

**CONSULTANTS**

MAIL:  
P. O. Box 25247  
Portland, Oregon 97225-0247  
Telephone: (503) 626-6656

Mark R. Heidecke  
Senior Vice President

STREET:  
4540 S.W. 110th Avenue  
Beaverton, Oregon 97005-3011  
Facsimile: (503) 626-2494

**SURVEY OF POWERDALE HYDROELECTRIC PROJECT**

This survey was completed in compliance with Section 209.250 of the Oregon Revised Statutes.

***Date of Survey:***

November 1994 thru October 1995

***Purpose of Survey:***

The purpose of this survey was to retrace the boundaries of the Powerdale Hydroelectric Project in Sections 1, 11 and 12 in Township 2 North, Range 10 East and Section 36 in Township 3 North, Range 10 East of the Willamette Meridian, in Hood River County, Oregon.

Topographic features were determined photogrammetrically with limited field verification.

***Basis of Bearing:***

The basis of bearing for this survey is the Oregon Coordinate System, North Zone, NAD 83, utilizing a GPS network based on National Geodetic Survey Control Stations "Last" and "Ponder 2".

***Method of Survey:***

This survey was executed with a Wild T1600 and a Wild DI-5 EDM using Field Survey Traverse methods.

**SECTION 11 & 12**

The South 1/4 corner of Section 11, (6008) was found per Hood River County Surveyor's Land Corner Record (LCR) Card No. 763. The Center 1/4 corner (116) was found per LCR Card 577. The Southeast Quarter was then subdivided in accordance with the BLM Manual of Instructions (usual method) and the properties prorated in utilizing PacifiCorp property deeds along with the adjoiner deed descriptions.

The Southeast corner of Section 12, (14) was found per LCR Card 593. The Southwest corner (6004) was found per LCR Card 914. The position of the South 1/4 corner was calculated by prorating the bearings and distances using Danny Cron's survey PS# 82014, from the Southwest corner (6004) and the Southeast corner (14). The East 1/4 corner (5001) was found per LCR Card 913, the Northeast corner (13) was found per LCR Card 596 and the West 1/4 corner (17) was found per LCR Card 910. At the Northwest corner (21) a 2-1/2" aluminum cap was found. LCR Card 590 and the survey by Anthony Klein, PS# 90097, called for a 2" iron pipe. The position of the 2-1/2" aluminum cap is consistent with Klein's surveyed distances to the Northeast corner (13) and the West 1/4 corner (16) of Section 1. The North 1/4 corner was calculated by prorating Klein's distances and bearings between the Northwest corner (21) and the Northeast corner (13).

**HR-25** The Northwest corner of HR-25 was established by holding the record calls for the West line of Tax Lot 300 (Book 55, Page 362). The westerly boundary of HR-25 was prorated by holding the record call of the Southwest corner of Tax Lot 300 and the Northeast corner of Tax Lot 300 said point also being the Northwest corner of HR-25. The North line of HR-25 was established by projecting the North line of the deed call of Tax Lot 300 (Book 55, Page 151) from the Northwest corner of HR-25 to the center of Hood River.

- HR-26** In the South half of the Southwest Quarter of the Northwest Quarter of Section 12, the deed for HR-26 (Volume 20, Page 89) calls for the Southwest corner to be 273 feet more or less from the WC 1/16 corner. The deed also calls for the westerly boundary to be 20 feet northwesterly of, perpendicular to, and parallel with the flowline (flume) as constructed. The flowline's position was field verified and was accepted in the position as built.
- HR-22** The monuments 7001, a 1" iron pipe, and 7000, a 6" axle, were found as established in the survey Reference "M", Hood River County Records. The position of 7001 was 7.94 feet East and 0.17 feet North of the calculated Northwest 1/16 corner location, and was not held as the corner. The boundary then runs easterly along the North 1/16 line to a point located at the intersection of the North 1/16 line and a line formed by points 7000 and 7002, thence northerly to point 7002. Monuments 7002 and 7003, both 3/4" iron pipes set by the survey Reference "M", were accepted as found.
- HR-19** Monument 7004, a 1-1/4" iron pipe was intended to be on the section line between Section 12 and 1 according to the Reference "M" survey, but fell 34.48 feet short possibly due to a chaining error. The HR-19 boundary line was projected northerly from 7003 through 7004 to the intersection of the North line of Section 12. The line between the calculated North and South quarter corners of Section 12, was held as the East boundary of HR-19.
- HR-22** The East line of HR-22 was projected southerly along the 1/16 line from the calculated CN 1/16 corner to the Northwesterly right-of-way line of the Mt. Hood Railway. In reviewing the record calls for HR-22 with the photogrammetric and field verifications, it was determined the intention of the description was to follow the northwesterly right-of-way line of the Mt. Hood Railway Company. The Northwesterly right-of-way line of the Mt. Hood Railway Company was held.
- HR-5** The courses and distances 322 to 335 were determined via photogrammetric methods. The four courses 336, 238, 239 and 240 were protracted to the calculated Southwest 1/16 corner. The Southwest 1/16 corner and the West 1/16 corner between Sections 12 and 13 were calculated in the usual method.

