

Friends of the Cumbres & Toltec Scenic Railroad

Proposed Projects for 1998

Table of Contents

Section	Project	Page
1	Introduction.....	2
2	Stock Cars.....	2
3	Short Refrigerator Car 55.....	3
4	Painting and Lettering.....	4
5	Long Refrigerator Cars 157, 163, and 169.....	4
6	Inspection Car MW02.....	5
7	Cook Car 053.....	6
8	Caboose 05635.....	7
9	Flat Cars 6200 and 6214.....	7
10	Wheel and Tie Car 06092.....	9
11	Railway Post Office Car 65.....	10
12	Rotary Snowplow OM.....	10
13	Miscellaneous Repairs to Freight Cars in Chama.....	11
14	Flat Car 6708.....	11
15	Pipe Gondola 9558.....	12
16	Short Caboose 0579.....	13
17	Miscellaneous Repairs to Freight Cars in Antonito.....	14
18	Display Locomotives in Antonito.....	15
19	Chama Stock Pens.....	15
20	Sand House.....	16
21	Night Watchman's House.....	17
22	Coal Tipple.....	17
23	Pole Barn near the Engine House in Chama.....	19
24	Cumbres Section House.....	19
25	Osier Section House and Station.....	20
26	Cut Trees along the Right of Way between Sublette and Rock Tunnel.....	21
27	Sublette Section House and Bunk Houses.....	21
28	Three-Rail Switch in Antonito.....	22
29	Paint Mileposts.....	22
30	Telegraph - Telephone Booths.....	23
31	Loading Dock of the Car Shop in Chama.....	23
Exhibits		

1. Introduction

The Friends of the C&TS RR plans to continue its historic preservation work in the summer of 1997 with three work sessions: June 15 through 19, June 22 through 26, and June 29 through July 2. The Friends is recognized by the Cumbres & Toltec Scenic Railroad Commission as the official historic preservation and interpretation entity for the property. The following projects have been approved by the Board of Directors of the Friends, the Operator, and the Commission for 1998. The references to photographs in this and previous submittals are being simplified. Instead of Exhibit A of the Friends' Proposed Projects for 1995, the photograph will be referred to as Exhibit 1995-A. Similarly, the exhibits accompanying this submittal are 1998-A, 1998-B, etc.

2. Stock Cars 5549, 5553, 5600, 5633, 5674, & 5841

Goal – Return the cars to sound and useable, historically accurate condition.

Condition – These double-deck sheep cars were purchased by the Friends in 1992. In 1993 dirt and manure was removed from the floors of three of the cars. At that time it was determined that all six cars needed new roofs and roof walks. Six of the twelve doors were so rotten that they could not be salvaged. None of the cars had complete hardware. In 1994, the dirt and manure was removed from the other three cars, and work was started on 5633. The entire roof was replaced with 1x6" tongue and groove boards to match the material removed and some stringers (purlins) that had dry rot and were considered unsafe were replaced with new 2x2" wood of the same dimension. All original grab irons were replaced in their original positions and one new door was installed. Exhibits 1995-C and 1995-D show a plywood patch on the roof of car 5633 before the 1994 work and the installation of the new roof on car 5633 during that work session.

In 1995, the roof walk was installed on 5633 and new roofs and roof walks were installed on stock cars 5841 and 5600. These roofs received at least two coats of paint. Exhibits 1996-B and 1996-C show hardware being fastened to a new door on car 5633 in 1995 and the roof walk being replaced on car 5841 after the new roof had been painted. In 1996 cars 5549, 5553, and 5674 received new roofs and roof walks. New purlins were required to replace rotten wood on 5549 and 5674, but the purlins on 5553 were sound and were not replaced. Similarly, the roof walks were all of new material for 5549 and 5674, but the old roof walk was sound on 5553 and the old wood was re-installed. Cars 5549 and 5674 received two new doors; car 5553 required only one new door as the other could be saved. At the end of the 1996 work sessions, most of the restoration of the wooden portions of all six sheep cars was complete.

In 1997, under the supervision of the Chief Mechanical Officer of the railroad, the mechanical restoration of these six cars was begun. The braking systems on cars 5600, 5633, and 5841 were refurbished: triple valve cleaned, brake cylinder repacked, and new brake shoes and new air line hose installed. Bottom rods, dead lever brackets, brake rods, train lines, angle cocks, and brake wheels were replaced if missing or unserviceable. The brake rigging was checked for completeness and satisfactory operation. The brake reservoir on 5841 was in very bad shape and was replaced with an identical unit from another car. Due to a shortage of lubrication pads, only six journals were packed. A bent queen post on 5841 had partially crushed the needle beam, so it was removed and straightened, and a reinforcing plate applied between the queen post and the needle beam. The associated truss rod was straightened and reapplied. Enough C3662 cast iron brake shoes were acquired to complete placing new shoes on the remaining cars in 1998.

Proposed Work for 1998 – In 1998, the mechanical restoration will continue under the supervision of the Chief Mechanical Officer of the railroad. In addition to brake work on 5674, 5549, and 5553, the center plates will have to be shimmed on 5553, 5674, and 5841 (A end). All the remaining journals will be repacked. The rotten end sill on 5633 will be replaced. All six cars will have their safety appliances, such as grab irons, checked and replaced or repaired as needed. In addition, as much work as possible will be done on the following items:

Car 5633 – replace broken journal box.

Car 5841 – replace wheel set with bad journal.

Car 5600 – replace wheel set with bad journal.

Car 5674 – replace broken journal box, straighten queen post, replace needle beam, stabilize or replace side sill, replace brake wheel.

Car 5549 – replace and shim side bearings, straighten brake rod, replace brake wheel.

Car 5553 – new brake rod (B end).

All this work will not be completed in 1998.

Approval – The restoration of the wooden portions of these cars was approved in 1993 and 1994. Mechanical restoration was approved in 1997.

3. Short Refrigerator Car 55

Goal – Return the car to sound and useable, historically accurate condition.

Condition – As reported in the Proposed Projects for 1994, this car was obtained after sitting on the ground for many years, and came without trucks or any underframe hardware. The lower six to nine inches of all the siding was rotten. In addition, the roof walk was rotten and the ice hatches were only partially present. Exhibit 1995-E shows the new side sill and horizontal bracing installed in 1994 to replace rotten wood. The end of the vertical truss rod was badly rusted, and had to be replaced as well. The siding that had to be removed for this work was replaced with new siding of the same dimension. Exhibit 1995-F shows one of the new needle beams under the car and ready to be bolted in place, also in 1994. Before the 1995 work session, weldments were procured to replace missing underbody parts, and during the 1995 work session the installation of these weldments commenced. In 1996 the body bolster weldments and bottom straps were temporarily placed in position. New queen posts were cast from a pattern made specifically for this project and installed on the needle beams. In 1997 the truss rods were installed and trucks of the correct design were placed under the car. The truss rods, and truck arch bars and spring seat castings were fabricated prior to the work session. The trucks used some parts, e.g., journals, wheelsets, and springs from the old trucks. The body bolsters that were temporarily installed last year had to be lowered and then reinstalled as part of the truss rod installation. The structural restoration of the car is now largely complete.

Proposed Work for 1998 – The Proposed Projects for 1994 contained a detailed proposal for restoration of the car which will not be repeated here. In 1998, work will again focus on restoring the underframe components. One truss rod will be removed, repaired, and reinstalled. The brake beams will be mounted on the trucks. Finally, couplers and draft gear will be installed. This may require fabrication of some metal parts if suitable parts cannot be found among the spare parts in the Chama yard. Steel weldments may be used in place of steel castings due to the much lower cost of weldments when only one or two pieces are required. The weldments will be part of the draft gear and will be out of sight unless one crawls under the car, or, in some cases, the draft gear is disassembled.

Approval – Approval for the use of steel weldments in place of iron castings was granted in 1995. General approval for restoration of the car was granted in prior years.

4. Painting and Lettering

Goal – Keep the cars painted in authentic colors and historically lettered.

Condition – Some of the cars have been painted recently by the Friends and are in good condition; others have not been painted in many years and some cars have no discernible number painted on the sides. Numerals used for displaying house numbers, which are made of a non-rusting metal, have been placed on the center sill of all the wooden frame cars to preserve the car number. These numbers are under the car up on the center sill and invisible unless one crawls under the car. The steel-frame cars have the number stenciled on the center sill. In 1997, two box car coaches, two cabooses, refrigerator car 157, six stock cars and three gondolas were painted. Eight cars were completely lettered in 1997 and numerous cars that had been almost completed in previous years were finished as well.

