1. NAME OF PROPERTY

Historic Name: Denver & Rio Grande Railroad San Juan Extension

Other Name/Site Number: Cumbres & Toltec Scenic Railroad; 5AA664; 5CN65

2. LOCATION

Street & Number: Railway corridor from Antonito, CO to Chama, N.M. via Cumbres Pass Not for publication:

City/Town: Antonito	Vicinity:	State: Colorado	County: Conejos	Code: 021	Zip Code: 81120
City/Town: Chromo	Vicinity: X	State: Colorado	County: Archuleta	Code: 007	Zip Code: 81128
City/Town: Chama	Vicinity:	State: New Mexico	County: Rio Arriba	Code: 039	Zip Code: 87520

3. CLASSIFICATION

Ownership of Property		Category of Property	
Private:	___	Building(s):	___
Public-Local:	___	District:	X
Public-State:	X	Site:	___
Public-Federal:	___	Structure:	___
		Object:	___

Number of Resources within Property

Contributing	Noncontributing	
21	5	buildings
0	0	sites
144	110	structures
1	0	objects
166	115	Total

Number of Contributing Resources Previously Listed in the National Register: 240 contributing

Name of Related Multiple Property Listing: Railroads in Colorado 1858-1948

4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ____ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ____ meets ____ does not meet the National Register Criteria.

Signature of Certifying Official Date

State or Federal Agency and Bureau

In my opinion, the property ___ meets ____ does not meet the National Register criteria.

Signature of Commenting or Other Official Date

State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

___ Entered in the National Register
___ Determined eligible for the National Register
___ Determined not eligible for the National Register
___ Removed from the National Register
___ Other (explain): _____

Signature of Keeper Date of Action

6. FUNCTION OR USE

Historic: Transportation Sub: Rail-related

Current: Transportation Sub: Rail-related

7. DESCRIPTION

Architectural Classification: Other: Railroad

Materials:

Foundation: Concrete
Walls: Weatherboard
Roof: Shingle
Other: Steel

Describe Present and Historic Physical Appearance.

BACKGROUND

The Denver & Rio Grande Railroad San Juan Extension was listed on the National Register of Historic Places in 1973 (NRIS 73000462). In the original listing, the boundary was broadly defined and only some of the resources were described. An updated National Register nomination accepted in 2007 (NRIS 07000374) clarified those boundaries and provided additional resource documentation. The 2007 nomination also established the district as nationally significant for a period of significance encompassing the entire Denver & Rio Grande Railroad's construction and operation of the rail line from 1880 to 1965. Note that the period of significance for the National Historic Landmark is from 1879 to 1930. Consequently, a number of National Register listed resources moved from contributing to noncontributing for this and other reasons. The refined period of significance extends from the beginning of construction to the start of the Great Depression, the point at which major modifications, modernization, and updates to the narrow gauge effectively ceased.

NARRATIVE DESCRIPTION

The Denver & Rio Grande Railroad San Juan Extension, also known as the Cumbres & Toltec Scenic Railroad (C&TS), is a 64 mile-long route that straddles the Colorado-New Mexico border between the communities of Antonito, Colorado and Chama, New Mexico. (see Figure 3) Approximately halfway between Denver, Colorado and Santa Fe, New Mexico, the narrow-gauge railroad line is on the western edge of the San Luis Valley, and south and west of the Rio Grande River. This route extends from Antonito to the lava-capped mesas southwest of the town, then weaves in and out of drainages along the north side of the Rio de Los Pinos to Osier, Colorado. Thereafter, the alignment follows an earlier wagon toll road down a high narrow valley, down steep slopes, and through a narrow canyon to Chama, New Mexico.[1] The railroad is nationally significant as an outstanding representation of the original 1,000-mile narrow gauge railroad network (see Figures 1 and 2) that opened the Central Rocky Mountain region for development, and as the country's longest and most complete representation of late nineteenth- and early twentieth-century railroading.

In all, the track crosses the state border eleven times, sometimes multiple times within hundreds of feet. The nominated boundary includes the right-of-way, which is generally 200' wide (100' on either side of the center line of the 3' gauge track). In several places the nominated boundary is wider to incorporate surviving section towns located along the right-of-way and associated structures and sites, and an outstanding collection of equipment that was built for and used on the line. In addition to the track, resources include depots, water tanks, trestles, telegraphone booths, section houses, tunnels, livestock loading pens, ten steam locomotives, and over a hundred other pieces of rolling stock. The track has all the attributes necessary to continue to move multiple trains over the line in both directions according to operation practices in use during the 1920s.

Between the high grassland at Antonito and the plateau at Chama, the route passes through mesas, river gorges, high valleys bordered by mountain peaks, a mountain pass, and gentle hills. The variety of elevations along the route contribute to the rich diversity of ecosystems that range from the desert-like landscape around Antonito to the spruce and fir forests that surround Cumbres Pass (10,015' above sea level), to cottonwood-lined riparian habitat near Chama. The landscape is marked by a number of volcanic features, notably San Antonio Peak, which is a large dome-shaped shield volcano that dominates the southern horizon, and Los Mogotes—a cluster of peaks—to the north.[2] The area between Antonito and Los Pinos is devoid of all but the most primitive roads

[1] Doris B. Osterwald, *Ticket to Toltec: A Mile by Mile Guide for the Cumbres & Toltec Scenic Railroad* (Lakewood, Colorado: Western Guideways, Ltd., 1992), 16-18.
[2] Ibid., 110-121.

and is largely unpopulated: it looks very much as it did in the late 1870s when railroad surveyors first traversed the area in search of a route to the San Juan Basin. During a ride across the line, it is easy to summon the feeling that you are travelling back to 1920, 1900, or even 1880.

The Cumbres & Toltec Scenic Railroad is one of two surviving segments of the original 1,000-mile narrow gauge component of the Denver & Rio Grande (D&RG).[3] General William Jackson Palmer built the D&RG to connect Denver with Salt Lake City. Palmer originally conceived of the D&RG as a north-south railroad connecting Denver with Mexico City. This plan was thwarted by the advance of the Atchison, Topeka, and Santa Fe Railroad westward in 1878. The competing railroad diverted the D&RG to the west to connect Denver with Salt Lake City and tap the mining towns of the central Rockies. The San Juan Extension was planned and constructed in the late 1870s to serve the southern portion of the Colorado Mineral Belt in the Silverton, Colorado area in the San Juan Basin. The Antonito-Chama segment preserves a portion of narrow gauge main line that extended between Alamosa, Colorado and Durango, Colorado. At Durango, branch lines extended to the north, serving the rock mineral basin at Silverton and south, serving the oil and gas mineral basin at Farmington. The Rio Grande Southern extended west and north, connecting Durango with Ridgway, Colorado. The Durango-Silverton segment is a National Historic Landmark, designated in 1961 for railroad transportation and as one of the last surviving segments of narrow gauge railroad. Both segments were part of the same rail system, were constructed sequentially, used the same equipment and were operated as a single entity by the same company.

The Denver & Rio Grande San Juan Extension exhibits physical and cultural integrity and continuity found only rarely in any kind of landscape, system, built environment, or heritage resource. That is largely due to the circumstances responsible for the preservation of the railroad, and the manner in which it has been operated for the last 40 years. As other portions of the D&RG were converted to standard gauge, the San Juan Extension survived intact and continued to be operated as it was in the early twentieth century, serving as a railroad main line until 1968. The Cumbres & Toltec Scenic Railroad began regular heritage railroad operations in 1971 and has operated as a tourist line every year since then. In 1971, a substantial proportion of the original physical plant and equipment built for and used by the original D&RG-San Juan Extension remained in place and, in most cases, in use. The railroad was essentially the same property first laid out by the D&RG Railroad in 1880 and modernized over the succeeding 50 years. Since then, the C&TS and affiliated groups have repatriated original D&RG narrow gauge rolling stock, engaged in complex and long-running restoration projects, and augmented the railroad's collections of archives, artifacts, and original fabric. In size, scale, intensity, geography, operating characteristics, and overall passenger experience, the C&TS closely replicates American railroad travel as it would have been throughout the period when railroads were the nation's primary means of transportation. Taking the better part of a day to traverse 64 miles would have been familiar to railroad passengers throughout the United States at any time between the 1840s and the 1940s. Most of the landscapes the C&TS traverses and the viewscapes it offers are little changed from the 1880s, and remain protected as parts of Federally administered land and a national forest. Few railroad heritage sites offer this combination of physical integrity, railroad experience, landscape and viewscape, and an overall sense of what railroad mobility meant to generations of Americans throughout the continental United States.

As the D&RG did for roughly 88 years, the C&TS offers a regularly scheduled program of steam locomotive-hauled passenger trains operating between terminals at Antonito, Colorado and Chama, New Mexico. The standard trips operate daily from each terminal (eastbound and westbound over the entire length of the railroad) during the customary season of late May through October. The railroad also runs special trains, charter trains, and work trains as needed.

[3] Refer to Figure 1 for a map of the D&RGWRG system at its most expansive point in 1923. See Administrative Notes below regarding nomenclature.

The Cumbres & Toltec exhibits a high degree of overall integrity of location, design, materials, setting, workmanship, feeling and association. One of only few comparable railroads in the United States out of thousands of once-ubiquitous examples, the Denver & Rio Grande San Juan Extension – together with other heritage railroads such as the Durango-Silverton Narrow-Gauge Railroad (NHL); Baltimore and Ohio Transportation Museum and Mount Clare Station (NHL), East Broad Top Railroad (NHL), Nevada Northern Railway, East Ely Yards (NHL), and California's Railtown 1897 State Historic Park – comprise the most substantial remaining unaltered, in situ, conserved examples of what was once the backbone of American transportation and industrial base, and the nation's largest single non-agricultural economic enterprise.

ADMINISTRATIVE NOTES

The Denver & Rio Grande as a corporate entity was born, died, and then reconstituted under a variety of names. These include:

- Denver & Rio Grande Railway, 1870-1886
- Denver & Rio Grande Railroad Company, 1886-1908 and 1908-1921
- Denver & Rio Grande Western Railroad 1921-1946 and 1947-1970

The latter name changed as the railroad declared bankruptcy, merged with an affiliated company, reincorporated and finally emerged from bankruptcy again.[4] Denver & Rio Grande (D&RG) is used as the descriptor common to all the various companies during the period of significance and will be used throughout this document.

When the states of Colorado and New Mexico purchased the Antonito-Chama portion (see Figure 3) from the D&RG in 1970, the railroad became known as the Cumbres & Toltec Scenic Railroad to distinguish it from the related Silverton Branch still owned and operated at that time by the D&RG; the Silverton Branch was sold in 1981 and is today known as the Durango & Silverton Narrow Gauge Railroad.

The D&RG's route straddles a cultural divide where Anglo names meet Spanish. Place names are spelled as the railroad spelled them. Note that the railroad spelled the place name "Big Horn," while the nearby geologic feature is "Bighorn Peak" according to U.S. Geological Survey maps. It also straddles the boundary between two states, and several place names occur both in Colorado and New Mexico.

As linear resources, railroads documented their property based on the distance from a particular terminal. In the case of the D&RG, locations are listed east to west with their mile (MP or milepost) distance from Denver, according to Doris Osterwald in *Ticket to Toltec*.[5] This practice was reinforced by the requirement of the Interstate Commerce Commission for railroads to document their property in the early twentieth century. Maps dating from 1915 were used to document the resource for this nomination, and resources are listed by site in the order they occur from east to west.[6] No correlation between the number of track features and named sites

[4] Robert A. LeMassena, *Rio Grande…to the Pacific!* (Denver, Colorado: Sundance Publications Limited, 1974), 305-306.

[5] All sites, buildings and structures are located at milepost (MP) locations as noted in Doris B. Osterwald, *Ticket to Toltec; A Mile by Mile Guide for the Cumbres & Toltec Scenic Railroad,* (Lakewood, Colorado: Western Guideways, Ltd.), 1992. Milepost distances on the D&RG are measured from Denver, with Chama being 344.12 miles from Denver by rail (Chama-Alamosa-Walsenburg-Pueblo-Denver). As the railroad made track improvements, the distance between points and the mileposts would be updated accordingly. Osterwald's MP locations are used as a common point of reference.

[6] *Original D&RG RR Records,* (Colorado Railroad Museum, Golden, Colorado.) *Interstate Commerce Commission, Bureau of Evaluation, D&RGW 4th Division, 2nd District.* Surveys prepared by the railroad for the ICC documented the length and breadth of the property and included notations for bridges, buildings and other structures. These documents were used as the basis for the boundary description.

should be assumed. Though a named site may have a track feature, like a siding, this does not mean another building or structure is at that site; likewise, a depot or section house may not require a special track arrangement. Bridges occur along the line where watercourses are crossed, and these may or may not be near other resources. Moving structures—locomotives and rolling stock—are generally listed in numerical order, though some types of cars were assigned numbers out of sequence, and in this case, the equipment is discussed generally in order starting with the lowest number of the group.

RESOURCE LISTING AND DESCRIPTION

A. PLACE NAMES

The route consists of 64 miles of three-foot gauge railroad track between the communities of Antonito, Colorado and Chama, New Mexico along the Colorado-New Mexico border (see Figures 2 and 3). Approximately 33 miles of track are in Colorado and 31 miles are in New Mexico. Named sites are listed because they are named sites along the route, or to help locate resources along the way. The route passes through the following named sites along the way:[7]

- Antonito, Colorado MP 280.7, elevation 7,888 feet[8]
- Lava, New Mexico MP 291.55, elevation 8,468 feet
- Big Horn Section House, Colorado MP 296, elevation 8,790 feet
- Big Horn, New Mexico MP 299.41, elevation 9,022 feet
- Sublette, New Mexico MP 306.06, elevation 9,276 feet
- Tunnel No 1, New Mexico MP311.3, elevation 9,465 feet
- Tunnel No. 2, New Mexico MP 315.2, elevation 9,580 feet
- Osier, Colorado MP 318.4, elevation 9,637 feet
- Cascade Creek Trestle, Colorado MP 319.95
- Los Pinos, Colorado MP 325.5, elevation 9,706 feet
- Apache Canyon, Colorado MP 327.6
- Cumbres, Colorado MP 330.6, elevation 10,015 feet
- Coxo, Colorado MP 332.2, elevation 9,753 feet
- Cresco, Colorado MP 335.1, elevation 9,193 feet
- Lobato Trestle, New Mexico MP 339.75
- Lobato, New Mexico MP 339.99, elevation 8,303 feet
- Rio Chama Crossing, New Mexico MP 343.6
- Chama, New Mexico MP 344.12, elevation 7,863 feet
- West End of Track, MP 344.8

[7] Osterwald, 72-73.

[8] Generally the D&RG provided elevations for named sites and structures, the exception being bridges. The end of track locations are not points the D&RG would have distinguished, and elevations are not indicated. Apache Canyon is a colloquial name and was not historically called out on D&RG timetables or maps. Osterwald reproduces a clever diagram used by the D&RG on page 73 that illustrates in one diagram the vertical profile of the track between Alamosa and Chama, indicates place names, mile posts, elevation above sea level, ruling gradient and track curvature among other information.

B. SETTING

The route traverses several distinctive landscapes. These vary in topography, geology, and vegetation and though trees have matured over time, contemporary visitors will find the views from the train essentially unchanged from the period of significance.

The high plains: Antonito, Colorado, to Lava, New Mexico

The portion of the route immediately west of Antonito is part of the San Luis Valley. It is broad, flat grassland, typical of several inner-mountain parks[9] located in Colorado and northern New Mexico. The plant life is almost desert-like with grasses, small flowers and cacti. The roadbed features long straight sections barely above the adjacent landscape, curving to follow the higher landforms with a gentle 1.65% gradient.[10] A mile out of Antonito, the adjacent dirt road diverges and the track continues on into the landscape, apparently leaving civilization behind. The track crosses several dry washes using culverts and small trestles, the largest of which is Hangman's Trestle, mile post (MP) 285.87. East of Lava, the track ascends to the top of the first mesa on a broad arc of track. San Antonio Peak dominates the horizon to the south; Los Mogotes can be seen across the Conejos River to the north, and the Mount Blanca massif can be seen in the distance to the northeast.

The mesas: Lava, New Mexico, to Big Horn, New Mexico

Between Lava and Big Horn, locating engineers surveyed broad curves in order that the track would rise to the next level of landscape. The tops of the mesas receive a bit more moisture, and the plants are more montane: small clusters of ponderosa pine and aspens mingle with the grasses and flowers. In general, the track is still at the level of the adjacent landscape, but the roadbed crosses deeper ravines and curves broadly through valleys and around slopes as it maintains the gentle (1.6%) grade. The last of these open loops is known as "The Whiplash" where the track curves to the south, then back north and south again in order to gain elevation, similar to a photograph of a cattle whip mid-motion. The lowest loop was the site of the Big Horn section house (Colorado), MP 296. Bighorn Peak is a prominent geologic feature.

Lower Toltec Gorge: Big Horn, New Mexico, to Tunnel No. 1, Colorado

West of Big Horn the right-of-way approaches the Los Pinos River and Lower Toltec Gorge. The valley is wide here, and the track follows the contours curving in and out of tributary basins: Sublette, New Mexico, MP 306.06, is at the end of one of these drainages. The track runs perpendicular to the slope, and occasionally rock cuts are necessary to cross the toe of a hill. Trees including aspen and firs are the dominant plant feature and an occasional fishing cabin is visible along the river below. Los Pinos River to the south becomes the focus as ridges start to rise to the north. Vistas extend south into the Tierra Amarilla Land Grant.

Upper Toltec Gorge: Tunnel No. 1, Colorado, to Osier, Colorado

[9] In Colorado, a series of high valleys extend north to south directly west of the Front Range and are known as parks: North Park, Middle Park and South Park. The southern most of these is the San Luis Valley, which extends south from Poncha Pass into northern New Mexico.

[10] Osterwald, 73.

Just past Tunnel No. 1, the track passes through a series of volcanic spires and pedestal rocks that are known as Phantom Curve. This area has been frequently photographed, both due to the unusual configuration of the rock, as well as the dramatic shadows cast by late afternoon sun. Slightly further along, the track enters Calico Cut, so named for the variety of colors of the rock, which includes deep reds, oranges and purple.[11] Perhaps the most dramatic natural feature of the trip is Toltec Gorge, a rock canyon 600' deep created by the Los Pinos River, MP 315.2. The natural slopes in this area are much steeper, and engineers depended upon short stretches of fill to bridge ravines. Instead of going around ridges, the track tunnels through them at two locations.[12] Trees and shrubs appear in the cracks among the rocks.

Lower Los Pinos Valley: Osier, Colorado, to Los Pinos Telegraphone Booth, Colorado

At Osier, MP 318.4, the track emerges into a high valley bordered by peaks and long ridges on either side. Coniferous trees cover the slopes with grasses predominating in the valleys. Tributary valleys are narrow and steep, so the track crosses these on fills and a high viaduct at Cascade Creek, MP 319.95.

Upper Los Pinos Valley: Los Pinos Telegraphone Booth, Colorado, to Los Pinos Tank, Colorado

At the Los Pinos telegraphone booth, MP 322.9, the valley widens between two long ridges. Here the river is broad and slow and cattle graze in pastures along the banks. The track crosses the river on a long, high trestle and curves back towards Cumbres Pass threading through stands of pine and spruce.

Cumbres Pass: Los Pinos, Colorado, to Windy Point, Colorado

Los Pinos tank, MP 325.5, is at the west end of the loop and just below the conifer forest that blankets the summit of the pass. The railbed hugs the hillside to maintain the 1.67% grade. Just below the summit, the track curves to the east in a giant hairpin configuration known as Tanglefoot Curve, MP 329.8. At the top of the curve is the east end of the Cumbres yard. The summit proper is farther west, near the highway crossing, MP 330.6. At an elevation of 10,015', Cumbres Pass is the highest point of the railroad, and the highest point currently traversed by a railroad in North America.

The Steep Descent: Windy Point, Colorado, to Lobato, New Mexico

From Cumbres, the track descends a steep 4% grade towards the Chama Valley.[13] Apparently, locating engineers were more cognizant of grades favoring loaded trains traveling west than those hauling material east. After crossing a short trestle over the old highway, the track circles around a rock outcrop on a fill at Windy Point. From here there are spectacular views of the valley to the south. The roadbed clings to the side of the steep cross slope, curving through stands of aspen and conifer forest and crossing the drainage on a stone culvert constructed in 1880. There is a short bench below Windy Point at Coxo, MP 332.2, where the track crosses Highway 17. West of this point, the track continues to move across the hillside on alternating stretches of cut and fill, well above Wolf Creek below. Just above Lobato, the hills are gentler and the track emerges into a broad valley lined with aspen trees.

The Narrows: Lobato, New Mexico, to State Highway 17 Crossing, New Mexico

[11] Ibid., 117.

[12] Two of the five narrow gauge tunnels constructed on the D&RG are preserved on the C&TS. These were the only tunnels between Denver and Silverton.

[13] Osterwald, 73.

At Lobato, MP 339.99, the track circles to approach the Wolf Creek Gorge. This small watercourse has created a 100' deep canyon that is traversed by a dramatic steel viaduct similar to that at Cascade Creek. Across the creek, the right-of-way follows the gentle valley to the Narrows, a second and much smaller gorge where the track is on a slightly less dramatic ledge. West of the Narrows, the grade diminishes and the roadbed emerges onto a relatively flat straight stretch of track crossing grassland dotted with low shrubs.

The Chama Valley: State Highway 17 Crossing, New Mexico, to Chama, New Mexico

West of the Narrows, the landscape changes from the conifer forests of the mountains to the cottonwood-lined riparian landscape of the Rio Chama. Shortly after the last highway crossing, the railroad crosses the Rio Chama on a multiple-span through truss bridge, at MP 343.6, and enters Chama proper on a plateau just above and parallel to the river and below the town.

C. TRACK AS A CONTRIBUTING RESOURCE

The C&TS is only a portion of the one-time 1000-mile narrow gauge system operated by the Denver & Rio Grande in the mountains of Colorado and New Mexico. This remaining track comprises an entire operational segment featuring passing tracks and sidings built in the 1880s and extant as-is since the 1920s. The described track features constitute the significant components that allowed the train dispatcher in Alamosa to schedule multiple trains in both directions over the single track railroad. For example, a passing siding allows trains travelling in opposing directions to pass one another, or permits a faster trailing train to overtake and pass a slower train. Today, the Cumbres & Toltec operates multiple trains in opposing directions and uses many of these sidings on a regular basis. Trains are operated in a fashion that would be familiar to a 1920s crew, including safety precautions, notably whistle and hand signals. Included as part of this resource are the many signs that mark the mile locations, state boundaries, speed limits, stations and sites as well as many small trestles, culverts and fills that convey water under the rails or convey the track across depressions in the landscape.[14] Larger bridges are described individually as contributing resources. While many of the track features were used on a daily basis, some of the most distinctive features relate to seasonal use. Generally the right-of-way (ROW) is 200' wide, though there are several instances where the ROW is only 100' wide. The railroad owned additional properties in the two towns and at section house sites. For a detailed description of the ROW and other properties, refer to Part 10, Geographical Data. With the exception of the recent loop addition at Osier (constructed in 1993), all track is historic and considered a single contributing structure. Listed below are locations of notable features such as sidings, wyes and loops.

1. Antonito, Conejos County, Colorado

Track west of the Highway 285 grade crossing is historic and thus contributing. Track east of the Highway 285 grade crossing is outside the NHL boundary as it was constructed in 1977 for tourist operations. This recent track in the Antonito yard consists of a balloon loop used to turn trains, engine service spurs and several display sidings. The historic right-of-way lies just north of the 1977 C&TS depot and is still used by the San Luis and Rio Grande Railroad (see Figure 4); that track has been revised from narrow gauge (3') to standard gauge (4'-8½"). Between 1901 and 1971, the track between Alamosa and Antonito was dual gauge—that is, a third rail allowed operation of both standard and

[14] Spencer Wilson and Vernon J. Glover, *The Cumbres & Toltec Scenic Railroad; The Historic Preservation Study*, (Albuquerque: University of New Mexico Press, 1980), 59.

narrow gauge equipment, sometimes in the same train.[15] The third rail was removed in 1971, and only a sign marking the end of standard gauge track west of the C&TS depot remains (see Photograph 1). The Friends of the Cumbres & Toltec have salvaged a dual gauge turnout from Alamosa and reconstructed it in the yard at Antonito to illustrate the complexity of this kind of track and display standard gauge rolling stock to contrast it with narrow gauge equipment. The historic D&RG Railroad Antonito Depot is northeast of the yard, at the point of a wye along the standard gauge track.

2. Lava, Rio Arriba County, New Mexico

This site (see Figure 5) features a short crossover at the neck of the loop that creates a balloon loop used to turn winter snow plow trains. The loop favors eastbound trains and the connecting track was constructed in 1922.[16]

3. Big Horn, Rio Arriba County, New Mexico[17]

A 1,184' long passing siding and wye are located here; the wye has a long tail track to facilitate turning trains, particularly snow-removal trains. A wye is a triangular-shaped (similar to a 'Y') track arrangement used to turn trains around: The main line is usually along one leg of a triangle and the tail extends opposite this leg.

4. Sublette, Rio Arriba County, New Mexico

A 949' long passing siding is located here (see Figure 6).

5. Toltec, Rio Arriba County, New Mexico[18]

At 3,400' in length, Toltec is one of the longest passing sidings on the railroad. In later years, the siding was extended to accommodate long trains originating in Alamosa and Farmington.

6. Osier, Conejos County, Colorado

A 1,699' long passing siding and spur represent the historic track at Osier (see Figure 9). This is the halfway point on the railroad and is the meeting point of the present-day east- and west-bound C&TS tourist trains. A balloon loop was constructed at the east end of the site in 1993 to more easily turn those trains originating in Chama.

7. Los Pinos, Conejos County, Colorado

A 1,850' long passing siding is located here along the longest stretch of straight track on the line, almost ¾ of a mile in length.

8. Cumbres, Conejos County, Colorado

---

[15] Joseph P. Hereford, Jr., and Ernest W. Robart. *Rio Grande Narrow Gauge—The Final Years, Alamosa to Chama.* (Union City, California: R/Robb Ltd, 2001), 13-14.

[16] Osterwald, 64. Favoring eastbound trains means snow trains heading from Cumbres toward Antonito could be quickly turned and return toward Cumbres should occasion demand.

[17] Note that Big Horn, NM, site of the track feature, is about three track miles west of Big Horn Section House, CO.

[18] Note that Toltec, NM, site of the track feature, is about three track miles east of Toltec Section House, CO.

The highest point of the railroad features several long passing sidings (the longest is 3,629') and a wye, used to turn helper locomotives, which are still used (see Figure 11). Loaded trains were moved across the steep 4% grade from Chama to Cumbres in multiple sections and assembled at Cumbres for the remainder of the trip downhill to Antonito. The track and structures also accommodated snow plow train operation in winter months.

9. Cresco, Rio Arriba County, New Mexico

A 1,702' long passing siding is located here.[19]

10. Lobato, Rio Arriba County, New Mexico

A 1,150' long passing siding is located here (see Figure 13).

11. Chama, Rio Arriba County, New Mexico

Chama features all of the components of a typical small railroad division point of the early twentieth century (see Figures 14 and 15). These track features include a yard with a number of sidings for assembling trains, a locomotive servicing area, a scale track to weigh cars (and their load), and a wye for turning locomotives. Prior to 1946, a turntable was located at Chama; it was removed when a change in operations due to the capacity of available locomotives reduced the need for locomotives to be assigned and maintained here.

D. BUILDINGS AND STRUCTURES AS CONTRIBUTING RESOURCES

Each of the place names has a number of contributing buildings and structures that are representative of railroad right-of-ways in the early- to mid-twentieth century. The milepost (MP) is given where the location of the building varies from the place name. Several buildings also have privies and sheds associated with them; these are noted in the resource descriptions but are not counted due to their small size and scale.

As noted in the following descriptions, many buildings and structures were rehabilitated and/or stabilized by the Friends of the Cumbres & Toltec Scenic Railroad. As the preservation and interpretation partner for the railroad, the Friends follow the Secretary of Interior Standards for the Treatment of Historic Properties in their preparation of work plans for each project. The work plans are submitted to the appropriate State Historic Preservation Office for approval prior to the initiation of each project. In-progress and final work is documented throughout the project. (Work plans and photo documentation are available for review at the Friends office.)

1. Antonito, Conejos County, Colorado (Figure 4)

	Contributing		Noncontributing	
Antonito, Colorado	**Buildings**	**Structures**	**Buildings**	**Structure**
a. D&RG Railroad Antonito Depot	1			
Total	**1**	**0**	**0**	**0**

a. D&RG Railroad Antonito Depot, 1880, Contributing

[19] The Cresco, NM, site of the track feature is south of Cresco, CO., location of the existing water tank.

The D&RG Railroad Antonito Depot, which is individually listed on the Colorado State Register of Historic Places, is located within the standard gauge wye (now owned and operated by the San Luis and Rio Grande Railroad). The building dates to 1880.[20] The rectangular one-story building is of masonry construction using rhyolite, similar to the Lava pump house (see Photograph 2). It has stone foundations and walls, with a gabled asphalt shingle roof. Typical of combination railroad depots, there are two waiting rooms, a ticket window on one end, and an operator bay on the track side. The building has been abandoned since 1971, was identified by the National Trust for Historic Preservation as a threatened historic building, and was subsequently conveyed by the Union Pacific Railroad to the Town of Antonito. Although the building is in poor condition, it retains a high degree of integrity. In 2009, the town received a State Historical Fund grant to repair the building; rehabilitation work is scheduled to begin in 2012.

Also in Antonito is a railroad yard that is used by the C&TS, but is outside the NHL boundaries. The majority of the buildings and structures within the yard were built in the 1970s for the scenic railroad. Included are the track in a balloon loop, a new depot built to resemble an 1882-era depot, an engine house, a car repair facility, and a three-rail track display (see Photograph 3).

2. Hangman's Trestle, Conejos County, Colorado

	Contributing		Noncontributing	
Hangman's Trestle, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Trestle				1
Total	**0**	**0**	**0**	**1**

a. Trestle, 1988, Noncontributing, 80' in length (MP 285.87)

At this point the track crosses a dry wash via a six-panel wood frame trestle of standard D&RG design. These trestles are constructed of cut timbers (as opposed to piles) with each bent constructed of four splayed vertical members resting on a mud sill and with a top plate. Bents are cross braced to resist lateral movement and 4x timbers brace the bents against one another. Bents are spanned by two pairs of 8x timbers that in turn support the bridge ties upon which the rail is laid. This trestle is a reconstruction. The original 1879 trestle at this site burned in 1988 during the filming of the Willie Nelson TV movie "Where the Hell's That Gold."[21] (Although an accurate reconstruction in its original location, the trestle does not meet National Historic Landmark Criteria Exception 6 because it represents a standard railroad design and other historic structures with the same association have survived.)

3. Lava, Rio Arriba County, New Mexico (Figure 5)

	Contributing		Noncontributing	
Lava, New Mexico	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Water tank				1
b. Pump House		1		

[20] Osterwald, 75.
[21] Ibid., 25.

Total	**0**	**1**	**0**	**1**

a. Water tank, 1973, Noncontributing

Steam locomotives heat water in the boiler to generate steam for propulsion. Locomotives consume water quickly, so water tanks are spaced along the lines at intervals to resupply locomotive tenders. Early locomotives had smaller tenders with less than half the water capacity of later, larger locomotives. With the advent of larger locomotives (and larger capacity tenders) some water tanks were dismantled (Toltec, for example) and others survived though were used less frequently (Lava). C&TS trains regularly take water at Antonito, Sublette, Osier, Los Pinos, Cumbres, Cresco, and Chama, though not all tanks will be used on a single trip, depending upon the direction of travel and weight of the train being operated.

The water tank barrel at Lava was formerly located at Antonito and moved to Lava in 1973 when the original water tank body was consumed in a fire attributed to a careless smoker. The Antonito tank was located north of the historic depot and was not on land conveyed to the States and the tank would otherwise have been demolished. The foundation and cribwork remain from the historic Lava structure. The tower is representative of a standard D&RG design and holds 50,000 gallons (see Photograph 4). It has concrete foundations, wood cribwork that supports a water barrel composed of vertical wood staves held in place with horizontal iron straps and covered with a polygonal shingle roof. It received water from a pump house located along the river below the tank. The tank has not been used since the early 1970s due to the removal of pump house equipment in the valley below. It is in poor condition due to its having stood dry for 30 plus years and is noncontributing due to the fact that the whole is composed of different parts moved from different sites.

b. Pump House, 1883, Contributing

Railroads located water tanks at intervals corresponding both to the size of the tender and convenient water sources. Many of the water tanks along the C&TS are fed by gravity from springs or creeks along the line. At Lava, the source is the Los Pinos River, which is well below the track. This required a structure to house a pump to force water up to the tank.

The 1883 pump house is located along the Los Pinos River, over 500' below the Lava water tank.[22] The pump house is a small, rectangular, single-story masonry structure constructed of hewn lava foundations and walls using techniques similar to those used on the Antonito depot. It features a gabled frame roof with shake shingles and is in poor condition. All machinery has been removed. A home was also located here for the pumper; it was removed after 1930. This pump house is a contributing resource and all the surviving material is original. This structure represents a common railroad facility that is composed of stone, and located some distance from the railroad.

4. Big Horn Section House, Conejos County, Colorado

a. Section House and Bunk House Site, 1880 (No Resources)

A section house, two bunk houses, and outbuildings were located inside the lowest curve of the Whiplash. Railroads are divided into segments and the railroad companies stationed crews at intervals with responsibility for track and bridge maintenance. The segments were known as

[22] Ibid., 77.

"sections," the crews as "section crews," and the buildings they lived in as "section houses." The length of the intervals between section houses were determined by the distance crews could travel in a day, as well as the location of potable water.[23] The section house at Big Horn was of the same design as those existing at Sublette, Osier, and Cumbres; one bunk house resembled those at Sublette and Chama, the other was a recycled railroad car body. All the buildings and structures dated from the 1880s and were removed by 1965.[24] Their removal suggests that the railroad was able to sufficiently maintain the track using motorized speeders. Today, only traces of building foundations remain. Railroad valuation maps indicate this site also included another car body used as a storage building. There were also outbuildings including coal houses and several privies.

5. Big Horn, Rio Arriba County, New Mexico

	Contributing		Noncontributing	
Big Horn, New Mexico	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Telegraphone Booth	1	0		
Total	**1**	**0**	**0**	**0**

a. Telegraphone Booth, circa 1900, Contributing (MP 299.7)

The telegraphone booth is an example of several similar buildings along the line used for communication with the dispatcher in Alamosa; the buildings date from circa the early 1900s. Most have mud sills resting on the ground, wood frame buildings sheathed in board-and-batten or wood shingles and roofs. The building at Big Horn, restored by the Friends of the Cumbres & Toltec in 2005, is in good condition. Telegraphones used magnetized steel wire to make sound recordings. Telegraphone booths were used by crews to supplement written train orders and communicate train locations to the railroad dispatcher in Alamosa.

6. Sublette, Rio Arriba County, New Mexico (Figure 6)

	Contributing		Noncontributing	
Sublette, New Mexico	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Shingle Bunk House	1			
b. Log Bunk House	1			
c. Section House	1			
d. Water Column				1
Total	**3**	**0**	**0**	**1**

a. Shingle Bunk House, 1881, Contributing

Section towns generally featured multiple buildings and structures, with the section foreman and his family living in the section house, and the rest of the crew housed in bunk houses. This bunk house, so named because it is sided with wood shingles, is a 16' x 22', single-story building constructed in 1881 and used to house section crews.[25] It has wood frame walls, shingle siding and a gabled asphalt shingle roof (see Photograph 5). This building was stabilized between 1992 and 1994 and is in good condition.

[23] Wilson and Glover, 16.
[24] Osterwald, 77.
[25] Ibid., 31 and 77.

b. Log Bunk House, 1880, Contributing

The log bunk house is representative of a standard D&RG design, two of which still exist along the C&TS. These buildings were constructed in 1880 and have mud sills resting on earth, hand hewn log walls and gable wood roofs. The log bunk house measures 19' x 30'.[26] This building was stabilized between 1992 and 1995 and is in good condition.

c. Section House, 1882, Contributing

The section house is a standard D&RG design, one of three that are extant along the C&TS. Similar buildings were once located at Big Horn and Toltec, and other surviving buildings are at Osier and Cumbres (see Photograph 5). All have stone and concrete foundations, with wood frame construction and lap siding. In plan, the buildings exhibit a 'T' plan with intersecting gable roofs of wood and later asphalt shingle. A porch infills the track side of the 'T,' and each leg of the 'T' measures about 15' x 30'. The building at Sublette was built in 1882 and features several additions at the back of the building made by the D&RG at unknown dates.[27] This building was stabilized between 1991 and 1996 and is in good condition. The section house has outbuildings: a coal house and tool shed, which still stand, and a privy that no longer exists. The outbuildings are not included in the resource count due to their small size. The coal house has earthen foundations, wood walls and a wood roof. The tool shed is a portion of a former wood railcar and rests on wood foundations. Combined, the section house, bunk houses, water columns and outbuildings compose a typical remote section village along the right of way: they reflect living conditions for railroad section gangs in a time when the railroad was the only connection between towns and cities.

d. Water Column, 1937, Noncontributing

The water column—or standpipe—is a vertical pipe that extends above the ground to tender height with a spout that can swing over the track. Integral to the column is a valve mechanism used to control the flow of water. It replaced a water tank that was across the track at this location until 1937.[28] Water is now stored in a reservoir uphill of the track, and piped to locomotive tenders via the column. The water column is in good condition. The foundation is concrete and the remainder of the standpipe is steel. This structure is a noncontributing resource as it was installed after the period of significance.

e. Powder Storage Site, 1879 (No Resource)

About 1/10 mile west of Sublette on the south side of the track at the top of the hill are the remains of a cache used to store blasting powder during construction of the railroad in 1879-1880.[29] The fact that the remnants have survived 130 years is remarkable and provides an opportunity for docents on the train to comment on how the railroad was constructed and blasting materials were stored.

