

**EMIGRANT TRAILS
IN THE VICINITY OF WESTMINSTER WOODS
AND EMIGRANT SPRINGS STATE PARK**

Meacham, OR



Northwest Chapter Mapping Committee

Oregon-California Trails Association

October 31, 2021

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Cover photo by Steve Bingold. Survey team at work.

1. Introduction

Westminster Woods (WW), shown with red shading in Figure 1-1, is owned by the First Presbyterian Church of Pendleton, Oregon. The property is used as a conference center for various church and public activities and is adjacent to the State of Oregon's Emigrant Springs State Park (ESSP). ESSP is shown with yellow shading. ESSP celebrates the nearby Oregon National Historic Trail (ONHT) and emigrant campgrounds in the area. The emigrant period of use was about 1841 to 1865, although there were travelers both before and after those dates.

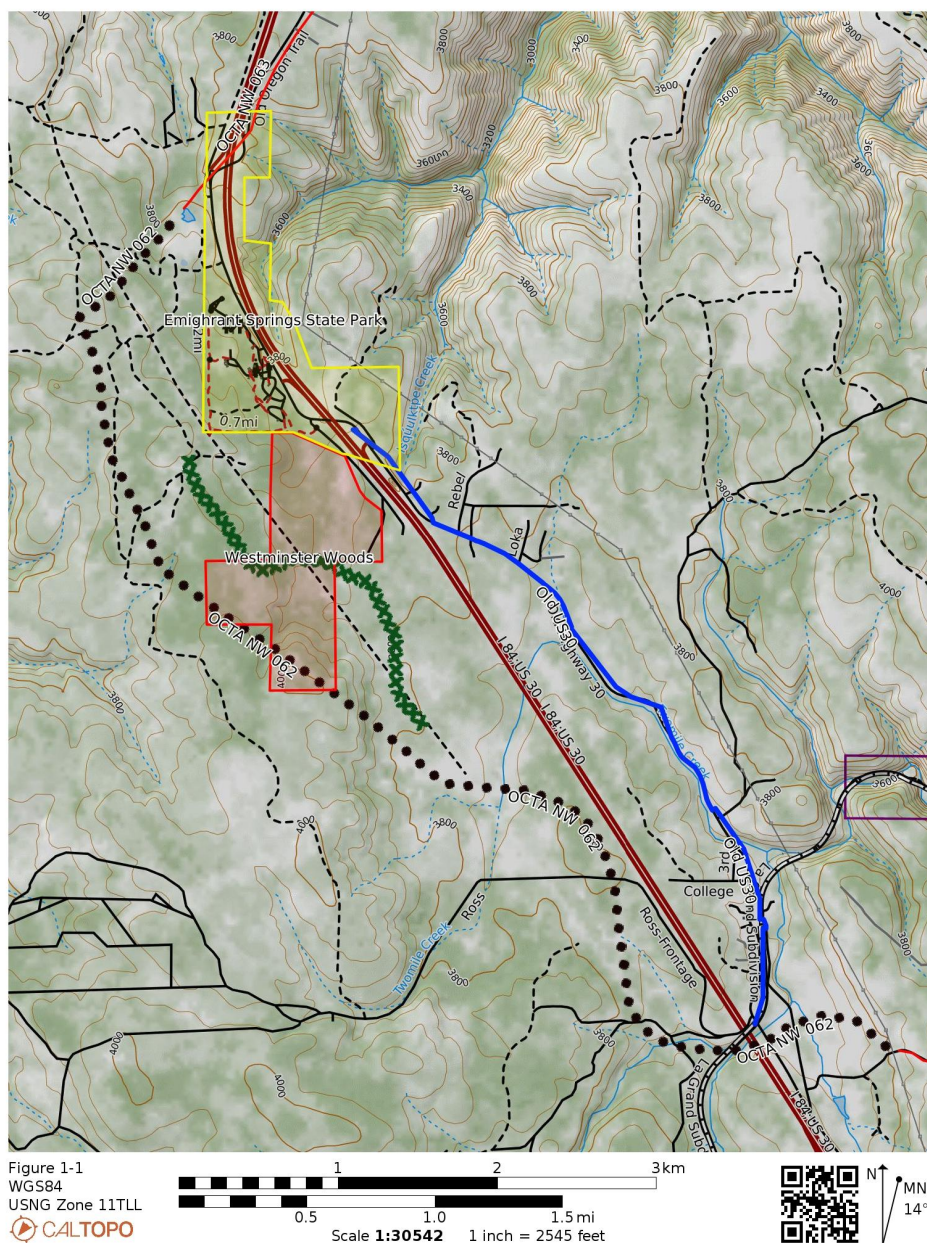


Figure 1-1. Project Area

The project area comprises approximately 75.4 acres located west of Interstate 84 and north and west of Meacham, Umatilla County, Oregon. Legal location of the project is Township 1 North, Range 35 East, Willamette Meridian sections 28, 29, 32, and 33. The project area is easily accessible from I-84 Exit 234.

The property consists of wooded terrain, mostly flat or with slope gradients of 5% or less. Mean elevation is 3,850 feet. Total annual precipitation is approximately 35 inches, and about 80% of that falls between October and June. Average temperatures for the locality between June and September range between 86 and 46 °F.

Westminster Woods lies in a mesic-forest zone with a soil ash layer overlying Columbia River basalt parent material. Much of this fine-textured material is wind-deposited loess originating from glacial activity or glacial Lake Missoula flood events (as opposed to Mount Mazama or Glacier Peak volcanic ash). The USDA Soil Conservation Service has identified the soil as Tolo silt loam (NRCS 1988). These soils overlie igneous rock of Tertiary Wanapum Basalt (middle Miocene) and Grande Ronde Basalt (Middle and Lower Miocene) [MacLeod and Walker 2003]. The property has moderate to heavy vegetation cover, sometime requiring bushwhacking, and it may include soggy or wetland areas. Predominant vegetation types are grand fir/twinflower (*Abies grandis*/*Linnaea borealis*), followed by Douglas-fir/oceanspray (*Pseudotsuga menziesii*/*Holodiscus discolor*). Other plant associations are grand fir/queencup beadlily; Douglas-fir/common snowberry; and grand fir/false bugbane.

Some ONHT historical records of its route through this area show it passing to the west of ESSP and through the western extremity of the WW property (black dotted line in Figure 1-1). Other studies indicate a route of the Oregon Trail through the area may closely follow Highway 30, the early federal highway through the area (solid blue line). There is another trace (green segmented line) that shows clearly in modern LiDAR images that passes directly through Westminster Woods. The church has interpreted this trace as being the “Oregon Trail,” but has asked the National Park Service to confirm this designation. The NPS asked the Oregon-California Trails Association (OCTA) to provide a volunteer team to apply its methodology from the Mapping Emigrant Trails (MET) Manual to see if confirmation is possible. This document reports the results of those studies.

After the Executive Summary (Section 2) the report describes land ownership within the area of the project (Section 3). Except for properties owned by the State of Oregon, all land is privately owned and requires permission to enter. This is followed by a summary of the historic trail-related information for the area (Section 4), and summaries of exploratory treks undertaken from June 28 through July 1, 2021 (Section 5). Section 6 presents recommendations for future research.

2. Executive Summary

From June 28 through July 1, 2021, a field team provided by the Oregon-California Trails Association searched for evidence of the Oregon Trail through the property known as Westminster Woods and adjacent properties. The search was extended to adjacent properties since it was necessary to understand all possible trail routes in these areas to interpret what is observed in Westminster Woods.

In addition to the field research, an extensive archival search was conducted. This included government survey plats and surveyor notes, research and documentation by others, emigrant diaries, and other old maps.

Currently, both field and archival research are incomplete. Permission could not be obtained to access some important properties due to timber operations on the property or the inability to get a response from an owner. Regarding archival research, we feel that there is a possibility of locating more detailed maps that were used to develop the ten-map Oregon State Highway Department 1959 map (hereafter OSHD1959) and John Evans' maps in "Powerful Rocky."

The OSHD1959 route shown on our maps is a composite of the original OSHD maps, maps by Percy Brown, maps by Aubrey Haines, maps by John Evans and maps by Gregory Franzwa. It is our conclusion that Brown, Haines, Evans and Franzwa all prepared their maps from the OSHD maps although it is important to note that each shows variations in where visible ruts existed at the time of their work.

We have looked unsuccessfully for additional information used to document the OSHD1959 route. The earliest 7.5-minute (1:24,000 scale) map for Meacham was prepared in 1964, too late for the OSHD effort. The only USGS map available to them would have been the 250K Pendleton map. Earl Bickmore, in his 3-page letter to P. M. Stephenson (Assistant State Highway Engineer), says "Small scale maps suitable for field work were prepared. On these maps were pertinent information showing location of streams, towns, highways, roads and railroads." Finding these maps might resolve many issues.

Our findings from this field and archival research are as follows:

1. The OSHD1959 trail was not validated. No evidence was found in the areas searched and no evidence was found in the surveyor notes or resulting survey maps. The area about 0.5 miles west of the Emigrant Springs State Park could not be entered at this time, but will be examined if access is obtained.
2. The earliest "Oregon Trail" through the area was just east of I84 and roughly follows old US30. This points to the emigrant spring mentioned in emigrant journals as being in this area as opposed to further west on the postulated OSHD1959 trail.

3. The LiDAR trace, which extends almost the full length of the project area, was the Meacham (later Foster) Toll Road and was identified in later (1887) maps as the “Old Stage Road.”

Future work should include:

1. Field surveys in areas not accessed that may contain remnants of OSHD1959.
2. Additional archival research at Oregon State Parks, Eastern Oregon State University, and other universities in the area to attempt to locate additional information used in the OSHD 1959 study.
3. Validation of the emigrant trail east of I84 and along old US30 from Meacham to the US30/I84 junction north of the Emigrant Springs State Park. This is primarily in Sections 33, 34 and 28 in T01N-R35E.
4. Metal detecting on the LiDAR trace, OSHD1959 and east of I84. Extensive undergrowth made the search for trail traces in the project area exceedingly difficult. Metal detecting for the purpose of identifying items would aid trail verification.
5. Other archaeological studies along trail routes.

3. Project Area and Land Ownership

The project area encompasses the Westminster Woods property, Oregon's Emigrant Springs State Park, and adjacent properties to the west. The total area is about six square miles. It is located northwest of Meacham, Oregon and to the west of I84. Most of the property is privately owned and has been logged multiple time over the past 150 years. Ground disturbance is substantial in the privately owner areas. Figure 3-1 and Table 3-1 show land ownership from a CalTopo overlay last updated June 1, 2021.

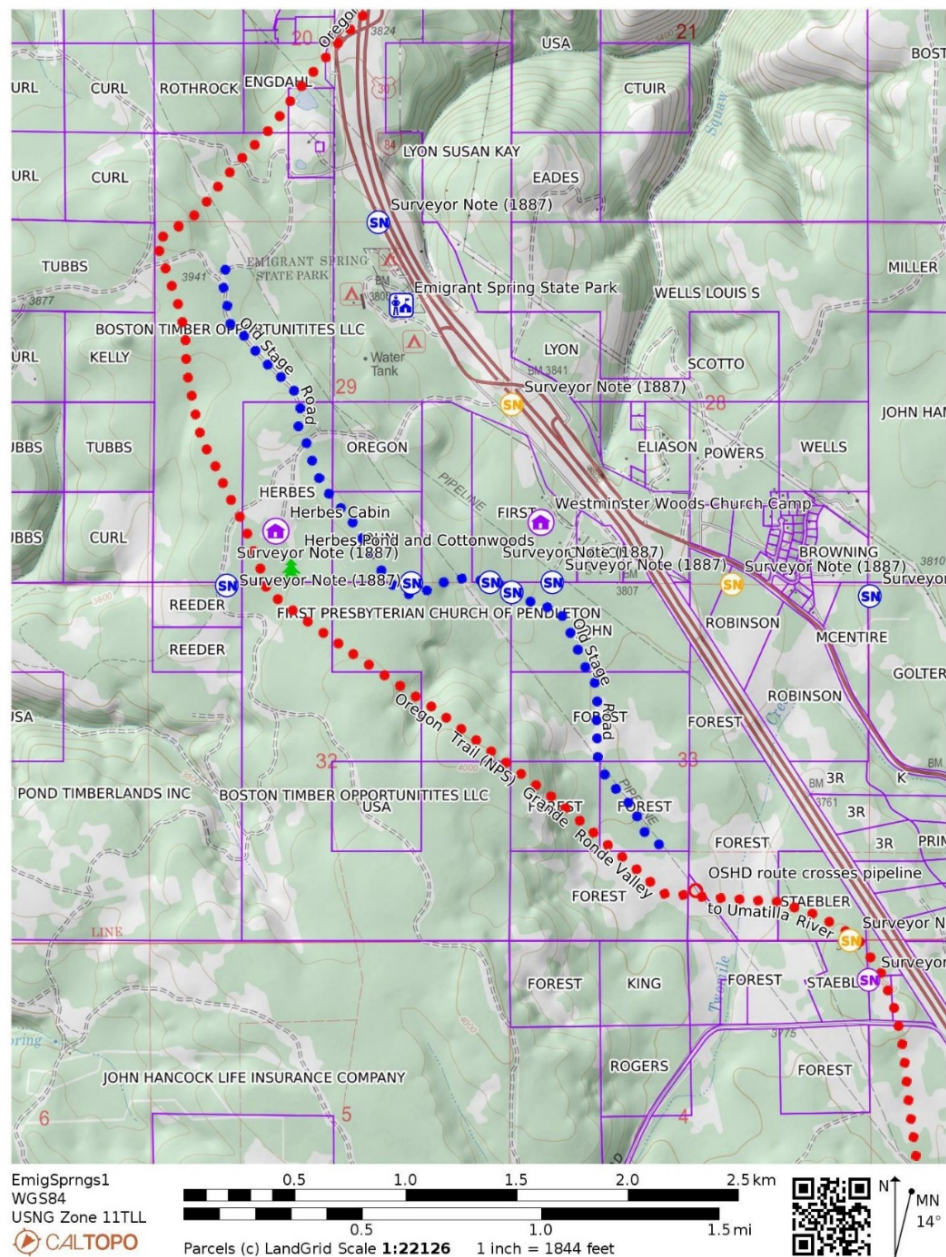


Figure 3-1. Landowners

Permission to access the properties was obtained from all owners except those managed by Hancock, Boston Timber (managed by Hancock), Staebler, and Engdahl. Property records indicate Engdahl may not be the current owner of the property listed under that name. Our sincere thanks to all of the landowners who provided access to their property.

