841 to Angle Point 854
SW1/4 of Section 17, T. 26 S., R. 3 E., Willamette Meridian
Umpqua National Forest
Douglas County, Oregon

DOUGLAS COUNTY
SURVEYOR

Narrative Report to Accompany Survey Plat

PURPOSE: This survey was performed to establish a portion of the Boulder Creek wilderness boundary to insure the North Umpqua Trail location was outside of the wilderness area. The Boulder Creek Wilderness was established by the Oregon Wilderness Act, 1984, Public Law 98-328. The official legal boundary description was approved March 27, 1987. This boundary was located under the authority and responsibilities listed in Forest Service Manual – Northwest Region Supplement 7151 and as clarified by 7151/2320 memo of September 3, 1992, to Forest Supervisors from the Forest Service Director of Lands and Minerals.

INVESTIGATION: In March, 1993, I performed a preliminary investigation of the legal description and found the description to be faulty in the vicinity of the Soda Springs Dam. I have made the determination that the legal boundary description has a latent ambiguity based on the following evaluation.

The latent ambiguity is located from Angle Point (AP) 841 through Angle Point 854. Angle Point 841 is described as “A point in the draw 200 feet northerly of Soda Springs Reservoir”. The legal description then describes the wilderness boundary “paralleling 200 feet northeasterly of PP&L’s powerline” to Angle Point 854. Angle Point 854 is described as “A point 200 feet northerly of and perpendicular to centerline of PP&L’s powerline”.

The specific point of 200 feet northerly of Soda Springs Reservoir in a draw for Angle Point 841 can be located. However, the nearest power lines are southerly across the reservoir, over 500 feet away. A 200 foot offset from the power line would be within the reservoir. Index Map Number 3, which accompanies the legal boundary description, shows the boundary remaining northerly of the reservoir. This also occurs with the digitized bearing and distances. Maps accompanying the creation of the Boulder Creek Wilderness legal description acknowledge the Federal Energy Regulatory Commission (FERC) license for the Pacific Power & Light (PP&L) North Umpqua Hydroelectric Power Project and depict a wilderness boundary offset 200 feet from the major features of the Project. It is my determination that the legal description after Angle Point 841 had intended to parallel the Soda Springs reservoir. PP&L is currently doing business as PacifiCorp.

From Angle Point 841 the conditions of paralleling the reservoir continue westerly for approximately 300 feet to the Soda Springs Dam. At the dam site the conditions change. The same Index Map shows the boundary line continuing northwesterly from the dam as a sinuous line. The on-the-ground conditions are that a concrete and steel penstock runs westerly from the dam, remaining north of an access road and the North Umpqua River. Electric control lines run along the penstock from the downstream power house to the dam. Also, PP&L high tension transmission lines cross the dam northwesterly, but are southerly of the penstock for approximately another 200 feet. It is my determination that the legal description also intended to be 200 feet from the dam and the penstock to the point of the intersection of the penstock with the centerline of the transmission lines. The official legal description after Angle Point 854 is sufficient and the boundary should be located as written.

PROCEEDURE: I located the wilderness boundary 200 feet from the PP&L power generating facilities in the following manner:

1. 200 feet perpendicular to the centerline of linear features, such as the transmission lines and the penstock ; or
2. in 200 foot arcs around points of protruding or sinuous features, such as the end of a wall, the end of the dam, and the edge of the water.

Per Brown, Boundary Control and Legal Principles – Third Edition, 1986, “A line parallel with a creek is parallel with all the bends and angles of the creek and is an equal distance from any bend or angle unless otherwise indicted. Sometimes the width of the strip can be wider than called for, but never less.” (Page 49).

Using a Lietz SET5 total station, I radially tied to the above mentioned features. Man-made features were located within 2 feet and the edge of the water was located within 5 feet. I then ran a closed traverse along the boundary line. The error of closure of the traverse was 1 part in 12,500.

Two controlling Angle Points were established at each end of this survey. Each controlling Angle point was monumented with an aluminum cap, had 2 new bearing trees marked, and had a wooden post set on the boundary line with a wilderness boundary sign attached.