7. Toltec, Rio Arriba County, New Mexico

[26] Ibid., 77.
[27] Ibid., 77.
[28] Ibid.
[29] Wilson and Glover, 19.

	Contributing		Noncontributing	
Toltec, New Mexico	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Telegraphone Booth		1		
Total	**0**	**1**	**0**	**0**

a. Telegraphone Booth, circa 1900, Contributing (MP 310.5)

Two sites use the Toltec name, and as at Big Horn, there is one in each state. The first is at Toltec Siding, where a telegraphone booth is located. This particular example is a wood box with an asphalt-impregnated paper roof mounted on a pole. The structure at Toltec was stabilized by the Friends of the Cumbres & Toltec in 2002 and is in fair condition. Telegraphone booths represent a component of the communications system used by crews to supplement written train orders and communicate train locations to the railroad dispatcher in Alamosa.

8. Tunnel No. 1 (Mud Tunnel), Rio Arriba County, New Mexico (Figure 7)

	Contributing		Noncontributing	
Tunnel No. 1, New Mexico	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Telegraphone Booth	1			
b. Tunnel No. 1, Mud Tunnel		1		
Total	**1**	**1**	**0**	**0**

a. Telegraphone Booth, circa 1900, Contributing (MP 311.2)

The telegraphone booth is an example of several similar buildings along the line used for communication with the dispatcher in Alamosa and dating from circa the early 1900s. Most have mud sills resting on the ground, wood frame buildings sheathed in board-and-batten or wood shingles and roofs. The building at Mud Tunnel is in good condition and was restored by the Friends of the Cumbres & Toltec in 2005. Combined, the telegraphone booths represent a component of the communications system used by crews to supplement written train orders and communicate train locations to the railroad dispatcher in Alamosa.

b. Tunnel No. 1, 1879, Contributing (MP 311.3, 342' in length)

Tunnel No. 1 or Mud Tunnel is so called because the soil at this location is composed of volcanic ash that turns to mud with the addition of water.[30] Consequently, this tunnel is lined with timber to prevent collapse, similar to tunnels on other lines that bore through unstable soils (see Photograph 6).

At either end of the tunnel is a "telltale," a structure developed by railroads to alert trainmen on top of rail cars of the upcoming tunnel. The structures at Tunnels 1 and 2 are constructed of a metal pipe frame, which forms an arch over the track. At the top of the arch, multiple ropes hang from the pipe with weights at the end of each rope. Should trainmen be on top of the cars—setting brakes, for example—the ropes would knock them down before the train entered the tunnel.

[30] Ibid., 20.

Tunnels 1 and 2 are the only tunnels along the D&RG narrow gauge lines and both were constructed in 1880. The tunnel was inspected in 2001 and 2004 and relined in kind in 2004 and is in good condition. The timber lining is typical of tunnels built through unstable material throughout the United States.

c. Shoo Fly, circa 1900 (No Resource)

Tunnel No. 1 is also the former site of a "shoo fly," a railroad term for a temporary track. In this case, a temporary track alignment was required to maintain rail service around the tunnel when it was relined after a fire early in the twentieth century.[31] The grade for the shoo-fly is in fair condition. This site represents a common railroad method used to route trains around a construction or wreck site.

9. Toltec Section House, Conejos County, Colorado

a. Section House Site, 1880, (No Resources) (MP 313.4)

The second Toltec site is at Toltec Section House, Colorado three miles past Toltec Siding and just beyond Calico Cut. This location is marked with a sign indicating "Toltec Creek." A depot, similar to the one at Osier, was constructed here in 1880 and the section house located at this point was of the same design as those at Sublette, Osier and Cumbres. A bunk house and water tank dating from the 1880s were also constructed at this location, along with several car body structures used for material storage, a coal shed and privy. The section house was removed in 1938, and the other structures in 1925.[32] The site illustrates the fact that railroads had small settlements all along the line. It also highlights how modernization of the line allowed this site to be abandoned as motorized speeders came into use allowing section crews to travel farther, while the increasing size of locomotives and correspondingly larger tenders allowed trains to travel further between water stops.

10. Tunnel No. 2 (Rock Tunnel), Rio Arriba County, New Mexico (Figure 8)

	Contributing			**Noncontributing**	
Tunnel No. 2, New Mexico	**Buildings**	**Structures**	**Objects**	**Buildings**	**Structures**
a. Telegraphone Booth	1				
b. Tunnel No. 2 (Rock Tunnel)		1			
c. Garfield Monument			1		
Total	**1**	**1**	**1**	**0**	**0**

a. Telegraphone Booth, circa 1900, Contributing (MP 314.7)

The telegraphone booth is an example of several similar buildings along the line used for communication with the dispatcher in Alamosa and dating from circa the early 1900s. Most have mud sills resting on the ground, wood frame buildings sheathed in board-and-batten or wood shingles and roofs. The building at Rock Tunnel was restored by the Friends of the Cumbres & Toltec in 2005 and is in good condition.

[31] Osterwald, 33.
[32] Ibid., 77.

b. Tunnel No. 2, 1879, Contributing (MP 315.2, 366' in length)

Tunnel No. 2, or Rock Tunnel (see Photograph 7), bores through a ridge of gneiss and schist of sufficient stability that wood lining is not required as at Tunnel No. 1.[33] It is possible to see the rock interior from the train. This is typical of tunnel construction through solid, self-supporting material, and serves as a contrast to the construction at Mud Tunnel four track miles away.

At either end of the tunnel is a "telltale," a structure developed by railroads to alert trainmen on top of rail cars of the upcoming tunnel. The structures at Tunnels 1 and 2 are constructed of a metal pipe frame, which forms an arch over the track. At the top of the arch, multiple ropes hang from the pipe with weights at the end of each rope. Should trainmen be on top of the cars—setting brakes, for example—the ropes would knock them down before the train entered the tunnel.

Directly west of the tunnel, the track crosses a sheer rock cliff at a level some 600' above the creek. Historic photos indicate that the track crossed this cliff on a short wood trestle. This was soon replaced with a stone retaining wall and makes for a particularly dramatic exit from the west portal of the tunnel with a view directly into the gorge below.[34]

Tunnels 1 and 2 are the only tunnels along the D&RG narrow gauge lines and both were constructed in 1880. The tunnel was inspected in 2001 and is in good condition.

c. Garfield Monument, circa 1881, Contributing (MP 315.32)

President James Garfield was assassinated in a Washington, D.C. railroad station within six months of assuming office in July 1881. Members of the Association of General Passenger and Ticket Agents held a memorial service at this location on the date of the funeral in September 1881.[35] A monument was commissioned to memorialize the event shortly thereafter, and is constructed of granite on a concrete base; it measures about 4' on each side, with a beveled base and square shaft about 4' tall, a cornice and prismatic cap: from the base to the top is about 9'. The trackside of the shaft is inscribed with a tribute:

IN MEMORIAM
JAMES ABRAM GARFIELD
PRESIDENT OF THE UNITED STATES
DIED SEPTEMBER 19, 1881
MOURNED BY ALL THE PEOPLE

ERECTED BY MEMBERS OF THE NATIONAL
ASSOCIATION OF GENERAL PASSENGER AND
TICKET AGENTS, WHO HELD MEMORIAL
BURIAL SERVICE ON THIS SPOT
SEPTEMBER 26, 1881

[33] Ibid., 34.
[34] Ibid.
[35] Ibid., 36.

The east-facing and west-facing sides are inscribed with the word, "GARFIELD." This object is in fair condition.

11. Osier, Conejos County, Colorado (Figure 9)

	Contributing		Noncontributing	
Osier, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Dining Hall			1	
b. Livestock Loading Pens		1		
c. Section House	1			
d. Depot	1			
e. Water Tank		1		
f. Coal Platform		1		
Total	**2**	**3**	**1**	**0**

a. Dining Hall, 1989 Noncontributing

A new dining hall was constructed in 1989 along the track to the south of the historic depot and section house.[36] It features a concrete foundation, wood frame walls, timber frame roof, and asphalt shingles. This building is a noncontributing resource because it was constructed after the period of significance.

b. Livestock Loading Pens, circa 1900, Contributing

Livestock pens were located in prominent towns along the narrow gauge and at locations near summer pasture lands such as at Osier. These pens—60' x 80'overall—feature a number of corrals connected by gates to a loading chute or chutes. The fences are typically constructed of wood rails and posts, both being variously peeled and unpeeled logs, hewn and sawn planks, depending upon the materials being available at the time of construction and repair. The loading pens at Osier date from the early twentieth century and are in good condition, having been partially restored in kind in 2005. Transportation of livestock represented a significant portion of traffic throughout the period of significance.

c. Section House, 1884, Contributing

The section house is representative of a standard D&RG design, three of which are extant along the C&TS. All have stone and concrete foundations, with wood frame structure and lap siding. In plan, the buildings were constructed as a 'T' with intersecting gable roofs of wood and later asphalt shingle (see Photograph 8). A porch infills the track side of the 'T,' and each leg of the 'T' measures about 15' x 30'. The building at Osier, built in 1884, features several additions at the back of the building made by the D&RG at unknown dates.[37] It was formerly used as the dining hall from 1971 to 1988. The building has a new concrete foundation (installed in 2010-2011 to stabilize the building), wood frame walls covered in lap siding, and a wood shingle roof. This building was restored in kind in 1993-2004 and is in good condition. Valuation maps indicate several outbuildings—notably privies—existed at Osier: the remains of two survive, and these are not included in the resource count due to their small size.

[36] Ibid., 37.
[37] Ibid., 77.

d. Depot, 1880, Contributing

The 16' x 24' depot is representative of an early D&RG design constructed in 1880.[38] In the 1970s, it was converted to a restroom for lunchtime patrons. This building was restored in kind to its original configuration between 1995 and 2001 and is in good condition (see Photograph 8). The building is rectangular in plan, has a mud sills resting on earth, wood frame walls, board-and-batten siding and a shake shingle roof, and wood shingles.

e. Water Tank, 1918, Contributing

The water tank at Osier is representative of a standard D&RG design and holds 50,000 gallons (see Photograph 8). It has concrete foundations, wood cribwork that supports a water barrel composed of vertical wood staves held in place with horizontal iron straps and covered with a polygonal shingle roof (some tanks have polygonal shingle roofs with eight sections and others have conical roofs). The tower is gravity fed by a spring. This structure was built in 1918 to replace an 1880 structure and renovated in 2001 and is in good condition.[39]

f. Coal Platform, 1888, Contributing

On the C&TS, Antonito and Chama were the primary coaling stations, with a coal platform at Osier in the early years for winter operations. The coal platform is typical of early structures located along the railroad for the purpose of storing coal for locomotives (see Photograph 8). It is constructed of wood posts bearing on mud sills with beams spanning perpendicular to the track; the floor and walls are wood planks laid perpendicular to the beams. Coal was shoveled into the bin by hand from adjacent gondolas, and later moved to locomotive tenders the same way. Photos show this structure in place prior to 1888.[40] In later years, this site was used to stockpile coal used in snow removal operations and for stranded trains. The bin is of wood construction resting on wood foundations. The structure was restored in 2009 and is in good condition.

g. Turntable Site, 1888, (No Resource)

A covered turntable was located in Osier prior to 1927. This is a short bridge rotating on a center pivot used to turn locomotives and was located at the end of the existing spur beyond the coal bin. The turntable itself was 50' long and enclosed in a 60' diameter wood shed, all dating from 1888.[41] Osier played a key role in winter operations during the period of significance; snow most frequently accumulated on the pass between Osier and Cresco, and in winter, this station would be used as the base for snow removal operations. The turntable, coal platform and water tank allowed locomotives and snow plows to be refueled and turned in the process of clearing the line.[42]

h. Bunk House Site, 1880, (No Resource)

[38] Ibid.
[39] Ibid.
[40] Wilson and Glover, 25.
[41] Osterwald, 77.
[42] Wilson and Glover, 25.

A log bunk house similar to those existing at Sublette and Chama was located beyond the turntable site. This site has been marked by the Friends of the C&TS and reinforces the importance of Osier as both a base for section crews and use in winter clearing the line.[43]

12. Cascade Creek, Conejos County, Colorado (MP 319.91)

	Contributing		Noncontributing	
Cascade Creek, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Steel Trestle		1		
Total	**0**	**1**	**0**	**0**

a. Cascade Creek Steel Trestle, 1889, Contributing, 408' in length

The deck plate girder trestle at Cascade Creek was constructed in 1889 and replaced an earlier wood trestle built at this location. According to both Osterwald and Wilson and Glover,[44] the components for the bridge were ordered in 1881 from the Keystone Bridge Company, and parts were used at other locations throughout the D&RG system until the replacement components were received and installed in 1889. (Replacement components were built by the Detroit Bridge and Iron Works according to Glover.[45]) This structure is in good condition (see Photograph 9).

Cascade Creek trestle is the highest bridge on the line, 137' at the deepest point of the crossing, and consists of eight spans resting on seven riveted steel bents, which in turn rest on stone foundation piers. Wilson and Glover note that the design is distinctive in that there is no lateral bracing between bents—the Lobato trestle is similar in this respect. Both bridges were designed by Charles Shaler Smith (1836-1886), an engineer who designed one of the Confederacy's largest powder mills in Augusta, Georgia.[46] Other notable bridges designed by Smith include those at the Kentucky River/ Dixville, Kentucky; Missouri River/ St. Charles, Missouri; Mississippi River/ Minneapolis, Minnesota; as well as bridges for the Atchison Topeka & Santa Fe and Atlantic & Pacific Railroads.[47] The design of the Hanging Bridge on the Arkansas River in the Royal Gorge is also attributed to Smith.[48]

13. Los Pinos, Conejos County, Colorado (Figure 10)

	Contributing		Noncontributing	
Los Pinos, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Telegraphone Booth	1			
b. Trestle		1		
c. Water tank		1		
Total	**1**	**2**	**0**	**0**

a. Telegraphone Booth, circa 1900, Contributing (MP 322.9)

[43] Ibid., 27.
[44] Osterwald, 73; Wilson and Glover, 28.
[45] Vernon J. Glover, *Southwest Rail Heritage No. 35,* "Cumbres & Toltec Scenic Railroad, Lobato and Cascade Trestles Designed by Famous Bridge Builder C. Shaler Smith," April 2005, 1.
[46] Ibid., 3.
[47] Ibid.
[48] Ibid.

The telegraphone booth is an example of several similar buildings along the line used for communication with the dispatcher in Alamosa. Most have mud sills resting on the ground, wood frame buildings sheathed in board-and-batten or wood shingles and roofs. The building at Los Pinos is in poor condition and was restored in kind by the Friends of the Cumbres & Toltec in 2005. Telegraphone booths represent a component of the communications system used by crews to supplement written train orders and communicate train locations to the railroad dispatcher in Alamosa.

b. Trestle, 1888, Contributing, 175' in length (MP 324.52)

A trestle carries the track across the Rio de Los Pinos in the middle of a broad valley (see Photograph 10). The bridge is an eleven-panel wood pile trestle with a ballasted deck typical of standard D&RG bridge designs.[49] This trestle is constructed of cut timbers (as opposed to piles) with each bent constructed of four splayed vertical members resting on a mud sill and with a top plate. Bents are cross braced to resist lateral movement and 4" timbers brace bents against one another. Bents are spanned by two pairs of 8" timbers that in turn support the bridge ties upon which the rail is laid. The structure is in good condition.

c. Water Tank, 1915, Contributing (MP 325.5)

The water tank at Los Pinos was constructed in 1915 to replace an 1880 structure and holds 20,000 gallons.[50] Water is gravity fed from a reservoir above the tank. It is a smaller version of the 50,000 gallon design with concrete foundations, wood cribwork supporting a water barrel composed of vertical wood staves held in place with horizontal iron straps, and a conical roof. The tower is gravity fed by a spring. Westbound trains periodically use this water tank today. This structure was restored in kind in 1986 and is in fair condition.

d. Section House Site, 1884, (No Resource)

A section house was built at this point in 1884 and was of the same design as those existing at Sublette, Osier and Cumbres. Today stone foundations mark the location of this building, which was removed in 1938.[51] Valuation maps also indicate a bunk house and several out buildings, including a coal house and privy. All outbuildings were removed with the section house in 1938.[52] This site has been marked by the Friends of the C&TS, referring to the modernization of the railroad and evolving railroad operating practices. At this site, the water tank was maintained to continue to serve westbound trains while the section buildings were removed due to the ability of the railroad to maintain track in this area from sites at Osier and Cumbres. This is in contrast to Toltec, where both the section buildings and water tank were removed towards the end of the period of significance.

14. Apache Canyon, Conejos County, Colorado

	Contributing		Noncontributing	
Apache Canyon, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**

[49] Osterwald, 40.
[50] Ibid.
[51] Ibid., 77.
[52] Ibid.

a. Telegraphone Booth	1	0		
Total	**1**	**0**	**0**	**0**

a. Telegraphone Booth, circa 1900, Contributing (MP 327.6)

The telegraphone booth is an example of several similar buildings along the line used for communication with the dispatcher in Alamosa. Most have mud sills resting on the ground, wood frame buildings sheathed in board-and-batten or wood shingles and roofs. The building at Apache Canyon is in good condition and was restored by the Friends of the Cumbres & Toltec in 2002. Telegraphone booths represent a component of the communications system used by crews to supplement written train orders and communicate train locations to the railroad dispatcher in Alamosa.

15. Cumbres, Conejos County, Colorado (Figure 11)[53]

	Contributing		**Noncontributing**	
Cumbres, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Storage Buildings			2	
b. Snowshed				1
c. Section House	1			
d. Car Inspector's House	1			
e. Water Column				1
f. Trestle		1		
Total	**2**	**1**	**2**	**2**

a. Storage Buildings, circa 1950, Noncontributing

Two small buildings inside the wye shelter motor cars and tools used for track maintenance. One is a standardized gable design of pre-engineered metal construction on an earth foundation typical of similar buildings used across the D&RG system after World War II. This building is in fair condition. The second building is wood construction and shows evidence of having been relocated to Cumbres. It was renovated in 2001 and is in good condition. Both buildings are noncontributing resources as they were constructed after the period of significance.

b. Snowshed, 1916, Noncontributing

The tail and west leg of the turning wye at Cumbres were at one time enclosed with a snowshed, the most imposing structure along the line. During winter operations locomotives were fitted with large snowplows on the front of locomotives. When it was necessary to turn the train, considerable effort would be involved shoveling out one leg of the wye to allow the train to back up and complete the turn; the snowshed at Cumbres favored westbound trains and allowed trains to turn at the pass with a minimum of hand shoveling. Similar structures covered the track atop Marshall Pass on the D&RG and Lizard Head Pass on the Rio Grande Southern, as well as Boreas Pass on the Colorado and

[53] Although Cumbres is the highest point reached by the railroad (elevation 10,015') between Antonito and Chama, it is not on the Continental Divide. Cumbres, often referred to as Cumbres Pass, marks the divide between the Conejos River-Rio Grande `and Wolf Creek-Chama River (which are also Rio Grande tributaries) watersheds. The San Juan Extension did cross the Continental Divide several miles west of Chama (MP 354.45, elevation 7,733') at the most unremarkable of all similar crossings by other transcontinental railroads.

Southern narrow gauge. During the period of significance, the D&RG plowed Cumbres Pass track from east to west, using the 4% downhill grade west of the pass to advantage (pushing snow downhill being easier than pushing it uphill). This is why track features at Cumbres favor westbound trains.

This large structure features wood post-and-beam construction on earth foundations sheathed with horizontal planks with joints covered with battens, and is representative of snowsheds that once dotted the D&RG system from the beginning of operations in the 1880s. Doris Osterwald documented 24 of these structures along the approaches to Cumbres alone.[54] The snowshed at Cumbres is the sole standing example. The snowshed was constructed in 1916 and survived intact until 1979, when all but the portion over the tail of the wye—about 80%—collapsed.[55] The surviving portion was stabilized and restored in kind using the original design and with similar materials and construction techniques; the restoration took place between 1990 and 1994. Since sheltering approximately 500' of track from snow (allowing long trains to turn at the wye) was the sole purpose of this structure, its extended length was the primary character-defining feature. Due to this loss of its character-defining feature, the remaining 100'-structure no longer retains integrity, and is thus counted as a noncontributing resource. Even so, it can be noted that the surviving portion of the snowshed has historic value since it represents an important and rare property type.

c. Section House, 1882, Contributing

The 1882 section house is representative of a standard D&RG design, three of which are extant along the C&TS.[56] Similar buildings were once located at Big Horn and Toltec. All have stone and concrete foundations, with wood frame structure and lap siding (see Photograph 11). In plan, the buildings were constructed as a 'T' with intersecting gable roofs of wood and later asphalt shingle. A porch infills the track side of the 'T,' and each leg of the 'T' measures about 15' x 30'. The building at Cumbres features several additions at the back of the building made by the D&RG at unknown dates. This building is often mistaken for the Cumbres Depot, which was demolished in 1954. After the depot was removed, the station sign was mounted on the section house. This building was stabilized and restored in kind between 1990 and 2003 and is in good condition. A coal house (too small to include in the resource count) survives east of the Section House. This building has a wood foundation and is constructed of wood with a roll asphalt-impregnated paper roof and is in good condition.

d. Car Inspector's House, 1911, Contributing

Prior to descending the pass, trains are required to stop and perform a test of the air brake system. Stopping heavy trains descending steep grades consumed the inventors of the late nineteenth century. George Westinghouse developed a failsafe air brake system that required air pressure be maintained to operate the brakes and which would stop the cars if the train broke in two and the air line was broken. At Cumbres an inspector was assigned to help perform the test and inspect the train for mechanical issues prior to the descent. Since trains could arrive at any hour, a dwelling was provided by the railroad in 1911 to house the inspector and his family.[57] The building is rectangular in plan, 30' x 30', with wood frame walls, vertical board-and-batten siding and a metal roof. It is

[54] Osterwald, 124.
[55] Ibid.; Wilson and Glover, 33.
[56] Osterwald, 79.
[57] Ibid.

subdivided inside to form several rooms on two floors. This building was stabilized in 1999 by the Friends of the Cumbres & Toltec and is in fair condition. Coal sheds, well housings, livestock enclosures and privies served the Car Inspector's House and were renovated by the Friends between 2007 and 2009. These are not included in the resource count due to their small size.

e. Water Column, 1937, Noncontributing

The water column—or standpipe—is a vertical steel pipe with cast fittings that extends above the ground to tender height with a spout that can swing over the track (see Photograph 11). Integral to the column is a valve mechanism used to control the flow of water. It replaced a 50,000-gallon water tank that was previously at this location up to 1937.[58] Water is now stored in an underground reservoir uphill of the track, and piped to locomotive tenders via the column. The water column is in good condition and is a noncontributing resource as it was installed after the period of significance.

f. Trestle, 1880, Contributing, 84' in length (MP 330.75)

A six-panel wood pile trestle crosses old State Highway 17 immediately west of the Section House.[59] This trestle is of standard D&RG design, constructed of cut timbers (as opposed to piles) with each bent constructed of four splayed vertical members resting on a mud sill and with a top plate. Bents are cross braced to resist lateral movement and 4x timbers brace bents against one another. Bents are spanned by two pairs of 8x timbers that in turn support the bridge ties upon which the rail is laid. The structure is in good condition.

g. Depot Site, 1882, (No Resource)

The depot site is located on the south side of existing track, approximately 50' east of where Highway 17 crosses the tracks. The depot was constructed in 1882 and demolished by the D&RG in 1954.[60] A privy was also located south of the depot at the end of a wood plank walk. A coal shed also served the depot. This site has been marked by the Friends of the C&TS and was the location of the only depot between Osier and Chama. Cumbres is an important point on the line and was staffed well past the period of significance to help monitor operations over the pass.[61]

h. Windmill/ Pump House Site, 1882, (No Resource)

Prior to 1937, water was pumped from a nearby lake to the Cumbres water tank using wind power. A wind mill and pump house were built in 1882. The windmill was replaced by a gasoline engine, which was removed in 1937.[62] A portion of the enclosure survives. This site has been marked by the Friends of the C&TS and demonstrates the variety of methods used to pump water to water tanks.

[58] Ibid.
[59] Ibid., 41.
[60] Ibid., 79.
[61] Wilson and Glover, 32.
[62] Osterwald, 79.

i. Turntable Site, 1884 (No Resource)

Between 1884 and 1916, a 50'-long gallows-frame turntable was located on the south leg of the wye.[63] The turntable was enclosed with a wood structure in 1887 and attached to the snow shed. Locomotive servicing facilities included a coal bin, sand house and ash pit. Though part of a wye, evidently the railroad felt it more efficient to use a turntable to turn locomotives during this period. Wilson and Glover indicate that the turntable was in place before the wye was covered in a snow shed,[64] implying that westbound trains plowed the east leg of the wye and the main track past the turntable, backed the short distance onto the turntable, and were turned to plow the west leg of the wye. It was common for railroads to locate turntables at the summit of mountain passes or nearby, with similar examples at Marshall Pass on the D&RG, and Boreas Pass, Fremont Pass and Alpine Tunnel (all in Colorado) on the Denver, South Park and Pacific. Multiple engines would be used to move trains uphill and then return to the base of the pass (Chama in this case) alone as the train continued on downhill in the opposite direction. Though locomotives can generally move both in forward and reverse equally well, it is preferred practice to turn locomotives and operate them in the forward direction whenever possible and especially over long distances. This takes advantage of the design of the locomotive wheel arrangement, the head light, classification lights, and most importantly the pilot (commonly referred to as the 'cowcatcher') or snowplow, which can be used to remove obstructions from the track.

j. Bunk House Site, 1880 (No Resource)

A 19' x 33' log bunk house, similar to the design of those existing at Sublette and Chama, was located beyond the section house. This site reinforces the importance of Cumbres as a key site for maintenance and operations.

16. Coxo, Conejos County, Colorado

	Contributing		**Noncontributing**	
Coxo, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Telegraphone Booth	1			
Total	**1**	**0**	**0**	**0**

a. Telegraphone Booth, circa 1900, Contributing (MP 332.9)

The telegraphone booth is an example of several similar buildings along the line used for communication with the dispatcher in Alamosa. Most have mud sills resting on the ground, wood frame buildings sheathed in board-and-batten or wood shingles and roofs. The building at Coxo was stabilized by the Friends of the Cumbres & Toltec in 2002 and is in fair condition. Telegraphone booths represent a component of the communications system used by crews to supplement written train orders and communicate train locations to the railroad dispatcher in Alamosa. Coxo is the site of an 854'-long siding east of the road crossing; this siding was removed towards the end of D&RG operations.[65]

[63] Ibid.
[64] Wilson and Glover, 32.
[65] Ibid., 37.

17. Cresco, Archuleta County, Colorado (Figure 12)

	Contributing		Noncontributing	
Cresco, Colorado	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Water tank		1		
b. Trestle		1		
c. Telegraphone Booth	1			
Total	**1**	**2**	**0**	**0**

a. Water Tank, 1920, Contributing

As at Big Horn and Toltec, the structures at Cresco are at a different location than the siding. The 1920s water tank at Cresco is representative of a standard D&RG design and holds 50,000 gallons.[66] It replaced a structure on this site built in 1893, was renovated in 1983 and is spring-fed by a pipe from a spring higher up the hillside. It has concrete foundations, wood cribwork that supports a water barrel composed of vertical wood staves held in place with horizontal iron straps and a conical shingle roof (see Photograph13). This structure is in good condition.

b. Trestle, 1880, Contributing, 64' in length

A four-panel wood pile trestle crosses a creek immediately west of the water tank (see Photograph 13). This trestle is a standard D&RG design, constructed of pile timbers, with each bent constructed of five splayed vertical members bearing in the ground and with a top plate.[67] Bents are cross braced to resist lateral movement and 4x timbers brace bents against one another. Bents are spanned by two pairs of 8x timbers that in turn support the bridge ties upon which the rail is laid. The structure is in good condition.

c. Telegraphone Booth, circa 1900, Contributing (MP 335.2)

The telegraphone booth is an example of several similar buildings along the line used for communication with the dispatcher in Alamosa. Most have mud sills resting on the ground, wood frame buildings sheathed in board-and-batten or wood shingles and roofs. The building at Cresco is in good condition. Telegraphone booths represent a component of the communications system used by crews to supplement written train orders and communicate train locations to the railroad dispatcher in Alamosa.

d. Section House Site, 1880, (No Resource)

A section house and bunk house were located south of the water tank. The section house was of the same design as those existing at Sublette, Osier and Cumbres; the log bunk house resembled those at Sublette and Chama. Outbuildings at Cresco included a car body used for tool storage, a coal house, and privy. The section house and all outbuildings were removed in 1938.[68] Similar to Los Pinos, the buildings were removed and the locomotive watering facilities retained.

[66] Osterwald, 79.
[67] Ibid.
[68] Ibid.

18. **Lobato Trestle (Wolf Creek Crossing), Rio Arriba County, New Mexico (MP 339.75) (Figure 13)**

	Contributing		Noncontributing	
Lobato, New Mexico	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Steel Trestle		1		
b. Movie Set				1
Total	**0**	**1**	**0**	**1**

a. Lobato Trestle, 1883/ 2011, Contributing, 310' in length

The deck plate girder bridge at Lobato was constructed in 1883 and replaced an earlier wood trestle at this location. Components for the bridge were ordered from the Keystone Bridge Company.[69] The bridge, a plate girder design, consists of six spans resting on five riveted steel bents, which in turn rest on stone foundation piers. The span is 100'high at the deepest point of the crossing.

The wood bridge deck caught fire in 2010 and the plate girder spans were replaced in kind with slightly heavier members in 2011. Also following the fire, the rails, guardrails, ties and guard timbers were replaced. All of these replacement elements referred to historic bridge design drawings, while also incorporating modern engineering standards required for safe operation over the bridge. Although the uppermost elements of the trestle were replaced following the fire, the trestle bents and stone foundations – which are the character-defining and most significant features of the trestle – are original. As such, the trestle retains a high degree of integrity.

Wilson and Glover note that the Lobato trestle design is distinctive in that there is no lateral bracing between bents—only the Cascade trestle is similar in this respect. Both bridges were designed by Charles Shaler Smith (1836-1886), an engineer who designed one of the Confederacy's largest powder mills in Augusta, Georgia.[70] As noted earlier, other notable bridges designed by Smith include those at Kentucky River/ Dixville, Kentucky; Missouri River/ St. Charles, Missouri; Mississippi River/ Minneapolis, Minnesota; and numerous bridges for the Atchison Topeka & Santa Fe and Atlantic & Pacific Railroads.[71] The design of the Hanging Bridge on the Arkansas River in the Royal Gorge is also attributed to Smith.[72]

b. Movie Set, 1970, Noncontributing

Hollywood discovered the D&RG prior to World War II, and many films were shot along the narrow gauge prior to 1968 when the D&RG ceased operation over Cumbres Pass; the railroad continues to be a popular location for television and movie work. The set, dating from 1970, consists of the remains of a water tank located at the east end of the siding at Lobato. It was initially constructed for the film *Shootout* starring Gregory Peck.[73] This structure—entirely constructed of wood—is in poor condition and is a noncontributing resource, as it was constructed after the period of significance.

[69] Ibid., 73; Wilson and Glover, 38.
[70] Glover, 3.
[71] Ibid., 4.
[72] Ibid., 3.
[73] Osterwald, 43.

19. Chama, Rio Arriba County, New Mexico (Figures 14 and 15)

	Contributing		Noncontributing	
Chama, New Mexico	**Buildings**	**Structures**	**Buildings**	**Structures**
a. Through Truss Bridge		1		
b. Oil Depot				1
c. Water tank		1		
d. Log Bunk House	1			
e. Car Body Bunk House	1			
f. Coaling Tipple		1		
g. Ash Pit				1
h. Sand House/Storage Bunker		1		
i. Warehouse	1			
j/k. Roundhouse/Enginehouse			1	
l. Oil House	1			
m. Night Watchman's Dwelling	1			
n. Depot	1			
o. Public Toilets			1	
p. Track Scale		1		
q. Motor Car Sheds				2
r. Livestock Loading Pens		1		
Total	**6**	**6**	**2**	**4**

There are several small support structures scattered throughout the Chama yards. These are small sheet metal sheds used to protect fire hoses and storage of track tools. They are not associated with a specific structure and due to their size are not counted as individual resources.

a. Through Truss Bridge, 1924, Contributing, 230' in length (MP 343.6)

The two-span steel through truss bridge, which crosses the Rio Chama, is the sole example of this kind of bridge on the Cumbres & Toltec. A Pratt design, the spans were built by the New Jersey Iron & Steel Company. According to Wilson and Glover, the trusses were installed across the Rio Chama in 1924, but were used near Delta, Colorado prior to that date.[74] This structure is in good condition.

b. Oil Depot, 1936, Noncontributing

Prior to World War II, an oil field was developed north of Chama along the Colorado-New Mexico border. Oil was piped to Chama, pumped into tank cars and shipped by rail to a refinery in Alamosa.[75] These shipments were responsible for a considerable amount of rail traffic on the line from the late 1930s until the refinery closed in 1963.[76] Tank cars would be spotted on either side of the depot for loading. What remains today of the oil depot is a steel frame structure with a wood

[74] Wilson and Glover, 41.
[75] Robert E. Sloan, *A Century + Ten of D&RGW Narrow Gauge Freight Cars, 1871 to 1981*. (Winona, Minn.: By the author RR 6 Box 513, 2000), 289.
[76] Osterwald, 88.

plank walk and handrails above the oil supply piping and an attached operator's shack, which conceals the valves. This structure was renovated in 1993, is in fair condition, and is a noncontributing resource as it was constructed after the period of significance.

c. Water Tank, 1920, Contributing

The water tank at Chama is distinctive on this railroad in that it has two spouts to service locomotives on two adjacent tracks simultaneously. It was originally pump-fed from the Rio Chama River and now is served by city water. The 1897 tower was rebuilt in the 1920s and is representative of a standard D&RG design and holds 50,000 gallons.[77] It has concrete foundations and wood cribwork that supports a water barrel composed of vertical wood staves held in place with horizontal iron straps and covered with a gabled shingle roof (some tanks have gabled shingle roofs with eight sections and others have conical roofs). This structure was renovated in 1994-1995 and is in good condition.

d. Log Bunk House, 1880, Contributing

Located north of the warehouse, the 19' x 30' log bunk house is representative of a standard D&RG design, two of which still exist along the C&TS. These buildings were constructed in 1880 and have log walls resting on grade with gable wood roofs. There is also a coal shed and privy too small to count as a resource adjacent to this building, which was used to house section crews. This building dates from 1880 and was stabilized in 1999 and 2007-2009 and is in good condition.[78] This is an excellent example of log construction dating from the construction of the railroad.

e. Car Body Bunk House, 1924, Contributing

Adjacent to the log bunk house is a box car body dating from the late nineteenth century without trucks, resting on grade. As boxcars aged and became unusable on the railroad, they were often recycled as line side structures housing material and equipment. In this case, the body was used as a bunk house for section crews. Like the railroad cars, this building is of wood construction, but with rolled asphalt-impregnated paper roofing over the wood car body roof. It was stabilized in 2002 to limit contact of wood parts with grade and is in good condition.

f. Coaling Tipple, 1924, Contributing

The Chama coaling tipple is the sole survivor of three nearly identical structures constructed in 1924 on the D&RG system, with the others constructed at Gunnison, Colorado and Durango, Colorado. It replaced a predecessor structure and fully automated the process of moving coal from waiting railcars to the storage bin and locomotive tenders.[79] This coincided with a brief period of modernization on the railroad that coincided with the delivery of larger locomotives with larger tenders. Located south of the water tank, the tower consists of a concrete bin below a raised track at the rear of the building, an elevator consisting of two buckets moving up and down the rear of the tower, and an elevated bunker above a gabled shed that encloses the elevator machinery (see Photographs 17 & 18). Carloads of coal are dumped into the concrete bin where they are fed to alternate buckets which raise the coal to a point at the top of the elevator, where the buckets

[77] Ibid., 75.
[78] Ibid.
[79] Ibid.

automatically tip, dumping the coal into the elevated bunker. The elevated bunker stores the coal for locomotives. It is dispensed through a single door and chute into the waiting locomotive tenders by engine crews. The elevated bunker is constructed of large timbers and wood sheathing. The top of the elevator is protected by a small, wood-sheathed gable-form shed, and the machinery house is a wood frame structure. Machinery within the shed was manufactured by Fairbanks-Morse. The structure is founded on wooden piles and mudsills, and appears to be leaning with age. The elevator machinery was restored by the Friends of the Cumbres & Toltec. It is operational, and it is used for demonstrations on occasion. The coaling tower is the subject of ongoing restoration and study by the Friends of the Cumbres & Toltec. It is in fair condition. The remains of the concrete foundation for the predecessor coal trestle are visible south of the sand storage bunker.

g. Locomotive Ash Pit, 2008, Noncontributing

East of the elevated coal loading track, the track leading to the roundhouse crosses a depressed concrete pit on steel beams and columns. Locomotive crews use this area to dump hot ashes from the locomotive's fireboxes and store them until they are cool; then they are moved to an adjacent rail car for disposal. Though this is the site of the historic ash pit, this feature was rebuilt in 2008 and only vaguely resembles the historic configuration. This structure is in good condition and is a noncontributing resource as it was constructed outside the period of significance.

h. Sand House and Storage Bunker, 1924, Contributing

Wet steel rails can be slick, and locomotive wheels can spin in place. To ensure traction, one of the locomotive domes is filled with dry sand, which is routed via piping to a point in front of the wheels to provide adhesion when starting trains and on wet rail. South of the coal tower is the sand house, used to store, dry and dispense sand to locomotives. The sand house is a wood frame structure with board-and-batten siding on mud sills, built with a gable roof overlaid with asphalt-impregnated paper sheet. Inside is a large stove with a raised sieve used to filter and dry wet sand (wet sand is subject to clumping and will clog the pipes on locomotives that dispense the sand at the rail). South of the sand house is a storage bunker constructed of wood piles with horizontal second-hand cross ties set behind and used to store the wet sand waiting to be dried. In front of the sand house is a vertical frame structure that supports an elevated holding tank. Once the sand is dried inside using a coal-fired stove, it is placed in a hopper where compressed air (tapped from the locomotive) blows the sand through a pipe to the elevated holding tank. Sand then flows from the hopper, via gravity, into the sand dome atop the locomotive boiler. This mostly automated the process of filling the locomotive sand dome; the less sophisticated method is to fill, lift and pour repeated pails of dry sand into the dome. The sand house, the bunker and its machinery were built in 1924 and restored by the Friends of the Cumbres & Toltec in 1997 and are in good condition.[80] Similar structures once existed at Durango and Gunnison.

i. Warehouse, circa 1920, Contributing

At one point two warehouses were located in Chama. The surviving structure is of timber-frame construction with corrugated metal siding and roof. This structure was used to store wool, an important local agricultural product, prior to shipment. A raised wood platform on trackside facilitates moving products from structure to railcar and vice versa. The platform and warehouse

[80] Wilson and Glover, 46.

floor were constructed in 1920 with a wood frame and gable roof sheathed with corrugated metal and restored in kind in 1998.[81] This structure is in good condition.

j./k. Roundhouse/Enginehouse, 1900, modified 1946 and 1977, Noncontributing

The dominant structure in the middle of the Chama yard is the roundhouse, used to maintain and store locomotives. Chama was used as a location to stage locomotives on the west side of Cumbres Pass, and the roundhouse was the center of this activity. Roundhouses derive their name from their form, a structure in the form of an 'O' (or partial 'O') covering tracks that radiate from a turntable, which is used to access all the tracks and turn locomotives. When locomotives are placed facing away from the turntable, the form of the building provides for more space around the front of the locomotive where regular maintenance occurs. A nine-stall brick building replaced an earlier wood building that burned in 1899.[82] Originally a turntable was located here but it was removed with the delivery of larger locomotives and changing operation and maintenance practices in 1946. With the removal of the turntable, all but the western-most two stalls were demolished. Even after the eastern stalls were removed, the remaining two stalls continued to be used to store and service locomotives. The building has brick exterior walls on a concrete foundation with post-and-beam construction at the interior supporting a flat roof, and has a dirt floor. South of the western-most stall, there is a boiler room containing two boilers to power machinery used to maintain the locomotives in an adjacent machine shop. The boilers themselves were recycled from older locomotives. Though roundhouses were once common throughout the US, railroads now use them less frequently, and so the buildings are less common.[83]

Connected to the roundhouse on the south and east is the new enginehouse, built in 1977.[84] Constructed of concrete block with a precast concrete flat roof, it contains two track bays for locomotive maintenance. The roundhouse and enginehouse are counted as one building because they are physically connected (per NHL guidelines). Even so, each component is substantial in size, and they were built 77 years apart, utilize different construction techniques and materials, and represent two distinct periods of railroad history. The roundhouse/enginehouse is noncontributing because of a loss of a high level of integrity to the original roundhouse and because the enginehouse was constructed after the period of significance.

l. Oil House, 1903, Contributing

South of the roundhouse is a brick building used to store oil and lubricants for locomotives. A corner room of the building also contains offices used by the staff responsible for locomotive maintenance. The building has a concrete foundation, masonry walls and a concrete roof; it dates from 1903 and is in good condition.[85] Valve oil and kerosene were expensive material at the turn of the twentieth century; this brick building both secured supplies of these provisions and also provided a fire-resistant enclosure.

m. Night Watchman's Dwelling, 1903, Contributing

[81] Ibid., 50.
[82] Ibid., 75.
[83] John P. Hankey, "The American Roundhouse: The Ultimate Railroad Structure" Trains (March 2010) : 25-33.
[84] Wilson and Glover, 46.
[85] Ibid.