Landowners with Possible Trail			10/11/2021 10:56		
South to North					Access
Township	Range	Section	Landowner	Contact	Status
T01S	R35E	Section 3	Forest Recovery, Inc	David Granger (360-608-0914)	Okay
T01S	R35E	Section 4	Donald L. Staebler		
T01N	R35E	Section 33	Donald L. Staebler		
T01N	R35E	Section 33	Forest Recovery, Inc	David Granger (360-608-0914)	Okay
T01N	R35E	Section 33	John Hancock Life	Steve McClelland SMcClelland@hnrgr.com	
T01N	R35E	Section 32	First Presbyterian	David Powell	Okay
T01N	R35E	Section 32	Boston Timber Opportunities	At Hancock Timber	
T01N	R35E	Section 29	First Presbyterian	David Powell	Okay
T01N	R35E	Section 29	John Hancock Life	Steve McClelland SMcClelland@hnrgr.com	
T01N	R35E	Section 29	Oregon Parks	Mark Miller	Okay
T01N	R35E	Section 29	Mike Herbes		Okay
T01N	R35E	Section 20	Boston Timber Opportunities	At Hancock Timber	
T01N	R35E	Section 20	Engdahl Robert Scott etal	541-382-5478	
T01N	R35E	Section 20	State of Oregon	N/A	Okay
Sorted by Landowner					
T01N	R35E	Section 32	Boston Timber Opportunities	At Hancock Timber	
T01N	R35E	Section 20	Boston Timber Opportunities	At Hancock Timber	
T01S	R35E	Section 4	Donald L. Staebler		
T01N	R35E	Section 33	Donald L. Staebler		
T01N	R35E	Section 20	Engdahl Robert Scott etal	541-382-5478	
T01N	R35E	Section 32	First Presbyterian	David Powell	Okay
T01N	R35E	Section 29	First Presbyterian	David Powell	Okay
T01S	R35E	Section 3	Forest Recovery, Inc	David Granger (360-608-0914)	Okay
T01N	R35E	Section 33	Forest Recovery, Inc	David Granger (360-608-0914)	Okay
T01N	R35E	Section 33	John Hancock Life	Steve McClelland SMcClelland@hnrgr.com	
T01N	R35E	Section 29	John Hancock Life	Steve McClelland SMcClelland@hnrgr.com	
T01N	R35E	Section 29	Mike Herbes		Okay
T01N	R35E	Section 29	Oregon Parks	Mark Miller	Okay
T01N	R35E	Section 20	State of Oregon	N/A	Okay

Table 3-1. Landownership as of June 1, 2021.

4. Historic Oregon Trail Information

4.1 Sources

Historic Oregon Trail information for the Blue Mountains comes from several sources:

- Pioneer diaries, the earliest source of information
- General Land Office (GLO) plat maps and surveyor notes from the 19th century
- Other maps from 1920 to 1991 produced by various authors
- Books and manuscripts published by local historians

Three GLO maps and the accompanying surveyor notes were reviewed:

- T1S-R35E (1864)
- T1S-R35E (1882)
- T1N-R35E (1887)

Other maps consulted were:

- The 1920 Archer Butler Hulbert Meacham Map 47 from his “The Crown Collection of American Maps,” page 49
- The Oregon State Highway Department (OSHD) maps produced in 1959 after a 2-year effort by Earl Bickmore, Larry Smitton, and Joshua Sawyer
- The annotated 7.5-minute topographic map produced by Percy Brown in 1972
- The annotated 7.5-minute topographic map produced by Aubrey Haines in 1972
- The National Park Service Comprehensive Management and Use Plan (CMUP), Appendix II, Sheet 295, Meacham, OR, published in 1981
- Gregory Franzwa’s “Maps of the Oregon Trail,” pages 245 and 249, published in 1982
- John Evans’ “Powerful Rockey,” Map 3-20, published in 1991
- The LiDAR map of the area provided by the National Park Service using Department of Geology and Mineral Industries (State of Oregon) data.

Much additional information comes from the work of local historians:

- Stewart, Betty Booth, “Meacham: A Wide Spot on the Oregon Trail,” 1996
- Miller, Gary Kenneth, “A History of Transportation in Nineteenth Century Umatilla County, Oregon,” 1996
- Evans, John W., “Powerful Rockey: The Blue Mountains and the Oregon Trail,” 1991
- Stearns, Doran Harding, “Oregon Papers, Numbers VII to XVII,” Supplement to the Daily Evening Telegram, Portland, Oregon, 1882
- Beckham, Stephen Dow, “In Their Own Words (Vol 1) Snake River Crossing to Echo Meadows,” 1991
- Beckham, Stephen Dow, “The Grande Ronde Valley and Blue Mountains - The Oregon Trail, 1812-1880,” 1991
- Olson, Jerry, “GLO Surveyor Personal Notes for Oregon,” 2019

Eight pioneer diaries covering the Blue Mountains were consulted and their camps plotted on a CalTopo map. The diaries were:

- James Nesmith (1843)
- Joel Palmer (1845)
- Absalom Harden (1847)
- Philemon V. Crawford (1851)
- Abigail Jane Scott (1852)
- John Tully Kerns (1852)
- Cornelia Sharp (1852)
- George Belshaw (1853)

These diaries were chosen because these pioneers documented their mileage each day and provided descriptions of their travels which were potentially useful in determining the location of their routes. The pioneer diaries consulted did not, unfortunately, provide much detailed information regarding the precise location of the Oregon Trail. We obtained a good idea of how far they traveled each day and where they camped, but they did not provide any information about the direction of travel. It would have been useful to know which direction they traveled from each camp spot, but such detail was lacking.

4.2 Analysis of Plat Maps

There are two main historical roads in the Meacham, Westminster Woods, and Emigrant Springs area:

- The Emigrant Road, established by the emigrants beginning in 1843
- The Meacham Toll Road, built by the Meacham Brothers nearly 20 years later in 1862

Over time, both these roads evolved and were called by different names. For instance, the Meacham Toll Road became the Foster Toll Road after Alfred Meacham's departure in 1869, the death of Harvey Meacham in 1872, and the marriage of Frederick Foster and Alice Meacham (Harvey's widow) in 1874.¹

The Emigrant Road and the Meacham (Foster) Toll Road were separate roads, as depicted on the General Land Office survey maps of T1S-R35E (1864 and 1882) and T1N-R35E (1887). The general locations of the Emigrant Road and the Meacham (Foster) Toll Road can be seen on these maps. For detail concerning these roads, however, the accompanying surveyor notes for each survey must be consulted.

¹ Stewart, Betty Booth, "Meacham: A Wide Spot on the Oregon Trail," 1996, pages 56-58

Table 4-1 outlines the various names given to the pioneer roads in our study area:

Source	Name for Oregon Trail	Name for Toll Road
1864 GLO Plat #4331	Old Emigrant Road	Toll Road
1864 Survey of GLO Plat #4331 – Survey Note Descriptions	Old Emigrant Road	Toll Road from Umatilla to Grande Ronde
1882 GLO Plat #4332	Old Emigrant Wagon Road	Foster Toll Road
1882 Survey of GLO Plat #4332 – Survey Note Descriptions	Emigrant Road	Toll Road
1887 GLO Plat #4329	Old Emigrant Wagon Road	Old Stage Road
1887 Surveyor of GLO Plat #4329 – Survey Note Descriptions	Pendleton and La Grande Wagon Road	Old Stage Road
1920 A. B. Hulbert	Oregon Trail	Foster Toll Road
1959 Earl Bickmore, Oregon State Highway Department	The Oregon Trail	Not shown

Table 4-1. Pioneer Road Names

Figures 4-1 and 4-2 cover the township immediately to the south of our study area. These maps clearly show the “Old Emigrant Road” and the “Toll Road” as separate roads.

Figure 4-1 shows the 1864 survey of Sections 3 and 10 in T1S-R35E done by David Thompson and Daniel Chaplin. The “Emigrant Road” is highlighted in red, and the “Toll Road” is highlighted in blue. The Meacham brothers 1862 stage station and hotel location are marked by a blue circle on the figures.

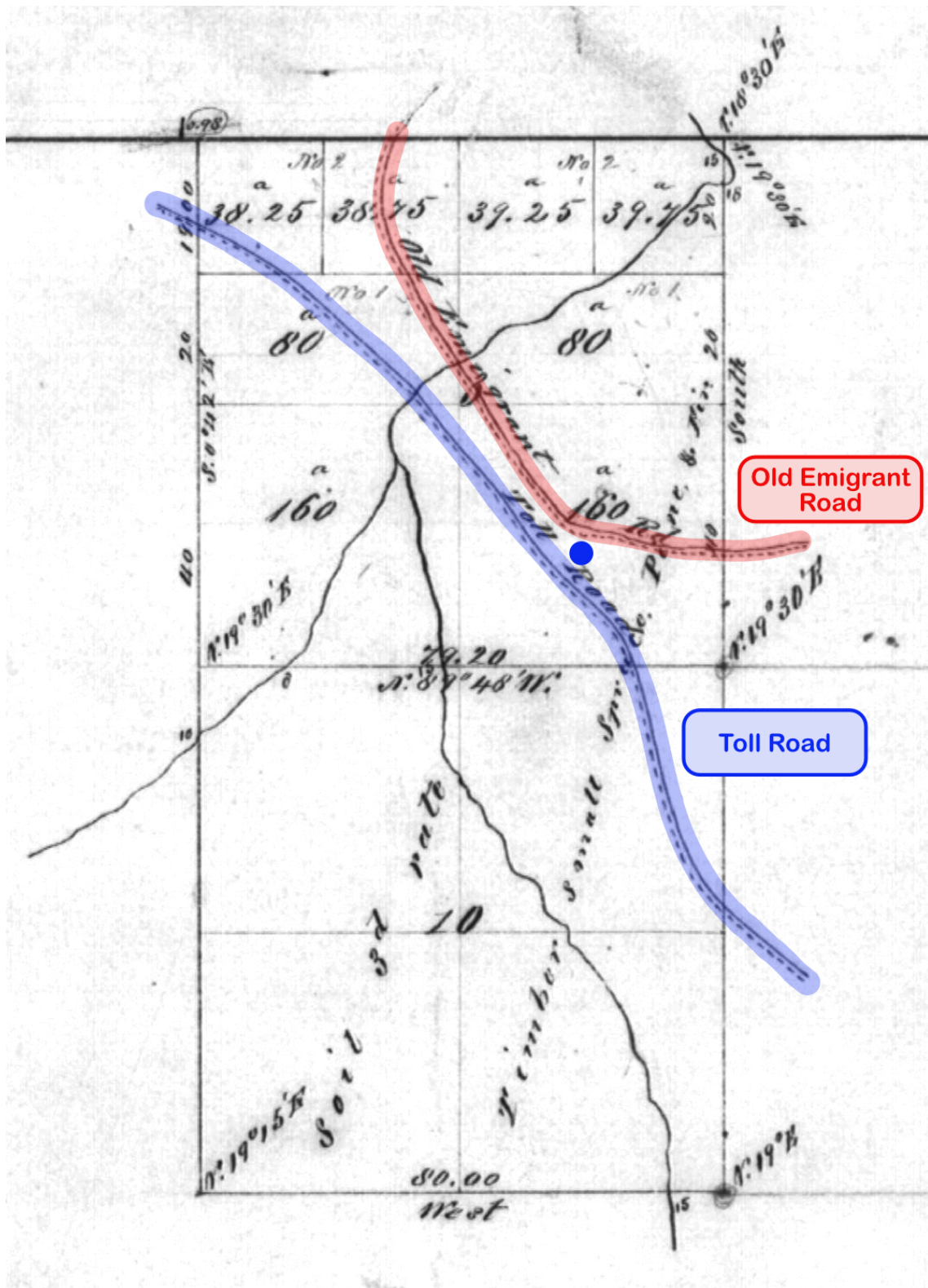


Figure 4-1. 1864 GLO Plat #4331 Detail, Section 3 and 10, T01S-R35E.

