

Abandoned Rails to Nowhere?

The Houseworth Alameda Cañon Stereograph Series: When? What? Why? Who?

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At his large Montgomery Street optical shop in San Francisco, Thomas Houseworth was seeing brisk sales in 1869 of stereo cards — stereographs, each mounted on stiff cardboard, such that when placed and viewed in a special handheld viewer, the scene would pop into stunning three dimensions. A particular series of 24 stereo cards he would sell under catalog numbers 1511–1534 (herein, the *Series*)² shows an old railroad, crossing three varied-looking bridges over a scenic creek, winding through Alameda Cañon (now Niles Canyon).³



Fig. 1. Card 1517: *First Bridge, Alameda Cañon, Central Pacific Railroad*, is one of the Series' 24 stereo cards. The only known surviving complete Series is the set of 24 half stereographs held at the Society of California Pioneers; see footnote 2 below. Stereo card 1517 courtesy of DeGolyer Library at the Southern Methodist University.

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² The Series is held as half stereographs in the Lawrence & Houseworth albums at the Society of California Pioneers, which can be viewed online through Calisphere, the University of California's digital collection <https://calisphere.org/collections/12547/?q=&sort=a&rows=48&start=96&rq=alameda>

³ Alameda Cañon is the period terminology used in the captions of the Series' stereographs and much of the period newspapers and writing, including Henry Root's memoir. This terminology is thus adopted here to reflect the period. Quotations from primary sources, however, retain the varying degrees of anglicization used in the various sources.

Available now for over a century and a half, this Series has surprisingly not been dated precisely and remains a puzzlement. Without a date, a stereograph is just a stunning 3D picture without context. With a date, the Series becomes a witness of history with a story to tell.

When was the Series taken? The present paper aims to pin the Series' date down to a narrow window. How? By asking what clues the photographs themselves can reveal when compared with the primary historical record. Four independent clues are thus found: the visible blooming California buckeye, the inflection in the road above the horseshoe curve, the intact Vallejo's Mill trestle flume, and the varied appearance of the bridges. The clues differ in strength and none alone fixes the date. Taken together, they reduce the likely dates to a narrow window in late Spring 1869 — several weeks in May to early June, and definitely not after the early-June arrival of two large Chinese construction corps to rework the old railroad in Alameda Cañon.

What is the Series about? The narrow dating window places the Series at a specific time of transition. It documents the Western Pacific road, dormant since 1866, likely being refreshed and its bridges under repair in late Spring 1869, just before early June when it was to be transformed by two Chinese construction corps as the core link of the Central Pacific's final leg from Sacramento to the Pacific, also as the San José branch with rail access to San Francisco, while awaiting a June 11th federal inspection of the old road. The Series literally made visible a historically crucial, usually invisible, transition phase.

Why was the Series made? The Series' mixed character — most of its stereographs are systematic documentation of track and bridges, but a handful are simply scenic creek views — suggests that the Series served two purposes at once: both official record (maybe for a federal inspection that took place on 11 June 1869) and items for sale in Houseworth's shop.

Who took the Series' stereographs? A specific person was suggested previously in 1996 — Alfred A. Hart, Central Pacific's official photographer — but that suggestion was thwarted by the then-assumed Series' date of early Fall 1869. The current date of late Spring 1869 removes that difficulty and makes Hart's authorship possible, though still unconfirmed.

The following sections lay out the evidence in full. Section 1 traces the Western Pacific railroad's tangled sequence of change from 1865 to 1870 — its money troubles, abandoned construction corps, unlikely revival, transformation and completion — in order to understand the photographs. Section 2 then walks through the dating argument in detail, examining each clue in turn. The next three sections utilize that dating window and the historical record to interpret: What the photographs show (Section 3); Why they were likely made (Section 4); and Who may have made them (Section 5). Finally, Section 6 steps back to consider the larger significance this research adds to the region's history; to the narrative of the Chinese builders; to later regional commemorative memory (case in point: the Niles marker); and to photographs elsewhere.

Section 1: Primary Historical Record, 1865-1870

Upon the signing of the amended Pacific Railroad Act by President Abraham Lincoln in March 1865, the charter for the final leg west of Sacramento of the Pacific Railroad, proposed from the Missouri river to the Pacific ocean, was officially re-assigned from Central Pacific Railroad Co. to Western Pacific Railroad Co. (1862-1870), hereinafter WPRR.⁴ At that time, the final leg of the Pacific Railroad was proposed as starting from San José, through Alameda Cañon (now Niles Canyon) and Livermore Pass to Stockton and then to Sacramento, with rail access to San Francisco provided at San José by the *San Francisco & San José Railroad* completed in early 1864. At Sacramento, the WPRR final leg would connect with the proposed trunk line to the Missouri river, thus providing rail access from San Francisco to the Missouri river and the eastern states. To receive the federal aid provided by the Pacific Railroad Act, WPRR had to complete 20 miles of railroad by July 1866, which had to be extended later.

Construction of the WP's final leg started in San José, led by Jerome B. Cox & partner, who reported to Charles McLaughlin, WPRR's general contractor. The construction corps of Cox & partner, some 600 Chinese strong, graded northward from San José and approached the mouth of Alameda Cañon in June 1865. From there, they had about three more miles to go before reaching the 20 miles from San José needed for federal aid.

In early August 1865, WPRR's president, Judge Timothy Dame, reported to the San Joaquin county Board of Supervisors that the Cox corps had reached the last mile of the first twenty miles and were excavating rock, working night and day: *"A force of nine hundred men are now employed on the road, have reached the last mile of the first twenty, and are engaged in excavating rock, working night and day shifts. On that part of the road where the workmen are at present employed, the excavation is by far the most difficult and tedious of any along the entire route,..."*⁵ *"It is really an imposing spectacle to see this great force of men prosecuting their labors by night by the light of thousands of fires kindled along the line of the road,"* exclaimed the *San Francisco Flag*.⁶ *"It seems incredible the quantity of solid rock they blast from its ancient bed; the forests they fell; the hollows they make level; the cuts they make in the mountain's side; the cañons they bridge; the change they make in the face of nature in a few days!"*⁷

⁴ "Amendatory of the Pacific Railroad Act", *Sacramento Daily Union*, Vol. 29, No. 4384, 10 April 1865

⁵ "Western Pacific Railroad", *Stockton Independent*, Volume IX, Number 5, 5 August 1865

⁶ "The Pacific Railroad", *San Francisco Flag*; reprinted in *Shasta Courier*, Vol. 14, No.23, 5 August 1865

⁷ *ibid.*

Shortly after, in late August 1865, Charles N. Fox was elected WPRR's president.⁸ By September, the bridges were almost ready for spanning: *"The abutments, which are of the strongest and most approved masonry, will be ready for spanning in a few days".*⁹

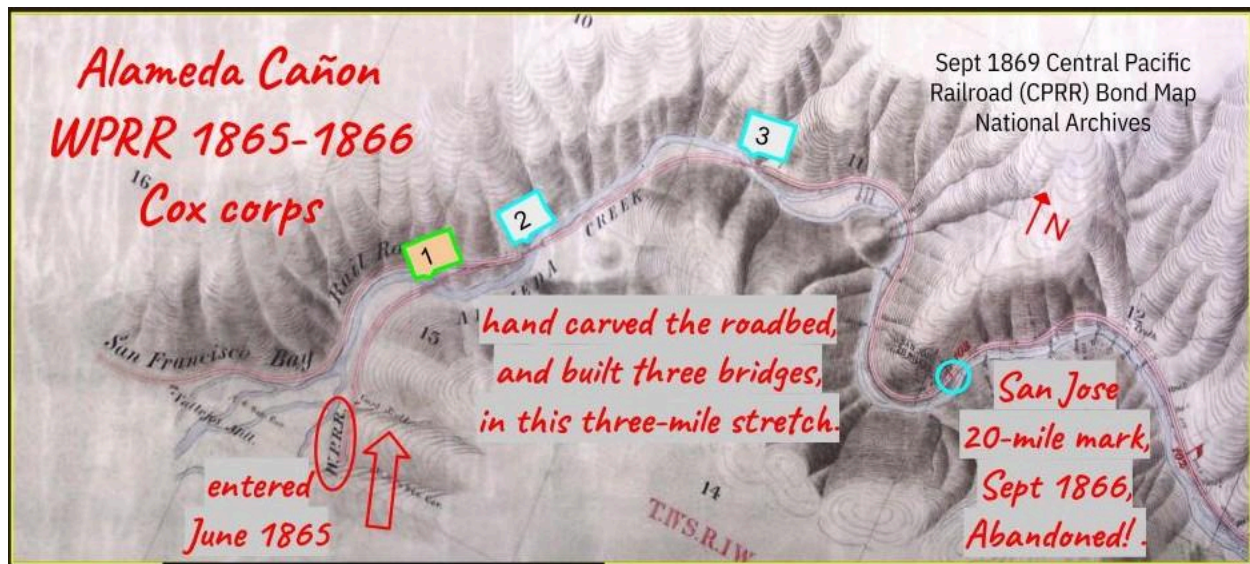


Fig. 2. Cox corps in Alameda Cañon from June 1865 to September 1866. They built three bridges (1, 2, 3 above) and hand carved all the fills and cuts needed to shoehorn a smooth roadbed for a mainline railroad into the twisty Cañon up to the 20-mile mark (circle). Alameda Cañon continues to the East (right) for a mile and a half before reaching Sunol valley. 1869 CPRR Bond Map, National Archives at College Park, Maryland, courtesy of Randy Hees.

