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United States Department of the Interior National Park Service

OCT | 1992

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines* for Completing National Register Forms (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

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Name of Property	MOUNT LOWE	RAILWAY			
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her names/site number	n/a				
Location Angele	es National	Forest			
		land north o	f Altadena		n √anot for publication
y, town	<u> </u>				vicinity
	code CA	county Los	s Angeles	code 037	zip code n/a
Classification					
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In my opinion, the property	meets do	es not meet the f	National Registe	er criteria. See	continuation sheet.
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6. Function or Use	
Historic Functions (enter categories from instructions) Domestic/hotel Education, research facility/observatory	Current Functions (enter categories from instructions) Transportation/trail Landscape/forest
7. Description Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
n/a (site)	foundation Brick, stone (granite), concrete walls Stone (granite), concrete
	other Railroad right-Of-way approximate 5 miles in length

Describe present and historic physical appearance.

SUMMARY:

The subject property is the site of a former cable and electric powered railway built in the 1890's which carried tourists from Altadena, California, a residential suburb lying 11 miles northeast of Los Angeles, into the back country of the San Gabriel Mountains, to a terminus at a mountain hotel called the Alpine Tavern. The nominated area lies presently entirely within the bounds of the Angeles National Forest.

From Altadena, a conventional electric street railroad (originally built to 3'6" narrow gauge) lead into Rubio Canyon, a steep and picturesque gorge of the San Gabriels' front range. Here was located Hotel Rubio and an extensive network of trails and wooden steps revealing nine waterfalls. From Rubio, passengers transferred to a cable incline car for a lineal ascent of 1,500 feet to Echo Mountain, 3,500 feet above sea level, where there were two more hotels, a zoo, astronomical observatory, power generating facilities, and other attractions. A second transfer to a narrow-gauge conventional electric street railway carried passengers along a breathtakingly scenic route of 3 1/2 miles to Ye Alpine Tavern (elevation 4,414 feet). Nearby, the summit of Mount Lowe (6,100 feet) and Inspiration Point offered a fine selection of recreational trails.

The last remaining hotel burned in September 1936 and the line was shortly thereafter sold for scrap by the traction company that owned it. Scrapping was complete by the onset of World War Two. The shell of several buildings and right-of-way remained for the benefit of hikers and equestrians.

During the late 1950's and 1960's what remained of the physical plant was the target of planned eradication by the United States Forest Service. The shell and great rock fireplace of the of the hotel (Alpine Tavern) was dynamited in 1959, as was thje concrete cablehouse on Echo Mountain in 1962. All of the poles and bridges were removed in this era as well. Most of the Alpine Division right-of-way was converted into a fire road, with further damage to the roadbed and many original features. Nevertheless, there is much remaining today, including almost all of the right-of-way, some machinery, and a great many walls and foundations, particularly at Echo Mountain.

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PRESENT PHYSICAL APPEARANCE:

For the purposes of this nomination, six discrete significant geographical areas have been identified, as follows:

1. RUBIO CANYON

From a point in northern Altadena (unincorporated suburb of Los Angeles County), an abandoned standard-gauge railway grade turns off the city streets and climbs the steep walls of Rubio Canyon. Although the railroad originally began in Altadena and was later extended into Los Angeles, not all of this right-of-way remains in the built-up areas. Length of the intact grade at this point is approximately one mile into the canyon. Some wooden crossties are visible, as are concrete foundations of three trestles in this distance, and many cuts and fills made to accommodate the railway grade.

At Rubio, the railway grade abruptly turns into the canyon where Rubio Pavillion and the incline transfer station spanned the canyon on a wooden platform. Here can be seen several concrete abutments and support structures for the platform.

Upon descending to the bottom of the canyon, one can find remnants of the original trail systems with its extensive network of wooden causeways and stairs leading past the nine waterfalls originally in the vicinity. Although there is some water in the canyon bottom during nearly all but the hottest summer months, decline in the water table over the last century and upcanyon recovery by water companies has produced a significant lowering of stream flow, with no waterfalls currently visible.

Looking up from the Pavilion site, one may observe a portion of the incline grade, which leads to Echo Mountain.

2. CABLE INCLINE:

This grade is 3000 lineal feet with a vertical rise of 1500 feet. Ascending from Rubio, one first encounters "Granite Gorge" a tremendous cut on a 48 per cent grade hewn through solid rock. At the uppermost edge of the gorge is the site of Macpherson Trestle, which spanned a very steep canyon on the same grade as below. There are concrete abutments on either side of the canyon, as well as five or six footings for the trestle timbers cast into the canyon bottom. On the bottom as well may be seen a length of several hundred feed of incline cable.



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Upgrade from Macpherson trestle the incline consists of a series of stepped terraces holding wooden crossties which supported the rails, cable guides and safety cable apparatus. Some of the crossties are intact, but many were burned in a serious 1979 fire. Where the ties have burned or washed out, a distinct stepped or terraced effect may be observed in the right-of-way.

Midpoint on the incline, the right-of-way is wider to accommodate four rails (to allow the cars to pass) instead of three. Remnants of the incline turnout are visible.

Between the turnout and the incline terminus at Echo Mountain the most significant feature is the concrete box and pair of iron cable wheels which were used to facilitate the grade change from 48 to 52 per cent.