Southeast of the oil house is another recycled car body that served as the residence for the hostler. Locomotive boilers are pressure vessels full of hot water; hostlers monitored locomotive boiler pressure, water level and fires through the night to ensure the engine would be ready for the next run. The building is a former refrigerator car dating from the late nineteenth century. It is of wood frame construction with roll asphalt-impregnated paper roofing over an applied wood roof superstructure. This building has been restored in kind by the Friends and is in good condition.

n. Depot, 1899, Contributing

The depot at Chama is the second such building at this location, replacing an earlier building that was consumed in the 1899 fire that also destroyed the original wood roundhouse.[86] The building is of wood frame construction with board-and-batten siding, double-hung windows, large eaves and a composition shingle roof (see Photograph 18). Typical of many combination railroad depots, there is a waiting room and ticket window on one end, a telegraph operator's bay on the track side, rooms for the agent's residence, and a large room with an elevated floor for storage of freight and express items.[87] A raised loading dock, restored in kind 2003, wraps the south end of the building to facilitate moving large items directly from rail cars into the freight room. Portions of the building have been adapted to offices as this building serves as the headquarters of the railroad. The waiting room appears very much as it did during D&RG operations. This building's foundation was stabilized in 1999 by the Railroad Commission and the roof was stabilized and re-shingled in 2009. The building is in good condition.

o. Public Toilets, 1999, Noncontributing

In response to increasing ridership and the need for added amenities, public toilets were constructed south of the depot in 1999. This building features toilet facilities for men and women, along with a drinking fountain, and is similar in appearance to a small depot or outbuilding. It has a concrete foundation, wood frame walls, board-and-batten siding and an asphalt shingle roof. This building is in good condition and is a noncontributing resource as it was built after the period of significance.

p. Track Scale, 1929, Contributing

Some forms of freight—particularly livestock—required accurate weighing for shipment, as the rancher paid for the weight moved, not by the carload. The track scale is a common railroad feature very much like the scale one might see at a doctor's office. A track switch on each end routes rail cars onto the "live" rails, the rails that cross the scale mechanism (locomotives are never allowed on the "live" rails as they are too heavy for the scale mechanism). The scale itself is located inside a concrete pit, with a small wood frame shed off to the side to house the instrument. A window allows the operator to see what is being weighed. This scale was first installed in Aspen, Colorado in 1889 and relocated to Chama in 1929.[88] This structure is in good condition.

q. Motor Car Storage Sheds, 1939 and 2002, Noncontributing

[86] Osterwald, 75.

[87] Combination depots combine the passenger, freight and express functions in one structure. Larger towns would have separate structures for each; smaller towns might only have a passenger depot as at Osier. Often, depots along the D&RG also included living quarters for the agent and his family.

[88] Osterwald, 75.

Between the Coaling Tipple and Water Tank are two small sheds used for motor car storage. The largest is a wood frame structure constructed by the Friends in 2002 to replicate a shed once located near the Water tank and removed near the end of D&RG operations. The smaller is a metal shed constructed by the D&RG after the period of significance. These structures are in good condition but are noncontributing resources, as they were constructed after the period of significance.

r. Livestock Loading Pens, 1888, Contributing

Livestock pens were located in prominent towns along the narrow gauge—as at Chama—and points near summer pasture lands. These pens, about 90' x 120' were constructed initially in 1888 and feature a number of corrals connected by gates to a loading chute or chutes.[89] The fences are typically constructed of wood rails and posts, both being variously peeled and unpeeled logs, hewn and sawn planks. The loading pens located at the south end of the Chama yard feature four loading chutes, with the ability to load single-deck cattle cars or double-deck sheep and pig cars. There is also a small scale house within the corral. The four chutes and seven western pens and associated alleyways were restored between 1993 and 2002. This structure is in fair condition.

s. Warehouse Site, circa 1920, (No Resource)

A second, larger warehouse once stood between the existing warehouse and the depot. Judging from historic photos, it was similar in size and of identical construction to the surviving building. It was demolished in 1971.[90]

t. Sheep Dip Pen Site, circa 1900, (No Resource)

North and east of the roundhouse is the site of a large structure that covered sheep dip pens constructed in 1900.[91] Prior to loading sheep onto stock cars, the animals were 'bathed' in a solution that removed insects they might have collected at pasture. This large structure was constructed of wood with a wood shingle roof. A number of outside corrals were adjacent to the covered portion of the facility. The pens were removed prior to the 1940s. The scale of this structure reinforces the importance of sheep ranching to this area.

E. MOVABLE EQUIPMENT AS CONTRIBUTING RESOURCES

Movable equipment includes the locomotives and rolling stock (boxcars, gondolas, and other rail cars) that compose the trains that were used to move material, goods and passengers across the line. Rolling stock includes revenue equipment—those cars carrying paying goods, both passengers and freight; and non-revenue equipment—the cabooses and maintenance equipment. The vast majority of the equipment used is "native to the line," that is, not used on another railroad, and used specifically on this segment. By 1925, all of the surrounding rail systems had been converted to standard gauge and all the narrow gauge/standard gauge interchanges that would have allowed the narrow gauge cars to move onto third-rail standard gauge track had been removed. Basically, within the period of significance, the D&RG San Juan Extension had become part of a circa 600-mile closed loop comprised of the D&RG, the Rio Grande Southern line (controlled by the D&RG) and a small mileage of connecting mining and lumbering lines. The narrow gauge cars could not connect with

[89] Ibid., 75.
[90] Ibid.
[91] Ibid.

the surrounding rail system.[92] Even though this narrow gauge system was isolated from the surrounding standard gauge system, it was heavily used and profitable (which is why the D&RG continued its operation), with cars regularly circling the closed loop.[93] The extant D&RG cars are thus assumed to have an association with this narrow gauge line during the period of significance. The C&TS, unlike some other heritage railroads, did not acquire a large number of unassociated cars from other railroads--with the exception of 8 hopper cars and 2 passenger cars. In a few other cases, the C&TS purchased rolling stock (such as the tank cars) that was definitively identified as being on this line. All of the other rolling stock was part of the D&RG San Juan Extension inventory when the railroad was purchased in 1970 by the states of Colorado and New Mexico, and was historically associated with the line. In railroad preservation it is rare to have a collection of locomotives, rolling stock and maintenance equipment operating on the track for which it was designed and purchased. Though the D&RG had almost 6,000 revenue freight cars in 1883, the number gradually declined to about 4,700 cars in 1902 and 3,200 cars in 1923.[94] Most of the extant cars were built circa 1903, and were showing signs of wear in the early 1920s. In 1928 the Interstate Commerce Commission mandated that all new equipment must have steel car body frames, and this coincided with an Internal Revenue System rule that encouraged the D&RG to rebuild most all the wood cars. This rebuilding program occurred at the end of the period of significance.[95] Aside from the construction of some new rolling stock to supplement the existing equipment, it marked the last equipment modernization, thus all the contributing resources have a high degree of integrity.

Of the 223 existing rolling stock owned by the C&TS, 123 have been counted as contributing resources[96] because they have been used on this section of the larger railway during the period of national significance, and retain integrity to that period. This collection represents one of the best in terms of quantity and diversity of locomotives and rolling stock as well the narrow period they represent. Here is an equipment summary; all are considered structures:

1. **Locomotives**

Locomotives	**Contributing**	**Non-Contrib.**
a. K-27	1	0
b. K-36	5	0
c. K-37	4	0
d. Diesel 19	0	1
Total	**10**	**1**

a. K-27 class, Locomotive 463, 1903, Contributing

[92] "It may be possible that, owing to the fact that narrow gauge equipment never leaves the line and is handled in short trains, that it does not have to be maintained to the same standard as standard gauge equipment." George F. Hess in L. F. Loree, "Report on the D&RG Railroad"(September 1, 1917; reprint, Golden, Colorado: Colorado Railroad Museum).

[93] It is the consensus of railroad historians that records do not exist that would identify specific individual D&RG cars as being on this specific segment. Rosters, train register books, and dispatchers' train sheets (the official daily records of train movements) identified the locomotives and passenger cars, but never freight cars. Basically, freight cars were just classified in groups, with no specific records on individual cars. Additionally, D&RG contributed an enormous amount of records to paper drives during World War II, resulting in a lack of pre-1930 records. Jerry Day, telephone interview by Keith Hayes, February 24, 2012; Vernon J. Glover, e-mail message to Keith Hayes, February 24, 2012; and Jimmy Blouch, various posts to Narrow Gauge Railroad Discussion Forum, 2007-2012, http://ngdiscussion.net/phorum/.

[94] Sloan, 3

[95] Ibid., 5.

[96] As noted on page 3, a number of cars contributing to the National Register district are not included in this tally of contributing equipment for the NHL district because of a different period of significance and other reasons.

Constructed by Baldwin Locomotive Works in 1903, locomotive 463 (builder's number 21788[97]) is both the oldest and smallest locomotive in use on the C&TS as of this writing. This class of locomotive originally consisted of fifteen locomotives, two of which remain today: numbers 463 and 464 (locomotive 464 is preserved in Michigan). These locomotives measure 61' long over the face of the couplers and weigh 223,550 pounds in operating condition. K-27 locomotives were unloaded at Salida and initially used in Marshall Pass service between Salida and Gunnison, Colorado. Over time, the locomotives roamed the entire narrow gauged system, with Locomotive 463 being used on Marshall Pass, Cumbres Pass, the Silverton Branch, the Farmington Branch and even the Rio Grande Southern.[98] Locomotive 463 is listed individually on the National Register under the name Engine No. 463.

b. K-36 class, Locomotives 483, 484, 487, 488 and 489, 1925, Contributing

Constructed by the Baldwin Locomotive Works in 1925, the K-36 class of ten locomotives represents the pinnacle of steam power on the D&RG narrow gauge. These nicely proportioned and well-designed locomotives were and are the favorites of train crews and highly regarded for their performance. These locomotives measure 68' long over the face of the couplers and weigh 286,600 pounds in operating condition.[99] Nine of the ten locomotives still exist today and five survive on the C&TS: 483 (stored unserviceable, builder's number (BN) 58584), 484 (BN 58585), 487 (BN 58588), 488 (BN 58589) and 489 (BN 58590).[100] These locomotives were initially assigned to both Marshall Pass trains based in Salida and to Cumbres Pass service.[101] All K-36 locomotives are contributing resources.

c. K-37 class, Locomotives 492, 494 and 495 (1928) and 497 (1930), Contributing

The K-37 class locomotives demonstrate the frugal response of the D&RG to a narrow gauge locomotive shortage in the late 1920s. The onset of the Great Depression somewhat reduced traffic levels and a growing fleet of smaller, older and increasingly worn-out locomotives resulted in pairing recycled standard gauge boilers dating from 1903 with new K-36 running gear ordered from Baldwin Locomotive Works in 1928 and 1930. The components were assembled at the D&RG's Burnham Shops in Denver and were initially based at Alamosa for use in powering Cumbres Pass trains.[102] These locomotives measure 65' long over the face of the couplers and weigh 307,250 pounds in operating condition.[103] Of the ten original locomotives, eight exist today and four survive on the C&TS: 492 (stored unserviceable, ex D&RG 1021, builder's number (BN) 20749), 494 (on display, ex D&RG 1020, BN 20748, 495 (on display, ex D&RG 1004, BN 20522) and 497 (operable, ex D&RG 1003, BN 20521).[104] All K-37 locomotives are contributing resources.

d. Diesel Locomotive 19 (1943), Noncontributing

---

[97] Cornelius W. Hauck and Robert W. Richardson, ed., *Steam in the Rockies* (Golden, Colorado: Colorado Railroad Museum, 1963), 17.

[98] Dennis O'Berry, *The Mudhens:, A Photographic History*, (Union City, California: R-Robb Ltd., 1995), 16-18.

[99] Robert L. Grandt, editor. *Narrow Gauge Pictorial, Volume XI, Locomotives of the D&RGW* (Union City, California: R-Robb Ltd.,1997), 189.

[100] Hauck and Richardson, 18.

[101] Hauck and Richardson, 18, and Robert D. Turner, *The Thunder of Their Passing: A Tribute to the Denver & Rio Grande's Narrow Gauge and the Cumbres & Toltec Scenic Railroad* (Winlaw, British Columbia: Sono Nis Press, 2003), 102.

[102] Turner, 101.

[103] Grandt, *Narrow Gauge Pictorial, Volume XI, Locomotives of the D&RGW*, 189.

[104] Hauck and Richardson, 18.

The states of Colorado and New Mexico own one non-steam locomotive.

Locomotive 19 was built by General Electric in 1943 for the Oahu Railway & Land Company (OR&L) in Hawaii. It has a B+B wheel arrangement (meaning two wheel sets, each with two powered axles) weighs 47 tons, and has a tractive effort of 22,000 pounds. A previous operator purchased 19 from the OR&L in 1972.[105] Locomotive 19 is not a contributing resource because its association with the proposed NHL postdates its period of national significance.

2. **Revenue-Freight** (listed in roster number sequence)

Modern railroad cars evolved from flat cars into a variety of forms each suited to particular commodities. Flat cars are simply open platforms consisting of a wood deck on wood, or later steel beams spanning the two wheel sets called trucks. Flat cars are used to transport a variety of loads including lumber, steel, equipment, and vehicles that may not fit inside an enclosed boxcar. Flat cars have steel stake pockets on the outermost longitudinal beams in order to place stakes and help secure loads for transit. Side stakes could also have horizontal boards attached to the inside face, and this forms a gondola (like a bathtub). Gondolas are used for open, loose loads like coal, limestone, unprocessed ore and ballast and sometimes lumber and steel. If an enclosure with a roof is placed on a flat car, it is a house car: three types of house car survive on the C&TS: boxcars, stock cars and refrigerator cars. Boxcars are fully enclosed structures with roofs and a sliding door on each side. Some have small doors on one end to aid in the loading of long pieces of finish lumber. Boxcars are used for weather sensitive and valuable loads: general freight and merchandise (limited in size by the door opening), dry lumber, bagged goods and processed ore. Stock cars are similar to boxcars in form and construction but without the exterior sheathing. Also the interior sheathing is more widely spaced for air movement. Stock cars are designed for the movement of livestock, including cattle, horses, sheep and pigs, though they were also used to move coal and lumber on the D&RG. Refrigerator cars are similar to boxcars, except that the enclosure is insulated for transport of perishable items. At both ends, the cars are perforated partitions with roof hatches where blocks of ice are be stored to cool the car interior (similar to historic home ice boxes; modern cars are mechanically cooled similar to a home refrigerator). The tank cars that survive on the C&TS are modern cars for the narrow gauge and used to transport liquids—in this case crude oil. The equipment that survives on the C&TS demonstrates the maturity of wood and steel rail car design. There are also representatives of most every car type used on the D&RG in the twentieth century, but also many of the car types seen on standard gauge railroads as well. Of the equipment currently owned by C&TS, most all was constructed during the period of national significance. With the exception of ten of their cars that were not historically associated with this railroad, all rolling stock built during that time also operated over Cumbres Pass during the period of significance. In total, this represents the largest collection of surviving D&RG equipment at a single site.

Revenue-Freight	**Contributing**	**Non-Contrib.**
a. Refrigerator Cars	5	0
b. Drop-bottom Gondolas	17	0
c. Flatcars	4	17
d. High-side Gondolas	19	8
e. Boxcars	24	13

[105] Osterwald, 69.

f. Stock Cars	11	0
g. Tank Cars	6	2
h. Pipe Gondolas	0	2
Total	**86**	**42**

a. Refrigerator Cars, Number 55, 1908; Numbers 157 (1924) Numbers 163, 166, and 169 (1926) all Contributing

Refrigerator car 55 is the sole example on the C&TS of fifty refrigerator cars constructed in 1908.[106] These cars—known as short refrigerator cars—are of 40,000 pound capacity and 30' long: they are constructed of wood frames held in tension by steel truss rods spanning two queen posts on needle beams. The car sides conceal wood trusses spanning between the body bolsters; concealed space between the interior and exterior sheathing is filled with sawdust for insulation. Ice bunkers were located on the ends of the cars. Ice was loaded via hatches on the roof and rested on grilles over metal pans that collected melted water. Cars in this series were rebuilt in 1926 in Alamosa, Colorado. These refrigerator cars were used over the entire narrow gauge system, including the Rio Grande Southern and the three railroads serving Silverton. Refrigerator cars transported perishable items including milk, meats, fruits, and vegetables to towns along the line, along with other locally-grown products being taken to market. When the Friends of the Cumbres & Toltec acquired this car for the railroad it had no trucks and was in poor condition. The structure, trucks and brake system have been restored in kind by the Friends. It is in good condition and a contributing resource.

The D&RG constructed twenty 40' long refrigerator cars in 1924 and 1926.[107] These cars, of 50,000 pound capacity were constructed specifically to better correspond with the size and volume of contemporary standard gauge cars. That is to say, the materials in one standard gauge refrigerator car could be transferred to a single 40' narrow gauge car, instead of two of the 30' cars. They are constructed much like the shorter cars and were also used over the entire narrow gauge system. Four long refrigerator cars survive on the C&TS, number's 157, 163, 166, and 169. Cars 157 and 163 are in good condition; car 166 is in fair condition; car 169 is in poor condition; all four cars are contributing resources.

b. Drop-bottom Gondolas, Numbers 700, 724, 727, 728, 731, 756, 769, 774, 783, 787, 790, 791, 798, 801, 811, 848, and 859 (1904), Contributing

700- and 800-series gondolas were constructed in 1904 by the National Car Company (later American Car and Foundry in St. Louis, Missouri.[108] These unusual cars—31' long and of 50,000 pound capacity—were designed to transport coal, coke (a form of processed coal used to make steel) and ballast. They are distinctive among gondolas on the D&RG narrow gauge in having composite construction, which features wood beams that span longitudinally between the trucks and cross members of steel. The floors of the cars have doors—six to a side—on either side of the center of the car. The doors are hinged along the center beam and are held in place by a chain-and-ratchet arrangement and take advantage of gravity to dump the load, hence the name 'drop-bottom.' The initial ratchet arrangement was not successful, and the cars were reconstructed at least once to modify door operation. The coal tipples constructed at Chama, Durango and Gunnison as part of the modernization program in the 1920s, were all served by drop bottom gondolas, and these were part

[106] Sloan, 28.
[107] Ibid., 29.
[108] Ibid., 125.

of the mechanization of the process of coaling locomotives. It is thus very likely these drop bottom gondolas were used on the line prior to 1930. In later years, the cars transported coal, cinders and ballast across the system. Seventeen cars survive on the C&TS, number's 700, 724, 727, 728, 731, 756, 769, 774, 783, 787, 790, 791, 798, 801, 811, 848, and 859. Cars 727, 791, 811 and 859 are in good condition; cars 728, 731, 756, 769, 774, 783, 787, 798, and 801 are in fair condition; cars 700, 724, 790 and 848 are in poor condition; all are contributing resources.

c. Flatcars, Numbers 1001, 1515 and 1567 (modified 1955) and 6708, 6746, 6755, 9533, 9557 and 9569 (modified 1957), Noncontributing; Numbers 6200, 6205, and 6214 (1918), Contributing; Number 6314 (1926) Contributing; Numbers 6509 (1939) and 6544 (1944), Noncontributing; Numbers 6601, 6613, and 6618 (1909, modified 1955) Numbers 6627, 6636, and 6649 (modified 1956), Noncontributing

Flatcars are among the most abused of rolling stock due to the lack of a superstructure above the frame to help distribute the loads induced on the car during transit. They are also used to transport a diverse array of machinery and other odd and heavy loads that will not fit in boxcars. Consequently these cars have the shortest life of most cars on the narrow gauge. Also, the surviving cars are a varied bunch, many of which were modified to this car type.

When abundant gas fields were discovered in Farmington in the 1950s, pipe was transported from Alamosa to Farmington via rail. Pipe lengths were frequently longer than the existing gondolas, so the ends were removed and idler cars were used between modified gondolas. These idler cars were modified first in 1955 from high-side gondolas and later in 1957 stock cars and boxcars.[109] The gondola bolster design causes the floor of these cars to be higher than the boxcar or stock car design. Providing lower idlers modified from house cars between cars of pipe reduced the opportunity for interference with the load during transit. They were often reinforced with lengths of rail above or below the side sills to compensate for the loss of superstructure. All of these cars had wood frames with steel truss rods and in spite of the reinforcement, these cars often split in two under normal service. Idler flat cars were used in service between Farmington and Alamosa and rarely if ever carried anything themselves—they were used as spacers between open-ended gondolas carrying long lengths of pipe. Nine of these cars survive on the C&TS, numbers 1001, 1515, 1567 (former gondolas), 6708, 6746, 6755 (former stock- or boxcars) 9533, 9557 and 9569 (former gondolas). Cars 6708 and 6755 are in good condition; cars 6714 and 9557 are in fair condition; cars 1001, 1515, 1567, 9533, and 9569 are in poor condition. These cars are noncontributing resources because they were modified after the period of significance and no longer resemble gondolas.

In 1918 the D&RG ordered twenty flatcars of composite construction. These cars have a composite frame of steel and wood with truss rods spanning two queen posts on needle beams. The cars have wood decks. These flat cars were rebuilt in 1937 with standard gauge components.[110] These cars were used across the entire narrow gauge system and transported machinery and freight that would not fit inside a boxcar. Three cars survive on the C&TS, numbers 6200, 6205, and 6214: cars 6200 and 6214 are in good condition; car 6205 is in poor condition; all three are contributing resources.

The last new wood flat cars were constructed by the D&RG in 1926. These cars have a composite frame of steel and wood with truss rods spanning two queen posts on needle beams. The cars have

[109] Ibid., 95.
[110] Ibid., 93.

wood decks and were reinforced using surplus rail in 1937.[111] One car survives on the C&TS: number 6314. This car is in good condition and is a contributing resource.

Prior to World War II, the lack of flat cars was impacting D&RG operations, and new all-steel flatcars in the 6500-series were commissioned in 1939. These 80,000 pound capacity cars were modified from standard gauge gondolas constructed in 1907.[112] These 40' cars had wood decks and were used to transport machinery and large freight goods including automobiles. They were used across the entire narrow gauge system. Fourteen cars came to the C&TS upon its formation: however all have been used as frames for new passenger cars and are described elsewhere. Two other cars were purchased from the Durango and Silverton Narrow Gauge Railroad in 2003. The latter are numbers 6509 and 6544. These last two cars are in good condition and are noncontributing resources as they were constructed after the period of significance.

The oil and gas pipe shipments to Farmington beginning in the 1950s required more flat cars than were on hand. The D&RG modified 62000-series standard gauge steel boxcars dating from 1909 to 6600-series narrow gauge flat cars in 1955. These were all-steel cars 37'-4" long.[113] Twenty-four cars were modified in this manner and three survive on the C&TS today: numbers 6601, 6613, and 6618. Similarly, 37000-series standard gauge stock cars were modified into 79 flat cars also in the 6600-series beginning in 1956. The newer cars are longer, measuring 37'-9".[114] Three of these cars survive on the C&TS: numbers 6627, 6636, and 6649. All are in good condition, except for 6618 which is in poor condition. All six cars are noncontributing resources because they were modified after the period of significance.

d. <u>High-side Gondolas, Numbers 1000, 1039, 1059, 1082, 1149, 1159, 1204, 1232, 1268, 1343, 1357 and 1456 (1902); Numbers 1534, 1610, 1667, 1733, and 1746 (1903); Numbers 9249 and 9378 (1902), Contributing; Numbers 1145 and 1246 (1902, modified 1950); Numbers 1557, 1648, 1839 (1903, modified 1950); Numbers 9213, 9214, and 9558 (1902, modified 1950), Noncontributing</u>

1000-series and 9000-series high-side gondolas were constructed beginning in 1902 by American Car and Foundry in St. Louis, Missouri. These cars—30' long and of 50,000 pound capacity—are constructed of wood frames held in tension by steel truss rods spanning two queen posts on needle beams (see Photograph 21). A 'hopper' to contain the load is constructed of vertical stakes in stake pockets attached to the side sills; horizontal boards extend between stakes at the sides and end of the car to the top of the stakes.[115] Some cars were rebuilt during the 1920s with steel draft gear, and the capacity was increased by adding another board along the sides and ends. These gondolas were used over the entire narrow gauge system, including the Rio Grande Southern and railroads serving Silverton.[116] Gondolas transported a variety of bulk commodities including coal, low-grade ore, limestone and lumber. In Salida, the cars were emptied into standard gauge cars in a lift that rotated the car about its axis. This service resulted in damage over time to the car including broken top boards and stakes. Repairs were made with short stake extensions and new top boards. Nineteen cars survive on the C&TS, numbers 1000, 1039, 1059, 1082, 1149, 1159, 1204, 1232, 1268, 1343,

[111] Ibid.
[112] Ibid.
[113] Ibid., 94.
[114] Ibid.
[115] Hoppers and gondolas are often confused—gondolas generally have lower sides. None of the Colorado narrow gauge lines had hoppers.
[116] Sloan, 124.

1357, 1456, 1534, 1610, 1667, 1733, 1746, 9249, and 9378. The high-side gondolas are in poor condition, except for 1204, 1357, 1667, 9249, and 9378, which are in fair condition; all 19 cars are contributing resources.

When pipe needed to be transported between Alamosa and Farmington, the D&RG modified high-side gondolas for this service.[117] Pipe lengths were frequently longer than the narrow gauge cars, so the ends were removed from gondolas and idler cars were used between the modified gondolas. As with the idler cars, these cars frequently succumbed to the rigors of this service. Pipe gondolas carried various sizes and lengths of drilling- and oil field pipe. Several such loads of pipe have been recreated and loaded in pipe gondolas by the Friend of the C&TS for demonstration purposes. Eight of these cars survive on the C&TS—numbers 1145, 1246, 1557, 1648, 1839, 9213, 9214, and 9558 (modified 1000- and 9000- series gondolas). Cars 1557 and 1648 are in good condition; cars 1145 and 1246 are in fair condition; and cars 1839, 9213, 9214, and 9558 are in poor condition. These cars are noncontributing resources, having been modified after the period of significance.

e. Boxcars, Numbers 3014, 3016, 3073, 3090, 3125, 3231, 3254, 3331, 3339, 3422, 3484, 3524, 3533, 3537, 3570, 3585, 3591, 3592, 3605, 3643, 3669, 3686, 3719, and 3742 (1904), Contributing; Numbers 205/3475 (new number/ original number), 206/3278, 207/3414, 208/3064, 210/3156, 211/3469, 212/3316, 213/3476, 214/3161, 248/3071, 249/3244, 250/3527 and 251/3405 (1904, modified 1971-73), Noncontributing

3000-series boxcars were constructed in 1904 by American Car and Foundry in St. Louis, Missouri. These cars—30' long and of 50,000-pound capacity—are constructed of wood frames held in tension by steel truss rods spanning two queen posts on needle beams.[118] The car sides conceal wood trusses spanning between the body bolsters (see Photograph 41). These boxcars were used over the entire narrow gauge system, including the Rio Grande Southern and railroads serving Silverton. All of the boxcars were rebuilt by the D&RG beginning in 1926 in Alamosa due to a loophole in the tax law that favored rebuilding used equipment.[119] This was well documented in contemporary publications and consisted of stripping each car of its metal parts and replacing all wood parts. As rebuilt, the cars served through abandonment. Rebuilt cars featured several varieties of wood and metal roof, at least two variants of side doors, and may or may not have included end doors. Boxcars were typically used for dry commodities including, high-grade ore, bullion, dry goods and groceries, sand, "drilling mud" and less-than-car-load-lot (LCL) freight. Fifteen cars survive on the C&TS as boxcars, numbers 3014, 3016, 3073, 3090, 3125, 3231, 3254, 3331, 3422, 3484, 3524, 3570, 3585, 3592 and 3669. These cars are in good condition and are contributing resources.

Another 22 cars were modified for passenger service in 1971-73 by removing the siding from the top half of the car, providing operable windows made of Plexiglas and installing seats and end doors.[120] Nine of them have been returned to the original configuration by the Friends of the Cumbres & Toltec as noted below. The 13 remaining in passenger car configuration are numbers 205/3475 (new number/ original number, 206/3278, 207/3414, 208/3064, 210/3156, 211/3469, 212/3316, 213/3476,

[117] Ibid., 127.
[118] Ibid., 48.
[119] Ibid.
[120] Herbert Danneman, *A Ticket to Ride the Narrow Gauge, A Chronological History of Denver & Rio Grande Narrow Gauge Passenger Trains and Their Equipment, 1871-1981*. (Golden, Co: Colorado Railroad Museum, 2000), 230.

214/3161, 248/3071, 249/3244, 250/3527, and 251/3405.[121] These 13 cars are in poor condition and are noncontributing resources due to the modifications made after the period of significance.

The nine boxcars modified for passenger service in 1971-73 which have been returned to the original configuration by having the siding replaced in kind (the superstructure, roof, ends and hardware remain the same) are 3339, 3533, 3537, 3591, 3605, 3643, 3686, 3719 and 3742. These cars are all in good condition and are contributing resources as they have been returned to their original configuration.

f. Stock Cars, Numbers 5510, 5549, 5553, 5600, 5633, 5674, 5691, 5706, 5747, and 5841 (1904), Contributing; Number 5995 (1923) Contributing

5000-series stock cars were constructed in 1904 by American Car and Foundry in St. Louis, Missouri. These cars—30' long and of 50,000 pound capacity—are constructed of wood frames held in tension by steel truss rods spanning two queen posts on needle beams (see Photograph 23). The car sides conceal wood trusses spanning between the body bolsters. (Stock cars are essentially boxcars with exposed structural framing.) These stock cars were used over the entire narrow gauge system, including the Rio Grande Southern. Beginning in 1926 and prior to 1929, these cars were rebuilt similar to the boxcars.[122] Cars with no intermediate deck were used for cattle and horses; cars with an intermediate floor were used for sheep and pigs, and are known as "double-deck" cars. Four cattle cars, numbers 5510, 5691, 5706, and 5747, and six sheep cars, numbers 5549, 5553, 5600, 5633, 5674, and 5841, survive on the C&TS. All cars are in good condition except for 5747 which is in fair condition and 5510 which is in poor condition; all ten cars are contributing resources.

In 1923, the D&RG constructed 100 additional stock cars, 34' in length with cast steel trucks. All were thought to have been scrapped during the 1950s, however one is still extant, number 5995.[123] It lacks trucks and hardware and is in poor condition awaiting preservation. This car is a contributing resource.

g. Tank Cars, Numbers 12739, 12757, 12918, 12962, 13084 and 13168 (1927), Contributing; Numbers 58424 and 58432 (modified 1936), Noncontributing

Narrow gauge tank cars were owned by several leasing companies, not the railroads. Those surviving examples of tank cars on the C&TS were all owned by the Union Tank Car Company (as evidenced by the report mark abbreviation UTLX). These are all examples of 29'-long, 60,000-pound (6,500-gallon) capacity tank cars which were rebuilt from older standard gauge cars originally constructed in the early twentieth century. Two types of tank cars survive: narrow framed and frameless and all were used to haul crude oil.[124]

Narrow framed tank cars were modified for narrow-gauge service between 1924 and 1930. All of the cars that survive on the C&TS were modified in 1927. These are of all-steel construction and consist of a tank vessel on a frame spanning between bolsters. They were used to transport petroleum products initially from Farmington, New Mexico to Montrose, Colorado, via the Rio Grande Southern, and later via Cumbres, Poncha and Marshall Passes between the same points. A

[121] Osterwald, 123.
[122] Sloan, 72.
[123] Ibid.
[124] Ibid., 289.

major slide buried the track on the Rio Grande Southern in 1929, and this traffic—including the tank cars--was re-routed over Cumbres Pass to Salida. It took until the next year to build a bypass track.[125] When oil fields were developed in the vicinity of Chama in the late 1930s, these cars were used between Chama and Alamosa. After this service ceased in the mid-1960s, many tank cars were sold and moved to the White Pass & Yukon Railroad in Alaska.[126] The Friends located six cars there and, with financial support from Union Tank Car Company, returned them to the C&TS in 1992. These include car numbers 12918, 12739, 12757, 12962, 13084, and 13168. All have been restored by the Friends, are in good condition, and are contributing resources.