But in mid-October 1865, work stopped abruptly in Alameda Cañon: *"Cox, the contractor, issued an order to his foremen to discharge all hands except those engaged upon the abutments and bridges".*¹⁰ With an anticipated four month delay in American iron needed for the Cañon tracklaying, the grading corps was dismissed because *"that part of the work [was] far in advance of the iron"* and it was *"unnecessary to spend all the money for grading".*¹¹ With the bridge work in the Cañon conducted steadily, by the annual January 1866 WPRR meeting, *"One thousand feet or more of heavy bridging [were] constructed, some of the bridges being thirty-five feet above the water".*¹²

The Daily Alta California (September 1866) reported that *"the three bridges in the cañon are built in excellent style, but that the cuttings are so steep in places that there will probably be landslides during the wet season".*¹³ The San Francisco Bulletin (October 1866) observed:

⁸ "RAILROAD ELECTION", Times Gazette, Volume VII, Number 22, 26 August 1865

⁹ "Progress of the Western Pacific Railroad", Sacramento Daily Union, Vol. 30, No. 4524, 21 September 1865

¹⁰ "Work stopped", Sacramento Daily Union, Volume 30, Number 4553, 25 October 1865

¹¹ "The Western Pacific Railroad", Daily Alta California, Volume 17, Number 5731, 14 November 1865

¹² "Western Pacific Railroad Company", Daily Alta California, Volume 18, Number 5786, 11 January 1866

¹³ "The Western Pacific", Daily Alta California, Volume 18, Number 6036, 20 September 1866

“Included in this section are three miles of the heaviest and most expensive work required upon the whole line. There are three bridges of the Howe truss pattern, ranging from 320 feet to 360 feet in length, with stone abutments and piers, and constructed throughout in the most substantial manner”.¹⁴

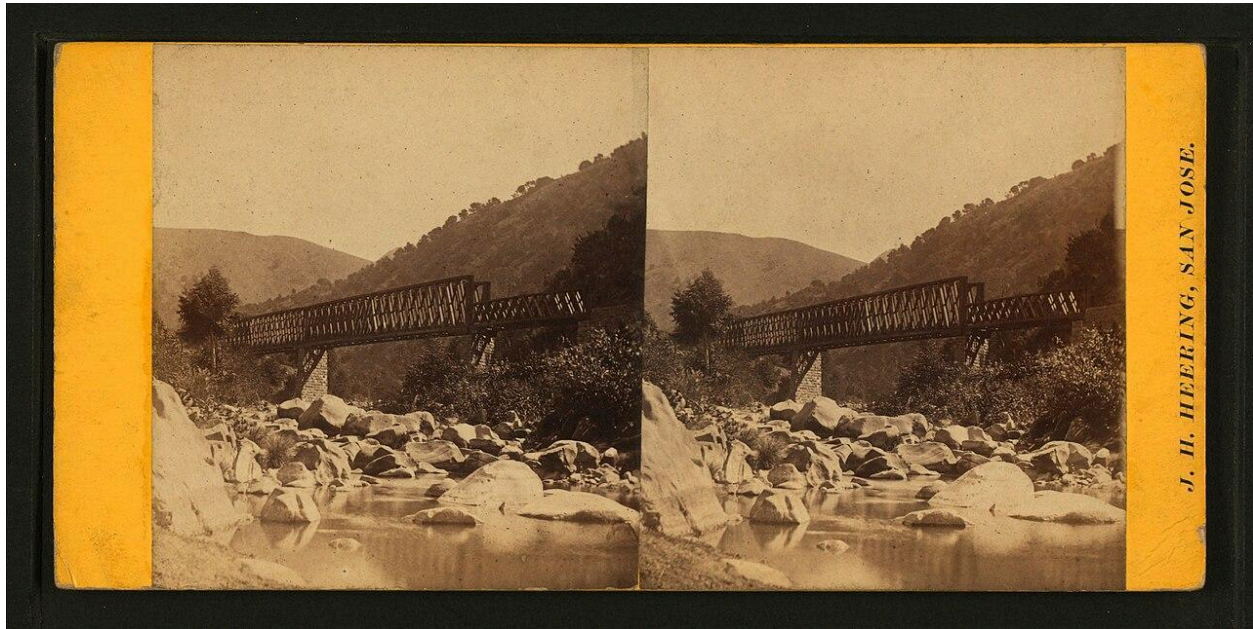


Fig. 3. Third (Farwell) bridge in Alameda Cañon is one of three Howe truss bridges with stone abutments and piers. Built in 1866 by the Cox corps, all had no covers, as shown above for the third bridge. Dated as 2 October 1866 by Randy Hees in “The WPRR Photographs of J. H. Heering, San Jose,” this stereo card is not part of the Houseworth Alameda Cañon Series. Stereo card courtesy of the Robert N. Dennis collection, N. Y. Public Library, public domain.

First hints of possible financial troubles for the San Francisco-based WPRR appeared in early March 1866 in a report to the Board of Supervisors of San Joaquin county: *“There has been a very large amount of money spent already in the grade, masonry and bridges”*, and WPRR’s McLaughlin said he regrets that he had to start *“at the heaviest end of the road”*.¹⁵ Furthermore, the shortage of Chinese builders because of competition from the Central Pacific Railroad and the shortage of American iron due to the Civil War greatly delayed operations in the Cañon during Spring and the languishing Summer of 1866. Cañon tracklaying proceeded in September. Finally, on Saturday, 29 September 1866, WPRR notified California’s Governor Low that *“twenty miles of the road from San José toward Stockton had been finished”*.¹⁶ Upon completing 20 miles,

¹⁴ “Western Pacific Railroad”, SF Bulletin; reprinted in Sacramento Daily Union, Vol. 32, No. 4848, 11 October 1866

¹⁵ “Supervisors’ report ... Western Pacific Railroad”, Stockton Independent, Volume X, No. 36, 14 March 1866

¹⁶ “Notification. — Governor Low”, Sacramento Daily Union, Volume 32, No. 4839, 1 October 1866

Cox abandoned his corps of Chinese builders, didn't even pay them their wages due for recent labor, and filed suit against McLaughlin for his own payment due.¹⁷ WPRR had run out of money.

After being notified, Governor Low joined two other commissioners — Josiah Johnson and A. M. Crane, both of Alameda — on 2 October 1866 to inspect the 20 miles of railroad from San José to Alameda Cañon and found that twenty miles “*has been satisfactorily completed and is in running order*”.¹⁸ Hoping that the bonds would be issued soon, WPRR ran excursion trains daily during October and part of November into the Cañon to the middle of nowhere.¹⁹ But the commissioners' report was not received by the U. S. Department of Interior until December 2nd,²⁰ the delay due perhaps to administrative processing or Mexican land grant issues. Although \$320,000 of bonds were issued to WPRR no later than 12 February 1867,²¹ it was too late to save it. WPRR had collapsed, and the road was left to deteriorate.

In Spring 1867, under the lead of Judge E. B. Crocker and Leland Stanford, Central Pacific (CP), reluctantly with no money transferred, absorbed the moribund WPRR; recovered the franchise to build the final leg of the Pacific Railroad; and redirected WP's assets to its main work in the high Sierras.²² Later that September, Stanford led his Associate Charles Crocker and Chief Engineer Samuel Montague to show them the projected WP line, from Sacramento to Alameda Cañon, so that Montague would be able to plan the engineering and construction details.²³ In December of the same year, the WPRR Chinese builders won their class action lawsuit for over 1,800 man-months of back pay against Cox *et al.*²⁴

After CP's army of Canton pierced the granite of the Summit Tunnel at Donner Pass, CP restarted work on the WP line in February 1868, but beginning at the east end near Sacramento. Even so, the Sacramento-based WP remained a side line to CP's main effort to lay as much track as possible towards Utah. In April 1868, CP acquired the Oakland waterfront as a western rail terminus. The old WP road, however, remained dormant in Alameda Cañon throughout 1868.

The fate of the old dormant WP Alameda Cañon road hung on the balance in January 1869, when Henry Root's surveyor team was sent to Dublin to run a new route from Pleasanton

¹⁷ “Cox vs. McLaughlin”, Daily Alta California, Volume 42, No. 14125, 2 May 1888. The suit was filed in September 1866 in the 15th District Court and was finally adjudicated in 1888 before the California Supreme Court.

¹⁸ “The Commissioners report...”, Sacramento Daily Union, Volume 32, Number 4847, 10 October 1866

¹⁹ “The Western Pacific R.R.” Times Gazette, Vol. 8, No. 30, 20 October 1866; “Marching on”, Stockton Independent, Vol. XI, No. 86, 8 November 1866

²⁰ “Department of Interior”, Sacramento Daily Union, Vol. 32, No. 4914, 27 December 1866

²¹ “New York, February 12 — The Secretary of the Treasury”, Wilmington Journal, Vol. 3, No. 15, 23 February 1867

²² Tutorow, Norman E., *The Governor: the life and legacy of Leland Stanford* (Arthur H Clark, 2004) pages 259-261

²³ Bain, David Haward, *Empire Express* (New York: Penguin Group. 1999) pages 335-339, 407-408

²⁴ “Verdict: Ah Ying et al. vs. J. B. Cox et al.”, Sacramento Daily Union, Vol. 34, No. 5219, 19 December 1867. In contrast to Cox vs. McLaughlin, which took over 20 years to adjudicate, this lawsuit was quickly settled by a jury in district court. They were awarded \$64,434.71, but probably never collected as Cox was ensnared with McLaughlin.

to Haywards that would bypass and save nine miles from the Alameda Cañon route further south.²⁵ *“However, a few days on the Dublin hill made it certain that there was no advantage in such a cut-off route over the Niles [Alameda] Cañon route and we had an order to abandon the trial line.”*²⁶ In mid-February, Stanford assured Mayor Samuel Merritt of Oakland that the company will “run a line to Oakland” as so contracted.²⁷ About the same time, a construction update indicated that, although several surveys had been done, the route from Livermore Valley to Oakland was yet to be adopted.²⁸

When the Alameda Cañon route was finally settled after mid-February, Henry Root’s party was sent to survey the final location of the new line from the future San José junction in the Cañon towards Oakland: *“Early in 1869, Guppy’s party, of which I was [the] transit man..., obtained a boarding place at Capt. Scott’s house near Vallejo’s Mill and went there to commence the final location from the junction point on the old Western Pacific line about a mile above the mill to Oakland. The line, at the start, was on steep hillsides and followed generally the line of the wood flume carrying water from Alameda Creek to Vallejo’s Mill.”*²⁹ Once CP settled in early 1869 on the new Alameda Cañon mainline alignment, the second and third bridges became long-term mainline structures, whereas the first bridge and the San José junction in the confined Cañon (see 1869 map in Fig. 2, page 4: the San José junction is between the first and second bridges on the WPRR and the new line to Oakland is called *San Francisco Bay Railroad*) were deemed temporary, superseded later by a new junction and bridge near Vallejo’s Mill in the valley.