**SECTION 1**

The West 1/4 corner (16) was found per LCR Card 689, the Northeast corner (5007) was found per LCR Card 592, the North 1/4 corner (15) was found per LCR Card 582, and the East 1/4 corner (5006) was found per LCR Card 417. See the narrative for Section 12 for the establishment of the South line of this section. At the Northwest corner (22) a nail, of unknown origin, was found in the asphalt at the intersection of 12th and Eliot Drive. The nail (22) location as the section corner, fits well using record data to the North 1/4 corner and the West 1/4 corner of Section 1 and the West 1/4 corner of Section 36. The Center 1/4 corner (5011), a 3/4" iron pipe was found and held as established in the survey Reference "C", Hood River County Records, and in Anthony Klein's survey, PS# 90097. The North 1/16 corner (6060), between Section 36 in Township 3 North, Range 10 East and Section 31 in Township 3 North, Range 11 East, a 1/2" iron rod with cap marked "RLS 1028" was found and held. Monument 6061, a 3/4" iron rod, was found N27°07'07"E 2.32 feet from 6060. The remaining section was subdivided in the usual method.

- HR-19** The line between monument 7003 and monument 7004 was projected Northerly to the intersection with the calculated South line of Section 1. Thence the line was projected Northerly to monument 6048, a found 1/2" iron rod with a cap marked, "RLS OR 932 & WA 22098". The line thence was projected northerly 0.12 feet to the calculated 1/16 line, said point also being the Northwest corner of HR-19. The North line of HR-19 thence follows the calculated 1/16 line East to the calculated South-center 1/16 corner. Monument 6049, a found 1/2" iron rod with a cap marked, "RLS OR 932 & WA 22098", was determined to be 0.32 feet North of the calculated 1/16 line.
- HR-10** The boundary of HR-10 proceeds North from the calculated South-center 1/16 corner to an intersection with a line projected easterly from the found monuments 6047 and 6046, 1/2" iron rods with caps marked, "RLS OR 932 &

WA 22098". The continuation of the westerly and northerly boundary lines of HR-10 were determined by holding the record courses and distances from Volume 10, Page 403.

**HR-3** In the West Half of the Northeast Quarter, the record call (Volume 5, page 614) for the westerly boundary of the PacifiCorp property is for a line of elevation 60 feet above the water of the stream of Hood River and 13 feet above the top of the flume located near the North line of the South Half of the Southwest Quarter of the Northeast Quarter of Section 1. The contour line at the 207' elevation was established by determining the elevation of the water of Hood River using NAVD88 data, generating a contour through photogrammetric and field methods and verifying the water elevation and the flume elevation. The PacifiCorp deed line was established by a series of chords that followed the 207' contour northerly to the North section line.

The East PacifiCorp deed line of HR-3 in the Northeast Quarter is coincident with the West right-of-way line of Oregon State Highway 35, (Mt. Hood Highway). The boundary was located by utilizing the highway right-of-way monuments 6026, 6028 thru 6030 and 6033, 5/8" iron rods, as per Mt. Hood Highway Dwg. 8B-23-14 Whiskey Creek - Hood River Section. The East boundary of HR-3 follows the West highway right-of-way line South to the center quarter section line. The PacifiCorp deed line thence proceeds West to the calculated Center East 1/16 corner.

**HR-10** The East line of HR-10 follows the protracted 1/16 line from the Center East 1/16 corner southerly to the intersection of the property line, between found monuments 6056 and 6057. Monuments 6051 thru monument 6057 were found as set by Danny Cron, in survey PS# 80085. The monuments 6052 thru 6056 were held. Monument 6057 was held for property line alignment, it fell N26°04'09"E at 0.27 feet, from the corner of HR-10. Monument 6051 was also held for alignment only. The deed boundary continues from monument 6052 towards monument 6051, to the northwesterly right-of-way line of the Mt. Hood Railway. The East line of HR-10 is then coincident with the northwesterly right-of-way of the Mt. Hood Railway and continues southerly to the South line of Section 1. The deed boundary then follows the South section line to the calculated South ¼ corner, (see North ¼ corner description in Section 12 of this narrative).