Frameless cars, also known as a Van Dyke tank car, use the tube of the tank as structure to span between the truck bolsters. The lower portions of the ends of the cars are reinforced for couplers. Twenty-five 6,500 gallon capacity cars were modified for service on the D&RG during the 1930s. The two surviving cars were so modified in 1936. These were notable, as many were painted with a distinctive "GRAMPS" logo. Gramps was the nickname of Lafayette Hughes, a Chama resident who owned an oil field northwest of Chama. Multiple sources indicate that Hughes had "GRAMPS" painted on the cars so his grandchildren would know which cars carried his oil. The oil was piped to Chama for loading on the tank cars for shipment to the refinery in Alamosa. This traffic sustained the railroad through the post-war years until abandonment.[127] Two cars were donated by the Friends from a La Jara businessman. Their numbers are 58424 and 58432 and they lack hardware and trucks and are currently being restored by the Friends. They are in poor condition and are noncontributing resources because they were modified for service after the period of significance.

h. Pipe Gondolas, Numbers 9613 and 9615 (1916, modified 1953 and 1963), Noncontributing

When more sturdy cars were needed for pipe service, the D&RG modified older steel frame standard gauge cars for this service. In 1953, the railroad modified 20 outside Z-braced boxcars originally built in 1916 at the Burnham Shops in Denver. Modifications consisted of cutting the sides down to approximately 3'-3" above the floor and mounting the cars on narrow gauge trucks. Some of these cars were subsequently modified in 1963 for Silverton passenger service.[128] Two cars survive on the C&TS, numbers 9613 and 9615. These cars are in good condition but are noncontributing resources as they were modified for service after the period of significance.

3. **Revenue-Passenger Cars**

Revenue-Passenger	**Contributing**	**Non-Contrib.**
a. 1982 conversion cars	0	7
b. 1987 conversion cars	0	7
c. 1993-97 conversion cars	0	5
d. Combination Car No. 60		1
e. Hinman coach		1
Total	**0**	**21**

[125] Sloan, 286, LeMassena, 223.
[126] Ibid., 290.
[127] Ibid., 291-292.
[128] Ibid., 127.

When the Denver & Rio Grande sold the Antonito-Chama line to the states of Colorado and New Mexico in 1970, all available passenger cars were being used in service on the Silverton line. In fact, many passenger cars assigned to non-revenue service received newly-fabricated trucks so their passenger trucks could be used under new passenger cars constructed at D&RG's Burnham Shops in Denver during the 1960s. Surviving passenger equipment includes ex-mail and baggage cars 053, X54 and X65, former chair car 0452, former tourist sleeper 0252 and ex-coach 292. These are all described under non-revenue equipment below.

Lacking passenger cars, the C&TSR initially converted boxcars for passenger use by removing siding from the top half of the cars, then installing plastic window material and seating. The result looked more like a freight train from a distance—popular with railfans—but had limited head clearance inside. The nineteen converted cars are listed under 'boxcars' in the 'Revenue-Freight' listing above.

a. 1982 Conversion Cars, Numbers 6510/ 501/ Antonito (old number/ new number/ name); 6516/ 503/ Del Norte; 6521/ 500/ Alamosa; 6537/ 505/ La Jara; 6540/ 504/ San Luis; 6542/ 502/ Monte Vista; and 6533/ 506/ Conejos (modified 1982), Noncontributing

In 1982-3, seven 6500-series steel flatcars (see flatcar descriptions under 'Revenue-Freight' above) were modified to passenger cars by constructing car bodies with paired windows, roofs, and end platforms similar in appearance to the earliest D&RG historic coaches. These are 6521/ 500/ Alamosa (old number/ new number/ name); 6510/ 501/ Antonito; 6542/ 502/ Monte Vista; 6516/ 503/ Del Norte; 6540/ 504/ San Luis; 6537/ 505/ La Jara; and 6533/ 506/ Conejos.[129] These cars are in good condition, but are noncontributing resources as they were modified after the period of significance.

b. 1987 Conversion Cars, Numbers 6500/ 510/ Tres Piedra (old number/ new number/ name); 6501/ 511/ Santa Fe; 6512/ 512/ Chama; 6518/ 513/ Taos; 6538/ 514/ Ojo Caliente; 6541/ 515/ Espanola and 6543/ 516/ Dulce (modified 1987), Noncontributing

In 1987, construction of seven more cars commenced using center sills from 6500-series steel flatcars. The design was refined, and the newer cars feature larger windows and a clerestory roof similar to the later period historic passenger cars used by the D&RG. These are 6500/ 510/ Tres Piedra (old number/ new number/ name); 6501/ 511/ Santa Fe; 6512/ 512/ Chama; 6518/ 513/ Taos; 6538/ 514/ Ojo Caliente; 6541/ 515/ Espanola; and 6543/ 516/ Dulce.[130] These cars are in good condition, but are noncontributing resources as they were modified after the period of significance.

c. 1993-97 Conversion Cars, Numbers AX4609/ 520/ Cumbres (old number/ new number/ name), unknown number/ 521/ Osier and AX4606/ 522/ Sublette (1957, modified 1993); AX4629/ 517/ Big Horn and unknown number/ 523/ Los Pinos, (1957, modified 1993 and 1997), Noncontributing

In 1993 and 1997, five more passenger cars were constructed using standard-gauge flat cars with steel underframes originally built in 1957. These cars are AX4629/ 517/ Big Horn (old number/ new number/ name); AX4609/ 520/ Cumbres; unknown number/ 521/ Osier; AX4606/ 522/ Sublette and

[129] Danneman, 231.
[130] Ibid., 231.

unknown number/ 523/ Los Pinos.[131] These cars are in good condition, but are noncontributing resources as they were modified after the period of significance.

d. Combination Car Number 60 (1897, modified 1909), Noncontributing

Built in 1897 for the Florence & Cripple Creek Railroad, the first railroad to reach the gold mines of the Victor and Cripple mining districts, Combination Car No. 60 operated as a suburban coach until about 1909 when it was converted to a combination baggage and passenger car. One of only two surviving F&CC passenger coaches in the United States, it is the only surviving example of a combination passenger-baggage car from that railroad. This narrow gauge car is a noncontributing resource because it never operated on the DR&G.

e. Hinman Coach, (ca. 1920s), Noncontributing

This all-steel passenger coach was built in post-revolutionary Mexico to replace the cars destroyed in that conflict.[132] It is often used for movie work and the film production companies modify it for their particular need. The cars wheelsets are not original to the car. This car is a noncontributing resource because it did not operate on the DR&G.

4. **Non-revenue: Cabooses**

A caboose is a car used at the end of the train to house the train crew, generally the conductor and brakemen, but not the enginemen.

Non-revenue: Cabooses	**Contributing**	**Non-Contrib.**
a. Caboose—short	1	0
b. Caboose—long	1	0
c. Caboose—converted	0	2
Total	**2**	**2**

a. Caboose—Short, Number 0579 (1886), Contributing

Caboose 0579 is an example of 11 17' long (short) cabooses built by the D&RG in 1886.[133] These cabooses are constructed similar to a boxcar with a wood frame held in tension by steel truss rods spanning two queen posts on needle beams. (see Photograph 24) The car sides conceal wood trusses spanning between the body bolsters. These cars ride on two trucks, similar to those used on freight cars but with leaf springs, instead of coil springs, for a smoother ride. The short cabooses had less space than their longer counterparts, generally with bunks for three, along with a desk for the conductor, a stove, a sink and a small folding table for dining, paperwork and cards. There were also storage lockers for train crew supplies. A cupola extends above the roof at the center of the car with seats for four but room only for two crew members whose job was to observe the train for "hot boxes" (when axle journal bearings were not wearing properly and running "hot" they set oil-soaked cotton waste lubricating the wheel bearings aflame). Although all D&RG short cabooses have similar construction, each vehicle has individual characteristics. The cars vary according to their

[131] Ibid.
[132] Wilson and Glover, 68.
[133] Sloan, 173.

assignments and the crews assigned to them who would modify each vehicle to their needs. After World War I with the construction of more- and larger cabooses, short cabooses were used primarily for day-long runs on the branch lines. Caboose 0579 appears to have been assigned to Montrose for use on the Ouray branch during the 1930s and '40s, and later was moved to Durango.[134] This caboose was used for the movie *Denver & Rio Grande* filmed north of Durango in 1951. It was sold shortly thereafter and subsequently moved to Antonito. The Friends of the Cumbres & Toltec have restored caboose 0579 in kind to operating condition. This caboose is in good condition and is a contributing resource.

b. Caboose—Long, Number 0503 (1923), Contributing

Caboose 0503 is an example of a D&RG long caboose. Several variations of these cabooses exist, but all are 25' to 26' in length with a cupola offset to the end of the car (see Photograph 24). These cabooses are constructed similar to a boxcar with a wood frame held in tension by steel truss rods, each spanning two queen posts on needle beams. The car sides conceal wood trusses spanning between the body bolsters. These cars ride on two trucks, similar to those used on freight cars but with leaf springs for a smoother ride. The long cabooses have more space than their shorter counterparts, with bunks for five, along with a desk for the conductor, a stove, a sink, and a small folding table for dining, paperwork, and cards. There were also storage lockers for train crew supplies. Caboose 0503 was constructed by the D&RG in 1923 from parts of a previous, shorter caboose of the same number that was built by the D&RG in 1886. Longer cabooses appear to have been assigned to Salida and Alamosa for service on longer-distance trains,[135] and Caboose 0503 traveled on Cumbres Pass in at least circa 1912.[136] Caboose 0503 was assigned to Alamosa after World War II and was sold to the C&TS in 1970. This caboose is in fair condition.

c. Cabooses—Converted, Numbers 05635 (modified 1976) and 0306 (modified 1982), Noncontributing

Two cabooses on the C&TS are replicas of long-caboose design. Caboose 0306 was built from boxcar 3060 in 1982. Caboose 05635 was similarly constructed from stock car 5635 in 1976[137] and further modified by the Friends in 2004-06. These cabooses are constructed similar to a boxcar with a wood frame held in tension by steel truss rods spanning two queen posts on needle beams. The car sides conceal wood trusses spanning between the body bolsters. There is a precedent for this modification, as the D&RG converted 2-3 boxcars to cabooses, several of which survive. Both C&TS cars are used in excursion service and are noncontributing resources as they were built and modified after the period of significance.

5. **Non-revenue: Maintenance of Way (MOW) Equipment**

The Cumbres & Toltec Scenic Railroad has an unparalleled collection of track-mounted maintenance-of-way (MOW) equipment typical of any early twentieth century railroad. MOW equipment is used to maintain the track and right-of-way year round and the machinery is also used to clear the line of snow in the winter. Most all the maintenance equipment was used over the entire system, even when

[134] Ibid.
[135] Ibid., 173.
[136] "Richard L. Dorman Collection of Narrow Gauge Images," Friends of the Cumbres & Toltec Scenic Railroad, Inc., http://www.cumbrestoltec.org/images/stories/Dorman_Catalog/RD052_DRGW_Long_Cabooses_0503_0574_Catalog.pdf. The circa 1912 date is confirmed by lettering style, lack of 'western' on name board and use of signal lamp on cupola.
[137] Osterwald, 71.

particular equipment was assigned to a certain place. It was common, for instance, for a "snow campaign" to start in Gunnison, work to Salida, go south to Alamosa, on to Cumbres, west to the Rio Grande Southern and back to Gunnison, perhaps taking a month. Or, the route could start in Chama or Alamosa and work counter clockwise around the system.[138] Older cars were modified into living quarters and supply cars for the crews that did this work. The D&RG maintained an extensive fleet of narrow gauge MOW equipment until abandonment in 1968, and much of this was sold to the States of Colorado and New Mexico in 1970. This equipment was numbered in two sequences. Cars built for this service were given letter numbers with the letter prefix "O." (For example rotary snow plow OM, is pronounced ō-em.) Cars modified from box cars or passenger cars for MOW service continued with their original number and the numeral prefix "0," or zero. The boom (idler) car for pile driver OB is 06008, for example. Letter prefix cars are described first, along with auxiliary equipment, with number prefix cars following.

Non-revenue: MOW	**Contributing**	**Non-Contrib.**
a. Pile Driver Car and Idler	2	0
b. Flangers	3	0
c. Rotary Snowplows and Tenders	3	3
d. Derrick Car and Support Train	8	0
e. Ditcher-Spreader	1	0
f. Modified Freight Cars	6	0
g. Modified Passenger Cars	2	3
h. Hoppers	0	8
i. Motor Cars	0	17
Total	**25**	**31**

a. Pile Driver Car, Number OB (1891); Idler Car, Number 06008 (1887), Contributing

Pile Driver OB was constructed in 1891 by the D&RG with machinery from Kendall and Roberts Co. This car consists of a long frame with a machinery enclosure and folding boom, all of which rotates 180° on a large steel gear, which is mounted on a 30' long flat car. Although D&RG records list the flatcar frame being of composite construction, it appears similar to other flatcars constructed of wood frames held in tension by steel truss rods spanning two queen posts on needle beams. The hoist machinery uses steam from the locomotive boiler to operate the pile, effectively a hammer used to ram piles into the earth. The D&RG used this primarily for bridge maintenance, but piles were also used to retain the roadbed at steep drop-offs. The operating weight of OB is listed as 68,400 pounds. The pile driver was in a wreck in 1920 and was rebuilt soon thereafter.[139] Due to the length of the folded boom, OB required an idler (boom) flat in order to be moved across the railroad. Flatcar 06008, dating from 1887 was assigned to OB in 1923. OB and 06008 were assigned to Alamosa. OB was restored in kind in 2008, and 06008 was restored in kind in 2006 and both are in good condition and are contributing resources.

[138] Jerry Day, in a forthcoming book.

[139] Jerry B. Day, *Narrow Gauge Pictorial, Volume VII, Denver and Rio Grande Western Work Equipment—OA to OZ.* (Union City, California: R-Robb Ltd.,1989), 17; and Sloan, 220.

b. Flangers, Numbers OJ, OK and OL (1888), Contributing

Flangers are shorter cars, 19' long, with snowplows mounted beneath their steel frames that spread the snow away from the track. These cars also had two "knives" that scraped the inside face of the rail, or flange, hence the name. The blades and knives are raised and lowered via air pressure from the locomotive: a target atop the flanger similar to that on a switch stand indicates the blade location, up or down. Flangers are operated immediately behind a locomotive, either in a special train with the flanger alone, as part of a rotary snow plow train, or in a normal train directly behind the locomotive. The design was patented by the D&RG in 1885.[140] Flangers initially had a wood frame similar to other freight cars, with truss rods spanning one needle beam; subsequently they were modified with steel frames. All available voids in the deck frame are filled with scrap metal to increase the weight of the car. Operating weights of C&TS flangers vary from 32,200 pounds to 33,900 pounds. Each flanger is distinct, with the blade shapes on each flanger different from all of the others. Of the 11 flangers listed on rosters, eight survive and three exist on the C&TS: OJ, OK and OL. These three flangers were all built by the D&RG in 1888 at Burnham Shops in Denver. Each was rehabilitated circa 1913 in Salida, and again in 1937 or 1940 in Alamosa to the current configuration, which is the same as during the period of significance. Flangers OJ and OK were assigned to Gunnison for use on the Black Cañon line, Baldwin and Crested Butte branches and transferred to Alamosa in 1956. Flanger OL was assigned to Salida for use on Marshall Pass, Poncha Pass and the Monarch branch, and was transferred to Alamosa in 1956. These cars are all in good condition and are contributing resources as they were assigned to Cumbres Pass and saw service over the line during extended snow removal campaigns (discussed on page 47) during the period of significance.

c. Rotary Snow Plows: Rotary OM (1889), Contributing; Coal Tender (1911), Noncontributing; Water Car 0471 (1924, modified 1958), Noncontributing; Rotary OY (1923), Contributing; Coal Tender (1923), Contributing; Water Car 0472 (1923, modified 1958), Noncontributing;

After operating the San Juan and Marshall Pass lines for almost a decade, the D&RG determined that snow plows mounted on locomotives were not sufficient for clearing winter snows on these lines. Fortunately, a machine had been developed to aid in clearing snow: the rotary snow plow. This machine, essentially a snow blower, was first developed by a man named Jull from Ontario, Canada, who later sold the idea to the Leslie brothers. Leslie Brothers Manufacturing Co. marketed the plow and licensed the Cooke Locomotive & Machine Works of Patterson, New Jersey (later the American Locomotive Company or ALCO) to construct the machines.[141]

The D&RG ordered Rotary Number 1/Leslie construction number 24 in 1889. The machine was delivered to Denver in February and stationed in Alamosa for use on Cumbres soon thereafter. A companion plow 2/Leslie 25 was ordered at the same time and sent to Salida for use on the Marshall Pass line.[142] Rotary snowplows move snow via a fan-like blade powered by steam. The machine is constructed on a steel underframe with a wood body surrounding the boiler. Rotary snow plows are unable to move by themselves, so photos of snow trains always show multiple locomotives pushing the plow through the snow. Rotary 1 was renumbered OM in 1907 (Rotary 2 became ON and was

[140] Day, 19, 66-67, 72-73 and 79-80; and Sloan, 220.
[141] Joseph P. Hereford, Jr. *Rotary Snowplows on the Cumbres & Toltec Scenic Railroad*. (Albuquerque: Windy Point Press, 1995), 5.
[142] Day, 98.

requisitioned by the Army in World War II for use in Alaska; ON was scrapped in 1968[143]). OM was rebuilt at least twice, in 1909 and 1916. After delivery of Rotary OY in 1923, OM was stationed in Chama, and it was last used by the D&RG in 1957. Although it was used west of Alamosa to Silverton, and reportedly on some standard gauge lines (on standard gauge trucks), OM rarely strayed far from Cumbres Pass. Hereford provides a detailed account of OM's use since 1970.[144] During the winter, rotary snow plows were placed on a track close to the engine facility, which often had a boiler house; a steam line would be run from the stationary boiler to the rotary to maintain water temperature and speed preparation time should the rotary be called into service. Photos indicate OM was stored on a track on the east side of the Chama yard and just south of the Roundhouse. Rotaries were delivered without tenders for coal and water, and old locomotive tenders were drafted for this use. In 1963, the original tender was replaced with one which formerly belonged to Uintah Railway locomotive 30, which was constructed by Baldwin in 1911. OM was also assigned a modified UTLX narrow frame tank car (the dome was removed) as water car 0471.[145] This increased the fuel and water capacity for the rotary and thus extended operating time between refueling. OM is on display on the storage track in Chama pending carbody and boiler repairs. Rotary OM is in fair condition; the two tenders are in good condition. OM is a contributing resource; the coal tender and water car 0471 are noncontributing resources as their modification and assignment to OM occurred after the period of significance.

In 1923 the D&RG ordered its fourth and final narrow gauge rotary from American Locomotive Company's (ALCO) Cooke works. This machine carries construction number 65053 and was designated OY by the D&RG.[146] OY was soon assigned to Alamosa to supplement OM in Cumbres Pass service. Shipped from the manufacturer without a tender, the D&RG modified a standard gauge tender for this use. In 1958, a UTLX narrow frame tank car was modified for use as an auxiliary water car and assigned the number 0472.[147] OY was repaired in kind in 1998 by the C&TS and is operable. Rotary OY and the coal tender are in good condition and are contributing resources; water car 0472 is in good condition and is a noncontributing resource as it was modified and assigned to OY after the period of significance.

d. Derrick Car and Support Trains: Derrick OP (1911); Idler Car 06063 (1887); Coach-Kitchen-Diner-Bunk 0452 (1879); Rail and Tie Car 06051 (1887); Wheel and Tie Car 06092 (1887), Cable Car 04426, (1895); Block Car 04444 (1895); Tool Car 04549 (1895), all Contributing

Derrick OP was constructed by the D&RG in 1911 using the frame of gondola 9562. Originally, the boom was of wood construction, and was revised to a steel boom in 1920. The boom of OP is constructed such that it can move up and down, but not side to side. Though listed on rosters as a "construction derrick" or crane, this vehicle was also used to return rail cars to the rails after wrecks and in maintenance activities. An enclosure similar to a small boxcar covers the two-drum hoist that raises the boom and the hook line. The hoist is powered by steam from an adjacent locomotive.[148] As with the pile driver, an idler car was necessary to transport OP across the railroad. Flat car 06063, built in 1887, was assigned as an idler car in 1923. In addition, several support cars were also assigned to OP, and many of these survive on the C&TS today. These include: 0452, a coach-kitchen-diner-bunk car converted from a passenger car built in 1879 by Billmeyer & Small as a chair

[143] Ibid., 112.
[144] Hereford, 13-71. An operating steam-powered rotary snow plow is quite dramatic.
[145] Day, 98.
[146] Ibid., 215.
[147] Ibid.
[148] Day, 135 and Sloan, 222.

car;[149] 06051, a rail and tie car converted from an 1887 flat car; 06092, a wheel and tie car modified from an 1887 flat car; 04426, a cable car modified from an 1895 boxcar; 04444, a block car converted from an 1895 boxcar; and 04549, a tool car modified from an 1895 boxcar.[150] All of these modifications were made within the period of national significance. OP and its support train were based in Alamosa and were used over the entire narrow gauge system.[151] Cars 06063, 06051, 06092, 04426, 04444, and 04549 are in good condition; OP is in fair condition; and 0452 is in poor condition. All eight vehicles are contributing resources.

e. Ditcher-Spreader, Number OU (1924), Contributing

Ditcher-Spreader OU was ordered by the D&RG in 1924 from the C. F. Jordan Co. of East Chicago, Indiana. This is the only narrow gauge version of this type of car constructed by Jordan. OU is constructed entirely of steel (unique among MOW equipment) and has a series of blades suspended along the side of the car, and from arms that can be rotated away from the car and down along the road bed using compressed air supplied by the locomotive. The spreader is operated behind a locomotive with the blades extended to move snow, ballast, or earth. OU was used along the C&TS to clear shrubs from the right-of-way in 2001 with great success. OU was based in Alamosa and used in ballast service (grooming the profile of the roadbed) across the entire narrow gauge system, but in snow service exclusively on Cumbres Pass. After delivery, the D&RG added an enclosure to protect the operator, and subsequently modified the enclosure; otherwise, the vehicle exists as constructed and neither the cabin nor subsequent modifications compromise the vehicle's historic integrity. OU is in good condition.

f. Modified Freight Cars, Numbers 04258 and 04407 (1885), 04904 and 04982 (1896), W462 (1903) and 09410 (1923), all Contributing

With wear and tear, older cars were shifted from revenue service to non-revenue service often serving as MOW cars. Cars received varying degrees of modification depending upon the new service assignment. A number of these cars have survived on the C&TS. Boxcars dating to 1885 include 04258, a section men bunk car assigned to OY and 04407, a sleeper. Both these cars are modified with added windows and doors. Boxcars dating to 1896 include 04904, a water service car (used by crews who maintained the water tanks and water sources along the line) and 04982, an office car. This last car was reportedly used as a caboose on the Santa Fe branch.[152] W462 is a water car constructed from the tender of locomotive 462, now scrapped.[153] Coal outfit car 09410 appears to be a former locomotive tender tank mounted on a high-side gondola frame. While less glamorous, each of above pieces fulfilled needed functions on the railroad and represent the resourcefulness of the company to recycle and adapt the various car types to new uses.[154] All of these modifications were made during the period of significance. Cars 04258, 04407, 04904, and 04982 are in good condition; W462 and 09410 are in poor condition. All six cars are contributing resources.

g. Modified Passenger Cars, Numbers 053 (1884, modified 1929), X54 (1880) and X65 (1887), 0252 (1889) and 292 (1881), 053 and 292 are contributing, X54, X65 and 0252 noncontributing.

[149] Danneman, 252.
[150] Sloan. 216.
[151] Day,136.
[152] Sloan, 217.
[153] O'Berry, 18.
[154] Sloan, 215-219.

Car 053 is a cook car that was assigned to rotary OY. This car is a former short (38'-6" long) 1884 mail car that was formerly used on the Santa Fe branch and modified for non-revenue service in 1929.[155] Enginemen outfit cars X54 and X65 were former long (46') mail cars used in "San Juan Express" service between Alamosa and Durango; X54 was built by Billmeyer & Small in 1880 and X65 by the D&RG in 1887.[156] X54 was later assigned to Rotary OM and X65 was then assigned to Rotary OY (according to Sloan, the X-prefix indicated the car was to be attached to the end of the train[157]). Two passenger cars survive in maintenance service: 0252 (ex-Pullman) and 292. Car 0252 was constructed by the Pullman Company as a 12-section tourist sleeping car in 1889 and was one of a series of four cars numbered 467-470. Three of these cars were sold to the Colorado & Northwestern in 1909 and subsequently renumbered. Western Union eventually purchased one of the cars, converted it to a coach-outfit car and used it along the Rio Grande to house personnel servicing its communications lines. After Western Union abandoned the car in 1933, the D&RG assumed ownership and renumbered the car 0252. Car 0252 was retired in 1953; it was acquired by the C&TS in 1994.[158] Car 292 was built by Jackson & Sharp in 1881 as a coach and used in passenger service until 1928 when it was transferred to MOW service.[159] Cars 053 and 292 are in fair condition; X54, X65, and 0252 are in poor condition. Cars 053 and 292 are contributing resources as they were modified during the period of significance; X54, X65, and 0252 are noncontributing resources as they were modified for MOW service after the period of significance.

h. Hoppers, Numbers 1-5 (1914), 1307, 1309 and 1311 (1920), Noncontributing

To aid in ballast spreading activities, the modern tourist line C&TS has purchased a number of steel hopper cars built for other railroads. Hoppers are gondolas with sloped end sheets and doors at the bottom of the bin toward the center of the car. They are used to haul loose material like rock and coal and can be unloaded through the bottom doors with gravity. Prior to 1999, three former standard-gauge Butte Anaconda & Pacific hoppers were purchased and placed on narrow gauge trucks: 1307, 1309 and 1311.[160] In 2000, five steel narrow gauge hopper cars were purchased from the East Broad Top (EBT) in Pennsylvania. These were formerly EBT numbers 978, 1044 and 1054 (the numbers of the last two have not been identified) and are numbered on the C&TS as EBT-1-5. All eight cars are of steel construction with doors at the bottom of the car to facilitate unloading. Cars 1307, 1309, and 1311 are in good condition; EBT 1-5 are in poor condition: all are noncontributing because they were not associated with C&TS during its period of national significance.

i. Motor Cars, Numbers 04, 013, 101, 102, 103, 104, 105, 106, 107 and 108 (circa 1945 and later); Trailers, Numbers 126-130 and 208 and 209 (circa 1945 and later), Noncontributing

Motor cars, colloquially known as speeders or pop cars for the popping sound of their reciprocal engines were used by track maintenance or section crews to monitor the right-of-way and travel to remote work locations. These are the motorized equivalent of hand-cars. The C&TS has a collection of various models of narrow gauge motor cars, many produced by the Fairmont Company after the period of significance. Numbers 04 and 013 are examples of model ST2; numbers 101, 102

[155] Danneman, 32-32.
[156] Ibid., 33-34 and 50-51.
[157] Sloan, 215.
[158] Danneman, 134 and 258.
[159] Ibid., 168.
[160] Osterwald, 123.

and 103 are examples of model A6; numbers 104 and 107 are examples of model A3; number 105 and 108 are model MT14; and model 106 appears to have been fabricated by the C&TS. In addition, seven non-powered trailers provide the ability to tow additional personnel, tools and materials. Trailers are constructed of cast and pressed steel frames and wheels with wood decks. These are numbers 126-130 and 208 and 209. All ten motor cars and seven trailers are in good condition and are noncontributing resources because they were built after the period of significance.

6. **Standard Gauge**

Standard Gauge	**Contributing**	**Non-Contrib.**
a. Standard Gauge Idler Car		1
b. Standard Gauge Boxcars		2
Total		**3**

a. Idler Car, Number 010793 (1939) Noncontributing

Palmer originally conceived the Denver & Rio Grande as a narrow gauge railroad for economic reasons: he was influenced by British industrial railroads and noted the smaller equipment weighed less, required less material for track work and roadbed, and could negotiate sharper curves and steeper grades. In short, it cost less to build and operate. The 3' track gauge contrasts with the 4'-8½" gauge adopted as "standard gauge" in the United States in the mid-nineteenth century. All Rio Grande track was narrow gauge until the late 1880s, when their standard gauge lines began to build west into the mountains. At first a third rail was installed (both gauges sharing one common rail), and gradually as the D&RG converted to the wider gauge, the narrow gauge third rail was removed. Three-rail track extended to Antonito, and the track between Alamosa and Antonito was operated as dual gauge until narrow gauge service ended in 1968.[161] Trains with both standard- and narrow gauge cars were operated as one unit using idler cars with multiple couplers on each end to join the cars of different gauges. The C&TS has one steel-framed idler car, 010793 which was constructed by the D&RG in 1939. The idler car is displayed in Antonito on three-rail track between the engine house and depot with two standard gauge boxcars to illustrate both the relative size difference between standard and narrow gauge equipment, and how the equipment could be operated together. The idler car is noncontributing because it was built after the period of significance; it is also a standard gauge car that is not associated with the narrow gauge Cumbres & Toltec Scenic Railroad portion of the D&RG.

b. Box Cars, Numbers 66306 and 66977 (1916), Noncontributing

For the purposes of comparison, the Friends have renovated two standard gauge box cars of composite construction built in 1916 and donated by the D&RG in the later 1980s. These are numbers 66306 and 66977, box cars with a steel frame, ends and roof, and wood side sheathing.[162] These are displayed by the Friends on the three-rail track display in Antonito between the engine house and depot with the idler car to illustrate the difference in size between standard gauge and narrow gauge rolling stock. Both cars are in good condition but are noncontributing resources because they are standard gauge cars and not associated with the narrow gauge Cumbres & Toltec Scenic Railroad portion of the D&RG.

[161] Wilson and Glover, 86-87.
[162] Osterwald, 122.

LIST OF RESOURCES

Resource	Description	Ref/ No's.[163]	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Length of Line	Track, Culverts, Signage	C	1880	•		•			•			
Antonito	D&RG Railroad Antonito Depot	D1a	1880	•		•		•				
Hangman's Trestle	Wood Trestle	D2a	1988	•			•		•			Reconstruc-tion of 1879 trestle
Lava	Water Tank	D3a	1973	•			•		•			
Lava	Pump House	D3b	1883	•		•			•			
Big Horn	Telegraphone Booth	D5a	c 1900	•		•		•				
Sublette	Shingle Bunk House	D6a	1881	•		•		•				
Sublette	Log Bunk House	D6b	1880	•		•		•				
Sublette	Section House	D6c	1882	•		•		•				
Sublette	Water Column	D6d	1937	•			•		•			
Toltec	Telegraphone Booth	D7a	c 1900	•		•			•			
Tunnel No. 1	Telegraphone Booth	D8a	c 1900	•		•		•				
Tunnel No. 1	Tunnel	D8b	1879	•		•			•			
Tunnel No. 2	Telegraphone Booth	D10a	c 1900	•		•		•				
Tunnel No. 2	Tunnel	D10b	1879	•		•			•			
Tunnel No. 2	Garfield Monument	D10c	1881	•		•					•	
Osier	Dining Hall	D11a	1989		•		•	•				
Osier	Livestock Loading Pens	D11b	1900	•		•			•			
Osier	Section House	D11c	1884	•		•		•				
Osier	Depot	D11d	1880	•		•		•				
Osier	Water Tank	D11e	1918	•		•			•			
Osier	Coal Platform	D11f	1888	•		•			•			
Cascade Creek	Steel Trestle	D12a	1889	•		•			•			
Los Pinos	Telegraphone Booth	D13a	c 1900	•		•		•				
Los Pinos	Wood Trestle	D13b	1888	•		•			•			
Los Pinos	Water Tank	D13c	1915	•		•			•			
Apache Canyon	Telegraphone Booth	D14a	c 1900	•		•		•				
Cumbres	Storage Building	D15a	1950	•			•	•				
Cumbres	Storage Building (2nd)	D15a	1950	•			•	•				
Cumbres	Snowshed	D15b	1916	•			•		•			
Cumbres	Section House	D15c	1882	•		•		•				
Cumbres	Car Inspector's House	D15d	1911	•		•		•				
Cumbres	Water Column	D15e	1937	•			•		•			
Cumbres	Wood Trestle	D15f	1880	•		•			•			
Coxo	Telegraphone Booth	D16a	c 1900	•		•		•				
Cresco	Water Tank	D17a	1920	•		•			•			
Cresco	Wood Trestle	D17b	1880	•		•			•			
Cresco	Telegraphone Booth	D17c	c 1900	•		•		•				

[163] Reference numbers for resources refer to the location in the resource summary. So the Lava Pump House would be under D (Buildings and Structures), 3 (Lava, New Mexico), b (item b). Rolling stock is referenced by the locomotive or car number.