Proposed Work for 1998 – The cars to be painted in 1998 have not been selected yet. In 1996 we purchased new airless paint sprayers and adopted a policy of applying primer to all surfaces of every car painted. These two changes appears to have resulted in better paint application and adhesion. Further, the use of primer tinted to the final color eliminates difficulties in covering white primer. As before, for most types of cars, we plan to use the 1926, 1934, and 1939 lettering schemes. Some cars will be lettered in each scheme since, for most of the historical period of interest, cars with all three paint schemes would have been seen on the railroad. The 1934 scheme is similar to the 1926 scheme but has a slightly different herald. The “flying Rio Grande” scheme was adopted in 1939. For some of the oldest cars, such as box car 4444, an older scheme, D&RG, not D&RGW, appears to be appropriate.

Approval – Painting and lettering is regular maintenance.

5. Long Refrigerator Cars 157, 163, and 169

Goal – Return the cars to sound and useable, historically accurate condition.

Condition – These cars had not received attention for many years. Exhibits 1996-D, 1996-E, and 1996-F illustrate some of the problems with these cars, especially the sagging and decayed doors, deteriorating ice hatches, and rotten roof walks. In 1996, work was begun on car 157. The roof walks were replaced with new wood of similar dimension. The inner ice hatch doors were removed for rebuilding over the winter, and the outer ice hatch doors were temporarily secured over the ice hatches. Rotten fascia and siding on the left side of the car were replaced. The doors on the left side of the car were found to be too rotten to rebuild as shown in Exhibit 1997-A. New doors were built to the same design, complete with canvas seals. The left side door jam header was also found to be rotten and was replaced with new wood of identical dimension. All new wood was painted with primer. On the right side of the car, more serious problems were uncovered. In addition to a rotten door jam header, the car header was completely deteriorated over the doors and for some distance past them. A diagonal brace near the doors was rotten, and the outside main sill was badly deteriorated as shown in Exhibit 1997-B. In 1977 about 16 feet of header, 12 feet of sill, and the door jam header on the right side were replaced. Two uprights and three diagonal braces were replaced or repaired. Much of the siding on this side of the car was replaced, as was the fascia. New doors were built and installed on the right side, and new roof platforms were installed.

Proposed Work for 1998 – This year the Friends proposes to complete the restoration of 40-foot refrigerator car 157 by installing new inner and outer roof ice hatch doors. The exterior was painted in 1997 and will be lettered this year. Cars 163 and 169 will be carefully surveyed to determine the exact extent of the work necessary on these cars. It is already evident that several of the doors are sagging severely and need to be replaced or rebuilt.

Approval – Approval for the restoration of 157 was granted in 1996 and 1997.

6. Inspection Car MW02

Goal – Return the car to sound and useable, historically accurate condition.

Condition – The Friends began their restoration of this inspection vehicle in 1996. A builder's plate was found indicating that the car was built by Fairmont (Class A6Z36, Serial Number 146516). Fairmont was the largest supplier of "speeders", small track maintenance motor cars, for many years. The car is powered by a Ford flathead V-8 engine, a type of engine built roughly from 1932 to 1950. Exhibits 1996-G and 1996-H illustrate the initial condition of MW02.

The 1996 work involved the mechanical parts. All fluids were drained and replaced. A new battery and spark plugs were installed. The carburetor and fuel line were disassembled and cleaned. After these efforts, the engine started easily and ran well, but the compression was found to be low in one cylinder. The cooling system appeared to be barely adequate so the radiator was removed, cleaned out, and reinstalled. A pressurizing radiator cap was added and the cooling system was found to be much improved. An inspection of the wiring revealed that all the wires except those to the starter and ignition had been cut in several places, so the vehicle was re-wired (headlights, rear lights, windshield wipers, etc.). At the end of the work session, after the engine had run for some hours, all the cylinders were found to have compression between 85 and 94 psi (vs. 100 psi for a new engine).

In 1997 the engine started with no trouble after the oil and gas had been changed and the battery charged. To improve air flow through the radiator, a smaller fan pulley was installed to increase the fan speed and a fan shroud was installed to ensure that all the air that passed through the fan also passed through the radiator. A test run to Lobato indicated that these changes appeared to have solved the overheating problem. Rewiring of the electrical system was completed and the rebuilt horns were installed. The leaking left rear axle seal was replaced. The brakes were made fully functional by rebuilding the rear hydraulic brake cylinders and replacing the rear brake pads. Two red rear marker lights were installed and all the lights made operable. The entire body was sanded and dents were repaired. Both running boards and the front bumper were straightened. Many of the body panels had to be reattached or reinforced. The exterior was given a coat of primer paint.

Proposed Work for 1998 – In 1998 work will continue on the exterior and will start on the interior. The doors, which were rebuilt off-site during 1997, will be reinstalled. The windows in the doors have been made operable, with new glass replacing the broken glass and new window cranks replacing the missing ones. The exterior will receive another coat of primer and then a finish coat. The stencils on the exterior were copied before the car was sanded, and will be reapplied. In the interior, some wood panels must be replaced; the others will be sanded and refinished. Two of the seats will be reupholstered.

Approval – Approval for the basic engine and mechanical work was given in 1996. Approval for the restoration of the body was granted in 1997.

7. Cook Car 053

Goal – Return the car to sound and useable, historically accurate condition as a cook car for use in snow plow service.

Discussion – As there are two other ex-RPOs on the property, and both retain more of the RPO interior than 053, we do not propose to restore car 053 to RPO form. (The other two ex-RPOs, 54 and 65, were "long" (40-ft.) RPOs and were converted to company service relatively late.) There are six cars on the property that formerly were used in passenger trains and all six have been converted to company service. In addition to 053, 54, and 65, there are 0252, 0292, and 0452. We hope to restore both 54 and 65 as RPO cars eventually. We would like to restore 0252 and 0292 to chair car or par-

lor car configurations, and 0452 to its former condition as a business car. Were all these restorations to occur, then Car 053, if restored as a cook car, would be the only example on the C&TS RR of former passenger equipment converted by the railroad for maintenance of way use.

Condition – This car was originally built as a short (30-ft.) Railway Post Office (RPO) car and served for many years on the “Chile” line between Alamosa and Santa Fe. After use as an RPO, the car was converted for company service as a cook car; it was usually used to accompany rotary snow plow trains which might have to remain out on the line for several days. The car was probably converted to MofW use in the early 1940s, and so spent about 25 years, a substantial portion of its life, as a cook car. The car has a metal roof and so is not in as bad condition as the other three historic coaches (0452, 0252, and 0292). For many years this car had been painted green and lettered “T. P. R. R. No. 159” from use in a movie some years ago. The interior of 053 generally reflects its use as a cook car; little, if anything, remains of the RPO interior.

The end platforms of wood-frame passenger equipment rest on stub frames that are attached to the main structural frame of the car. This stub frame consists of two center sill extensions, two intermediate sill extensions, and an end sill. (There are no side sill extensions because of the stairways up to the end platform.) Since the platform is exposed to the weather, this method of construction allows the end platform to be replaced without disturbing the main structural frame of the car.

Exhibit 1996-I illustrates the deteriorated condition of the “B” end platform in 1995 and Exhibit 1997-C shows the condition of the “B” end sill extensions removed in 1996. When the metal parts were removed from the platform, the platform literally fell off the car. The condition of the platform structural members was much worse than thought, and there was not enough seasoned oak on hand to rebuild the end platform during the 1996 work sessions. Therefore, more oak was ordered and in 1997 the “B” end platform and stub frame, which had been disassembled in 1996, was rebuilt with new oak sill extensions and a new oak end beam. All the metal pieces, brake wheel, stairs, grab irons, etc.) were replaced in their original positions. Because siding work is planned for 1998, the steps were not reinstalled.

