

*RESEARCHING, RETRACING & RESOLVING
OLD COUNTY ROADS IN OREGON*

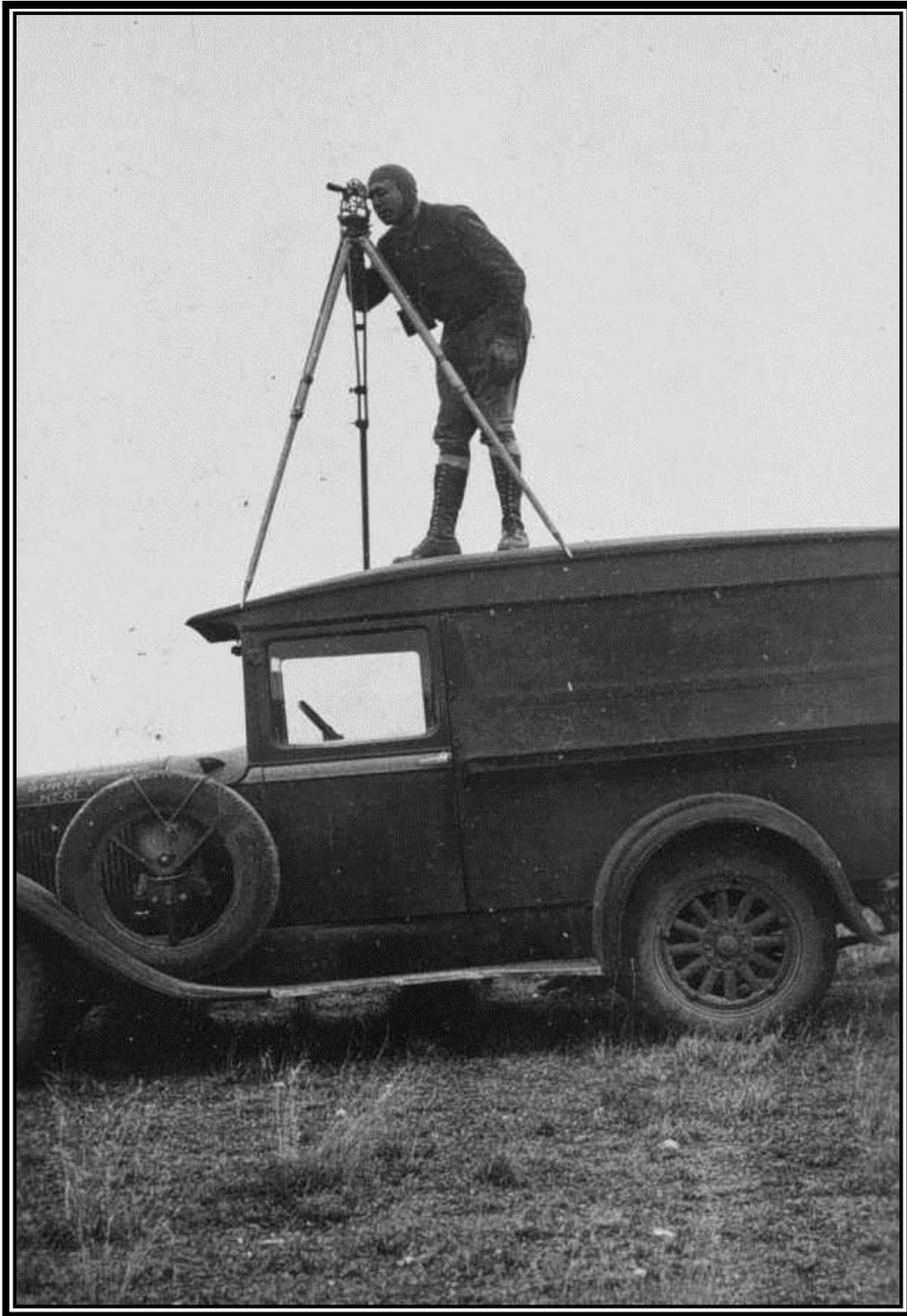


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DISCLAIMER

This presentation is intended to be an introduction to the basics of researching county roads and is not to be considered a definitive dissertation on the subject. This data is a portion of the information you may need for your road research. A multitude of other legal, physical or unwritten factors may negate this information.

The information in this presentation was developed from 25 years of researching county road records in Deschutes, Crook and Wasco Counties. Other Oregon counties may have drastically different filing systems and procedures for retracing roads. Be sure to contact the local county authorities when beginning your research.

An excellent publication about road related laws in Oregon is the Oregon Department of Revenue “Oregon Cadastral Map System Volume 4 (2003), Highways and the Law of Dedication”. It can be downloaded on the www.ormap.net website, where it is referred to as “The Manual”. Pay close attention to Chapters 14 through 18.



Researching and Retracing Old County Roads –Deschutes County Road Dept.

~ DEFINITIONS ~

GENERAL DEFINITIONS

Public Road. “A road or way established and adopted by the proper authorities for the legal use of the general public, and over which every person has a right to pass and to use it for all purpose of travel or transportation to which it is adapted and devoted....” *Black’s Law Dictionary*

“A road over which the public has a right of use that is a matter of **public record.**” *Oregon Revised Statutes 368.001 (5).*

County Road. “A public road under the jurisdiction of a county that has been designated as a county road under ORS 368.016.” *Oregon Revised Statutes 368.001 (1)*

- County Roads are public roads which are maintained (paved, repaired, plowed) by the County. A public road becomes established as a County Road by order of the County Commissioners.

Local Access Road. “A public road that is not a county road, state highway or federal road.” *Oregon Revised Statutes 368.001 (2).* (A non-county maintained road is often referred to as a “public road” or a “local access road”. The county has jurisdiction over these roads outside of city limits.)

Private Road. A road which is not dedicated to the public. These roads do not come under County, City or State jurisdiction.

Dedication. “The appropriation of land, or an easement therein, by the owner, for the use of the public, and accepted for such use by or on behalf of the public*....” *Black’s Law Dictionary*

*Note: A dedication has to be accepted by the proper authorities (such as the County Commissioners) to constitute a “statutory dedication”. Subdivision and partitions must include signature blocks for acceptance by the governing authorities. After a road is dedicated to the public by a deed, the County Commissioners or City Counselors must sign an acceptance of the dedication.

ROAD ESTABLISHMENT DEFINITIONS

County Board (or County Commission): Governing body of a county. Also called “County Court”.

Commissioner’s Journal. The minutes or transcripts of the county commissioner’s meetings.

Resolution. “A formal expression of the opinion or will of an official body...Such is not law but merely a form in which a legislative body expresses an opinion.” *Black’s Law Dictionary*

Order. “A mandate; precept; command or direction authoritatively given; rule or regulation. Direction of a court or judge made or entered in writing...” *Black’s Law Dictionary*

Establish. “To settle...fix firmly...create; put beyond doubt or dispute” *Black’s Law Dictionary*

~ ROAD ESTABLISHMENT OVERVIEW ~

Public roads can be created in many ways, but four of the most common methods are:

1. Establishment by the County Commission or Court. This is how the majority of the older roads in Oregon were created.
2. Dedication by deed.
3. Fee title deed to governing agency and then establishment by agency (most Federal and Oregon State Highways are created this way).
4. Dedication by subdivision or partition plat.

County road records and commissioner's journals are the primary source of information for researching method number 1. Methods 2 and 3 involve research at the County Clerk's office and method number 4 involves research at the County Surveyor's Office and the County Clerk's office.

The purpose of this presentation is to explain **method 1**: how roads were originally established by counties and the resources available to assist surveyors in researching and retracing these old roads.

Explanation of Road Establishments. Prior to 1917 the road establishment process could only be initiated by a petition submitted by citizens. This process can be referred to as a "**road by petition**". The general road law of 1917 provided for the establishment of county roads by resolution of the county court as an alternative to the petition system. This process is referred to as "**road by resolution**" or "**road establishment by resolution**" or "**road establishment**".

Be aware that the modern connotation of establishing a road differs from the older definition. Today, establishing a county road usually means expending county funds to maintain an existing public right-of-way rather than creating a new right-of-way.

Roads established by the county create an easement across the properties which the road crosses (*Lankin V. Terwilliger*, 22 Or.97 (1892)), unless the owners deeded the property in fee to the County or public. Typically the property was not deeded to the county. If it was deeded, a record will exist in the County Clerk's deed records.

The information for these established roads is found in Commissioner's Journals and county road records. The Commissioner's Journals contain the minutes of the road proceedings and the road records are the actual documents (petition, resolution, establishment, etc.), survey maps and notes. The Commissioner's Journals are usually found at the County Clerk's office and the road records are usually filed at either the County Surveyor's Office, the Road Department or the Public Works Department.

The road proceedings in the Commissioner's Journals constitute the legal establishment of the road as a public road in lieu of a conveyance or dedication deed.

The proceedings for road establishments customarily were as follows:

1. **(a) Petition by land owners requesting a road to be established.** The petition contains a *general* description of the road alignment and signatures of the petitioners. A right-of-way width may be stated in the petition. Prior to 1917, this was the only method to initiate the creation of County Roads.

Researching and Retracing Old County Roads –Deschutes County Road Dept.

1. **(b) Resolution by County Commission to establish a road.** After 1917, the county court could initiate the proceedings to create a county road by resolution. A resolution is the County’s public declaration of its intent to establish a road. This is the official action that gets the ball rolling. It commonly contains a *general* description of the road alignment. This is not the final, surveyed, alignment description. Usually the right-of-way width will be stated in the Resolution.
2. **Notice of the proposed road establishment being posted.** The petition or resolution was posted at the courthouse and along the proposed road (in later years it was also published in newspapers).
3. **Road Viewers Appointed.** The Road Viewers inspected and surveyed the proposed alignment and then determined if the establishment of the proposed road was in the public interest. They also determined damages to any properties along the road. “**Damages**” were payments for loss of revenue (such as crop production) or improvements (fences, buildings, etc.). The payments for damages were not for a fee taking of the right-of-way.
4. **1st reading of the petition or resolution and viewers report in open court (public meeting).** After the 1st reading, citizens could file a remonstrance to the proposed road or a claim for damages if they did not agree with the Road Viewers assessment. In some cases a new, revised alignment would be proposed in a revised resolution, in which case the proceedings would begin anew.
5. **2nd reading of the petition or resolution in open court (public meeting).** The same citizen input could be admitted as in the 1st reading.
6. **Establishment of road by County Commission.** This action legally creates a public road. This contains wording such as “**...the road...was approved and declared a public highway**” or “**...ordered that said road be finally surveyed and opened...**”. In Deschutes County Commissioner’s Journals, the order usually goes on to state that the survey notes or plans and profiles were to be filed at the county surveyors office or “according to law”. The right-of-way width is usually not stated in older establishment orders. In these cases the R/W width will be as stated in the petition or the resolution. If the record proceedings are silent as to the width, the statutory width at the time of the establishment must be determined. At Deschutes County we refer to the 1959 document “*Determining Widths Of Existing Rights-Of-Way For County Roads*” by William F. Frye, Lane County District Attorney (see Appendix 1).

To summarize, the steps were the same in a resolved road as a petitioned road, except the citizen’s petition was replaced with the Court’s resolution.

| | Road by Petition | Road by Resolution |
|----------|---|-------------------------------------|
| 1 | Petition by Citizens (accompanied by Bond) | Resolution By County Court |
| 2 | Notice of Petition Posted | Notice of Resolution Posted |
| 3 | Road Viewed and Surveyed | Road Viewed and Surveyed |
| 4 | First Reading In Open Court | First Reading In Open Court |
| 5 | Second Reading in Open Court | Second Reading in Open Court |
| 6 | Road Established | Road Established |

~ RESEARCHING COMMISSIONER'S JOURNALS ~
~ JOURNAL INDEXES ~

As stated earlier, Commissioner's Journals are the minutes and/or proceedings of the Commissioner's meetings. In more current journals all the actual documents presented to or signed by the Commissioners are filed in these journals. In earlier journals, entries were made regarding the presentation and signing of these documents, but the actual documents (petitions, resolution, notice, etc.) may be on file elsewhere. Usually the journal entries will contain a verbatim transcript of the important information such as the description contained in the resolution. Sometimes the original documents are no longer in existence. In Deschutes County the original documents are located at the Road Department in the alphabetized road files and in Crook County they are filed in "Road Jackets" at the County Clerk's Office.

When researching a county road establishment, the best source of information is the Commissioner's Journals. If the original establishment documents are available, they too should be examined.

The first step in researching Commissioner's Journals is to contact the County Road Department or Surveyor's Office to see if they have already done this. No need in reinventing the wheel. If this information has not been compiled by the local road authority, then the following steps are necessary:

Determine the original name of the road and its creation date. In Deschutes County roads have changed names as frequently as a snake sheds its skin. Check to see if the County Road Department or Surveyor's Office has an index showing the *original* road names. Old surveys filed at the Surveyor's Office are sometimes helpful in determining the original names of roads. Keep in mind that you may have to search for records in a different county since most of the county boundaries in Oregon changed frequently in the early years of statehood.

Search the Index of the Commissioner's Journals: An individual Commissioner's Journal spans a number of years, so you must first find the appropriate journal.

The index at the beginning of each journal is a strange and exotic creature. No two are alike and when you finally think you've broken the code, a big curve ball comes whizzing by which sends you back to the dugout shaking your head.

The index is alphabetized, but the entries under each letter are not alphabetized. They were entered as they occurred. The entry is on the left, followed by the pages that contain information about the entry. If you are lucky, you will find the road name followed by all the page numbers which contain the establishment proceedings. In some instances the road will not be listed under its name, in which case you must look under other letters such as "C" for "county road", "E" for "establishment of road", "H" for "highway", "O" for "order establishing", "P" for "public road", "R" for "road" or "resolution", or whatever other letters you can logically conjure up to outwit the lunatic who originally placed the entries in the index.

The following two pages are from the index of Deschutes County Commissioner's Journal 2. The first page is the letter "D" for a search of entries for "Deschutes-Pleasant Ridge Market Road" and the second page is the index for the letter "R", which has a hodgepodge of various road entries which would not logically be listed under "R" by a sane person.