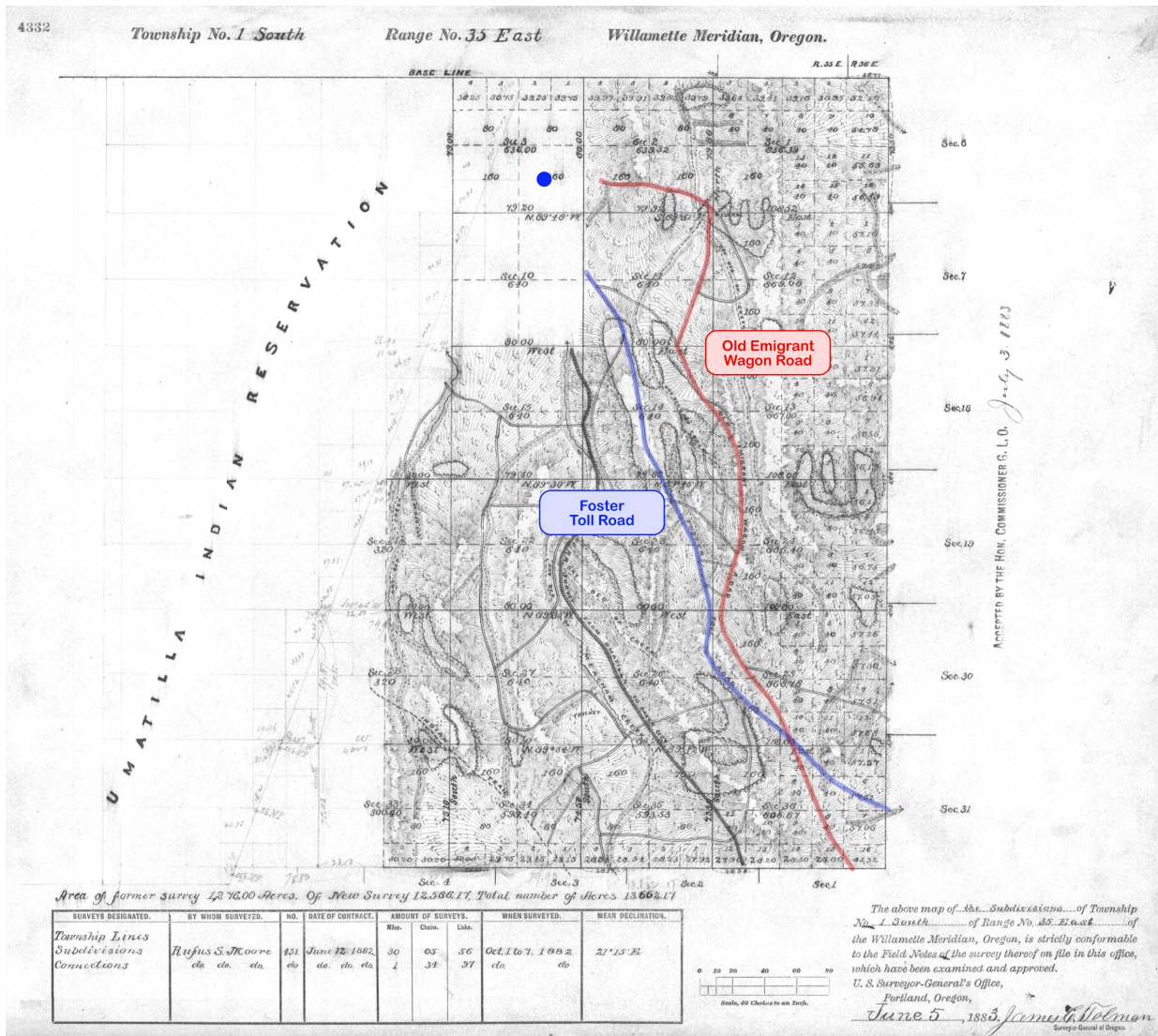


Figure 4-2. 1882 GLO Plat #4332, T01S-R35E

Figure 4-3 depicts the township covering our study area. The purple dot is the location of Westminster Woods Church Camp, and the blue dot is the location of Emigrant Springs State Park

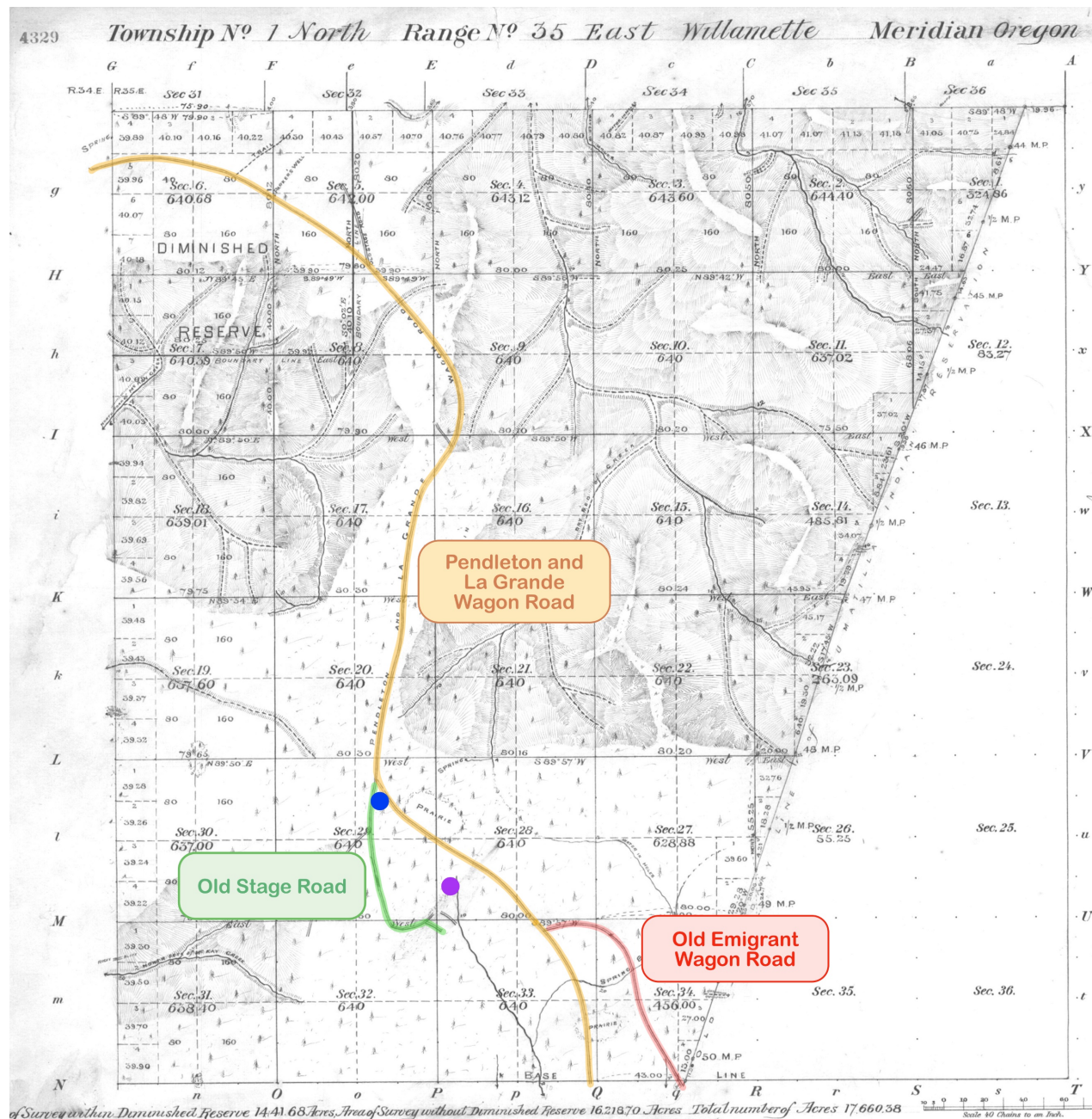


Figure 4-3. 1887 GLO Plat #4329, T01N-R35E

4.3 Analysis of Surveyor Notes

The earliest detailed information on the location of the Emigrant Road in our study area comes from the General Land Office surveyor notes from which the GLO maps were produced. General Land Office maps and surveyor notes for Oregon are available online.

Our study area is covered by several GLO maps:

- 1864 T01S-R35E, Sections 3 and 10 only (GLO Plat #4331)
- 1882 T01S-R35E, eastern half (GLO Plat #4332)
- 1887 T01N-R35E, western two-thirds (GLO Plat #4329)

Using the surveyor notes associated with these maps, surveyor note location markers were placed on a CalTopo USGS topographic base map covering the study area. The surveyor note location markers were grouped into five categories based on the road description in each surveyor note. Each category was given a different color so that one could visualize the various road types and their location and direction through the study area.

The categories were:

- Emigrant Road (red)
- Toll Road (purple)
- Stage Road (green)
- Pendleton and La Grande Wagon Road (orange)
- Miscellaneous Wagon Roads (blue)

After categorizing and color-coding the surveyor note locations on the CalTopo map, several things became evident:

- The surveyor notes labeled “Emigrant Road” and “Toll Road” only occur in T1S-R35E (1864 and 1882).
- The surveyor notes labeled “Stage Road” and “Pendleton and La Grande Wagon Road” only occur in T1N-R35E (1887).
- Surveyor notes labeled “Wagon Road” occur in both Townships.

The surveyor notes for the 1864 GLO map (#4331) provides the earliest documentation of the location of both the Emigrant Road and the Meacham Toll Road. The Meacham Toll Road was built by Alfred and Harvey Meacham shortly after they arrived in 1862 at a cost of \$81,000.² The hotel they built in 1863 served as a Stage station (“Meacham Station”). A much larger hotel was built in 1865 due to increased traffic on the Meacham Toll Road by people going to the gold fields near Baker City as well as in Idaho.³

² Doran H. Stearns, “Oregon Papers, Numbers VII to XVII,” a supplement to Henry Pittock’s *Daily Evening Telegram*, 1882; “The Life of Alfred B. Meacham”, Thomas Augustus Bland (1883) places the figure at \$100,000.

³ Betty Booth Stewart, “Meacham: A Wide Spot on the Oregon Trail,” 1996, Chapter 3

4.3.1 1864 Surveyor Note Locations in Sections 3 and 10 of T01S-R35E

Figure 4-4 below shows Sections 3 and 10 in T01S-R35E, surveyed in 1864 by David Thompson and Daniel Chaplin. The two sections are highlighted in light green.

The 1864 surveyor note locations on Figure 4-4 are the ones inside or on the border of the green highlighted Sections 3 and 10. All others are from the 1882 survey of T01S-R35E by Rufus Moore.

A solid red line has been drawn between the red markers to emphasize the general direction of the Emigrant Road (#1 on the map). The northernmost note location is located at what is now the junction of Highway 30 and Forest Service Road 3030. There are no “Emigrant Road” surveyor note locations north of this marker. If we follow the line indicated by the red markers to the NW (into T01N-R35E), we encounter an orange “Pendleton and La Grande Wagon Road” marker (shown in Figure 4-5 at the top of Section 33). This route closely follows what is now Highway 30 along Twomile Creek.

A solid purple line has been drawn between the purple markers to emphasize the general direction of the Toll Road (#2 on the map). The two northernmost Toll Road markers are described by the surveyors as the “Toll Road from Umatilla to Grande Ronde” and the southernmost is described as the “Foster Toll Road.” The purple line shows the Toll Road going NW, staying to the west of the route shown by the red Emigrant Road markers. These 1864 Toll Road markers lead directly to the “Pendleton and La Grande Wagon Road” marker from 1887 in the top left corner of Figure 4-4 (#3 on the map).

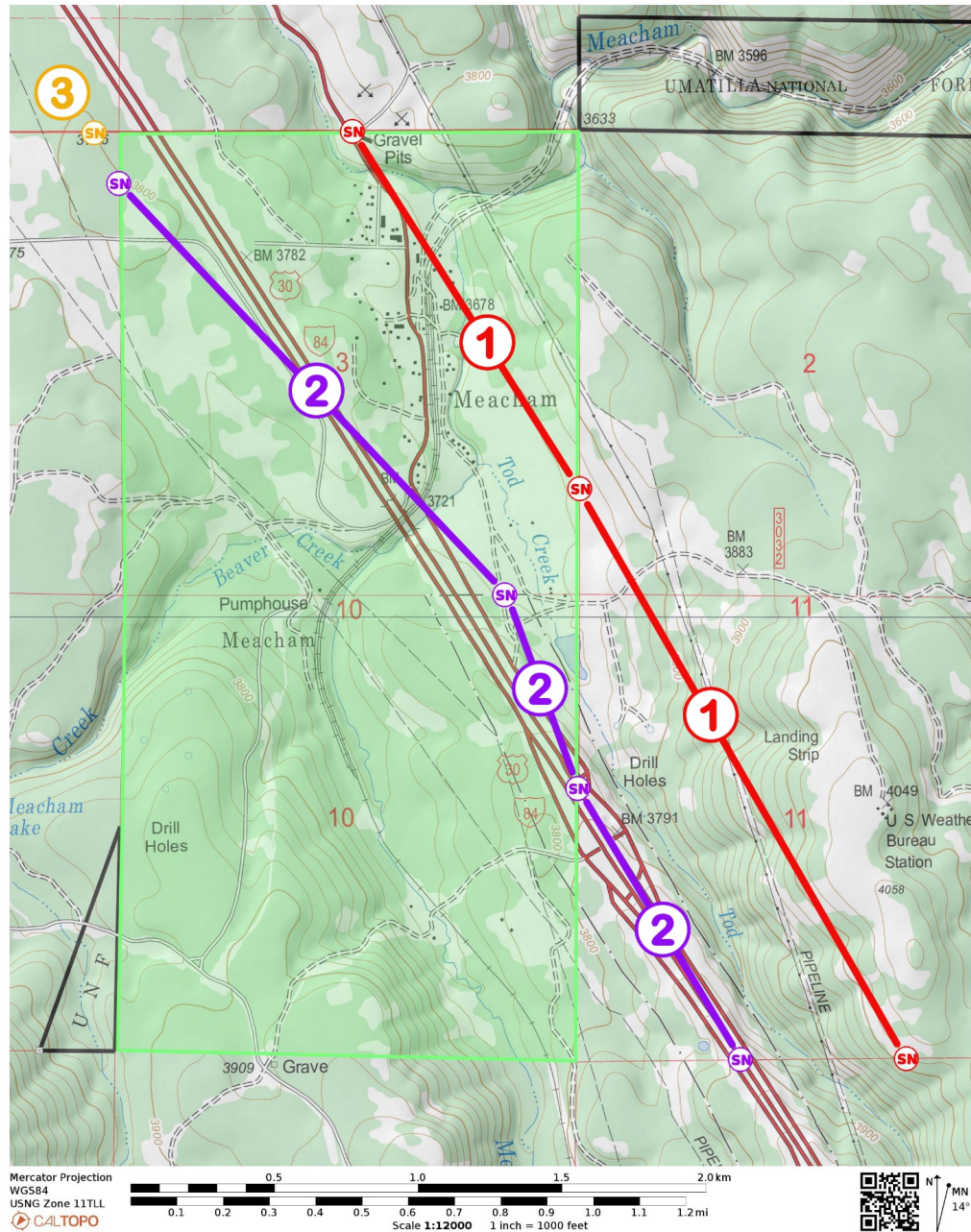


Figure 4-4. 1864 Surveyor Note Locations

- ① Three “Emigrant Road” surveyor note locations: one from the 1882 T1S-R35E survey by Rufus Moore and two from the 1864 survey of Sections 3 and 10 by David Thompson and Daniel Chaplin
- ② Four “Toll Road” surveyor note locations: one from the 1882 T1S-R35E survey by Rufus Moore and three from the 1864 survey of Section 3 and 10 by David Thompson and Daniel Chaplin
- ③ “Pendleton and La Grande Wagon Road” surveyor note location from the 1887 T1N-R35E survey by James Currin and James Noland