Angle Point 841 was determined from the legal description at a point in the draw, 200 feet from the edge of Soda Springs Reservoir. A witness corner for Angle Point 841 was established out of the draw on the boundary line. Angle Point 854 was determined to be at the intersection of two parallel lines, each 200 feet from the centerlines of the penstock and the transmission lines.

Other Angle Points were established on the boundary at intersections of arcs and/or straight lines. A portion of the wilderness boundary crossed a slide area and no Angle Points were established on the slide. Two additional Angel Points were established on each side of the slide area. The Angle Points were monumented with an aluminum cap.

The location of the wilderness boundary line established in this survey was marked only with blazed trees. Trees within 4 feet, either side of the boundary line, were line blazed. The boundary line was not marked within the slide area. Other than on the two wooden posts at the controlling Angel Points, no wilderness boundary signs were posted.

A staff compass and steel tape were used to measure the new bearing trees. The magnetic declinations were determined by sighting down a traverse leg of known bearing and the bearings are reported to the nearest 1/4 degree. Measurements are to the center of the rootcrown of the bearing trees. The tree diameters are at breast height.

BASIS OF BEARING: The basis of bearing was a solar observation taken on the north side of the dam, September 27, 1994. The bearings and distances shown in this survey are true geodetic bearings.

The bearing S. 49° 39' 17" E. for the segment of the transmission line suspended over the Soda Springs Dam was taken from the PP&L drawing “Exhibit K-14, Sheet No. 2, Application for Amendment of License Project No. 1927, Soda Springs Development”, dated June 13, 1952. This is a grid bearing based on the Oregon Coordinate System of 1927, South Zone.

MONUMENT FOUND:

Soda Springs Dam –

A 2 inch diameter brass cap was found cemented in the northwest corner of the top of the spillway structure. This geodetic monument, named “Soda Springs Dam”, was established using G.P.S. survey control in 1992 by Richard B. Davis, Oregon Land Surveyor 827, for PacifiCorp. The published data from the report “Survey Control Network Surrounding PacifiCorp Generating Facilities”, revised Feb. 22, 1993, are:

Oregon Coordinate System of 1983, South Zone (international feet)

602566.725 northing
4390318.692 easting
1813.94 elevation, NAVD 88
-1° 21' 53.224" theta angle
0.999810582 combined scale and elevation factor

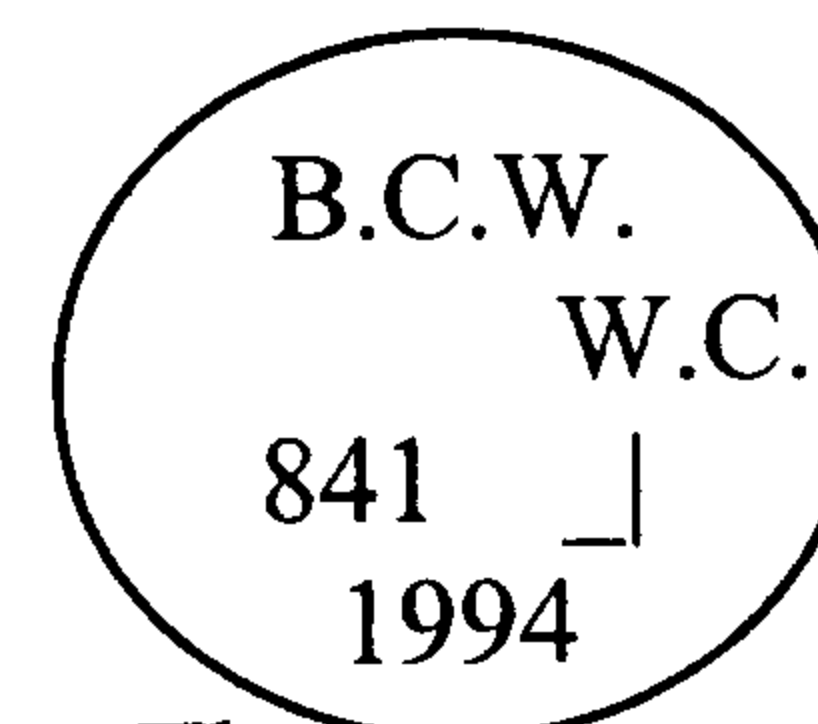
Geodetic Coordinates, NAD 83(91)

43° 18' 09.72139" N. latitude
122° 29' 41.52896" W. longitude

MONUMENTS ESTABLISHED:

Angle Point 841, Witness Corner –

I set the Witness Corner on the boundary, N. 53° 45' W., 11.4 feet from the true point in the draw. At the Witness Corner point, I set a 5/8" diameter rebar, 30" long, driven 30" in the ground, with a 1-1/2" diameter aluminum cap attached and marked as shown:



Corner is on a small flat, approximately 10 feet, N. 30° W. from the draw. The true point is under a 48" diameter log. I determined the magnetic declination to be 18° East.