**EXAMPLE OF TYPICAL INDEX ENTRIES:
DESCHUTES COUNTY COMMISSIONERS' JOURNAL 2
INDEX - "D"**

Dance Hall - 19-46-59
 Deschutes Park 25
 Danielson, Walter 40
 Delinquent Artif 47-584-
 Drake, Frank P. 59-123
 Deppoy, Timothy 91-94-193
 Dennis, John W. 105-106
 Deschutes Power Co 106-151
 Davis, Frank E. 109-121
 Deschutes Co. Fair Assn 110-261
 Dales - California Highway 117-171-141-146-169-214-231-360
 Damages (Road) 125-133-402
 District Atty 159
 Dance Hall 160-173-255-255-261-261
 Dry Squad Dance Hall
 Deschutes Co. Municipal Imp. Dist 255-266
 Deschutes - Pleasant Ridge Market Road - 307-310-354-367-382-383-
 Dental Clinic - 316-
 Damage for Theft - Cor P. Burdy. 320-400
 Deschutes Hospital Claims 344-
 Dahl - O. P. - 360
 Deeds Issuing 361-379-537-
 Delinquent Taxes. 367-529-
 Deschutes Co. Library Board. 409-520-
 Dance Hall at Lumbago. 410-438
 Damage (Sheep) 411-412-436-473-476-528-570-
 Dance Hall at Lumbago - 418-438
 Dance Hall License - Pleasant Ridge. 421
 Malheur County Fair - 421
 Davis, Link - Indigent - 425-
 Dance License - Pine Forest Grange. 435
 Dance Hall. 454-501-509-503-512-515-518-524-541-548-613-616-625-
 Dry Section of Central Oregon Hwy - 458-465-467-471
 Distribution of Co. Property Fund - 476
 Roddy Co. Road - 482-487-487-488-
 Dog Licenses - 483-574-622-
 Anatomia Mine - 537-
 Davis, Link - 584-
 Dance Hall License - 634-

**ENTRIES FOR DESCHUTES-PLEASANT
RIDGE MARKET ROAD (the Resolution is
page 307 and the Order of Establishment is
Page 383. The prudent surveyor will examine
ALL of the pages listed.**



| | | |
|---|---|-------------------------------|
| | Redmond Lower Bridge Road | 1-1-2-2-3-5-9- |
| → | Murphy Road | 1- |
| → | Plainview Road -4 | |
| → | Alfalfa Road 4 | |
| → | Armstrong-Moore Road 6. | |
| → | Spring River Road | 6 |
| → | Central Oregon Highway | 6 |
| → | Cypress Road | 7 |
| → | Cend-Hava Cuts Road | 9-10 |
| → | H. S. Hamilton Road | 10-13- |
| → | Dallas-Cal Highway | 12-14-16-18-19-22-26-32-44-45 |
| → | N.W. Redmond Road | 24-30-31-36-40-41 |
| | Street Abandonment | 27-28 |
| | Rewards 33-64 | |
| | Red. H. | 45 |
| | Red Cross | 60-85-454-577- |
| | Redmond Commerce Club lot | |
| | Road Repairs | 77 |
| | Rees Market Road | 103-109-109-115-117-118-118 |
| | Redmond Sunnyside Co. | 106 |
| | Rawlins Lee A. | 116 |
| | Road Master | 129-125 |
| | Rowe, H.P. | 162 |
| | Reporter | 239 |
| | Roads, Inspector | 241 |
| | Rowe, Nellie E. | 275 |
| | Registrations | - 271 |
| | Remission of Taxes | - 273-295-341 |
| | Redemption of Property sold for Taxes | - 281-302-303-311 |
| | Remission of Penalty + Interest | - 315-353-395 |
| | Redemption of Tax Sale | - 320 |
| | Redemption of Real Property | - 321-385-399 |
| | Recording instruments | 321- |
| | Redfield - Lloyd Commitment | |
| | Recording Lease | 334 |
| | Road Master Appointment | 335- |
| | Rent | - 350 |
| | Road Equipment | - 372-414- |
| | Resignation of County Clerk | 384 |
| | Release of Prisoners | 384 |
| | Redemption of Lots 5-6-7 Blk 13 Riverside | 409 |
| | Road Signs | 417 |
| | Redemption of Lots 5-6 Blk 3 Kenwood | 418 |
| | Rent Co. Cases | - 419 |
| | Roundup of Horses | 427 |
| | Remission of Taxes | - 429-442-472 |
| | Redemption of Taxes | - 436 |
| | Round up of Horses | 439 |

**EXAMPLE OF NON-TYPICAL INDEX ENTRIES:
DESCHUTES COUNTY COMMISSIONERS' JOURNAL 2
INDEX - "R"**

**THE ROADS WITH ARROWS NEXT TO THEM DON'T
BEGIN WITH THE LETTER "R"**

~ RESEARCHING COMMISSIONER'S JOURNALS ~
~ JOURNAL ENTRIES ~

When you examine each of the entries listed in the index you are primarily searching for the road resolution and the establishment, or final order, which legally created the road. The resolution is important because it often states the right-of-way width. The establishment is paramount to all entries because it is the action that finalizes the proceedings and creates the road. Many of the entries are superfluous, such as the viewer's appointments, 1st and 2nd readings and awards for damages. You should review each and every entry, however, to insure that no unusual circumstances exist, such as a second resolution for a different route or right-of-way width being recorded after the first resolution.

Sometimes you will find that a road was not established even though all the other entries were recorded. An entry may exist stating the road was disallowed, or no entries will be found beyond the resolution or the 1st or 2nd reading. A survey for the road may even be in existence at the Road Department and the physical road may be paved and carrying well over 1000 cars a day. In such cases the road may have been established at a latter date. If not, you may have to dig deeper in the files at the Road Department or County Clerk's Office to see if an establishment order was signed by the Commissioners but inadvertently not recorded in the Journals. If these avenues fail, the legality of the road is in question and it is time to talk to an attorney.

The following four pages are the journal entries for the Deschutes-Pleasant Ridge Market Road.

| | | |
|--|--|--|
| EXPLANATION OF COMMISSIONER'S JOURNAL ENTRIES FOR THE DESCHUTES-PLEASANT RIDGE MARKET ROAD (From the Deschutes County Clerk's Office) | | |
|--|--|--|

| Page | Document | Notes |
|------|---|--|
| 9-10 | Journal 2, Pages 307-308 7/25/1928 | Resolution. County declares its intent to establish a road, orders notice of to be posted. This contains a <i>rough</i> description of the road and states the width as 60 feet. |
| 11 | Portion of Journal 2, Page 310 8/15/1928 | Viewers Appointment |
| 11 | Portion of Journal 2, Page 354 2/6/1929 | First Reading. Viewers Report read for the first time in court. |
| 11 | Portion of Journal 2, Page 367 3/20/1929 | Claim for Damages. Mr. Whittemore disagrees with viewers report and files claim for damages. |
| 11 | Portion of Journal 2, Page 382 4/24/1929 | Second Reading. Viewers Report read for the second time in court. Proceedings to be continued. |
| 12 | Journal 2, Page 383-384 4/25/1929 | Order of Establishment. The Viewers Report is accepted, damages are awarded, the surveyor is ordered to survey the road and file his survey, and the road is declared a public highway. |

**EXAMPLE OF ROAD RESOLUTION FOR
DESCHUTES – PLEASANT RIDGE MARKET ROAD
DESCHUTES COUNTY COMMISSIONERS' JOURNAL 2, PAGES 307-308**

307

| No. | ROAD FUND COST. | | AMOUNT |
|-----|---------------------------|------------|--------|
| 70 | A. A. Fossen | Engineer | 3.88 |
| 72 | Fred Collins | Labor | 2.25 |
| 73 | S. K. Messinger | " | 5.25 |
| 74 | Cecil Floyd | " | 7.13 |
| 75 | Jess Tuck | " | 8.92 |
| 76 | Jim Thompson | " | 2.00 |
| 106 | F. H. May | Roadmaster | 188.59 |
| 107 | C. V. Monical | Labor | 39.98 |
| 108 | W. B. Crawford | " | 55.93 |
| 109 | L. Carver | " | 67.35 |
| 110 | Don C. Wood | " | 74.85 |
| 111 | Alford Willson | " | 62.30 |
| 112 | D. D. Tussing | " | 77.35 |
| 113 | George McAllister | " | 69.82 |
| 114 | Millard Triplett | " | 123.53 |
| 115 | Franchies Service Station | Car Exp | 14.50 |
| 130 | J. W. Schrank | Labor | 18.00 |

| No. | MARKET ROAD FUND | | AMOUNT |
|-----|-------------------|------------|--------|
| 94 | F. H. May | Roadmaster | 7.99 |
| 95 | Millard Triplett | Labor | 3.49 |
| 96 | George McAllister | " | 4.99 |
| 97 | Elmer Wilson | " | 4.99 |
| 98 | D. D. Tussing | " | 4.00 |
| 99 | W. C. Widdow | Craftsman | 14.06 |

| No. | SPECIAL MARKET ROAD FUND | | AMOUNT |
|-----|--------------------------|------------------|--------|
| 76 | Don Mirich | Grading Contract | 940.96 |
| 77 | John Runge | Surveyor | 37.42 |
| 78 | W. C. Widdow | " | 44.86 |
| 79 | A. A. Fossen | " | 59.54 |
| 80 | Ben Alsop | " | 37.45 |
| 81 | Clifford Martin | Labor | 4.49 |
| 82 | Jim Thompson | " | 76.30 |
| 83 | Fred Collins | " | 85.30 |
| 84 | S. K. Messinger | " | 129.30 |
| 85 | Cecil Floyd | " | 170.80 |
| 86 | Jess Tuck | " | 224.80 |
| 87 | F. H. May | Roadmaster | 30.36 |
| 88 | Millard Triplett | Labor | 19.21 |
| 89 | George McAllister | " | 37.93 |

| No. | SPECIAL MARKET ROAD FUND | | AMOUNT |
|-----|--------------------------|-------|--------|
| 90 | Elmer Wilson | Labor | 22.45 |
| 91 | Don Woods | " | 4.99 |
| 92 | L. Carver | " | 4.99 |
| 93 | D. D. Tussing | " | 2.49 |
| 131 | S. N. Weisgerber | " | 43.66 |
| 132 | F. C. McElfresh | " | 26.94 |
| 133 | M. L. Cox | " | 20.95 |
| 134 | E. E. Cullison | " | 19.95 |
| 135 | Nels Glander | " | 14.97 |

There being no further business, the Court thereupon adjourned to Thursday, August End, 1928 at 2 P.M.

H. H. De Armond
County Judge

J. S. Innes
Geo. G. Sedgwick
Commissioners

Bend, Oregon, July 25, 1928

The County Court of Deschutes County met this day pursuant to adjournment, all members being present, whereupon the following proceedings were had, to-wit:

In the Matter of the Establishment of
the DESCHUTES-PLEASANT RIDGE MARKET ROAD.

It appearing to the court that the Deschutes-Pleasant Ridge Market Road is one of the roads heretofore designated as a market road and provided for under the bonded road program, and that it is to the interest of the County that said road be forthwith established and built; whereupon the following resolution was adopted.

Whereas, it is hereby considered that a public necessity exists for the establishment of the road hereinafter described, said Court does hereby declare its intention to establish a County Road in Deschutes County, Oregon, by resolution, described along the center line thereof as follows, to-wit:



(continued) EXAMPLE OF ROAD RESOLUTION FOR
DESCHUTES - PLEASANT RIDGE MARKET ROAD
DESCHUTES COUNTY COMMISSIONERS' JOURNAL 2, PAGES 307-308

Beginning at a point in the Nichols Market Road approximately 300 ft. distant in a Northwesterly direction from the center line of the Oregon Trunk Railway, in the Northeast quarter of the Southwest quarter of Section 26, Twp. 16 S., R. 12 E., W.M.; thence in a Northeasterly direction more or less parallel to the main line of the Oregon Trunk Railway to an intersection with the East boundary of Section 23 of said township; thence Northerly to a termination in the right of way of The Dallas-California State Highway at the Northeast corner of Section 11 of said township, said road to be 60 feet in width.

NOTE:
GENERAL
DESCRIPTION
OF THE
PROPOSED
ROUTE

NOW, THEREFORE, IT IS HEREBY ORDERED, That the County Surveyor or his duly qualified Deputy, shall give notice of this Resolution by posting true copies thereof, properly certified to as such by the County Clerk, at the place of holding county court and also at three public places in the vicinity of said proposed road thirty days previous to the consideration of this resolution by the County Court, notifying all persons concerned that said Resolution will be considered and passed upon by this Court at its term on the 5th day of September, 1928, at which time the report of the Board of County Road Viewers on said road will be read for the first time, and at which time and until the second reading thereof the Court will consider any objections, remonstrances or petitions for damages which may be filed on account of said proposed road.

R/W WIDTH
STATED IN
RESOLUTION

Dated at Bend, Deschutes County, Oregon, this 25th day of July, 1928.

E. H. De Armond, County Judge
J. S. Innes, Commissioner
Geo. O. Sedwick, Commissioner

In the Matter of the Establishment of
The BEND-PRINEVILLE MARKET ROAD, SECTION 1.

It appearing to the court that the Bend-Prineville Market Road is one of the roads heretofore designated as a market road and provided for under the bonded road program, and that it is to the interest of the County that said road be forthwith established and built, whereupon the following resolution was adopted:

WHEREAS, it is hereby considered that a public necessity exists for the establishment of the road hereinafter described, said Court does hereby declare its intention to establish a County road in Deschutes County, Oregon, by resolution, described along the center line thereof as follows, to-wit:

Beginning at a point in the Alfalfa Market Road approximately 300 feet Southwesterly from the Northeast corner of Section 31, Twp. 17 S., R. 12 East, W.M.; thence Northerly for approximately two miles to a termination in the Butler Market Road at the Northeast corner of Section 19, Twp. 17 S., R. 12 E., W.M., said road to be 60 feet in width.

NOW, THEREFORE, IT IS HEREBY ORDERED, that the County Surveyor or his duly qualified Deputy, shall give notice of this Resolution by posting true copies thereof, properly certified to as such by the County Clerk, at the place of holding county court and also at three public places in the vicinity of said proposed road thirty days previous to the consideration of this resolution by the County Court, notifying all persons concerned that said Resolution will be considered and passed upon by this Court at its term on the 5th day of September, 1928, at which time the report of the Board of County Road Viewers on said road will be read for the first time, and at which time and until the second reading thereof

VIEWER'S APPOINTMENT: 2CJ310 8/15/1928

→ In the Matter of Deschutes-Pleasant Ridge
Market Road: ✓

The Court having made preparation to build the above road, it is necessary that Viewers be appointed to ascertain damages, if any, for right of way. It is, therefore;

ORDERED that C. V. Silvis and C. P. Becker be and they are hereby appointed viewers to act with the County Engineer in viewing and determining damages, if any, for right of way; and

It is further ORDERED that said Viewers make and report their findings on the 16th day of August, 1928, or within ten days thereafter.

