Washington Department of Natural Resources Land Survey Casebook V.2
A Collection of Interesting Surveys

Presented By Larry B. Pederson, PLS and John M. Shackelford, PLS
LSAW 2011 Annual Conference, Spokane Washington
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A-7 Oso What? How many Center quarter corners in a GLO completion survey? Gary S. Herrick, PLS
1990 a Private Surveyor establishes the west 1/4 corner of Section 36 at a two way fence intersection based on the testimony of neighboring landowners. This position was used in a double proportion calculation for the SW corner of Section 26, but was not monumented.

1992-1993 DNR Surveyor Jon Purnell, PLS researches Grays Harbor County Road Records and finds 1930’s era ties to West 1/4 corner of Section 36 on plan & profile sheet for Walker Road.
DNR surveyor Jon Purnell ties three points in common with the 1930's era county road notes and calculates the West 1/4 corner of Section 36 based upon the county information.
Ownership records indicate that the corner position as established in 1990 private survey and pointed out by neighboring landowners was most likely a private property corner about 50 feet north of the true Quarter corner position as re-established from the county road notes.

Approx. 50’ between 1/4 corner and private property corner, per deed records.
Corner Note from DNR Survey

Walker Road, DNR FM 845
Sec. 36, T20N, R11W, Willamette Meridian

X 21 – CORNER NOTE FROM DNR SURVEY

WEST 1/4 CORNER SECTION 36

CALCULATED CORNER

EVIDENCE FOUND:
- NO PHYSICAL EVIDENCE OF THE ORIGINAL MONUMENT OR ITS ACCESSORIES WAS FOUND.
- A PLAN AND PROFILE SHEET FOR THE WALKER COUNTY ROAD NO. 48651 FOUND AT THE GRAYS HARBOR COUNTY ENGINEER'S OFFICE WAS EXAMINED AND WAS FOUND TO BE THE BEST AVAILABLE EVIDENCE OF THE CORNER'S ORIGINAL LOCATION. SEE "FIELD SEARCH" AND "CORNER RESTORATION" BELOW FOR DETAILS.

RECOVERY HISTORY:
- GEORGE D. ROBERTSON, DEPUTY COUNTY SURVEYOR, REESTABLISHED THE CORNER IN JUNE, 1900 FROM THE GLO BEARING TREE IN SECTION 35, THE OTHER BEING DESTROYED. SEE SURVEYOR'S RECORD VOLUME 1, PAGE 300 AND FB 6, PG. 15 AND 23 FILED WITH THE GRAYS HARBOR COUNTY ENGINEER.
- FIELD NOTES AND PLAT OF THE WILEY ROAD (NOW THE WALKER COUNTY ROAD NO. 48651) NOTE THE CORNER AS FOUND. SEE FIELD NOTES AND PLAT DATED DECEMBER 16, 1916 BY G.D. ROBERTSON, COUNTY ENGINEER, FILED WITH THE GRAYS COUNTY ENGINEER.
- A PLAN AND PROFILE SHEET OF THE WALKER COUNTY ROAD NO. 48651, DATED DECEMBER 1931, SHOWS THE CORNER AS A FOUND IRON PIPE. THE DRAWING ALSO SHOWS A TIE FROM STA 179+50.3 AT THE END OF THE PROJECT TO THE CORNER.
- THIS CORNER APPEARS ON THE FOLLOWING SURVEYS ON FILE WITH THE DEPARTMENT OF NATURAL RESOURCES, PUBLIC LAND SURVEY OFFICE AT OLYMPIA, WA. AND WITH THE GRAYS HARBOR CO. AUDITOR:
  - SURVEY VOLUME 11, PAGE 91, DATED 4/11/90 BY E.A. BUTLER, PL 18896 SHOWS A TWO-WAY FENCE CORNER.
  - FIELD NOTES AND PLAT DATED DECEMBER 16, 1916 BY G.D. ROBERTSON, COUNTY ENGINEER, FILED WITH THE GRAYS HARBOR COUNTY ENGINEER.
  - A PLAN AND PROFILE SHEET OF THE WALKER COUNTY ROAD NO. 48651, DATED DECEMBER 1931, SHOWS THE CORNER AS A FOUND IRON PIPE. THE DRAWING ALSO SHOWS A TIE FROM STA 179+50.3 AT THE END OF THE PROJECT TO THE CORNER.