From which I establish new references:

A 4"x 4" wooden post, 6 feet long, set 2 feet in the ground, bears S. 54° E., 2.0 feet, with wilderness boundary sign and location tag attached.

A 10" Douglas fir bears S. 48° W., 47.3 feet, scribed “WC BT” on a single blaze.

An 18" maple bears N. 12-3/4° W., 9.9 feet, scribed “BCW WC BT” on a single blaze.

Geodetic Coordinates, NAD 83(86)

43° 18' 12.664" N. latitude
122° 29' 35.360" W. longitude

Angle Point 841 –

Under large log in a draw, not set.

Geodetic Coordinates, NAD 83(86)

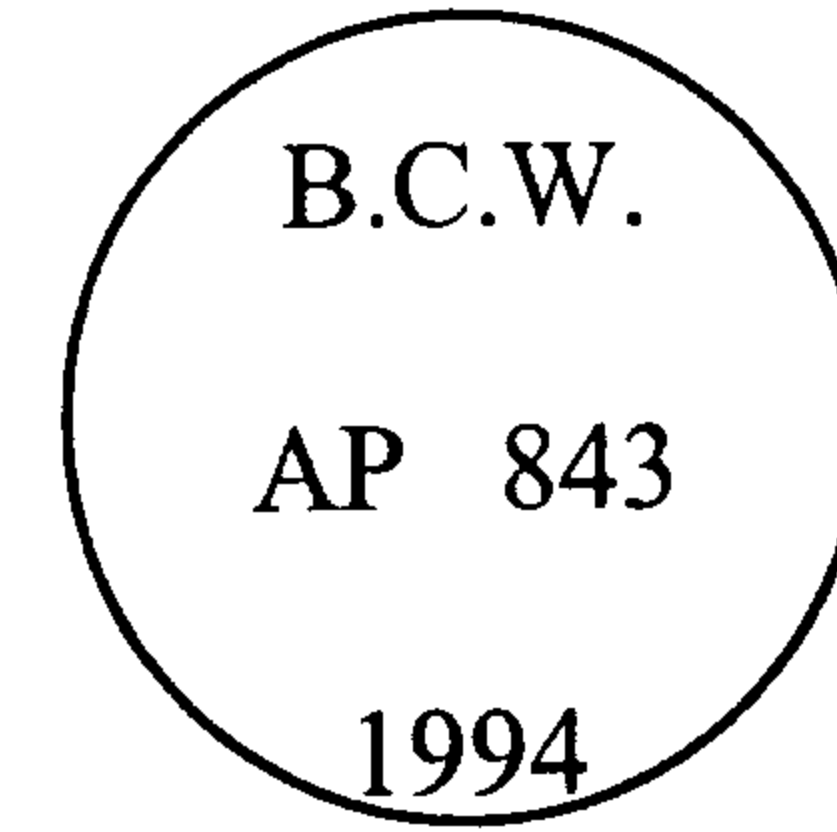
43° 18' 12.597" N. latitude
122° 29' 35.236" W. longitude

Angle Point 842 –

Not set.

Angle Point 843 –

I set a 5/8" diameter rebar, 30" long, driven 30" in the ground, with a 1-1/2" diameter aluminum cap attached and marked as shown:
The corner is on a steep East slope approximately 10 feet from the edge of the slide.



Geodetic Coordinates, NAD 83(86)

43° 18' 13.012" N. latitude

122° 29' 35.831" W. longitude

Angle Point 844 –

In slide, not set.

Geodetic Coordinates, NAD 83(86)

43° 18' 12.929" N. latitude

122° 29' 37.675" W. longitude

Angle Point 845 –

In slide, not set.

Angle Point 846 –

In slide, not set.