4.3.2 1887 Surveyor Note Locations in T01N-R35E

Figure 4-5 shows a portion of T01N-R35E which covers our study area. The township was surveyed in 1887 by James Currin and James Noland.

The figure shows the LiDAR track from the National Park Service LiDAR image (see Appendix B) as a blue hatched line beginning near the purple 1864 “Toll Road from Umatilla to Grande Ronde” surveyor note marker (purple-circled #1 on the map). The road track proceeds NW, crosses Twomile Creek, eventually crosses the pipeline corridor and closely follows it on its west side. It then recrosses the pipeline and proceeds north to the Westminster Woods Church Camp (green-circled #2 on the map), where it turns west and crosses the pipeline for the third time. The road track then turns north, eventually meeting a well-used dirt road west of Emigrant Springs State Park (blue-circled #3 on the map).

The LiDAR road track is marked by three green “Old Stage Road” surveyor note locations just west of Westminster Woods Church Camp (green-circled #2 on the map). There is a fourth “Old Stage Road” surveyor note location just north of Emigrant Springs State Park (green-circled #4 on the map). A dashed blue line has been drawn on the map in this location (with a green question mark next to it) to show a possible connection between the blue hatched line LiDAR road track and the fourth green “Old Stage Road” surveyor note location.

These green “Old Stage Road” surveyor note locations are from 1887 and may have been labeled “Old” by the surveyors because stage traffic no longer used the road and had likely switched to the “Pendleton and La Grande Wagon Road” to the east sometime before the township was surveyed. Before 1887, the 1864 “Toll Road” shown in the NW corner of Section 3 (#1 on the map) could have gone NW along the LiDAR road track to Westminster Woods Church Camp and beyond, possibly meeting the “Old Stage Road” marker just north of Emigrant Springs State Park (green-circled #4 on the map).

An orange line (orange-circled #5 on the map). has been drawn connecting the “Pendleton and La Grande Wagon Road” surveyor note locations to better visualize the route documented in 1887 by James Currin and James Noland

A red dashed line (red-circled #6 on the map) has been drawn (with a red question mark next to it) between the red 1864 “Old Emigrant Wagon Road” surveyor note location at the top of Section 3 to the orange 1887 “Pendleton and La Grande Wagon Road” surveyor note location at the top of Section 33 (in T01N-R35E) to show the possible route of the Emigrant Road from Lee’s Encampment NW, following Twomile Creek. This follows the current alignment of Highway 30.

Note that there are no surveyor note locations where the red-barred 1959 OSHD Oregon Trail route crosses section lines, specifically on the section line between Section 32 and 33 and the top NW corner of Section 29 (see the gray-circled #7s on the map). There is a surveyor note for a “Wagon Road” about 0.2 mile west of the OSHD route near the NW corner of Section 32.

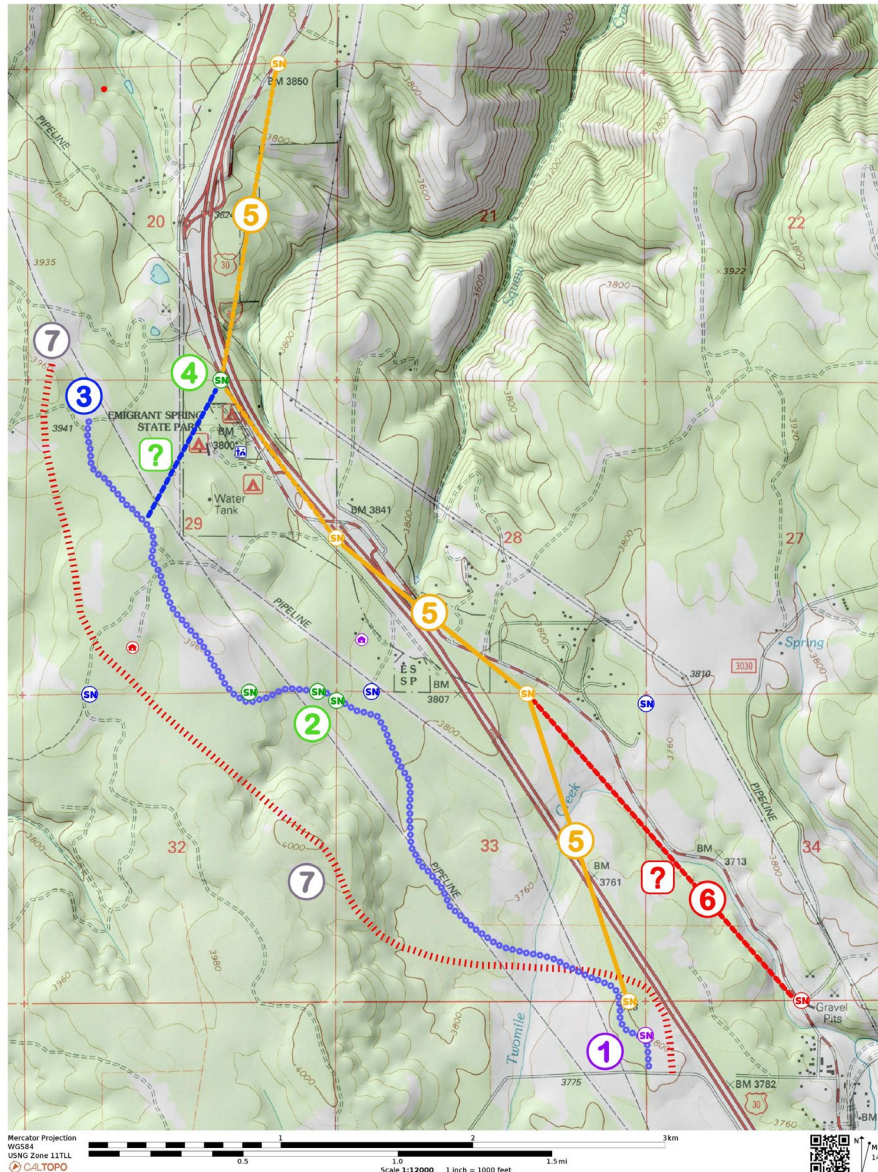


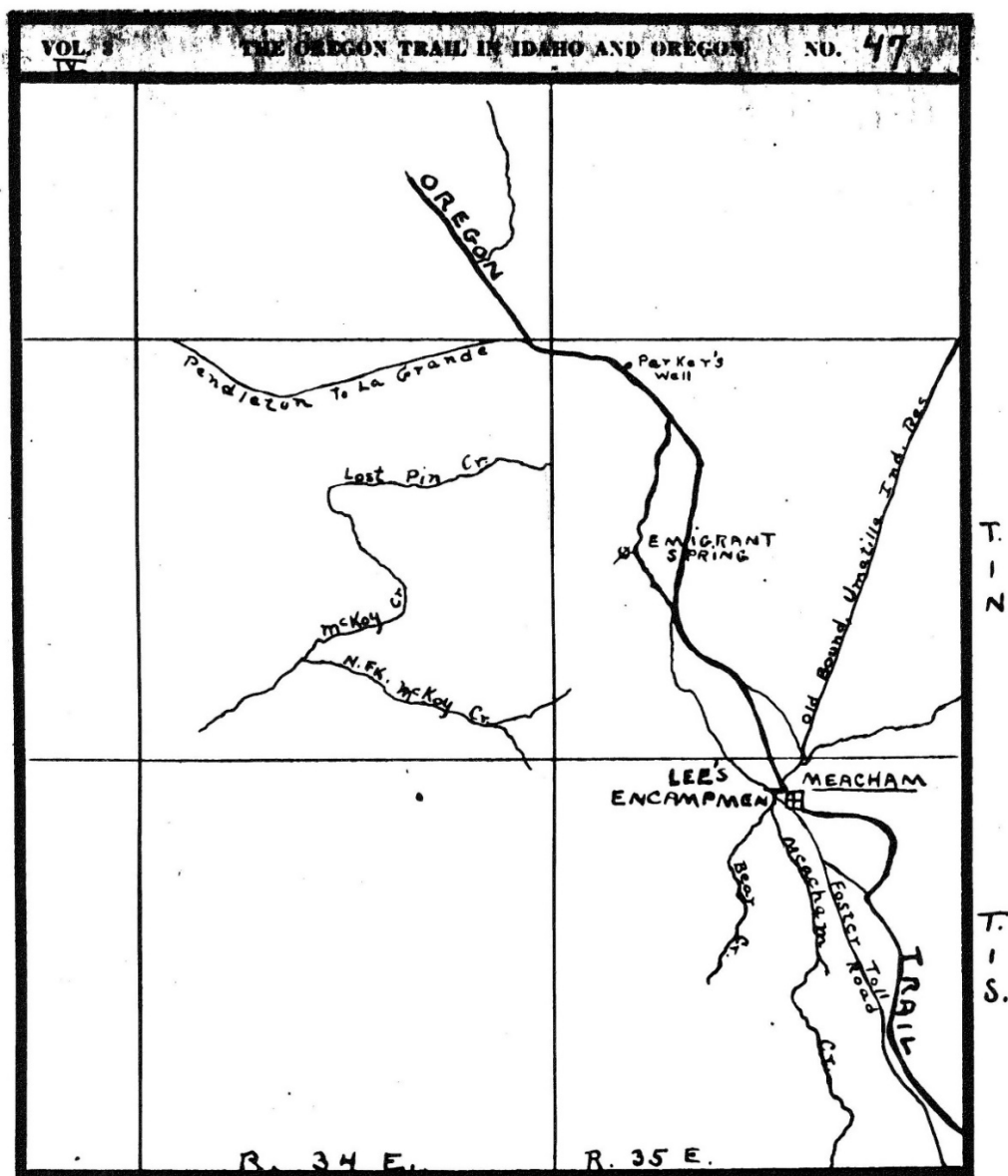
Figure 4-5. 1887 Surveyor Note Locations in T01N-R35E

- ① 1864 “Toll Road from Umatilla to Grande Ronde” surveyor note location.
- ② 1887 “Old Stage Road” surveyor note locations at Westminster Woods.
- ③ North end of blue LiDAR road track.
- ④ 1887 “Old Stage Road” surveyor note location north of Emigrant Springs State Park, with dashed blue line showing possible route.
- ⑤ 1887 “Pendleton and La Grande Wagon Road”
- ⑥ Possible “Old Emigrant Wagon Road” north from the 1864 surveyor note location at the top of Section 3, T1S-R35E.
- ⑦ 1959 Oregon State Highway Department Oregon Trail route.

4.4 Archer Butler Hulbert Research (1920)

Archer Butler Hulbert was an historical geographer, professor of history, and writer who published 102 volumes in his lifetime (1873-1933). One of his publications was “The Crown Collection of American Maps” published in series between 1909 and 1928. The Oregon Trail was included in Series 4, Volume 3, and the Meacham, Westminster Woods, and Emigrant Springs area was covered by Map 47, here shown as Figure 4-6.

Hulbert consulted the original General Land Office maps to produce his Meacham Map 47. He shows the Oregon Trail, Foster Toll Road, Lee’s Encampment, and Emigrant Springs, as well as Meacham Creek. He clearly shows that the Oregon Trail (broad black line) and the Foster Toll Road (narrower black line) were separate roads, merging at Lee’s Encampment (Meacham) and separating again to join further north at Emigrant Springs.



"Lee's Encampment," the present site of Meacham, offered a welcome resting place for tired teams on the mountain summit: plain where food and water and enchanting scenery were enjoyed: Palmer, 110; Kellogg, 92; Currey, 43; Kerns, 182-3. Cf. Quarterly, I, 378. Emigrant Spring marks the site of the Oregon Trail monument unveiled by President Harding.