Later, when CP’s army of Canton was within fourteen miles of Promontory Summit, CP issued a dispatch from the railroad front dated 27 April 1869 announcing that the company had *“discharged and sent west nearly 2,000 men.”* The communique went on to say: *“In a month or six weeks, others, with many of the teams, will be sent to the Western Pacific, on which line the Company will concentrate all the force that can be used. They will put the road through from Stockton to Oakland by the end of the year.”*³⁰ In other words, CP expected WPRR to be its main line of business by the end of May or early June.

It was only after Stanford tapped the gold spike at the 10 May 1869 Promontory Summit ceremony, signalling to a waiting nation anticipating the completion of the trunk line from Sacramento to Omaha, that any news about the railroad in Alameda Cañon surfaced. On Saturday, 22 May 1869, at the end of a lengthy article about his visit to the railroad operations at Livermore Pass, the editor of the *Alameda Gazette* added one sentence to document the

²⁵ “New Route”, *Sacramento Daily Union*, Volume 36, Number 5546, 5 January 1869

²⁶ Henry Root (1921), *Surveyor, Engineer and Inventor: Personal History, 1845-1921*, San Francisco, Calif. page 16

²⁷ “Western Pacific Railroad terminus”, *Daily Alta California*, Volume 21, Number 6907, 15 February 1869

²⁸ SF Bulletin, reprinted in “Western Pacific Railroad,” *San José Weekly Mercury*, Vol. XVI, No. 40, 18 February 1869

²⁹ Henry Root (1921), *Surveyor, Engineer and Inventor: Personal History, 1845-1921*, San Francisco, Calif. page 17

³⁰ “Central Pacific Railroad Matters”, *Sacramento Daily Union*, Volume 37, Number 5644, 29 April 1869

rehabilitation of the dormant railroad in Alameda Cañon: “A gang of men are at work in Alameda Canyon,³¹ repairing the bridges, and men are also at work putting the track already completed between Vallejo’s Mills and San José, in order”.³² Vallejo’s Mill, a flour mill of local prominence, stood about three miles west of the San José 20-mile mark, on the west side of the Cañon away from the WPRR approach from San José (see map in Fig. 2, page 4). As the nearest named place familiar to a general readership, it was likely used to identify the end of track in the middle of nowhere that would otherwise require reference to an internal railroad milepost.

The following month, after almost a three-year hiatus, construction activity returned to Alameda Cañon and with vigor. WP had become CP’s main line. On Friday, 4 June 1869, James Harvey Strobridge left Sacramento, by the steamer *Yosemite* with a number of men, horses, grading and camp tools, to build a main line to the projected rail terminus at Oakland from a new junction in Alameda Cañon with the 1866 WP road, about 100 yards above the eastern end of the first bridge. Once there, “the first move was to tear out the whole flume along the hillside [to Vallejo’s Mill] and get the grading done as soon as possible and then to build a new flume on the lower side of and about parallel with the railroad line”.³³ Also in early June, Turton, Knox & Ryan, the contractor at Livermore Pass, “detached a large number of their men from the Livermore Pass vicinity and set them grading and tracklaying on the lower end of the road, commencing twenty miles from San José, at the end of the section completed by the former owners of the franchise, and working up Alameda Canyon into Livermore Valley”.³⁴ In June 1869, the Strobridge corps (about 600, mainly Chinese) was working from the San José junction in the Cañon westward towards Vallejo’s Mill; while from the junction up the Cañon only about 2.3 miles away, a Turton, Knox & Ryan corps (hundreds, largely Chinese) was working from where the Cox corps stopped near the 20-mile mark eastward towards Sunol valley — a vigorous reactivation of construction in the Cañon corridor.

Furthermore, on June 8th, the east segment of the WP line, from Sacramento southward to the San Joaquin river, was the subject of a federal progress inspection. “*The Special Commission appointed by the Government to examine the Pacific Railroad, consisting of Colonel Williamson, of the United States Engineer Corps; Hon. Sherman Day, United States Surveyor General of California; and Lloyd Tevis, of San Francisco, accompanied by ex-Governor Stanford, President of the Central Pacific Railroad Company, and Josiah Johnson, Superintendent of the Sacramento Valley Railroad, paid a visit to the Mokelumne river, on the Western Pacific Railroad,*

³¹Quotations from primary sources retain the varying degrees of anglicization as well as the different stylistic conventions and varying local period terminologies used in the various primary sources.

³² Alameda Gazette of 22 May 1869, excerpted in “Western Pacific Railroad”, Stockton Independent, Volume XVI, No. 99, 26 May 1869; also Marysville Appeal, Volume 19, Number 125, 28 May 1869

³³ Henry Root (1921), *Surveyor, Engineer and Inventor: Personal History, 1845-1921*, San Francisco, Calif. page 17

³⁴ “Again in the Field — The Western Pacific Railroad”. Sacramento Daily Union, Vol. 37, No. 5676, 5 June 1869

yesterday [June 8], a special train being provided for their accommodation.” From there, they traveled by wagon southward to the San Joaquin river at Mossdale. *“The party returned in the evening [about 10 p.m.], and as we learn, express themselves well pleased with the manner of construction of the Western Pacific Railroad”*. In regard to the construction, the Sacramento Union had the following: *“We are told that ex-Governor Stanford stated that the entire road from Sacramento to San Francisco, will be completed by the middle of August”*.³⁵

Three days later, on June 11th, two of the commissioners paid an official visit to the old 1866 WP road, from San José to the 20-mile mark. *“From the mouth of the cañon to San José the road has been put in running order, and on Friday last [June 11] we met at the mouth of the cañon Commissioners Sherman Day and Colonel Williamson, who, with Engineer Bender, were making the official examination of the road”*.³⁶

The topography of the old WP road requires careful attention (see map in Fig. 2, page 4). Captain Scott’s ranch lay just south of the Cañon entrance, at the point where the WP road passed from open country into the confined corridor of Alameda Cañon. This threshold — the mouth of the Cañon as contemporaries called it, approached from the San José direction — is the geographic reference point for the newspaper’s account of the June 11th inspection quoted above. From the Cañon mouth, the WP road ran about three miles through the Cañon interior, passed across three bridges and through the horseshoe curve, to the San José 20-mile mark. This was the road under official examination on 11 June 1869.

Thereafter, the construction of the Pacific Railroad’s final leg, from Sacramento to San Francisco bay, continued relatively unabated.³⁷ Upon the opening day of the State Fair in Sacramento, Monday, 6 September 1869, the first through train left Sacramento and crossed the Mossdale bridge where the last rail was laid. When the train arrived in the Cañon, it traversed and validated all 20 miles of the refreshed 1866 WP rails. Specifically, in the Cañon the entire train traversed the core link from the San José 20-mile mark to the San José junction; at the junction one part of the train switched off and traversed the branch to San José, while the rest of the train, with Stanford on board, continued on the new line to the finish at Alameda wharf on San Francisco bay.³⁸ The Pacific Railroad from the Missouri to the Pacific was finally done.

Eight months later, the San José junction in the Cañon corridor, along with the first bridge and its approach, were decommissioned on 28 April 1870, in favor of a new Niles junction and bridge in the spacious valley just west of Vallejo’s Mill, which were inaugurated the same day.³⁹

³⁵ “Official Visit”, Sacramento Record (9 June 1869), reprinted in Stockton Independent, Vol. 16, No. 112, 10 June 1869. Also “Western Pacific”, Sacramento Daily Union, Vol. 37, No. 5679, 9 June 1869

³⁶ “Progress in the Western Pacific Railroad”, Daily Alta California, Vol. 21, No. 7021, 17 June 1869

³⁷ See e.g., “Building Alameda Cañon’s first iron road”, Washington Township Museum of Local History, 2023

³⁸ *ibid.*

³⁹ “A tale of two junctions: the birthing of Niles”, Washington Township Museum of Local History, December 2020

Section 2: Date of the Series (When?)

The literature contains two brief considerations of the date of the Series. Peter E. Palmquist, in his authoritative reference work on Lawrence & Houseworth, catalogs the stereographs known to be published by Lawrence & Houseworth or Houseworth & Co., and situates the Series of interest here within the much larger Houseworth WPRR 1466-1568 series. On the date of the Series, he offers: “*Dating is uncertain, but probably no later than 1871*.”⁴⁰ Mead B. Kibbey, in his book on Alfred A. Hart’s railroad photography, notes that the Houseworth WPRR views share stylistic and compositional characteristics with Hart’s documented CPRR work. He then goes on to write: “*The dry vegetation, progress of construction, and coats worn by the few men depicted [in the Houseworth WPRR series] would indicate the date as early fall of 1869...*” with no further elaboration on this brief consideration.⁴¹

The current paper presents a *de novo* dating analysis of the Series — arguing, on the basis of evidence not previously synthesized and not dependent on the Series’ purpose or the identity of its photographer, that it belongs to a narrow window in late Spring 1869. Four different and mutually reinforcing dating clues support this conclusion: (1) the botanical evidence of flowering vegetation visible in card 1511, (2) the inflection in the road above the horseshoe curve in card 1533, (3) the intact Vallejo’s Mill trestle flume in card 1516, and (4) the condition of the three Cañon bridges visible in the Series. Each is examined in turn.

A. First Clue: The blooming California buckeye, card 1511

The first image in the Series, card 1511, depicts California buckeye (*Aesculus californica*) in bloom. The California buckeye blooms in late Spring, from approximately late April through late June, at the low elevations of Alameda Cañon, with peak bloom in May and early June.⁴² Blooming buckeye is wholly incompatible with an early Fall date and it rules out the early Fall window considered by Kibbey for the Houseworth WPRR series. Although it places no effective constraint on the year, the botanical evidence requires a seasonal constraint of late Spring, with peak bloom in May and early June, for the Series.

⁴⁰ Palmquist, Peter E. *Lawrence & Houseworth / Thomas Houseworth & Co.: A Unique View of the West, 1860–1886* (Columbus, Ohio: National Stereoscopic Association, 1980) see p. 122-123.

⁴¹ Kibbey, Mead B., *The Railroad Photographs of Alfred A. Hart, Artist* (Sacramento: California State Library Foundation, 1996), p. 67. Note his footnote 63 regarding card 1510 with a copyright date of 1869.