The roof of 053 is made of “tin” (galvanized steel) with lead beads between the sections. (The sections are approximately 16 inches square.) The end portions of the clerestory have deteriorated badly. The glass in the some of the clerestory windows is broken, and all the screens on these windows are beyond repair. The fascia to which the edge of the roof is nailed is badly decayed. The siding is in very bad shape. Dry rot is prevalent, and many boards are missing or warped. It is estimated that less than one third of the tongue and groove siding is sound. Due to previous repairs and modifications, the tongue and groove boards are of three different widths, with 4-inch and 5-inch most common. While the car does not have a noticeable sag, the condition of the frame could not be determined. Some of the window frames appear to be severely decayed. Exhibit 1996-I shows the condition of the siding and the fascia.

Proposed Work for 1998 – In 1998 the “A” end platform will be rebuilt similarly to the “B” end platform. White oak for the sill extensions and end beam has already been obtained. All the metal pieces, stairs, grab irons, etc.) will be replaced in the original positions. We also propose to begin the restoration of the exterior of the car. On the roof, we will reseal the joints with a fiber-based aluminum roof paint. The siding of the clerestory section will be removed to determine the condition of the frame members underneath, and then replaced. (Once this has been determined, the restoration of the clerestory windows and siding can be planned for 1999.) On the main body of the car, the siding and fascia will be removed to determine the condition of the main structural frame of the car and the window frames. (This will enable us to plan the extent of the work to be undertaken in 1999 in detail and order and season any wood required for frame repair.) When not undergoing restoration, this car is protected with a car cover (tarp).

Approval – Approval to replace the end platforms and make minor roof repairs was granted in 1996. Approval for window frame repairs, other exterior repairs such as clerestory restoration, siding and fascia replacement, and repairs to the structural frame (as required) was given in 1997. This work

will have no effect on the form to which the interior may be restored. A restoration plan for the interior of the car will be submitted when the exterior has been restored or the restoration of the exterior affects the form of the interior.

8. Caboose 05635

Goal – To improve the appearance of this caboose.

Condition – This caboose was built from stock car 5635 in 1976 so that the operator would have a caboose in addition to historic 0503 to offer in charter service. Since it was not a historic caboose, the interior could be made more comfortable than that in 0503. The car received siding on the inside of the truss frame structure, but not on the outside, resulting in a rather peculiar appearance.

Proposed Work for 1998 – In 1998 we proposed to assess the condition of the car and determine the feasibility of applying siding to the outside of the frame to give the car the outward appearance of a regular caboose.

Approval – This project will be purely an assessment and feasibility study.

9. Flat Cars 6200 and 6214

Goal – Restore two steel-and-wood-frame flat cars. After restoration, the Friends, under the supervision of the operator, will add removable sides and ends to them so that they can be used as observation cars.

Discussion – The observation cars are essentially gondolas with modifications made to allow passage into the car at each end. The observation cars are very popular with the riders and are usually full unless the weather is bad. Typically, there is one observation car at the end of each regularly scheduled tourist train when the train leaves Antonito or Chama. On the return trip the observation car is right behind the engine. That means the force to pull the entire train (about 300-350 tons) is transmitted through the observation car for half of each trip. In 1996 there were five observation cars, but only two were operable. All five of these cars were originally wood frame cars. These five cars are:

301 – Converted from flat car 6205 around 1970. It is currently operable and up to 1997 was usually used on the Antonito train. This car is from the same series as the two cars to be restored. Built with a wood frame in 1918, the frame was largely rebuilt with steel in 1937. The operator made major structural repairs to this car a few years ago.

1204 – Converted from wood-frame gondola 1204 in the mid-1980s and numbered 302 in past. This car was removed from use in 1991 because of bad end sills.

1557 – Converted from wood-frame pipe gon 1557 in 1982. The Friends placed a new floor in this car in 1993; unfortunately, the deteriorated condition of the sills was not fully appreciated at the time. The car was removed from service at the end of the 1996 season when the center sills were found to be on the verge of failing. This observation car was primarily used on charter trains for some years.

1648 – Converted from wood-frame pipe gon 1648 in the late 1970s. This car is currently operable and until recently was usually used on the Chama Train.

1746 – Converted from wood-frame gondola 1746 in the 1970s. It was retired about ten years ago as being “worn out.” The end sills are bad. The condition of the longitudinal sills is unknown.

Given the way the draft gear on the wood-frame gondolas is mounted below the frame sills, the continued use of these cars between the engine and the rest of the train may not be advisable even if all the wood in the frames of these cars were to be replaced with new wood. The option preferred by the operator, both for durability and safety, is to use only steel-frame cars in daily service.

In 1997 pipe gondolas 9613 and 9615 were refurbished and placed into service as observation cars. These cars were made from old standard gauge box cars in the 1950s by the D&RGW RR to haul pipe to the oil fields near Farmington. They have sturdy steel frames, the sides are boards attached to a steel framework. The Friends installed new wooden floors and repaired the wooden sides as required. The operator then closed off the ends of the cars with removable barriers that do not prohibit the cars from being returned to their pipe gondola configuration in the future. A removable metal ramp at each end in the center of the car allows passage to adjacent cars while the train is in motion. The operator also made repairs to the trucks and brakes before the cars were placed in service.

The operator requires additional steel-frame observation cars. There are no more pipe gondolas that are suitable candidates for conversion since the remaining five pipe gondolas all have wooden frames.

The D&RG RR built 20 wood-frame flat cars, 6200 - 6219, in 1918 (at a cost of \$601, each). At this date it was unusual to build new railroad cars with wooden frames. The capacity of the cars is variously given as 40,000 and 50,000 lbs. Three of these cars were transferred to work equipment in 1923; the remaining 17 flat cars were given new side bearings and had the body bolsters reinforced in 1926 (for \$61). Then in 1937, the 17 cars were rebuilt with steel underframes (for \$258). None of these 17 cars was retired until 1956; three of them survived to be passed on to the C&TS RR: 6200, 6205, and 6214. Flat car 6205 was converted into an observation car (301, as mentioned above) shortly after the C&TS began operation.

Flat cars 6200 and 6214 have both steel and wood in the frame, but the basic load-bearing structure is steel. The end sills are wood, but the coupler is mounted directly to the steel center sill. The wooden longitudinal sills appear to be there primarily so that there will be something to which the floor boards can be nailed. The body bolsters of car 6200 show evidence that vertical members had been crudely cut off with a torch and have "D&RG", not "D&RGW", molded into them. As the D&RG RR became the D&RGW RR in 1921, this would seem to indicate that the steel frames for these cars were fabricated in 1937 using structural parts from old standard gauge cars.

Condition – The condition of flat car 6200 is shown in Exhibit 1998-A. The wood end sill on 6214 is so badly decayed that the brake wheel has fallen off. All the wood in these cars is rotten and structurally unsound: the deck, the end sills, and the longitudinal sills. The steel parts have some superficial rust but are basically sound.

Proposed Work for 1998 – The Friends propose to restore cars 6200 and 6214 as flat cars. All the wood in these cars will be replaced with wood of similar type and dimension. Oak for the end sills has been obtained and is drying. Thirty-four-foot beams for the longitudinal sills are not available at a reasonable price; we will use 18-foot beams and splice them. (This was commonly done by the railroad during this period.) The splices will be reinforced with 0.375-inch steel plate. The other alternative for these sills was to use factory-constructed ("glue-lam") beams. Only the intermediate sills carry any weight at all.

Once these two cars are restored as flat cars, the Friends and the operator will add removable sides and end barriers to make them function as observation cars. Almost all flat cars come with stake pockets along the sides. The insertion of stakes into these pockets allows logs or pipes to be carried on flat cars. The narrow gauge gondolas on the C&TS RR are all basically constructed as flat cars, with the stake pockets used to hold the uprights to which the sides of the car are attached. Unlike box cars, the sides of these narrow-gauge gondolas do not contribute to the strength of the car. Thus, placing sides on a flat car to make an observation car is similar to the way a regular gondola is constructed. The sides will primarily be held in place by vertical members placed in the stake pockets. However, since people will be the primary cargo, interior braces will be added to increase the rigidity of the sides. There will be four or five braces on each side. Each brace will be fastened to the frame by bolts that will pass through the brace, the floor, and the sill beneath. One bolt will pass through the combination wood and steel outer sill, and another through the wood intermediate sill. Were these cars to have the sides and ends removed to return them to their flat car configuration, these holes would be noticeable in the floor boards. However, these few floor boards could then easily be replaced. The end barriers will be similar to those on 9613 and 9615. A removable

metal ramp at each end in the center of the car will allow passage to adjacent cars while the train is in motion. The operator will also repair the trucks and brake systems as required.