Figure 4-6. Hulbert Map 47

4.5 1959 Oregon State Highway Department (OSHD) Research

The Oregon State Highway Department published ten maps covering the Oregon Trail in Oregon, from the Snake River to The Dalles in 1959. It was a two-year effort involving Earl Bickmore, Larry Smitton, and Joshua Sawyer, highway engineers working on their own time.

Earl Bickmore had copies of eleven pioneer diaries and access to the GLO survey maps. He gathered additional information from county libraries through which the trail passed and prepared small-scale maps suitable for field work. He compared the route shown on the GLO survey maps with the descriptions in the emigrant diaries, and if a conflict occurred, the diary took precedence. The Blue Mountains was one area where the presence of toll and freight roads was confusing, and he relied heavily on the emigrant diaries. Unfortunately, there is no record of which diaries Earl Bickmore used, and his small-scale field maps have not been found. Larry Smitton made some ground and aerial observations from the Blue Mountains west to the John Day River, but there is no information whether these observations were done in our study area.⁴

Figure 4-7 (OSHD Sheet 5) covers the Meacham, Westminster Woods, and Emigrant Springs area. The highway engineers showed continuous visible ruts through our study area, mostly west of the pipeline corridor, from the NW corner of Section 3 in T1S-R35E to the NW Section 29 in T1N-R35E. This Oregon Trail alignment became the de facto trail location for all subsequent maps: Percy Brown (1972), Aubrey Haines (1972), NPS Comprehensive Management and Use Plan (1981), Gregory Franzwa (1982), and John Evans (1991).

⁴ “Oregon Trail” letter from Earl Bickmore to P.M. Stephenson, Assistant State Highway Engineer, January 26, 1959

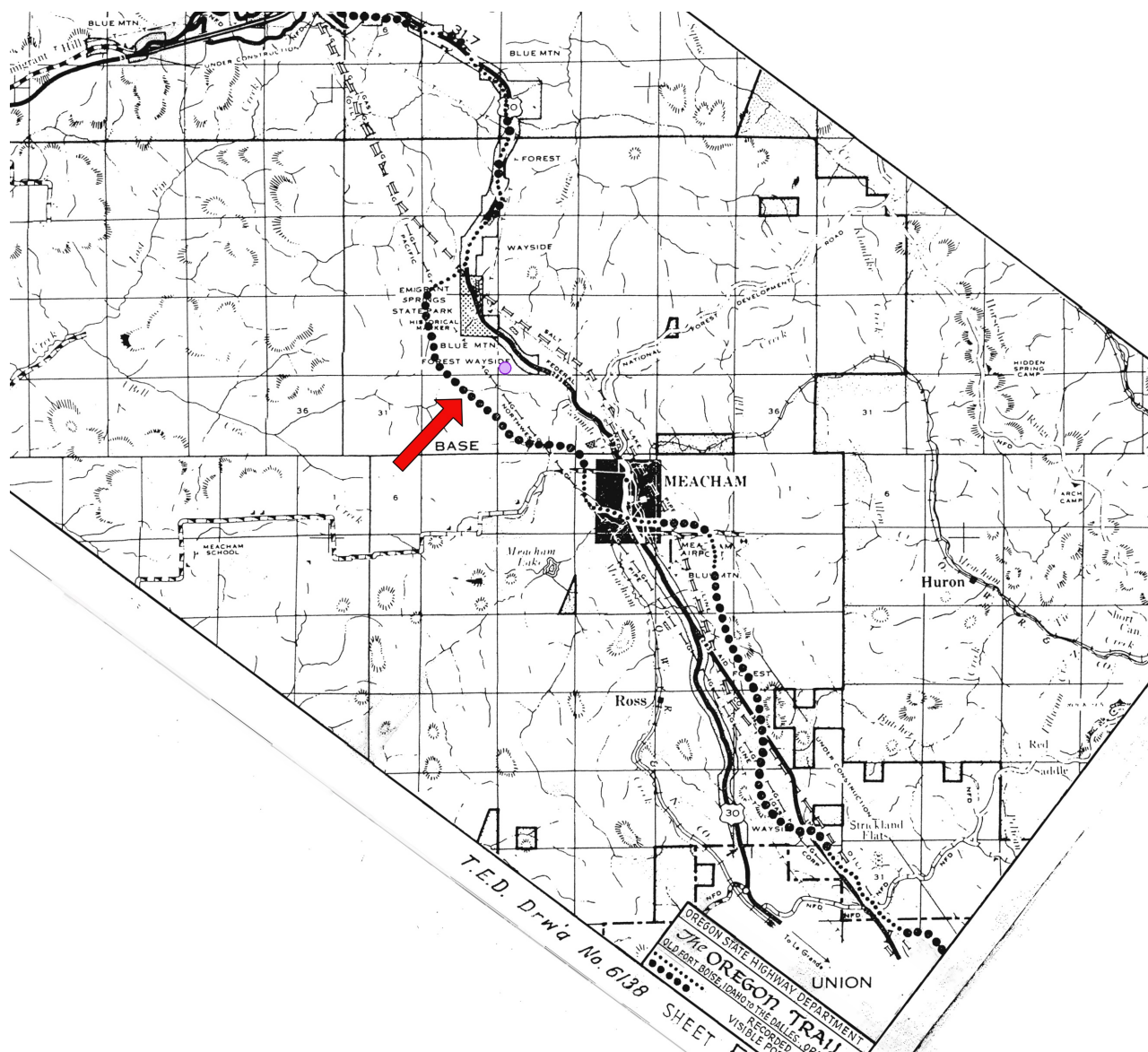


Figure 4-7. 1959 OSHD Sheet 5

4.6 OSHD/LiDAR/GLO/Hulbert Comparison

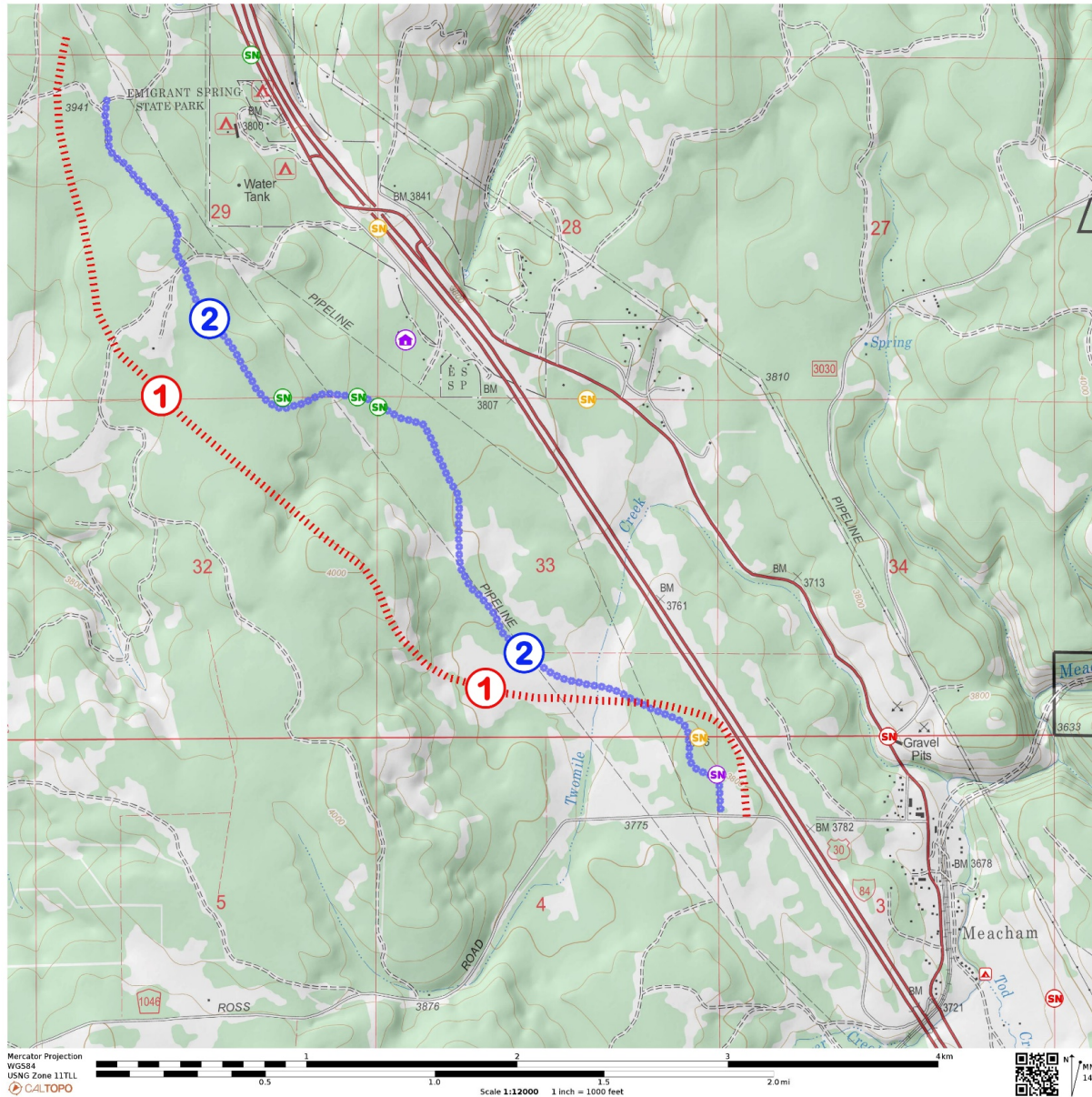
The three maps that follow are a comparison between the Oregon State Highway Department 1959 Sheet 5 Oregon Trail route, the LiDAR track from the National Park Service LiDAR image, the General Land Office maps for T1N-R35E (1887) and T1S-R35E (1882), and the Archer Butler Hulbert 1920 Meacham Map 47.

Figure 4-8 shows the OSHD 1959 Oregon Trail route as a red-barred line, marked with a red circular #1. The Oregon LiDAR road track is shown as a blue-hatched line, marked with a circular #2.

Figure 4-9 adds the 1882 T1S-R35E GLO Plat #4332 and the 1887 T1N-R35E GLO Plat #4329. The roads from these maps are marked with a blue-green circular #3. On the left, the Meacham Toll Road. On the right, the Emigrant Road.

Figure 4-10 adds the 1920 Hulbert Map 47. The Oregon Trail is depicted with a wide blue line, marked with a purple circular #4. The Foster Toll Road is depicted with a narrower blue line, marked with a green circular #5.

What is striking about Figure 4-10 is how closely some of the roads align with each other. A notable exception is the 1959 OSHD route, which does not align with any other roads except in the SE corner of Section 33 in T1N-R35E, NW of Meacham.



- ① 1959 Oregon State Highway Department route.
- ② LiDAR track from Ross Road north, past Westminster Woods.
- ③ General Land Office plat map roads.
- ④ 1920 Archer Butler Hulbert Oregon Trail route.
- ⑤ 1920 Archer Butler Hulbert Foster Toll Road route.

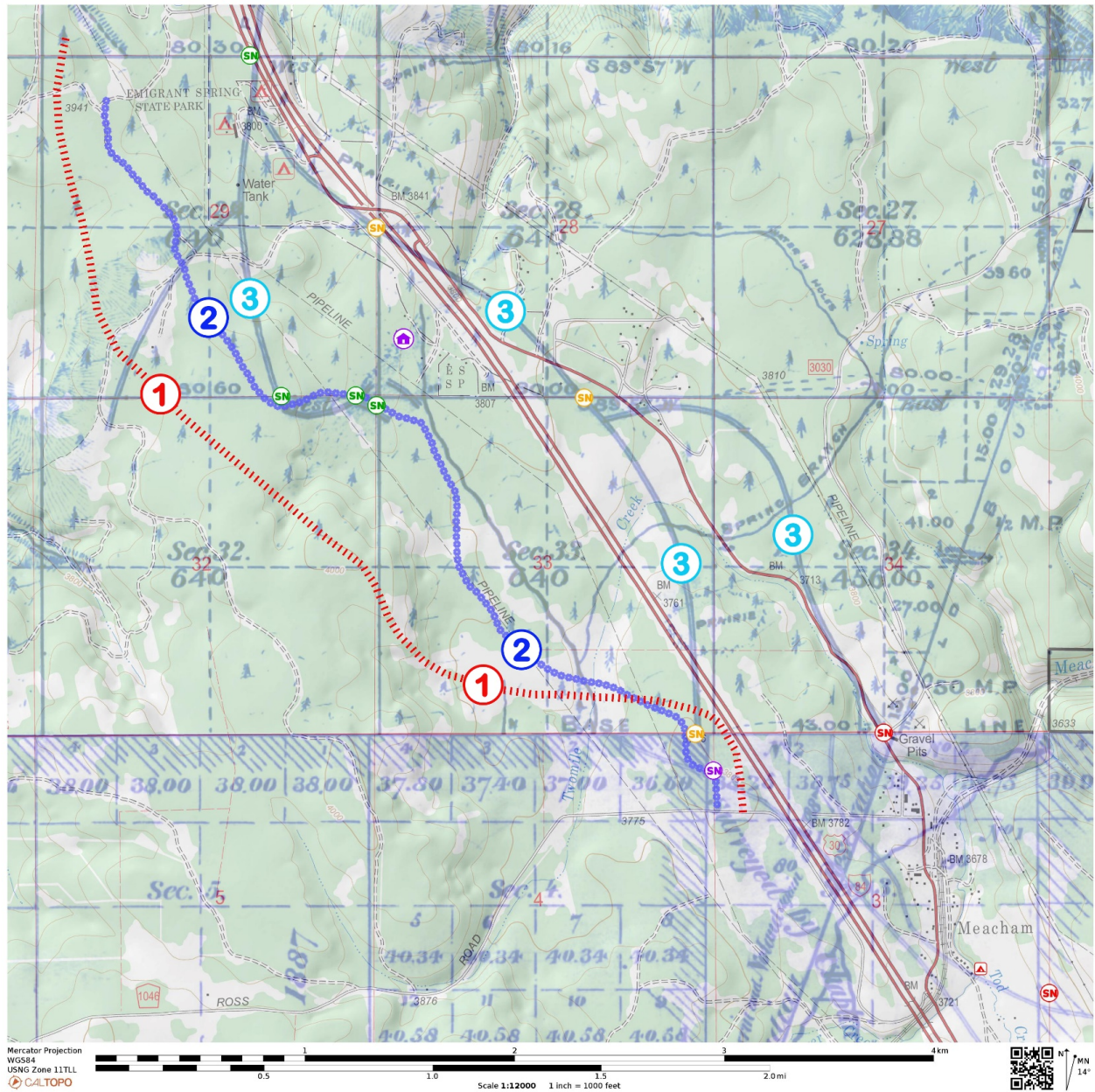


Figure 4-9. 1882 T01S-R35E and 1887 T01N-R35E Maps Added (3)