⁴² The California buckeye (*Aesculus californica*) blooms from approximately late April through late June in the Coast Ranges at low elevations. Alameda Cañon, ranging from roughly 100 to 400 feet in elevation, would exhibit peak bloom in May and early June. By August the buckeye enters summer drought dormancy and drops its leaves entirely, presenting bare branches wholly inconsistent with the blooming specimens visible in the Series. Botanical reference: Jepson Flora Project, *Jepson eFlora*, *Aesculus californica* entry (accessed 2026).



Fig. 4. Card 1511: Santa Clara Valley, from the mouth of Alameda Cañon. Shows California buckeye in bloom; peak bloom in Alameda Cañon during May and early June. Image courtesy of Society of California Pioneers, SCP-1240.

B. Second Clue: The inflection in the road above horseshoe curve, card 1533

The final image of a railroad in the Series, card 1533, shows the horseshoe curve turning left up to a roadbed bending right — an inflection point in the road above the horseshoe curve — which from an official railroad map is located near 20 miles from San José where the Cox corps stopped in 1866. The visible railroad near 20 miles from San José has to postdate September 1866, the month tracklayers proceeded into the Cañon and finished the 20th mile.⁴³ In early June 1869, Turton, Knox & Ryan “detached a large number of their men from the Livermore Pass vicinity and set them grading and tracklaying on the lower end of the road, commencing twenty miles from San José, at the end of the section completed by the former owners of the franchise, and working up Alameda Canyon into Livermore Valley”.⁴⁴ The railroad near 20 miles from San José is consistent with a date before the early-June extension from that point, although the image alone cannot establish that construction had not already begun.

⁴³ “Notification”, Sacramento Daily Union, Volume 32, No. 4839, 1 October 1866. “20 miles... had been finished”

⁴⁴ “Again in the Field — The Western Pacific Railroad”. Sacramento Daily Union, Vol. 37, No. 5676, 5 June 1869

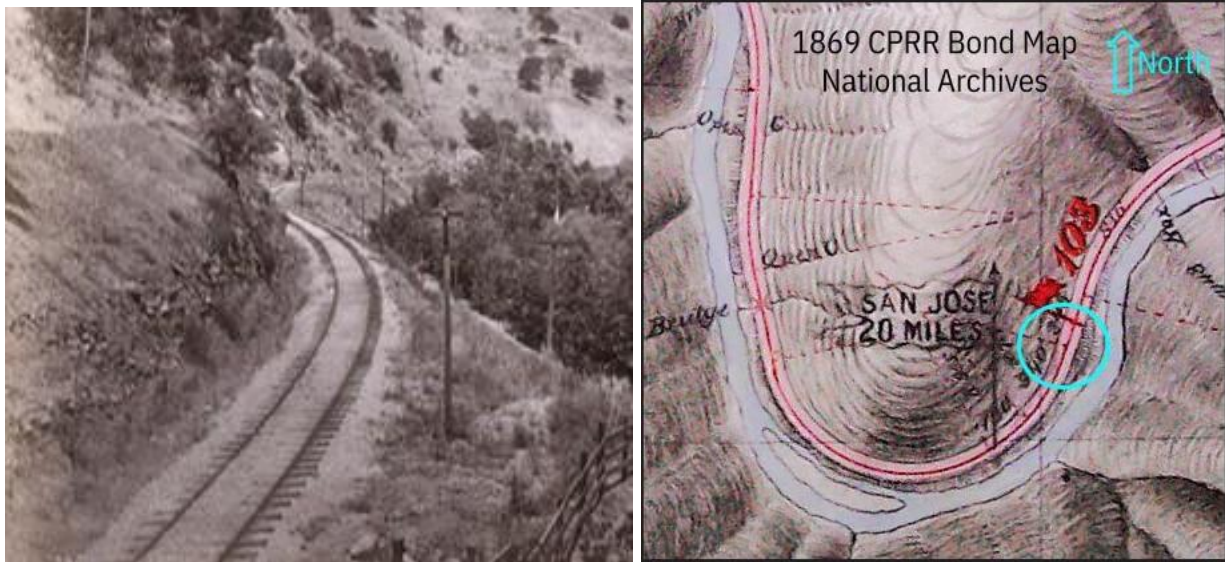


Fig. 5. (a) Left. Card 1533: Up Alameda Cañon, from the Big Cut. (b) Right. Map: inflection in the road near San José 20 miles (circle). Image (left) shows the railroad turning left up the Cañon to an inflection in the road, and then the roadbed bending right; while Map (right) shows that the inflection in the road is located near the San José 20 miles. Flag 103 on Map is the CPRR milepost from Sacramento; Map was the last one CPRR submitted for federal subsidy. Image courtesy of the Society of California Pioneers, SCP-1273; 1869 CPRR Bond Map, National Archives at College Park, Maryland, courtesy of Randy Hees; both image and map cropped by the author to show details.

C. Third Clue: The intact Vallejo's Mill trestle flume, card 1516

Card 1516 shows a trestle flume carrying water along the hillside of the creek's north bank to Vallejo's Mill. Henry Root, in his memoir of engineering work in this period, specifically records that upon Strobridge's arrival in the Cañon in early June 1869, the construction corps had to first demolish the Vallejo's Mill trestle flume to make way for the construction of the new rail line: *"the first move was to tear out the whole flume along the hillside [to Vallejo's Mill] and get the grading done as soon as possible and then to build a new flume on the lower side of and about parallel with the railroad line."*⁴⁵ The flume's intact presence in card 1516 establishes that the Series predates early June 1869. This is a structurally clean *terminus ante quem*, independent of botanical cycles, rail and topographical considerations, and newspaper interpretation: a specific, datable act — the demolition of the flume — provides a firm upper bound, early June 1869, for the date of the Series. Among the four dating clues developed here, the Vallejo's Mill flume provides the strongest chronological constraint, a firm upper bound. It does not, however, set any lower bound. As with the other clues, it is independent of questions of authorship or purpose.

⁴⁵ Henry Root, *Surveyor, Engineer and Inventor: Personal History, 1845–1921* (San Francisco, Calif.: printed for private circulation, 1921), p. 17, available at cpr.org.



Fig. 6. Card 1516: Alameda Creek and Cañon, Central Pacific Railroad. Shows the intact Vallejo's Mill trestle flume on the bank across the creek, which is the alignment of the new mainline to be constructed by Central Pacific. Note the man standing on the near shore; likely the photographer's assistant to call attention to the flume across the creek. Image courtesy of the Society of California Pioneers, SCP-1245; cropped by the author to show the man.

D. Fourth Clue: Condition of the bridges in cards 1517-1518, 1521-1522, & 1527

All three bridges in the Cañon were built as Howe truss bridges with no covers; see Fig. 3 on page 5 for such an image of the third bridge. After a couple of months of use in Fall 1866, they were left to deteriorate. The views in the Series of these three bridges, however, are quite different: while cards 1517-1518 show the first bridge as a Howe truss bridge as built with no cover, cards 1521-1522 & 1527 show the second and third bridges with some protective covers added in place. This asymmetry is historically significant. At the beginning of 1869, the route from Livermore Valley to Oakland had not been settled and a team was sent to survey a new line to bypass the Alameda Cañon route.⁴⁶ Henry Root was on that team: *"We soon had orders to go to Dublin and run a trial line over the hill from there to Haywards to settle the question whether a connection of the Western Pacific line could be made... However, a few days on the Dublin hill made it certain that there was no advantage in such a cut-off route over the Niles [Alameda] Cañon route and we had an order to abandon the trial line".*⁴⁷ Although several surveys were done, the route to Oakland was still not yet adopted in mid-February.⁴⁸

When the Alameda Cañon route to Oakland was finally adopted, Henry Root's team was sent, in early 1869, to survey the final location of the new main line to Oakland, which started at the future San José junction, between the first and second bridges, followed the wooden flume

⁴⁶ "New Route", Sacramento Daily Union, Volume 36, Number 5546, 5 January 1869

⁴⁷ Henry Root (1921), *Surveyor, Engineer and Inventor: Personal History, 1845-1921*, San Francisco, Calif. page 16

⁴⁸ SF Bulletin, reprinted in "Western Pacific Railroad," San José Weekly Mercury, Vol. XVI, No. 40, 18 February 1869

westward to Vallejo's Mill and then out towards Oakland.⁴⁹ Once this alignment was selected, the railroad's future configuration was effectively determined: the second and third bridges would be part of the long-term main line, whereas the first bridge and the San José junction would serve only temporarily (in fact, for less than eight months after the inauguration of the junction on 6 September 1869).⁵⁰ The photographs of the covered second and third bridges (See Fig. 7 below) are consistent with work undertaken after the early-1869 adoption of the Alameda Cañon route, while the uncovered first bridge (See Fig. 1, page 1) is consistent with its temporary status. The Series does not show the east end of the second bridge. The evidence does not establish when the covers were installed, which would be sufficient for a hard lower bound. Covering the second and third Howe trusses for long-term service would most naturally have followed CP's adoption of the Alameda Cañon route in early 1869. Thus, the condition of the bridges is treated as a probable inference yielding a probable lower bound of early 1869.