In the Matter of Claims Against
the County. ✓

FIRST READING: 2CJ354 2/6/1929

→ In the Matter Deschutes-Pleasant Ridge ✓
Market Road:

The Viewers' report heretofore filed in the above entitled matter was read for the first time and continued for second reading to Wednesday, February 13, 1929.

CLAIM FOR DAMAGES: 2CJ367 3/20/1929

Bend, Oregon, March 20, 1929.

The County Court of Deschutes County met this day pursuant to adjournment, all members being present, whereupon the following proceedings were had;

→ In the matter of the Deschutes-
Pleasant Ridge Market Road: ✓

WHEREAS, C. L. Whittemore has filed a claim for damages for right of way in the above matter greatly in excess of the amount awarded by the Viewers, and has offered to submit the matter for arbitration, which seems fair and just to the Court. Therefore, it is hereby

ORDERED that the Court does hereby accept said proposition and appoints W. M. Wilson of Redmond as arbitrator to represent the County Court at such arbitration hearing,

SECOND READING: 2CJ382 4/24/1929

Bend, Oregon, April 24, 1929.

The County Court of Deschutes County met this day pursuant to adjournment, all members being present, whereupon the following proceedings were had, to-wit:

→ In the Matter of Deschutes-Pleasant ✓
Ridge Market Road;

The viewers' report in the above matter was read for the second time and continued until Friday, the 25th day of April 1929 for the third and last reading.

ORDER OF ESTABLISHMENT
2CJ383-384 4/25/1929

April 25, 1929

The County Court of Deschutes County met this day pursuant to adjournment, Commissioner Peak being absent, whereupon the following proceedings were had, to-wit:



In the Matter of the Deschutes-
Pleasant Ridge Market Road:

The above matter came on regularly for hearing at this time, this being the day following the second reading of the Viewer's Report, and it appearing that Clarence L. Whittimore has filed herein his claim for damages in the sum of Three Hundred Eleven Dollars (\$311.00).

It further appearing from an examination of the Viewer's report that the Viewers did not allow the said Clarence L. Whittimore any damages for right of way.

It further appearing that by agreement heretofore had with the said Clarence L. Whittimore, the question of his damages was submitted to a Board of Arbitration, which Board duly met and considered the claim and allowed the said Clarence L. Whittimore \$240.00.

It further appearing that no other objection of claim for damages has been filed, and now after fully considering the same, the court finds that the report of the Viewers is in all things equitable, fair and just, except in the case of Clarence L. Whittimore, and that the damages assessed by the Viewers' report are just and reasonable, except as to the said Whittimore, and being satisfied that said road will be of public utility, it is, therefore, hereby

ORDERED and ADJUDGED that said report be adopted, with the exception of the said Clarence L. Whittimore, who is hereby allowed the amount awarded by said Board of Arbitrators.

It further appearing that the Board of Viewers found and assessed damages for right of way as follows:

| | |
|----------------------------------|--------|
| Oregon Trunk Railway Co. | \$8.00 |
| E.O. Stadler | 51.00 |
| Merion L. Duval | 95.80 |
| Ole Hanson | 400.00 |
| Box 227 M.R.B. | |

It is further ORDERED that the Clerk draw warrants on the Road Fund payable to the above parties in the amounts set opposite their respective names in payment for said right of way.

It is further ORDERED that the Clerk draw a warrant on the Road Fund in favor of Clarence L. Whittimore for \$240.00.

It is further ORDERED that said road be finally surveyed and opened, and the field notes be recorded in the office of the County Surveyor, and that from and after this date the said road is hereby declared to be a public highway.

There being no further business, the Court adjourned.

H.H. DeArmond
County Judge

E.M. Peak
Commissioner

J.S. Innes.



THIS LAST SENTENCE IS THE WORDING WHICH ESTABLISHES THE ROAD AND MAKES REFERENCE TO THE SURVEY MAP AND NOTES.

THE SURVEY, RATHER THAN THE DESCRIPTION IN THE RESOLUTION, DEFINES THE LOCATION OF THE ROAD.

NOTE THAT NO WIDTH IS STATED. YOU MUST REFER BACK TO THE RESOLUTION.

~ RESEARCHING ROAD SURVEY INFORMATION ~
~ ROAD JACKETS ~

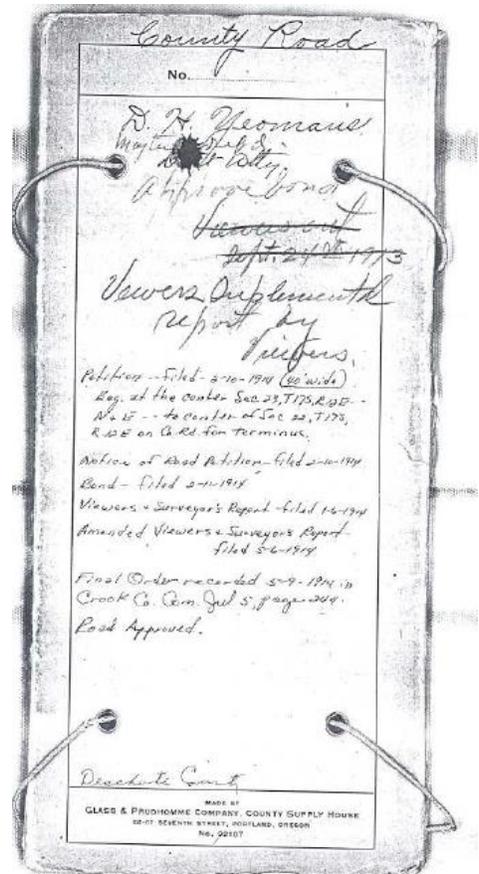
The Commissioner Journal entries create a legal road, but in order to retrace the road on the ground you must analyze the surveyor's maps and notes. This survey information ranges from GLO-style notes on legal size paper to linen and mylar roll maps with detailed field notes. During the 1950's and 60's in Deschutes County many of the roads were never surveyed. One of the old County Surveyors (now deceased) was quoted as saying that during this time there was no pay for his position so he wouldn't survey the newly established roads until the Commissioners paid him to do so. Apparently the check is still in the mail.

The earliest road survey records in Deschutes County were originally Crook County records dating from 1882 to 1916 (Deschutes County was carved out of Crook County in December 1916). This information is filed in "Road Jackets" which are a manila-like package which fold up to a size of 4 ¼ " X 11" . These road jackets usually contain the original road proceedings (petition, notice, bond, etc.) along with the Viewer's Report and/or the Surveyor's Report (sometimes these are one in the same). In Deschutes and Crook Counties the contents of the Road Jackets are handwritten on the cover, along with the right-of-way width and the Commissioner's Journal volume and page which established the road. If the road was not established it is noted on the cover. It is wise to examine the contents carefully as we have found errors in the cover notes.

A very important piece of information in these road jackets is the petition. It sometimes states the proposed road width. This width is the established width if no other information to the contrary can be found in the commissioner's journals.

The survey notes are a GLO-style format accompanied by a paper map of the survey. The notes state where monuments were set and/or tied. The monuments were usually chiseled "R" stones or scribed trees marked with an "R" at each angle point and "M" stones or trees at each mile marker. Very little additional information is noted. Topography calls are usually nonexistent. Even a major topographical feature, like the Deschutes River, is often ignored. The notes for one road begin at a section corner, run for over 41 miles without a single tie to a corner, creek, ridge or intersecting road, and then end "near the center of Section 5....".

The following 2 pages are copies of the 1913 Surveyor's Report for the D. Frank Road. Parts of this road are now N. W. Maple Avenue, N. W. 59th Street, N. W. Kingwood Avenue and N. W. 67th Street northwest of Redmond. The County Road shown at the beginning point of Frank Road on the survey map is the 1905 Kirk Whitted Road, which is now known as N. W. Helmholtz Way.



1913 D. Frank Road Surveyor's Report

THE D FRANK ET AL COUNTY ROAD

SURVEYOR'S REPORT.

TO THE HONORABLE THE COUNTY COURT OF CROOK COUNTY, STATE OF OREGON.

GENTLEMEN:

In pursuance of the resolution of your honorable body ordering the same, I met with the County Road Viewers at the point of beginning of the D Frank et al County Road on December 8, 1913, and made a complete survey of the same.

H A Helmboltz }
Aubrey Perry } Sworn Chainmen.

The following are the complete field notes and map of the survey.

Beginning at the $\frac{1}{4}$ corner between sections 6&7 T15S, R12E, W.M.

Thence N89°45'W 39.60 CH to the corner of sections 6-7-1-12 on Range line.

Thence N89°45'W 40.55 CH to the $\frac{1}{4}$ corner between sections 1-12 T15S, R12E.

Thence South 20.00 CH set rock marked "R"

Thence S89°50'W 26.50 CH set rock marked "R"

Thence S53°12'W 4.42 CH set rock marked "R"

Thence N76°32'W 6.00 CH set rock marked "R"

Thence S68°16'W 4.35 CH set rock marked "R"

Thence S34°23'W 2.13 CH set rock marked "R"

Thence S64°23'W 3.87 CH set rock marked "R"

Thence S 0°45'E 4.11 CH set rock marked "R"

Thence S20°10'W 2.21 CH set rock marked "R"

Thence South 6.30 CH to the $\frac{1}{4}$ corner between sections 11&12.

Thence S 0°30'W .11 CH set rock marked "1M"

Thence S 0°30'W 40.11 CH to the corner of sections 11-12-13-14.

Thence South 20.13 CH to the $\frac{1}{16}$ corner between sections 13-14 N $\frac{1}{2}$.

TERMINUS.

Fred A Rice
County Surveyor.

~ RESEARCHING ROAD SURVEY INFORMATION ~
 ~ ROLL MAPS AND LINEN TRACINGS ~

In the late 1910's and early 1920's the local county road surveys became more sophisticated. In Deschutes County the earliest survey maps were 16" X 18" linen tracings which were bound in a large book. In the mid 1920's roll maps were drafted similar to early State Highway roll maps. These often have an accompanying profile drafted on a very delicate rice paper-like media. The field books for these maps often contain valuable retracement information not shown on the maps.

The following 5 pages are copies of the survey original information for the 1927 Deschutes-Pleasant Ridge Market Road. This is now known as the Pleasant Ridge Road and is located near Deschutes Junction between Bend and Redmond.

| | | |
|--|--|--|
| EXPLANATION OF SURVEY INFORMATION FOR THE DESCHUTES- PLEASANT RIDGE MARKET ROAD (From the Deschutes County Road Department) | | |
|--|--|--|

| Page | Document | Notes |
|------|--|---|
| 17 | Title Block of 1927 Survey Map | Notes that field notes are in field book #55. Sometimes notes are in multiple field books and all of them are not necessarily listed on the title block. |
| 18 | Portion of 1927 Survey Map | Centerline monuments that were set are indicated as well as any monuments tied (usually section and ¼ corners, but in this case a centerline monument from the 1926 Nichols Market Road is tied). On this survey the curve data shows Railroad degree of curve (chord definition) as opposed to Highway degree (arc definition). Curve lengths and stationing are chord distances as opposed to arc distances. A clue as to whether or not the curves are Railroad definition is by looking at the curve tables in the back of the field book. (see Appendix 2 of this paper for more information concerning Railroad and Highway curves) |
| 19 | Transit Notes (Field Book 55 PG.2) 8/6/1927 | Beginning point of the road. This page has ties to the monumentation of Nichols Market Road. |
| 20 | Transit Notes and Reference Notes (Field Book 55 PG.3)8/6/1927 | Transit notes continued from the previous page. This page also has reference ties to the steel bars set at centerline. Sometimes these reference notes are elsewhere in the field book or in an entirely different book. Power poles and fence posts usually did not survive to present day, but we have found numerous juniper trees with original references. They are usually small finish nails in a side blaze of a juniper, about 2 to 3 feet above ground. |
| 21 | Portion of Road Profile 2/13/1929 | The top line is a straight line chart showing centerline monuments with their reference ties and bench marks. This can be very helpful in searching for reference points to centerline monumentation. The middle portion is the profile and the bottom line is a straight line chart showing horizontal alignment information (stationing, tangent bearings and curve data) |