- | | |
|---|---|
| 1 | 1959 Oregon State Highway Department route. |
| 2 | LiDAR track from Ross Road north, past Westminster Woods. |
| 3 | General Land Office plat map roads. |
| 4 | 1920 Archer Butler Hulbert Oregon Trail route. |
| 5 | 1920 Archer Butler Hulbert Foster Toll Road route. |

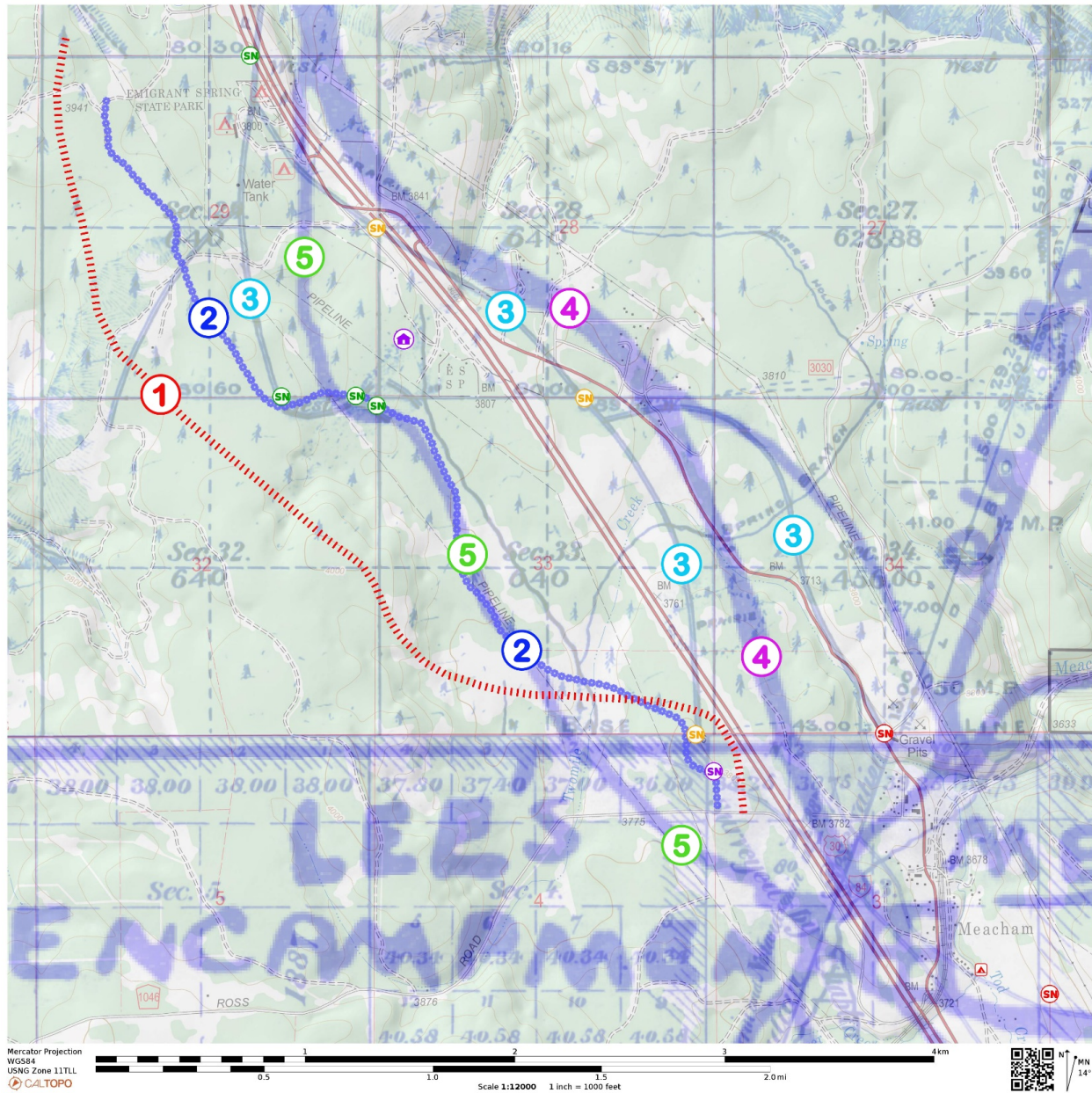


Figure 4-10. 1920 Hulbert Map 47 added (4 and 5)



- 1 1959 Oregon State Highway Department route.
- 2 LiDAR track from Ross Road north, past Westminster Woods.
- 3 General Land Office plat map roads.
- 4 1920 Archer Butler Hulbert Oregon Trail route.
- 5 1920 Archer Butler Hulbert Foster Toll Road route.

4.7 Conclusions from Historic Studies

While we cannot provide a definitive conclusion regarding the ruts at Westminster Woods, due to the limitations on our explorations and other factors (such as the proliferation of old logging roads in the area), we can indicate with some confidence what they are.

We considered the following when formulating our conclusion:

- The 1864 General Land Office survey map of Sections 3 and 10 in T01S-R35E and the accompanying surveyor notes by David Thompson and Daniel Chaplin.
- The 1882 GLO survey map of T01S-R35E and the surveyor notes by Rufus S. Moore.
- The 1887 GLO survey map of T01N-R35E and the surveyor notes by James Currin and James Noland.
- The high-resolution LiDAR map provided by Brian Deaton of the National Park Service.
- Our own exploration of the area, June 28 to July 1, 2021, including GPS and photo documentation.

The ruts on the Westminster Woods Church Camp property are obvious and substantial and go both north and south of the church property, totaling at least three miles. There are three 1887 surveyor note locations labeled “Old Stage Road” conforming to the location of the ruts on church property west of the Chapel Facility. How these ruts tie into GLO map roads on the north end is unclear, as we were unable to explore the private properties in that area. The ruts do seem to tie into GLO map roads on the south end near Ross Road where there is an 1864 surveyor note location for the “Toll Road from Umatilla to Grande Ronde,” and an 1887 surveyor note location for the “Pendleton & La Grande Wagon Road” (Number 1 on the Figure 4-5).

The 1864 “Toll Road from Umatilla to Grande Ronde” is the Meacham Toll Road built by Alfred and Harvey Meacham soon after their arrival at Meacham in 1862. Can this surveyor note location’s proximity to the LiDAR trace through Westminster Woods be a coincidence?

5. OCTA Field Surveys

5.1 Overview of 2021 Explorations

Our study area included the Westminster Woods Church Camp properties and adjacent areas, including Emigrant Springs State Park to the north and private properties to the south. From June 28 to July 1, 2021, we explored the area using Westminster Woods Church Camp as a base of operations. Our primary goal was to explore the road track on the property owned by the church, and, secondarily, to look for road ruts on adjacent private properties, especially the route documented by the Oregon State Highway Department in 1959. We felt it important to explore a wider area north and south of the Westminster Woods Church Camp to provide context to the trail ruts found on the church property itself.

The road track on the Westminster Woods Church Camp turned out to be quite extensive, extending for about a mile to the north and two miles to the south. Our exploration of this road track was greatly aided by its appearance on the LiDAR image provided by the National Park Service (see Appendix B). We were unable to fully explore the north end of the track as it was on private property that we did not have permission to enter. The south end extended to Ross Road, though our exploration of the south end was incomplete due to private property there, also.

Our explorations failed to reveal road ruts along the 1959 OSHD route. It occurred to us that this route might be identical to the LiDAR track shown below. If this is true, the highway engineers placed the route on their map well to the west of the road track we walked on June 30th, approximately 1,000 feet west at its closest approach in the Westminster Woods Church Camp area. Their route is also shown west of the pipeline corridor, while the LiDAR track is mostly east of the pipeline. It is difficult to imagine that they would make an error of this magnitude when placing the route on their map.

5.2 Description of Daily Treks

Each of the figures that follows shows the project area. The red hashed line approximates the route of the Oregon Trail as shown by the Oregon State Highway Department's 1959 map. The blue line is a trace that appears in a LiDAR image of the area.

5.2.1 OCTA Team Trek 1. Herbes Property

Figure 5-3, Tuesday morning, June 29, 2021. The red shaded area covers the property owned by the Herbes Family. The property was acquired about 1938. There is an extensive family pioneer history, but not on this property.

Mike Herbes led us around the area on Monday to show the routes and areas that his father and grandfather had identified as the emigrant trail and camping areas. We revisited the area on Tuesday to record sites. The purple dotted line is the OCTA field team route as recorded with GPS data.

In this area there are multiple open areas that would be suitable as emigrant camping areas. Their shape and size probably vary from that present in the mid-1800s, but they are indicative of what

might been present. Water and grass are available although we visited in late June while the emigrants would have been there in September or October.

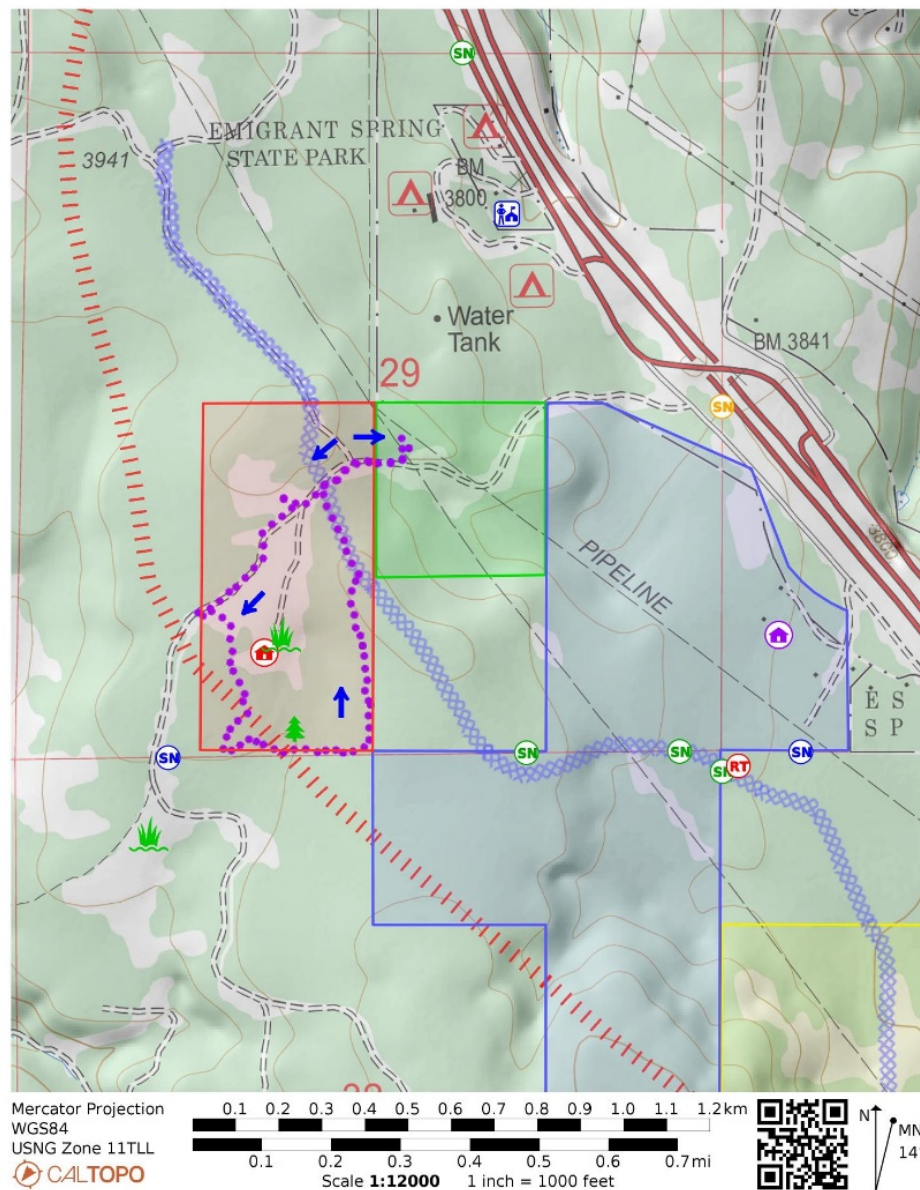


Figure 5-3. Trek 1 - Herbes Property (Red shading)

We attempted to verify the presence of the OSHD and LiDAR traces. No evidence of the OSHD1959 trace was found although the swale and track of the LiDAR trace was verified.