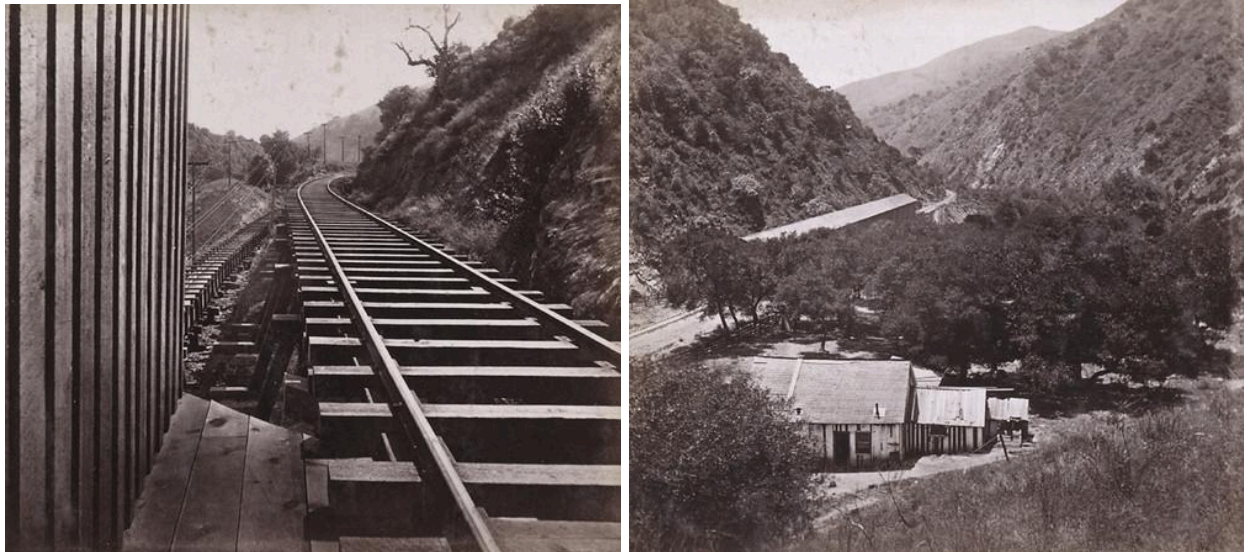


Fig. 7. (a) Left. Card 1522: Looking down Alameda Cañon, from Second crossing. (b) Right. Card 1527: Looking down Alameda Cañon, above the Third Bridge. Shows (left) the west end of the second bridge with newly laid railroad ties, floor boards, and vertical wall boards for the roof cover visible in card 1521 (not shown); and (right) the covered third bridge at a distance with the construction camp in foreground. Images courtesy of the Society of California Pioneers, SCP-1251. SCP-1256.

On 22 May 1869, the editor of the Alameda Gazette reported that *"a gang of men are at work in Alameda Canyon, repairing the bridges, and men are also at work putting the track already completed between Vallejo's Mills and San José, in order"*.⁵¹ This is the presently known

⁴⁹ Henry Root (1921), *Surveyor, Engineer and Inventor: Personal History, 1845-1921*, San Francisco, Calif. page 17

⁵⁰ "A tale of two junctions: the birthing of Niles", Washington Township Museum of Local History, December 2020.

⁵¹ Alameda Gazette of 22 May 1869, excerpted in "Western Pacific Railroad", Stockton Independent, Volume XVI, No. 99, 26 May 1869; also Marysville Appeal, Volume 19, Number 125, 28 May 1869

surviving account specifically documenting bridge repairs and rehabilitation in the Cañon prior to the early June reconfiguration and the June 11th federal inspection. Although this May 22nd report did not play a role in the present dating considerations, it does have an important role. Once the chronology of the Series is established (see the following Synthesis), then this report would provide independent corroboration that bridge rehabilitation was actually underway within the dating window of the Series. It would independently provide a documented historical context that is compatible with the bridge conditions visible in the photographs and would help make the photographs intelligible — e.g., the construction camp in the foreground of the photo of the third bridge at a distance (see Fig. 7(b), page 14) is likely for the bridge repair crew.

E. Synthesis: A narrow window in late Spring 1869

No single line of evidence presented above is sufficient by itself to establish the date of the Series. Each instead contributes a different type of chronological constraint and support. Importantly, these four lines of evidence are mutually reinforcing and complementary. Together these observations reduce the range of plausible dates far more effectively than has previously been recognized.

The blooming California buckeye provides a seasonal constraint consistent with May and early June, but does not constrain the year. The inflection in the road near the San José 20-mile mark gives a lower bound of September 1866 and is compatible with a date before the construction activities in early June 1869. The intact Vallejo's Mill trestle flume furnishes a firm upper bound, requiring that the photos predate its removal during preparation of the new mainline alignment in early June 1869, but sets no constraints for the lower bound. Finally, the asymmetry in the condition of the bridges yields the probable lower bound of early 1869 and no constraints for the upper bound.

Taken together, the evidence reduces the plausible dates for the Houseworth Series to a narrow range in late Spring 1869, probably in May to early June, and definitely not after the early-June arrival of the Chinese construction corps to reconfigure and extend the Alameda Cañon railroad. The intact status of the flume provides the hard upper bound of early June to define the late edge of the likely window, and the inflection of the road above the horseshoe curve is consistent with it. The condition of the bridges constrains the year, and the blooming California buckeye constrains the season. Together they yield a soft botanically probabilistic early edge to the late Spring 1869 window, which cannot rule out, for example, late April for buckeyes to bloom and thus for the Series. The narrow window of likely dates begins with a soft botanical early edge in late Spring 1869, extends for several weeks most likely in May to early June of 1869, when the window ends abruptly. For brevity, this narrow window is referred to

henceforth just as “*late Spring 1869*,” with the hard late edge of early June and the botanically probabilistic early edge implicit.

Alternatively, synthesizing only the first three lines of evidence gives three possible windows: the late Spring of 1867, of 1868, and of 1869. In late Spring of 1867, Central Pacific was focused on penetrating the Sierra and trying to acquire the moribund WPRR. In the late Spring of the following year, they had WPRR and restarted the WP line grading from the Sacramento side, but they were drawing American iron and some Chinese builders away from this WP work to aid their main pursuit of laying as many rails as possible towards Utah. In either year, there is no evidence to suggest that Central Pacific would invest in WP then to provide the Cañon bridge coverings seen in the Series. Adding the fourth clue back into the synthesis yields the same narrow window of late Spring of 1869 as before.

The dating-window conclusion was reached independently of any consideration of the Series' purpose or the identity of the photographer, relying instead upon independent and complementary lines of evidence recoverable from the photographs themselves when compared with the sequence of change revealed in the primary historical record.

Since the late-May contemporary report that men were repairing the bridges was not used in the dating argument, it would provide an important independent corroboration of the bridge work inferred from the photographs once they are dated. Once dated, the views take on important historical context. The last view in the Series of a railroad — card 1533 showing an inflection in the road looking up the Cañon above the horseshoe curve — is interpreted once dated as the 1866 rail terminus near the San José 20-mile mark,⁵² likely rehabilitated; this is done not because the image itself revealed the precise end of track, but because the Series was dated as definitely not later than early June 1869 when the track near the 20-mile mark was only then extended eastward by the construction corps of Turton, Knox & Ryan. In this sense, dating can unlock historical context and meaning.

This paper now proceeds by asking in general: how the dating window might inform the considerations of the Series' character in Section 3; how the chronology and character might inform the Series' purpose in Section 4; and how the chronology and purpose might inform the authorship of the Series in Section 5.

⁵² The rail terminus of the Series is nominally set at the San José 20-mile mark. However, in the Supreme Court decision of *Cox vs. McLaughlin*, reported in *Daily Alta California*, Volume 42, Number 14125, 2 May 1888, it was revealed that “*Cox finished the first twenty miles and part of the twenty-first mile, and received certain payments; but McLaughlin then failing to make further payments as provided in the contract. Cox was unable to proceed further with the work, through want of funds, and abandoned it.*”

Section 3: Character of the Series (What?)

Having established in Section 2 that the Series' window is "*late Spring 1869*", the question moves from when the photographs were made to what stage in the history of the Alameda Cañon railroad do they record. Contemporary documentary sources in Section 1 now become relevant, not for dating the Series, but for interpreting the condition of the railroad captured in the photographs. Together with the narrow date window, they can materially inform both the general character of the Series as well as the specific subject matter of particular views by providing documented historical context — all independent of its purpose and photographer.

Generally speaking, the Series covers a 3-mile stretch of the 1866 WP railroad in a documentary fashion: starting near Capt. Scott's ranch, moving systematically and progressively in sequence into the Cañon, across each of the three bridges in order, around the horseshoe curve, and stopping near the rail terminus at the 20-mile mark from San José. Importantly, the Series was taken in the narrow window consistent with a contemporary newspaper report in late May 1869 that the old WP road was being refreshed and its bridges under repair.⁵³ Furthermore, the Series' narrow window was immediately prior to the two-pronged construction onslaught to reconfigure and extend the railroad in early June 1869: (1) the Strobridge corps to reconfigure the railroad by establishing on the old 1866 WP line, between the first and second bridges, a new San José junction from which a new main line is to be built westward to San Francisco bay; (2) the corps of Turton, Knox & Ryan to extend the rail terminus near the 20-mile mark eastward to Livermore Pass.⁵⁴ The establishment of the San José junction effectively cuts the old 1866 WP line in two: a branch line to San José, which the first bridge is part of, and a Cañon core link of CP's main line from Sacramento to San Francisco bay — the final leg of the Pacific Railroad. Lastly, on June 11th, federal commissioners were examining the old WP road.⁵⁵ Thus, the Series is a documentary that captures a historically crucial period: the old 1866 WP line, likely being rehabilitated with its bridges under repair, on the brink of becoming the core link for CP's final leg of the yet-unfinished Pacific Railroad, while awaiting a federal progress inspection.

On the other hand, there are within the Series a few views of Alameda Creek that appear to have only tenuous connections with the documentary approach and have more scenic value. Views that seem to have more scenic than rail documentary value include those identified explicitly in their captions to be only about Alameda Creek itself: card 1520: *Alameda Creek, above the first bridge*; card 1523: *Alameda Creek, above the second bridge*; and card 1534:

⁵³ Alameda Gazette of 22 May 1869, excerpted in "Western Pacific Railroad", Stockton Independent, Volume XVI, No. 99, 26 May 1869; also Marysville Appeal, Volume 19, Number 125, 28 May 1869

⁵⁴ "Again in the Field — The Western Pacific Railroad". Sacramento Daily Union, Vol. 37, No. 5676, 5 June 1869

⁵⁵ "Progress in the Western Pacific Railroad", Daily Alta California, Vol. 21, No. 7021, 17 June 1869

Alameda Creek, below the Big Cut. A view of the creek in a cañon setting — with its pools, its riparian vegetation in Spring leaf, and the dramatic confined depth that makes it particularly attractive viewed in stereographic format — is chosen for visual and commercial stereo impact, not for railroad relevance. Thus, the overall character of the Series is somewhat dualistic. The vast majority of the Series is documentary of the railroad line: systematic in its coverage, sequential in its progression up the line, and relatively precise in its rail terminus. Sprinkled among the documentary views, but still in the appropriate sequential order, are a few views of the creek that are commercially oriented with higher scenic impact than railroad relevance.