3. ECHO MOUNTAIN:

Echo Mountain is the locus of the most significant sites and groups of artifacts. Beginning at the head of the incline, the concrete landing platform and remains of the loading/unloading platform is visible. A short setback from the head of the incline is the ruins of the cable winding station, a concrete building which formerly housed the upper grip or "bull" wheel, eight feet in diameter, in the basement. Here were also located the electric motor and reduction gears which turned the bull wheen and thus powered the incline. The structure, built in 1906 to replace an earlier wooden building destroyed by fire, originally had a second story control room in the shaped like a castle turret. The additional elevation provided the incline operator a clear view down most of the incline right-of-way. On the roof of the cablehouse was located the 3 million candle power General Electric searchlight which was obtained from the Chicago World's Fair in 1893.

The concrete shell of the cablehouse was destroyed in 1962 as a "safety hazard." At that time the "bull" wheel and a large pair of idler wheels were removed from the basement and set in the ground not far away on the former railroad right of way. Now covered with large chunks of concrete, the building is recognizable up to the floor line, with the steps and original basement area partially intact. A smaller pair of idler wheels remains in its original location in the building remains.

Much of the original heavy machinery including several intermediate gears and the remains of the searchlight remain in the canyon just below the ruins of the cablehouse.

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Just north of the cablehouse location lies the site of the Echo Mountain House, the premier hotel on the line, which was destroyed by fire in 1900. Concrete foundations mark the approximate footprint of the hotel. The original reservoir for the hotel is intact.

East of the Echo Mountain House site are the foundations of a smaller hotel, the Chalet, which was built in 1893 and dates from the opening of the railway. Several concrete abutments are here, as well as the upright walls of the tunnel conecting the hotle's kitchen with the dining room. There is a picturesque love seat intact in this area, as well as a semicircular arrangement of five concrete posts, the exact function of which has never been determined.

Also in this area are two concrete fountains (the "Rainbow Fountain") dating from 1893 or 1894.

The remainder of the site structures on Echo Mountain are a largely unrelated group of brick and concrete foundations dating from 1893-1905. On the mountain's south crest may be observed the foundations of the small zoo, the "Casino", and the inspection pit for trolley car mechanical work. On the north side of the right-of-way the foundations largely relate to service and storage buildings, and cottages housing the railway employees. There is an especially well-constructed area of steps and walls in this area.

/ Above Echo Mountain by several hundred feet is the site of the Lowe Observatory. Although badly overgrown, the original carriage road can be observed leading to it. There is a concrete foundation matching the footprint of the original Observatory building In its center is the concrete pier which served as the telescope mount. A second concrete reservoir is located here.

4. ALPINE RAILWAY DIVISION:

Beginning on a tangent at Echo Mountain (milepost 0.00), the upper-division right-of-way makes a sweeping curve of about one mile in length through Las Flores Canyon. The line is most intact at this point, because this section has never been converted into a fire and truck road. All rails are gone, but many ties can be seen. The foundations of 7 trestles are in evidence and are in good condition, particularly the trestle known as "High Bridge" (0.71), and "Sentinel Rock" (0.76) a picturesque outcropping left on the canyon side by the original builders is also evident.

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At a point called Cape of Good Hope (0.80), the line makes a sharp turn to the right and enters Millard Canyon. At this point also, the fire access road which was built up through Millard Canyon from Altadena in the early 1960's joins the right-of-way. The longest stretch of straight track on the railway, amounting to only 227 feet, was here. Because of the fire road, the right-of-way is wider than it was in the railway days. Many bridge abutments and reinforcing walls are in evidence, including some walls built in the 1960's for the fire road.

At Dawn Station (1.20), the old trail to the former gold mile at the bottom of Millard Canyon joins the right-of-way.

At Horseshoe Curve (1.40), the right-of-way makes a steep turnback. Although the abutments for two trestles have been removed for the fire road, the site is very recognizable. Some concrete channelization has been done here recently to avoid further erosion.

Near the site of Circular Bridge (1.75), the line emerges from the woods and commands a spectacular view of the valley, as well as a view of the right-of-way below in Las Flores and Millard Canyons. There is another steep turnback here, and a number of rock retaining walls, bridge abutments and foundations original to the railway. This spot marks the halfway point on the upper railway division.

The line re-enters the forest and proceeds through upper Millard Canyon, with concrete bridgework visible throughout. At Sunset Point (2.44), named for its obvious attraction, the right-of-way enters Grand Canyon. The roadbed here is much more rocky, as it is carved on a shelf of solid granite. Granite Gate (2.55) was a beautiful rock outcropping left on the canyon side by the builders. It is partially intact, but has been defaced by the road graders. Here, also, one of the original trolley wire supports may be seen hanging out of the rock wall on the mountain side.

From this point to the tavern site (3.57) the right-of-way proceeds through towering pine forests. A rock retaining wall nearly a mile long may be observed on the mountain side. The observant hiker will be able to discern the Alpine Tavern Stables area near the hotel site. Two large concrete bridge abutments at the head of Grand Canyon mark the last trestle which deposited travelers at the door of the Alpine Tavern (3.57).

The foundations of 14 of the 18 bridges on the upper divisions are visible today.