Angle Point 847 –

In slide, not set.

Angle Point 848 –

In slide, not set.

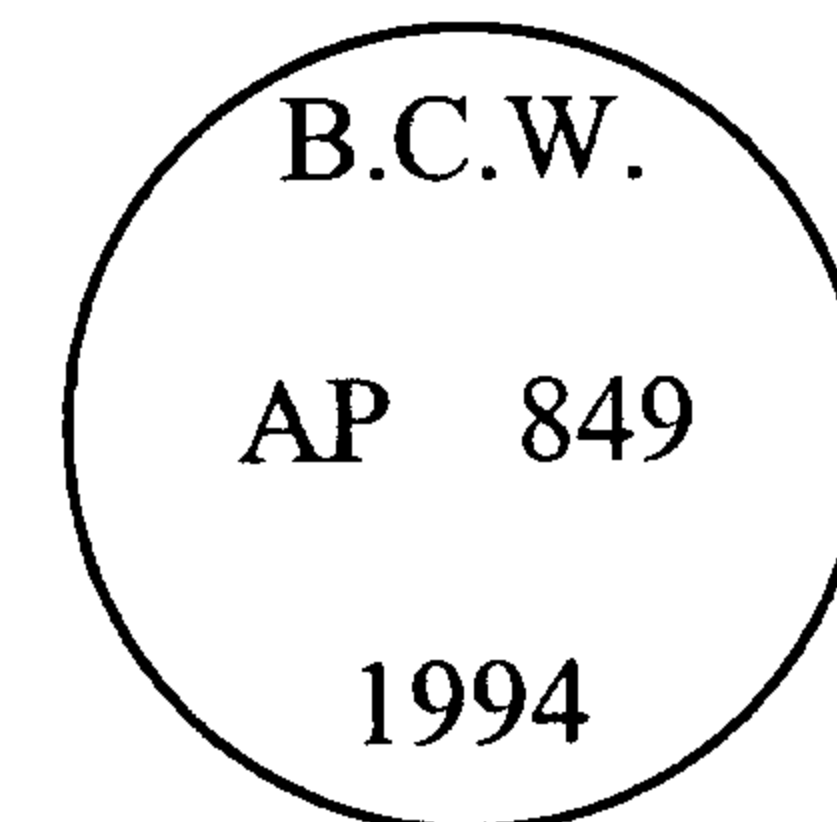
Geodetic Coordinates, NAD 83(86)

43° 18' 13.293" N. latitude

122° 29' 39.888" W. longitude

Angle Point 849 –

I set a 5/8" diameter rebar, 30" long, driven 30" in the ground, with a 1-1/2" diameter aluminum cap attached and marked as shown:
Corner is on a steep South slope.



Geodetic Coordinates, NAD 83(86)