Resource	Description	Ref/ No's.	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Lobato	Steel Trestle	D18a	1883	•		•			•			Restoration 2011
Lobato	Movie Set	D18b	1970		•		•		•			
Chama	Through Truss Bridge	D19a	1924	•		•			•			
Chama	Oil Depot	D19b	1936	•			•		•			
Chama	Water Tank	D19c	1920	•		•			•			
Chama	Log Bunk House	D19d	1880	•		•		•				
Chama	Car Body Bunk House	D19e	1924	•		•		•				Constructed as a car body in late nineteenth century
Chama	Coaling Tipple	D19f	1924	•		•			•			
Chama	Ash Pit	D19g	2008	•			•		•			
Chama	Sand House/ Storage Bunker	D19h	1924	•		•			•			
Chama	Warehouse	D19i	1920	•		•		•				
Chama	Roundhouse/Enginehouse	D19j/k	1900	•			•	•				modified 1946 and 1977
Chama	Oil House	D19l	1903	•		•		•				
Chama	Night Watchman's Dwelling	D19m	1903	•		•		•				
Chama	Depot	D19n	1899	•		•		•				
Chama	Public Toilets	D19o	1999		•		•	•				
Chama	Track Scale	D19p	1929	•		•			•			
Chama	Motor Car Shed	D19q	1939	•			•		•			
Chama	Motor Car Shed	D19q	2002	•			•		•			
Chama	Livestock Loading Pens	D19r	1888	•		•			•			
Locomotive	K-27	463	1903	•		•			•			
Locomotive	K-36	483	1925	•		•			•			
Locomotive	K-36	484	1925	•		•			•			
Locomotive	K-36	487	1925	•		•			•			
Locomotive	K-36	488	1925	•		•			•			
Locomotive	K-36	489	1925	•		•			•			
Locomotive	K-37	492	1928	•		•			•			
Locomotive	K-37	494	1928	•		•			•			
Locomotive	K-37	495	1928	•		•			•			
Locomotive	K-37	497	1930	•		•			•			
Locomotive	Diesel	19	1943		•		•		•			
Rolling Stock	Refrigerator Car	55	1908	•		•			•			
Rolling Stock	Refrigerator Car	157	1924	•		•			•			
Rolling Stock	Refrigerator Car	163	1926	•		•			•			
Rolling Stock	Refrigerator Car	166	1926	•		•			•			
Rolling Stock	Refrigerator Car	169	1926	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	700	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	724	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	727	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	728	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	731	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	756	1904	•		•			•			

Resource	Description	Ref/ No's.	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Rolling Stock	Drop-Bottom Gondolas	769	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	774	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	783	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	787	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	790	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	791	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	798	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	801	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	811	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	848	1904	•		•			•			
Rolling Stock	Drop-Bottom Gondolas	859	1904	•		•			•			
Rolling Stock	Flatcar, Idler (from Gon)	1001	1955	•			•		•			modified 1955
Rolling Stock	Flatcar, Idler (from Gon)	1515	1955	•			•		•			modified 1955
Rolling Stock	Flatcar, Idler (from Gon)	1567	1955	•			•		•			modified 1955
Rolling Stock	Flatcar, Idler (from Stock)	6708	1957	•			•		•			modified 1957
Rolling Stock	Flatcar, Idler (from Stock)	6746	1957	•			•		•			modified 1957
Rolling Stock	Flatcar, Idler (from Stock)	6755	1957	•			•		•			modified 1957
Rolling Stock	Flatcar, Idler (from Gon)	9533	1957	•			•		•			modified 1957
Rolling Stock	Flatcar, Idler (from Gon)	9557	1957	•			•		•			modified 1957
Rolling Stock	Flatcar, Idler (from Gon)	9569	1957	•			•		•			modified 1957
Rolling Stock	Flatcar, Composite Frame	6200	1918	•		•			•			
Rolling Stock	Flatcar, Composite Frame	6205	1918	•		•			•			
Rolling Stock	Flatcar, Composite Frame	6214	1918	•		•			•			
Rolling Stock	Flatcar, Truss Rod, 40 foot	6314	1926	•		•			•			
Rolling Stock	Flatcar, Steel Frame	6509	1939	•			•		•			
Rolling Stock	Flatcar, Steel Frame	6544	1944	•			•		•			
Rolling Stock	Flatcar, SG Boxcar	6601	1909	•			•		•			modified 1955
Rolling Stock	Flatcar, SG Boxcar	6613	1909	•			•		•			modified 1955
Rolling Stock	Flatcar, SG Boxcar	6618	1909	•			•		•			modified 1955
Rolling Stock	Flatcar, SG Stockcar	6627	1956	•			•		•			modified 1956
Rolling Stock	Flatcar, SG Stockcar	6636	1956	•			•		•			modified 1956
Rolling Stock	Flatcar, SG Stockcar	6649	1956	•			•		•			modified 1956
Rolling Stock	High-Side Gondolas	1000	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1039	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1059	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1082	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1149	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1159	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1204	1902	•		•			•			302/ Observation Car
Rolling Stock	High-Side Gondolas	1232	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1268	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1343	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1357	1902	•		•			•			

Resource	Description	Ref/ No's.	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Rolling Stock	High-Side Gondolas	1456	1902	•		•			•			
Rolling Stock	High-Side Gondolas	1534	1903	•		•			•			
Rolling Stock	High-Side Gondolas	1610	1903	•		•			•			
Rolling Stock	High-Side Gondolas	1667	1903	•		•			•			
Rolling Stock	High-Side Gondolas	1733	1903	•		•			•			
Rolling Stock	High-Side Gondolas	1746	1903	•		•			•			
Rolling Stock	High-Side Gondolas	9249	1902	•		•			•			
Rolling Stock	High-Side Gondolas	9378	1902	•		•			•			
Rolling Stock	Pipe Gondolas, modified Gon	1145	1902	•			•		•			modified 1950
Rolling Stock	Pipe Gondolas, modified Gon	1246	1902	•			•		•			modified 1950
Rolling Stock	Pipe Gondolas, modified Gon	1557	1903	•			•		•			modified 1950
Rolling Stock	Pipe Gondolas, modified Gon	1648	1903	•			•		•			modified 1950
Rolling Stock	Pipe Gondolas, modified Gon	1839	1903	•			•		•			modified 1950
Rolling Stock	Pipe Gondolas, modified Gon	9213	1902	•			•		•			modified 1950
Rolling Stock	Pipe Gondolas, modified Gon	9214	1902	•			•		•			modified 1950
Rolling Stock	Pipe Gondolas, modified Gon	9558	1902	•			•		•			modified 1950
Rolling Stock	Boxcar	3014	1904	•		•			•			
Rolling Stock	Boxcar	3016	1904	•		•			•			
Rolling Stock	Boxcar	3073	1904	•		•			•			
Rolling Stock	Boxcar	3090	1904	•		•			•			
Rolling Stock	Boxcar	3125	1904	•		•			•			
Rolling Stock	Boxcar	3231	1904	•		•			•			
Rolling Stock	Boxcar	3254	1904	•		•			•			
Rolling Stock	Boxcar	3331	1904	•		•			•			
Rolling Stock	Boxcar	3422	1904	•		•			•			
Rolling Stock	Boxcar	3484	1904	•		•			•			
Rolling Stock	Boxcar	3524	1904	•		•			•			
Rolling Stock	Boxcar	3570	1904	•		•			•			
Rolling Stock	Boxcar	3585	1904	•		•			•			
Rolling Stock	Boxcar	3592	1904	•		•			•			
Rolling Stock	Boxcar	3669	1904	•		•			•			
Rolling Stock	Boxcar-Modified	3064	1904	•			•		•			208; modified 1971-73
Rolling Stock	Boxcar-Modified	3071	1904	•			•		•			248; modified 1971-73
Rolling Stock	Boxcar-Modified	3156	1904	•			•		•			210; modified 1971-73
Rolling Stock	Boxcar-Modified	3161	1904	•			•		•			214; modified 1971-73
Rolling Stock	Boxcar-Modified	3244	1904	•			•		•			249; modified 1971-73
Rolling Stock	Boxcar-Modified	3278	1904	•			•		•			206; modified 1971-73
Rolling Stock	Boxcar-Modified	3316	1904	•			•		•			212; modified 1971-73

Resource	Description	Ref/ No's.	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Rolling Stock	Boxcar-Modified	3405	1904	•			•		•			251; modified 1971-73
Rolling Stock	Boxcar-Modified	3414	1904	•			•		•			207; modified 1971-73
Rolling Stock	Boxcar-Modified	3469	1904	•			•		•			211; modified 1971-73
Rolling Stock	Boxcar-Modified	3475	1904	•			•		•			205; modified 1971-73
Rolling Stock	Boxcar-Modified	3476	1904	•			•		•			213; modified 1971-73
Rolling Stock	Boxcar-Modified	3527	1904	•			•		•			250; modified 1971-73
Rolling Stock	Boxcar-Modified and Restored	3339	1904	•		•			•			200
Rolling Stock	Boxcar-Modified and Restored	3533	1904	•		•			•			451 Concession Car
Rolling Stock	Boxcar-Modified and Restored	3537	1904	•		•			•			202
Rolling Stock	Boxcar-Modified and Restored	3591	1904	•		•			•			
Rolling Stock	Boxcar-Modified and Restored	3605	1904	•		•			•			209
Rolling Stock	Boxcar-Modified and Restored	3643	1904	•		•			•			204
Rolling Stock	Boxcar-Modified and Restored	3686	1904	•		•			•			401
Rolling Stock	Boxcar-Modified and Restored	3719	1904	•		•			•			203
Rolling Stock	Boxcar-Modified and Restored	3742	1904	•		•			•			201
Rolling Stock	Stockcar, Single Deck	5510	1904	•		•			•			
Rolling Stock	Stockcar, Single Deck	5691	1904	•		•			•			
Rolling Stock	Stockcar, Single Deck	5706	1904	•		•			•			
Rolling Stock	Stockcar, Single Deck	5747	1904	•		•			•			
Rolling Stock	Stockcar, Double Deck	5549	1904	•		•			•			
Rolling Stock	Stockcar, Double Deck	5553	1904	•		•			•			
Rolling Stock	Stockcar, Double Deck	5600	1904	•		•			•			
Rolling Stock	Stockcar, Double Deck	5633	1904	•		•			•			
Rolling Stock	Stockcar, Double Deck	5674	1904	•		•			•			
Rolling Stock	Stockcar, Double Deck	5841	1904	•		•			•			
Rolling Stock	Stockcar, 34'	5995	1923	•		•			•			
Rolling Stock	Tank Cars, Narrow Frame	12739	1927	•		•			•			
Rolling Stock	Tank Cars, Narrow Frame	12757	1927	•		•			•			
Rolling Stock	Tank Cars, Narrow Frame	12918	1927	•		•			•			
Rolling Stock	Tank Cars, Narrow Frame	12962	1927	•		•			•			
Rolling Stock	Tank Cars, Narrow Frame	13084	1927	•		•			•			
Rolling Stock	Tank Cars, Narrow Frame	13168	1927	•		•			•			
Rolling Stock	Tank Cars, Van Dyke	58424	1936	•			•		•			modified 1936
Rolling Stock	Tank Cars, Van Dyke	58432	1936	•			•		•			modified 1936
Rolling Stock	Pipe Gondolas, modified SG	9613	1916	•			•		•			modified 1953 & 1963
Rolling Stock	Pipe Gondolas, modified SG	9615	1916	•			•		•			modified 1953 & 1963
Revenue Passenger	Modifed NG Flatcar	6501	1987		•		•		•			511/ Santa Fe; modified 1987

Resource	Description	Ref/ No's.	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Revenue Passenger	Modifed NG Flatcar	6510	1982				•		•			501/ Antonito; modified 1982
Revenue Passenger	Modifed NG Flatcar	6516	1982		•		•		•			503/ Del Norte; modified 1982
Revenue Passenger	Modifed NG Flatcar	6521	1982		•		•		•			500/ Alamosa; modified 1982
Revenue Passenger	Modifed NG Flatcar	6533	1982		•		•		•			506/ Conejos; modified 1982
Revenue Passenger	Modifed NG Flatcar	6537	1982		•		•		•			505/ La Jara; modified 1982
Revenue Passenger	Modifed NG Flatcar	6540	1982				•		•			504/ San Luis; modified 1982
Revenue Passenger	Modifed NG Flatcar	6500	1987		•		•		•			510/ Tres Piedra; modified 1987
Revenue Passenger	Modifed NG Flatcar	6512	1987		•		•		•			512/ Chama; modified 1987
Revenue Passenger	Modifed NG Flatcar	6518	1987		•		•		•			513/ Taos; modified 1987
Revenue Passenger	Modifed NG Flatcar	6538	1987		•		•		•			514/ Ojo Caliente; modified 1987
Revenue Passenger	Modifed NG Flatcar	6541	1987		•		•		•			515/ Espanola; modified 1987
Revenue Passenger	Modifed NG Flatcar	6542	1982				•		•			502/ Monte Vista; modified 1982
Revenue Passenger	Modifed SG Flatcar	6543	1987		•		•		•			516/ Dulce; modified 1987
Revenue Passenger	Modifed SG Flatcar	4606	1957		•		•		•			522/ Sublette; modified 1993
Revenue Passenger	Modifed SG Flatcar	4609	1957		•		•		•			520/ Cumbres; modified 1993
Revenue Passenger	Modifed SG Flatcar	4629	1957		•		•		•			517/ Big Horn; modified 1993 & 97
Revenue Passenger	Modifed SG Flatcar	-	1957		•		•		•			521/ Osier; modified 1993
Revenue Passenger	Modifed SG Flatcar	-	1957		•		•		•			523/ Los Pinos; modified 1993 & 97
Revenue Passenger	Combination Car	60	1897				•		•			modified 1909
Revenue Passenger	Hinman Coach	-	c 1920s				•		•			modified multiple times
Non-Revenue Caboose	Caboose-short	0579	1886	•		•			•			
Non-Revenue Caboose	Caboose-long	0503	1923	•		•			•			
Non-Revenue Caboose	Caboose-conversion	0306	1982		•		•		•			modified 1982
Non-Revenue Caboose	Caboose-conversion	05635	1976		•		•		•			modified 1976
Non-Revenue MOW	Pile Driver	OB	1891	•		•			•			
Non-Revenue MOW	Idler Car	06008	1887	•		•			•			
Non-Revenue MOW	Flanger	OJ	1888	•		•			•			
Non-Revenue MOW	Flanger	OK	1888	•		•			•			
Non-Revenue MOW	Flanger	OL	1888	•		•			•			
Non-Revenue MOW	Rotary Snow Plow	OM	1889	•		•			•			
Non-Revenue MOW	Rotary OM Coal Tender	-	1911	•			•		•			not from this line
Non-Revenue MOW	Water Car	0471	1924	•			•		•			modified 1958
Non-Revenue MOW	Rotary Snow Plow	OY	1923	•		•			•			
Non-Revenue MOW	Rotary OY Coal Tender	-	1923	•		•			•			
Non-Revenue MOW	Water Car	0472	1923	•			•		•			modified 1958

Resource	Description	Ref/ No's.	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Non-Revenue MOW	Derrick	OP	1911	•		•			•			
Non-Revenue MOW	Coach-Kitchen-Diner-Bunk	0452	1879	•		•			•			
Non-Revenue MOW	Idler Car	06063	1887	•		•			•			
Non-Revenue MOW	Rail and Tie Car	06051	1887	•		•			•			
Non-Revenue MOW	Wheel and Tie Car	06092	1887	•		•			•			
Non-Revenue MOW	Cable Car	04426	1895	•		•			•			
Non-Revenue MOW	Block Car	04444	1895	•		•			•			
Non-Revenue MOW	Tool Car	04549	1895	•		•			•			
Non-Revenue MOW	Ditcher Spreader	OU	1924	•		•			•			
Non-Revenue MOW	Section Men Bunk Car	04258	1885	•		•			•			
Non-Revenue MOW	Sleeper	04407	1885	•		•			•			
Non-Revenue MOW	Water Service Car	04904	1896	•		•			•			
Non-Revenue MOW	Office Car	04982	1896	•		•			•			
Non-Revenue MOW	Water Car	W462	1903	•		•			•			
Non-Revenue MOW	Coal Outfit	09410	1923	•		•			•			
Non-Revenue MOW	Cook Car	053	1884	•		•			•			modified 1929
Non-Revenue MOW	Enginemen Outfit	X54	1884	•			•		•			
Non-Revenue MOW	Enginemen Outfit	X65	1884	•			•		•			
Non-Revenue MOW	Coach Outfit	0252	1889	•			•		•			
Non-Revenue MOW	Coach Outfit	292	1881	•		•			•			
Non-Revenue MOW	Hopper	1	1914		•		•		•			
Non-Revenue MOW	Hopper	2	1914		•		•		•			
Non-Revenue MOW	Hopper	3	1914		•		•		•			
Non-Revenue MOW	Hopper	4	1914		•		•		•			
Non-Revenue MOW	Hopper	5	1914		•		•		•			
Non-Revenue MOW	Hopper	1307	1920		•		•		•			
Non-Revenue MOW	Hopper	1309	1920		•		•		•			
Non-Revenue MOW	Hopper	1311	1920		•		•		•			
Non-Revenue MOW	Motor Cars	04	1945	•			•		•			
Non-Revenue MOW	Motor Cars	013	1945	•			•		•			
Non-Revenue MOW	Motor Cars	101	1945	•			•		•			
Non-Revenue MOW	Motor Cars	102	1945	•			•		•			
Non-Revenue MOW	Motor Cars	103	1945	•			•		•			
Non-Revenue MOW	Motor Cars	104	1945	•			•		•			
Non-Revenue MOW	Motor Cars	105	1945	•			•		•			
Non-Revenue MOW	Motor Cars	106	1945	•			•		•			
Non-Revenue MOW	Motor Cars	107	1945	•			•		•			
Non-Revenue MOW	Motor Cars	108	1945	•			•		•			
Non-Revenue MOW	Motor Car Trailer	126	1945	•			•		•			
Non-Revenue MOW	Motor Car Trailer	127	1945	•			•		•			
Non-Revenue MOW	Motor Car Trailer	128	1945	•			•		•			
Non-Revenue MOW	Motor Car Trailer	129	1945	•			•		•			
Non-Revenue MOW	Motor Car Trailer	130	1945	•			•		•			

Resource	Description	Ref/ No's.	Date	NR		NHL		Building	Structure	Site	Object	Notes
				Cont	N/C	Cont	N/C					
Non-Revenue MOW	Motor Car Trailer	208	1945	•			•		•			
Non-Revenue MOW	Motor Car Trailer	209	1945	•			•		•			
Non-Revenue MOW	Idler Car	010793	1939	•			•		•			
Standard Gauge	SG Boxcar	66306	1916	•			•		•			
Standard Gauge	SG Boxcar	66977	1916	•			•		•			

8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties:

Nationally: X Statewide: _ Locally:

Applicable National Register Criteria:	A X B _ C X D
Criteria Considerations (Exceptions):	A _ B _ C _ D _ E _ F _ G
NHL Criteria:	1
NHL Theme(s):	V. Developing the American Economy 3. Transportation and Communication
Areas of Significance:	Transportation, Engineering, Commerce
Period(s) of Significance:	1879-1930
Significant Dates:	1879
Significant Person(s):	N/A
Cultural Affiliation:	N/A
Architect/Builder:	Denver & Rio Grande Railroad
Historic Contexts:	XII. Business L. Shipping and Transportation XIV. Transportation E. Railroads XVIII. Technology (Engineering and Invention) B. Transportation

Summary of Significance

The Denver & Rio Grande Railroad San Juan Extension, now known as the Cumbres & Toltec Scenic Railroad, is a 64-mile segment of the 36" gauge railroad built by William Jackson Palmer to open the Central Rocky Mountain region for development. The San Juan Extension is nationally significant under NHL Criterion 1 as an outstanding representation of the 1,000-mile Denver & Rio Grande Railroad (D&RG) narrow gauge railroad network, which was America's largest and most ambitious narrow gauge railroad. The so-called "Narrow Gauge Movement" of the late nineteenth century was one of the most distinctive, and important, epochs in American railroading. For a period following the Civil War, narrow gauge seemed to be a viable alternative to what would become standard gauge (52 1/2"). This represented a fundamental choice with serious ramifications for the entire American economy and course of commercial development.[164] The network defined by the D&RG and its affiliated companies represented the nation's most ambitious, extensive, and successful expression of narrow gauge railroading as a viable alternative to the prevailing system of standard gauge railroading. The D&RG served as a kind of narrow gauge "proof of concept" project and demonstrated the ability of 36" railroads to penetrate mountainous regions, operate over long distances, and scale up equipment and infrastructure to meet heavy traffic demand. It represents an outstanding example of a technological salient and the kind of innovation characteristic of post-Civil War economic expansion.[165] The San Juan Extension is one of only two functioning narrow gauge segments of the 1,000-mile D&RG system.

Also under Criterion 1, the Denver & Rio Grande San Juan Extension is nationally significant as the country's longest and most complete representation of late nineteenth-early twentieth century railroading. In terms of length, scale of operations, completeness, intensity of steam operations, and state of preservation, it is the country's best surviving example of the American railroad at its peak of national influence, roughly 1870 to 1930, when the network exceeded 254,000 route miles. Railroading was then the country's largest single non-agricultural employer and provided 85% of all intercity transportation. The United States depended on railroad mobility as one of the foundations of its economy and its primary means of transportation and communication. In the first three decades of the twentieth century, the D&RG enhanced and modernized its narrow gauge lines according to the same general standards it followed for its standard gauge lines. As a result, the narrow gauge network (including the San Juan Extension) was in most principal aspects no different from the heavy duty, modern main line railroading of the period. It was exceptional as the country's most impressive narrow gauge system, yet at the same time utterly representative of the general American railroad practice of the first quarter of the twentieth century.[166] Today, no other North American railroad heritage corridor exhibits the

[164] The works framing almost any national context discussion of railroads and American industrialization in a D&RG context are Alfred D. Chandler, *The Railroads: America's First Big Business, Sources and Readings* (New York: Harcourt, Brace and World, 1965); Alfred D. Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge: Harvard University Press, 1977); and William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1991). More recent works include Sarah H. Gordon, *Passage to Union: How the Railroads Transformed American Life, 1829-1929* (Chicago: Ivan R. Dee, 1996), and Daniel Walker Howe, *What Hath God Wrought: The Transformation of America, 1815-1848* (New York: Oxford University Press, 2007).

[165] Besides the D&RG there were a variety of other lines in the Rocky Mountain region, such as the 325-mile Denver, South Park and Pacific (DSP&P). The DSP&P track was eventually absorbed into the Colorado and Southern (C&S) system, which included a number of narrow and standard gauge lines. For reasons similar to the D&RG-San Juan Extension, the C&S continued to operate narrow gauge lines in Colorado until 1943. Another noteworthy example was the Rio Grande Southern, which began construction in 1890 and operated between Durango and Ridgeway Colorado over a 164-mile mountainous right-of-way until 1951. There were various other shorter narrow-gauge lines constructed in the 1890s, such as the Colorado & Northwestern and the Florence & Cripple Creek, but by the 1920s most of these had been abandoned or absorbed into other railroads or converted to standard gauge. For a summary, see Donald B. Robertson, *Encyclopedia of Western Railroad History, Volume II: Colorado, Idaho, Montana, Wyoming* (Dallas: Taylor Publishing, 1991).

[166] The standard academic history of the D&RG remains Robert G. Athearn, *Rebel of the Rockies: A History of the Denver and Rio Grande Railroad* (New Haven: Yale University Press, 1962).

completeness, variety, representative characteristics, scale, and authenticity of the Denver & Rio Grande San Juan Extension.

The period of significance of 1879-1930 represents the construction of this segment of the original San Juan Extension, which began in 1879, its continual use and improvement during the late nineteenth century, the almost complete modernization of the physical plant throughout the first quarter of the twentieth century, and the fact that the Denver & Rio Grande Western Railroad (successor to the D&RG) essentially ceased modernizing the railroad or substantially changing its operating practices or maintenance regimes after 1930.

The D&RG San Juan Extension is thus a fully evolved resource reflecting almost every important change in railroad technology, operations, and physical form during the period when the American railroad matured into a fully integrated system. Subsequent to 1930, the railroad changed little, making it a deeply-layered physical record of typical American railroading throughout its 51-year period of significance.

Denver & Rio Grande Railway

The Denver & Rio Grande Railway Company was originally incorporated by William Jackson Palmer to build a railroad between Denver and El Paso, Texas to connect with a railroad being developed simultaneously by Palmer which connected El Paso with Mexico City. Construction commenced south from Denver in 1871 and track was complete to Colorado Springs and Pueblo in 1872. The original route was to follow the Arkansas River west to Salida, then south over Poncha Pass, through the San Luis Valley and follow the Rio Grande on to El Paso. Branch lines were also planned to serve the mining areas in Colorado, New Mexico, and Utah.[167]

The Panic of 1873 delayed construction beyond Pueblo and Cañon City until 1876. By this time, the Atchison, Topeka and Santa Fe had extended standard gauge track to the area en route to California. Both railroads had plans for routes over Raton Pass south of Trinidad, and the Arkansas River Canyon (Royal Gorge) west of Pueblo. In both cases, there was only room for one railroad. The resulting so-called "Royal Gorge War" was ultimately settled by the Treaty of Boston in 1880. This agreement prevented the Santa Fe from building into the mountains west of Pueblo, and limited the D&RG from building south of Espanola, New Mexico. As a result, the D&RG refocused its mission to build west to Salt Lake and serve the developing mines in the San Juan Mountains of Colorado. This network of track was completed to Salt Lake and through much of the San Juans by 1882.[168] Though the original narrow gauge mainline was constructed over Marshall Pass and through the Black Cañon of the Gunnison, the D&RG soon converted the route over Tennessee Pass to the Colorado River drainage to standard gauge, and this became the mainline between Denver and Salt Lake City.[169]

Construction of the San Juan Extension railbed west of Antonito started in late 1879. The railhead reached Antonito in April of 1880, and Chama on December 31 of the same year. Although several routes were studied, Cumbres Pass appears to have been chosen for the route's proximity to coal deposits at Monero. Rails reached Durango in 1881 and Silverton in 1882. The primary maintenance shops for the San Juan Extension were at Alamosa although there were smaller intermediate roundhouses and shops at Chama and Durango. There were yards at Alamosa, Antonito (a small junction yard), Chama, and Durango. Trains operated between Alamosa and Durango with locomotive and crew changes occurring at Chama.[170]

[167] Osterwald, p. 17.
[168] Walter P. Borneman, *Rival Rails: The Race to Build America's Greatest Transcontinental Railroad* (New York: Random House, 2010), 140-160 and Osterwald, 17-18.
[169] LaMassena, 26-58.
[170] Osterwald, 11 and 19-21.

American Railroading

The significance of the D&RG San Juan Extension is inextricably linked with the overall significance of the railroad in the development of the nation, most notably in the western settlement of the United States.[171] In almost every dimension of antebellum American life, distance was an obstacle. That was particularly true in the trans-Mississippi West, where great distances, sometimes harsh conditions, and relative absence of navigable waterways imposed substantial burdens on commerce, settlement, and development. The difficult topography of the many mountain ranges exacerbated the already substantial difficulties of the existing modes of transportation.

Distance—or the costs and inconveniences of moving goods and people—precluded many kinds of commerce, inflated the costs of almost everything, and determined the course, and intensity, of national development. Terrain and weather were likewise understood as obstacles and threats. In winter, most outdoor activities came to a halt in the more northerly states. Grain harvested one fall might not be shipped until late the following spring. In an economy powered by animals, crossing even modest hills was taxing and costly. A mountain barrier such as the Appalachians or Rockies was a serious, and unyielding, impediment. Economic development of areas such as the ore-rich Colorado Mineral Belt was essentially impossible as it was too far removed from water transport, while the cost of land transportation precluded effective exploitation.[172]

Despite the impediments imposed by poor transportation, there was great impetus and political will for major territorial expansion. In five major expansions over 45 years (the Louisiana Purchase of 1803, the Spanish Cession of 1819, the Annexation of Texas in 1845, the Oregon Treaty of 1846, and the Mexican Cession of 1848), the United States extended its territory to the Pacific Ocean and established the basic contours of the continental United States of today. A series of additional treaties, purchases, and adjustments (such as the Gadsden Purchase of 1853 and the Alaska Purchase of 1867) substantially fixed the North American boundaries of the United States. The areas served by the D&RG were part of the Louisiana Purchase, Spanish Cession, Texas Annexation, and Mexican Cession.

The concept of a continental United States had existed since shortly after American independence. But it was by no means inevitable, or even universally regarded as desirable. For over two centuries (roughly 1600 through 1850), European powers had sparred over claims to vast areas of North America and had employed various strategies of settlement, economic colonization, natural resource exploitation, and military conquest to enforce those claims. At no point was the present configuration of a "northern tier" nation (Canada), a "middle tier" nation (the United States) and a "southern tier" nation (Mexico) considered either natural, or even likely. Especially throughout the 18th century, it was equally possible to imagine a North America defined by a New England, New Spain, New France, and New Russia, with the possibility of smaller enclaves of Swedes, Dutch, and other countries engaged in empire building.[173] The American Civil War, which immediately preceded, and in fact set the stage for the creation of the D&RG, is perhaps the most vivid example of the instability of the idea of a continental United States in the first half of the nineteenth century. The point is simply that the full realization of a stable, coherent, modern United States would have been difficult, if not impossible, without technology such as the railroad.

---

[171] One of the best syntheses is James A. Ward, *Railroads and the Character of American Life, 1820-1887* (Knoxville: University of Tennessee Press, 1986). For a more general treatment of the early railway age, see Daniel Walker Howe, *What Hath God Wrought: The Transformation of America, 1815-1848* (New York: Oxford University Press. 2007).

[172] The most comprehensive discussion of the evolution of the United States railroad network remains James E. Vance, Jr., *The North American Railroad: Its Origin, Evolution, and Geography* (Baltimore: Johns Hopkins University Press, 1995).

[173] D.W. Meinig, *The Shaping of America: A Geographical Perspective on 500 Years of History. Volume2: Continental America, 1800-1867* (New Haven: Yale University Press, 1993).

For a variety of reasons and in an astonishingly brief moment—roughly between 1826 and 1832—the United States embraced the railroad as the solution to its transportation dilemma. No modern railroads existed in the U.S. in 1826, the year the three most important early projects—the Mohawk & Hudson Railroad (a portage railroad connecting river navigation), Granite Railway (a commercial or industrial railroad), and Baltimore & Ohio Railroad (a long-distance common carrier railroad) came into being. A few visionaries also were calling for a railroad to the Pacific Coast as early as 1830. By 1831, the United States was at the beginning of a railroad boom that waxed and waned over the next eight decades.

Two points are important in contextualizing the significance of the Denver & Rio Grande Railroad. First is the underlying premise, or rationale, for the rapid and almost universal adoption of the railroad in the United States. To a nation increasingly sophisticated in its understanding of technology and increasingly assertive about economic development, the railroad was the tool it had been waiting for. Experience quickly demonstrated what the railroad could do: it was an astonishingly efficient means to move heavy loads over land. It was not dependent on water as canals and rivers were, and soon was understood as all-weather transportation. The rapid perfection of reliable steam locomotives was a transformative development. The vastly superior efficiency and power of steam locomotion completely altered both the intensity, and economics, of travel and transportation.

By 1836—a mere decade after the pioneer railroad projects were first conceptualized—steam railroads routinely carried people and goods a distance in one hour that previously had required a day's travel. In one day, passengers could cover by rail the distance previously requiring a week on foot, horseback, or by stage. In a week, the train covered a distance previously requiring months of hard travel. It is difficult today to imagine how profound antebellum Americans must have regarded this "annihilation of space and time."[174]

By 1850 or so railroad technology had been sufficiently developed that Americans in most contexts regarded it as a tool, or a kind of commoditized technology. Rather suddenly, America had the means to create a true transportation network on a national scale. Railroad transportation was efficient, effective, and reliable. It was fast (speed being relative) and offered the ability to ship and travel in all weather, all seasons, day or night, in what was reasonable comfort. The United States had nothing comparable before the railroad. Every subsequent transportation system has merely elaborated or intensified the basic characteristics of railroad mobility.

Americans understood the practical ramifications very clearly. Distance could be reduced to a factor of time and reasonable cost, rather than generally represent a major obstacle. In many cases, weather was largely minimized as a factor in commercial transactions. Grain harvested in the Midwest in October could be on a ship to Great Britain in November; goods made in eastern cities or landed on their wharves in January could be in western cities a few weeks later. The consequences for banking, credit, and the general economy were profound.

Secondly, railroads also radically changed the way Americans conceptualized and conducted business—and the very ways people worked. They were America's first big business, and they accustomed people to thinking in terms of large projects, corporate administration, pooled resources, professional management, and wage or salary work governed by contract rather than more traditional patron-client employee relationships. By the time of the San Juan Extension's inception, Americans essentially believed that there was no place on the continent

[174] Wolfgang Schivelbusch, *The Railway Journey: The Industrialization and Perception of Time and Space*,(Berkeley: The University of California Press, 1986) and George Rogers Taylor, *The Transportation Revolution, 1815-1860*,Vol. IV *The Economic History of the United States*, (New York: Reinhart & Co., 1951) both discuss the idea of how the railroad broke down the dual barriers of distance and geography.

that could not be served by rail. The corollary was that if the payback was great enough or the need sufficiently compelling, a railroad would be built. Railroads created expectations and then fulfilled them.[175]

By the 1850s, and certainly throughout the great railroad expansion westward following the Civil War, the promoters of railroads clearly understood their projects to be part of a vastly larger logistical chain. The prospect of a railroad could turn an entire region from subsistence farming to an early version of commercial farming within a matter of years. A railroad like the D&RG could simultaneously make much of Colorado, New Mexico, and Utah part of larger local, regional, national, and international markets.[176]

From its first operations linking Denver with Colorado Springs in 1871, the D&RG hauled a wide, and expanding, variety of freight. It brought construction materials (stone, wood, aggregates) to the booming urban center of Denver and other on- and off-line cities. It tapped fuel resources (wood, coal, and later oil) that were distributed to regional markets. The railroad enabled agriculture on a commercial scale (row crops, fruit, and animals) to spread into areas previously too remote for anything but subsistence agriculture.

The D&RG San Juan Extension also facilitated mineral development in the region, which, in turn, led to the creation of a variety of towns and semi-urban places that had to be organized, populated, governed, and provided with infrastructure and provisions. The railroad both required and facilitated the creation of systems for the distribution of fuel, communications, provision of water, and a range of technologies. Both mines and the railroad itself required skilled craftsmen (carpenters, smiths, electricians, founders, pipefitters, painters, various specialized crafts, and so on). The railroad permitted remote and inhospitable regions to become populated, developed, and essentially reformatted within a decade—an example of how, in many thousands of places across the trans-Mississippi West, railroad mobility defined the course of national progress.

As it reached farther into the Mineral Belt, an ore-rich geologic zone that extends between Durango and Boulder, the D&RG unlocked a variety of precious, industrial, and commodity minerals which became part of national and international commerce. Gold and silver, for example, enlarged the national money supply. But D&RG also hauled considerable quantities of lead ore for processing in distant cities, alloy metals such as molybdenum (ultimately destined for steel centers in Chicago, Cleveland, and Pittsburgh), and raw materials to be incorporated into export products. The D&RG served waves of internal migrants and immigrants inexorably pushing stock raising, agricultural, urban, and industrial frontiers westward. Settlers in the region the railroad served were dependent on a logistical chain of manufactured goods, industrial supplies, certain commodities, and sometimes processed food. That supply chain stretched all the way back to Europe, and later, Asia.

The Denver & Rio Grande San Juan Extension is a physical manifestation of multiple patterns of United States development in the West: the maturity of large scale technological networks (railroads, telegraphy, inland navigation, telephony); the emergence and maturity of systems of commerce and industry (national markets,

[175] Two now-classic works outline the many ways railroad mobility conditioned the way Americans acted, thought, and constructed their lives. It is useful to understand the D&RG San Juan Extension in terms of Wolfgang Schivelbusch, *The Railway Journey: The Industrialization and Perception of Time and Space* (Berkeley: University of California Press. 1986), and John R. Stilgoe, *Metropolitan Corridor: Railroads and the American Scene* (New Haven: Yale University Press, 1983). The overall context for the projection of the San Juan Extension is succinctly framed in D.W. Meinig, *The Shaping of America: A Geographical Perspective on 500 Years of History, Volume 3: Transcontinental America, 1850-1915* (New Haven: Yale University Press, 1998). See especially Part One, Section 1, "Forging the Iron Road," and Part 2, Section 7, "The Colorado Complex."

[176] The standard works on Western railroad development include the classic summaries by Robert Edgar Riegel, *The Story of the Western Rail*roads (New York: Macmillan, 1926), and Oscar Osburn Winther, *The Transportation Frontier: Trans-Mississippi West 1865-1890* (New York: Holt, Rinehart and Winston, 1964) and Julius Grodinsky, *Transcontinental Railway Strategy, 1869-1893: A Study of Businessmen* (Philadelphia: University of Pennsylvania Press, 1962). For more recent general works, see Walter P. Borneman, *Rival Rails: The Race to Build America's Greatest Transcontinental Railroad* (New York: Random House, 2010) and Richard White, *Railroaded: The Transcontinentals and the Making of Modern America* (New York: W.W. Norton, 2011).

regional specialization, the rise of a commodity-based economy, uniform national currency and monetary policy, large-scale capital formation); accelerating patterns of immigration, internal migration, urbanization, and the displacement of native peoples; broad social, economic, and political trends (the rise of organized labor; the redefinition of the labor/capital compact; the emergence of aggressive industrial capitalism and a corresponding trend to regulation); and the full embrace of an ideology of natural resource exploitation by any means possible.[177] Indeed, the history of the United States in the post-Civil War era, and especially post-Reconstruction and post-Depression of 1877, may be understood as the rapid westward extension of related salients—all directly influenced by railroad mobility.

Narrow Gauge Railroading

Railroad gauge refers to the measured distance between the inside edges of the rails as they are fastened to the supporting crossties. Early in Great Britain's Industrial Revolution, collieries in the North of England informally settled on a gauge of 56" for the primitive tramways (horse-drawn railways) carrying coal from the mines to local docks. With a minor widening to 56 ½", that became the de facto standard gauge for England until 1846, when an Act of Parliament made 56 ½" the official standard for the United Kingdom and its colonies.

Track gauge is an arbitrary standard. Almost any track gauge between 36" and 72" is regarded as practical from a strictly engineering point of view. The only two basic considerations are that it must be uniform for any given railway (or else the wheels would not remain on the track), and that the locomotives and cars of a railroad with a certain gauge can operate only on other railroads sharing that same gauge. In America, common gauges were 56 ½", 59", 60", 66", and 72."

Prior to the Civil War, there was no standard gauge in the United States, and no widespread agreement as to the utility or need for one. Initially, American railroads understood themselves as independent companies with purpose-built physical plants. They were largely point-to-point operations and did not envision the utility of being able to operate their equipment on any other railroad. There was no expectation of interoperability, in which a car of freight on any one railroad would be able to move without reloading to a destination on another railroad. An analogy would be the express services provided by the United States Postal Service, UPS, and FedEx as they currently operate. In their business models, each maintains its own systems and has no expectation that its traffic will be handled by another carrier.

Following the Civil War, the question of track gauge came under intense discussion as the country began to understand the railroad's potential as a true national network rather than as a hodgepodge of unconnected segments or series of distinct routes. When William Jackson Palmer began planning the Denver & Rio Grande Railroad in the late 1860s, there were at least seven different track gauges in use throughout the United States. The 56 1/2" gauge became the de facto national standard with the passage of the Pacific Railroad Act in 1862, but it was not until 1886 that substantially all of the railroads in the U.S. had converted their tracks to that gauge. In the early 1870s, during the time of its inception, the D&RG was the leading proponent of the use of 36" narrow gauge.

In 1870, as William Jackson Palmer finalized plans for the new Denver & Rio Grande Railway and assembled the major financial support, he made a crucial decision: the railroad would be built to a track gauge 36 inches rather than the emerging standard of 56 ½ inches. For a variety of reasons, he ignored an increasingly powerful trend toward railroad interoperability, network, and standardization. The commitment of the D&RG to a track

[177] A summary of these issues and their relationship with the D&RG is at the core of Kathleen A. Brosnan, *Uniting Mountain and Plain: Cities, Law, and Environmental Change along the Front Range* (Albuquerque: University of New Mexico Press, 2002).

of narrower width helped initiate the so-called "Narrow Gauge Movement" in the United States and influenced the selection of various narrow gauges in countries such as Australia, India, New Zealand, South Africa, and other places throughout the world.[178] Within fifteen years, the narrow gauge movement subsided. Total U.S. narrow gauge mileage peaked at 11,700 in 1885 before beginning a slow decline. Twenty years after laying its first narrow gauge track, the D&RG itself was beginning a massive program to widen its track to standard gauge to be more fully integrated into the national network.

Palmer's decision to build a 36" gauge railroad network stretching from Denver and Salt Lake City to a connection with a Mexican 36" network was bold, somewhat unorthodox, and entirely in keeping with the unpredictable nature of America's westward expansion. He did create a 1,000-mile system that practically defined American narrow gauge railroading. Substantial parts of that system remained in regular, common carrier service for almost a century.

Unlike most narrow gauge railroads, which were built initially to minimum physical standards and rarely modernized in keeping with the rapidly evolving technological standards of the general railroad industry, the D&RG utilized what might be termed "heavy" narrow gauge, distinguished from the dozens of sizable, but more lightly-constructed and short-lived narrow gauge railroads in other parts of the country. Other railroads built in the central Rocky Mountain region also qualified as heavy narrow gauge, as did certain specialized narrow gauge railroads such as the coal-hauling East Broad Top Railroad in Pennsylvania.

There were, in the last quarter of the nineteenth century, two dominant schools of thought regarding track gauge. The majority of railway managers and informed observers accepted (or could be persuaded of) the technological imperative of adopting a standard gauge throughout North America. What that gauge might be remained a somewhat contentious and open question throughout the middle of the nineteenth century, but the critical point was that the gauge should be uniform and the general track structure compatible so that the trains themselves had a high degree of interoperability. That is the foundation of a true network and the basis for almost everything else the industry was trying to accomplish.