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5. ALPINE TAVERN SITE:

In addition to the abutments for the last bridge, the concrete walkway and passenger unloading area at the entrance to the hotel site are highly visible. There are several concrete floors marking the interior of the hotel, including one immediately in front of the location of the stone fireplace. Several concrete or rock-lined pathways diverge from the hotel site toward the sites of the cottages and various outbuildings that originall surrounded the hotel. A rock wall two stories in height which sheltered the 1924 addition to the hotel is one of the most prominent features of the site. On the side of the hill about 200 feet up from the hotel site, one of the 10,000 gallon tanks from its water system remains and is still in use. Below the hotel site in the canyon, the concrete septic tank remains as well.

6. INSPIRATION POINT/MT. LOWE SUMMIT:

Inspiration Point (about 1/3 mile from the Tavern site) at the head of Castle (upper Rubio) Canyon and Mount Lowe Summit (approximately 2 miles by trail) were the centers of recreational activity and the many fine hiking trails surrounding the Tavern. At Mt. Lowe Summit, there are rock foundations and a steel flagpole erected by the railway. Two trails, the east and west summit trails, converge here. They are part of the network of trails known as the "Mount Lowe Eight" built in 1893-94 and still maintained today. At Inspiration Point, the trails converge again. They are known as the "Sunset Trail" and "Castle Canyon Trail" below this point, and both lead to Echo Mountain. At Inspiration Point, there are many rock and concrete foundations, as well as the original "pipe telescopes" through which hikers and railway patrons would peer to locate marked cities in southern California.

HISTORIC PHYSICAL APPEARANCE:

1. RUBIO CANYON:

A single-track conventional streetcar electric railway with overhead wires supplying power to the cars. The overhead wires are supported over the rails by metal pipe arms attached to wooden poles planted at the side of the track. Eleven wooden trestles were originally built on this line; later rebuilding of the roadbed reduced these to three.

A small storage yard of two track capacity is located about 750 feet from the end of line.

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At Rubio, the streetcar line ends and the incline begins on a wooden platform spanning the canyon. Hotel Rubio, built in 1893, is a plain wooden structure having two stories above and two stories below platform level. For reasons never entirely clear, the pitch of the roof of the below platform section exceeds that of the above platform area. There were approximately a dozen rooms available to overnight guests, as well as a large and popular dining room.

Hotel Rubio was completely destroyed by a landslide in 1909. A wooden trainshed of two track capacity was built to replace it. There were no sleeping facilities in this new arrangement. The trainshed served until dismantled in 1939.

An extensive network of plank walkways and steps enabled hikers to view the nine waterfalls in the canyon above Hotel Rubio.

2. CABLE INCLINE:

A three-rail right-of-way of 3000 feet in length, having a vertical rise of 1500 feet, stretching from Rubio Canyon to Echo Mountain. The pulling cable is 1 1/2 inches in diameter, formed into an endless loop, with grip or bull" wheels eight feet in diameter at each end. Around their circumference there are 72 automatic grips arranged so that 45 of them held the cable at one time. The ascending and descending cars share a common center rail, passing at a siding midpoint where the three rails diverge into four for this purpose. An entirely separate safety cable of slightly smaller diameter was provided which passed through an automatic grip under the incline car Just above Rubio Canyon is "Granite Gorge", a steep and treacherous cut which required six months of hand construction to complete.

Directly above Granite Gorge is Macpherson Trestle 150 feet higher at the far end. It was named for the chief engineer of the railroad, David Macpherson.

The average for the incline is 59 percent, or a vertical ascent of 59 feet for each 100 feet of track.

3. ECHO MOUNTAIN:

Echo Mountain was a complex group of facilities, some of which were open to the public and some of which were dedicated to private and/or maintenance uses. For ease of description, the following discrete areas have been indentified:

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A. Powerhouse/cable operating machinery:

As originally built, the cablehouse was a wooden structure of single story construction which was built over a series of rock and concrete foundations anchoring the cable winding machinery, technically located in the basement. The winding machinery itself consisted of the "bull wheel", eight feet in diameter, two reduction gears, and the electric motor which drove the incline cable. As a result of the reduction gears, the bull wheel revolved at ten revolutions per minute, making a trip up or down the 1,500 feet long incline last six minutes.

The operating machinery, of intense interest to railway and hotel patrons, was always open to the public. As originally built, the machinery supplying electrical power was located in a separate building behind the cablehouse, but as a result of the 1905 fire were consolidated.

In 1905, a windstorm and resulting fire destroyed every building on Echo Mountain save one. The power generating facilities were moved to Altadena and the cablehouse was rebuilt as an attractive two story fireproof (concrete) structure. It was built in the "mission style" with arched entranceways and (imitation) tile roof. The second above-ground story was a tower, complete with parapets, that contained the operating machinery and held the 3 million candlepower World's Fair searchlight on its roof (at nine feet in diameter, the largest in the world when built by the General Electric Company). This building also housed the "photographic department" and served until the railway was dismantled in the late 1930's.

Vandals set fire to the second cablehouse in 1940.

B. Echo Mountain House:

A large three-story hotel having approximately 70 guest rooms, built in 1894, burned to the ground as a result of a kitchen fire, 1900. The architect was T. J. Parkes, of Los Angeles. In style, the Echo Mountain House resembled similar mountain resort hotels popular in the eastern United States. It was situated at the head of the incline and so designed as to take maximum advantage of the sweeping panorama over the San Gabriel Valley. There were two wings. each of three stories, and having a southern exposure of over 400 feet. The roof of each

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wing had three gables, and where they came together a large metal dome rose an additional story, for a total of four in the center of the building.

The interior of the Echo Mountain House was finished entirely in natural wood, furnished in typical Victorian style.