43° 18' 13.444" N. latitude

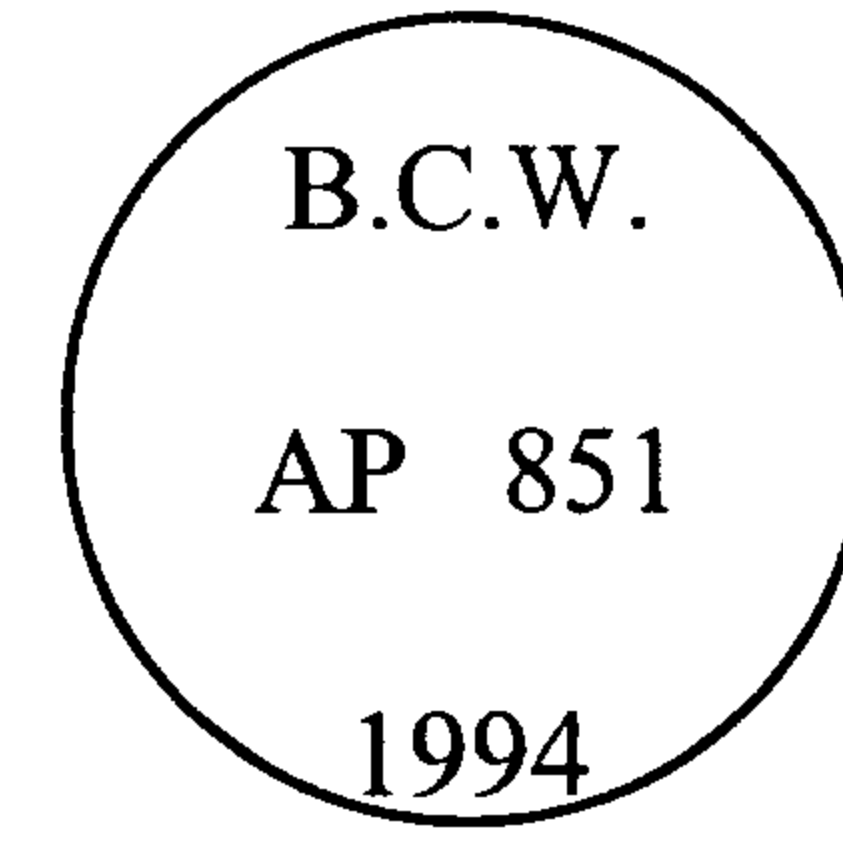
122° 29' 40.398" W. longitude

Angle Point 850 –

Not set.

Angle Point 851 –

I set a 5/8" diameter rebar, 24" long, driven 24" in the ground, with a 1-1/2" diameter aluminum cap attached and marked as shown:
An 11" Douglas fir, with location tag, bears N. 10° W., 6.5 feet. Corner is on a steep South slope.

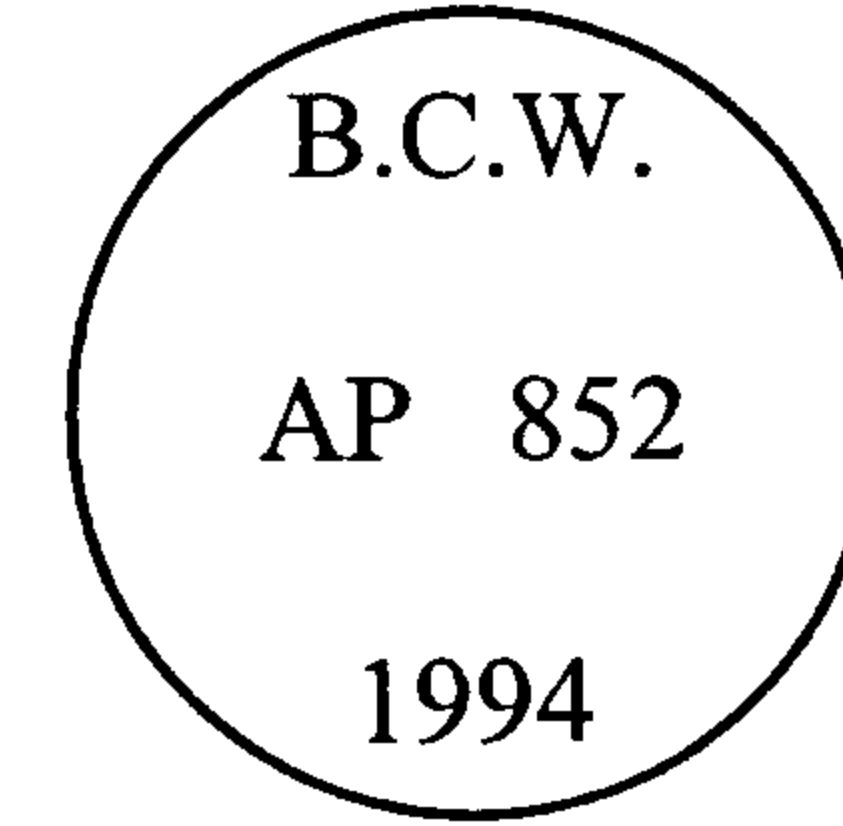


Geodetic Coordinates, NAD 83(86)

43° 18' 13.452" N. latitude
122° 29' 41.865" W. longitude

Angle Point 852 –

I set a 5/8" diameter rebar, 24" long, driven 22" in the ground, with a 1-1/2" diameter aluminum cap attached and marked as shown:
A 10" madrone, with location tag, bears S. 20° W., 4.9 feet. Corner is in a rocky opening, one foot southwest from the base of a 5-foot high rock outcrop.