Fig. 8. (a) Left. Card 1520: *Alameda Creek, above the first bridge*; (b) Center. Card 1523: *Alameda Creek, above the second bridge*; and (c) Right. Card 1534: *Alameda Creek, below the Big Cut*. Shows three views of Alameda Creek, which are the few sprinkled among the predominantly documentary railroad-relevant views of the Series.

Geographically on a finer scale, the 24-view Series displays the systematic sequential progression in both rail documentary and scenic creek views: starting with 4 views around Capt. Scott's, with three looking southward; 2 views on the way northward towards the first bridge, including one view of the flume; 4 views around the first bridge, looking in diverse direction include one creek view; 3 views around the second bridge, with two on the west end and one creek view; 2 views of through cuts between the second and third bridges, looking up the Cañon; 3 distant views towards the third bridge, from three directions; 4 views of the Big Cut, with three looking up the Cañon; and ending with 2 views around the 20-mile mark, with one creek view.

On the other hand, the pending early-June reconfiguration of the old WP line can be used to divide the Series into two sequential subseries: (a) 10 views of the WPRR Cañon approach from near Capt. Scott's northward and then turning eastward across the first bridge to the pending San José junction, which is part of the temporary portion of the San José branch that would be decommissioned on 28 April 1870; and (b) 14 views from the pending San José junction eastward across the second and third bridges, through the heaviest part of the Cañon, to near the 20-mile mark, which is the long-term Cañon core link, about 2.3 miles long, from which CP is to build its final leg to the Pacific.

The Series captures the Cañon core link and its approach, built by the Cox corps who were not paid and abandoned nearly three years prior, likely while it was being rehabilitated and its two bridges under active repair, just before it was to be pressed back to service by two different Chinese construction corps that followed in early June 1869, working away from each other on opposite ends of the core link to reconfigure, extend and integrate it into CP's final leg to the Pacific. The approximate locations of the various cards in the Series as of late Spring 1869 are shown below on two separate maps cropped from the September 1869 CPRR bond map, which was made for a federal subsidy request from CPRR after the San José junction and the final leg to the Pacific were completed on 6 September 1869.

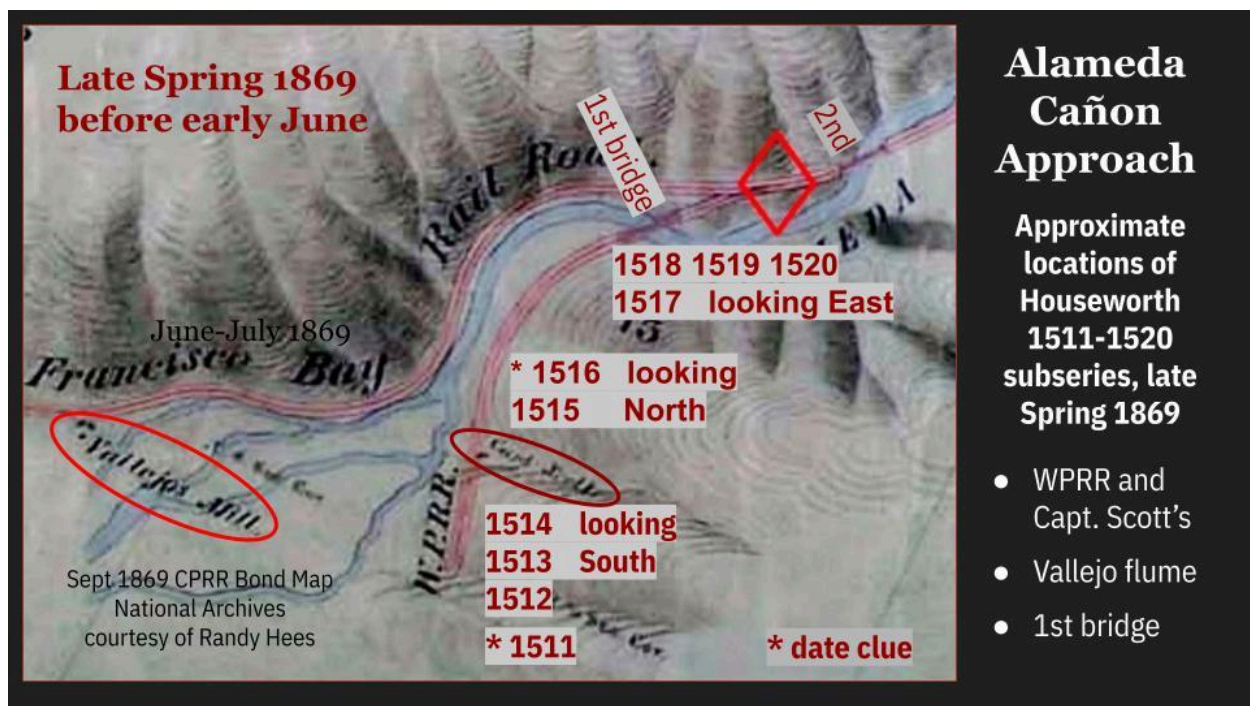


Fig. 9. The WPRR Cañon approach from near Capt. Scott's (encircled) to the San José junction (diamond): When the San José junction was built in June 1869, it effectively cut the 1866 WPRR line in two and the Cañon approach segment with the first bridge was reconfigured as the temporary part of the San José branch. The San José junction and the first bridge in the Cañon corridor were decommissioned on 28 April 1870, superseded by the Niles junction and bridge in the valley near Vallejo's Mill.

Approximate locations of the Houseworth 1511-1520 subseries, in "*late Spring 1869*", starting near Capt. Scott's ranch and working systematically northward and turning eastward through the first bridge:

- Capt. Scott's: 1511, 1512-1514 (looking South), 1515 (looking North);
- Vallejo's Mill flume: 1516 (looking North);
- first bridge: 1517-1520.

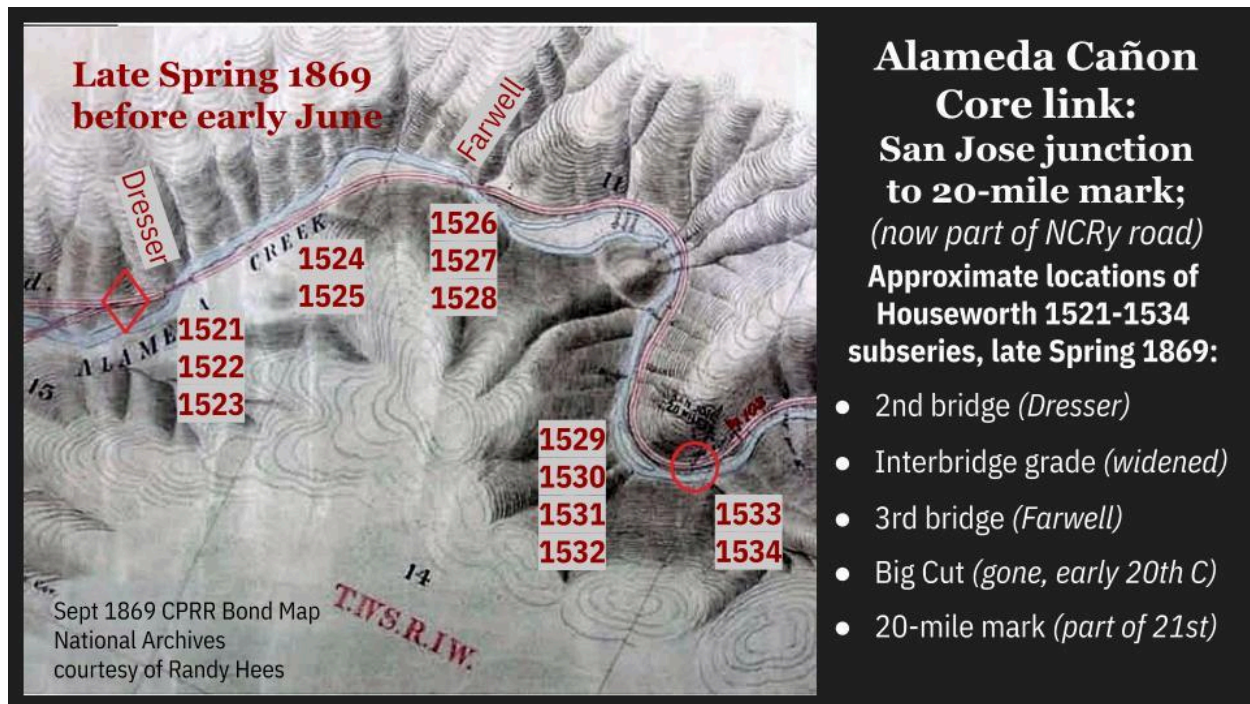


Fig. 10. The Cañon core link, from the San José junction (diamond) to the San José 20-mile mark (circle), of CPRR's final leg, from Sacramento to San Francisco bay, of the transcontinental Pacific Railroad. When construction activity returned to the Cañon after a nearly 3-year hiatus, the Strobridge corps started at the San José junction working westward, while the corps from Turton, Knox & Ryan started at the San José 20-mile mark working eastward.

Approximate locations of the Houseworth 1521-1534 subseries, in "late Spring 1869", starting from the second bridge progressing systematically eastward to near the San José 20-mile mark:

- second bridge: 1521-1523;
- grade between the second and third bridges: 1524-1525;
- third bridge: 1526-1528; Big Cut: 1529-1532; near the 20-mile mark: 1533-1534.

The narrow dating window also informs the specific subject matter of particular cards, by providing essential historical context otherwise invisible, independent of its purpose and its photographer. In particular, the rehabilitation of the 1866 WP line brings the technical prowess required to build the mainline grade through the heaviest part of the Cañon into full unfiltered display in the various views. The exactness of the Herculean handiworks of the Chinese builders is notably on exhibition in the rugged through-cuts and rock-cuts of cards 1524-1525 below, not obscured by any vegetation or later widening of the roadbed, and most remarkably in the treacherous hand-carved slopes of the Big Cut required to maintain a mainline grade through a horseshoe curve in cards 1529 through 1532. These spectacular views of the Big Cut are the presently known surviving images of this original prominent horseshoe alignment through the Cañon. Since these hazardous landslide-prone slopes on the outside of the horseshoe curve were removed likely by machinery in the early 20th century, the dramatic Big Cut is gone.