This work is being done as part of a cooperative program with the Western Museum of Mining and Industry (WMMI) in Colorado Springs, where an enclosed work space is available. This program has been approved by the Railroad Commission and the Operator. Car 6200 was moved to WMMI last autumn and has had all the wood removed. None of it was sound enough to be retained. When 6200 is restored as a flat car, it will be returned to Chama and 6214 moved to WMMI. Car 6200 will have sides and ends installed in Chama this summer under the supervision of the Chief Mechanical Officer of the railroad. Car 6214 should be restored as a flat car late in 1998 and will have sides and ends installed in Chama in the summer of 1999.

Approval – This project requires approval. The operator has need of more sturdy observation cars. 6200 and 6214 will be restored completely to their 1937 configuration before any functional additions are made. These additions will be completely removable. No trace of these additions will evident after removal if the floor boards with bolt holes are replaced. No part of the restored flat cars will be removed in order to make them function as observation cars.

10. Wheel and Tie Car 06092

Goal – Return this car to sound and useable, historically accurate condition.

Discussion – The Historical Preservation Study (p. 71) states that flat cars 06008, 06051, 06063, and 06092 were built in 1887 and were converted to company service well before 1923. They have wooden frames and are among the oldest cars on the C&TS RR to survive in relatively unmodified condition. Cars 06008 and 06063 are the idler flats for the pile driver OB and the derrick OP, respectively. These two cars remain basic flat cars. Car 06051 is known as the rail and tie car; Car 06092 is known as the wheel and tie car. These two cars have structures on top of the deck to make them more useful in maintenance of way and wreck service. These structures are held in place by vertical members inserted into the stake pockets on each side of the car.

Condition – Car 06092 is a wood-frame flat car with a wooden bin on one end to hold ties and rails fixed to the deck on the other end to allow trucks or individual wheelsets (an axle with wheels on each end) to be carried (see Exhibit 1997-L). The deck is in bad condition and at least one sill appears to be broken. The car appears to have had no maintenance for at least 30 years.

Proposed Work for 1998 – We propose to remove enough of the deck, which may be all of it, to determine the condition of the longitudinal sills. It may be necessary to remove the tie bin to do this. As shown in Exhibit 1997-L, this bin is supported by vertical members which fit into the stake pockets on the outside of the car. Our investigation this year will allow us to order and season the wood necessary to make structural repairs in 1999.

Approval – This project was approved in 1997. The work proposed for 1998 was planned for 1997 but could not be started due to the need to complete other projects.

11. Railway Post Office Car 65

Goal – To restore this car to historically accurate condition as an RPO car.

Condition – The two 40-foot RPO cars, 54 and 65, were used in daily service on the Alamosa - Durango run until the Post Office moved the mail service to trucks in 1951. These cars were then converted to company service and the mail-handling interiors removed. For a number of years after the formation of the C&TS RR, both cars were used on opening day as railway post offices. However, RPO 65 has become structurally unsound and even this limited service had to be termi-

nated. In addition, the roof appears to be leaking. It appears prudent to fix the roof before embarking on structural repairs.

Proposed Work for 1998 – In 1998 it is proposed to remove as much of the roof as required to determine the extent of the repairs required. The car will be covered with temporary materials and a tarp for the winter. The roof will be repaired in 1999. As it may be some years before the sides of the car can be restored, we plan to paint the car as well. This work is being done in conjunction with the National Rocky Mountain Narrow Gauge RR Museum of Chama.

Approval – This project requires approval.

12. Rotary Snowplow OM

Goal – Make minor repairs and apply paint to rotary snowplow OM to give it a more satisfactory appearance and decrease its rate of deterioration.

Condition – This plow is now over 100 years old. Because it is smaller and less capable than the newer rotary snowplow OY, and because it requires considerable boiler work, this plow has not been used in many years. Further, the boiler is still insulated with asbestos. The entire boiler is enclosed within a cabin consisting of a wooden truss structure, siding, and a roof. The upper sills of the truss are badly decayed. The repairs to the wooden cabin appear to be more extensive than the Friends can complete in a summer and there is no covered work space where the plow can be left until the work is finished. Further, if the roof and siding are removed for repairs to the truss structure, the asbestos should be removed at the same time. Due to these complications, a thorough restoration can not be accomplished at this time. The tender is largely steel, but has a sloped wooden roof over the coal bin.

Proposed Work for 1998 – We plan to make minor repairs to the siding, roof, and windows of the plow and to the roof on the tender. We also plan to paint both plow and tender.

Approval – This project requires approval.

13. Miscellaneous Repairs to Freight Cars in Chama

Goal – Make minor repairs and finish up some repairs not completed in previous years.

Condition – A number of freight and company service cars have minor items that need to be fixed or completed. For example, some of the cars the Friends use for storage are missing their roof walks. Other cars have missing or loose grab irons, hand rails, and stirrups. The operator has indicated that it would be appreciated if we could fix some of these items on the cars that are used on special trains.

Proposed Work for 1998 – We plan to install the missing roof walks on the cars used by the Friends, and to replace or make more secure items such as grab irons, hand rails, and stirrups on cars identified by the operator. Also, various small trim pieces on several cars that could not be installed in previous years will be installed and painted.

Approval – This project was approved in 1997.

14. Flat Car 6708

Goal – Rebuild one wood-frame flat car from the frame up, so that it will last for some decades.

Discussion – There are eighteen flat cars on the C&TS RR, not including company service cars in the 06000 series (discussed above) and observation car 301 (made from flat car 6205, as mentioned previously). The eighteen flat cars may be categorized as follows:

5 steel-frame cars (6601, 6613, 6618, 6627, 6649),

3 wood-and-steel-frame cars (6200, 6214, 6314), and

10 wood-frame idler flats (1001, 1033, 1515, 1567, 9533, 9557, 9569, 6708, 6746, 6755).

The only wood-frame flat cars on the C&TS RR that were built originally as flat cars are those in the 06000 series. Of the steel-frame flat cars, 6618 has a bent frame and has been off its trucks for years. 6613 was converted to an observation car by the operator in 1997. The sides are supported primarily by vertical members in the stake pockets. The remaining three steel-frame cars are useful as flat cars; their frames are unquestionably sound. Cars 6200 and 6214 have been discussed above; car 6314 is similar.

The idler flats were made in the 1950s to place between gondolas without ends in order to carry 50-foot pipe to Farmington for use in the oil fields. Six of the first seven idler flats listed above were made from gondolas by removing the sides and ends (Historical Preservation Study, p.134). Presumably 1567 was also made from a gondola. Four of these cars have old rails clamped along the tops of the side sills for added strength.

In 1955, 25 thirty-foot stock cars were converted to idler flats 6700-6724 by removing everything above the deck. Stock car 5533 was converted to idler flat 6708. Cars 6746 and 6755 appear to have been converted from stock or box cars later. All three of these cars have rails fastened under the side sills for increased strength. As the truss frame in a box or stock car adds considerable structural strength, the rails may have been added to compensate for this loss.

Idler flats 1033, 1515, and 6708 are in the worst condition. We propose to rebuild 6708 first. By rebuilding the cars in the poorest condition first, the idler flat cars with original wood will be preserved as long as possible. We are keeping the flat cars in best condition painted and their decks waterproofed, but deterioration of the frames is already advanced.

Condition – The wooden frames of the ten idler flat cars have been exposed to rain and snow for at least 40 years, and perhaps more than 70 years if they were converted from stock cars.. In general, the frames are rotten or broken so that these cars are more-or-less unusable. Exhibits 1997-M, 1997-N, and 1997-O show cars 1033; 1515, and 6708. The sills of 6708 are shown in 1993 when the deck was removed for the installation of a new deck. Unfortunately, the extent of the decay in the sills of 6708 was not fully recognized at the time, and the repairs made to the sills then were not sufficient to make the car structurally sound. In 1997 flat car 6708 was moved to Antonito where it was partially disassembled. Exhibit 1998-B shows the condition of the frame of 6708 at that time. Some of the frame members were so badly decayed that the wood could be scooped out by hand. All the wood, except the needle beams, is so rotten it will have to be replaced.