C. Chalet:

This was a small hotel located slightly down Echo Mountain, also with a southern exposure. It was a three-story structure containing a dozen guest rooms, also entirely of wooden construction. It opened in 1893 and was destroyed in the storm of December 1905.

All of the buildings on Echo Mountain were painted white for maximum visibility from the valley below.

D. Casino/zoo:

The Casino, constructed contemporaneously with the Echo Mountain House in 1894, was a barnlike structure containing a dormitary for the railway employees on its upper floor. It was built approximately 500 feet west of the Echo Mountain House on the south-facing front of Echo Mountain. Its footprint was approximately 20 by 30 feet and was two stories in height. The lower floor was used for social gatherings.

The Echo Mountain Zoo or menagerie as it was known was a low structure consisting of cages built between the cablehouse and the Casino on the south-facing front of Echo Mountain. It held a modest collection of animals (civet cats, racoons, a bear) typically found in the San Gabriel Mountains. The collection was partly for the amusement of hotel guests and partly as a expression of Professor Lowe's policy of using the mountains as resources for scientific study.

E. Railway maintenance areas:

A fire destroyed the Echo Mountain House in February, 1900. In December, 1905, a windstorm and fire destroyed every other building on Echo Mountain save the observatory. With reconstruction, the mountain took on a different character. Echo Mountain became transfer point rather than the destination it had been. The mountain was given over to maintenance facilities and housing for the railway employees. There was an inspection pit for the streetcars, numerous storage buildings, and several cottages (including the "double house" for the photographer and repair forement.

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F. Lowe Observatory:

Professor T.S.C. Lowe, the railway's builder, intended to endow a first-class scientific institution in the mountains. As a precursor to a planned 37 1/2 inch reflecting telescope. Lowe built a small observatory on Echo Mountain in 1894. Its first director was Dr. Lewis Swift, one of the more famous astronomers of the nineteenth century, who had been lured away from his post as director of the Warner Observatory in Rochester New York. Swift, who personally had discovered over a thousand comets, brought with him the famed 16 inch Alvan Clark Refracting Telescope, which was installed on Echo Mountain.

The Mount Lowe Observatory was the principal astronomical institution in Southern California before the erection of the 100 inch Hooker reflecting telescope on Mount Wilson. The observatory building itself collapsed in a windstorm in 1928, but the telescope was saved and is presently at still in use by the astronomy department at the University of Santa Clara (California).

4. ALPINE RAILWAY DIVISION:

A single-track conventional streetcar electric railway of narrow (42" gauge) with overhead wires supplying power to the cars. The overhead wires are supported over the rails by metal pipe arms attached to wooden poles planted at the side of the track.

The best description of the original physical appearance of the Alpine Division is the "spiel" or monologue given by the railway conductors to the passengers. This verson dates from about 1920:

"Friends, you are now starting the last three and a half miles of this trolley trip on which you will cross 18 bridges and pass around 127 curves, the longest piece of straight track being but 225 feet in length. The canyon below you on the left is known as Las Flores Canyon, named from the thousands of native wild flowers which bloom in the canyon each spring. Looking across the canyon to the ridge above you may be seen the world famous Circular Bridge, which we will pass over in about 15 minutes."

"We are now approaching the Cape of Good Hope where we will cross the ridge from Las Flores into Millard Canyon. Looking across Las Flores Canyon to the left you can see Echo Mountain from which you started a few minutes ago."

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"We have now passed around the Cape of Good Hope and are entering Millard Canyon. Just ahead is the longest stretch of straight track on this section of the trip. It is 225 feet long. Millard Canyon below you now is a beautifully wooded canyon with a small stream at the bottom. Below us in the canyon is Dawn Mine, an early-day gold mining venture. Several of the tunnels stimm remain but are boarded up and used as a part of Pasadena's water supply supply system."

"We are now crossing the Devil's Slide, so named because the loose, decomposed granite of which it is composed makes treacherous footing for the unwary hiker on the steep slope."

"Now we approach Horseshoe Curve. It is a 120 degree curve which means that for each 100 feet of the curve we pass around 120 degrees, or one third of a curve. You will observe that we are making almost a complete circle, our direction leaving the curve now being opposite to, but on a higher level than we approached the curve."

"Just ahead is the steepest grade on this part of the trip, a 7 per cent grade."

"As we come out of this grove of live oak trees into the open, we can see the city of Long Beach and other coastal areas more than 30 miles away. Looking beyond may be seen the Catalina Channel with Catalina Island in the distance, nearly 60 miles away."

"We are now comeing to the world-famous Circular Bridge. As we approach it, the precipice on the right is a sheer drop of almost 1000 feet. The bridge was the first bridge in the world designed for both a curve and an ascending grade. It is almost a complete circle nearly 400 feet in length with better than a 4 per cent grade. Looking to the right and below us, we again view the Las Flores Canyon and Echo Mountain where you changed from the incline to this car."

"Looking below on the left may be seen Horseshoe Curve and the three elevations of track over which we have just passed. We are now approaching Sunset Point from which beautiful susnsets over the mountain and the valley below may be viewed."