Fig. 11. (a) Left. Card 1524: Alameda Cañon, above Second crossing. (b) Right. Card 1525: Alameda Cañon, below Third bridge. Shows the original ruggedness of the through-cuts (left) and the rock-cuts (right) hand-carved by Chinese builders, pictured before growth of obscuring vegetation and widening of the cuts likely by machinery in the early 20th century. Images courtesy of the Society of California Pioneers, SCP-1253, SCP-1254.



Fig. 12. (a) Left. Card 1529: The Big Cut, above Third bridge, Alameda Cañon. (b) Right. Card 1530: The Big Cut, above Third bridge, Alameda Cañon. Shows the treacherous landslide-prone slope on the outside of the curve (left), and the steep rock-cut on the inside of the curve (right), both hand-carved precisely by Chinese builders to maintain mainline grade and curvature on a horseshoe curve, pictured before the outside slopes were removed likely by machinery in the early 20th century. Images courtesy of the Society of California Pioneers, SCP-1258, SCP-1259.

Moreover, card 1516 (see Fig. 6, page 13) is the presently available surviving photo of the Vallejo's Mill trestle flume, perhaps original, taken before its demolition to make way for the new mainline construction. Also card 1522 (see Fig. 7(a), page 14) shows the west side of the

second bridge refreshed with newly laid floor boards, railroad ties and vertical wall boards for a roof cover at a special moment: awaiting the new construction of the San José junction, which would be at the point where the tracks slip behind the ridge to the right of the image, with a new mainline grade and track to be built by the Strobridge corps to the San Francisco bay.

The local time of day of photos can be estimated from three pieces of information: the time of year the Series was taken, approximately late May, the latitude of the Cañon where the photos were taken, and the direction of the Sun in the photos themselves. Card 1519 from the first bridge with the Sun about due East yields a local time of about 8am. Card 1531 of the Big Cut with the sharp telegraph-pole shadow across an approximately East-West track yields a local time of early afternoon.⁵⁶ These time estimates are consistent with a morning-to-afternoon progression through the Cañon; whether it was done that way is purely speculative.⁵⁷



Fig. 13. (a) Left. Card 1519. Looking up Alameda Cañon, from the first bridge. (b) Right. Card 1531. The Big Cut, above the third bridge, Alameda Cañon. In late May, with the Sun about to come out due East at the first bridge (left), the local time of card 1519 is estimated to be about 8 am; while the sharp telegraph-pole shadow across an approximately East-West track at the Big Cut (right) yields an estimated local time of early afternoon for card 1531. Images courtesy of the Society of California Pioneers, SCP-1248, SCP-1260.

⁵⁶ The local solar time is defined by the Sun being due South at local noon. Before the transcontinental Pacific Railroad, such local time was commonly used (Sacramento time was about 4 minutes ahead of San Francisco time). At the Cañon's latitude in late May, the Sun would rise at about 5 am local time and set about 7 pm local time.

⁵⁷ One possible speculative scenario for a field session across the 3-mile stretch covered by the Series is as follows: a full-day field session for a photographer and assistant, starting out early about 6 am in late May at Capt. Scott's on a high overcast morning, progressing to the first bridge by about 8am when the Sun was about to break out, then traversing two more bridges under active repair to the Big Cut by early afternoon when the Sun was shining brightly, and finally completing the Series down at the creek.

Section 4: Purpose of the Series (Why?)

Two possible purposes of the Series can be readily identified. They are not entirely mutually exclusive — the same photographs could have served more than one function — but they imply different commissioning relationships and different primary intentions.

The first possibility is commercial publication by Houseworth & Co. Thomas Houseworth had a well-established practice of commissioning or acquiring railroad views for commercial sale to the public; the CPRR series sold through his firm demonstrated the market for such views. In 1869 the transcontinental connection made the Bay Area railroad infrastructure of broad public interest. However, this explanation is difficult to reconcile with several features of the Series. The segment documented — Capt. Scott's to the twenty-mile mark — had no immediate tourist or traveler appeal, and the Series stops at a point in the middle of nowhere that makes no commercial sense as a finished product. Also, the systematic, sequential character of the coverage is inconsistent with the selective, dramatic approach that characterized successful commercial stereograph series. Houseworth's role as publisher is not in question here; whether he was the commissioning client is.

The second possibility is that the Series was commissioned by the railroad company, CPRR or its WPRR subsidiary, as institutional documentation of the old 1866 WP line's condition during the period immediately preceding the commissioners' 11 June 1869 inspection. That federal inspection had a personal dimension as well. Sherman Day, the lead commissioner and a member of the Society of California Pioneers, had deep connections to the San Francisco–San José railroad corridor beginning nearly two decades earlier: he was a founding director and executive committee member of the *Pacific and Atlantic Railroad Co.*, the corridor's first incorporated railroad venture, organized on 6 September 1851. After it failed to obtain the necessary capital, it suspended operations.⁵⁸ In October 1853, it was reorganized and by December 1854, Day served as the company's Secretary, a post he probably held when the enterprise collapsed amid the financial reverses of 1854–55.⁵⁹ Years later in Spring of 1860, he was a founding director and stockholder of its successor, the *San Francisco and San José Railroad Company*.⁶⁰ When that company also failed to gain public confidence and was dissolved by its own stockholders in June 1860, Day was present and voted his twenty shares in favor of

⁵⁸ "San José and San Francisco Railroad", *Daily Alta California*, Volume 2, Number 270, 8 September 1851; "San José Intelligence", *Daily Alta California*, Volume 2, Number 275, 13 September 1851. The full history was recounted in a report by Judge Dame, found in "Grand Celebration of the Opening of the San José Railroad", *Daily Alta California*, Vol. 16, No. 5070, 17 January 1864.

⁵⁹ "Pacific and Atlantic Railroad Company", *Daily Alta California*, Number 353, page 3, col. 2, 22 December 1854

⁶⁰ "ARTICLES OF ASSOCIATION", *Times Gazette*, Volume II, Number 8, 26 May 1860

the dissolution.⁶¹ A further reorganization under the same name later that same year finally succeeded, led by a new and different cast of San Francisco financiers. That new cast led by Judge Dame then organized in 1862 the Western Pacific Railroad Company to extend the line from San José toward Sacramento through Alameda Cañon.⁶² Eighteen years after he first helped organize the corridor's first railroad venture, Day returned to the same corridor extended by a descendant company as the lead federal commissioner to certify that a project, one whose roots he had helped originate and had thrice watched fail, had been built nearly three years prior by others and now ready to be pressed back to service.

The CPRR had a well-established practice of photographic documentation of its construction through the Sierra (see Section 5 below). On 8 June 1869, Stanford hosted the federal party on their inspection of the eastern segment of the final leg of the Pacific Railroad and provided a special train and wagon, indicating that the CPRR actively managed the presentation of its eastern WP progress to the government. Commissioning a photographic record of the western WP segment for the 11 June 1869 inspection — demonstrating the condition of the old 1866 WP line, the state of bridge rehabilitation, and the progress of the work — would have been consistent with this possibility of CPRR's interest both in documenting its own construction progress and in presenting its work to the inspection party led by a commissioner with a personal, nearly two-decade stake in the corridor's history. What is not consistent would be the few scenic views of Alameda Creek within the Series.

The mixed character of the Series — systematic infrastructure coverage with a few scenic creek views — does materially inform the purpose of the Series. A purely institutional purpose does not readily account for the scenic creek views; a purely commercial explanation does not readily account for the methodical sequential coverage of the old WP line. The mixed character of the Series is therefore best understood as evidence for two potential uses. The systematic infrastructure views are consistent with institutional documentation, while the few creek views are readily compatible with Houseworth's commercial market. Whether these two functions were planned together at the time of photography, or whether commercially useful views were simply added to an otherwise documentary rail assignment, cannot presently be determined.

The systematic infrastructure coverage — track, bridge exteriors, the horseshoe curve, the progression to mile twenty — is consistent with an institutional purpose, but the photographs do not identify the client. They could have been commissioned by the railroad for

⁶¹ "THE DISSOLUTION", *Times Gazette*, Volume II, Number 12, 23 June 1860

⁶² "Grand Celebration of the Opening of the San José Railroad", *Daily Alta California*, Vol 16, No 5070, 17 January 1864; "San José Railroad Completed", *Sacramento Daily Union*, Vol. 26, No. 4003, 20 January 1864. In his report, Judge Dame, then president of SF&SJ RR and WPRR, announced that WPRR has already awarded its multi-million construction contract to McLaughlin & Houston, without advertising for proposals.

its own records, prepared in anticipation of the federal inspection, or produced independently by a photographer who recognized the documentary value of the work then underway. The June inspection therefore provides an important context for the Series, but not evidence by itself that the inspection was the reason the photographs were made.

In this joint-purpose reading, the photographer, understanding both markets, produces both kinds of views in the same field session. The institutional client, whoever it is, receives a documentary record of the old WP line; and Houseworth gets to publish the results for sale. What the precise joint-purpose arrangement was cannot be determined from the presently available evidence. The asymmetry of the large number of documentary rail views to the few scenic creek views in the Series suggests that the institutional purpose was primary and the commercial secondary, although there is yet no confirming evidence of this speculation. What can be said is that the Series is not made for a single audience or a single use, and that any account of its purpose that insists on a single explanation will leave part of the Series unaccounted for.

Section 5: Photographer of the Series (Who?)

Mead B. Kibbey was the first to suggest a case for Alfred A. Hart — CPRR's official photographer — as the author of this Houseworth WPRR Series, noting both stylistic parallels with Hart's CPRR work and the established prior commercial relationship between Hart and Houseworth.⁶³ The dating and purpose analyses presented here strengthen that case in two respects: an earlier compatible date and the well-matched dual-purpose nature of the Series.

Kibbey briefly considered an early-Fall 1869 date for the Houseworth WPRR Series, which would be months after when Judge E. B. Crocker suffered a paralyzing stroke that forced him out of CPRR's board into early retirement.⁶⁴ Hart's patron in CPRR was Judge Crocker; when he resigned from the board, Hart's primary connection with CPRR ceased. Thus Kibbey's suggestion for Hart's authorship of the Series is thwarted by his own dating consideration of early Fall 1869, which evidently was based on observations on the whole Houseworth WPRR series.⁶⁵ In contrast, the dating evidence presented here looks only on the Series (a subset of

⁶³ Kibbey, Mead B., *The Railroad Photographs of Alfred A. Hart, Artist* (Sacramento: California State Library Foundation, 1996), p. 67. From footnote 63: "In 1869 Thomas Houseworth, to whom Hart had sold railroad views of the CPRR for years, copyrighted at least one of a long series of views of the Oakland branch."