FIELD SEARCH:
- NO PHYSICAL EVIDENCE OF THE ORIGINAL MONUMENT OR ITS ACCESSORIES WAS FOUND.
- NO PHYSICAL EVIDENCE OF THE POST SET BY ROBERTSON, NOR THE BEARING TREE USED BY ROBERTSON IN 1900 WAS FOUND.
- NO PHYSICAL EVIDENCE OF THE IRON PIPE SEEN IN 1931 WAS FOUND.
- THE FENCE CORNER USED BY BUTLER IN 1990 IS OBLITERATED. PROPERTY OWNERS IN THE VICINITY, (BUTTERFIELD AND THEEL) INDICATED THE APPROXIMATE POSITION OF THE FENCE CORNER ON THE GROUND.
- PERFORMED MAPPING OF FENCES IN THE VICINITY RUNNING WEST AND SOUTH FROM THE APPROXIMATE BUTLER POSITION, SEE DETAIL X. THeses FENCES HAVE BEEN REBUILT OVER THE YEARS, AND MAY NOT BE IN THEIR EXACT ORIGINAL LOCATIONS ACCORDING TO PROPERTY OWNERS IN THE VICINITY.
- RECREATED BUTLER'S POSITION FOR THE CORNER VIA ROTATION AND SCALE COMPUTED FROM POINTS IN COMMON WITH HIS 1990 SURVEY, SEE DETAIL X.
- RECREATED THE 1931 POSITION FOR THE CORNER VIA ROTATION AND SCALE COMPUTED FROM THREE RECOVERED POINTS OF THE 1931 COUNTY ROAD SURVEY. THIS POSITION FALLS 180° 22' 47" - 50.84 FT. FROM THE RECREATED BUTLER POSITION. THIS POSITION ALSO FALLS WITHIN 0.76 FEET OF THE NORTH-SOUTH RUNNING FENCE LINE IN THE VICINITY (SEE DETAIL, SHEET X).

CORNER RESTORATION
- THIS CORNER IS DECLARED OBLITERATED PER SECTION 5-9 OF THE 1973 MANUAL DUE TO THE LACK OF CONCLUSIVE EVIDENCE OF THE ORIGINAL MONUMENTATION.
- THE 1931 WALKER ROAD SURVEY BY GRAYS HARBOR COUNTY IS DEEMED ACCEPTABLE COLLATERAL EVIDENCE OF THE CORNER'S ORIGINAL POSITION.
- THE 1931 SURVEY IS ACCEPTED OVER THE 1900 AND 1916 ROBERTSON SURVEYS, DUE TO APPARENT INACCURACIES IN THAT WORK.
- THE 1992 DNR SURVEY RECOVERED THREE POINTS OF THE 1931 WALKER ROAD SURVEY: THE NORTHEAST AND NORTH 1/4 CORNERS AND CENTERLINE STATION 179+50.3. AN ANALYSIS OF THE 1931 & 1992 SURVEYS BY LEAST SQUARES YIELDS A BEST FIT ROTATION (1931 TO 1992) OF +2° 23' 29" +/- 33" AND A SCALE FACTOR OF 0.99901064 +/- 0.00016303 AT THE 2 SIGMA (95%) LEVEL. THE 1/4 CORNER POSITION TRANSFORMED FROM COUNTY 1931 TO DNR 1992 HAS AN POSITIONAL UNCERTAINTY OF +/- 0.76 FT (95%), SEE DETAIL, SHEET X.
- THE RESULTANT 1/4 CORNER POSITION IS SUPPORTED BY THE LOCATIONS OF EXISTING FENCES IN THE VICINITY. SEE DETAIL X.
- SET A DNR ALUMINUM MONUMENT PER TIES SHOWN ON 1931 COUNTY SURVEY OF THE WALKER ROAD, MARKED PER SECTION 4-31 OF THE 1973 MANUAL.
  SET REFERENCE POINTS AS FOLLOWS:
  - SET 1" DIA. DNR ALUMINUM CAP ON A 30" LENGTH OF 1/2" DIA. REBAR IN AN EAST WEST RUNNING FENCE AT N 51° W - 66.36 FT.
  - SET 1" DIA. DNR ALUMINUM CAP ON A 30" LENGTH OF 1/2" DIA. REBAR IN A NORTH-SOUTH RUNNING FENCE AT S 6° E - 23.69 FT.
Original GLO Survey performed by C.M. Morgan under contract No. 140 in 1872. Section 36 is a standard section with no government lots or other special circumstances of note.
Private 1979 survey in the West half of the SW quarter of Section 36 accepts monuments at the NW and SW corner of Section 36. The West 1/4 corner is single proportioned and multiple parcels are created.
1982, DNR performs a survey in Section 36