In this area there are multiple open areas that would be suitable as emigrant camping areas. Their shape and size probably vary from that present in the mid-1800s, but they are indicative of what

might been present. Water and grass are available although we visited in late June while the emigrants would have been there in September or October.

We attempted to verify the presence of the OSHD and LiDAR traces. No evidence of the OSHD1959 trace was found although the swale and track of the LiDAR trace was verified.

5.2.2 OCTA Team Trek 2. Westminster Woods property

Figure 5-4, afternoon, Tuesday, June 29. The second field exploration was primarily on the Presbyterian Church's Westminster Woods property. The route was chosen to verify the OSHD and the LiDAR traces within the Westminster Woods property. The LiDAR trace was verified while the OSHD trace was not.

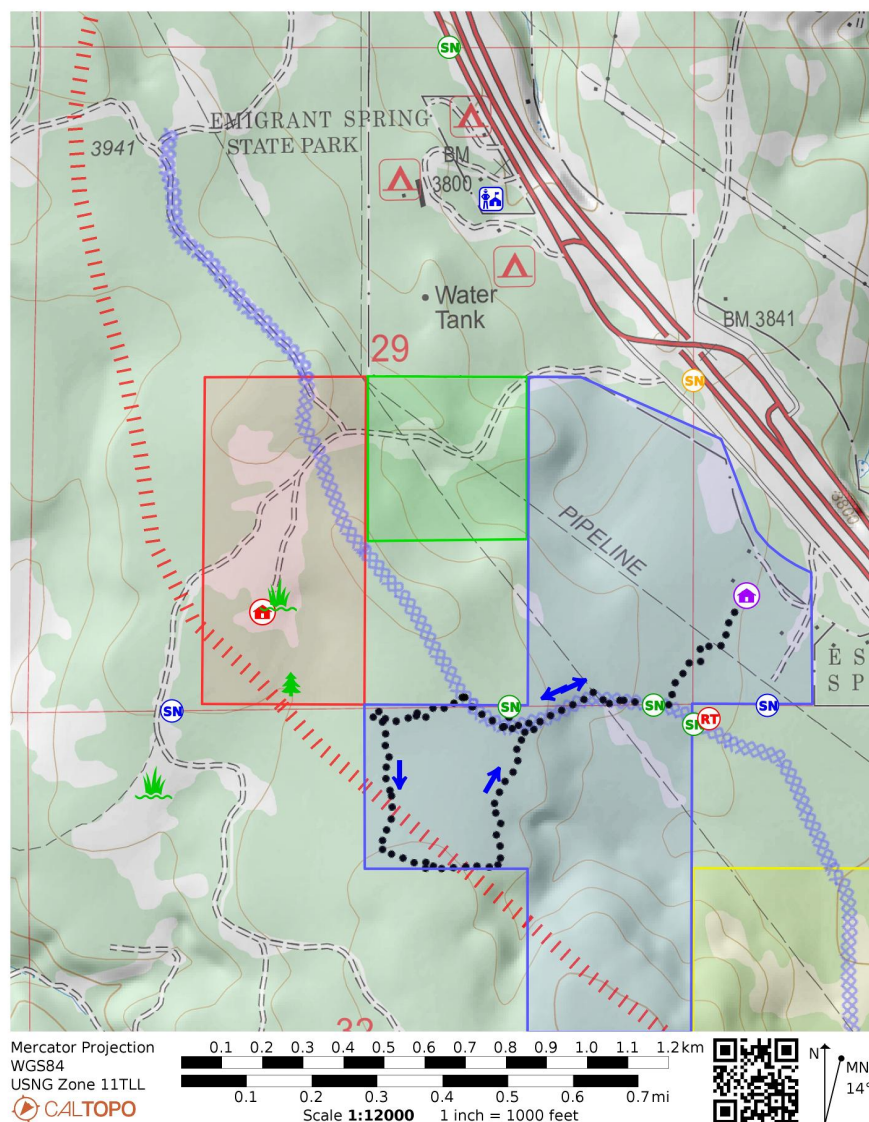


Figure 5-4. Trek 2 - Westminster Woods (Blue shading)

5.2.3 OCTA Team Trek 3. Lidar Trace to Ross Road

Figure 5-5, Wednesday, June 30 – LiDAR Trace South of Westminster Woods to Ross Road (Westminster Woods and Forest Recovery properties). The LiDAR trace of a road or trail from the church property to Ross Road was verified, but there was nothing to identify it as the “Oregon Trail.”

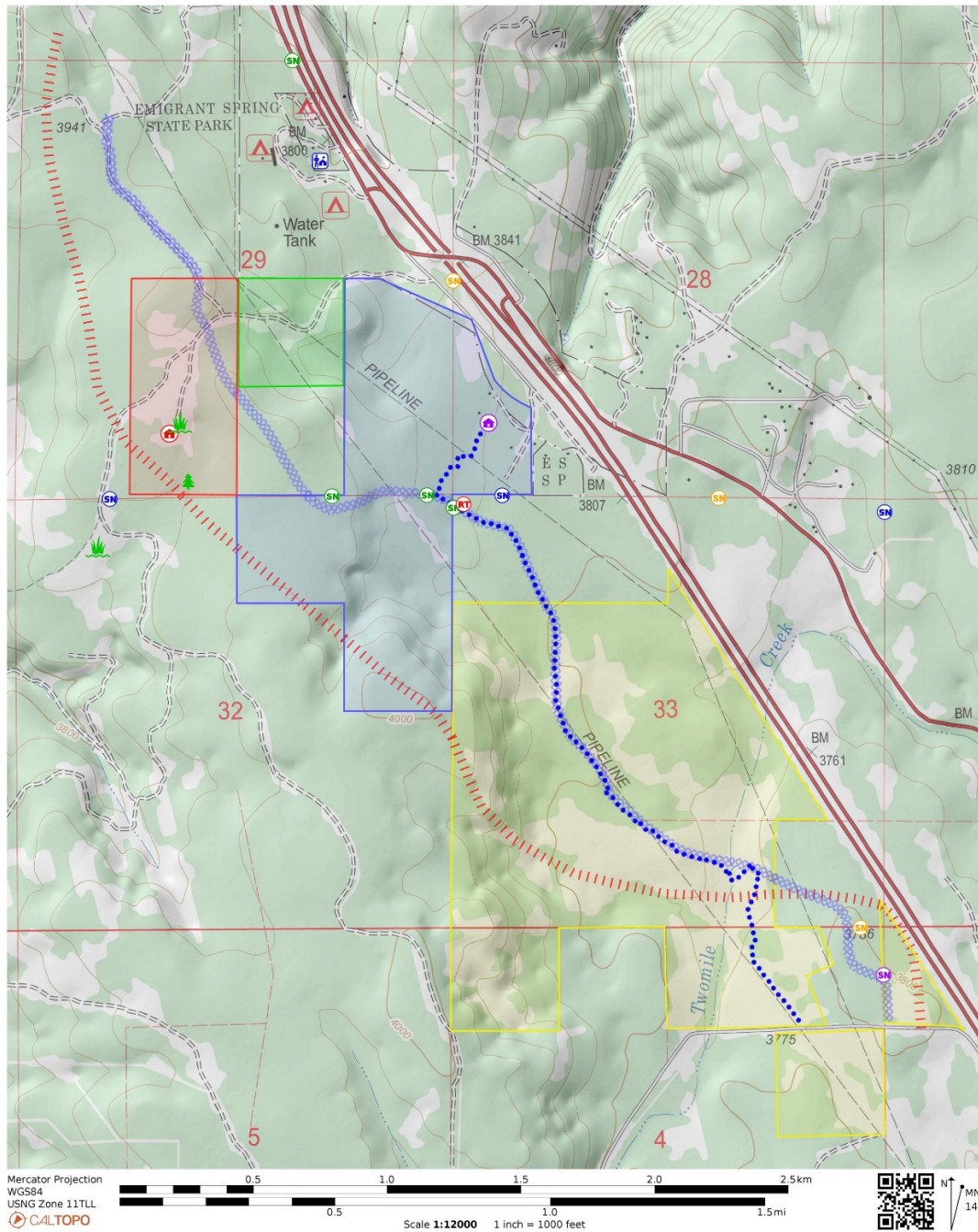


Figure 5-5. Trek 3 - LiDAR Track from Ross Road. Primarily Forest Recovery Property

5.2.4 OCTA Team Trek 4. Historic Trail Locations to Ross Road

Figure 5-6. Thursday, July 1 – Westminster Woods and Forest Recovery properties. The route taken on this day was designed to cross back and forth across the OSHD 1959 line as much as possible in order to maximize our chances of encountering road ruts. No trace of a road or trail trace corresponding to the OSHD 1959 line on historic maps was found.

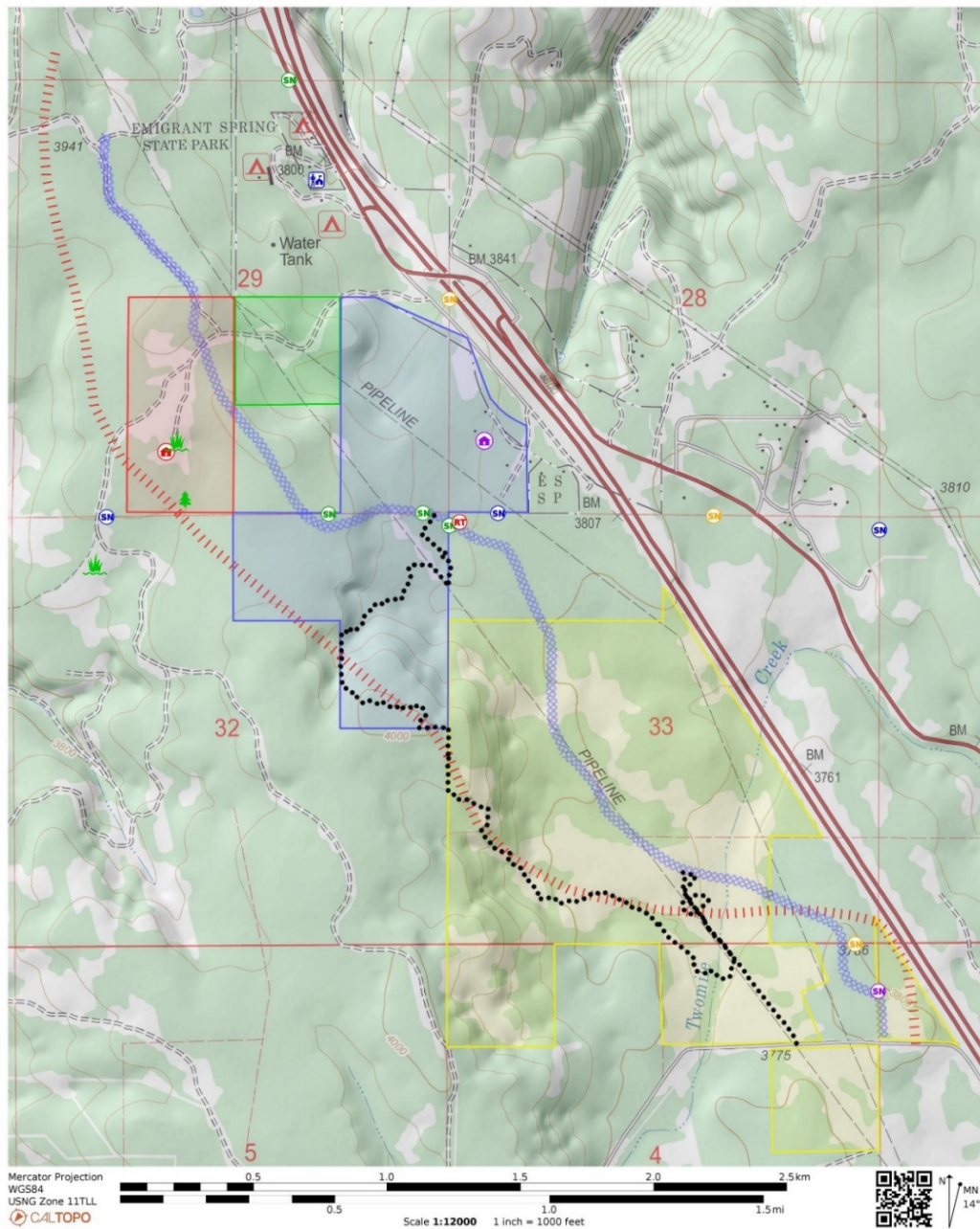


Figure 5-6. Trek 4 - Search for the ONHT from Historic Mapping.

6. Recommendations – Future Work

Future work should include:

1. Field surveys in areas not accessed that may contain remnants of OSHD1959.
2. Additional archival research at Oregon State Parks, Eastern Oregon State University, and other universities in the area to attempt to locate additional information used in the OSHD 1959 study.
3. Validation of the emigrant trail east of I84 and along old US30 from Meacham to the US30/I84 junction north of the Emigrant Springs State Park. This is primarily in Sections 33, 34 and 28 in T01N-R35E.
4. Metal detecting on the LiDAR trace, OSHD1959 and east of I84. Extensive undergrowth made the search for trail traces in the project area exceedingly difficult. Metal detecting for the purpose of identifying items would aid trail verification.
5. Other archaeological studies along trail routes.