"We are now coming to Granite Gate. You will observe that the roadbed here has been blasted through solid granite. As we pass through the gate, a broad canyon below us comes into view. Called Grand Canyon, it is nearly a mile wide and more than 1000 feet in depth. Alpine Tavern is located at the head of this

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5. ALPINE TAVERN:

The Tavern is a hotel constructed of wood in 1895 at Crystal Springs, at the head of Grand Canyon, the terminus of the Alpine Railway Division. The architect was Louls F. Kwiat Kowski. As originally built, the hotel was a two story structure of approximately 40 by 80 feet. It was enlarged and remodeled a number of times, most notably in 1924. Some additions are the work of architect Myron Hunt.

The architectural style is best described as "Swiss Chalet" which featured wide porches, broad low-peaked roofs, and a wealth of "craftsman" like details throughout. The interior was largely finished in natural wood, creating a warm and homey appearance for the hotel guests. Most notable interior detail was the great fireplace, built of arroyo stone, around which guests would congregate on cold evenings.

A number of wooden and tent cottages were built in the areas surrounding the hotel. The Tavern was at the center of many fine riding and hiking trails.

The hotel burned to the ground in September, 1936, and the railway was sold for scrap and torn up prior to World War Two.

6. INSPIRATION POINT/MT. LOWE SUMMIT:

Both of these sites lie above the elevation of the Alpine Tavern and were important destination points on the extensive network of government and privately built trails. At Inspiration Point, at the head of Castle (upper Rubio) Canyon, a wooden shelter was built in the "craftsman" style which contained a number of pipe "telescopes" (without lenses) pointing out the various cities in southern California. At Mt. Lowe, there was a shelter and a flagpole, as well as additional "pipe telescopes".

8. Statement of Significance									
Certifying official has considered the								ies:	
	n	ationally	, E	X statev	vide	loc	ally		
Applicable National Register Criteria	⊠ A	XX B	⊠c	□ D					
Criteria Considerations (Exceptions)	□ A	□в	□с		E	□F	G	n/a	:
Areas of Significance (enter categorie Engineering	s from i	nstructio	ons)		Period 1892	of Signi - 193	ficance 6		Significant Dates 1893, 1900
Entertainment									1905, 1936
Science Transportation									
					Cultura	l Affiliat	ion		
Significant Person					Archite				
Thaddeus S.C. Lowe					David			cson	
					Andre T. J.				

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

SUMMARY:

Mount Lowe was the most popular single tourist attraction in California at the turn of the century, and, after San Francisco and Los Angeles, probably the most recognizable geographic name in the state. It would not be inappropriate to compare Mount Lowe's stature in California tourism to the present day Disneyland. In its 43 year history, there were over three million recorded visitors, a large percentage of whom were drawn from out of state. It enjoyed national fame as a tourist attraction and no trip to California was complete without a visit here.

HISTORIC CONTEXT:

The Mount Lowe Railway, which opened July 4, 1893, was the brainchild of Professor Thaddeus S. C. Lowe, who had achieved fame and commendataion from President Lincoln as a pioneer in the use of lighter-than-air balloons for scientific purposes, military observation and reporting. It was originally planned to construct it to the summit of Mount Wilson, a distance of 11 miles by rail, but legal difficulties necessitated a change of desitnation to an unnamed peak eventually christened Mount Lowe. Construction was never completed, however.

Professor Lowe's meteorological work during the 1850's had taught him a great deal about gases and their properties. Following the Civil War, Lowe achieved moderate wealth as an inventor and entrepreneur. He is credited with inventing the process for artificial refrigeration by condensation of ammonia and held a number of patents related to the production and distirbution of gas. He moved to Pasadena California in 1889, ostensibly to retire, but soon became involved in various business interests in Southern California.

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In 1892, Lowe became intrigued with the idea of a railway in the mountains behind Pasadena, a concept which had been proposed and promoted by others without success.

Construction on the first section into Rubio Canyon began in 1892. The incline was formally opened to passengers on July 4, 1893. Building the Alpine Division commenced shortly thereafter, culminating in the dedication of Alpine Tavern on December 14, 1895.

Lowe lost the railway due to cash flow problems in 1898. Thereafter it was acquired by the Pacific Electric Railway Company, which extended the lower line into Los Angeles and operated it successfully until the Tavern burned in September 1936.

SPECIFIC AREAS OF SIGNIFICANCE:

I. Architecture:

A. Echo Mountain:

The "White City" (1893-94) was designed by T. J. Parkes, prominent Los Angeles architect, who had also done Professor Lowe's 24,000 square foot residence on Orange Grove Avenue in Pasadena. In style, these buildings resembled mountain hotels found in the Catskills and White Mountains of the eastern United States rather than the elaborate "Eastlake" victorian structures prevalent in California at that time. There is a strong resemblance between the Echo Mountain House and the Hotel Del Coronado, which was built slightly earlier.

Because of its prominent visibility, overlooking hundreds of square miles of the San Gabriel Valley, the Echo Mountain House was designed to be seen by a large number of people, and was undoubtedly the most recognizable hotel in Southern California at the time.

B. Alpine Tavern:

The Tavern was built during a time of financial difficulty for Professor Lowe, and was not an elaborate structure. Nevertheless, architect Kwiat Kowski made excellent use of the beautiful rustic setting and natural materials such as natural woods and arroyo stone for foundations and decorations. In style, the Tavern resembled structures common to its namesake alps in Europe, and thus was a significant precursor to the "craftsman" style of architecture which developed a decade later.

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The Tavern was remodeled and enlarged many times, most noteably in 1924 when a new concrete-shelled annex was constructed. Some additions were by noted southern California architect Myron Hunt.