DNR finds an 1892 Plat of Section 36 that indicates a pronounced angle point at the west 1/4 corner.

Instead of accepting the 1979 survey for the west 1/4 corner position DNR calculates and monuments a position based upon the 1892 plat.
The discrepancy between the 1979 Private survey and 1982 DNR survey go largely unresolved even as DNR revises the 1982 map in 1993.
DNR returns to the area again in 2001 to establish boundaries for a timber sale in the SE quarter of Section 35.

During the course of this survey it is noted that the 1979 private survey and subsequent DNR surveys will need to be reconciled.

This reveals the overlaps shown below: The lots from the 1979 private survey occupy a triangular area 1/2 mile north-south with a maximum width of 188± feet.
In 2002 the private surveyor that performed the 1979 survey in Section 36 files an amended survey accepting the DNR restoration of the 1/4 corner and remonuments selected corner positions.
This case begins with a disputed double proportion of the NW corner of section 28 and single proportion of the east 1/4 corner of section 28.

In 1975 E.E. Anderson PLS, performed a survey by which he proportioned the northeast corner and the east quarter corner of section 28, T29N, R1W, wm, see vol. 1, page 62. As a result of the location of the Anderson quarter corner between sections 27 and 28, a lawsuit was filed in Jefferson county Superior Court for adverse possession of a portion of land that was over an existing fence line in addition to access to a small local lake that had not previously been available. Jefferson county superior court cause number 8494 called for a survey performed by G. Roats PLS, see vol. 1, page 150.
The results of the Roats survey agreed with the existing fence lines. The court accepted the Roats survey and dismissed the case with prejudice and determined the Anderson survey to be erroneous. In addition a boundary line agreement was formed from the court cause which determined portions of the boundaries of state land in section 28.
Silent Alder (How would a court subdivide a Section?)
Sec. 28, T29N, R1W, Willamette Meridian

Interestingly, interior monumentation performed by Anderson at the time of his 1975 survey were called in the boundary line agreement and were required to be held. The problem that results is how to further subdivide the section if required to hold these drastically distorted locations for the Anderson subdvisional corners.

Legal Description from Court Caused Boundary Line Agreement

All right, title and interest in and to that portion lying South of the following described centerline description in Section 27 and 28, Township 29 North, Range 1 West, W.M., which lies adjacent to Tract 3, which is attached hereto and incorporated herein by reference. Said centerline is described as follows:

For any shared boundary line East of the West Quarter corner of Section 27, Township 29 North, Range 1 West, W.M., the line set forth in the survey "Portion South Line North Half of Section 27," by Roats Engineering filed for record with the Jefferson County Auditor on August 31, 1976, in Vol. 1, Page 150, under Auditor's File No. 236630.

From the West Quarter corner of Section 27, as set forth in the Roats Survey, said boundary line shall run to an existing concrete marker placed 144 1/4 North by 11 1/2 West of an existing 1/2" iron pipe set by the E. E. Anderson Survey as the Southwest corner of the Southeast Quarter of the Northeast Quarter of Section 28, thence North to the Southwest corner of the Northeast Quarter of the Northeast Quarter of Section 28, as established in the survey of the "North Half of the Northeast Quarter and the Southwest Quarter of the Northeast Quarter of Section 28," by E. E. Anderson, as recorded with the Jefferson County Auditor on February 18, 1976, in Vol. 1, Page 62, under Certificate No. 226994, thence West along a line as set forth therein to the Southwest corner of the Northwest Quarter of the Northeast Quarter of Section 28, Township 29 North, Range 1 West, W.M.