Appendix A. Comments on Surveyors and Surveyor Notes

The 1864 surveyors, David Thompson and Daniel Chaplin, likely stayed at the Meacham Hotel while doing the 1864 survey. Read their description of the hotel in Figure A-1. Figure A-2 shows the surveyor notebook page indicating the location of the Toll Road on the section line between Sections 3 and 4.

It is of interest to note that David Thompson went on to become an Oregon State Senator 1866-72; Governor of Idaho Territory 1875-76; Oregon Legislature 1878, 1882, 1889; Mayor of Portland 1879, 1881; Elector and Delegate to the Republican National Convention 1884; Republican Candidate for Governor 1890; Ambassador to Turkey 1892-93; and ten years a Regent for the University of Oregon.

Daniel Chaplin staked a land claim in 1861 at what would become the town of La Grande and surveyed the town in 1862. In 1864 he was elected to the Oregon State Legislature. He became President of the Blue Mountain Consolidated Wagon Road Company, which was formed to manage the Meacham Toll Road after the departure of Alfred Meacham in 1869 and the death of Harvey Meacham in 1872.

General Description

The quality of the Land in this Township is very poor being situated on the Summit of the Blue Mountains. There is a little good Land along the creek that flows through the two sections and it could not be called more than $\frac{1}{2}$ ^{an} acre. The timber is small Spruce and Pine with a little Fir & Larch.

Near the South boundary of Section 3 is the only water on the Emigrant Road leading from Grand River Valley to the Valley of the Shumate in any season of the year and is known among the old Pioneers of Oregon as "Lee's Encampment". There is a fine Hotel at this place kept by "Mearsham Brothers" and large and expensive improvements have been made by them for the accommodation of travellers crossing the Blue Mountains.

Figure A-1. 1864 General Land Descriptions by Thompson and Chaplin

35 East Willamette Mission ⁶

chains North on a Ransom line between Secs 3 & 4
Variation 1930' East

4000 Set post for temporary 1/4 Sec corner

7900 Put out Base Line 981/20 East of corner

to Secs 3 & 4 from which corner Run

S 0° 42' East on a true line between Secs 3 & 4

9000 Toll Road from Umatilla to Grande
Ronde bears S E 8 1/2° N

3900 Set post for 1/4 Sec corner from which

(a line 12 in diam bears S 40° E 7 1/2° N 1/2

(a " 12 " " " N 10° W 45 " "

7900 The corner to Secs 3, 4, 9 & 10

Land gently rolling

Soil 3 1/2% rate Stony

Timber Small Spruce Pine &
Fir

May 1st 1864

Figure A-2. Surveyor Notes for the "Toll Road from Umatilla to Grande Ronde"

Appendix B. LiDAR Images

Figures B-1 and B-2 show the LiDAR images for the project area. These images were provided by the National Park Service using Department of Geology and Mineral Industries (State of Oregon) Data. The two images are identical except for the highlighting showing the trace identified as the toll road route. The light red and blue lines indicate boundaries of areas of interest, but are not directly pertinent to our identification of roads and trails through the area.

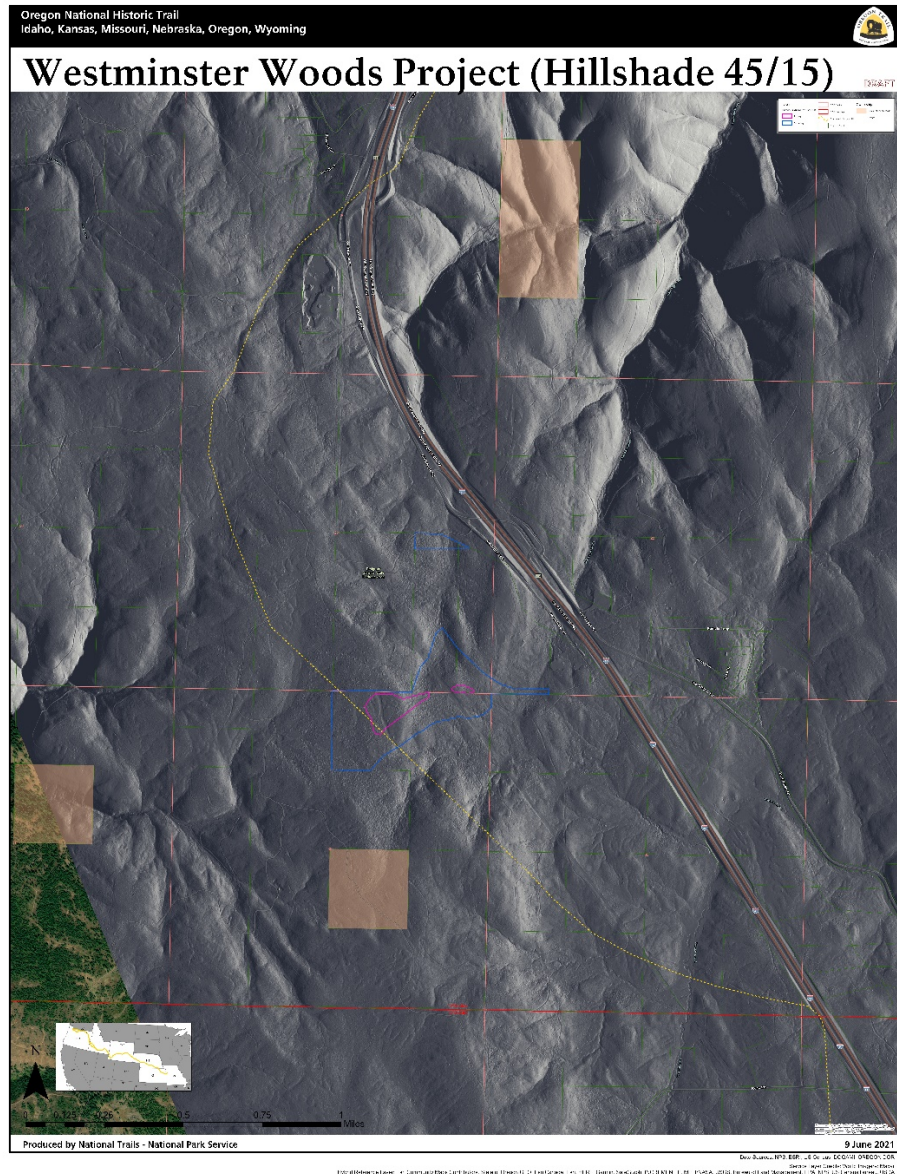


Figure B-1. LiDAR Image

B-1

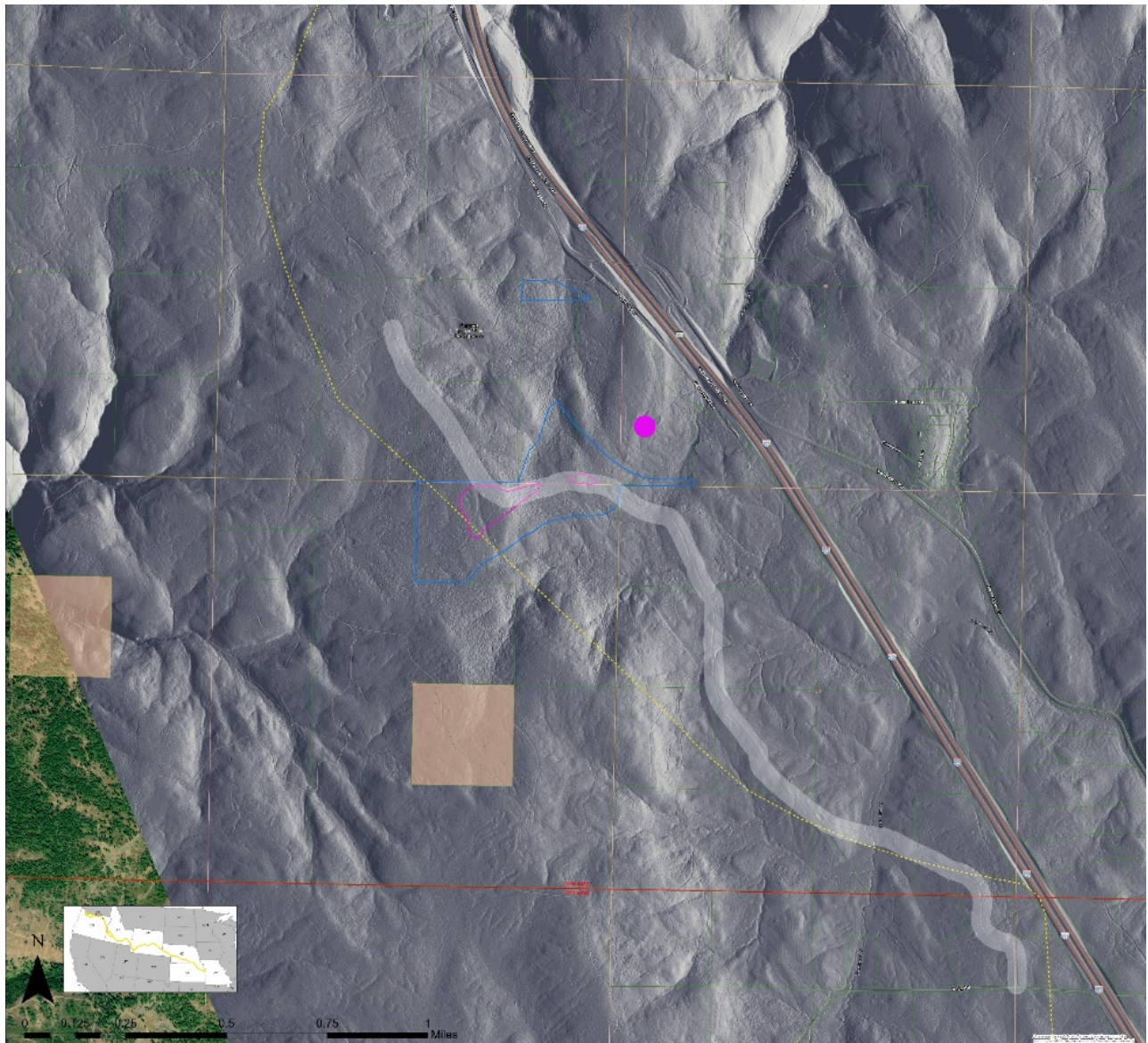


Figure 5-2. LiDAR Image with Highlighting

Appendix C. Statement of Work

In coordination with NPS, OCTA will convene a team of four to six experienced historic trail researchers with expertise in Oregon Trail history and wagon travel, who will define the project area to be surveyed and identify participating landowners.

The core study area consists of approximately 75 acres located west of Interstate 84 and north and west of Meacham, in Umatilla County, Oregon. Legal location of the core study area is Township 1 North, Range 35 East, Willamette Meridian sections 28, 29, 32, and 33. Other adjacent locations may be included at the discretion of the study team.

In coordination with NPS and participating landowners, the study team will conduct a systematic pedestrian survey of the study area to collect locational data and photographs of features of interest. No artifacts or objects will be collected and there will be no excavation, testing, or intentional disturbance of the ground surface.

The team will use historical information (e.g., Government Land Office plats, Department of Transportation mapping information, and other survey results), as well as publicly available areal/satellite and LiDAR imagery) and criteria provided by OCTA's Mapping Emigrant Trails Manual, as well as any other criteria that they deem useful, to determine whether any of the features are likely components of the Oregon Trail.

In coordination with NPS, the team will produce a written report that describes the project area, summarizes the use-history of the area, states the background of this project, identifies the research questions, describes field and analytical methodologies, lists participants and equipment used, describes the data and results of analysis, includes photos and maps as appropriate for communicating results, and provides a consensus opinion (and dissenting opinions, if any) regarding the origin and nature of the features. Other information may be included at the discretion of the researchers. The report will be shared with participating landowners. Locational data and selected imagery will be shared with NPS and adjoining state land managers.

Appendix D. Responsibilities of the Parties

Recipient Responsibilities

- The Recipient shall carry out the Statement of Work in accordance with terms and conditions stated herein. The Recipient shall adhere to Federal, state, and local laws, regulations, and codes, as applicable.
- The Recipient shall perform the following activities:
 - a. Convene a study team of experienced trail researchers. [Dave Welch]
 - b. Seek landowner permission to enter properties for the purposes of the survey. [Dave Welch and Mark Miller]
 - c. Conduct pedestrian survey and gather data and imagery. [Robin Baker, Stafford Hazelett, and team]
 - d. Compile data and conduct analysis and comparison with historical information. [Baker, Hazelett, Welch and others as needed]
 - e. Prepare and submit written report. [Dave Welch and team]
 - f. OCTA headquarters shall receive the supporting funds and disburse to the team members. [Travis Boley]

Appendix E. Participants

Participants included Westminster Woods staff, Emigrant Springs State Park staff, and Oregon-California Trails Association volunteers. Thanks to all for helping to complete this project.

Volunteer Field Team (Left to right)

Robin Baker
Jenny Miller
Steve Bingold
Frank Sadlon

Documentation:

David Welch – Overall documentation lead
Robin Baker – Lead for historical studies
Steve Bingold – Review and comment

Other participants:

Dave Welch – OCTA Mapping Committee
Mark Miller - Manager, Emigrant Springs State Park
Brenda Garrick - Emigrant Springs State Park
Dave Powell - Westminster Woods
Lee Kreutzer - National Park Service
Steve Jenevein – Oregon SHPO Office
Travis Boley – OCTA Association Manager



Photo by Robin Baker. Frank Sadlon, Jenny Miller, David Warren, Lee Kreutzer, Brenda Garrick, Mark Miller, Dave Welch