### SECTION 36

The West 1/4 corner (7008) was found per LCR Card 621, the Northwest corner (6013) was found per LCR Card 992, the Northeast corner (117) was found per LCR Card 584, and the East 1/4 corner (120) was found per LCR Card 618. Monument 6011, a found 3/4" iron pipe per the survey Reference "F", Hood River County Records, was held as the North 1/16 of Section 36. A railroad spike (6012) was found at the intersection of Pacific Ave. and 12th Street, in the vicinity of the South 1/16 corner between Section 36 and Section 35 in Township 3 North, Range 10 East. The railroad spike was determined to be 0.11 feet West of the section line and 7.21 feet North of the 1/16 line and was not held. The remaining section was subdivided in the usual manner.

**HR-28** In the West Half of the Southeast Quarter, the record call (Volume 34, Page 278) for the West line of HR-28 is for a meander line 100 foot westerly of and parallel with the west edge of the water of the Hood River. The meander line was ascertained utilizing the waters edge as determined by photogrammetric methods. The meander line, West line of HR-28, proceeds northerly from the East 1/16 corner, between Sections 36 and 1, 1.14 feet along the protracted 1/16 line to the meander line. The West line of HR-28 then follows the meander line Northerly to the calculated center quarter line. The project boundary thence follows the center quarter line westerly to the calculated center 1/4 corner, said corner also being the Southwest corner of HR-1.

**HR-1** The West line of HR-1 follows the 1/16 line northerly to a the Southwest corner of Tax Lot 102, (monument 7016 near this location was not held). The Southwest corner of Tax Lot 102 was held per the record (Volume 5 Page 614) distance of 600 feet southerly from the North 1/16 corner (6011). The northwesterly corner of HR-1 was established by the record (Volume 5 Page 614) distance of 300 feet Easterly of the North 1/16 corner (6011). The South line of Tax Lot 102 was held per record course and distance (AF# 880466) and the easterly and northerly

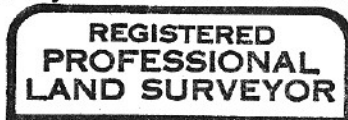
lines of Tax Lot 102 were prorated in holding the line between the corners 600 feet southerly and 300 feet westerly of the North 1/16 corner (6011). The boundary thence follows along the calculated 1/16 line Easterly 20 feet to a corner of HR-4.

**HR-4** Record courses and distances were held per the deeds for Tax Lot 200 (AF# 701282 and AF# 681469) to the calculated South line of the Nathaniel Coe Donation Land Claim (DLC) No. 37. The boundary for HR-4 thence followed along the calculated South Line of DLC No. 37 to a 3" Corps of Engineers brass disk (6075). The brass disk was held as the SE corner of the Nathaniel Coe DLC No. 37. The monuments 6073 & 6072, found per the Anthony Klein survey, PS# 90010, were held for the property line of HR-4. Monument 6074, of the Klein survey, fell 0.09 feet north of the established HR-4 boundary line and was not held. Line was projected northeasterly on the line formed by monuments 6073 and 6072, to the intersection of a line formed by 6065 and 6063. Monument 6065 is a 5/8" iron rod per PS# 90010, monuments 6063 and 6064 are 5/8" iron rods of unknown origin. The boundary continues northerly to 6065 and 6063. Monument 7018, a 5/8" iron rod as called out in PS# 90010 and Partition Plat No. 9318, and was accepted as the Southeast corner of Winan's Addition to Hood River. The monuments 7021, a 5/8" iron rod with cap marked "OR 1799 PLS WA 15673 PLS" and monument 6062, a 5/8" iron rod, origins unknown, were held. The HR-4 boundary was prorated in using the monuments 6062, 6063, 6064, 7018 and 7021. The record distance (Volume 10, Page 379) was held for the East/West alignment.

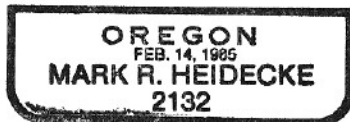
The monuments 6076, 6077, 6078, 6080, 7019, and 7020 as set in PS# 93049, Partition Plat No. 9318, were found and held. The monuments were used to reestablish the boundaries of the Partition Plat. The South line of Parcel 1 of the Partition was projected Westerly to intersect with the line of the Westerly boundary of the Partition projected Southerly. The South and East boundaries, as prorated in, of the Partition Plat were held as the property line for HR-4. The record calls for courses 177 and 178 go South to the bluff and follow the bluff line Northerly to the North line of the section. The HR-4 boundary, from the Northeast corner of the Partition Plat, follows the bluff line as determined by a contour, generated by photogrammetric methods to the East right-of-way line of the 40 foot right-of-way dedicated by the Winan's East Addition. The East right-of-way line of Sherman Avenue was held for the boundary of HR-4 Northerly, to the Northeast corner of Winan's Addition. The monuments 6064 and 7018, the South line of Block 5 of Winan's Addition, were used to reestablish the boundaries of Winan's Addition and Winan's East Addition. The record courses and distances for the two subdivisions were held. Holding the record calls for the subdivisions, the Northeast corner was determined to fall short of the calculated North line of the section. From the calculated Northeast corner of Winan's Addition, the East line of Winan's Addition was projected North to calculated section line.