Narrow gauge proponents divided into two communities. Both strongly advocated 36" gauge railroads based on a set of specific assumptions. In general, they asserted that there would be predictable, proportional, and substantial economic benefits associated with narrow gauge railroads, and that the costs and inconveniences of transshipment from cars of one gauge to cars of another would somehow be offset by the lower first cost and operating expenses of the narrow gauge carriers. Their argument was that there would be initial savings in land acquisition, grading, bridging and tunneling, and all of the other tasks associated with preparing the right-of-way. Narrow gauge trains were physically smaller (by as much as 20%), lighter, and exerted less dynamic stress on the track structure and roadbed. The right-of-way itself could be narrower, and there would be significant economies of scale. Ties, rails, support structures (such as coal depots and water tanks), cars, locomotives, and all manner of appurtenances likewise could be scaled down with savings on material and fabrication costs. Rail weighing 30-40 pounds per yard would suffice, rather than the standard mainline rail of 60-80 pounds per yard. Finally, operating costs (ranging from fuel and water to running repairs and maintenance) would be lower, in part because the equipment itself was lighter and presumably easier to run and maintain. This last argument was informed by the belief that smaller equipment (especially 36" gauge) had a superior "tare-to-load" ratio. Smaller cars could still carry substantial loads, but because they were

[178] The definitive summary of North American narrow gauge railroading is George W. Hilton, *American Narrow Gauge Railroads* (Stanford: Stanford University Press, 1990). See especially Part Two, 338-365 ("Colorado") for a synthesis of the D&RG gauge issues. See also Douglas J. Puffert, *Tracks Across Continents, Paths Through History: The Economic Dynamics of Standardization in Railway Gauge* (Chicago: University of Chicago Press, 2009).

disproportionately lighter than standard gauge cars, a given locomotive could pull relatively more freight than its standard-gauge equivalent.

Where the narrow gauge proponents divided into factions had to do with whether narrow gauge railroads were better suited as an adjunct to standard gauge systems (analogous to serving as the "last mile" in a telecommunications network), or as a parallel or overlay network in frank competition with the emerging standard gauge network. In the first scenario, the standard gauge railroads would serve as trunk lines and primary carriers in more heavily developed areas. In areas of lighter traffic or more costly construction, narrow gauge railroads would operate with lower fixed costs and running expenses. Communities that could not otherwise afford railroad transportation would thereby have access to at least some rail service via a narrow gauge connecting line. In their best-case scenario, these narrow gauge proponents envisioned some version of a national network, with 36" gauge lines connecting end-to-end and providing long distance and interchange service. In the view of some partisans, this type of narrow gauge was, in fact, superior to existing broad gauge railroading and would ultimately replace it.

The second group of narrow gauge advocates based their primary arguments on a somewhat different, and more straightforward, set of assumptions. In their view, narrow gauge railroads were best suited to operations with a limited traffic base, point-to-point traffic, or to a discrete area without a great deal of interchange or break-bulk traffic. Narrow gauge lines would also make excellent feeders, connecting with standard gauge lines as needed. This type of narrow gauge was an adjunct to ordinary railroading and merely a specialized application of a more general technology.

When Palmer announced his plans for the D&RG in early 1871, he decided on a track gauge of 36" based on narrow gauge railways he had seen in the United Kingdom and the advice of several early advocates of the technology. In principle, the D&RG would be an ideal candidate for narrow gauge construction: it would be built ahead of demand through sparsely settled country, resulting in lower construction costs. It would face challenging mountain rights of way, which would be less expensive to grade to narrow gauge standards. And it was envisioned as a largely self-contained system carrying large quantities of coal and ore between on-line customers. There would be relatively little connecting or interchange traffic, so the need for trans-shipment would be modest.[179] In addition, Palmer hoped to build due south from Denver towards El Paso, Texas, where the D&RG would connect with an emerging network of 36" gauge Mexican railroads he was active in promoting. His reasoning in 1869-71 was that there would be better markets and more chance for economic development in Mexico than with United States markets at greater physical distances.

William Jackson Palmer and the D&RG

Something of a railroad prodigy, Palmer was born in 1836 in Delaware; when he was about 5, his family moved to the Germantown area of Philadelphia, where he apparently became fascinated with steam locomotives and railroading. The 11 or 12 years he spent in Germantown (roughly 1841 through 1853) offered the opportunity for both a good education and exposure to the cutting edge of the railroad industry.[180] By the time his family (who were Quakers) arrived in Germantown in 1841, the Philadelphia, Germantown, and Norristown Railroad had been in operation for roughly nine years. In that period, Philadelphia was the country's most advanced center for locomotive and railroad technology. The Baldwin Locomotive Works and the firms operated by the

[179] For an analysis of the D&RG as originally envisioned, see O. Meredith O. Wilson, *The Denver and Rio Grande Project, 1870-1901: A History of the First Thirty years of the Denver and Rio Grande Railroad* (Salt Lake City: Howe Brothers, 1982).

[180] Palmer has not recently attracted the attention of academic or trade biographers. For outlines of his life, see John S. Fisher, *A Builder of the West* (Caldwell, ID: Caxton Printers, 1939) and Wilson McCarthy, *General Wm. Jackson Palmer (1836-1909) and the D&RGW Railroad* (Princeton: Princeton University Press, 1954).

Norris Brothers were the two leading locomotive builders in the United States. The Sellers Company was the leading builder of railroad appliances and machine tools. There were foundries, mills, carbuilders, and other industrial facilities throughout the region. A boy interested in railroading and technology could have absorbed a great deal of insight and practical knowledge.

Palmer went to work for the Hempfield Railroad's Engineering Corps in western Pennsylvania at age 17. Apparently Palmer showed great aptitude for railroading and willingness to improve his knowledge and abilities, and in the mid-1850s he went to England and France for a year to study railroad engineering. Upon his return, Palmer carried on a series of locomotive fuel experiments for the Pennsylvania Railroad and was then appointed private secretary to John Edgar Thomson, the railroad's president. Thomson and Palmer traveled extensively, and Palmer would have had regular and close interaction with Thomas Scott, the First Vice President and Thomson's second-in-command and presumed successor. Scott's close protégé at that time was Andrew Carnegie, who had a successful career in railroading and telegraphy before going into the steel business. In many respects, Palmer's early railroad career created personal and professional connections with some of the most powerful and skilled business executives in America, and he would have been directly exposed to their strategies and tactics.[181]

Palmer spent between three and four years as Thomson's private secretary before leaving the railroad at age 24 to raise a troop of cavalry and join the Union cause in the western theater of the Civil War. Palmer returned to Pennsylvania to organize an entire brigade, and quickly rose to be the brigade's commander with the rank of colonel; he ended the war with the rank of brevet (meaning, promoted in the field) brigadier general. After the war, Palmer accepted a series of senior management positions with the Kansas Pacific Railroad between 1867 and 1870. The Kansas Pacific was a Pennsylvania Railroad-backed project linking Kansas City with Denver. Palmer served variously as treasurer, general manager, head of the route survey for a Kansas Pacific California Extension, and head of that railroad's final construction phase between western Kansas and Denver.

The Eastern financial interests backing construction of the Kansas Pacific held Palmer's abilities in high regard and used him as their most effective problem solver and field general. Palmer was, by the time he planned the D&RG, a skilled, well-connected, aggressive railroad executive who trained under some of the most able businessmen in the U.S. He had at least the basics of an engineering education, a great deal of field experience, and practical experience with locomotives. His successful career as a staff and field officer during the war further developed his powers of analysis and leadership.[182]

From the beginning, the D&RG was projected and completed as the single most extensive narrow gauge railroad in North America. The plan was sophisticated, and despite nearly constant financial difficulties, the railroad was well designed and thoroughly plausible. In comparison with several thousand other miles of North American narrow gauge railroads completed before about 1900, no other single narrow gauge railroad or system even approached the D&RG system in terms of route miles, complexity, physical plant, operating efficiency, engineering sophistication, technological evolution, earnings, or strategic importance. As a corporation (or related group of corporations), it was deeply involved in a continuing series of rate wars, corporate take-overs

[181] For a sense of Palmer's training as a railway executive, and the networks of capital and power in which he operated, see James A Ward, *J. Edgar Thompson, Master of the Pennsylvania* (Westport, CT: Greenwood Press, 1980) and Ward, "Power and Accountability on the Pennsylvania Railroad, 1846-1978," *Business History Review* 49, no. 1 (1975): 37-59. See also Harold C. Livesay, *Andrew Carnegie and the Rise of Big Business* (Boston: Little, Brown, 1975) and Joseph Frazier Wall, *Andrew Carnegie* (New York: University of Pittsburgh Press, 1989).

[182] Palmer's work on the Kansas Pacific clearly shaped his vision for the D&RG. See William R. Petrowski, *The Kansas Pacific: A Study in Railroad Promotion* (New York: Arno Press, 1981) and Petrowski, "Kansas City to Denver to Cheyenne: Pacific Railroad Construction Costs and Profits," *Business History Review* 48, no. 2 (1974): 206-224.

and receiverships, and strategic contests with some of the country's major financial players. In general it had a presence in American business and culture far exceeding its modest actual size and presumed influence.

In addition, the D&RG was a bold and innovative experiment in transportation technology—the kind of "proof of concept" project sometimes necessary to assess or validate an emerging technology. On the one hand, the D&RG began converting its primary narrow gauge lines to standard gauge as early as 1890. However, that was more in response to rapidly changing external factors than inherent weaknesses of narrow gauge railroading. Those external factors included the railroad's forced reorientation as an east-west connecting railroad, rather than being able to complete a north-south connection between Denver and the emerging network of 36" gauge railroads in Mexico. The rush to build east-west standard gauge railroads was so powerful that several of Palmer's underlying assumptions from 1869-1870 were outdated by 1885. Palmer's conceptualization of an effective narrow gauge system that was practical on its own merits is proven by the fact that several hundred miles of his original narrow gauge remained in productive service well into the twentieth century. The key to those lines' longevity seems to have been the D&RG's practice of treating narrow gauge lines in the same manner as its standard gauge track and facilities, so that the narrow gauge lines received routine maintenance, upgrades, and new equipment.

Finally, while the D&RG system was the largest and most substantial narrow gauge system in North America, it also was the most varied. Its trains operated in dense urban settings, well-watered valleys, over high mountain passes, and through various kinds of deserts. The railroad provided almost every kind of freight and passenger service: Pullman and parlor car service, local and through coaches, charter trains, accommodation trains, and every kind of freight service, from package express and livestock to bulk commodities and high/wide loads.

The D&RG also played a major role in the development of scenic and natural resource tourism in the West. The D&RG realized early that scenery (and the novelty of riding in narrow gauge cars) could be packaged and marketed to a variety of customers eager for a sublime or authentic experience. The railroad's Colorado Circle Tours were especially popular in the 1880s and 1890s. Tourists would depart Denver and take a series of regular and special trains over Colorado and New Mexico routes offering spectacular scenery, comfortable accommodations, and varying levels of commentary. The trips appealed mainly to urban middle class audiences and represent an example of corporate efforts to shape the "cultural construction of the West."[183]

Overall, the D&RG was the fullest and most significant expression of the roughly 15-year long narrow gauge movement in the United States. If the United States had not established a de facto national standard gauge of 56 ½" as part of the 1862 Pacific Railroad Act, it is likely that a narrow gauge alternative would have delayed true implementation of American standard gauge for even longer than it did. The narrow gauge movement was a significant event in the country's commercial, transportation, and technological history. It typified a number of cultural traits—technological innovation, empirical development, entrepreneurship, "trial by marketplace" rather than central planning, and cutthroat competition — that characterized late nineteenth century American enterprise. After the United Kingdom's Parliament passed the Gauge Act in 1846, for example, it was simply illegal in the United Kingdom to build a railroad to any other gauge than standard 56 ½". In the United States, sorting out questions of that kind was a somewhat less formal, but often much livelier, process. The D&RG is an outstanding example of that process. However, by 1930–as far as the D&RG and its successor corporation, the Denver & Rio Grande Western (D&RGW), was concerned–narrow gauge was a distinction without a

[183] For the best general discussions, see Valerie J. Fifer, *American Progress: The Growth of Transport, Tourist, and Information Industries in the Nineteenth Century West* (Chester, CT: Globe Pequot Press, 1988), John Sears, *Sacred Places: American Tourist Attractions in the Nineteenth Century* (New York: Oxford University Press, 1989), and Earl Pomeroy, *In Search of the Golden West: The Tourist in Western America* (Lincoln, NE: University of Nebraska Press, 1990).

difference. It was no longer a movement, no longer a viable technological alternative, and in form and function was practically identical with standard gauge railroading.

American Railroading at its Peak

By the 1920s, railroads in America had become a mature industry. Many companies were among the largest employers in their regions, and some railroads were sufficiently respected to be included in the Dow Jones stock index. At the corporate level, railroads had boards and executives that oversaw a variety of departments, from engineering to operations, advertising to ticketing. Industry organizations allowed competing companies to share best practices and develop standards in a collaborative environment. Labor unions had been organized around specific crafts within the railroad organizations, differentiating enginemen, trainmen, and shop forces. Unions and the operating departments had evolved the rules of train operation to a point that is still familiar to contemporary railroaders. Though communications largely relied on telegraph, phone systems were making inroads to supplement communication between operating points. The physical plant had likewise evolved. Hand-hewn log cross ties and light rail had long-ago been replaced and upgraded with treated wood ties and heavier rail. Engineers and scientists had studied steam locomotion extensively and developed a clear understanding of how to optimize designs for power or speed. Wood car designs were well-established and railroads were quickly adopting steel designs to increase both capacity and safety. Passenger ridership would peak during the decade as the nation still depended upon railroads to move people and material as the rise of the automobile and all weather roads was just dawning. In these respects, American railroading was at its zenith.

Denver & Rio Grande, San Juan Extension as the Longest and Most Complete Representation of American Railroading at its Peak

As an operating steam railroad in nearly continuous service for 130 years, the Denver & Rio Grande San Juan Extension–which today operates as the Cumbres & Toltec Scenic Railroad–is an outstanding example of traditional railroad craft, practice, physical plant, and equipment.[184] Through a variety of intentional goals and unintended consequences, it remains the most complete, original, and typical example of traditional early twentieth century main line railroading on the continent regardless of track gauge. There are hundreds of operating historic railroads and thousands of railroad heritage sites and experiences available throughout the United States. But by virtue of its size and scale of operations, the variety of its contributing assets, and the contingent circumstances which brought about its preservation, the Denver & Rio Grande San Juan Extension may be understood as the most significant surviving example of early twentieth-century main line steam railroading in the United States.[185]

The railroad's state of integrity is largely due to circumstances surrounding the operation of the D&RG San Juan Extension during the period between the Great Depression of the 1930s and the transfer of operations to the newly formed New Mexico and Colorado State Railroad Commissions in 1970. During this period, the San Juan Extension essentially operated in a kind of limbo—a 1920s railroad in service for an additional 40 years without substantial change.

After 1890, when the D&RG and its related companies began widening their more heavily-trafficked lines to standard gauge to make interchange and interoperability more cost effective, the company did not segregate its

[184] For an overview of the Denver & Rio Grande San Juan Extension as a preservation project, see Spencer Wilson and Vernon Glover, *The Cumbres & Toltec Scenic Railroad: The Historic Preservation Study* (Albuquerque: University of New Mexico Press, 1980).

[185] For a synthesis and context, see Carlos A. Schwantes and James P. Rhonda, *The West the Railroads Made* (Seattle: University of Washington Press, 2008). Schwantes and Rhonda summarize much of the scholarship of the past 50 years in an attempt to "locate" the railroad in the more complex context of Western development.

narrow gauge lines, or apply different policies to their operation, economic viability, or continual improvement. The D&RG (and later, D&RGW) was one corporation with one governance, one staff, one business plan, and one bottom line. It had one corporate administration: one executive department, one operating department, one engineering department, one mechanical department, one sales department, and so on. One set of corporate policies, federal regulations, intra-company relations, labor contracts, and every other determinant of every-day operations governed the D&RG from 1871 through the sale of its last narrow gauge operations in 1980. The same administrative complex of repair facilities, unionized craftsmen, and operating officials performed work and supervised train operations on both narrow and standard gauge lines between 1890, when the railroad began widening certain of its lines to standard gauge, through the sale of the 64 miles that became the Cumbres & Toltec Scenic Railroad in 1970 and the final sale of the Silverton Branch in 1980. The fact that some of its tracks were 36" wide, and some 56 ½" wide, was merely a logistical and operational issue.

The San Juan Extension of the 1920s was, physically, culturally, operationally, corporately, and in all other respects, typical of American railroad practice, as it had evolved to that point. Aside from the width between its rails, and certain logistical issues resulting from having to transfer passengers and freight at points where the track gauge changed, there were no meaningful differences between D&RG standard gauge and narrow gauge. Both operations were integral parts of a larger, well-functioning and typical American railroad corporation. In 1920, there were 180 "Class I" main line railroads similar in all principal respects to the D&RG.

In particular, the D&RG had chosen to modernize (through 1930) the San Juan Extension without changing its track gauge. That was partly because after about 1900, there was comparatively little "interchange" traffic on the San Juan Extension. A relatively small proportion of inbound and outbound freight originated, or terminated, at points served by standard gauge D&RG or other railroad lines. A majority of the line's traffic was either local (for example, oil from wells near Chama to a refinery at Alamosa, both points on the existing narrow gauge network), or of such a character as to justify the added expense of narrow gauge-to standard gauge transfer. As was typical throughout the railroad industry, the D&RG modernized and improved its standard and narrow gauge lines incrementally. On the narrow gauge lines, improvements often took the form of heavier new or second hand rail to replace worn rail; additional ballast and "surfacing" (making the railbed and track level smooth), and the addition of maintenance buildings. On the San Juan Extension, D&RG replaced the original Morse telegraph line with a new and innovative telegraphone system that combined telephony and telegraphy. It upgraded the car and locomotive fleet as the original rolling stock wore out and new designs became available. And the railroad upgraded certain bridges to handle the heavier cars and locomotives placed in service after about 1900.

Until 1930, on both its standard and narrow gauge lines, the D&RG also continuously upgraded its operating practices, the suite of rules, policies, procedures, and work customs that govern how the process of railroad transportation actually unfolds. By the mid- to late-1920s, the San Juan Extension had become a modern, substantial, rather heavily trafficked secondary main line typical of tens of thousands of miles of similar secondary main line throughout the United States (as distinguished from main lines or main tracks, which were the primary railroad through routes). San Juan Extension trains were controlled by a train dispatcher, who issued written orders to be delivered to each train on the division. He sent those orders to operators at strategic points (such as Chama, Cumbres, and other on-line stations) where they were copied and given to the engineer and conductor. The single track railroad had passing sidings, which allowed eastbound and westbound trains to meet and pass each other. Some trains operated by printed timetable, which meant they ran on a set schedule and other "extra" trains were required to keep out of their way.

Throughout the twentieth century traffic ebbed and flowed in proportion to the general economy, and the D&RG continued to update the San Juan Extension. However, the stock market crash of October 1929 had the

unexpected consequence of almost totally precluding any further modernization or major maintenance on most of the narrow gauge, and even some of the standard gauge, lines.

At the time, no one foresaw the depth or duration of the Great Depression, but it was clear by early 1930 that the nation's economy was still in free fall and that general conditions would not improve rapidly or anytime soon. The D&RG, like railroads across the country, took increasingly severe austerity measures. It reduced the number of trains it operated, furloughed or dismissed employees, suspended much regular maintenance, ceased purchasing new or replacement equipment, and generally economized in every way possible. Even so, the D&RG operated at a loss of between $2 million and $4 million per annum throughout much of the 1930s, and entered bankruptcy in 1935 owing over $122,000,000.

There were other corporate, legal, and political challenges in the late 1920s and 1930s, but all had the effect of a kind of animated suspension on the San Juan Extension. The line remained the primary transportation and communications link for thousands of people and hundreds of firms, and continued to carry timber, livestock, coal, mineral products, and passengers sufficient to continue operations — but it did not receive full maintenance, and certainly not even the most ordinary betterments. The D&RG literally was fighting for corporate survival, and paid little attention to its surviving narrow gauge lines. When the D&RG entered receivership in 1935 (for a period of 12 years) and again had the ability to raise and spend money, it chose to invest in its standard gauge lines and emphasize its bridge, or connecting, traffic to and from railroads on its east and west. So even when the railroad's severe financial stress ended, there remained little commitment to make further investment in the narrow gauge lines in general or the San Juan Extension in particular.

Meanwhile, other railroads—and indeed the standard gauge portion of the D&RG—continued to upgrade and modernized its operations and stock. An important benchmark in that development was the gradual conversion from steam locomotives to diesel. Diesel locomotives have a high first cost and the D&RG used what capital it could muster to dieselize its main lines and standard gauge operations. Though diesel locomotives generally have higher efficiency and lower crew and operating costs, it remained less expensive overall to continue using the existing steam locomotives on the San Juan Extension. Narrow gauge diesel locomotives were even more expensive because they were non-standard products in an industry that increasingly relied on assembly line manufacturing. While diesel locomotives might have offered sufficient cost savings to keep the San Juan Extension active as a profitable branch line, they were too expensive to purchase–and provided an incentive to maintain the San Juan Extension's increasingly obsolete steam locomotive facilities for as long as possible. As the dieselization of standard gauge lines became more pervasive, the gap between standard and narrow gauge lines grew ever wider, and the San Juan Extension became more and more antiquated.

In 1941 the Interstate Commerce Commission granted the railroad permission to abandon the narrow gauge line between Antonito and Santa Fe, and the rails were removed the following year. It was only a matter of time before the D&RG applied for permission to abandon its remaining narrow gauge lines. Those subsequent abandonments took place throughout the 1940s and 1950s as particular lines either required costly maintenance, became unprofitable to operate, or as traffic patterns changed. The San Juan Extension managed to survive, however.

From at least the 1940s on, the San Juan Extension became popular with railroad enthusiasts, photographers, and others who were aware of the line's historic significance and scenery. The D&RG offered regular passenger service over the entire line from Alamosa to Silverton until 1951, when the railroad received permission to cease the service due to mounting financial losses. The railroad continued to run a regularly scheduled mixed train (essentially, a scheduled freight train with an attached passenger car to accommodate anyone needing transportation) between Durango and Silverton. Between 1951 and 1967, the D&RG

occasionally operated special passenger excursions and chartered passenger trains over the line between Alamosa and Durango.

As the freight business on the San Juan Extension declined, the D&RG minimized what little maintenance was justified. Since the end of World War II the railroad had concluded that all of its existing narrow gauge lines would either be widened to standard gauge and upgraded (if there were sufficient traffic to justify the investment) or abandoned and the property disposed of. The only question was when to pursue the betterment or disposal of each individual line. A minor surge in pipe and oil field supplies in the 1950s and 1960s kept the San Juan Extension in business; otherwise it, too, likely would have been abandoned sometime in the 1950s.

In September 1967, the D&RG filed to abandon the remainder of its narrow gauge lines, with the exception of the 45-mile Silverton Branch. That segment had experienced considerable growth in tourist traffic, and after the Interstate Commerce Commission refused to grant permission for abandonment in the early 1960s, the D&RG improved the facilities, added trains, and generally invested in the Silverton Branch as a continuation of the passenger service it had been operating since the line's completion to Silverton in 1882. In 1980, the D&RG sold the branch (by then disconnected from the Denver & Rio Grande San Juan Extension) to an entrepreneur, who made substantial additional investments in the railroad and further expanded service. That branch, which is now the Durango-Silverton Narrow-Gauge Railroad National Historic Landmark, is considered to be one of the most efficiently run, profitable, and popular heritage railways in the world.

In 1968, the D&RG essentially suspended common carrier operations in advance of a ruling by the Interstate Commerce Commission on its petition to formally abandon almost all of its remaining narrow gauge operations between Alamosa, Durango and Farmington, New Mexico. That permission came in July 1969, at which time the Interstate Commerce Commission granted the D&RG permission to cease all service and dispose of the assets and land. Interstate Commerce Commission permission for abandonment formally extinguished any obligation the D&RG had to offer common carrier service. That did not mean that D&RG *had* to dismantle the physical plant and sell the land and assets—just that it was permitted to do so at the company's option.

Cumbres & Toltec Scenic Railroad

Throughout the 1960s, the D&RG had made plain its intention to dispose of the San Juan Extension, and also its willingness to consider options to preserve the line or portions of it if resources could be found. In 1967, a number of local groups began to advocate for the line's preservation as either an operating heritage railway or as a national monument, in the manner of the Chesapeake & Ohio Canal preservation effort in Maryland. The National Park Service did several studies and concluded that NPS could not assume responsibility for the railroad. At roughly the same time, advocates for the line's preservation convinced elected officials in Colorado and New Mexico of the heritage and economic development value of the 64 miles between Antonito and Chama. Based on the apparent success of the D&RG's Silverton Branch, and with the legitimate expectation that expanded operation would help the local economy in the region, in July 1970 both states together purchased the line, rolling stock, buildings, tools, materials, and other assets for a little over $570,000, or just shy of $9,000 per mile (not considering any other assets).

At the time of conveyance, New Mexico and Colorado initially created State Railroad Authorities that were legally empowered to own and operate railroad lines on behalf of the people of their respective states. The entire American railroad industry was in dire financial and physical condition by the late 1960s, and the decision by the D&RG to convey the railroad and associated assets at such a reasonable price represented a considerable gesture. Following the sale, D&RG removed the tracks between Chama and Durango and disposed of the land. The railroad removed the third rail, which had allowed San Juan Extension trains access

to the major repair shop at Alamosa, and later removed virtually all traces of the Alamosa Shop complex itself. With the sale of the Silverton tourist train operation in mid-1980, the D&RG was at last both out of the passenger train business, and done with narrow gauge operations after 109 years of continuous operation.

The sales contract stipulated the transfer of a certain number of locomotives, cars, tools, and other assets. As the company had gradually ceased its narrow gauge operations through the 1920s, 30s, and 40s, it had retained a great deal of narrow gauge equipment, parts, and supplies at places like Alamosa and Chama. In practical terms, the new Cumbres & Toltec Scenic Railroad was able to effectively take over a going concern with a rich and complete inventory of capital equipment and plant—almost all pre-1930 in origin.

The new Cumbres & Toltec Scenic Railroad resumed a modest level of traditional D&RG steam operations at Chama after an initial shutdown period of roughly 12-14 months. It did so largely with the help of volunteers, many of whom were current or former D&RG employees from either Chama or Alamosa. Operating and maintaining steam locomotives and narrow gauge equipment of this type require highly specific skills and experience. There was a transition period during which current and former D&RG employees filled similar positions with the new C&TS, providing continuity in terms of skills training, work culture, and other intangible aspects.

By 1988, a core group of concerned volunteers had incorporated as the Friends of the Cumbres & Toltec Scenic Railroad and begun functioning as a cultural resource support organization. Over the last three decades, this support organization has matured into the railroad's partner organization, providing development and direct financial support, coordinating extensive volunteer and public participation, and serving as a public face of the railroad. By agreement with the Cumbres & Toltec Scenic Railroad Commission, the Friends also have primary responsibility for interpretation, education, and the conservation of non-operating railroad assets.

Current passengers may not be fully aware that many—perhaps most—of the actual tasks the Cumbres & Toltec crews do are identical with the work railroaders throughout the continent performed in the early twentieth century. Railroading is a complex, highly decentralized activity that requires a wide variety of skilled labor, coordination, and the ability to respond correctly to a wide variety of work-related challenges. Running trains at low speeds over flatlands is a reasonably straightforward affair. But running all sorts of trains—each with very different handling characteristics—over a tortuous mountain railroad like the San Juan Extension requires extremely high levels of skill, fortitude, and courage.

Those skills are of a completely different type than the skills of most modern railroad work. At the point of conveyance, the San Juan Extension had been technologically obsolete for at least 30 years. Even in the 1940s, the line was characterized by somewhat out-of-date equipment (older air brake systems and wood cars) and a late nineteenth century physical infrastructure, including steep grades, sharp curves, and unballasted track. The railroaders who operated the San Juan Extension in its last decades—and who worked for, served as volunteers with, and trained new employees of the Cumbres & Toltec Scenic Railroad—used skills and procedures developed in the late nineteenth century and common through about 1940. An analog would be finding a fully-crewed, full-rigged, iron hulled sailing ship still in blue-water navigation in the late 1960s.

The Cumbres & Toltec Scenic Railroad explicitly operates as a living history experience, meaning in part that it provides a kind of immersion. But the sensory qualities are especially noteworthy. The trip from one end of the railroad to the other is sufficiently long to be mildly tedious, somewhat boring, and possibly fatiguing. It is an unvarnished recreation of railroad mobility as it existed from the time of the Civil War through the 1950s. The cars are not heated or air conditioned, so passengers experience whatever weather happens to be on the outside. They endure the fine rain of cinders from the coal-burning locomotive and experience a variety of smells (coal,

fir trees, creosote and coal tar from the crossties, hot metal and steam). The motion of the train is precisely what it has been behind steam locomotives for 180 years: pulsing, rocking, pitching, and moving in unexpected ways. The sounds likewise are identical, ranging from the metallic clack of wheels crossing rail joints to a variety of locomotive whistle signals. The sum of these individual experiences and characteristics is what distinguishes an experience on the Cumbres & Toltec from superficially similar experiences on other heritage railroad operation in the country. On the whole, the Cumbres & Toltec recreates the experience of ordinary early twentieth century train travel with a level of reality, authenticity, and grit rarely recreated elsewhere.

Comparable Properties

Eighty years ago there were at least 3,000 comparable roundhouse and locomotive terminals in the United States, and thousands of opportunities to experience a daylong, regularly scheduled traditional railroad passenger train journey of the type now offered by the Cumbres & Toltec Scenic Railroad. In that period, the vast majority of railroad trips were utilitarian in nature; the railroad was how Americans reached their destinations. As late as 1950, there were still roughly 2,000 daily passenger train departures throughout the United States, and several thousand freight and passenger segments that could be characterized as traditional American railroading: steam locomotion, classic wood or steel cars, break-bulk freight traffic, and physical plant and equipment dating largely from the first quarter of the twentieth century.

Today, there are approximately 230 operating heritage railway resources active in the United States. Of these, fewer than 100 use steam locomotives and provide an early twentieth century passenger train experience. Some operating railroads, such as the Mid-Continent Railroad Museum in Wisconsin and the Strasburg Railroad in Pennsylvania, do an excellent job of recreating many aspects of traditional steam-powered passenger travel. But the Strasburg Railroad is roughly four miles long and operates locomotives and cars with no association to the railroad or even the region. Mid-Continent offers a simulated early twentieth century railroad experience.[186]

Indeed, while some operating railroad heritage sites approximate what ordinary railroad travel in the early twentieth century might have been like, few actually place visitors in a specific context, on original equipment, and provide an experience substantially the same as available on that railroad a century ago. While the San Juan Extension is similar to its peer resources in general form and purpose, it is materially different in the level of operations and scale of the experiences that it offers.

In addition, in assessing the relative merits of railroad resources, the issue of gauge needs to be understood within the context of individual railroads and their period of operation, for example whether a narrow gauge or standard gauge railroad made economic and engineering sense at the time it was completed and throughout its service life. The most important narrow gauge railroads surviving into the twentieth century were, first and foremost, effective operating railroads. The issue of gauge was a logistical and maintenance issue, but made little difference in terms of management, operations, or function. The surviving narrow gauge railroads were managed, operated, maintained, and modernized in the same manner as standard gauge railroads. What sets the Denver Rio Grande San Juan Extension and its comparable narrow gauge properties apart is the combination of original site, original equipment, authenticity of experience, and significant associations with the real purpose of the American railroad – to provide the kind of mobility required by a nation on the move, literally and figuratively.

[186] The Association of Railway Museums and the Tourist Railway Industry Association maintain basic data sets on most of the active railroad heritage entities in the United States. See James G. Wrinn, ed., *Tourist Trains Guidebook, Second Edition* (Waukesha: Kalmbach Publishing Co, 2009). The guidebook appears serially under various titles, but provides the most reliable survey of operating heritage railroads in the U.S.

In addition, in order to be comparable to the Denver Rio Grande San Juan Extension, historic railroads also should be complex resources that include a wide range of resources such as trackage, buildings, shops, infrastructure and rolling stock. For example, while there are over a dozen National Historic Landmarks that are associated with railroad history – such as the Baltimore and Ohio Railroad Martinsburg Shops in Ohio, Union Pacific Railroad Depot in Wyoming, St. Clair River Tunnel in Michigan, Bollman Truss Railroad Bridge in Maryland, and the William Aiken House and Associated Railroad Structures in South Carolina – most of these sites include only one or more individual resources. Complex heritage railroad resources that are comparable to the Cumbres & Toltec Scenic Railroad include only four National Historic Landmarks, two National Park Service units, and one state-owned railway system. These are the Durango-Silverton Narrow-Gauge Railroad (NHL), the Baltimore and Ohio Transportation Museum and Mount Clare Station (NHL), the East Broad Top Railroad (NHL), the Nevada Northern Railway, East Ely Yards (NHL), Golden Spike National Historic Site, Steamtown National Historic Site, and Railtown 1897 State Historic Park.[187]

The Durango-Silverton Narrow-Gauge Railroad, which extends between Durango and Silverton, Colorado, is a 45-mile long, narrow gauge segment of the Denver & Rio Grande San Juan Extension. Designated a National Historic Landmark in 1961, the Durango-Silverton Narrow-Gauge Railroad, which also is operated as a heritage railroad, is nationally significant for its associations with settlement and access to natural resources throughout much of Colorado, northern New Mexico and parts of Utah. In addition, almost all of the underlying arguments for landmark status for the D&RG San Juan Extension apply as well to the Durango-Silverton Narrow-Gauge Railroad, specifically its associations with the Denver & Rio Grande and integrity as a complex of historic narrow gauge railroad resources.[188]

Also designated as a National Historic Landmark in 1961 was the Baltimore and Ohio Transportation Museum and Mount Clare Station in Maryland, where regular passenger rail service in the United States was inaugurated in 1830. The National Historic Landmark includes four principal buildings associated with the railroad, including the roundhouse, which now contains the historical collections of the Baltimore & Ohio Railroad.

East Broad Top Railroad is a 36” gauge coal hauling railroad from the early twentieth century, which was designated a National Historic Landmark in 1964. Built in 1871 primarily to transport coal, the East Broad Top Railroad today is a privately operated heritage railroad. The Landmark includes station buildings and a rail yard complete with machine and car shops, blacksmith shop, foundry, turntable and roundhouse. The East Broad Top shares many attributes with the San Juan Extension, including original site, substantial track, original equipment, regular steam operations, and status as both a significant representative of a particular kind of narrow gauge railroading and a typical early twentieth century steam railroad.

The Nevada Northern Railway, East Ely Yards in Nevada was designated a National Historic Landmark in 2006. The complex includes depots, offices, shops, yards and rolling stock that comprise an outstanding representation of a twentieth century steam locomotive main yard servicing facility. The Nevada Northern Railway was constructed in 1905-1906, primarily to provide transportation to major copper producing areas in the state.

[187] The Allegheny Portage Railroad National Historic Site, a National Park unit that is also a National Historic Landmark, is another nationally significant railroad resource but is a fundamentally different type of railroad system in that it was designed to tow canal boats uphill along a series of inclining planes, rather than carry freight and passengers.

[188] The Cumbres & Toltec segment of the D&RG was part of the main line; the Durango-Silverton segment was a trunk line. Both railroad segments encompass a wide range of railroad resources, although the Cumbres & Toltec Scenic Railroad has a larger inventory of rolling stock that originally operated on the line.

Two National Park System units also are comparable to the Denver & Rio Grande San Juan Extension. Golden Spike National Historic Site in Utah is where the Union Pacific and Central Pacific Railroads joined tracks in 1869, nominally completing the first transcontinental railroad line and symbolically joining the Atlantic Coast with the Pacific Coast. The National Park Service operates replicas of the two steam locomotives present at the driving of the spike and offers regular reenactments and interpretive performances. Steamtown National Historic Site in Pennsylvania is one of the most impressive railroad heritage resources in the country and offers a variety of activities, steam locomotive operations, and traditional railroad experiences. However, the Steamtown facilities are greatly altered from their in-service states, and almost none of the machinery, cars, or locomotives have any original connection with the site.

An additional comparable property is Railtown 1897, a unit of the California State Parks in Jamestown, California, that is operated as a heritage railway. The park preserves historic resources, including a still-operating roundhouse, associated with the Sierra Railway, a logging railway associated with the West Side Lumber Company.[189] The park comprises a preserved locomotive servicing facility, original locomotives and rolling stock, and track or operating rights to provide a period passenger train experience.

Even within the context of the above-noted comparable properties, the Denver & Rio Grande San Juan Extension (Cumbres & Toltec Scenic Railroad) is an exceptional railroad cultural resource with an unparalleled combination of original fabric, original form and footprint, number of contributing features, intensity of operations, range of historic equipment and structures, continuity, and authenticity of operating practices and workplace culture. Through a series of bold initiatives and unintended consequences, the Denver & Rio Grande San Juan Extension (Cumbres & Toltec Scenic Railroad) survives as an outstanding example of early twentieth century railroad practice and an accurate and comprehensive presentation of travel by train one hundred years ago.

[189] According to the Railtown 1897 website (http://www.railtown1897.org/railtown/default.asp), the railroad also is known as "The Movie Railroad" because it has been used as a set for numerous films, including *High Noon*, *Back to the Future 3*, as well as the television series *Petticoat Junction*.

9. MAJOR BIBLIOGRAPHICAL REFERENCES

References based on an academic history/regulatory/analytical context

Anderson, George L. *General William J. Palmer: A Decade of Colorado Railroad Building, 1870-1880*. General Series No. 209. Colorado Springs, CO: Colorado College, 1936.

_____. *Kansas West.* San Mateo, CA: Golden West Books, 1963.

Andrews, Thomas A. "Made by Toile? Tourism, Labor, and the Construction of the Colorado Landscape, 1858-1917." *The Journal of American History* 92, no. 3 (2005): 837-863.

Anonymous. "General William J. Palmer, A Builder of the West." *The World's Work* (February 1908): 9899-9903.

Athearn, Robert G. *Rebel of the Rockies: A History of the Denver and Rio Grande Western Railroad.* New Haven: Yale University Press, 1967.