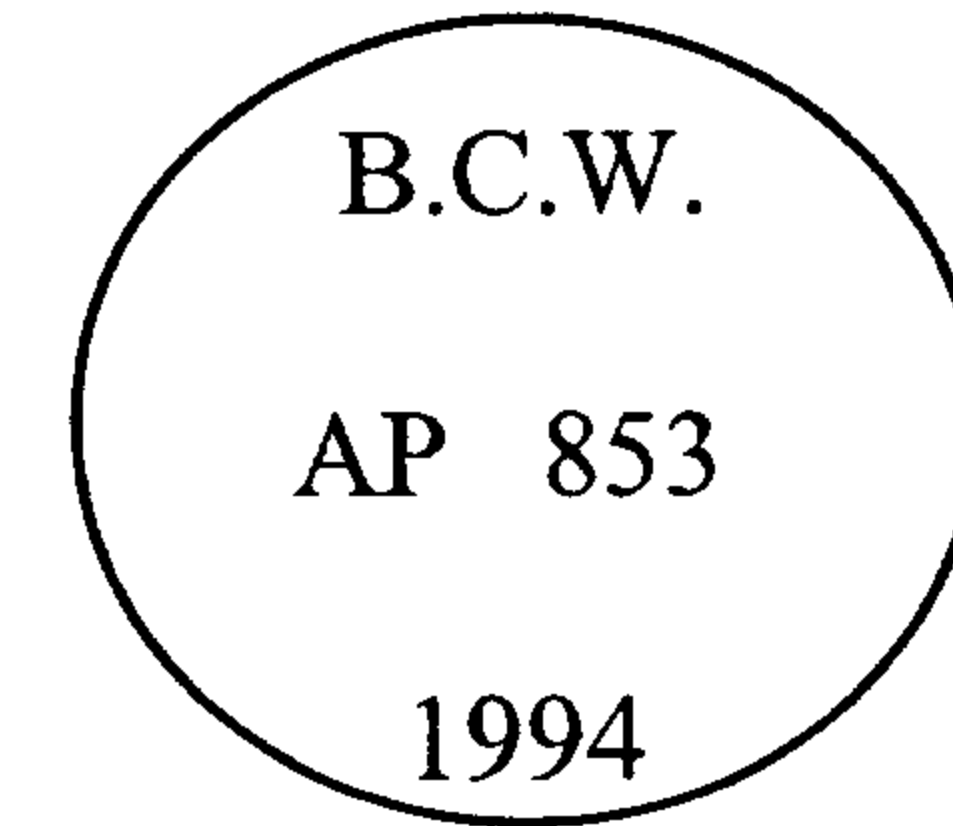


Geodetic Coordinates, NAD 83(86)

43° 18' 13.404" N. latitude
122° 29' 42.466" W. longitude

Angle Point 853 –

I set a 5/8" diameter rebar, 30" long, driven 28" in the ground, with a 1-1/2" diameter aluminum cap attached and marked as shown:
A 28" Douglas fir, with location tag, bears N. 70° W., 2.5 feet. Corner is on a South slope.