⁶⁴ "Recovering. — Judge E. B. Crocker", *Stockton Daily Independent*, Vol. XVI, No. 147, 22 July 1869

⁶⁵ Footnote 63 suggests that card 1510 with a copyright date of 1869 on its recto (front) and a fall-of-the-year view was one evidence that led Kibbey to the date of early Fall 1869 for the whole Houseworth WPRR series. Note: the blooming California buckeye in card 1511 and the intact trestle flume in card 1516 both rule out early Fall 1869.

the whole Houseworth WPRR series) and yields a much earlier date in “late Spring 1869.” The earlier date makes Hart's authorship chronologically possible in a way that Kibbey's early-Fall dating did not. Hart had completed the Promontory assignment on 10 May 1869 and subsequently returned to Sacramento. By August Carleton E. Watkins, a boyhood friend of CPRR's Collis P. Huntington, had taken over the photographing of CPRR's completed transcontinental line in Nevada and Utah.⁶⁶ The surviving record therefore leaves open a three-week period in late May and early June in which Hart could have undertaken additional railroad photography. This does not demonstrate that he was available for, or accepted, a Bay Area assignment; it simply removes the chronological obstacle created by Kibbey's proposed early-Fall date.

Secondly, the joint-purpose nature of the Series — institutional documentation and commercial views produced in the same field session — maps quite well onto Hart's established working pattern with CPRR, where scenic river and lake views were sprinkled amongst railroad infrastructure views. His CPRR views highlighted mainly the difficulty of construction, the documentation of success, as well as the dramatic and picturesque landscape. His scenic views were appreciated most by CPRR's Judge Crocker, who wrote to Huntington praising Hart's landscape views, “As a work of Art, they can not be surpassed”.⁶⁷ Hart's photographs made under railroad commission also frequently flowed into Houseworth's commercial catalog. Hart understood and routinely operated within this kind of arrangement serving both purposes.

Although Kibbey's case for Hart as the photographer of the Series is resuscitated and strengthened by both the current dating and joint-purpose analyses, it still remains that no direct confirming evidence for Hart as the photographer of the Series has yet been found. In short, this attribution is still speculative and unproven. The present analyses on the dating, character and purpose of the Series are independent of the identity of the photographer.

⁶⁶ Illustrated San Francisco News, 14 August 1869, p. 15, as cited in Palmquist, Peter E. *Carleton E. Watkins, Photographer of the American West* (Albuquerque: University of New Mexico Press, 1983), p. 47, footnote 141.

⁶⁷ Willumson, Glenn L, *Alfred Hart: Photographs of the Central Pacific Railroad* (London: History of Photography, 1988), reprinted in Kibbey, Mead B, *The Railroad Photographs of Alfred A. Hart, Artist* (Sacramento: 1996) page 194

Section 6: Historical Significance

The significance of this research is more than simply dating the Series of 24 views of an old railroad in Alameda Cañon. The larger significance is that establishing the date makes it possible to understand what was happening to the railroad when the photographs were taken. For photos with known locations, dating is key to unlocking historical context and meaning. Without a date, the picture floats about with little or no historical context. With a date, the Series can tell a useful and perhaps compelling story.

The Series has a date window of several weeks in late Spring 1869, just before the major early-June reconfiguration of the Alameda Cañon route. At that time, the physical remains of the 1866 Western Pacific road were being revived, about to be incorporated into a new Central Pacific system destined to the Pacific. The photographs thus record neither a completed 1869 railroad nor merely an abandoned 1866 project. They capture a railroad in transition: the infrastructure created by the first Chinese construction corps was still visible, while a new construction effort was about to transform it into the core link of the new route to San Francisco bay. The Series literally made visible what was a historically crucial transient phase.

That chronology unlocks the historical context of nearly every view in the Series. The picture of the Vallejo's Mill trestle flume, an imposing and possibly original structure, is the presently known surviving record of it before its removal in the 1869 early-June reconfiguration. The final view of the road in the Series is not just an inflection in the road above the horseshoe curve; it is the rail terminus near the 20-mile mark from San José. The bridges and cuts are not merely impressive picturesque remnants; they are the surviving elements of an earlier Western Pacific construction being brought to running order, while awaiting a pending federal inspection. The last two-and-a-quarter mile segment, built by the Cox corps in 1866 before they were abandoned in the middle of nowhere, is a rare surviving piece of the earlier railroad infrastructure whose physical fabric not only survived nearly three years of deterioration but also was rehabilitated and incorporated as the core link into Central Pacific's main line from which the final leg connecting the rest of the continent to the Pacific could be built.

The Chinese builders are also brought into sharper focus by this chronology and historical record. The infrastructure visible in the Series was the physical product of the Chinese construction corps who built the Cañon road in 1865-1866; who labored about a year just on the twentieth mile, sometimes day and night, through the heaviest part of the Cañon; and who were not only abandoned, once the requisite twenty miles were accomplished, but also denied their wages due on the last few months of hard Cañon labor. Three years later, the Series places in full 3D display the original precision monumental handiwork of the Chinese builders — without any

filters, any obstructing overgrown vegetations, or any later machinery takedowns of treacherous landslide-prone slopes — pictured when their old 1866 road was being put to running order, but not yet reconfigured by two Chinese construction corps that followed in early June 1869.

The chronology also clarifies the role of the old Western Pacific road. In June 1869, two newly arrived construction corps were working away from each other from opposite ends of the Cañon corridor. Strobridge's corps began at a new junction near the western end of the second bridge and worked toward Vallejo's Mill, while Turton, Knox & Ryan worked eastward from where the 1866 Cox corps stopped. The surviving Cañon portion of the old Western Pacific road was being transformed and incorporated as a core link in the new Central Pacific route to the Pacific. However, it was not itself the last physical gap in the rail from the Missouri river to the Pacific.

That last distinction matters because the larger completion story of the Pacific Railroad can be easily compressed in later memory simply to a single event. The Niles historical marker,⁶⁸ "Completion of the Transcontinental Railroad: Niles, California," erected 1979 near the remains of Vallejo's Mill, correctly reminds visitors that the May 1869 gold spike ceremony did not itself create rails spanning "the United States from ocean to ocean" and that September was decisive. But by locating the September "final link" near Vallejo's Mill, it compresses two stages of construction into one place and moment. The historical record clearly separates these two stages of construction in 1869: the old Western Pacific road in the Cañon was reconfigured in June; the last rail was laid on the bridge over the San Joaquin river at Mossdale in September.⁶⁹

For visitors to Niles Canyon, that produces a more precise and interesting story. The last rail was not laid here. What happened here came earlier. In June 1869, the old dormant Western Pacific railroad was revived, then transformed and incorporated as a core link of a new route. Two large Chinese construction corps came, working away from each other from opposite ends of the core link. One started at the west end, building a new junction and route, westward to Vallejo's Mill, destined to the Pacific. The other extended the east end, eastward to Livermore valley, destined to the San Joaquin river at Mossdale. Three months later on 6 September 1869, the last physical rail gap was closed on the Mossdale bridge; the first through train started from Sacramento, crossed the Mossdale bridge, traversed the core link to reach the tidewaters of the Pacific at Alameda wharf. In this way, "the connection between the Pacific and Atlantic Oceans... the great work of the age may be said to be completed".⁷⁰

⁶⁸ The inscription on the Niles marker reads: "May God continue the unity of our country as this railroad unites the two great oceans of the world." The gold spike ceremony at Promontory, Utah, in May of 1869 united the tracks of the Central Pacific and Union Pacific Railroads. However, the rails did not span the United States from ocean to ocean until some months later. In September, the final link between San Francisco and Sacramento was completed near the flour mill of Jesús Vallejo, a short distance east of this location. <https://www.hmdb.org/m.asp?m=143737>

⁶⁹ "The laying of the last rail," SF Call (8 Sept 1869), reprinted in Stockton Daily Evening Herald (8 Sept 1869) p. 3

⁷⁰ *ibid.*

The larger lesson is about historical context and meaning. Dating is not an end in itself. Nor does a date automatically supply the meaning of a photograph. Rather, for photographs of a sufficiently identifiable place, a secure date allows the image to be positioned within a sequence of change revealed in the historical record. A bridge can be seen before or after its repair. A structure can be present before its demolition. A track can be shown before an extension or junction alters it. A landscape can contain the physical evidence of one railroad phase before another replaces it. In the Series, the photographs show the Cañon before the June 1869 reconfiguration; the construction record shows what was about to happen; and the September record shows what the surviving route ultimately became. The photographs thus acquire their historical context not merely from what they depict, but from their position within the documented transformation of that place.

This also explains why the date was established before addressing the Series' character, purpose, and photographer. The date provides the temporal framework with which these questions can be asked without circular reasoning. The chronology permits the historical setting to be interpreted. In Section 3 (What?), the late-May 1869 newspaper report of bridge repairs is primarily used to independently interpret the historical context of the Series. Only thereafter are the questions of purpose in Section 4 (Why?) and authorship in Section 5 (Who?) considered. This is deliberate to avoid the tendency of using assumptions about the intended purpose or the photographer to establish the chronology.

More broadly, the method used here may be useful for photographs elsewhere. It demonstrates how a group of photographs of a known place can recover a moment of historical transition that might otherwise be obscured by later memory. Photographic series of this kind are frequently treated as illustrative material, but not interrogated as artifacts with their own internal recoverable history. The photographs of a known place preserve the physical evidence; the historical record establishes the sequence of change; and dating connects the two, unlocking the historical context.

The Houseworth Series exemplifies this connection. It shows a dormant Western Pacific road at a moment before its transformation in June 1869; it preserves the precision handiwork of the Chinese builders who created it in 1866; and it records a landscape about to become part of the railroad that ultimately reached the Pacific in September 1869. In short, the Series captures the old road in the last weeks it could possibly be called "abandoned"—it's about to become part of the Pacific Railroad, the great work of the age.