The North line of HR-4 thence follows the calculated North line of Section 36 to the West right-of-way line of the Oregon State Highway 35 (Mt. Hood Highway). Calls for corners 210 feet Westerly on the calculated North section line and 400 feet Southerly along the East section line, were held. The East boundary of HR-4 then is coincident with the section line, southerly to the protracted North 1/16 corner between Section 36 in Township 3 North, Range 10 East and Section 31 in Township 3 North, Range 11 East.

**HR-1 & 2** The East line of HR-1 was prorated by holding the calculated North 1/16 corner between Section 36 in Township 3 North, Range 10 East and Section 31 in Township 3 North, Range 11 East and the calculated Center East 1/16 corner. From the East 1/16 corner, the North boundary of HR-2 follows the center 1/4 line, easterly to the westerly right-of-way line of the Mt. Hood Highway. Monuments 8004, 8005, 8006, 6034 and 6033, 5/8" iron rods were recovered per the "Mt. Hood Highway Dwg. 8B-23-14 Whiskey Creek - Hood River Section". These monuments were used to locate the highway right-of-way which is coincident with the HR-2 East boundary, southerly to the section line.



*Mark R. Heidecke*



EXP 6/30/97



**PACIFICORP - POWERDALE HYDROELECTRIC PROJECT**  
**GPS CONTROL POINTS**  
**OREGON COORDINATE SYSTEM**  
**NORTH ZONE (NAD83)**

<b>GPS CONTROL POINT</b>	<b>NORTHING (METERS)</b>	<b>EASTING (METERS)</b>	<b>ELEVATION (METERS)</b>	<b>DESCRIPTION</b>
4	221019.39	2417016.52	148.58	GPS SET-IR W/AL.CAP
10	223308.91	2418637.47	199.11	GPS SET-PK
11	227917.10	2419996.38	52.58	GPS SET-IR W/AL.CAP
12	227409.98	2422621.20	66.33	GPS SET-IR W/AL.CAP
100	222466.43	2419413.79	156.13	GPS SET H&T
101	222807.63	2419413.36	191.97	GPS SET-H&T
102	222569.96	2418610.73	202.92	GPS SET-H&T
103	222179.18	2418587.72	173.15	GPS SET-H&T
105	221682.70	2418097.57	168.80	GPS SET H&T
106	220458.60	2418168.12	206.36	GPS SET H&T
107	220892.21	2418517.34	199.36	GPS SET H&T
109	220880.47	2420292.33	212.33	GPS SET H&T
110	222484.82	2420246.82	93.46	GPS SET H&T
111	221917.63	2419598.36	150.33	GPS SET H&T
112	221683.19	2416759.88	282.13	GPS SET-IR W/AL CAP
113	220891.77	2418080.94	201.02	GPS SET-H&T
114	222484.95	2417774.14	237.42	GPS SET-IR W/AL CAP
115	222502.14	2416998.05	269.45	GPS SET-H&T
118	221686.27	2420136.27	186.88	GPS SET-H&T
119	222069.97	2420720.96	189.06	GPS SET-H&T
121	226914.17	2421072.17	139.01	GPS SET-PK
122	226908.68	2420637.04	142.32	GPS SET-PK
123	226069.57	2420674.52	150.45	GPS-SET-PK
124	226070.84	2420291.19	149.63	GPS SET-PK
126	227278.88	2420317.24	108.47	GPS SET-H&T
127	228115.74	2420536.61	28.62	GPS SET-H&T
136	222644.64	2420239.68	91.29	GPS SET-IR W/AL.CAP
137	222823.73	2420459.27	87.11	GPS SET-IR W/AL.CAP
138	224600.40	2421215.03	65.02	GPS SET-X IN HATCH ON FLUME
139	224651.44	2421632.52	130.86	GPS SET-PK
140	226230.73	2421469.06	39.09	GPS SET-IR W/AL.CAP
156	224689.63	2421077.20	140.60	GPS SET H&T
1011	223032.77	2421871.36	180.39	GPS-SET-H&T
1012	222864.09	2421868.35	184.65	GPS-SET-H&T
1052	223776.04	2420242.93	172.75	GPS-SET-H&T
ELIOT	225672.94	2420295.25	158.32	SET-NAIL WITH SHINER
SURVEYOR	226738.46	2419770.77	144.05	SET-IR W/AL.CAP