Ample evidence of 6708's stock car origin was found when the car was disassembled: e.g., black paint chips, holes where the door guides were attached, and holes where the side truss rods were attached. In the process of converting the stock car to a flat car, the ends of the needle beams were sawed off to allow 30-foot sections of rail to be clamped under the side sills. Thus, the entire side sill is supported by the body bolsters alone as the needle beams no longer reach to the side sills.

Proposed Work for 1998 – We propose to rebuild 6708 with all new wood except for the needle beams. The end sills are oak and will be replaced with oak. The outer sills and intermediate sills are fir and will be replaced with fir or pine. These sills are one piece of wood. It does not appear economically feasible to get 30-foot 5x9-inch beams for the outer sills or 30-foot 4x7-inch beams for the intermediate sills. We will either have to splice these sills or use constructed ("glue-lam") beams for these sills. The center sills were made from three pieces of wood with reinforced scarf joints. The outer pieces are oak and the center piece is fir. The reinforcing pieces were 2-inch-thick pieces of oak. The new center sills will be built in the same way using the same types of wood. The steel rails will be reinstalled under the outer sills. All steel parts will be replaced in their original positions. The

major parts can all be reused, but the nuts and bolts are generally too rusty to be reused and will be replaced with new hardware of the same dimension.

Approval – This project was approved in 1997.

15. Pipe Gondola 9558

Goal – Rebuild one wood-frame pipe gondola from the frame up, so that it will survive for decades.

Discussion – There are 26 gondolas on the C&TS RR. All have wood frames and were built prior to 1904 (Historical Preservation Study, p.74). They may be categorized as follows:

- 16 unmodified gondolas (all but one of the following: 1000, 1039, 1059, 1082, 1149, 1159, 1232, 1268, 1343, 1357, 1456, 1534, 1610, 1667, 1733, 9249, 9378),
- 1 gondola modified for use as an observation car by the operator in 1997 (one of above),
- 4 gondolas modified for use as observation cars by the operator in the 1970s and 1980s (1204, 1557, 1648, 1746), and
- 5 gondolas that had the ends removed for pipe service in the 1950s (1145, 1246, 1839, 9213, 9558).

The four gondolas made into observation cars years ago have been discussed above. As described there, gondolas are primarily flat cars with sides and ends placed on top of the deck and held in place by vertical members inserted into the stake pockets on the sides of the cars. The five pipe gondola were made from regular gondolas in the 1950s by removing the ends so that steel pipe longer than the length of the car could be transported.

The frames of these gondolas have been exposed to the weather for over 90 years. There are about 60 open cars (flat cars, gondolas, and drop-bottom gondolas) on the C&TS RR. As long as these cars are stored outside, it seems clear that in 30 to 50 years none of them will be serviceable. Indeed, none of them may even be in existence. Storage of even a small fraction of these cars inside does not appear feasible in the foreseeable future. Therefore, the Friends propose to begin a project of completely rebuilding two examples of each type of open car (flat cars, regular gondolas, pipe gondolas, and drop-bottom gondolas). If each car takes three years to complete, the eight rebuilt cars will be completed around 2020. These cars will have little or no original wood, but they may survive to 2050 or 2075, or even 2100, when the cars with original wood will all have decayed away. Gondola 9558 is one of the gondolas in the worst condition. The rebuilding of 9558 will not affect the wood-frame gondolas in the best condition. If nothing is done, 9558 will probably have to be dismantled in the next 20 years anyway. The Friends is keeping the gondolas in best condition painted and their decks waterproofed, but the existing deterioration of the frames cannot be reversed.

Condition – Pipe gondola 9558 has sills that are in very bad condition. In addition, 9558 is one of the few car on the C&TS that retains the original wooden coupler pockets. Most of the older cars had these original features replaced with steel coupler pockets at various times when they received major repairs. Exhibit 1998-C shows the general condition of car 9558.

Proposed Work for 1998 – We propose to rebuild 9558 from the frame up. The goal is to make one structurally sound wood-frame pipe gondola that will last for some decades. We will reuse whatever wooden structural members are salvageable, but it is not clear that any main structural members will be in good enough condition to be reused. Thus, the frame of 9558 may consist of entirely new wood at the end of this project. The new wood will be as close to the frame members removed in type and dimension as it is practical to obtain. The sides of the car are less affected by standing water than the frame and floor, and it may be possible to retain much of the wood in the sides. Single timbers of the cross-section and length required for the longitudinal sills are becoming very difficult and expensive to obtain. We may be forced to use factory-constructed (“glue-lam”) beams for some of these sills. Oak in the sizes required for the end sills can still be obtained.

Approval – This project requires approval.

16. Short Caboose 0579

Goal – A complete restoration of the caboose, at the end of which it will be in condition to serve on the railroad and will be historically accurate insofar as possible.

Condition – This car is the only example of a short caboose on the C&TS RR; the other historic caboose, 0503, is a long caboose. Caboose 0579 has been on display in Antonito for decades. It was originally a standard D&RGW short caboose similar to caboose 0578 which has been preserved (and recently rebuilt) at the Colorado Railroad Museum in Golden. No number had been evident on this car for many years, but 0579 was found on each end over the doors in 1996 by sanding away many layers of paint. Caboose 0579 appears to have been retired after it was used in a train that was deliberately wrecked in 1951 for the filming of the movie “Denver and Rio Grande.” The damage to the car is consistent with this wreck. Further, the sanding of the paint revealed a layer of green paint. This substantiates its use in the movie since the D&RGW RR is not known to have ever painted a caboose green for normal service.

The body of 0579 was donated to the C&TS RR around 1970. About that time, the siding on both sides (but not the ends) was replaced with historically incorrect material and the steps on each end were replaced with “porches” to facilitate its use as a “tourist information booth.” Exhibit 1997-K showed the appearance of caboose 0579 several years ago.

Very little remains of the original interior, and much of the exterior hardware, e.g., steps, ladders, and grab irons, is missing. The end sills, needle beams, queens posts, truss rods, coupler pockets, couplers, brake wheels, and all the other brake components are missing. The center sills appear to be intact but have a lapped splice in the center. The splice seems to be original, i.e., not done as part of a repair. One side sill is missing for 4 feet and one intermediate sill is damaged at both ends. The tenons on the ends of the longitudinal sills which fit into the end sills have been cut off. Two vertical body truss rods are damaged. Most or all of the windows are not original; and most of the trim and fascia is not original or missing. Two lower brackets on the bolsters have been cut. One can be repaired by welding, but the other will have to be replaced.

In 1997 the car was moved from a location near the entrance to the Antonito yard, where it had been resting on a pair of old freight car trucks for many years, to the end of the repair track where it is now resting on two bridge timbers. The floor was removed to allow a complete assessment of the condition of the frame.

Proposed Work for 1998 – This year we propose to restore the frame of the car. Splices of 4”x8” fir approximately 5’ long will be required in one intermediate sill and one outer sill. The center sills will be reinforced with 0.375” steel plate, as was done to 0503 by the operator recently to increase its structural strength. Steel plate will also be used to “box in” the ends of the sills. As the tenons on the longitudinal sills have been sawn off, bolting the end sills to these steel plates seems to be the only way to regain the structural strength of the car. This steel reinforcement of the frame will allow the car to be used safely in normal operations on the railroad and make it less likely to be damaged in switching. The steel will be up underneath the car and invisible to the public eye.

New end sills and needle beams will be installed. Coupler pockets, truss rods, queens posts, brake parts, and other missing metal parts will be obtained from a burned 3000-series box car obtained by the Friends a few years ago strictly for its trucks and other metal parts. This car will be dismantled in 1998 to obtain these parts. Parts required for 0579 that are unobtainable elsewhere may have to be taken from flat cars 1033 and 1515.

Also, we plan to replace the historically incorrect plywood roof with tongue and groove boards covered with fabric and a coating similar to Inducril. (Inducril simulated the original tar coating, but lasted much longer. Unfortunately Inducril is no longer available.) This is the type of roof on cabooses 0503 and 0578. The roof does not appear to leak now, but the cupola is sagging, so some structural repairs may be required. The roof is some decades old. A new roof will protect the new

siding and interior we hope to install in future years. It is believed that any necessary structural work can be done without disturbing the roof.

Approval – This project was approved in 1997.

17. Miscellaneous Repairs to Freight Cars in Antonito

Goal – Return the cars to sound and useable, historically accurate condition.