DESCHUTES-PLEASANT RIDGE MARKET ROAD

MAP OF
NO. 34

DESCHUTES COUNTY OREGON

ROBERT B. GOULD
COUNTY ENGINEER

SCALE
1-INCH = 400 FEET
NOT TO SCALE

1927

FIELD NOTES-BOOK NO.55
ASSUMED MERIDIAN

APPROVED

APPROVED

David R. ...
COUNTY JUDGE

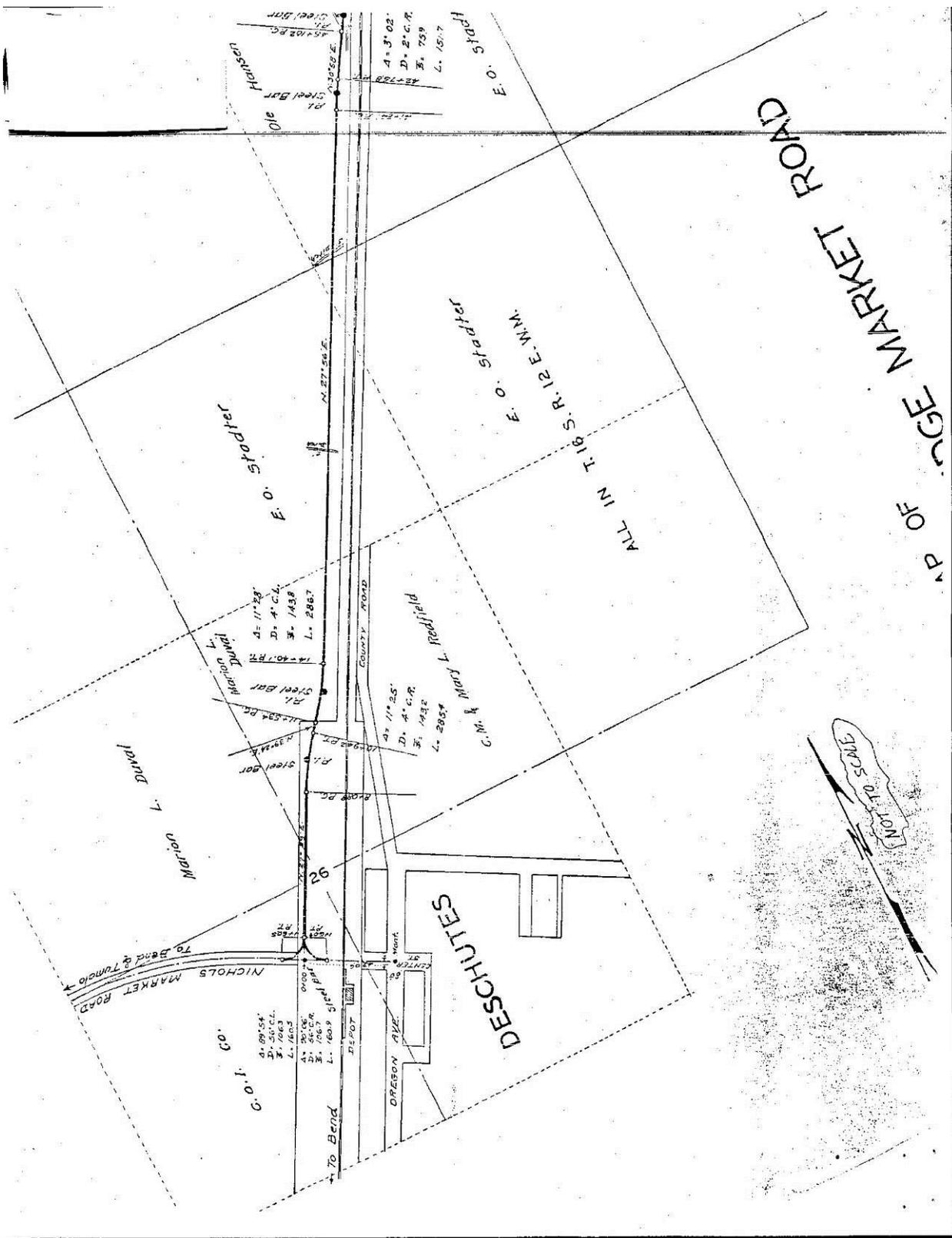
James P. ...
COUNTY COMMISSIONER

BY

Roy A. Klein
STATE HIGHWAY ENGINEER

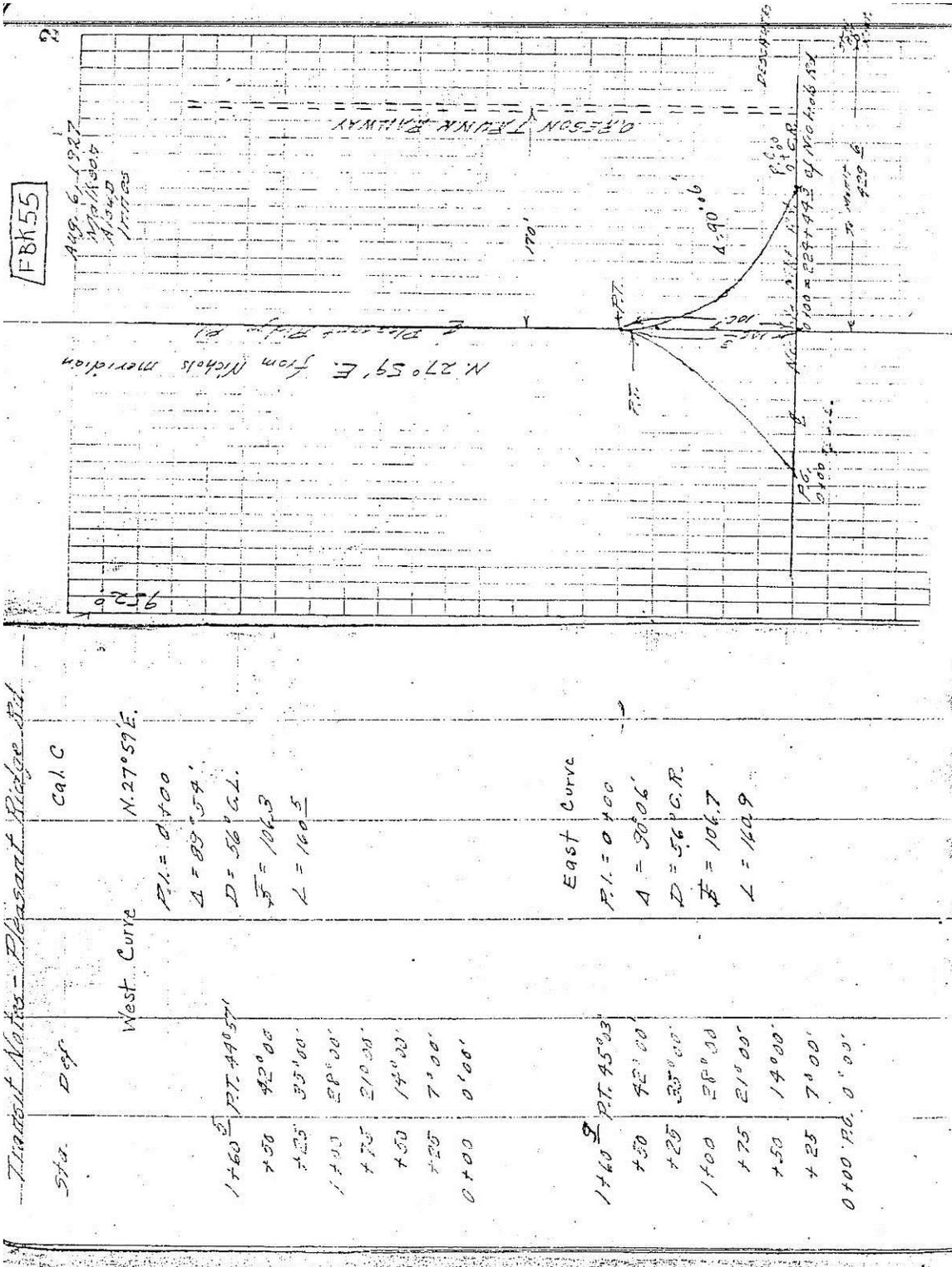
...
MARKET ROAD ENGINEER

1927 Deschutes-Pleasant Ridge Market Road – Roll Map



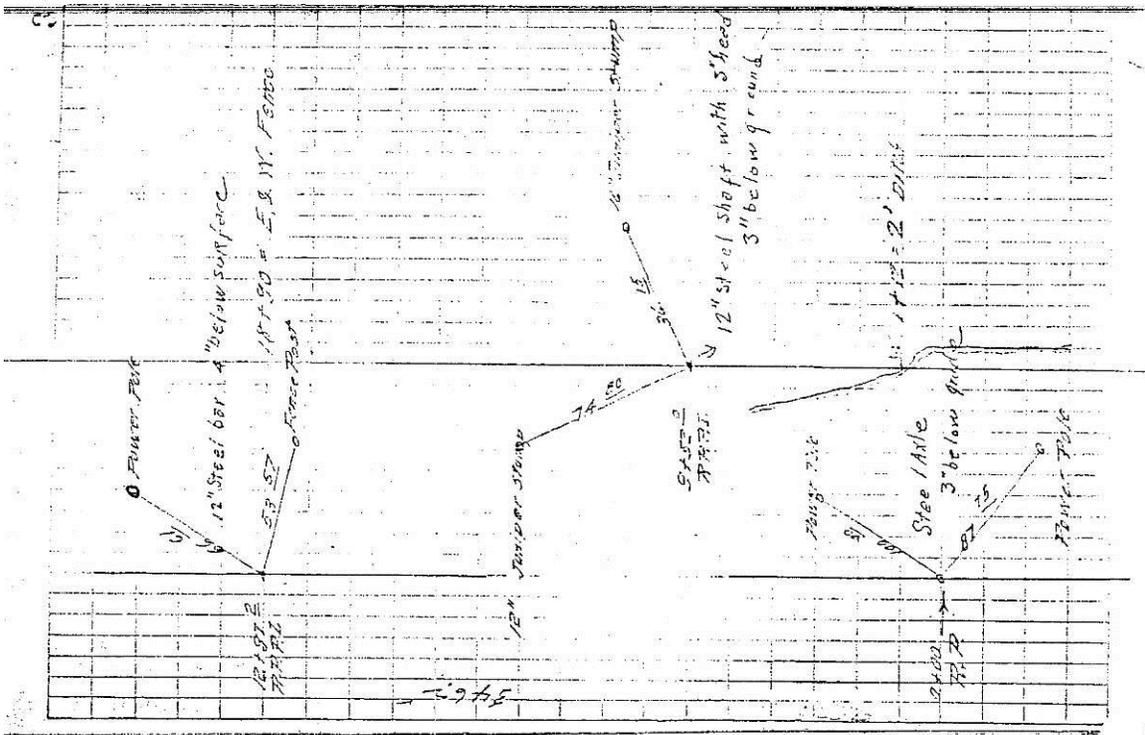
Researching and Retracing Old County Roads –Deschutes County Road Dept.

1927 Deschutes-Pleasant Ridge Market Road - Transit Notes



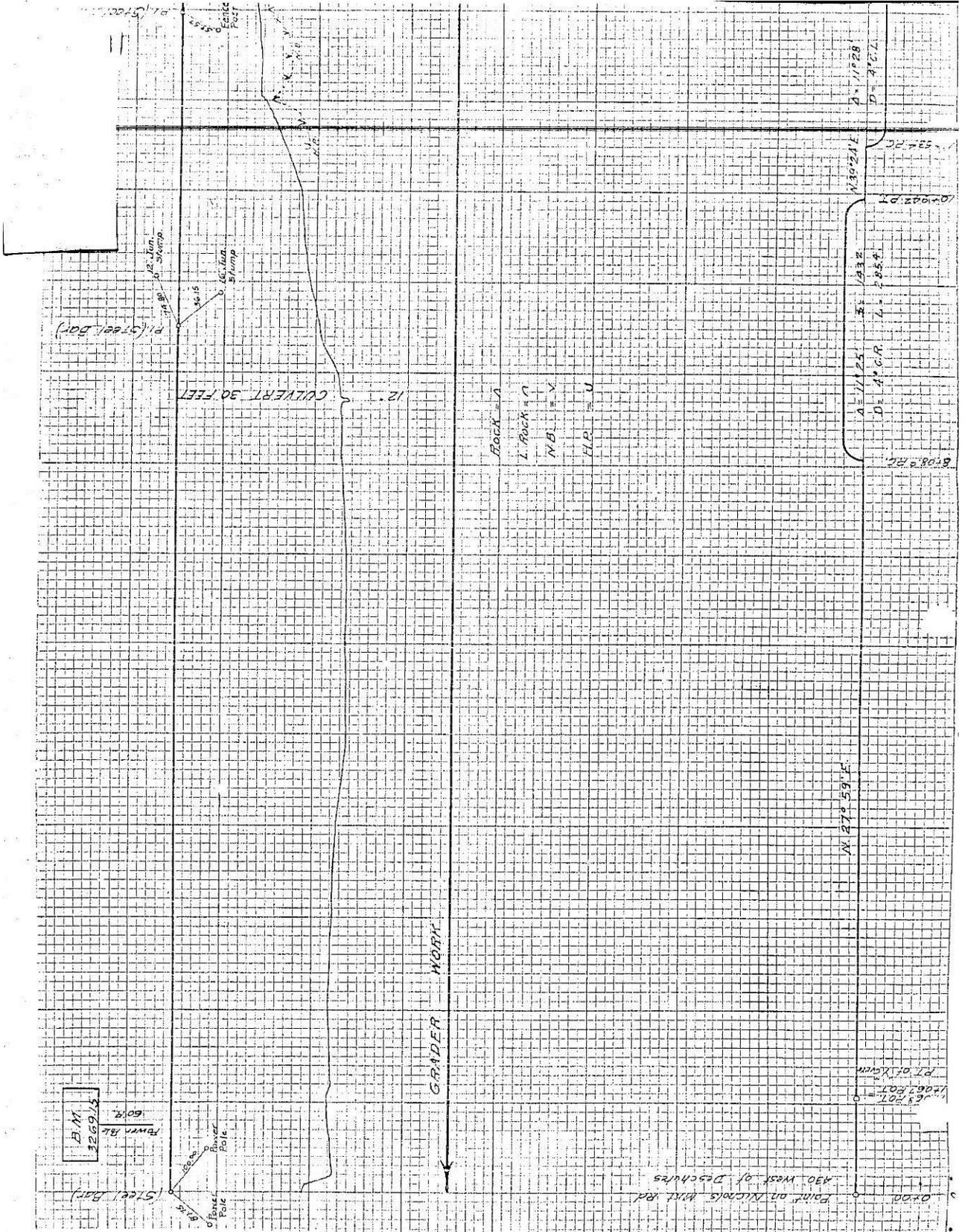
| Sta | Def | Calc |
|--------------------------|-------------|--------------|
| West Curve N. 27° 59' E. | | |
| 1+60 | PT. 44° 57' | PI = 0+00 |
| + | 50 42° 00' | A = 89° 59' |
| + | 25 33° 00' | D = 56' G.L. |
| 1+00 | EP° 20' | Δ = 106.3 |
| + | 75 21° 00' | L = 160.5 |
| + | 50 14° 20' | |
| + | 25 7° 00' | |
| 0+00 | 0° 00' | |
| East Curve | | |
| 1+60 | PT. 45° 23' | PI = 0+00 |
| + | 50 42° 00' | A = 30° 06' |
| + | 25 33° 00' | D = 56' G.R. |
| 1+00 | EP° 00' | Δ = 106.7 |
| + | 75 21° 00' | L = 160.9 |
| + | 50 14° 00' | |
| + | 25 7° 00' | |
| 0+00 | PC. 0° 00' | |

1927 Deschutes-Pleasant Ridge Market Road - Transit Notes with Reference Ties



| Sta. | Def. | | |
|-----------------|-------------|---------------|---------------|
| 14+40 | P.I. 544' | N. 27° 51' E. | P.I. = 12+97' |
| 14+00 | 4° 55' | | A = 11' 28' |
| +50 | 3° 56' | | D = 4° 6' L. |
| 13+00 | 2° 56' | | F = 143' |
| +50 | 1° 56' | | L = 285' |
| 12+00 | 0° 56' | | |
| 11+53 | P.G. 0° 00' | N. 39° 24' E. | |
| 10+04 | P.T. 542' | | P.I. = 9+52' |
| +50 | 4° 49' | | A = 11' 25' |
| 10+00 | 3° 49' | | D = 4° 6' L. |
| +50 | 2° 49' | | F = 143' |
| 9+00 | 1° 49' | | L = 285' |
| +50 | 0° 49' | | |
| 8+08 | P.G. 0° 00' | | |
| 0+00 | | | |
| Sta. 22+44 | | | |
| of Nichols Afd. | | | |

1927 Deschutes-Pleasant Ridge Market Road - Profile



Researching and Retracing Old County Roads –Deschutes County Road Dept.

