

## Vezey – Shaw Creek – Composite Acad Map

- 1979/6/28 – Survey for Harrild by Oswald P. Jensen, PLS
  - Unrecorded
  - Used as a basis for deeds out of Harrild ownership
  - Use Jensen survey as basis of bearings to maintain consistency with deeds
  - Purportedly based on a breakdown of Section 35, T7S, R8E FM
  - Recovered 5 Section 35 BLM monuments
  - Set 8 R/C to monument corners of GL-2 & GL-3
  - Certain missing bearings & distances can be filled in from recorded deed descriptions
  - Record dimension closures within reason
  
- 1974/1/21 – Department of Highways ROW plans for Project F-062-4(1) & F-062-3(5) – Canyon Creek to Shaw Creek
  - MP 285.2 – 298.7
  - Sheets 23 & 24 of 26
  - Recorded?
  - Input record alignment and ROW where data available
  - Existing ROW prior to PLO 601 (1/20/49) called out at 66-feet in width by prescription
  - Billie Harrild property acquired in fee by condemnation as Parcel 16
  - Fee taking includes northerly existing Old Richardson ROW within GL-2
  - Outer 100' of Old Richardson within GL-12 vacated by CDV 94-02-013 on 4/4/95 (B897/P764)
  - Note SLE along West line of Section 35
  - Note DNR ownership below Ordinary High Water Line of Shaw Creek
  - Note apparent prescriptive existing ROW for Shaw Creek Road
  
- 1983 – DOT&PF – ROW Map FAP 62 – Old Richardson Highway - Cutoff Portions From Fairbanks to Shaw Creek
  - Recorded as Plat 83-99, FRD
  - Sheets 14 & 15 of 15
  - Input record centerline data – note some minor conflicts in curve data & stationing
  - Note that existing prescriptive ROW for Old Richardson and Shaw Creek road is shown according to physical footprint (ditch to ditch) as opposed to 66-feet.
  
- Hold Jensen survey as basis of bearings - Then
- Old Richardson ROW:
  - Both Jensen and DOT Old Richardson maps tie the West  $\frac{1}{4}$  corner for Section 35 and the Southeast Corner for Section 35.
  - Align Old Rich W  $\frac{1}{4}$  S35 to Jensen W  $\frac{1}{4}$  S 35 and rotate to line between W  $\frac{1}{4}$  and SEx S35.
  - The Jensen survey inverse between these two points is 5905.55 and the Old Richardson map inverse is 5897.09 for a difference of 8.46 feet. No scaling was performed.

- Adjusted Old Rich ROW to reflect vacated outer 100-feet according to CCDV B897/P764 recorded April 4, 1995.
- New Richardson ROW:
  - The New Rich ROW plans tie the SEx S35 but the W ¼ line is referenced with a centerline station and bearing. The SWx S35 is shown as calculated. I used this position to locate the W ¼ S35 along the shown bearing at 2640.66 feet from the calculated corner.
  - Align New Rich calculated W ¼ to Jensen W ¼ and rotate to line between W ¼ and SEx S35.
  - The New Rich inverse between these two points is 5901.32 or approximately the average of the Old Rich and Jensen line. No scaling was performed.
- For future survey:
  - New Rich ROW: The 1977 New Rich As-builts do not indicate that any monuments either centerline or ROW were set for this project. Ties to the physical centerline will be required for ROW control.
  - Old Rich ROW: Centerline as-built required to control ROW.
  - Tie into DOT GPS control for new Shaw Creek Bridge - See ROS 2006-101
  - See Plat 2017-96 Rich Passing Lanes ROS Survey Control. Sheet 3 of 9 shows Monument 209 with references at MP 286 and within Section 35. Uses Rich-1 LDP.

## Record Data Adjustment

- Copy jfb-harrild2vezey layer (B892/P011 SWD Harrild to Vezey) to jfb-record data adj layer.
- Create polyline of courses
- Annotate – Add Labels – Line & Curve – Add multiple segment line/curve – select polyline
- Select all labels – scale to 1"=200; revise properties to NR stacked bearing & distance
- Flip labels so bearings are on top or left and distances are on bottom or right
- Select Survey – Mapcheck Analysis
  - New Mapcheck – name mapcheck – select POB – select labels – Enter to close
  - Select output screen – EOC 0.14'
  - Select Input screen – select Mapcheck 1: jfb-test then Rt click – select Adjust Mapcheck
  - May select Compass/Transit/Crandall/Least Squares adjustment
  - Review adjustment notes
  - Select "Create Polyline" furthest right icon; Annotate & add labels

## Adjustment Methods

<b>Method</b>	<b>Premise</b>	<b>Advantage</b>	<b>Disadvantage</b>
<b>Ignore</b>	Don't adjust anything.	Simple; repeatable	Ignores error
<b>Arbitrary</b>	Place error in one or more measurements	Simple	Not repeatable; ignores error behavior
<b>Compass Rule</b>	Assumes angles and distances are measured with equal accuracy so error is applied to each.	Simple; repeatable; compatible with contemporary measurement methods.	Treats random errors systematically
<b>Transit Rule</b>	Assumes angles are measured more accurately than distances; distances receive greater adjustment.	Simple; repeatable; compatible with older transit-tape surveys.	Treats random errors systematically; not compatible with contemporary measurement methods.
<b>Crandall Method</b>	Quasi-statistical approach. Angles are held and errors are statistically distributed into the distances.	Allows some random error modeling; repeatable.	Models only distance errors, not angle errors.
<b>Least squares</b>	Full statistical approach.	Allows full random error modeling; repeatable; can mix different accuracy and precision measurements; provides measurement uncertainties.	Most complicated method

The Compass Rule works sufficiently well for simple surveying projects and is the one we will apply.