DATED this 29th day of November, 1976.

[Signature]

HOWARD VELLHAN

A3 – 3
Silent Alder (How would a court subdivide a Section?)
Sec. 28, T29N, R1W, Willamette Meridian

State solution:
Survey by L.B. Pederson PLS, subdivided the section using the court appointed positions from the Roats survey and developed a theoretical section from whence the lines were then bent through the positions called for in the boundary line agreement. See DNR Final Map #1630.

Reasoning:
- It was thought at the time, that if the Anderson positions called for in the boundary line agreement were used for further subdividing the section it would unreasonably distort the remainder of the section and distribute the error inequitably. The judgment and the solution went largely against the state though the State was never named in either the court cause or the boundary line agreement.
This survey is located on the east edge of the City limits of Republic Washington. It involves the 9th Standard Parallel, Patented Mining Claims, Residential and Cemetery Boundaries.

The purpose of the survey is to establish State boundaries in gov't lots 5 & 6 against two mining claims.

There are thirty-three separate recorded documents associated with resolving these boundaries.
Curlew 36
Sec. 36, T37N, R32E, Willamette Meridian

Survey History:
- 1893 – Ninth Standard Parallel
- 1897 - Beginning of U.S. Mineral Surveys
- 1901 - Township and Subdivisions
- Post 1901 - Many surveys of various types
Curlew 36
Sec. 36, T37N, R32E, Willamette Meridian
Due to major error in the establishment of the Ninth Standard Parallel, it was resurveyed or retraced several times thereafter.

1962 Ira M. Tillotson surveyed an administrative site for the Forest Service finding significant errors in many of the original Mining Claim surveys.

In his book “Legal Principles of Property Boundary Location on the Ground In the Public Land Survey States” Ira Tillotson wrote: “The Ninth Standard Parallel North of the base line was run through Ranges 23 and 33 e, from west to east in 1893 by William H. Maxwell, the government land office deputy contract surveyor. The notes show he used two independent chain crews, whose results were averaged to set each Standard corner”

Later on it was discovered that there was a mistake made in chain reportage that resulted in a shortage of about one and one half miles along the parallel - this was not discovered until after much land to the north of the parallel was subdivide and gone into private patent.
DNR’s 2009 survey will reconcile the boundaries of state land with the Mining Claim surveys, the Republic Cemetery. Many original corners were found around the Mining Claims other corners were found at purported corners of the Republic Cemetery and Thompson Acres Plat.

The cemetery was originally described by deed as a metes and bounds tract. The description erroneously extended into government lot 6 (State Land).
In 2004 a private survey shows the relationship of the cemetery to government lot 6.

Although the language of the deed seems to be the location of cemetery property to the East line of Government Lot 7, the location of this line could only have been determined by a proper subdivision of Section 36. Probably due to the difficulty of performing such a section subdivision with the equipment used by surveyors in that era, Mr. Bendixon laid out the boundary of the cemetery property without the benefit of ascertaining the actual location of the East line of Government Lot 7. Furthermore, the land description of cemetery property calls for a north-south distance of 133.50 feet which extends beyond the north line of southeast quarter of the southwest quarter, into the northeast quarter of the southwest quarter and beyond the north line of Government Lot 7 into Government Lot 6, which belongs to the State of Washington. Nevertheless, Bendixon set all four corners of the original cemetery property with a iron pipe in 1940 within which cemetery plots were laid out as plotted in 1949 by Bendixon and William Hesse, both county employees. (See Reference 2.)