II. Engineering:

The railway itself has been noted as one of the civil engineering landmarks of California. It incorporated many design innovations and was exceedingly difficult to construct, as its builders had the availability of dynamite but no power tools of any kind.

Mount Lowe was the first mountain railroad in the world to be operated by electricity.

In particular, the following engineering details are significant:

A. Great Incline:

"Granite Gorge"--a cut through solid granite which occupied the labors of a construction gang for eight months. All the construction debris had to be carried up (on the backs of men-burros could not be induced to climb the grade) a 62 per cent grade and disposed of uphill.

Macpherson Trestle--spanned a difficult and deep canyon on the incline. It was over 200 feet long and 114 feet higher on its upper end. It was named for David J. Macpherson, chief engineer and construction supervisor, who had formerly worked for the Engineering Department of the Santa Fe Railway.

Incline turnout and machinery--all of the cable winding machinery was designed by Andrew Hallide of the California Wire Rope Works, designer of San Francisco's pioneer cable car system.

B. Alpine Railway Division:

Las Flores Canyon--on the Alpine Division. Eleven substantial bridges were required in the first 1 1/4 miles of upper division right of way. Construction was particularly treacherous here, due to the decompositon of the rock supporting the roadbed.

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Circular Bridge--first railway bridge of its kind ever built on an ascending grade. A substantial difference of elevation at its two ends allowed the right-of-way to make a curve of nearly 360 degrees. It was built on a uniform grade of 4 1/2 percent and had a diameter of nearly 400 feet.

III. Entertainment/Recreation:

A trip to Mount Lowe was an inexpensive and unequalled opportunity for Southern California native and tourist alike to experience the beauty and recreation opportunities provided by the local mountains—incidentally, some of the most beautiful mountain scenery to be found anywhere. In addition to sightseeing and the amenities of the mountain hotels, there were miles of fine riding and hiking trails, some of which are extant and within the boundaries of the nomination. The lectures at the Observatory served dual functions of education and entertainment.

When the weather was good, 800 to 1,000 railway passengers a day would be carried. During the few weeks of the year when snow lay in the mountains, daily patronage would exceed 1,500.

IV. Science:

T.S.C. Lowe, the railway's builder, was, like many men of the nineteenth century, self-taught in scientific principles. His early experiments with balloons pioneered modern meterology, and his use of them for observation during the Civil War marked

the beginnings of military aviation in the United States. It was Lowe's intentions to devote a portion of the profits from the railway to the endowment of a major scientific institution (the Lowe Institute) in the San Gabriel Mountains. Plans included the establishment of a 37 1/2 inch reflecting telescope at Inspiration Point. Although this goal was not achieved, Lowe did found the Lowe Observatory on Echo Mountain, from which in the period 1894-1898 resident astronomer Dr. Lewis Swift discovered 298 new nebulae and a large number of comets.

Up to its destruction by a windstorm in 1928, the Lowe Observatory served an important function to teach and popularize basic astronomical concepts to many thousands of railway patrons.

V. Transportation:

In 1902, the Mount Lowe Railway was incorporated into the Pacific Electric Railway Company, which became the largest and best known interurban electric railway company in the United States. The P.E. was vital to the growth of Los Angeles, and the

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in Southern California. Although some P.E. rights-of-way are still in use, many others have been abandoned, and there is no better preserved section of an abandoned right-of-way than the Alpine Division between Echo Mountain and Millard Canyon.

The Mount Lowe line was also a cornerstone in the struggle for control and domination of the electric railway interests in Southern California at the turn of the century (see Seims, Trolley Days in Pasadena).

Pacific Electric Substation #8 in Altadena, which served the Mount Lowe line, has been listed on the National Register since 1977. It was the location of the Mount Lowe Museum (1984-1986).

9. Major Bibliographical References	
-	
James, George Wharton, Scen Railway, Pasadena, California, Ech	nic Mount Lowe and Its Wonderful ho Publishing Co., 1895. 92pp.
Robinson, John, The San Gabri Country, San Marino California, Go	iels, <u>Southern California Mountain</u> olden West Books, 1977. 203pp.
Seims, Charles, <u>Mount</u> <u>Lowe</u> San Marino, California, <u>Golden Wes</u>	e, the Railway in the Clouds, st Books, 1976. 243pp.
Seims, Charles, <u>Trolley</u> I California, Golden West Books, 198	Days in Pasadena, San Marino 83. 192 pp.
	See continuation sheet
Previous documentation on file (NPS): preliminary determination of individual listing (36 CFR 67) has been requested previously listed in the National Register previously determined eligible by the National Register designated a National Historic Landmark recorded by Historic American Buildings Survey #	Primary location of additional data: State historic preservation office Other State agency Federal agency Local government University Other
recorded by Historic American Engineering Record #	Specify repository:
10. Geographical Data	
Acreage of property Approx. 1680 acres	
200 40100	
UTM References A	B
C B B B B B D B 7 B 5 B 3 D	D
E 3 9 8 7 5 0 3 7 8 8 3 0 0	See continuation sheet
Verbal Boundary Description	
•	
	See continuation sheet
Boundary Justification	
	•
	See continuation sheet
11 Form Prepared Pr	
11. Form Prepared By name/title Charles G. Seims, Attorney at Law;	former gunaton Mt I are Museum
organization	date 8-15-91
street & number 519 N.E. Fourth St,	telephone <u>(503)</u> 665-8143
city or town Chacham	state Organ zin code 97030

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VERBAL BOUNDARY DESCRIPTION:

A tract of land in the Angeles National Forest, County of Los Angeles, State of California; commencing at a point marked "A" on the base map; thence in a straight line following true north and the boundary of the Angeles National Forest 3/16 of a mile to point "B" on the base map; thence west 3/4 of a mile in a straight line following the boundary of the Angeles National Forest to point "C" on the base map; thence in a straight line corresponding to magnetic north approximately two miles to point "D" on the base map; thence east in a straight line approximately 1 1/4 miles to a point marked "E" on the base map; thence in a straight line running roughly south to point "A" on the base map.