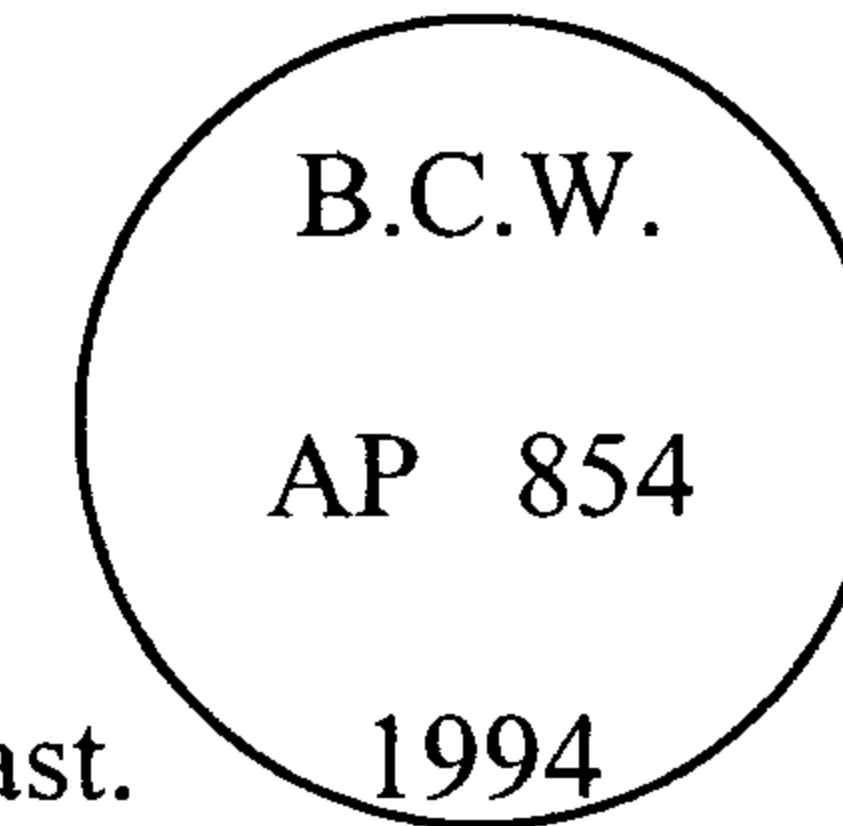


Geodetic Coordinates, NAD 83(86)

43° 18' 13.740" N. latitude
122° 29' 43.456" W. longitude

Angle Point 854 –

I set a 5/8" diameter rebar, 30" long, driven 22" in the ground, with a 1-1/2" diameter aluminum cap attached and marked as shown:
A 40" Douglas fir bears S. 65° W., 4.7 feet. Corner is on a steep southwest slope. I determined the magnetic declination to be 18-1/2° East.



From which I establish new references:

- A 5" Douglas fir bears N. 50-3/4° E., 22.9 feet, scribed "BCW AP 854 BT" on a single blaze.
- A 7" incense cedar bears S. 50-1/2° E., 19.1 feet, scribed "AP 854 BT" on a single blaze.
- A 4"x4" wooden post, 6 feet long, set 2 feet in the ground, bears N. 63° W., 2.2 feet, with wilderness boundary sign and location tag attached.

Geodetic Coordinates, NAD 83(86)

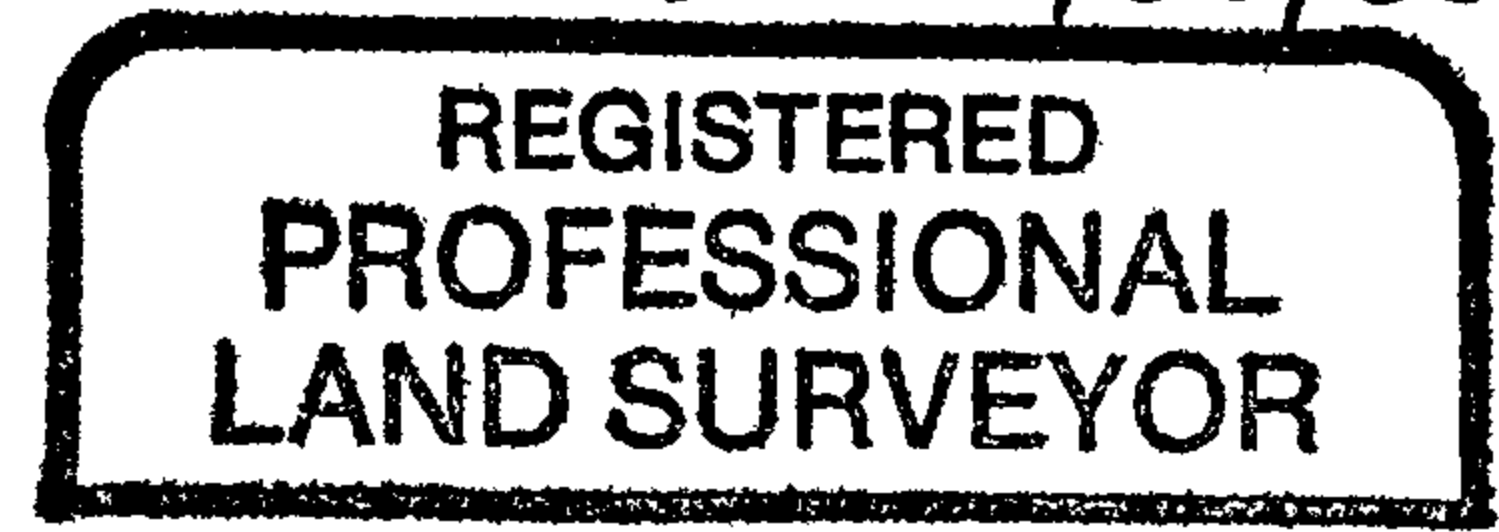
43° 18' 13.723" N. latitude
122° 29' 44.840" W. longitude