Condition – A number of repairs in previous years left bits of trim and small items unfinished. Otherwise, these cars are in good condition.

Proposed Work for 1998 – This year the Friends proposes to finish up a number of small items on these cars. For example, several of the cars need roof walks. The doors on some of the cars do not close completely, and work on the rollers and latches is required.

Approval – This project requires approval.

18. Display Locomotives in Antonito

Goal – Improve the appearance of the display locomotives in Antonito so that they appear historically correct and have all their major parts.

Condition – Locomotives 494 and 495 have been on display in Antonito for many years. The paint has deteriorated, and many parts, such as side rods, have been removed for use on other locomotives. The locomotives do not make good displays when many major parts are missing since it is then impossible to understand how the locomotive functioned. Further, the boiler jackets that were placed on these locomotives after the old asbestos boiler insulation was removed a few years ago are not historically correct in some details.

Proposed Work for 1998 – We plan to paint and letter these two locomotives. The boiler jackets on 492 and 497 will be examined to determine how the boiler jackets on 494 and 495 should be modified to more closely approximate the original jackets. It may not be possible to complete the boiler jacket work this year. The locomotives will be surveyed to determine the missing parts and the locomotive facilities at Antonito and Chama searched to find as many of these parts as possible. After consultation with the Operator and the Chief Mechanical Operator, a plan will be devised to replace as many parts as may be feasible.

Approval – This project requires approval. Painting and lettering is regular maintenance. The boiler jacket modification and parts replacement will make the locomotives closer to their original appearance.

19. Chama Stock Pens

Goal – Return the pens to sound and useable condition.

Condition – The Friends have worked on the stock pens for since 1993, but much remains to be done. Some parts of the loading ramps and gates at the north end of the pens were refurbished during 1993, 1994, and 1995, but most of the pens still have many rotten boards and posts. Exhibits 1994-A and 1994-B show the general condition of the pens before restoration commenced. Exhibits 1995-A and 1995-B show the work done on the north chute and walkway in 1994. Exhibit 1996-A illustrates the new floor and chute sides installed on the middle chute in 1995. In 1996 work continued on the north and middle chutes, which are combination sheep and cattle chutes. The north and middle chutes are essentially completely restored now, and the two holding pens leading to the north

chutes have been restored as well. The two holding pens leading to the middle chute are useable, but not completely restored. Work began on the south chute in 1996; this chute is configured for cattle only. A short stock train was spotted at the pens in 1996 and the north and middle chutes, gates, and ramps lined up, both vertically and horizontally, so that sheep could have been loaded onto the cars from both levels at the two chutes had any been available. Due to the press of other projects in 1997, only the walkways along the south (cattle) chute were rebuilt last summer.

Proposed Work for 1998 – The focus in 1998 will be on finishing up some railings and miscellaneous items on the middle chutes, completing the south chute, and starting on the truck chutes and the holding pens behind the chute holding pens. Posts that are rotten at ground level or below will be replaced with new posts, or sound used posts, of the same size. All useable boards will be railed in place, and rotten boards will be replaced with new rough-sawn lumber of the original dimensions. This project will not be completed for some years as the pens are a large complex.

Approval – This project was approved in 1992.

20. Sand House

Goal – Return the building to sound condition, with the exterior historically accurate.

Condition – The sand house is located in the Chama yard adjacent to the coal tipple. It contains a coal stove used to dry sand, bins for storing sand, and an air propulsion system for moving the dry sand to a sand storage bin on top of a tower. From this bin the sand flows by gravity to the locomotives. The sand is carried on top of the boilers of the locomotives and is fed by gravity to the rails under the drive wheels to increase traction when the rails are wet or greasy. The sand will not flow if wet, thus the need to dry it before loading it on the locomotives. South of the Sand House is a bin for storing sand prior to drying.

The sand tower is supported by four legs; two rest on the ground and two rest on the roof of the sand house. In 1996 much of the sand tower structure was badly decayed, and the tower could be seen to sway in the wind. The roof of the Sand House had not been reinforced under the tower legs to support the additional weight; the rafters were broken and the roof had been leaking in this area for some years. Additional rafters had broken also, presumably under the snow load. Exhibit 1997-E shows the interior of the sand house in 1996; sisters on the rafters and water stains on the decking are clearly evident. Exhibit 1997-D of the Friends' Proposed Projects for 1997 shows the exterior of the Sand House in 1996. Many of the boards and battens were warped, decayed, or missing. The building looked as if it had never been painted. The doors were in poor condition. The roof was gray asphalt roll roofing, applied horizontally.

In 1997 the sand house was repaired and the sand tower was rebuilt. Sisters were added to all the sand house roof rafters to strengthen and straighten the roof. In addition, joists were added to tie the walls together and form a truss to support the weight of the rear legs of the sand tower. The old roof material was removed down to the decking, which was patched and covered with half-inch plywood for additional strength. The original metal roof edge was reapplied, and then the roof of felt and 90-lb. roll roofing was installed. Finally, the metal roof ventilators and chimney were reinstalled. Siding boards that were rotten near the ground were cut off and new boards spliced in at the bottom. New battens were installed where the battens were rotten or missing. The doors were straightened and rehung. The surmise that the building had originally been painted yellow was not verified upon close inspection. Although very little paint was left, it appears the building had been painted box car red. Thus, the building was given a coat of primer paint and a finish coat of paint in this color.

The sand tower was also rebuilt. The main tower legs, which rested directly on the ground, were rotten below ground level but sound above ground level. They were supported by jacks while they were cut off just above ground level and bolted to quarter-inch steel plates supported by a new three-foot-deep concrete footing. The rear legs were found to be too rotten to be retained, so they were replaced with new wood of similar dimension. Metal flashing was made to fit around these

legs where they joined the roof to prevent water leakage. The tower braces were retained if sound and replaced if rotten.

Proposed Work for 1998 – A few minor trim items remain to be completed in 1998. And a second coat of paint will be applied.

Approval – Approval for repair and rebuilding of the sand house and tower was granted in 1997.

21. Night Watchman's House

Goal – Return the building to sound condition, with the exterior historically accurate insofar as possible.

Condition – This building, made from an old refrigerator car, served as the residence for the night watchman. It is located just south of the oil house in the Chama yard. The interior is divided into three rooms: a bedroom, a kitchen, and a bathroom. The operator had stored records in this building for some years. The appearance of this building in 1996 is shown in Exhibit 1997-F. The interior walls and ceiling are 1x6s; the boards run horizontally on the walls. The exterior walls are standard freight car tongue and groove, except the gable ends, which are vertical 1x6s with no battens covering the joints. The roof is green roll roofing applied vertically over the ridge. The roof appears to be sound.

In 1997 the Friends repaired the night watchman's house so that volunteers could stay in it during work sessions. The siding was patched as needed, all loose boards were renailed, and battens were installed on the gable ends to replace missing boards. A skirt of rough 1 x12 boards was placed around the base of the building, and all joints were caulked. A new chimney was installed. Damaged interior siding and missing molding were replaced, and a new floor was placed over the original linoleum, which was badly worn. The kitchen and bathroom counters were remodeled, and a new gas water heater was installed. The interior was painted white. During preparation for painting the exterior, it was determined that the building had retained its refrigerator color scheme and herald while in use as a residence. Therefore, the building was painted yellow with box car red ends.

Proposed Work for 1998 – A few minor trim items remain to be completed in 1998. The herald will be reapplied.

Approval – Approval for repair and rebuilding of the night watchman's house was granted in 1997.

22. Coal Tipple

Goal – To restore the coal tipple to historic and operating condition. By painting and color-coding to match interpretative signs, we plan to create a display of how this important element of a railroad yard operated.

Discussion – A coal tipple or coal loading tower allowed coal to be loaded quickly into the tender of a steam engine by gravity. This was much faster and less labor-intensive than shoveling the coal into the tender by hand. A bin located above the top of the tender holds enough coal to load a number of tenders. Some mechanical means is provided to lift coal into this bin. The coal tipple in Chama is the only surviving coal tipple on the D&RGW RR. It is one of very few extant railroad coal tipples in the country.