~ RETRACING OLD COUNTY ROADS ~
~ IMPORTANCE OF ORIGINAL SURVEY INFORMATION ~

When the Order of Establishment stated that a road was to be surveyed, the original survey map and notes become the de facto legal description for the road's alignment and a surveyor should retrace this alignment as diligently as any other boundary description. The same laws of deed construction apply to road surveys as they do to other descriptions and surveys.

Now for the bad news...we have found that many of the 1800's and early 1900's road surveys were rife with blunders, omissions and inaccuracies. Examples include a road which mathematically missed the called for terminus point by 1700 feet and one which turned out to be located one township south of the township stated in the Surveyor's Report and Commissioner's Journals.

It is the individual surveyor's prerogative as to how he or she retraces a roads alignment. I will give a brief listing of some of the stumbling blocks we have encountered in road retracement followed by examples of recent retracements and research.

Problems encountered in retracing GLO-style road surveys.

- Original monuments are obviously the best evidence for retracement. Where "R" stones and trees were called for the chances are slim to none that you will find any trace of them. "R" stones are difficult to find in their original position if the road has been bladed in the last 80 years or so.
- Some of the worst surveys you've ever seen. Big blunders, and lots of them.
- Surveyors were required by law to mark trees to the left and right of centerline with 3 notches. These marks can sometimes be found although they don't initially have any bearing on the exact location of the road. This is because they are at random, unknown distances from the surveyed centerline.
- These early roads were for horse and wagon traffic so they meandered around ridges and other obstacles without the benefit of horizontal curves. When the roads were later improved and straightened they were sometimes built outside of the existing right-of-way. Also, after the surveyed location was established travelers often began pioneering more practical shortcuts that ended up completely outside of the right-of-way. These beaten paths subsequently became the main road. And it appears that in a few instances some roads were probably moved by settlers to go along property lines when they originally cut across the property. In all three of these cases the probability of finding original monumentation may increase.
- The intent of the description is often vague. Not many 1/16th corners were in existence during the time of these surveys. If a road begins at the S. W. corner of Section 8 and then goes "East 20 chains and then north 20 chains" it appears the intent is to run along the 1/16th lines. Unfortunately calls for sectional lines were rarely made and an ambiguity may arise when the road location is inspected in the field.



Problems encountered in retracing old roll maps and linen tracing surveys.

- Original monuments are more prevalent and sturdy in these surveys. Iron pipes, steel bars and steel axles were mostly set in Deschutes County but they were usually set on centerline which increases the chance that they have been destroyed.
- Generally quite a few reference points (RPs) were set in these surveys. Finding these RPs can be key to nailing down the original centerline.

Researching and Retracing Old County Roads –Deschutes County Road Dept.

Trees, utility poles, fences and hubs were often used. It's rare to find them when they were set on power poles or fence posts since these have typically been replaced. The RPs set on trees are very helpful, although a great many of them were set close to the roads and have been destroyed due to widening.

- Although the accuracy of these roads are better than the earlier GLO-style surveys, they sometimes have relatively big blunders as compared to property surveys performed in the same era. I recently encountered a distance error of 8 feet between found original monuments in a one mile segment of a 1926 Market Road.

Miscellaneous Problems

Two Rights-of-way: In Deschutes County a few of the old Crook County roads have had a Deschutes County road established over them. The two alignments are never quite the same and sometimes the right-of-way widths differ. An establishment for a new road can vacate an older alignment if it is stated in the resolution or establishment, but this generally did not happen with these roads. Both roads must be retraced to determine the outermost limits of the right-of-way.

Subsequent surveys with no action by the

Commissioners:

In the 1940's through the 1980's a lot of reconstruction or modernizing was done on roads in Deschutes County. Many surveys were filed at the Road Department or the County Surveyor's Office. These realignments and surveys oft times created significant alignment changes in existing roads. The problem is that no actions were legally taken by the County Commission to change the right-of-way on these projects. A road survey by itself is not a legal document that can change boundaries. It must have the proper statutory



documents such as dedications, establishment proceedings or legalization proceedings to make it legitimate. If you find a 1922 right-of-way map for Ward Road along with a 1922 Commissioner's Journal entry establishing the alignment you are in good shape. If you then find a 1945 State Highway FAS (Federal Aide Secondary) survey for Ward Road (which differs from the 1922 map) with no other circa 1945 actions by the County Commissioner's or deeds filed at the County Clerks office, the validity of the 1945 map should be questioned. It's likely that most of these construction plans were as-built projects where the road had meandered through time. The legalization process as defined in Chapter 368 of the Oregon Revised Statutes should have been initiated at the time of these projects.

Records of Surveys: Many surveys of parcels abutting road right-of-ways have inaccurately depicted both the correct right-of-way width of old roads and/or the alignment of the road. Don't hang your hat on the road as depicted on a record of survey.



Road vacations: Last but not least, you should always check to see if the portion of the road you are researching has been vacated.

~ RETRACING OLD COUNTY ROADS ~
~ EXAMPLES ~

Example 1: Nichols Market Road Retracement (See sketches on pages 25-26).

This road was established in 1926. Its current name is Tumalo Road. The east 1 mile had to be retraced in conjunction with the Deschutes Junction Overcrossing project. The eastern terminus of the road is the beginning point for the 1931 Deschutes Market Road. This intersection is also the centerline intersection of Oregon Avenue and Center Street in the 1910 plat of "Centralo". Nichols runs southeasterly and intersects Oregon Avenue at right angles.

Monumentation was readily found along the entire project except for the last tangent. Holding the delta angle of the last curve did not fit the existing road or other monuments set in the 1970's from a 1954 as-built survey by the county for paving. The original terminus point was needed.

This was an interesting retracement because information from 4 different surveys was used to determine the location of the terminus point and the bearing of the east tangent.

The intersection of Oregon Avenue and Center Street was monumented with a "steel bar" in the 1911 plat of Centralo. This steel bar was used as the terminus of the 1926 Nichols Market Road survey. We were able to narrow our search location to about a 20 foot radius in the pavement of these two roads. The 1931 Deschutes Market Road survey used this same steel bar as the point of beginning. The first P. I. from this steel bar was southwesterly 1656.3 feet along the platted centerline of Oregon Avenue. The 1931 Deschutes Rd. was not built and the PI fell in undisturbed ground. The RP trees were found and then the steel bar PI was found. We could now measure record distance to the 1911 steel bar location, but the pin finder readings were inconclusive. The subdivision of Centralo had never been developed and most of the plat had been vacated in 1918. The centerline of Oregon Avenue had continued to the northeast of the 1911 steel bar and the plat noted that a monument had been set at an intersection 940 feet to the northeast. We shot a distance from the 1931 PI of 2,596 feet and began searching in a cultivated field. We found this PI 2 feet below the ground. Using this PI for line, we then went 1656 feet from the 1931 PI and began digging through the pavement. 2 feet down we found the 1911 PI. Nichols was supposed to intersect Oregon at right angles but we had additional information on the east tangent of Nichols. The point of beginning for the 1927 Deschutes-Pleasant Ridge Market Road was set on this line 429.6 feet from the 1926 Nichols terminus point. We turned 90° off the Oregon Avenue line and found the 1927 P.O.B. 1.5 feet below the pavement. We now had a rock solid terminus point and east tangent bearing for Nichols Road.

Example 2: Arnold Market Road Research (See sketches on pages 27-28).

This road was established in 1928. Its current name is S. E. 27th Street. For many years portions of 27th Street, Knott Road, Rickard Road, and Arnold Market Road were all referred to as Arnold Market Road (road segment A through F on page 28).

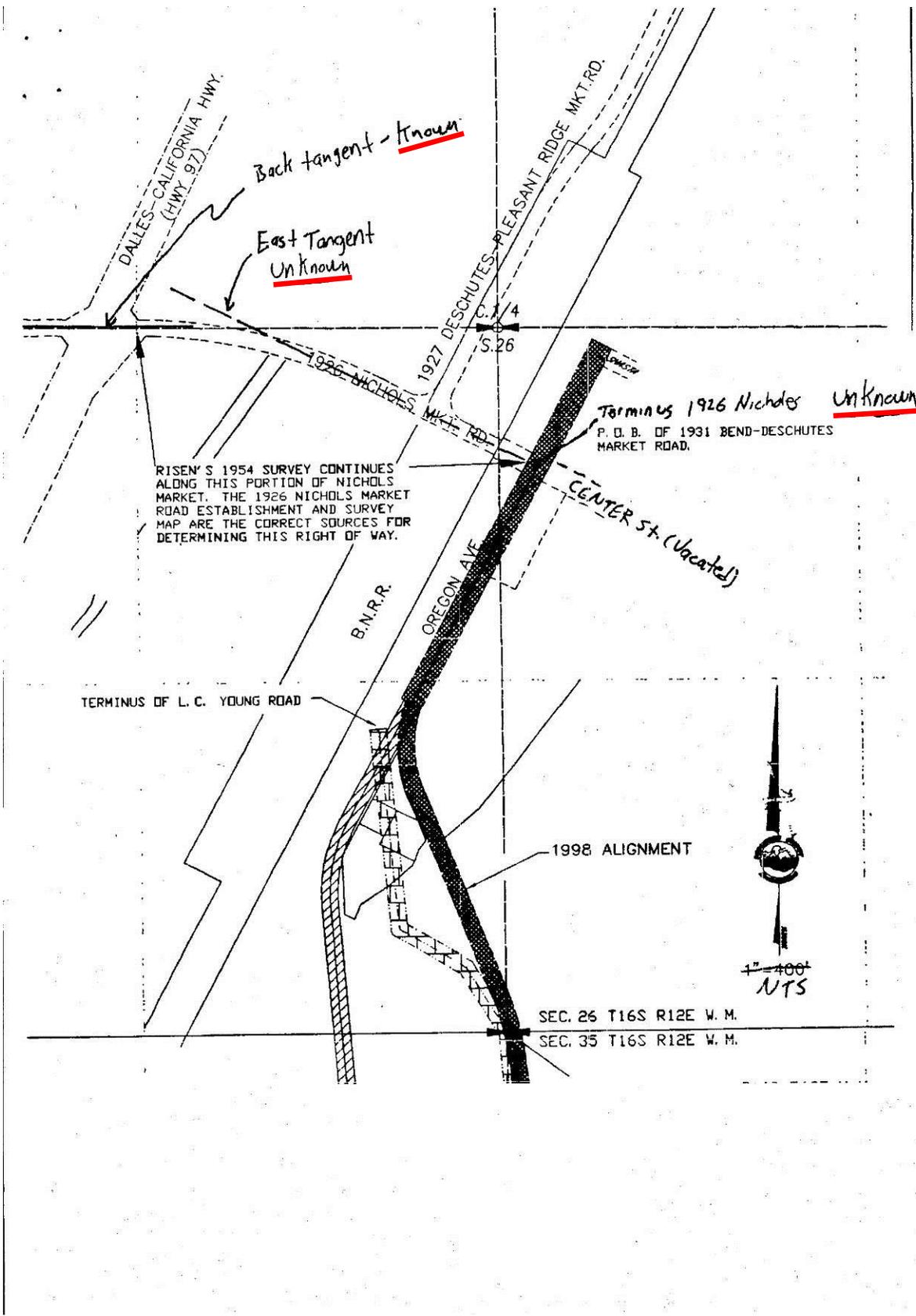
No linen tracing is in existence for Arnold but 2 blue line copies of the original linen are filed at the Road Department. Near the northwest corner of section 14, T18S, R12E the paved road jogs southeasterly for ½ mile and then jogs again to the south. This south jog is where Arnold intersects the 1908 Ferguson Road. However, the 1928 map shows the road continuing southeasterly to the near the south ¼ corner of section 24, T18S, R12E. This segment was never built.

The trouble with Arnold Market road is that 2 resolutions exist. The first resolution was declared when the County's intent was to build the road in its entirety as shown on the 1928 map. A protest must have arisen about this new alignment, because 2 months latter the commissioners initiated anew the establishment of Arnold through a new resolution. This one has the terminus "at a point approximately 2550 feet south of the north line of Section 5, T18 S R 12 E...". This is a vague terminus, but it can be argued that the intent was to end the road at its intersection with Ferguson Road since one of the 1928 blue lines has an X at this intersection with a handwritten note that says "End of 1928 Construction".

Most likely the existing roads south of the terminus were then improved with Market Road funds to create a decent road. However, there has been confusion about the legal widths of the patch work of roads since this time. Improving and realigning an existing road with road funds does not change the roads legal right-of-way width or move its established right-of-way. For decades it was believed that all of Arnold Market Road had a right-of-way width of 60 feet. The Sketches on pages 27-28 show what Deschutes County has determined the various widths to be.