WILDERNESS BOUNDARY DATA TABLE:

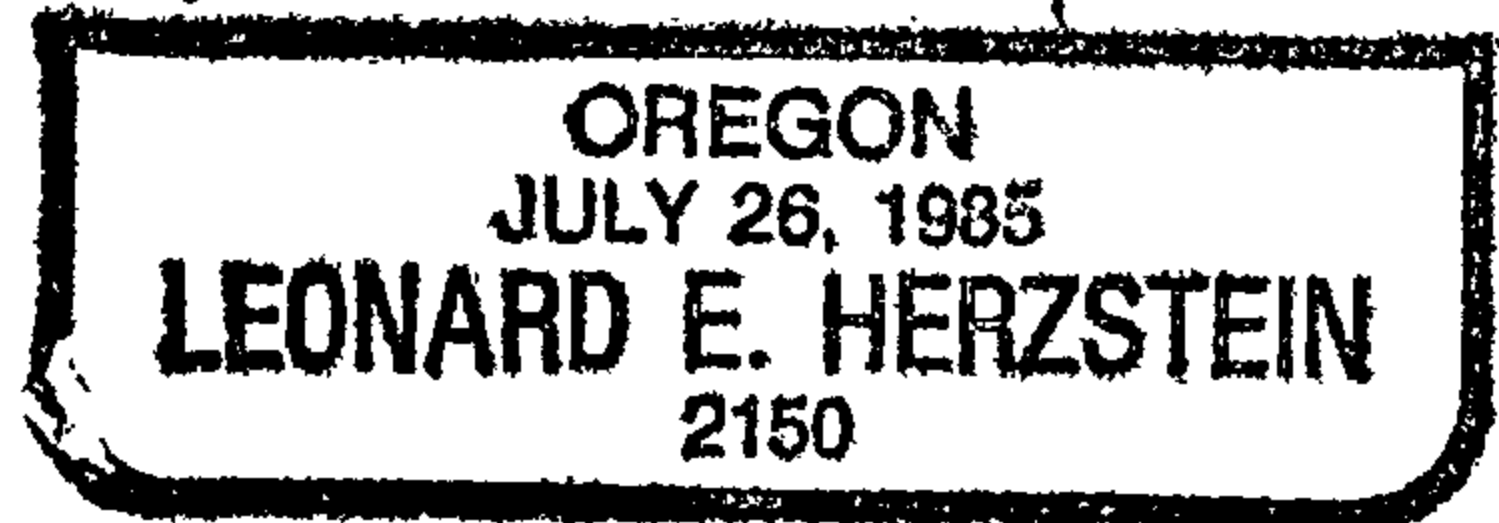
All curved segments have a radius distance of 200.0 feet. Distances are in feet.

	Long Chord Dist.	LC Bearing	Arc Distance	Central Angle
AP 841	125.2	N. 70° 23' 50" W.	127.3	36° 28' 39"
	(114.3)	N. 72° 01' 48" W.	115.9	33° 15' 55"
Witness corner AP 841 to AP 843)				
AP 843	63.0	S. 82° 18' 08" W.	63.3	18° 07' 25"
AP 844	167.8	N. 77° 17' 39" W.	173.1	49° 36' 08"
AP 848	40.7	N. 68° 00' 29" W.	40.7	11° 40' 09"
AP 849	108.4	N. 89° 33' 44" W.	109.8	31° 27' 26"
AP 851	44.7	S. 83° 46' 20" W.	44.8	12° 50' 03"
AP 852	Horizontal Dist.	Bearing		
	80.7	N. 65° 06' 22" W.		
AP 853	102.3	S. 89° 02' 08" W.		
AP 854				

CURRENT CERTIFICATE
EXPIRES 06/30/2011



Leonard E. Herzstein



09/29/09

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