BOUNDARY JUSTIFICATION:

boundaries were chosen because they economically encompass the six areas geographic areas of significance identified in Section #7 (Rubio Canyon, the incline, Mountain, Alpine Railway Division, Alpine (Mount Lowe) Tavern, and the recreational facilities at Mount Lowe Summit/Inspiration Point.) In addition, the nominated area includes a substantial portion of the original trail system (including the "Mount Lowe Eight") built when the railroad was constructed. convenience, the nominated area was located entirely within the boundaries of the Angeles National Forest on federal property.

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THE FOLLOWING INFORMATION APPLIES TO ALL PHOTOGRAPHS SUBMITTED:

NAME OF PROPERTY: Mount Lowe Railway

CITY AND STATE: National Forest north of Altadena, California

LOCATION OF ORIGINAL NEGATIVE(S): with preparer

THE FOLLOWING INFORMATION APPLIES TO PARTICULAR PHOTOGRAPHS:

PHOTOGRAPH NUMBER: 1

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1898

DESCRIPTION/DIRECTION: The "White City" on Echo Mountain, photographed looking north from Altadena. From left to right, the buildings on the mountain are: observatory, casino/menagerie, Echo Mountain House, Chalet.

PHOTOGRAPH NUMBER: 2

NAME OF PHOTOGRAPHER: C.C. Pierce

DATE OF PHOTOGRAPH: circa 1898

DESCRIPTION/DIRECTION: Base of Echo Mountain looking north, showing trolley right-of-way into Rubio Canyon. This photograph is taken at approximately the southernmost portion of the nominated area.

PHOTOGRAPH NUMBER: 3

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1898

DESCRIPTION/DIRECTION: Base of incline, looking west from Hotel Rubio, which is out of sight to left and rear.

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PHOTOGRAPH NUMBER: 4

NAME OF PHOTOGRAPHER: Lawrence

DATE OF PHOTOGRAPH: 1909

DESCRIPTION/DIRECTION: Base of Incline and rebuilt trainshed after Hotel Rubio destroyed by landslide in 1909. Photo looks north.

PHOTOGRAPH NUMBER: 5

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1930

DESCRIPTION/DIRECTION: Great incline. looking west. Note Granite Gorge, Macpherson Trestle, and the incline turnout.

PHOTOGRAPH NUMBER: 6

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1930

DESCRIPTION/DIRECTION: Changing from incline to upper division Note the new (1906) powerhouse and the great trolley car. World's Fair searchlight of 6 million candlepower.

PHOTOGRAPH NUMBER: 7

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1894

DESCRIPTION/DIRECTION: incline operating machinery in the base of the cablehouse. Photo looks east toward incline.

PHOTOGRAPH NUMBER: 8

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1895

DESCRIPTION/DIRECTION: Echo Mountain House, looking north. First

cablahouse is at far left

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PHOTOGRAPH NUMBER: 9

NAME OF PHOTOGRAPHER: Munsey

DATE OF PHOTOGRAPH: circa 1898

DESCRIPTION/DIRECTION: "White City" on Echo Mountain, looking south.

PHOTOGRAPH NUMBER: 10

NAME OF PHOTOGRAPHER: Lawrence

DATE OF PHOTOGRAPH: circa 1912

DESCRIPTION/DIRECTION: Same view as #9, showing alterations to Echo Mountain after fire of 1905.

PHOTOGRAPH NUMBER: 11

NAME OF PHOTOGRAPHER: Lawrence

DATE OF PHOTOGRAPHER: circa 1914

DESCRIPTION/DIRECTION: View of Alpine division right-of-way in Las Flores Canyon, looking north. Circular Bridge is at upper right.

PHOTOGRAPH NUMBER: 12

NAME OF PHOTOGRAPHER: Lawrence

DATE OF PHOTOGRAPH: circa 1914

DESCRIPTION/DIRECTION: View of Alpine division right-of-way in Las Flores Canyon, looking West.

PHOTOGRAPH NUMBER: 13

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1895

DESCRIPTION/DIRECTION: Circular Bridge, looking South. "White City" on Echo Mountain at upper left.

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PHOTOGRAPH NUMBER: 14

NAME OF PHOTOGRAPHER: Lawrence

DATE OF PHOTOGRAPH: circa 1914

DESCRIPTION/DIRECTION: Later view of Circular Bridge than #13,

looking South.

PHOTOGRAPH NUMBER: 15

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1925

DESCRIPTION/DIRECTION: Granite Gate, looking East.

PHOTOGRAPH NUMBER: 16

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: circa 1930

DESCRIPTION/DIRECTION: Alpine (Mount Lowe) Tavern, looking West.