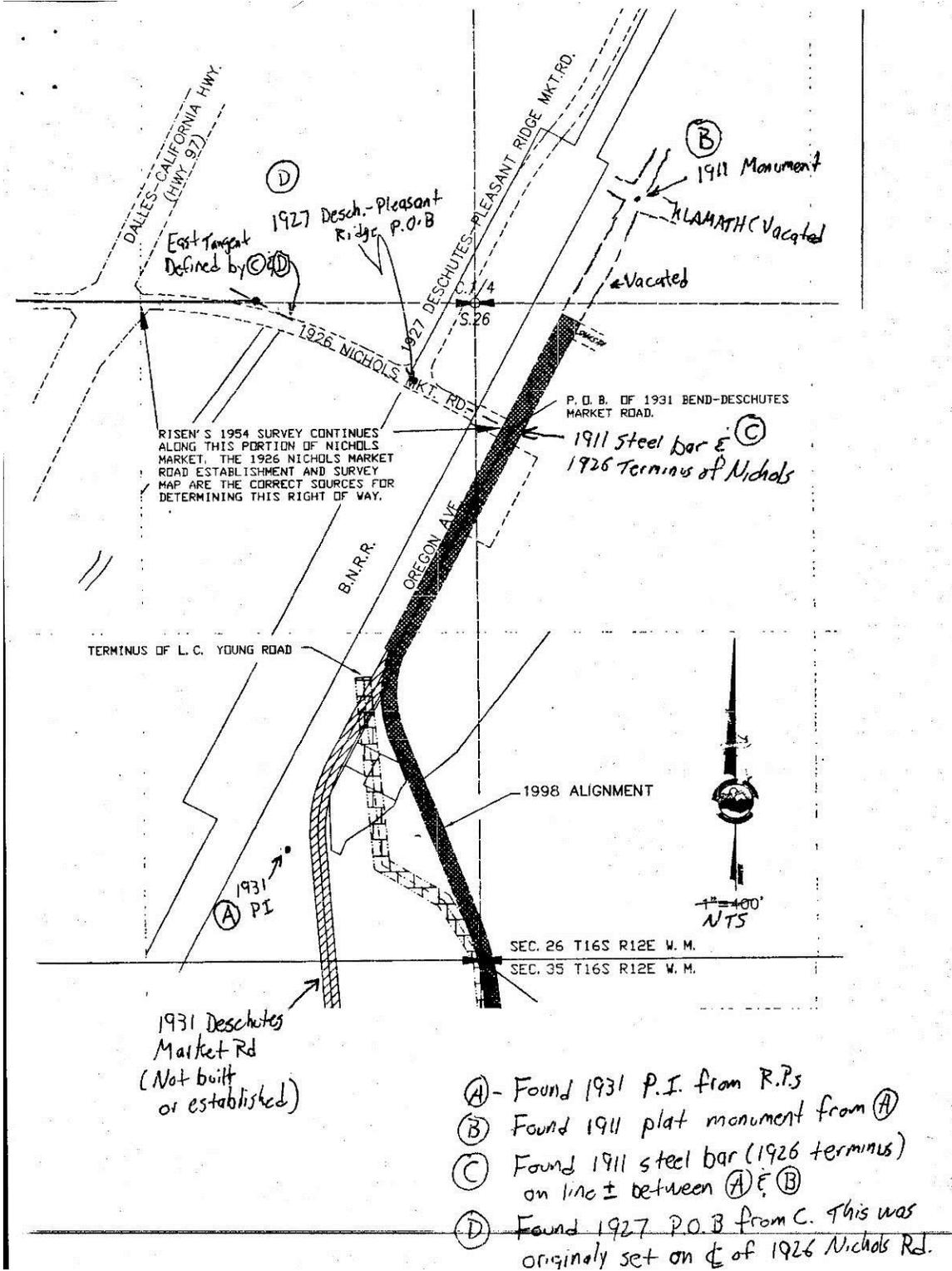
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Nichols Market Road Retracement – Problem Determining East Tangent



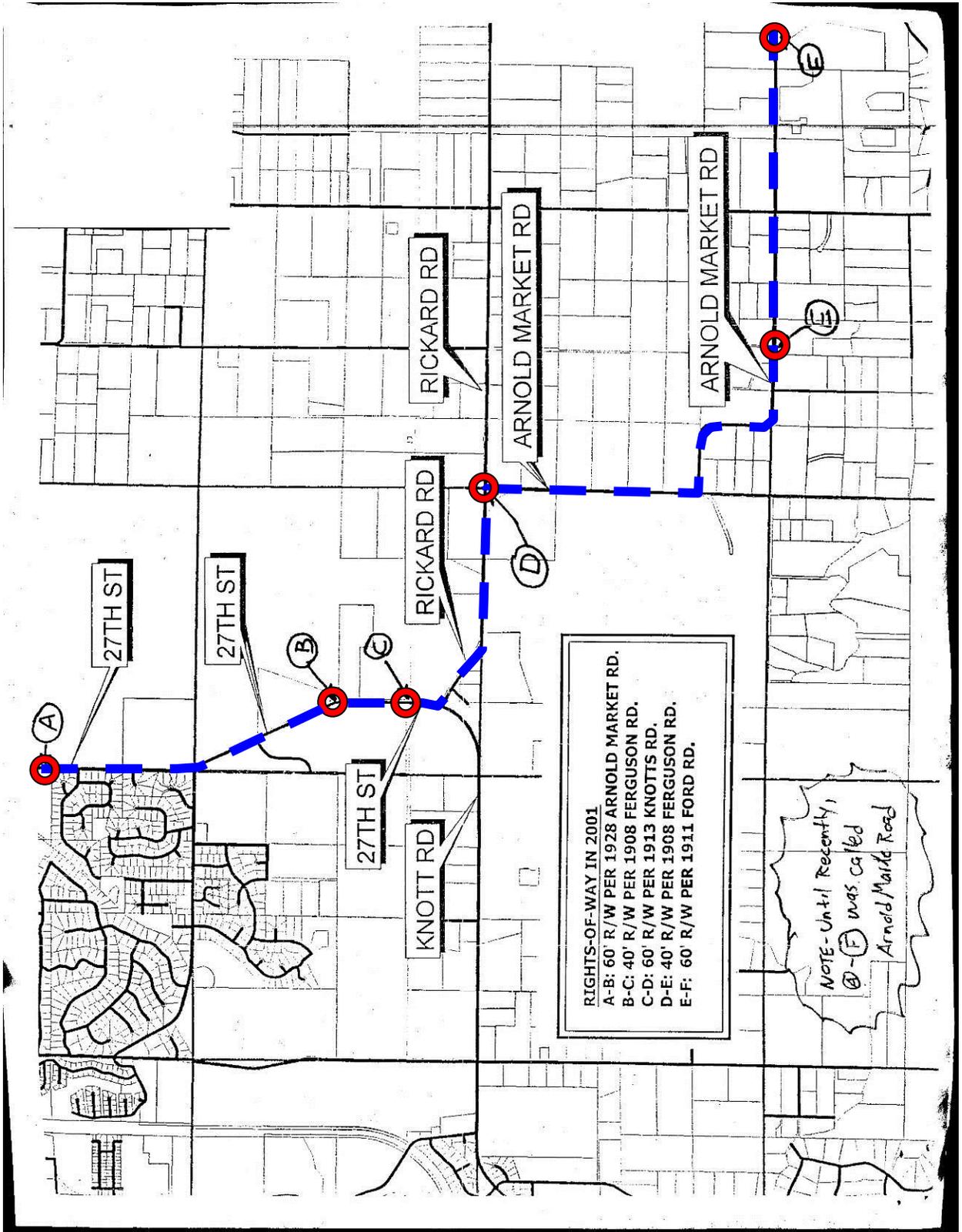
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Nichols Market Road Retracement – Resolution



Researching and Retracing Old County Roads –Deschutes County Road Dept.

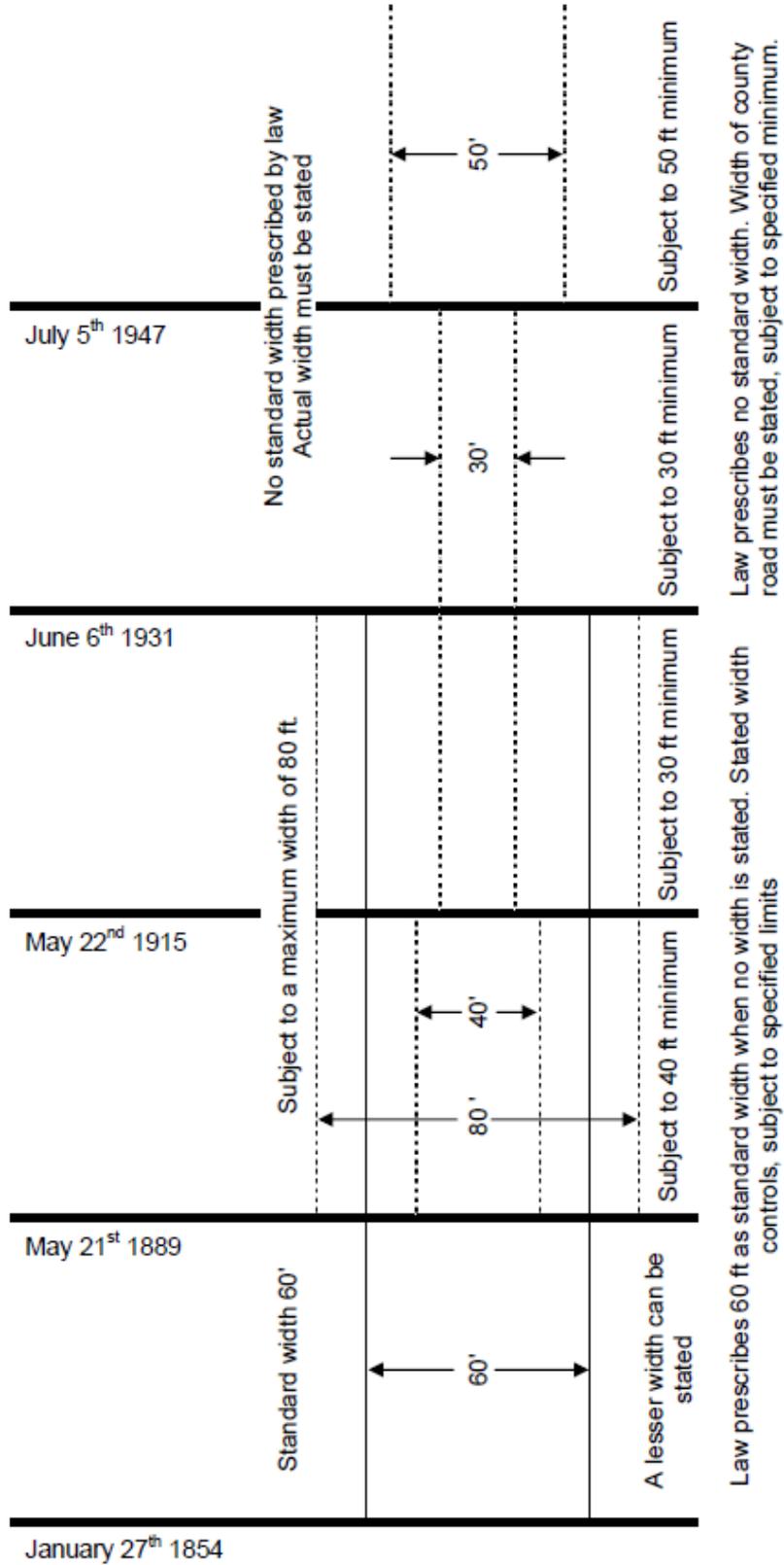
Arnold Market Road – 2008 R/Ws



Researching and Retracing Old County Roads –Deschutes County Road Dept.

Statutory County Road Widths

Determining widths of existing rights-of-way for county roads. - William F. Frye



Appendix 2 – Railroad Degree of Curve vs. Highway Degree of Curve

Most of the early Deschutes County Road plans (1920's through 1940's), including the Market Roads, have curve information calculated in Railroad, or Chord, Degree of Curvature rather than Highway, or Arc, Degree of Curvature. The curve data on these old plans usually included Delta Angle, Degree of Curve, Length and Tangent. Generally the Radius is not given. The following information is provided to readily identify record curve information given in Railroad Degree of Curvature.

| | | | |
|---|------------------------|-------------------------|-------------|
| D_R = Railroad Degree of Curve (Chord Definition) | R = Radius | T = Tangent | $\pi = \pi$ |
| D_H = Highway Degree of Curve (Arc Definition) | Δ = Delta Angle | L = Length (see note) | |

Formulas:

Highway Curve (Arc Definition):

1. $D_H = 5729.578 \div R$

2. $R = 5729.578 \div D_H$

Railroad Curve (Chord Definition):

3. $D_R = 2 \arcsin (50 \div R)$

4. $R = 50 \div \sin (D_R \div 2)$

Tangent (both Railroad and Highway)

5. $T = R \tan (\Delta \div 2)$

Radius (both Railroad and Highway)

6. $R = T \div \tan (\Delta \div 2)$

To confirm that the record curve information on a set of old plans is given in Railroad Degree of Curve (Chord) you can check formula 6 against formula 2 :

Given (from 1930 Dodds Road Tracing):

$\Delta = 54^\circ 10'$

Degree = 8°

$L = 677.1$

$T = 366.5$

Step 1: Calculate Radius using **Formula 6** (actual radius regardless of curve type):

$R = 366.5 \div \tan (54^\circ 10' \div 2) = 716.72$

Step 2: Calculate Radius using **Formula 2** (radius derived from Highway degree of curve):

$R = 5729.578 \div 8 = 716.20$ {which is 0.52' less than above which indicates that the Dodds record degree of curve is Railroad}

Step 3: Check Step 1 results with **Formula 4** (radius derived from Railroad degree of curve):

$R = 50 \div \sin (8 \div 2) = 716.78$. This is 0.06' different from Step 1 since the record tangent is rounded to 366.5 rather than the correct tangent distance for a 8° R.R. curve of 366.53 which would result in a R of 716.78 if used in Step 1. This step has confirmed the curve is Railroad.

Note: The curve length given on old plans calculated in Railroad Degree of Curve is usually not the ARC length of the curve, but the length in 100 foot chords.