In 1964, County Surveyor, Ralph Waldo Emerson Main, Professional Land Surveyor (PLS) #4469 and assistant Paul Fox performed a survey of additional property to be obtained by Ferry County for expansion of the cemetery. See unrecorded survey per Reference 3. Main performed a section subdivision, ascertaining the location of the East line of Government Lot 7 and noted the discrepancy between Bendixon’s survey and the location of this line. Main, however, accepted Bendixon’s corner location restoring the northeast and northwest corners to their original location using Bendixon’s original field notes. Likewise, I have accepted and perpetuated the location of the original cemetery as originally located by Bendixon.
2009 DNR survey uses basically the same resolution as the 2004 private survey and additionally notes that they found measurement errors in the 4 to 5 foot range between found corners of the Joe Dandy Lode Amended and Trail Lode mineral surveys. DNR used the grant boundary method to restore lost lode corners.
Aeneas 22 (senior rights)
Sec. 22, T35N, R31E, Willamette Meridian

This survey involves abutting Indian Allotments and Homestead Entry Surveys in Okanogan County, Washington.

Survey Chronology:
- 1899 Indian Allotment #196 is surveyed
- 1909 Homestead Entry #38 and United States Location Monument are established
- Township and sections surveyed in 1912

State ownership is shown shaded.
Aeneas 22 (senior rights)
Sec. 22, T35N, R31E, Willamette Meridian

Interesting Historical Note:
The original Indian Allotment Survey did not include the existing house & barn in the allotment, choosing instead to have as much cultivated land within the allotment boundaries as possible.
Preliminary to commencing the survey I find that Cor. No. 1 of this survey is not within a reasonable distance from the nearest established corner of the public surveys. Therefore I establish United States Location monument No. 2 as follows:--

On a high rocky hill, 525 feet above the valley, visible for a long distance from the surrounding section, I mark a ledge of rock in place, 6 x 4 feet face, 3 feet high, with a cross (x) for the exact point for the monument, and chisel the letters U S L M No 2, on the South side of the cross. I erect a mound of stone, 5 feet base, 4 feet high, the base bears N. and 12 ins. distant from the cross. The bearings to this U.S.L.M. are as follows:--
1912- GLO survey established township and section boundaries subsequent supplemental plats established the final lotting scheme around the Indian Allotment and H.E.S. and also gave the Indian Allotment the name “Tract 39”
Aeneas 22 (senior rights)
Sec. 22, T35N, R31E, Willamette Meridian
Corners at points “B” and “E” as well as the CC on the east line of the Indian Allotment in the diagram below had to be calculated keeping junior/senior surveys in mind.
Corner “B” was re-established by single proportion along the southerly line of Indian Allotment #196. This was found to better protect the senior survey by not introducing an angle point in the Indian Allotment line while other methods considered would have bent the line.

Corner “E” was re-established using similar rationale as corner “B” but using a different method. The line between found corners “A” & “F” was projected a proportional distance north to calculate the NE corner of the Indian Allotment; again this method was chosen in order to keep the Allotment boundaries straight and not introduce “new” angle points where none existed.

The CC labeled “N15-16” on the east line of the Indian Allotment was also set on a single proportion along the Allotment line instead of the section line because of the senior line involved.
This survey was commenced by DNR in cooperation with the Department of Fisheries and the Washington State Parks & Recreation Commission to delineate the boundaries of state managed tidelands within two Bush Act oyster tracts and a vacated oyster reserve.

The earliest tideland survey associated with the parcels is the 1894 survey of “Oyster Reserve #134” by A.S. Ruth, Engineer.
The “Bush Act” Oyster Tracts refer to the Bush Act of 1895 where tracts of tidelands could be surveyed and purchased from the state for the sole purpose of oyster cultivation.

Persons wanting to purchase such lands would have them surveyed and submit the survey and legal description to the Commissioner of Public Lands along with an application to purchase. The Commissioner would then have the survey examined and land appraised before putting it up for public auction.

The Bush Act was amended many times and original sales of oyster tracts or other tidelands no longer take place.
To begin a survey of oyster tracts & tidelands the Aquatic Index Plates on file with the DNR must be examined to determine what parcels the state originally sold.