The present coal tipple in Chama was built in 1924 (Historic Preservation Study, pp. 46-49). It replaced an earlier trestle (built 1902). While the coaling trestle had bins from which the tenders could be loaded by gravity, the capacity of the bins or pockets was small and the bins had to be loaded by shoveling the coal by hand into the bins from the gondolas on the trestle. Prior 1902, coal was just shoveled by hand from a bin or platform up into the tenders. The deteriorating coal platform at Osier is an example of this type of primitive coaling facility.

In the coal tipple at Chama, drop-bottom cars containing coal are first run up an incline to above-ground-level. From there, when the drop-doors are opened the coal falls into a pit below ground-level. From this pit, two buckets or skips take the coal to the top of the two bins or bunkers and empty the coal into the bins. The two buckets are connected so that as one ascends, the other descends. The two buckets counter-balance each other, so only the weight of the coal need be raised on each trip. The hoist machinery may be powered by either an electric motor (GE, 10 hp.) or a diesel engine (Fairbanks Morse, Type Y).

The incline and hoisting system is located on the SE side of the tipple. The loading track is on the NW side. A chute from each coal bin may be lowered to guide the coal into the tender of a loco-

tive on this track. A door at the bottom of the bin is opened to allow the coal to flow from the bin into the tender.

The coal tippie has not been used in decades. When the connecting lines were severed in 1968, it was no longer possible to bring in coal by rail. A modern industrial tractor with a bucket loader makes it easier for the operator to load coal into the tenders than it would be to transfer the coal to a gondola and then use the coal tippie. However, sometime in the future it may be possible to rebuild the incline so that the coal trucks, as well as railway cars, could unload directly into the pits of the coal tippie.

Condition – The coal tippie is believed to be basically sound and operable. However, it is not plumb and leans to the northwest; the departure from vertical may be about 5°. There is no evidence of a concrete foundation. Like the sand tower, the coal tippie may rest on buried wooden mud sills. Exhibit 1998-D shows the coal tippie, the exterior of the hoist house, and the diesel.

Proposed Work for 1998 – The first task is a general cleaning of the interior of the hoist house. The walls are bare wood; they will be given a coat of linseed oil to help preserve them. The floor appears to be dirt, but there may be concrete below the dirt. If so, the dirt above the concrete will be removed. Main structural timbers, catwalks, railings etc. will be painted. Modern lighting will be installed so that the interesting features, e.g., the diesel engine and the hoist machinery, will be easily visible. The diesel engine will be cleaned up and placed in operating condition. All that appears to be required is a tune-up and replacement of lubricants and coolants. The electric motor and hoist machinery will also be cleaned and lubricated. Various elements of the diesel motor, electric motor, and hoist machinery will be painted various colors to aid in interpretation. The rehabilitation of the exterior of the hoist house will include caulking, repairing windows and doors, fixing any leaks in the roof, and painting in the historic color. The exterior features of the tippie will be repaired as necessary. These include the dewatering sumps, the bunker doors, the loading chutes, and the mechanism that is used to raise and lower the chutes. The headworks will be inspected and lubricated.

The interpretative signs could be of two types. If the signs are to be used with a docent, the docent would unlock the building and take small groups through the hoist house. The docent would operate the hoist and move a few buckets of coal up into the bunkers. As the docent would be present, the signs could be less extensive than if no docent were there. If the interpretation is to be self-guiding, the signs would have to be more extensive. If the hoist house were to be unlocked for an hour or so before and after the daily train, the signs could be placed inside. If the hoist house is to be locked at all times, then the signs would have to be placed outside and the elements of interest easily visible through the windows.

Approval – This project requires approval.

23. Pole Barn Near the Engine House in Chama

Goal – Assess the feasibility of constructing a relatively simple structure such as a pole barn to keep locomotives and some of the more unusual cars out of the weather.

Discussion – Every winter some of the locomotives and all of the cars must be stored outside. The rain, snow, and temperature changes are taking their toll on these historic pieces of railroad equipment. The deterioration of these locomotives and cars could be slowed considerably if the rain and snow could be kept off them. As it may be many decades before all of the locomotives and even a fraction of the cars can be kept in enclosed buildings, an inexpensive way to keep moisture off some of the rolling stock is desirable. Since a tin-roofed structure once housed a sheep-dipping facility in the area northeast of the engine house, a pole barn with a similar roof in this area could present a historically acceptable view to the tourists while protecting some engines and cars. There are currently four tracks in this general area. Three of these tracks are directly below the bank on which the engine house sits. These tracks are effectively out of service now since the ties are rotten and the rails have spread on one track derailing the cars on it. A pole barn that spanned these three

tracks for several hundred feet could keep that the winter snows and spring rains off all the locomotives that cannot be stored in the engine house for the winter and a few of the more valuable cars. Any work on a pole barn would have to be preceded by track rehabilitation. It seems likely that the tracks would have to be removed, the drainage improved, ballast added to lift the ties out of the dirt, and the tracks re-laid with new ties.

Proposed Work for 1998 – We plan to explore the cost, feasibility, and historic acceptability of erecting a pole barn over the three deteriorated tracks northeast of the engine house. However, this area is low and the water table appears to be high in this area, so other areas on the railroad property may be examined as well.

Approval – This project will be purely a feasibility study.

24. Cumbres Section House

Goal – Return the building to sound condition, with the exterior as historically accurate as modern safety codes allow. The interior will be restored and upgraded to allow the building to be inhabited during the summer months.

Condition – The building was painted in 1991, but, until 1996 had otherwise received little attention since the states bought the property in 1970. By 1995 the roof was in very bad shape. The north side of the E-W gable and the N-S gable were covered with two layers of old sawn cedar shingles. Exhibit 1996-J shows the condition of this part of the roof following a patch installed in 1994 in an area where the shingles were completely missing.

In 1996, the part of the roof covered with wooden shingles received a new roof of sawn cedar shingles, see Exhibit 1997-G. The rafters on the east face, which had been repeatedly broken under the snow load, were completely replaced with new fabricated rafters, which consisted of a 0.25" steel plate, 5.5" in depth, bolted between two nominal 2x6" boards. This face received new planking.

On the north side (facing the tracks), removal of the two layers of shingles revealed more problems than expected. Much of the decking was rotten, and in some places the gaps between the planks exceeded 5 inches (see Exhibit 1997-H) so that the 1x2" furring strips could not have been installed in those areas. Further, many of the rafters were broken where they crossed the top of the wall, although not as badly as on the east face. After all the decking was removed on this face, sisters were bolted to the broken rafters, and braces were installed under the eave to replace the one existing inadequate brace. Then the decking was replaced using the sound planks from the original roof and the much newer planks removed from the east face. The new roof consisted of 44-lb. felt, 1x2" furring strips, and 18" sawn cedar shingles dipped in a wood preservative before installation. The fascia, trim, and soffits were installed and given at least one coat of primer paint. On the east face, the horizontal soffit installed a few decades ago when the broken rafters were repaired again was not replicated; instead, sloping soffits, as found on the rest of the building and believed to be original, were installed.

In 1997, the south face of the roof, which was covered with asphalt, three-tab shingles, was replaced with sawn cedar shingles. Some missing and rotten rafters around the chimney and some bad decking below the valley with the N-S gable were replaced with new material. Also, some of the sheet rock and other relatively modern material in the interior was removed.

Proposed Work for 1998 – In 1998 work will start on renovating the interior of the building to make it habitable. This work was the subject of a separate proposal in 1996. Also in 1998, the roof ridge cap, for which materials were not on hand in 1997, will be installed.

Approval – Funds to purchase the materials for this work have been provided by the Colorado Historical Society. The Commission submitted considerable material concerning this project to the CO and NM SHPOs in 1996 and the work was approved then.

25. Osier Section House and Station

Goal – Return the buildings to sound condition, with the exteriors as historically accurate as modern safety codes allow. The interior will be restored and upgraded to allow the building to be inhabited during the summer months.

Condition – After the states took over the Antonito – Chama section of the D&RGW narrow gauge in 1968-1970, the section house at Osier was converted for use as a food service facility. Several modifications to the building were made at that time, the most noticeable of which from outside is the large extended porch on the front (east) of the building. Shortly after the section house was converted into a food service facility, the station was converted into a rest room facility. When the new dining facility was completed in 1989, all use of the section house and station ceased.