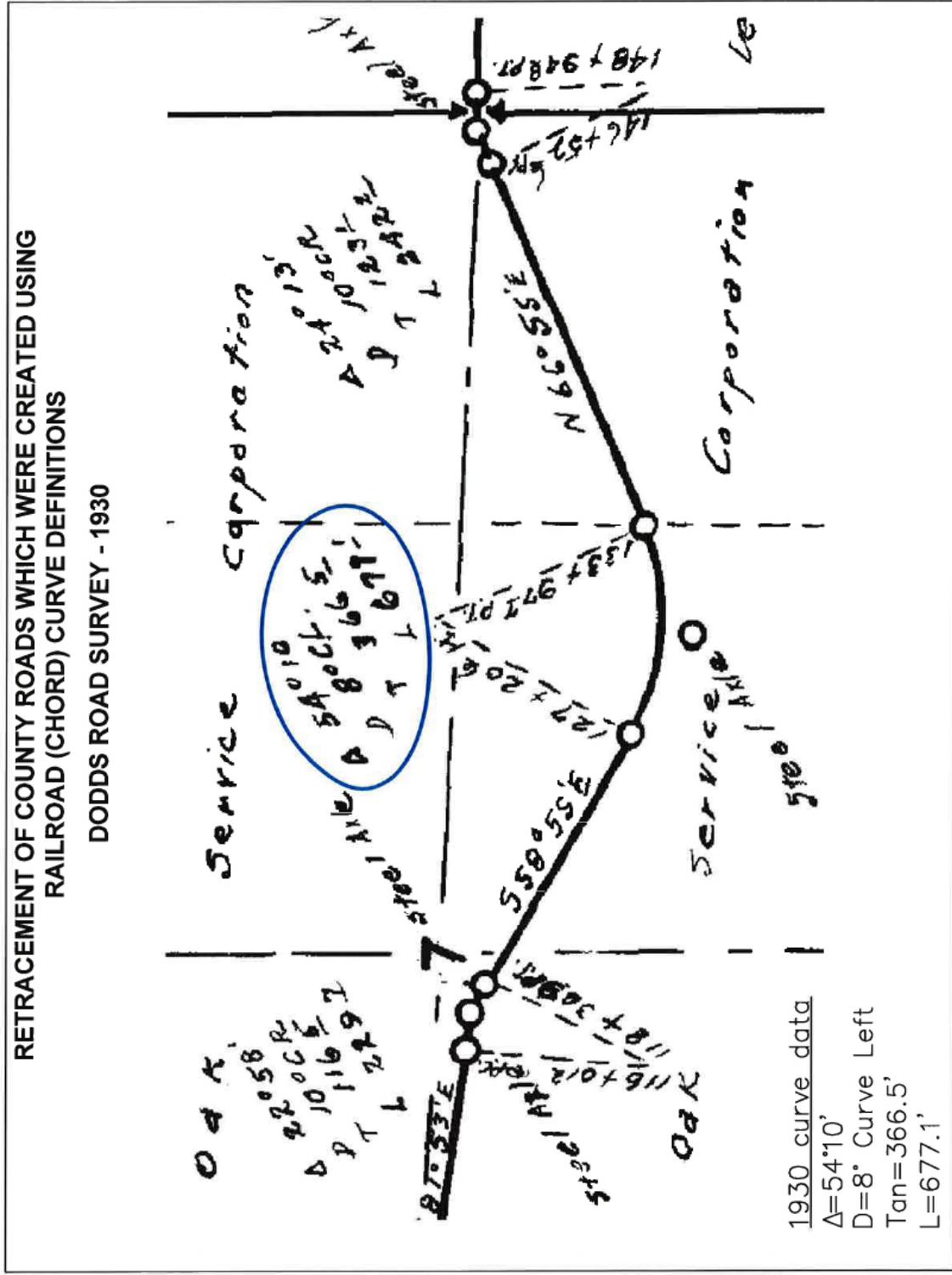
- The formula for calculating Curve Length in Chords is: $100(\Delta \div D_R)$
- The formula for calculating True Arc Length is: $(\pi \times R \times \Delta) \div 180$

On old road plans the PC and PT stationing will reflect the Curve Length in Chords distance, so when you retrace an alignment using computer generated alignments your stationing will be inherently off unless you equation station each PT. See pages 6 – 8 for more details.

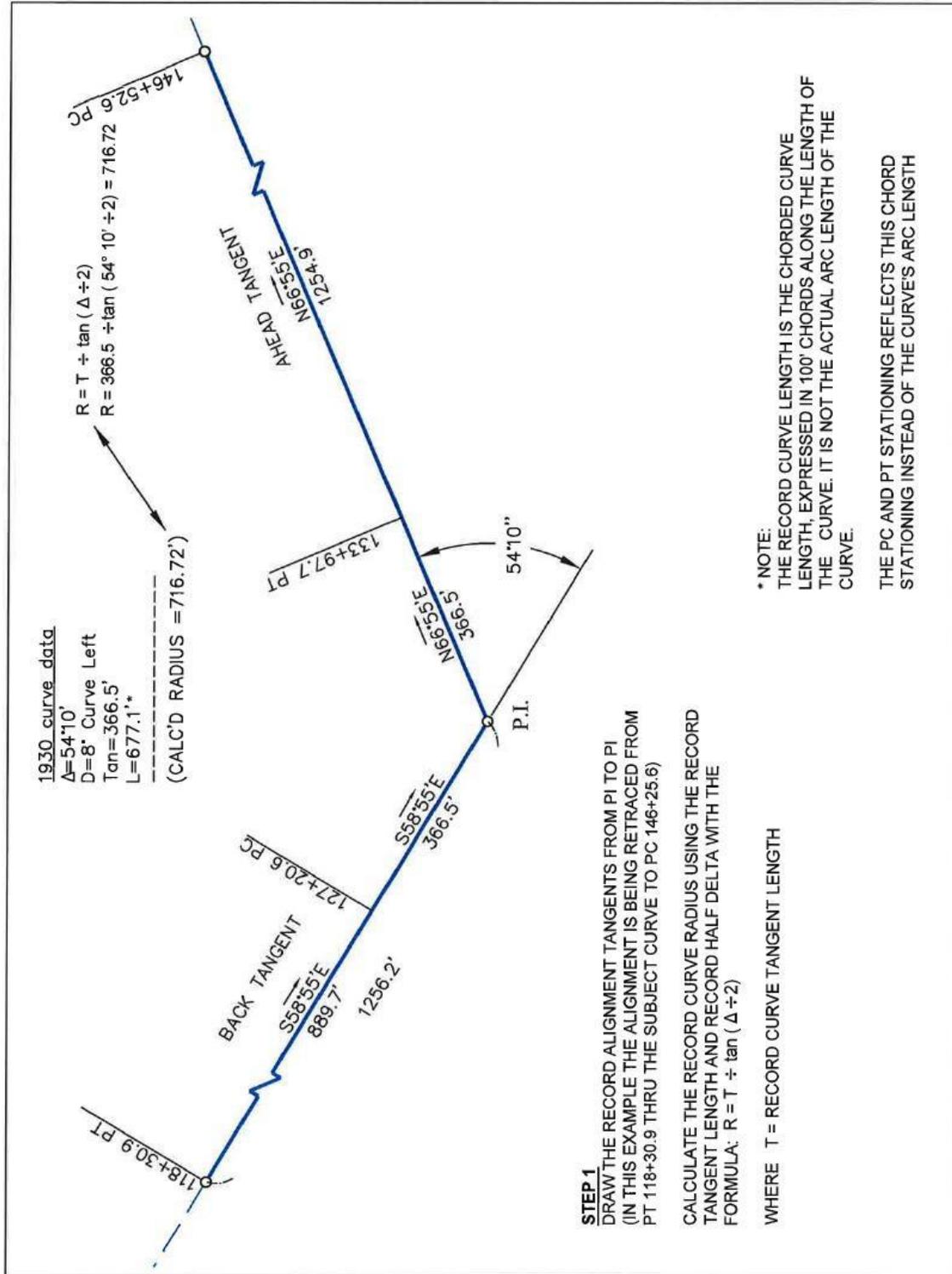
Retracement:

At the road department we initially use the Tangent and Delta to run in old alignments. We do not change the accuracy of this information. If the tangent is listed as 366.5 instead of 366.53, we use 366.5. If you are using the radius to retrace a curve and are in doubt as to whether the curve is a Railroad or Highway curve, Formula 6 should be used to calculate the Radius.

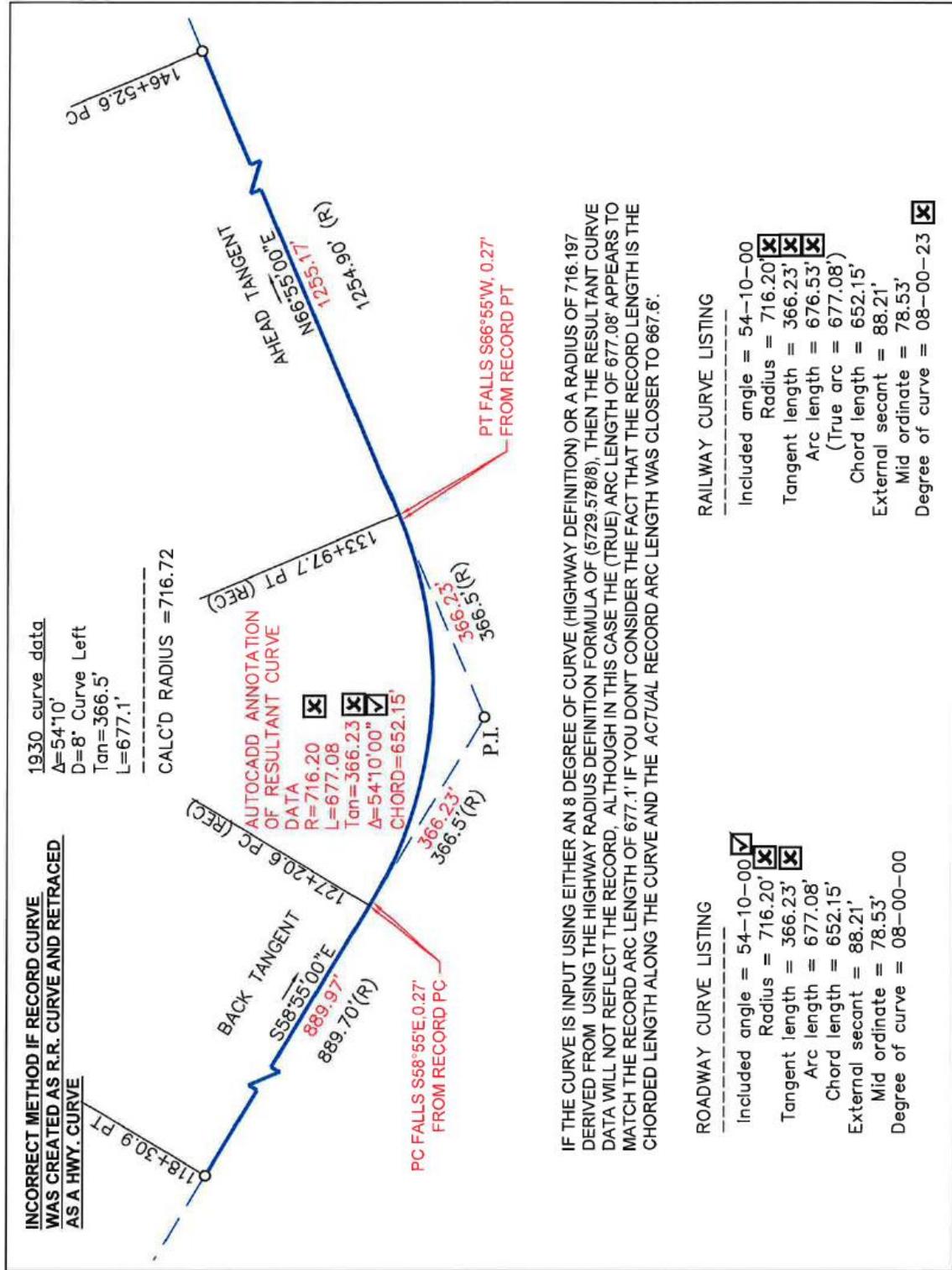
NOTE: In some cases, due to rounding or other factors, the record curve data may not clearly fit the criteria for either Railroad or Highway curves. If the original field book is in existence, it may contain additional data.



First step in retracement – ignore curve data, put in back and ahead tangents to set the P.I. of the curve, also use formula #6 from page 1 to calculate the expected radius:



If you had assumed that this curve was an 8 degree hwy curve with a radius of 716.20 feet, the following shows the erroneous data you would have generated



EXAMPLE OF A CURVE STATIONED IN RAILROAD STATIONING AND HIGHWAY STATIONING

In the following examples, the original Dodds Road curve on page 4 is used. It is stationed both in arc degree of curve ("HWY" stations) and chord degree of curve ("RR" stations).

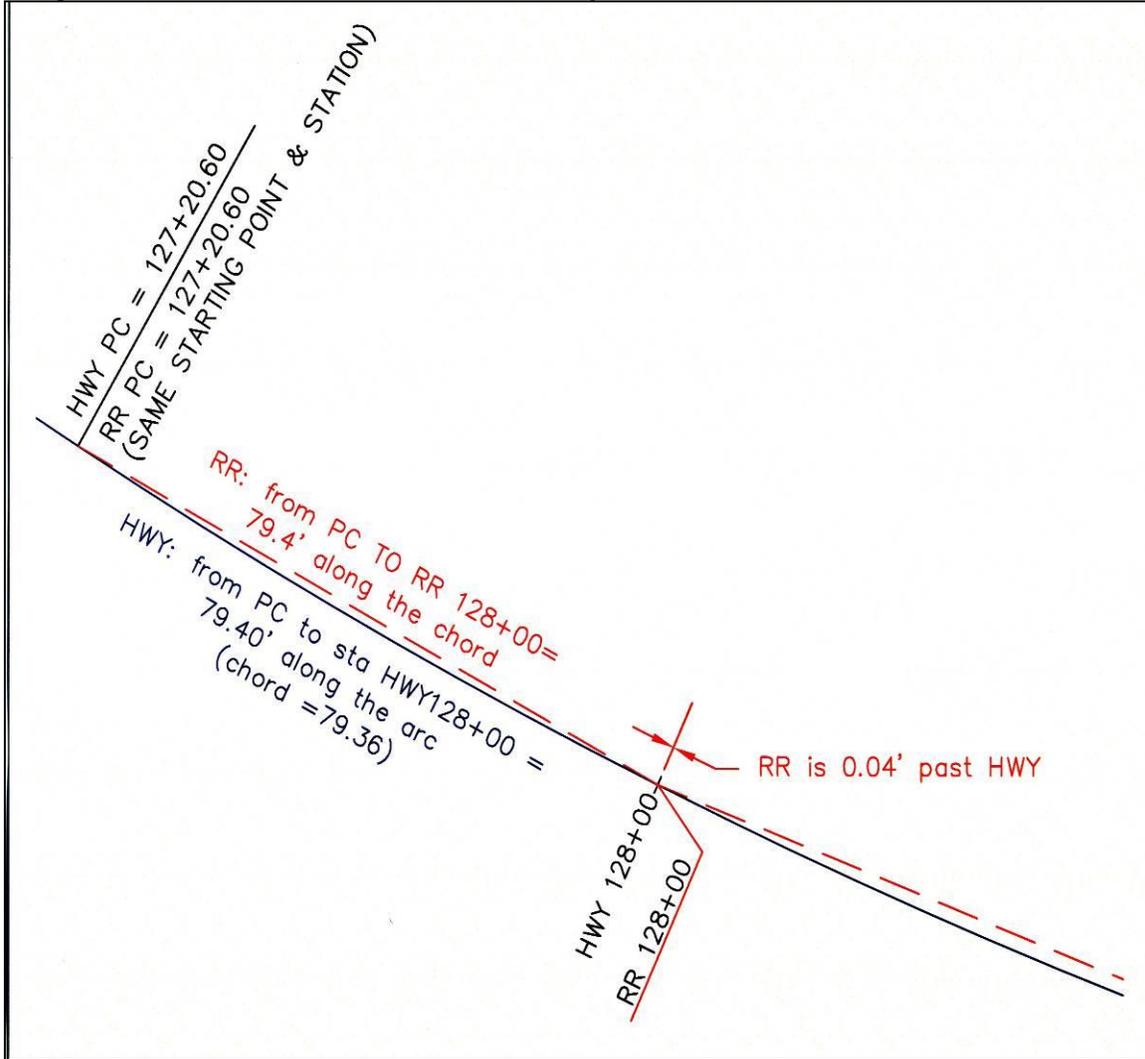
Blue line = curve, Red dashed line = RR chord stations.