A typical Aquatic Plate will consist of a register detailing aquatic land sales, leases, easements & rights of way. As well as a graphic or map portion that identifies approximately where the activity noted in the register occurs.
### Activity Register

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<th>NOTE</th>
<th>APP. NO.</th>
<th>NAME</th>
<th>DATE OF ISSUE</th>
<th>DOCUMENT &amp; TERM</th>
<th>LAND TYPE</th>
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<td>AP 3513</td>
<td>H. Thacker et al</td>
<td>3-20-1909</td>
<td>QTR. P.322</td>
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<td>AP 2898</td>
<td>T. Miller</td>
<td>3-26-1919</td>
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<td>J. Sims</td>
<td>3-26-1928</td>
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<td>F. Robinson</td>
<td>3-26-1928</td>
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<td>TR. 90</td>
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### Map

[Map of the area, showing sections and tracts.]
The Aquatic Plate information directs us to the original deeds from when the state sold the parcels: DNR has transcribed copies of these deeds on microfilm and is beginning a project to scan the original paper transcriptions and index them into the agency land records database. (2011)

A portion of the transcribed deed for the oyster tract to the north of the vacated oyster reserve (1906)

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Beginning at corner #1, a stake identified with the meander corner to fractional Sections 26 and 35, township 22 North, range 4 West, N.W. marked and witnessed as described in the government field notes; thence S. 16°20'W. 7.03 chains to corner #2, a stake identified with the N.E. corner of the Shohomish Indian Reservation on said Section 26; thence S. 9°50'E. 3.04 chains to corner #3; thence S. 16°00'E. 9.72 chains to corner #4; where a stake bears W. 89°32' 0.52 links distant; thence S. 16°00'E. 5.01 chains to corner #5; thence S. 16°30'E. 4.91 chains to corner #6; thence S. 32°00'E. 11.85 chains to corner #7, where a stake and mound of stone bears
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HISTORY OF OYSTER TRACTS

THE TRACT REFERRED TO AS THE STATE OYSTER RESERVE NO. 134 WAS INITIALLY SURVEYED IN OCTOBER OF 1894 BY A.S. RUTH. THE SURVEY FIXED THE MEANDER CORNER ON THE SOUTH LINE OF SECTION 35 AS THE SW CORNER OF THE RESERVE.

THE “FISHERIES” TRACT WAS DEEDED BY THE STATE OF WASHINGTON TO HOMER THACKER, LOLA FALKNOR AND JESSIE M. HOPKINS UNDER APPLICATION NUMBER 3513 ON MARCH 26, 1906 AS RECORDED IN VOLUME 9 OF DEEDS PAGE 21, RECORDS OF MASON COUNTY.

ON APRIL 30, 1961 THE PARCEL WAS DEEDED BACK TO THE STATE OF WASHINGTON, STATE PARKS AND RECREATION COMMISSION, FROM WALLACE O. HANSON, OLYMPIA KERNS, AGNES GRANGER, AND BUSTER HANSON AS RECORDED IN VOLUME 208 OF DEEDS AT PAGE 170, RECORDS OF MASON COUNTY.

THE NORTHERLY OR "ST. PARKS" TRACT WAS DEEDED BY THE STATE OF WASHINGTON TO A.J. FALKNOR UNDER APPLICATION NUMBER 3356 ON MARCH 26, 1906 AS RECORDED IN VOLUME 8 OF DEEDS AT PAGE 334, RECORDS OF MASON COUNTY.

ON APRIL 30, 1961 THE PARCEL WAS DEEDED BACK TO THE STATE OF WASHINGTON, STATE PARKS AND RECREATION COMMISSION, FROM WALLACE O. HANSON, OLYMPIA KERNS, AGNES GRANGER, AND BUSTER HANSON AS RECORDED IN VOLUME 208 OF DEEDS AT PAGE 170, RECORDS OF MASON COUNTY.
METHOD OF SURVEY

THIS SURVEY LOCATED AND MONUMENTED THE CORNERS OF THREE STATE OWNED TIDELAND TRACTS LYING IN FRONT OF SEC. 35, T22N R4W AND SEC. 2 T21N R4W.


THE STATE OYSTER RESERVE NO. 134, VACATED JANUARY 13, 1930, THE STATE OYSTER RESERVE TRACT HAS BEEN CALCULATED FROM THE ORIGINAL PLAT WHICH WAS PREPARED IN OCTOBER OF 1894. THE PLAT TIES THE OYSTER RESERVE TO THE MEANDER CORNER BETWEEN SECTIONS 35 AND 2. THERE ARE NO OTHER CONTROLLING CORNERS. THE RECORD BEARING AND DISTANCES WERE CALCULATED AND THE ERROR OF Closure was balanced by the Compass Rule.