Borneman, Walter R. *Rival Rails: The Race to Build America's Greatest Transcontinental Railroad.* New York: Random House, 2010.

Brayer, Herbert O. *William Blackmore: A Case Study in the Economic Development of the West.*
Volume II, Early Financing of the Denver & Rio Grande Railway and Ancillary Land Companies, 1871-1878.
Denver: Bradford-Robinson, 1949.

Brosnan, Kathleen A. *Uniting Mountain & Plain: Cities, Law, and Environmental Change Along the Front Range*. Albuquerque: University of New Mexico Press, 2002.

Chandler, Alfred D. Jr. *The Railroads: The Nation's First Big Business.* New York: Harcourt, Brace & World, 1965.

_____. "The Railroad: Pioneers in Modern Corporate Management," *The Business History Review* 39, no. 1, Special Transportation Issue (1965):16-40.

_____. *The Visible Hand: The Managerial Revolution in American Business.* Cambridge: Harvard University Press, 1977.

Chappell, Gordon, and Cornelius W. Hauck. *Scenic Line of the World*. Golden, CO: Colorado Railroad Museum, 1977.

Clothier, Isaac H., compiler. *Letters, 1853-1868, Gen'l. Wm. J. Palmer*. Philadelphia: n.p., 1906.

Cochran, Thomas. *Railroad Leaders, 1845-1890: The Business Mind in Action.* Cambridge: Harvard University Press, 1953.

Colorado Historical Society; Colleen P. Bradley, compiler. *An Inventory of the Records of the Denver & Rio Grande Western Railroad.* Denver: Colorado Historical Society, 1996.

Cronon, William. *Nature's Metropolis: Chicago and the Great West.* New York: W.W. Norton, 1992.

Cumbers & Toltec Scenic Railroad and the States of Colorado and New Mexico, *et al.* "Bi-State Agreements, Statutes, and Documents Governing the Administration of the C&TS Railroad," online at: http://www.cumbrestoltec.org/the-railroad/cats-commission/cats-railroad-governing-documents.html (accessed June 16, 2011).

Denver & Rio Grande Railroad. *Around the Circle. One Thousand Miles Through the Rocky Mountains. Being a Trip Among Peaks, Over Passes and Through Canyons of Colorado, Presented by the Passenger Department of the Denver & Rio Grande R.R.* Chicago: Knight, Leonard & Co., 1898.

Fifer, J. Valerie. *American Progress: The Growth of Transport, Tourist, and Information Industries in the Nineteenth-Century West*. Chester, Conn.: Globe Pequot Press, 1988.

Fisher, John S. *A Builder Of The West*. Caldwell, ID: Caxton Printers, 1939.

Gordon, Sarah H. *Passage to Union: How the Railroads Transformed American Life, 1829-1929*. Chicago: Ivan R. Dee, 1996.

Grodinski, Julius. *Transcontinental Railway Strategy, 1869-93: A Study of Businessmen.* Philadelphia: University of Pennsylvania Press, 1962.

Hilton, George W. *American Narrow Gauge Railroads.* Stanford, CA.: Stanford University Press, 1990.

Howard, Ernest. *A New Story of American Railroad Wrecking: Denver and Rio Grande, Western Pacific and the Missouri Pacific's Part in the Affair. Prepared and Published as the Result of a Private Investigation by Ernest Howard.* New York: Ernest Howard, 1918.

Howe, Daniel Walker. *What Hath God Wrought: The Transformation of America, 1815-1848.* New York: Oxford University Press, 2007.

Knapp, Frank A. Jr. "Precursors of American Investment in Mexican Railroads." *Pacific Historical Review* 21, no.1 (1952): 43-64.

Livesay, Harold C. *Andrew Carnegie and the Rise of Big Business.* Boston: Little, Brown & Co., 1975.

McCarthy, Wilson. *General Wm. Jackson Palmer (1836-1909) and the D&RGW Railroad.* Princeton: Princeton University Press, 1954.

Meinig, D.W. *The Shaping of America: A Geographical Perspective on 500 Years of History.* Vol. 2: Continental America, 1800-1867. New Haven: Yale University Press, 1993.

_____. *The Shaping of America: A Geographical Perspective on 500 Years of History.* Vol. 3: Transcontinental America, 1850-1915. New Haven: Yale University Press, 1998.

Mock, Samuel David. "Railroad Development the Colorado Region To 1880." PhD diss., University of Nebraska-Lincoln, 1938.

National Park Service. "Theme XV, Westward Expansion and the Extension of the National Boundaries to the Pacific, 1830-1898: Transportation and Communication." National Survey of Historic Sites and Buildings. Washington: National Park Service, 1960.

Petrowski, William R. "Kansas City to Denver to Cheyenne: Pacific Railroad Construction Costs and Profits." *Business History Review* 48, no. 2 (1974): 206-224.

_____. *The Kansas Pacific: A Study in Railroad Promotion.* New York: Arno Press. 1981.

Pletcher, David M. "The Building of the Mexican Railway." *Hispanic American Historical Review* XXX (1950): 26-62.

Pomeroy, Earl. *In Search of the Golden West: The Tourist in Western America*. Lincoln, NE: University of Nebraska Press, 1990.

Puffert, Douglas J. *Tracks Across Continents, Paths Through History: The Economic Dynamics of Standardization in Railway Gauge.* Chicago: University of Chicago Press, 2009.

_____. "The Standardization of Track Gauge on North American Railways, 1830-1890." *The Journal of Economic History* 60, no. 4 (2000): 933-960.

Robertson, Donald B. *Encyclopedia of Western Railroad History,* Vol. II: Colorado, Idaho, Montana, Wyoming. Dallas: Taylor Publishing, 1991.

Scamehorn, H. Lee. *Pioneer Steelmaker in the West: The Colorado Fuel and Iron Company, 1892-1903.* Boulder, Colorado: Pruett Publishing, 1976.

Schivelbusch, Wolfgang. *The Railway Journey: The Industrialization and Perception of Time and Space*. Berkeley: University of California Press, 1986.

Schwantes, Carlos, and James P. Ronda. *The West the Railroads Made*. Seattle: University of Washington Press in association with Washington State Historical Society and the John W. Barriger III National Railroad Library at the St. Louis Mercantile Library, 2008.

Sears, John. *Sacred Places: American Tourist Attractions in the Nineteenth Century*. New York: Oxford University Press, 1989.

Stewart, Paul Logan. *The History of the Denver And Rio Grande Railway, 1871-1881.* MA thesis, University of Colorado, 1931.

Stilgoe, John R. *Metropolitan Corridor: Railroads and the American Scene.* New Haven: Yale University Press, 1983.

Stover, John F. *American Railroads, 2nd. ed.* Chicago: University of Chicago Press, 1997.

Taylor, George Rogers. *The Transportation Revolution, 1815-1860.* Vol. IV, The Economic History of the United States. New York: Rinehart & Co., 1951.

United States Department of the Interior – National Park Service, *Denver & Rio Grande Western Narrow Gauge, An Alternative Study,* NPS Western Service Center, undated.

Vance, James E, Jr. *The North American Railroad: Its Origin, Evolution, and Geography.* Baltimore: Johns Hopkins University Press, 1995.

Ward, James A. "Power and Accountability on the Pennsylvania Railroad, 1846-1878." *Business History Review* 49, no. 1 (1975): 37-59.

_____. *J. Edgar Thomson, Master of the Pennsylvania.* Westport, CT: Greenwood Press, 1980.

_____. *Railroads and the Character of America, 1820-1887.* Knoxville: University of Tennessee Press, 1986.

_____. *Railroaded: The Transcontinentals and the Making of Modern America*. New York: W.W. Norton, 2011.

Wilson, O. Meredith. *The Denver and Rio Grande Project, 1870-1901: A History of the First Thirty Years of the Denver and Rio Grande Railroad.* Salt Lake City: Howe Bros., 1982.

Wilson, Spencer and Vernon J. Glover. *The Cumbres & Toltec Scenic Railroad; The Historic Preservation Study*. Albuquerque: University of New Mexico Press, 1980.

References based on a Public History/Material Culture/Modeling /Enthusiast Context

Beebe, Lucius and Charles Clegg. *Narrow Gauge in the Rockies*. Berkeley, CA: Howell-North, 1958.

_____. *Rio Grande: Mainline of the Rockies*. 2 Volumes. Berkeley, CA: Howell-North, 1962.

Blevins, Tim; Pikes Peak Library District; Colorado Springs Pioneers Museum; Colorado College; et al. *Legends, Labors & Loves: William Jackson Palmer, 1836-1909.* Colorado Springs, CO: Pikes Peak Library District with the Colorado Springs Pioneers Museum and Colorado College, 2009.

Chappell, Gordon. "Farewell to Cumbres." *Colorado Railroad Museum Rail Annual*, 1967.

Danneman, Herbert. *A Ticket to Ride the Narrow Gauge: A Chronological History of Denver & Rio*

Grande Narrow Gauge Passenger Trains and Their Equipment, 1871-1981. Golden, CO: Colorado Railroad Museum, 2000.

_____. *Rio Grande Narrow Gauge Varnish: A Denver & Rio Grande Narrow Gauge Passenger Train Car Roster 1871-1981*. Golden, CO: Colorado Railroad Museum, 2003.

Davis, E. O. *The First Five Years of the Railroad Era in Colorado.* Golden, CO: Sage Books, 1948.

Day, Jerry B. *Narrow Gauge Pictorial,* Volume VII, Denver and Rio Grande Western Work Equipment—*OA to OZ.* 1989.

Denver & Rio Grande Railroad. *Antonito to Chama ICC Valuation Maps, 1919*. Golden, CO: Robert W. Richardson Library Collection "*Original D&RG RR Records,*" Colorado Railroad Museum, 2002.

Dorman, Richard L. and Bob Hayden. *Rocky Mountain Railroads, Volume II: D&RGW: Durango to Alamosa and Salida.* Santa Fe, NM: R. D. Publications, 2005.

Glover, Vernon J. "Cumbres & Toltec Scenic Railroad, Lobato and Cascade Trestles Designed by Famous Bridge Builder C. Shaler Smith." *Southwest Rail Heritage No. 35 (*April 2005).

Grandt, Robert L., ed. *Narrow Gauge Pictorial, Volume II, Passenger Cars of the D&RGW*, 1985.

_____. *Narrow Gauge Pictorial, Volume III, Gondolas, Boxcars and Flatcars of the D&RGW*. [Oakland, CA: R. Robb Ltd.], 1984.

_____. *Narrow Gauge Pictorial, Volume V, Cabooses of the D&RGW*. [Oakland, CA: R. Robb Ltd.], 1987.

_____. *Narrow Gauge Pictorial, Volume XI, Locomotives of the D&RGW*. [Oakland, CA: R. Robb Ltd.], 1997.

Hankey, John P. "The American Roundhouse: The Ultimate Railroad Structure" *Trains* (March 2010): 25-33.

Hauck, Cornelius W. and Richardson, Robert W., ed. *Steam in the Rockies*. Golden: Colorado Railroad Museum, 1963.

Hereford, Joseph P. Jr. *Rotary Snowplows on the Cumbres & Toltec Scenic Railroad*. Albuquerque: Windy Point Press, 1995.

Hereford, Joseph P. Jr., and Ernest W. Robart. *Rio Grande Narrow Gauge: The Final Years, Alamosa to Chama.* Union City, CA: R/Robb, 2001.

Hungerford, John B. *Narrow Gauge to Silverton: The Story of an American Heirloom*. Resada, CA: Hungerford Press, 1966.

LeMassena, Robert A. *Rio Grande…to the Pacific!* Denver: Sundance Publications, 1974.

Meyers, Steven J., ed. *Trails among the Columbine: A Colorado High Country Anthology.* Denver: Sundance Publications, 1987.

O'Berry, Dennis. *The Mudhens: A Photographic History.* Union City, CA: R-Robb Ltd, 1995.

Original D&RG RR Records, Colorado Railroad Museum, Golden, Colorado. *Interstate Commerce Commission, Bureau of Evaluation, D&RGW 4th Division, 2nd District. Valuation Sections: Colorado 16 and New Mexico 2,* 1920.

Official Roster No. 11 of the Denver and Rio Grande Western Railroad System and the Rio Grande Southern Railroad Company, 1923.

Stations and Structures, Antonito-Chama, 1901 and 1905.

Structure Numbering System, CRRM SB 398 and 399, 1920.

Osterwald, Doris B. *Ticket to Toltec: A Mile by Mile Guide for the Cumbres & Toltec Scenic Railroad*. Lakewood, CO: Western Guideways, 1992.

Sloan, Robert E. *A Century + Ten of D&RGW Narrow Gauge Freight Cars, 1871 to 1981*. Winona, MN: By the author, 2000.

Turner, Robert D. *The Thunder of Their Passing: A Tribute to the Denver & Rio Grande's Narrow Gauge and the Cumbres & Toltec Scenic Railroad.* Winlaw, British Columbia: Sono Nis Press, 2003.

Previous documentation on file (NPS):

__ Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
_X_ Previously Listed in the National Register.
__ Previously Determined Eligible by the National Register.
__ Designated a National Historic Landmark.
__ Recorded by Historic American Buildings Survey: #
__ Recorded by Historic American Engineering Record: #

Primary Location of Additional Data:

_X_ State Historic Preservation Office
__ Other State Agency
__ Federal Agency
_X_ Local Government: Denver Public Library
__ University
_X_ Other (Specify Repository): Colorado Railroad Museum

10. GEOGRAPHICAL DATA

Acreage of Property: approximately 1,537 acres

UTM References:
UTMs were computed using the WGS-84 datum.

	Zone	Easting	Northing	Location Notes
A (Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B (Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C (Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D (Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E (Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F (Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G (Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H (Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I (Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

Verbal Boundary Description

The landmark consists of two discontiguous parcels: land surrounding the historic D&RG railroad depot in Antonito, Colorado, and a narrow corridor containing the historic right-of-way (ROW) and associated resources from Antonito, Colorado, to Chama, New Mexico. The boundary along the track follows the historic ROW, as depicted in figures 5 through 25. In general, the historic ROW extends 100' on each side of the track centerline. Several exceptions occur just west of Antonito and west from the Archuleta County-Conejos County boundary in Colorado to Chama, where the original ROW extended 50' each side of the track center line, and in areas where certain features required a larger area. Specifically:

1. Antonito, A parcel of land in the Town of Antonito, Conejos County, Colorado, and lying the exterior boundary of the Antonito Depot Tract, located in the NE 1/4 of Section 29, Township 33 North, Range 9 East, of the New Mexico Principal Meridian, Conejos County, Colorado, being more particularly described as follows: Beginning at a point on the North right of way line of Second Avenue of said Town of Antonito from which the East 1/4 Corner of said Section 29 (monumented with a No.6 re-bar with a 2-inch aluminum cap set by Colorado PLS No. 14840) bears South 76° 06' 02" East a distance of 1837.68 feet; thence North 90° 00' 00" West along said North right of way line a distance of 120.25 feet; thence North 03° 39' 35" West a distance of 209.16 feet; thence Northeasterly along the arc of a non-tangent curve to the left a distance of 244.72 feet (curve data: Radius = 1471.14 feet, Delta = 09° 31' 52", Chord length = 244.44 feet, Chord Bearing = North 17° 26' 02" East); thence North 86° 30' 23" East a distance of 32.03 feet; thence South 03° 39' 35" East a distance of 444.80 feet to the Point of Beginning. Containing 0.97 Acres more or less.
2. Antonito, the second parcel begins at the eastern side of U.S. Highway 285, where the track intersects the highway, and proceeds in a southwesterly direction along the track.
3. Antonito-Lava, MP 280.7– MP 283.1, 50' each side of track center line
4. Antonito-Lava, MP 283.1 - MP 287.0, 100' each side of track center line.
5. Antonito-Lava, MP 287 – MP 287.5, 50' each side of track center line.
6. Antonito-Lava, MP 287.5 – MP 291.25, 100' each side of track center line.

7. Lava, MP 291.25 - MP 291.75 [2011+10-2050], 100' outside of track center line, 12'-6" each side of pipe line, plus 300' x 350' parcel at pump house. Extended parcel defines water pipeline and pump house on Los Pinos River.
8. Lava-Big Horn Section House, MP 291.75 - MP 295.05, 100' each side of track center line.
9. Big Horn Section House/ Whiplash Curve, MP 295.05 - MP 298, 100' outside of track center line plus land within lower loop. Extended parcel defines land within a significant track feature and preserves sites of demolished structures related to the railroad.
10. Big Horn Section House-Sublette, MP 298 - MP 305.75, 100' each side of track center line.
11. Sublette, MP 305.75 - MP 306.25, 100' outside of track center line, 12'-6" each side of pipe line and 100' x 100' parcel at well. Extended parcel defines water pipeline to source.
12. Sublette-Tunnel No. 1, MP 306.25 - MP 311, 100' each side of track center line Mud Tunnel, MP 311 - MP 311.75,100' north side of track center line and 600' south side of track center line. Extended parcel defines historic temporary right-of-way.
13. Tunnel No. 1-Osier, MP 311.75 - MP 318, 100' each side of track center line.
14. Osier, MP 318 - MP 319, 350' north side of track center line, 300' south side of track center line plus 12'-6" each side of two pipelines to source. Extended parcel defines water pipe lines to source.
15. Osier-Cumbres, MP 319 - MP 330.3, 100' each side of track center line.
16. Cumbres, MP 330.3 - MP 330.75, 150' south side of track center line, 300' north side of track center line, plus 50' each side of track center line at wye.
17. Cumbres-Conejos-Archuleta County Line, MP 330.75 - MP 334.5, 100' each side of track center line.
18. Conejos-Archuleta County Line -Chama, MP 334.5 - MP 343.5, 50' each side of track center line.
19. Chama, MP 343.5 - MP 344.8, 100' north side of track center line, 200' south side of track center line, plus 25' each side of track center line at wye.

Boundary Justification

Boundaries are based on *Interstate Commerce Commission valuation maps* dated 1919 in the Robert W. Richardson Railroad Library Collection, and available at the Colorado Railroad Museum. These indicate the right-of-way (ROW) limits which were conveyed to the states of Colorado and New Mexico and appear to correspond to the description provided in the document of sale. The boundaries at significant place locations, like Antonito, Cumbres and Chama represent a combination of the dimension from the track center line, and distances indicated on the valuation maps that capture all of the significant structures or features within the boundary and are within the legal descriptions of land conveyed to the States. Water is a precious resource in the West, and the railroad took pains to protect water rights used for water tanks. This includes the definition of pipe line ROW's extending beyond the track ROW to the river, creek or spring location.

11. FORM PREPARED BY

Name/Title: Keith E. Hayes, AIA and John P. Hankey

Address: Friends of the Cumbres & Toltec Scenic Railroad
4421 McLeod NE, Suite F
Albuquerque, N.M. 87109
Telephone: (505) 880-1311

Date: February 29, 201217, 2012

Edited by: Robie Lange
National Park Service
National Historic Landmarks Program
1849 C St. NW (2280)
Washington, DC 20240

Telephone: (202) 354-2257

NATIONAL HISTORIC LANDMARKS PROGRAM
March 13, 2012

Photograph #1
View looking west from Antonito, in Conejos County, CO, with the 'End of Standard Gauge' sign to the right. Photographer: Roger Hogan, 2010.

Photograph #2
View of the historic Denver & Rio Grande Railroad Antonito depot (facing east), in Conejos County, CO. Photographer: Roger Hogan, 2010.

Photograph #3
View of the Antonito terminal, in Conejos County, CO, (facing east). The new depot is to the left and the new engine house is to the right, with locomotive 484 and coaches on leads. A dual gauge switch is in the foreground, with standard gauge box cars and an idler car in the distance.
Photographer: Roger Hogan, 2010.

Photograph #4
The water tank at Lava, in Rio Arriba County, NM (facing north). locomotive 489 and train are headed westbound around the loop.
Photographer: Roger Hogan, 2010.

Photograph #5
View of Sublette, in Rio Arriba County, NM (facing northeast), with locomotive 488 and westbound train on the main track, and speeder 104 on the siding. From left to right are the shingle bunk house, section house, coal shed and tool shed.
Photographer: Roger Hogan, 2010.

Photograph #6
Locomotive 489 and westbound train at the west portal of Tunnel No.1 (Mud Tunnel), in Rio Arriba County, NM (facing southeast). The roadbed for the shoo fly is at the extreme right.
Photographer: Roger Hogan, 2010.

Photograph #7
Locomotive 489 and westbound train at the west port of Tunnel No.2 (Rock Tunnel), in Rio Arriba County, NM. The locomotive is crossing the retaining wall just outside the portal. The Garfield Monument is in the foreground. View faces east.
Photographer: Roger Hogan, 2010.

Photograph #8
Locomotive 484 and eastbound train at Osier, in Conejos County, CO. From left to right are the section house, water tank, depot, and coal platform (facing north).
Photographer: Roger Hogan, 2010.

Photograph #9
Locomotive 484 and eastbound work train crossing Cascade Trestle, in Conejos County, CO. Behind the locomotive are flat cars 6200, 6214, 6544, 6509 and 6601 with caboose 0306. View faces west.
Photographer: Roger Hogan, 2010.

Photograph #10
Locomotive 488 and westbound train at east end of trestle at Los Pinos, in Conejos County, CO (facing east). Photographer: Roger Hogan, 2010.

Photograph #11
Westbound locomotive 484 at Cumbres, in Conejos County, CO. From left to right are the water column, coal shed, and section house (facing east).
Photographer: Roger Hogan, 2010.

Photograph #12
Eastbound locomotive 488 with maintenance-of-way train crossing trestle at Cumbres, in Conejos County, CO. Train includes pile driver OB, boom car 06008, wheel and tie car 06092, tool car 04549 and rail and tie car 06051. View facing west.
Photographer: Roger Hogan, 2010.

Photograph #13
Water tank and trestle at Cresco, in Archuleta County, CO (facing north).
Photographer: Roger Hogan, 2010.

Photograph #14
Westbound train with locomotive 484 crossing the steel trestle at Lobato, in Rio Arriba County, NM (facing north).
Photographer: Roger Hogan, 2010.

Photograph #17
The north end of the Chama yard, in Rio Arriba County, NM, facing southwest towards the depot. From left to right, the water tank, two equipment sheds, fire hose shed and coaling tipple. The roundhouse is in the distance behind the coaling tower. Equipment from the right includes tank cars 13168, 12918 and 12739, double deck stock car 5549, refrigerator car 169, spreader OU, and other maintenance-of-way equipment.
Photographer: Roger Hogan, 2010.

Photograph #15
Westbound train with locomotive 315 (owned by Durango Historical Society). Train includes drop bottom gondola 774, idler flatcar 6755, pipe gondola 1557, idler flatcar 6708, flatcar (converted to open observation car) 6205 and caboose 0579. View facing northwest.
Photographer: Roger Hogan, 2010.

Photograph 16
Eastbound train with locomotive 488 crossing the west span of the Rio Chama bridge, in Rio Arriba County, NM. View faces north.
Photographer: Roger Hogan, 2010.

Photograph #18
The Chama yard in Rio Arriba County, NM, looking towards the eastbound water tank. The depot is at right, and the coaling tipple and the other water tank are in the distance. The warehouse is behind the trees to the left of the gray car. Equipment on the right includes modified Boxcars 207/ 3064 and an unidentified car and caboose 0503. View faces north.
Photographer: Roger Hogan, 2010.

Photograph #19
View of the Chama yard, in Rio Arriba County, NM, showing the roundhouse with maintenance-of-way equipment. Starting at left of center, spreader OU, flanger, OJ, wheel and tie car 06092, rotary snow plow OY, auxiliary water car 0471 and locomotive 489. In the background are boxcar 3686, an unidentified car and boxcar 3014. View faces southeast.
Photographer: Roger Hogan, 2010.

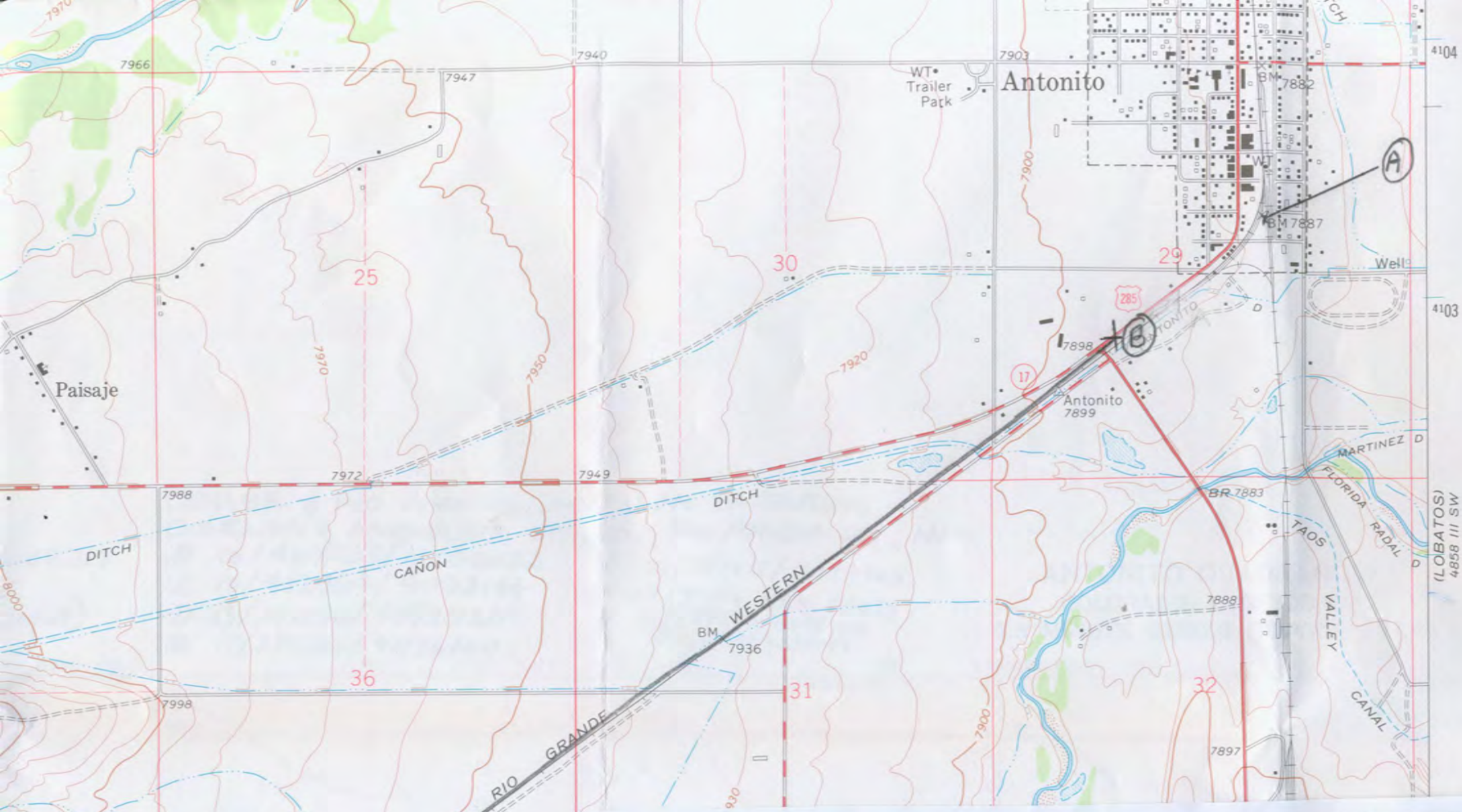
Photograph #20
Drop bottom gondola 791 in the Chama yard, in Rio Arriba County, NM. View faces east.
Photographer: Roger Hogan, 2012.

Photograph #21
High side gondola 1149 in Chama yard, in Rio Arriba County, NM. View faces east.
Photographer: Roger Hogan, 2012.

Photograph #22
Boxcar 3073 with idler flat 6746 to the left. Facing east in the Chama yard, in Rio Arriba County, NM. Note the reinforced 'Camel' door on the boxcar, and rails added for reinforcement to the underside of the flatcar. Photographer: Roger Hogan, 2012.

Photograph #23
Double deck stockcar 5841 in Chama yard, in Rio Arriba County, NM. Evidence of the upper deck can be seen in the row of board ends under the 'flying' Rio Grande lettering on the right end of the car. The stockcar to the left lacks these boards and is thus a single deck car.
Photographer: Roger Hogan, 2012.

Photograph #24
Short caboose 0579 and long caboose 0503 at the Chama yard, in Arriba County, NM. The eastbound coaling tipple is in the background, at left. View faces north.
Photographer: Roger Hogan, 2012.

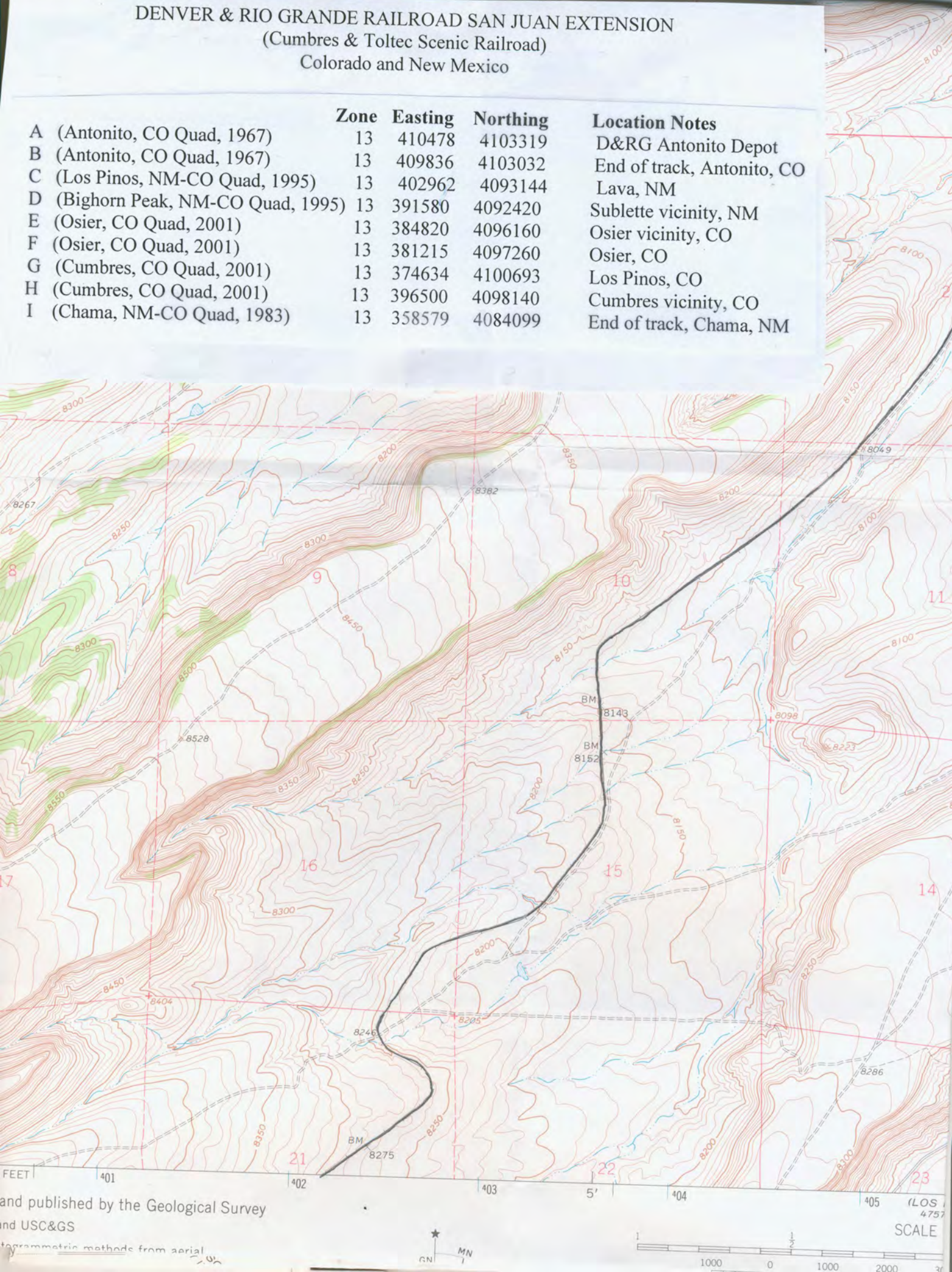


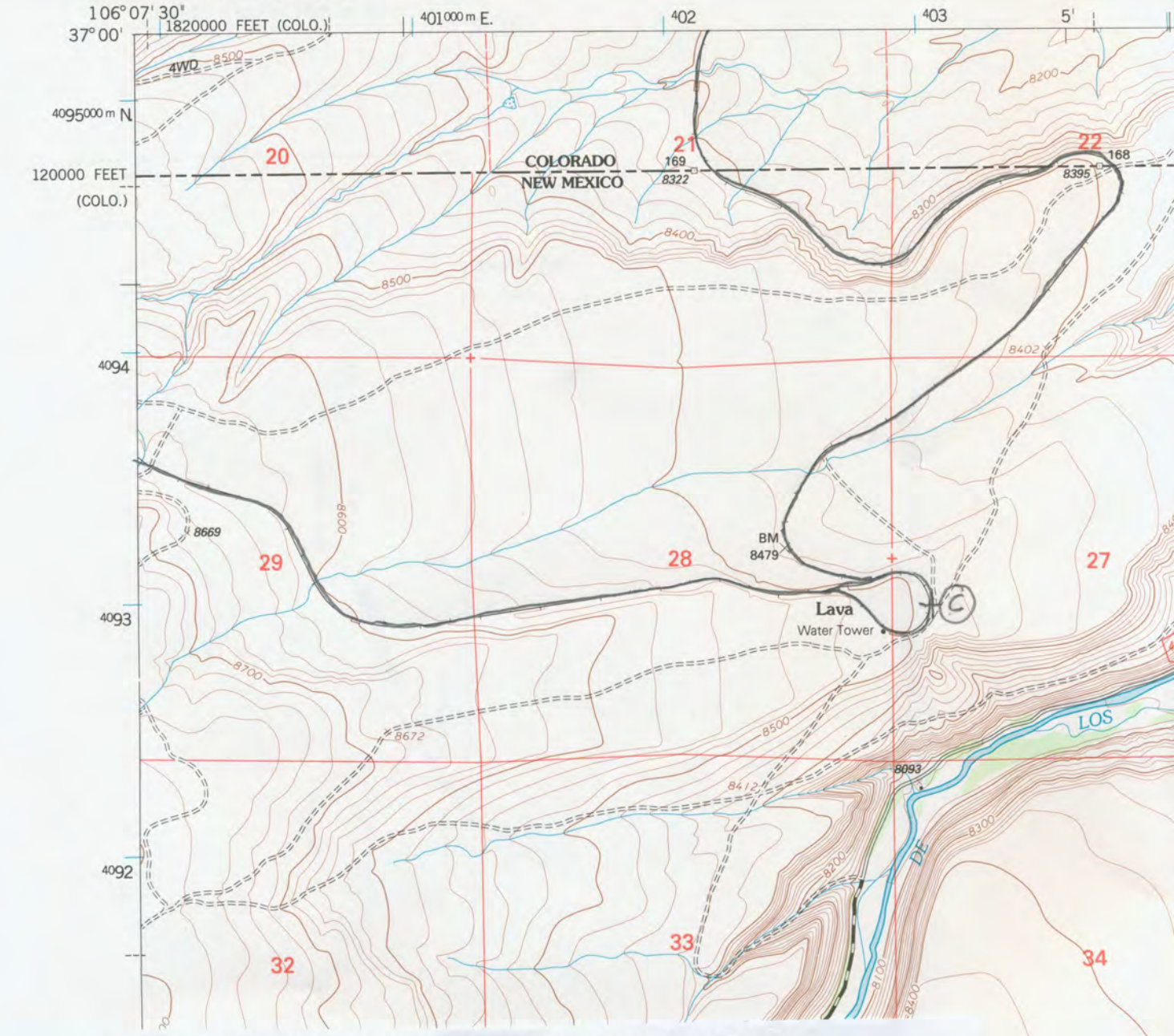
DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