1. Beginning at the PC, which is the same point and same station for both the HWY and RR stationing, the next even 100' station is set as follows:

HWY station 128+00 is set 79.40' along the curve's arc from the PC (for a chord of 79.36')

RR 128+00 is set 79.4' from the PC along a chord which intersects the curve arc.

This places RR 128+00 a distance of 0.04' further along the arc than HWY 128+00:



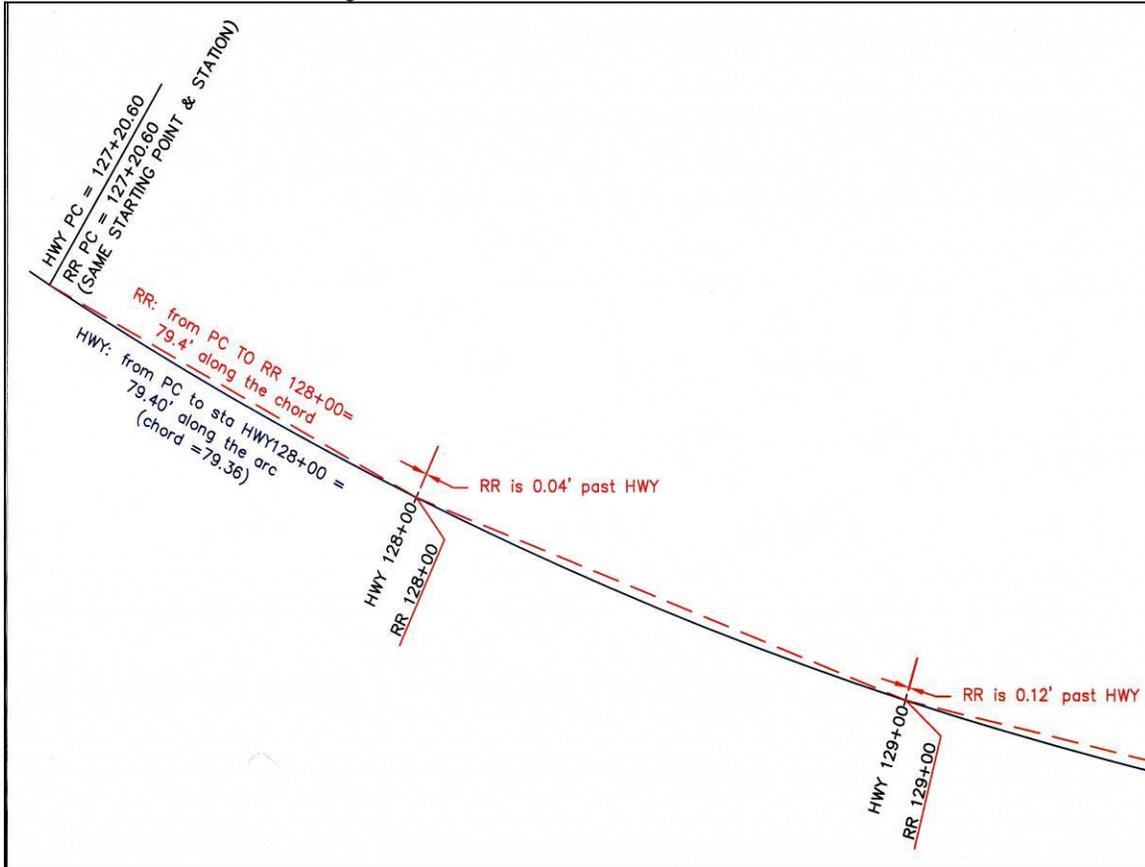
EXAMPLE OF A CURVE STATIONED IN RAILROAD STATIONING AND HIGHWAY STATIONING

The same goes for the next 100' station.

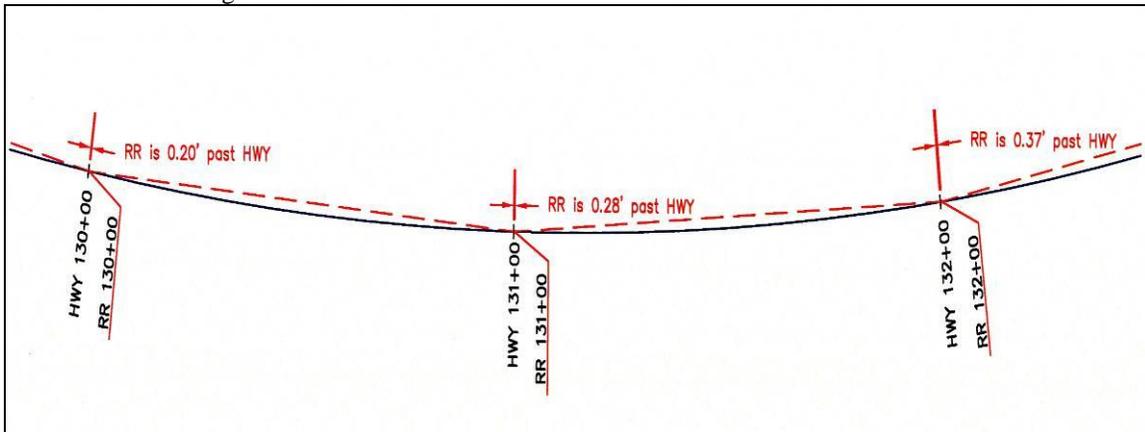
HWY 129+00 is 100' along the curve's arc from HWY 128+00

RR 129+00 is 100' is set at a 100' chord distance from RR 128+00

RR 129+00 is 0.12' further along the arc than HWY 129+00



This continues through the curve:

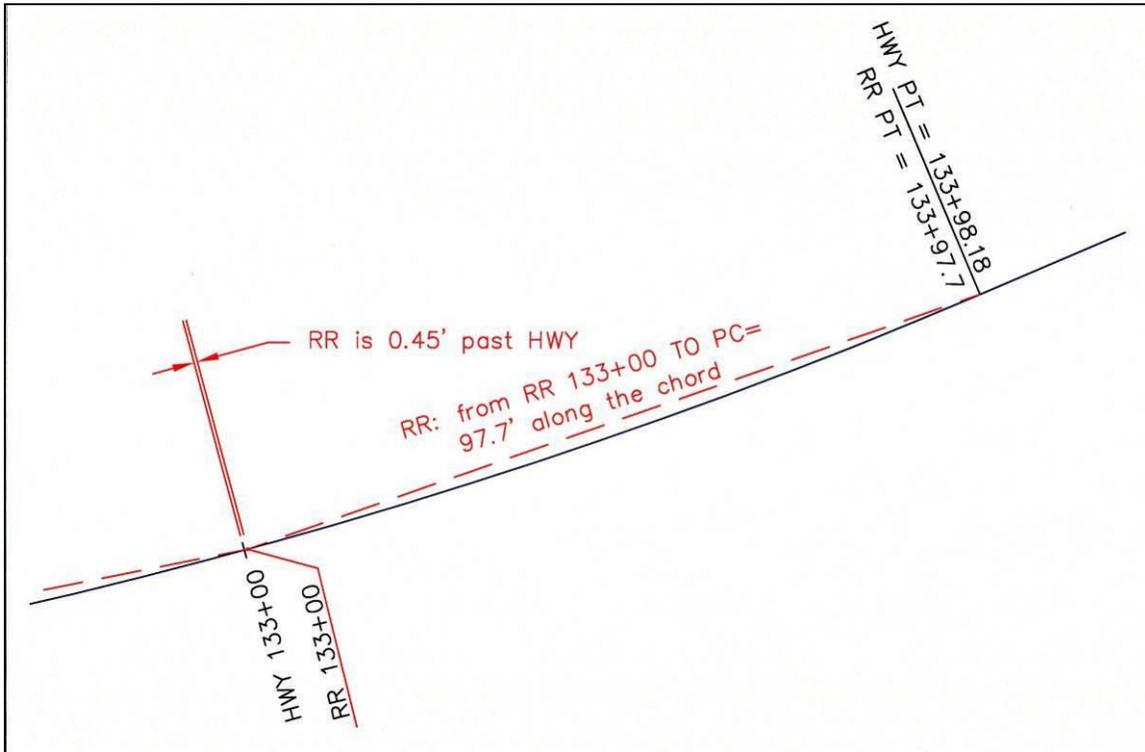


EXAMPLE OF A CURVE STATIONED IN RAILROAD STATIONING AND HIGHWAY STATIONING

...until the last even 100' station in the curve (133+00, where RR is now 0.45' further along the curve's arc than the HWY stationing.

From HWY 133+00 you need to go an arc length of 98.18 feet to the PT.

From RR 133+00 you pull a straight-line chord distance of 97.7 feet to the PC



The same curve, with the same PC and PT location, but a different form of stationing results in HWY PT 133+98.18 and RR PT 133+97.7.

That's why the
HWY curve length = 677.58' and
RR curve length = 677.1'

In the LDT RAILWAY CURVE LISTING, the "Arc Length" is the RR curve length and the "True arc" is the HWY curve length.

In many cases, the difference in the HWY vs. RR curve data will be nominal. But to accurately retrace these old roads, you should confirm what information you are working with.

Highway Curves in old surveys - In a few of the old road field books (but not on the plans), a notation next to a curve will say "HARGER CURVE". It appears that these are expressed as a highway degree of curve. This may stem from the 1919 book "*Handbook for Highway Engineers*" by W.G. Harger and E.A. Bonney. Starting on pages 345 of this book is the explanation and formulae of horizontal curves based on a one degree curve with a radius of 5730 feet where degree of curve is expressed by a central angle subtended by 100 feet of arc. In other words, an arc (highway) curve definition.

See: <http://books.google.com/books?id=aK43AAAAMAAJ&lpg=PA349&ots=0Mjz-RG1U0&dq=harger%20curve&pg=PA345#v=onepage&q=Explanation%20of%20curve%20tables&f=false>

Appendix 3 - Status of Roads Dedicated To the Public Or Established By the County

“While a highway exists there is nothing more than a mere suspension of the abutter’s right.”*

- A Treatise on the Law of Roads and Streets; Third Edition (1911) Byron L. and William F. Elliott (* in 1911 “Highway” was a general term for public roads before state and federal DOTs came into existence)

The following information is from Oregon Department of Revenue publication “[Oregon Cadastral Map System](#)”

Dedication of a public road creates easement

(This includes a public road dedication via deed or on a plat)

Chapter 15, Dedication
Page 15-3 (pdf page 453)

Principle 1

“Dedication is an appropriation of land by the owner for a public use.”³

(3. *Id. See: Muzzy v. Wilson*, 259 Or. (1971) *Magic v. Basquin*, Ohio Com. Pl., 102 N.E.2d 42, 44: “the word ‘dedicate’ means a grant of an interest in land for public use.” See: 26, 27 Am. Jur. 2d, Em. Dom., 56 Am. Jur. 2d; *Municipal Corp.*, Counties, subsec 532 et seq *Henderson v. Frio County*, Tex. Civ. App., 362 S.W.2d 406, 408: “Instruction properly defined ‘dedicated as public road’ to mean road devoted or appropriated to public use as a public road by owner, by some unequivocal acts or conduct manifested an intent to appropriate it to such use.”)

Page 15-32 (pdf page 482)

Principle 25

“In this state the rule is that where land has been dedicated or appropriated for a public street, the fee in that street remains in the original owner subject only to the public easement.”²⁵⁴ The fee passes to the purchasers of abutting lots in accordance with the intent of the grantors.²⁵⁵

(254. *Id. cit.: Huddleston v. City of Eugene*, 34 Or. 343; *Kurtz v. Southern Pacific Company*, 80 Or. 213; See: sec 56-716, Oregon Code (1930).)

(255. *McQuaid v. Portland & V. Ry.* 18 Or. 237, 22 P. 899; *Huddleston v. Eugene*, 34 Or. 343; 43 L.R.A. 44. See: 70 A.L.R.; *C.W. Nell et al v. Independent Realty Co.*, 317 Mo. 1233 (cited in Oregon cases).)

Chapter 16, Court Cases
Page 16-9 (pdf page 530)

In *City of Burlingame v. Norberg and DeCastello v. Cedar Rapids* the effect of a dedication was held to be:

... not to deprive a party to title to the land, but to estop him or her, while the dedication continues in force, from asserting that right of exclusive possession and enjoyment which the owner of property has. The dedication involves rather a right to the use of the land against interference from the dedicator.

Together, these principles make one of the most important points of this entire publication: ***It is not the purpose of the dedication of a public way to grant fee simple absolute title, with the right of disposal, to the public, or to any public body or agency.*** The dedication merely provides the public with the necessary interest to use the land for travel from place to place without interference from the dedicator, his or her heirs or grantees.

Researching and Retracing Old County Roads –Deschutes County Road Dept.

Creation of a county road creates easement:

Chapter 16, Court Cases
Page 16-3 (pdf page 524)

1892. *Lankin v. Terwilliger*. “By the location of a *county road*, the public *only* acquires an easement in the land, while the fee remains in the owner, subject to the charge in the public; and when the road is vacated by public authority, the land covered by it immediately reverts in the owner, freed from the easement.”

Lankin v. Terwilliger, 22 Or. 97, 29 P. 268. (1892)

Chapter 16, Court Cases
Page 16-3 (pdf page 524)

1889. *Huddleston v. Eugene*. “It is held that by location of the *county road* the public acquires only an easement in the land, while the fee remains in the owner; and when the road is vacated by public authority, the land immediately reverts to the owner.”

Huddleston v. Eugene, 34 Or. 343, 55 P. 868. (1899)

Notes concerning fee ownership by governing body:

- When researching road R/W, be aware of the fact that the majority ODOT highway right-of-ways were bought in fee by the state.
- In the past, a few segments of county roads were bought in fee by the County. In Deschutes County we’ve found this to be true in the early Market Road years (1919-1932)

In both cases, deed indexes and records should reflect the fact that title to the road was purchased by the governing body.