PHOTOGRAPH NUMBER: 17

NAME OF PHOTOGRAPHER: Lawrence

DATE OF PHOTOGRAPH: circa 1914

DESCRIPTION/DIRECTION: Alpine Tavern interior, looking East.

PHOTOGRAPH NUMBER: 18

NAME OF PHOTOGRAPHER: unknown

DATE OF PHOTOGRAPH: CIRCA 1925

DESCRIPTION/DIRECTION: Inspiration Point, showing trail and

structure.

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PHOTOGRAPH NUMBER: 19

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989

DESCRIPTION/DIRECTION: Abandoned right-of-way in Rubio Canyon, looking north.

PHOTOGRAPH NUMBER: 20

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989

DESCRIPTION/DIRECTION: Abandoned right-of-way in Rubio Canyon, looking north.

PHOTOGRAPH NUMBER: 21

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1963

DESCRIPTION/DIRECTION: Railroad trestle in Rubio Canyon, looking North.

PHOTOGRAPH NUMBER: 22

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989

DESCRIPTION/DIRECTION: Site of Rubio Pavilion and trainshed, looking north/east from end of right-of-way.

PHOTOGRAPH NUMBER: 23

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Incline right-of-way (heavily overgrown) looking east from Echo Mountain.

NPS Form 10-800-a

United States Department of the Interior National Park Service

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PHOTOGRAPH NUMBER: 24

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Incline transfer station at Echo Moountain, looking north/east. These walls and structures built in 1893.

PHOTOGRAPH NUMBER: 25

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Incline transfer station and ruins of cablehouse, Echo Mountain, looking west.

PHOTOGRAPH NUMBER: 26

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Cable grip wheel designed by Andrew Hallide on Echo Mountain, looking east.

PHOTOGRAPH NUMBER: 27

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Detail of cable gripwheel.

PHOTOGRAPH NUMBER: 28

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Detail of ruined cablehouse on Echo Mountain, looking south/west. Building was destroyed by USFS in 1962.



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PHOTOGRAPH NUMBER: 29

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Detail of ruined cablehouse on Echo Mountain showing relation to Alpine Division right-of-way. The walls in the background date from 1893.

PHOTOGRAPH NUMBER: 30

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Rainbow Fountain on Echo Mountain, dating from 1893.

PHOTOGRAPH NUMBER: 31

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Rock step and wall detail, Echo Mountain, looking west.

PHOTOGRAPH NUMBER: 32

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: "High Bridge" in Las Flores Canyon, Alpine Division right-of-way. The stone abutment dates from 1894, the concrete foundation is later. Camera looks north/east.

PHOTOGRAPH NUMBER: 33

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: "Sentinel Rock" in Las Flores Canyon, looking north and east.

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PHOTOGRAPH NUMBER: 34

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: "Cape of Good Hope" (right) and "Longest Straight Track" (center), in Millard Canyon, looking south. Note the rock walls reinforcing right-of-way.

PHOTOGRAPH NUMBER: 35

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: "Horseshoe Curve" and Alpine Division right-of-way in Millard Canyon.

PHOTOGRAPH NUMBER: 36

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: "Circular Bridge" site, looking east. Original bridge foundations at center right.

PHOTOGRAPH NUMBER: 37

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Alpine Division right of way retaining walls at Sunset View, between Circular Bridge and Granite Gate. The camera looks south/east.

PHOTOGRAPH NUMBER: 38

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Granite Gate, showing an original trolley wire support. This monument was badly defaced by USFS in the 1960's.

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PHOTOGRAPH NUMBER: 39

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Alpine Division right-of-way near Granite Gate, looking west.

PHOTOGRAPH NUMBER: 40

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Alpine Tavern site, showing foundations for the "S-bridge), looking north.

PHOTOGRAPH NUMBER: 41

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Rock wall detail at Alpine Tavern site, looking north.

PHOTOGRAPH NUMBER: 42

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989:

DESCRIPTION/DIRECTION: Rock wall detail at Alpine Tavern site, looking north.

PHOTOGRAPH NUMBER: 43

NAME OF PHOTOGRAPHER: Seims

DATE OF PHOTOGRAPH: 1989

DESCRIPTION/DIRECTION: Ruins of shelter and "pipe telescopes" at Inspiration Point, looking west.

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INDEX OF EXHIBITS:

- 1. Two USGS Topographic Maps (Pasadena California and Mt. WIlson Quadrangles), with the nominated area marked and outlined in yellow.
- 2. A group of 43 8 x 10 glossy photographs depicting Mount Lowe in historical and modern views.
- 3. 3 Pacific Electric Railway Plat Maps, "Mount Lowe Line, Los Angeles County, (1930). Index to submitted photographs marked in red.
- 4. Sketch Map, "Map of Echo Mountain California", prepared by Charles Seims.
- 5. Article, "From Strawberries to Snow by the Mount Lowe Electric Road", The Electrical Engineer, February 7, 1894.
- 6. Article "A Most Unusual Construction", Street Railway Journal, 1893.
- 7. Brochure, "Mount Lowe--A Way Up Trip", 1903. (photocopy)
- 8. Brochure, "The Lowe Observatory, Mt. Lowe California", circa 1908. (photocopy)
- 9. Brochure, "Mount Lowe Trail Trips" (reproduction)
- 10. Brochure, "Mount Lowe Museum", 1985, (photocopy)
- 11. Book, Mount Lowe, the Railway in the Clouds", by Charles Seims, Golden West Books, 1976.