The section house had a new sawn cedar shingle roof installed during 1994 and 1995 on the original roof; the roof on the added porch was not replaced as it was expected that it would be removed in a few years. In 1996 the Friends installed new doors and windows of the original size and type in their historical locations. Some siding and trim work on the exterior was also done at this time.

In 1997 the Friends removed the extended front porch built around 1970 and the large concrete slab under it. A replica of the original front porch was built in its place. Two sections of the foundation were repaired and a 6' x 8' slab was poured for the generator building. A replica of the original rear porch was built, and metal rodent barriers were installed as needed. Modification of the foundation boards, drip strips, and siding that were required for the porch removal and construction was completed. The building was given a coat of primer paint.

The station had a new sawn cedar shingle roof installed in 1995. In 1997 new windows and doors acquired in 1996 were installed in the original locations and a non-original door opening was closed off. The wall board, walls, and other features added to the interior about 1970 to convert the building into a toilet facility were removed.

Proposed Work for 1998 – In 1998 work will focus on the interior of the section house, including the replacement of the hardwood floor and rebuilding some walls. The utilities will also be roughed in. The interior renovations were described in detail in a separate proposal in 1996. The exterior of the building will be painted the reddish brown (Moor-O-Matic II Universal Color System HC-71) that appears to be the only color of paint ever applied at this site. Interior restoration of the station will commence. A generator shed will also be constructed on the pad poured last year.

Approval – Funds to purchase the materials for this work have been provided by the Colorado Historical Society. The Commission has submitted considerable material concerning this project to the CO and NM SHPOs in 1996 and earlier years and the project was approved then.

26. Cut Trees along the Right of Way between Sublette and Rock Tunnel

Goal – Improve the views to the south between Sublette and Rock Tunnel.

Condition – In the 30 years since the states acquired the C&TS RR, the aspen trees on the downhill side of the tracks have grown appreciably. In the stretch between Sublette and Rock Tunnel only occasional views of the Los Pinos valley and the mountains and plains beyond are now possible. We have had several people who came back to ride the train after ten or twenty years tell us how much less they enjoyed their more recent trip since they saw mostly the tops of aspen trees for about one fifth of the trip.

Proposed Work for 1998 – We plan to attempt a small trial cutting in 1998 using hand tools. The track between Sublette and Rock Tunnel is partly in New Mexico and Carson National Forest and partly in Colorado and Rio Grande National Forest. In the initial years, we will be working only on the stretch just west from Sublette, which is all in New Mexico. Some of the trees that require cutting are 50 feet or more in height, and all the trees are located on steep hillsides. Because of safety considera-

tions, we do not wish to use chain saws until someone with professional logging or tree trimming experience can be found to lead this project.

Approval – This project requires approval. In addition, the approval of Carson National Forest will be required.

27. Sublette Section House and Bunk Houses Doors and Windows

Goal – Return the buildings to sound condition, with the exteriors historically accurate.

Condition – Occupancy of the section house and the bunk houses at Sublette ended in 1968 or 1969 when the D&RGW RR ceased to operate the line. In the ensuing years vandals broke the glass in the windows, so rough plywood was nailed over the windows to keep out rain, snow, and people. The doors have been damaged and one is not historically correct. Exhibit 1996-N shows the appearance of a typical window in 1993 when the section house was being painted with primer. This building had a new asphalt shingle roof installed in 1991 and in 1993 it was given a coat of white primer paint. In 1996 it was painted with the appropriate white with lime green trim proposed for this site in *Colors along the Line (op. cit.)*.

In 1997 the weathered sheets of plywood nailed over the section house windows were replaced with smooth-finish plywood painted black and fixed in place over the sashes in order to preserve the existing sashes and mullions for restoration in the future. To lend verisimilitude to these protective panels, *trompe l'oeil* techniques were used to suggest the mullions and interior scenes. The result is shown in Exhibit 1998-E.

All but one of the doors on the Sublette buildings appear to be in good enough condition that they can be reused if they are repaired, rehung, painted, and have new hardware installed. The current door to the log bunk house is a plywood panel. Because of uncertainty over whether a door similar to the ones installed in the Osier section house in 1996 was appropriate, the plywood sheet over the doorway to the log bunk house was not replaced in 1997. Exhibit 1998-F shows the north and south doors of the shingle bunk house at Sublette. Judging from their condition, these four-panel doors appear to be original. Exhibit 1998-G shows a similar door on the log bunkhouse at No Agua, NM more than 50 years ago.

Proposed Work for 1998 – The same window treatment applied to the section house will be employed to upgrade the appearance and protection of the bunk house windows. The doorway currently covered plywood in the log bunk house will have a four-panel door similar to the ones shown in Exhibits 1998-F and 1998-G installed.

Approval – Approval for the window treatment on the section house was given in 1997. Further information on the bunk house doors was requested at that time.

28. Three-rail Switch in Antonito

Goal – Install the available three-rail switch in the display track in the center of the loop in Antonito.

Discussion – The D&RGW railroad once had an extensive network of three-rail track. The line from Alamosa to Antonito and most of the yards in both Alamosa and Antonito were laid with three-rail track up until the narrow gauge line to Durango was abandoned in 1968. While there was never a three-rail switch in exactly this position in the historic period, the yard a few hundred feet to the east was mostly three-rail track, and the wye, which still extends just to the north of the property, was also laid with three-rail track.

Condition – Several years ago a few hundred feet of three-rail track was laid inside the loop in Antonito near the station, and two standard gauge box cars and the dual-gauge idler car were placed on this track for display. When this track was obtained from an unused spur in Alamosa in 1989, a

three-rail switch was also obtained. The switch has lain in pieces in the Antonito yard since 1989. In 1997 the reconstruction of the switch was started on the west end of the existing three-rail track in Antonito. There are over 900 parts to this switch, and some were found to be missing, broken, or so rusted that they could not be reused. Thus, the installation of the switch could not be completed in 1997.

The original plan was to place the three rail switch in the loop track west of the station and extend the three-rail track from its present location to the switch and perhaps across the highway. However, the operator has determined that the switch is too worn to be placed in track which sees daily use. At the west end of the three-rail track the switch will not have trains passing over it but it will be available for visitors to inspect and, perhaps, operate.

Proposed Work for 1998 – In 1998 we will complete the reconstruction of the three-rail switch.

Approval – This project was approved in 1997.

29. Paint Mileposts

Goal – Keep the mileposts and other signs painted in authentic colors and historically lettered.

Condition – Some of the mileposts and other signs have been painted recently by the Friends and are in good condition; others have not been painted in many years and are becoming illegible.

Proposed Work for 1998 – Paint those mileposts and other signs along the track which are most in need of paint. They will be painted in the traditional scheme: white with black numerals.

Approval – Painting and lettering is regular maintenance.

30. Telegraph - Telephone Booths

Goal – To restore these booths along the right-of-way to historic condition.

Discussion – There were originally telegraph, later telephone, booths at most of the sidings, at both tunnels, and at three or four other locations along the railroad between Antonito and Chama.

Condition – The telephone booths are not in very good condition. In some cases they have been vandalized. They have not received any care for over 30 years.

Proposed Work for 1998 – In 1998 we propose to ascertain and document the current condition of all the telephone booths. This will enable us to develop detailed restoration and rehabilitation plans for them to be implemented in 1999 and subsequent years.

Approval – Only a survey of condition is planned for 1998.

31. Loading Dock of the Car Shop in Chama

Goal – Make the loading dock of the car shop in Chama safe to walk on.

Condition – Northeast of the station in Chama, and nearly opposite the Sand House, is a metal building often called the car shop although it is not possible to move a railroad car into this building. The D&RGW RR used to keep materials and tools in this building that were used to make minor repairs to railroad cars. (For major repairs, the cars were taken to Alamosa.) Cars to be repaired in Chama were located along a loading dock on the southeast side of the building. The building has been used as a general warehouse and storage building for decades. The Friends proposes to place some power tools in one end of this building in 1998 to make a woodworking shop. The wooden loading

dock is badly deteriorated and presents a safety hazard. Numerous plywood patches have been nailed over holes in the deck and constitute a tripping hazard in themselves.

Proposed Work for 1998 – We will remove the entire loading dock deck, and replace it with new material of similar dimension. The structure underneath that supports the deck will be examined for soundness and any rotten members will be replaced with beams of similar dimension. The deck will be given a coat of a wood preservative such as linseed oil.

Approval – This project requires approval.