THE "SOUTH" OR PARKS TRACT: THE TRACT, DEEDED AS PARCEL 1 IN VOLUME 208, PAGE 170 OF DEEDS, RECORDS OF MASON COUNTY, IS A METES AND BOUNDS DESCRIPTION TIED ENTIRELY TO THE STATE OYSTER RESERVE PLAT NO. 134. THE COURSES AND DISTANCES WERE CALCULATED AT RECORD, WITH ALL THE ERROR OF CLOSURE PUT INTO THE LAST COURSE BETWEEN CORNER NO. 8 AND THE NORTHEAST CORNER OF THE OYSTER RESERVE.
Survey of State Trust Lands in Sections 20 & 21, T32N, R7E with GLO completion survey to take into account for the subdivision of section 21.

Oso What, (fill in the blanks)
Sec. 21, T32N, R7E, Willamette Meridian
First GLO Survey in 1890 establishes the NW 1/4 of Section 21 as an aliquot 160 acres.
1906 GLO Completion survey establishes the rest of Section 21 with gov't lots abutting all previously established sections or parts of sections. Note that the plat appears to also show multiple positions for the center 1/4 corner of section 21.
The subdivision of Section 21 DNR preserved the NW quarter as per the 1890 GLO survey by making a parallelogram with the south and east lines of the quarter being parallel with the north and west lines. The SE quarter was established in a similar manner making the west line of the quarter parallel to the entire east line (a weighted mean bearing of both courses on the east line) and the north line of the quarter parallel to the south line.
DNR survey and subdivision method matched that of an earlier private survey but the calculated corner positions did not match in all cases due to DNR finding the original SE Corner of section 21 that had previously been calculated by double proportion but not set.
DNR corner notes for three corners in vicinity of the center of section 21:

**PM1-A** SOUTHEAST CORNER OF THE NW1/4 SECTION 21

**Accepted Corner**

**History:**
1991 GLO Plat shows a regular northwest quarter-section.

**Field Search:**
On 6-28-03, we found the Geo-Dimensions rebar & cap (accepted).

**Corner Perpetuation:**
We replaced the rebar & cap with a DNR aluminum monument, marked with identification. 4" up in mound of stone. References were established as follows:
17" Hemlock #44 located 23.24 feet set DNR aluminum tag & mail. 1 1/2 feet up on northwest side.
23" fir stump #47E located 39.02 feet set DNR aluminum tag & mail. 1 1/2 feet up on northwest side.
17" cedar #40NW located 18.99 feet set DNR aluminum tag & mail. 1 foot up on southwest side.
23" fir snag #32W located 38.88 feet set DNR aluminum tag & mail. 1 1/2 feet up on northwest side.
Set Orange carbonate post 1 foot west.

**PM1-B** SOUTHWEST CORNER OF GOVERNMENT LOT 3, SECTION 21

**Calculated - Not Set**

**History:**
1998 Geo-Dimensions Survey - set a rebar & cap at their calculated position (32).

**Field Search:**
On 6-26-03 we found a Geo-Dimensions rebar & nylon cap (not accepted). N24°25'41"W 50.13 feet from our calculated position. The difference is due primarily to us having found the southeast corner of section 21.

**Corner Perpetuation:**
It was not necessary to set a DNR monument at this corner.

**PM1-C** NORTHWEST CORNER OF THE SE1/4 SECTION 21

**Calculated - Not Set**

**History:**
1998 Geo-Dimensions Survey - set a rebar & cap at their calculated position (32).

**Field Search:**
On 6-26-03 we found the Geo-Dimensions rebar & nylon cap (not accepted). N24°25'41"W 50.13 feet from our calculated position. The difference is due primarily to us having found the southeast corner of section 21.

**Corner Perpetuation:**
It was not necessary to set a DNR monument at this corner.
What to take away from this example?

While being very strong on the method to subdivide an irregular section is very good to remember, it is equally important (if not more so) to make very diligent searches for original corners or evidence of corners that will ultimately control the section subdivision.