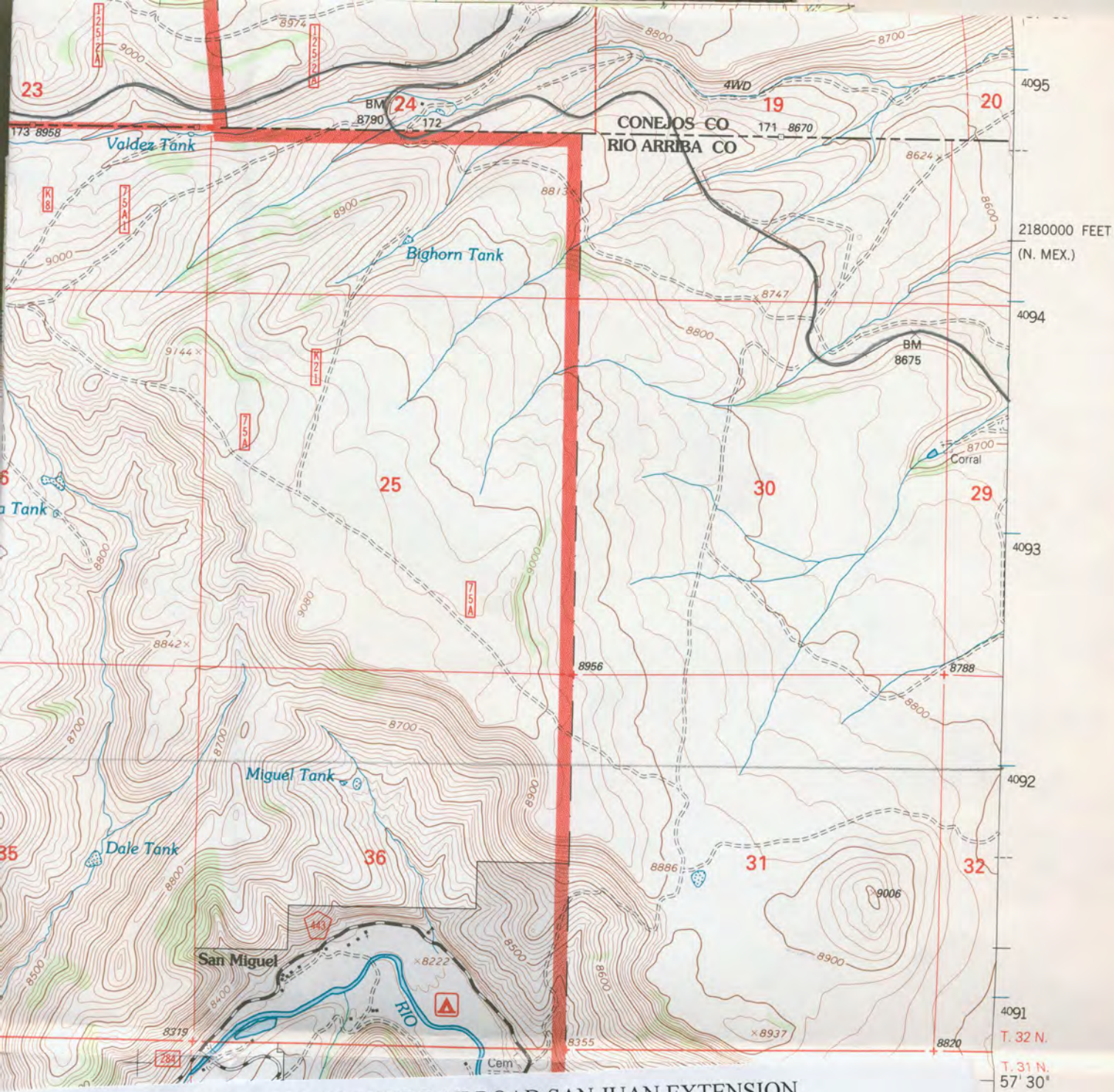
		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM





DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

	Zone	Easting	Northing	Location Notes
A (Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B (Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C (Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D (Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E (Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F (Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G (Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H (Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I (Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

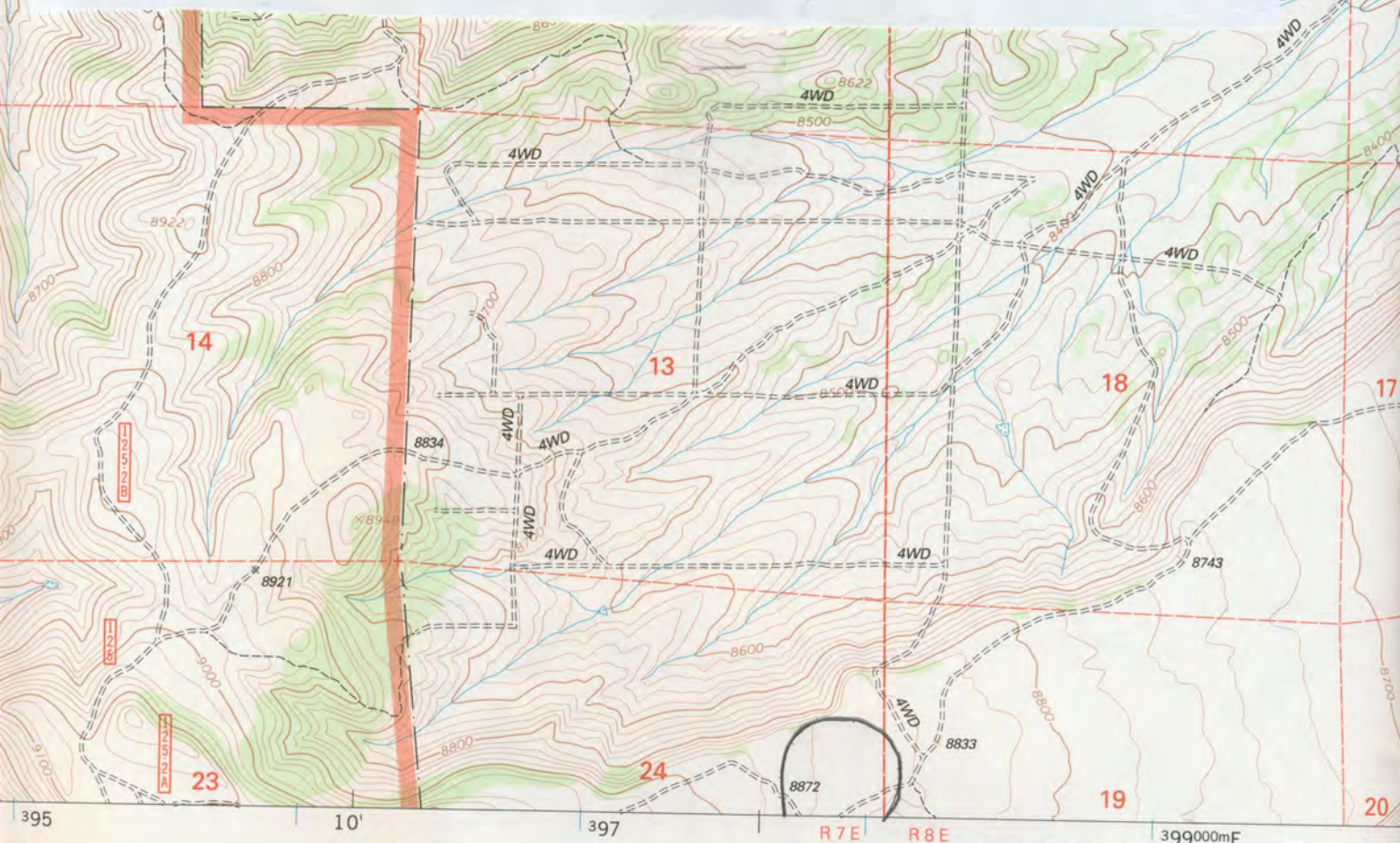


DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM



INTERIOR - GEOLOGICAL SURVEY, RESTON, VIRGINIA - 2005

1
7000 8000 9000 10 000
2
2000

COLORADO
QUADRANGLE LOCATION

1929
0.3048

STANDARDS
NVER, COLORADO 80225
VAILABLE ON REQUEST

1	2	3
4		5
6	7	8

1 La Jara Canyon
2 Vicente Canyon
3 Goshawk Dam
4 Osier
5 Antonito
6 Toltec Mesa
7 Bighorn Peak
8 Los Pinos

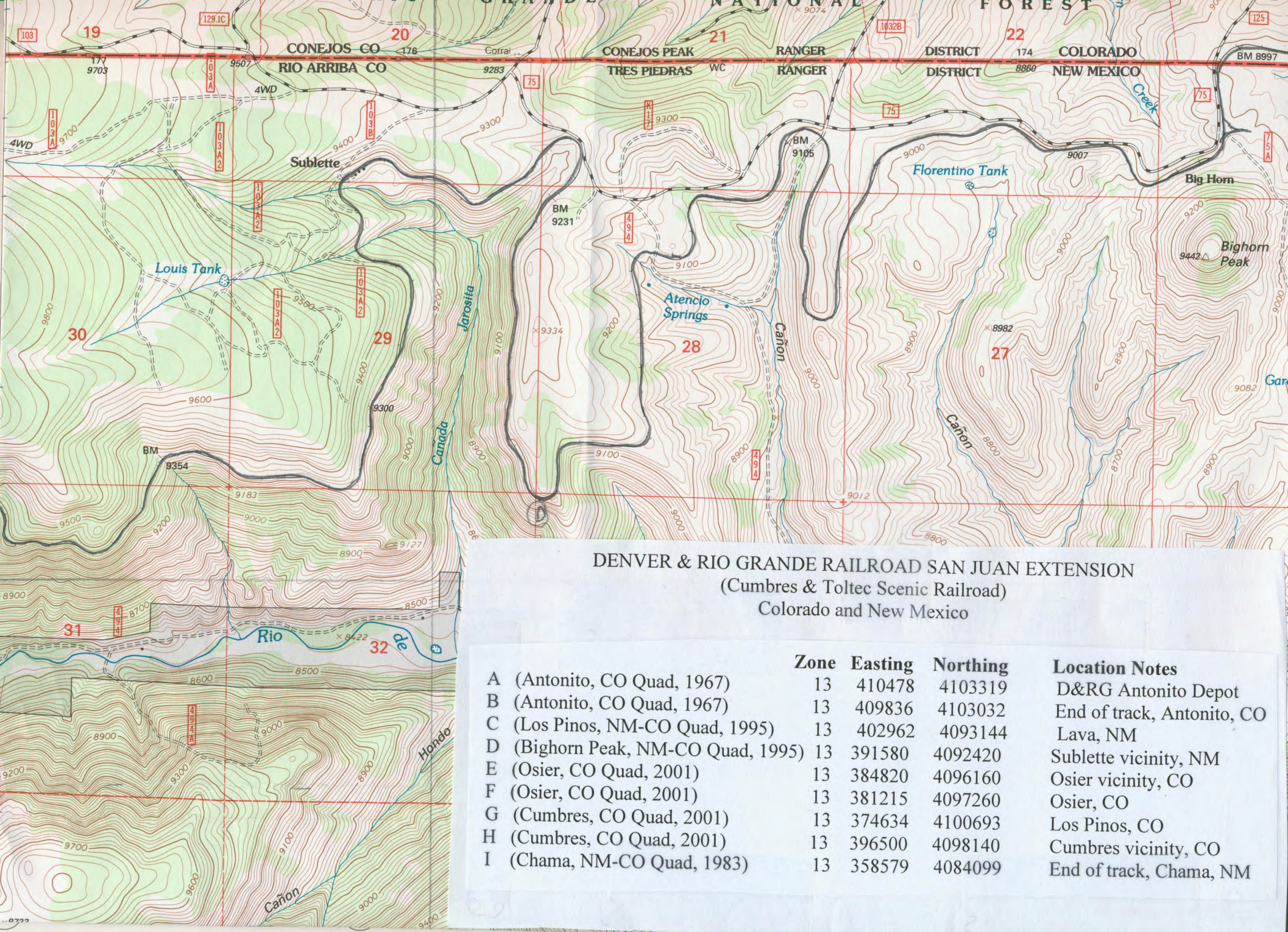
ADJOINING 7.5' QUADRANGLES

HIGHWAYS AND ROADS

Interstate 5
U. S. 101
State 79
County 6
National Forest, suitable for passenger cars 105 61
National Forest, suitable for high clearance vehicles 105
National Forest Trail 384

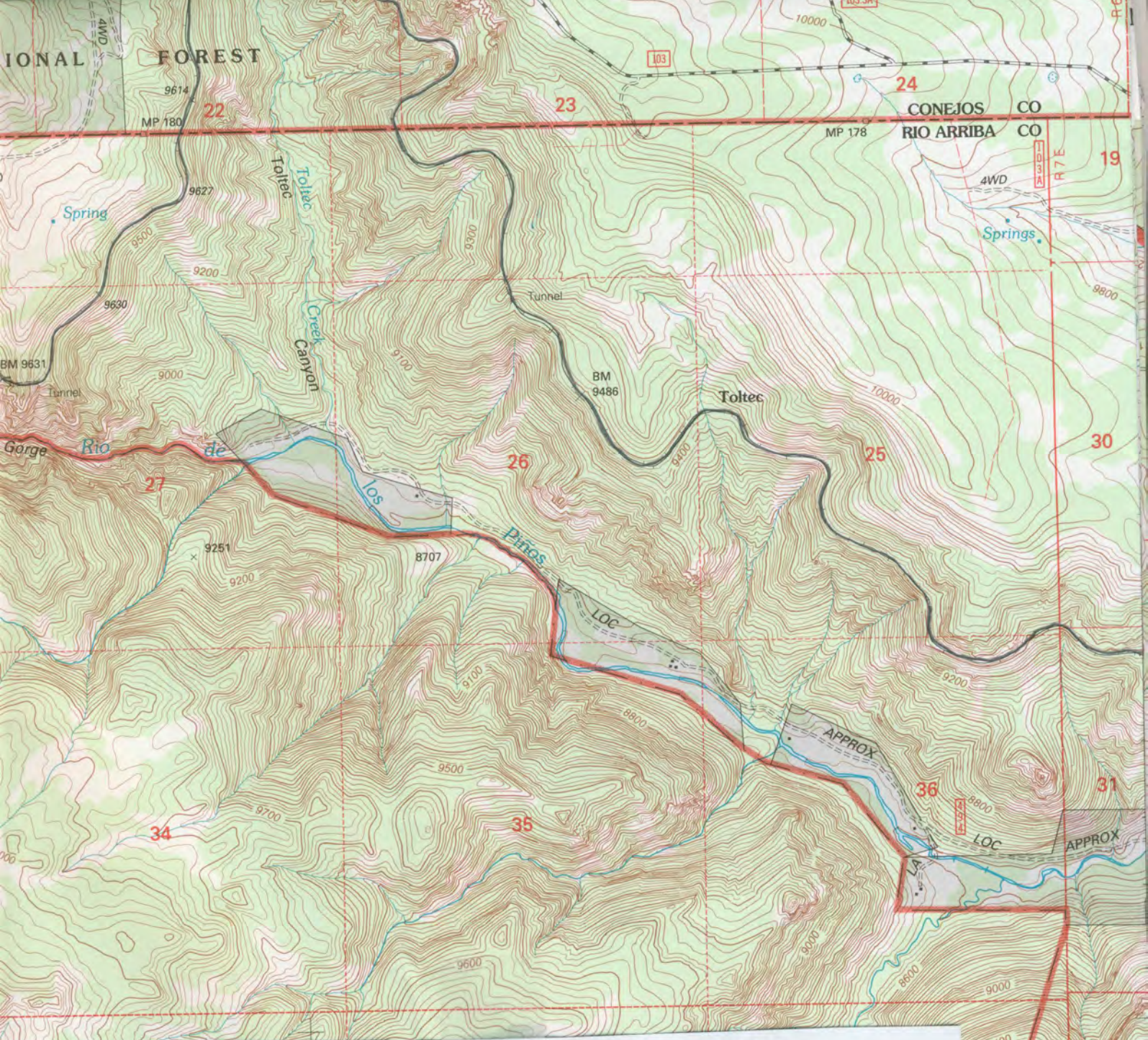
Primary highway .....
Secondary highway.....
Light-duty road
Composition: Unspecified
Paved.....
Gravel .....
Dirt .....
Unimproved; 4 wheel drive ....
Trail .....
Gate; Barrier.....

FOX CREEK
2001
37106-A2-TF-
NGA 4758 II SW-SER



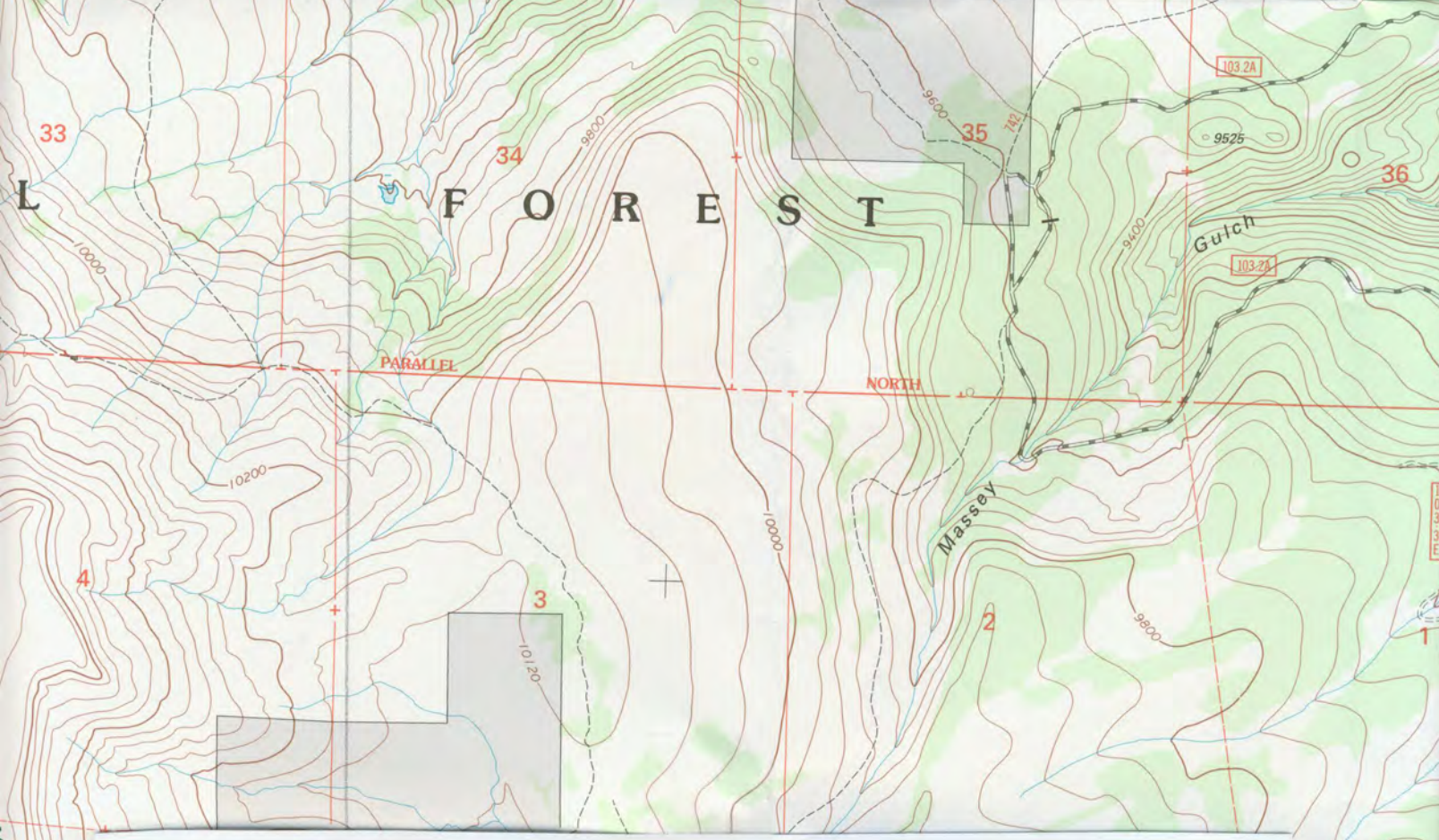
DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM



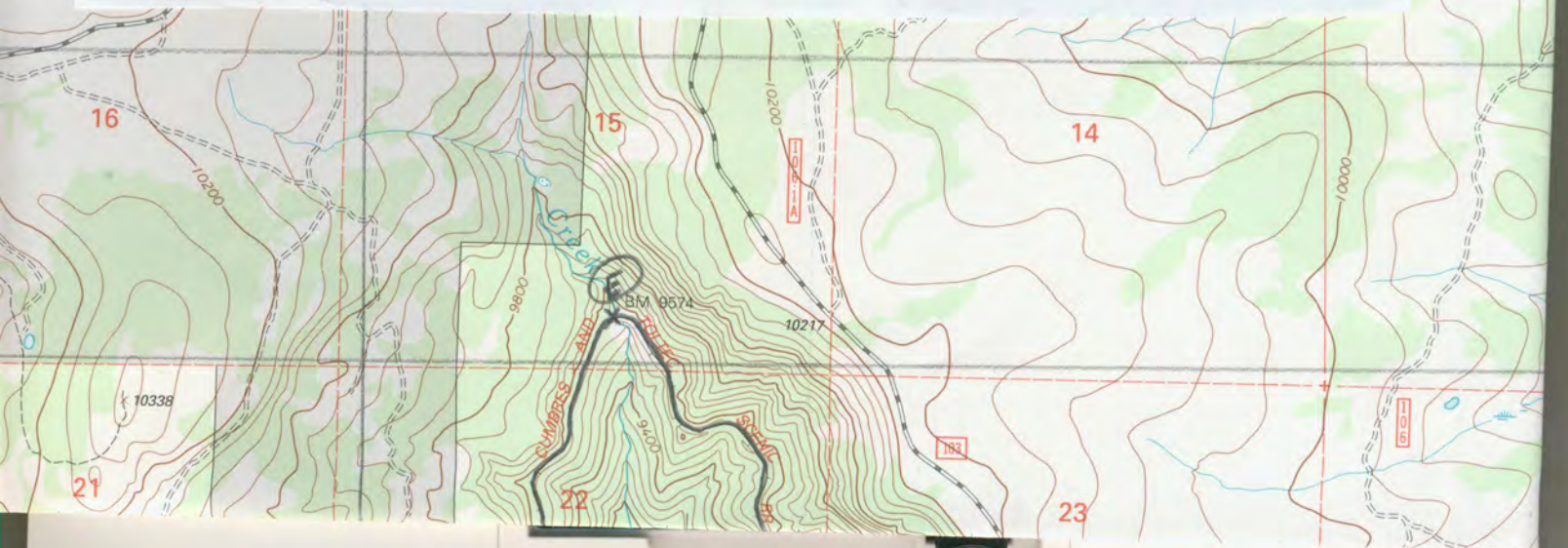
DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

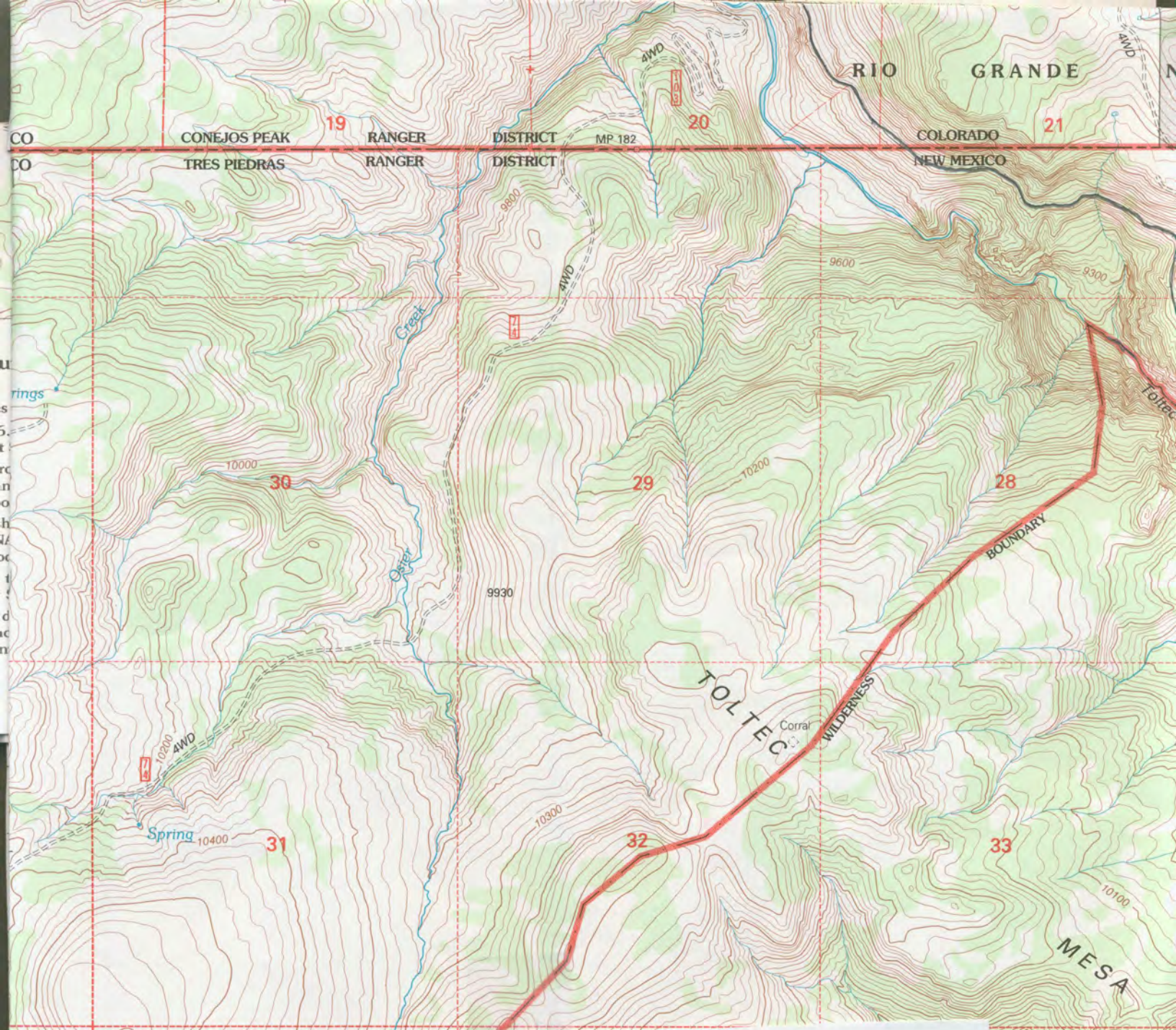
		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM



DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM



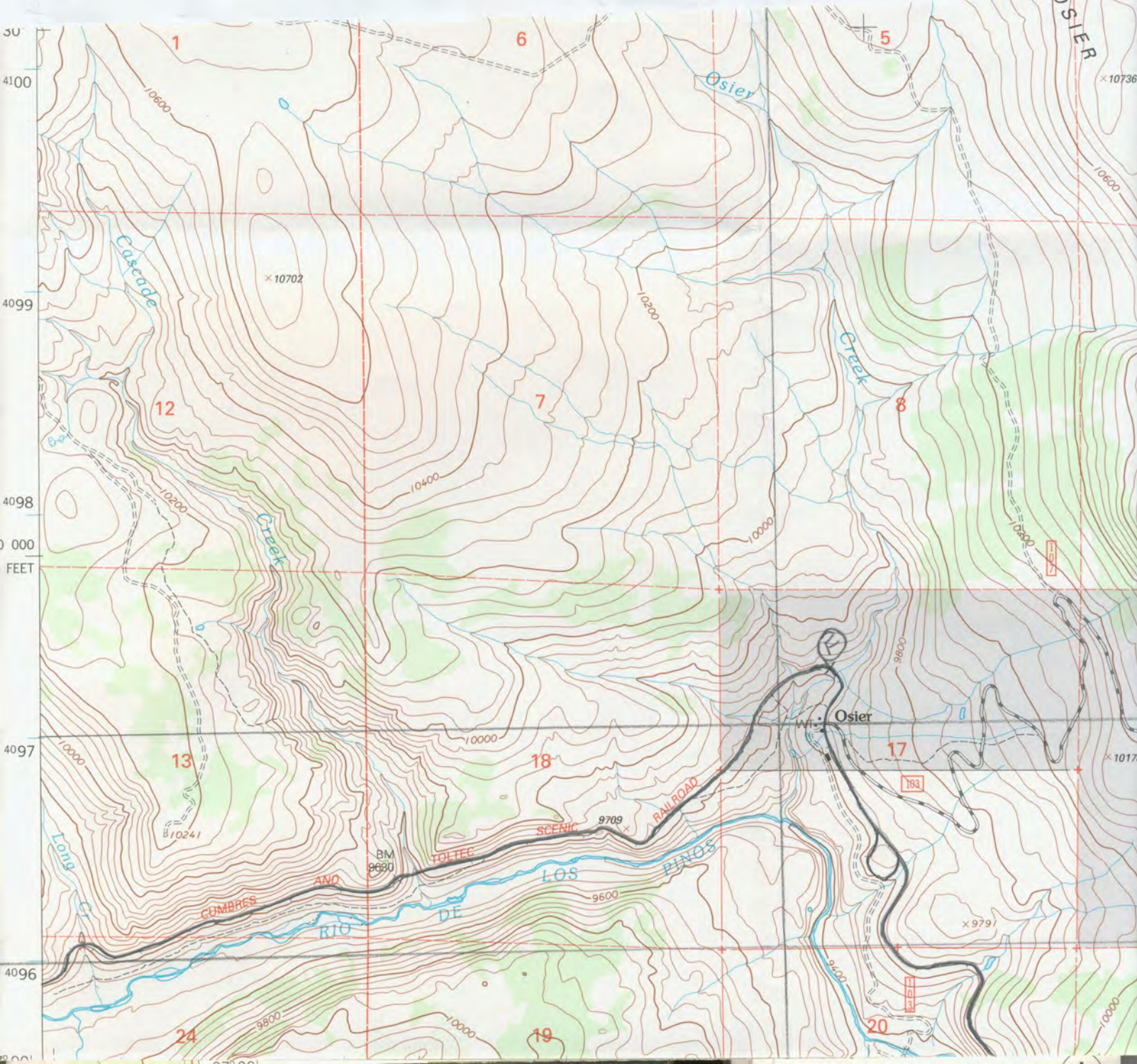


DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

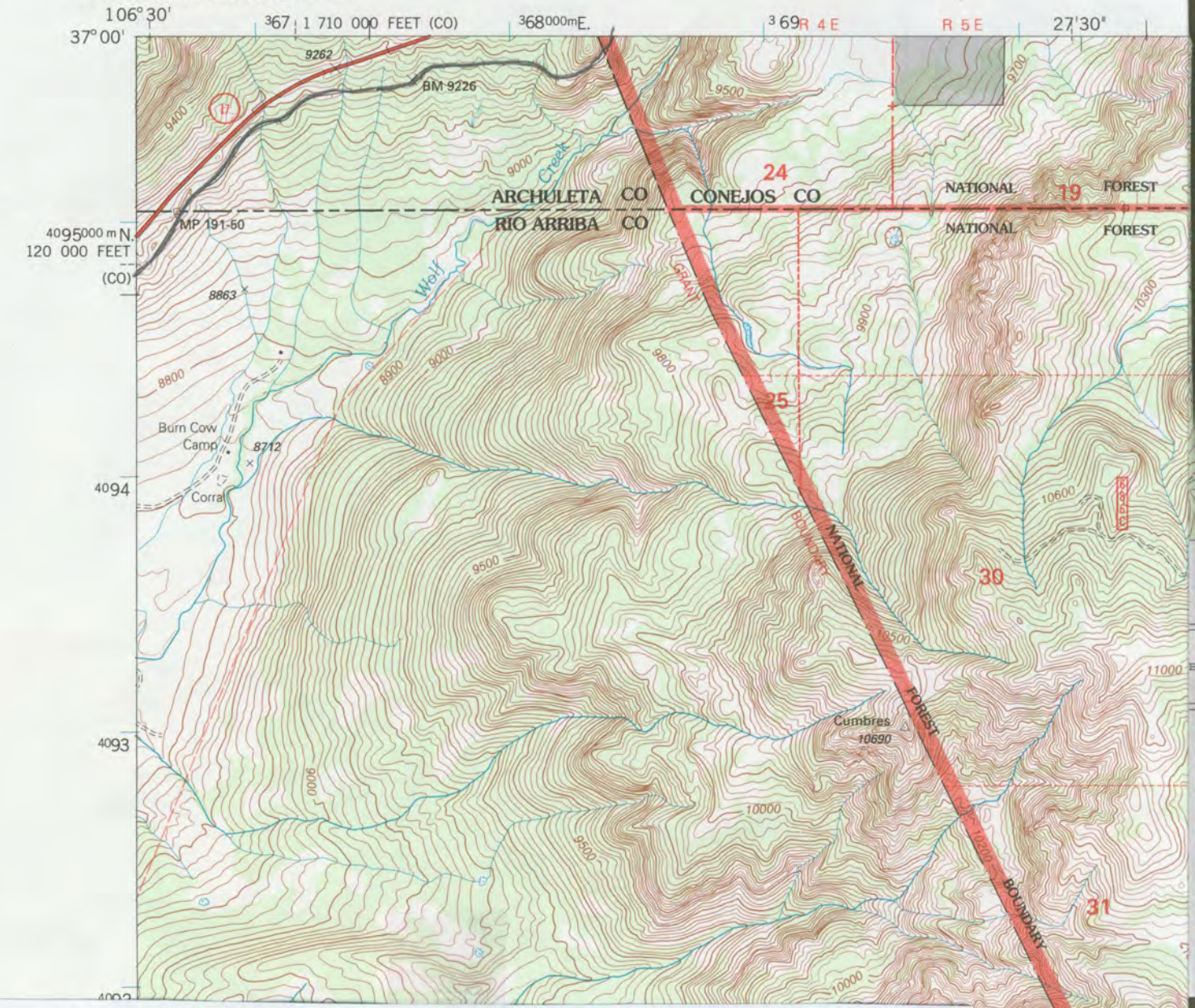


DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

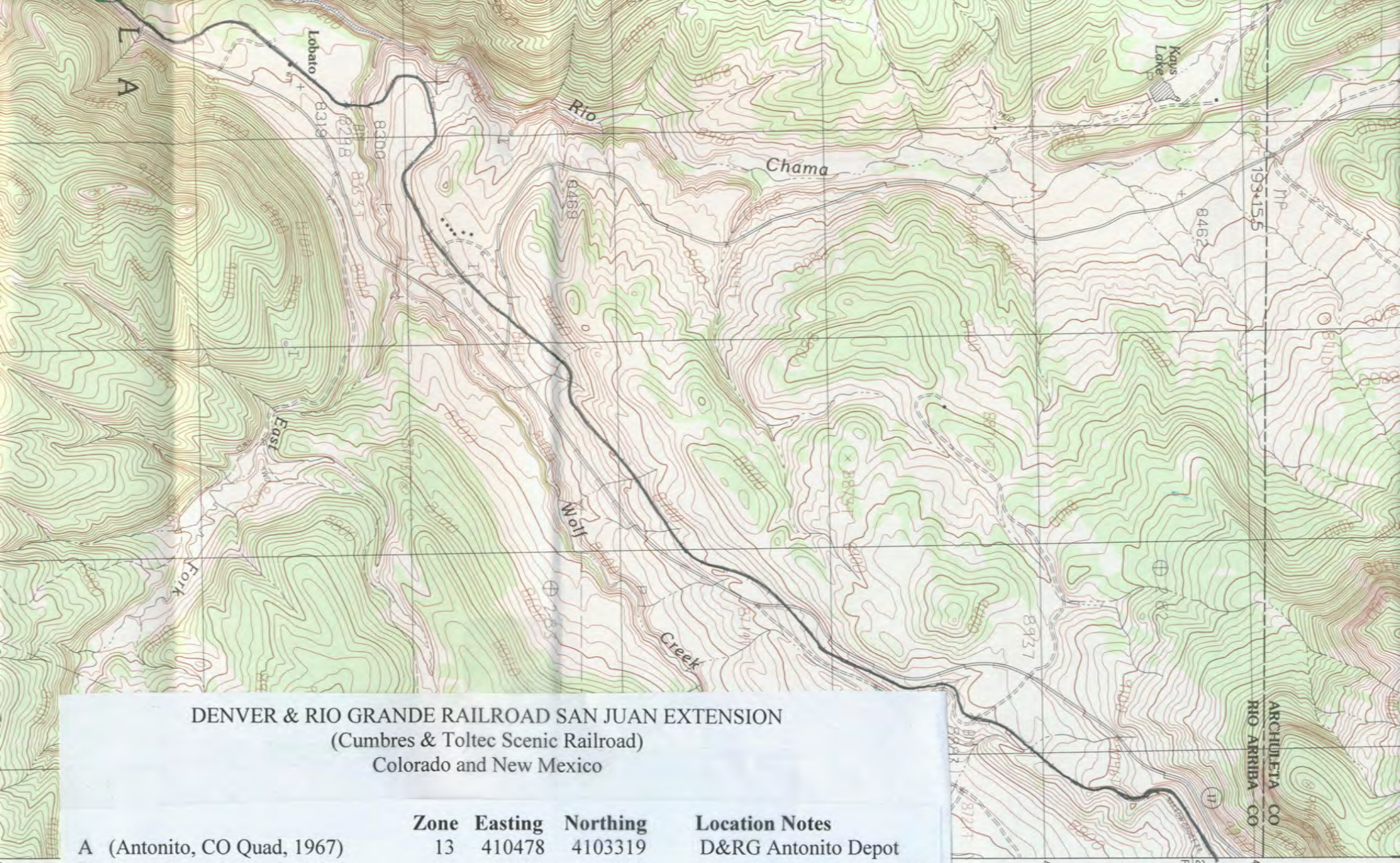
DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM



DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM



DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM

DENVER & RIO GRANDE RAILROAD SAN JUAN EXTENSION
(Cumbres & Toltec Scenic Railroad)
Colorado and New Mexico

		Zone	Easting	Northing	Location Notes
A	(Antonito, CO Quad, 1967)	13	410478	4103319	D&RG Antonito Depot
B	(Antonito, CO Quad, 1967)	13	409836	4103032	End of track, Antonito, CO
C	(Los Pinos, NM-CO Quad, 1995)	13	402962	4093144	Lava, NM
D	(Bighorn Peak, NM-CO Quad, 1995)	13	391580	4092420	Sublette vicinity, NM
E	(Osier, CO Quad, 2001)	13	384820	4096160	Osier vicinity, CO
F	(Osier, CO Quad, 2001)	13	381215	4097260	Osier, CO
G	(Cumbres, CO Quad, 2001)	13	374634	4100693	Los Pinos, CO
H	(Cumbres, CO Quad, 2001)	13	396500	4098140	Cumbres vicinity, CO
I	(Chama, NM-CO Quad, 1983)	13	358579	4084099	End of track, Chama, NM