The Cumbres & Toltec Scenic Railroad



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TO: LEE

A PATIENT LADY

THANKS MOM

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INTRODUCTION

This project addresses the design of a museum, a hotel, and adaptive re-use of the existing depot for the Cumbres and Toltec Scenic Railroad. It is an investigation of the history of a phenomenom - the railroad -, how the phenomenom has effected form, and how these forms should influence the proposed new buildings.

The museum will be the focus of the project and will receive the greatest depth of study. The hotel design will concentrate on programatic issues, form and massing. The adaptive re-use of the depot will consider its original function and configuration, its current use, and the function which will best serve the existing railroad without disturbing the character of the historic building.

The study of railroad history will be extensive because this project revolves around the presentation of historic technology to the public. The forms which have evolved from this technology profoundly effect the forms and character of the new structures.

The project will be a summary of the skills which have been developed over the past five years and the output will employ various media - drawings, models, narrative, charts, and illustrations - through which these skills express themselves.

HISTORIC PERSPECTIVE

NARROW GAUGE RAILROADS AND STATIONS IN THE COLORADO MINING COUNTRY: THE TIMES AND CONDITIONS THAT THEY SERVED

Colorado's "Gold Rush" began in the late 1850's with sporadic discoveries, first at Cherry Creek where Denver now stands, then into the hills to the west up Clear Creek to Central City and Victor. In 1858, news of tne new- found strikes in the vicinity of Pike's Peak to the southwest of Denver soon spread to the Midwest and Eastern States. The "Fifty Niners", as they came to be called, were estimated at about 100,000 in number. Tneir slogan was "Pikes Peak or Bust" and many did turn back before reaching the gold fields. The people were from all walks of life: merchants, housewives, gamblers, saloon keepers; some came in their specific capacities to serve the needs of the miners, while others gave up or at least postponed old vocations to become miners. Of those who dreamed of riches directly from the mines, the vast majority found disappointment.

Of the seekers, some were more welcome than others. Merchants and men of means who could grubstake the miners were greeted warmly. Women appeared early on the scene. Some accompanied their husbands and helped in the family businesses, while others came with the madams who opened lucrative houses in supporting cities like Denver and Leadville and in tne blossoming camps. Slavery



Typical group of miners at the Pandora Mine
near Telluride Circa 1900

Byers photo from the
Mallory Hope Ferrell
Collection
Silver San Juan

sentiments were strong, but mutual greed seemed to overcome differences of conviction. Both Northerners and Southerners attended the rush for gold. Several minority groups found themselves facing discrimination for various reasons. The Chinese and frequently the Negroes and Spanish Americans were victims of racial bias. Mormons were excluded as a religious group. The American Indian was pushed aside whenever convenience dictated.(1)

The population was very mobile, often moving to another camp on the first rumor of a new strike. As Duane Smith notes, "Expectations, excitement, and optimism underlay the hustle of the hopeful as they made their way to the bonanza to stake their claim, open their store, or in some other way, try to make their fortune." (2)

The first to arrive on the scene often faced primitive conditions. They lived in lean-to shelters, tents, sod huts, dugouts, or hastily erected log walls with canvas roofs. Their supplies consisted of what could be packed on horses and mules; and, initally, even a narrow muddy wagon path was a luxury.

Because there was no existing support system for these transient communities or camps, transportation of

supplies was an immediate concern which grew proportionately as the available gold became harder to extract and the mining camp matured.

The inital gold discoverers, more often than not, made their find by panning 'free gold' from the gravels of streams and gulches. As soon as lumber for construction was available the miners expanded the volume of gravel and sand washed by trading gold pans for sluice boxes and rockers. The principle of recovery was the same - gold is heavier than soil and gravel and will settle first out of water - only the proportion of the material handled increased. Water supply used by these devices was often the limiting factor, and long ditches were frequently constructed to ensure a reliable source. As transportation improved, huge pumps and hoses were brought in to hydraulically cut down the gravel banks.(3) This placer gold was retrieved using relatively basic methods. It could be done with the most rudimentary equipment, requiring primarily lumber for its construction.

As the placers became 'worked out' the miners worked their way upstream to seek the source of the gold that had washed down with the gravel. "This gold lay in veins, pockets, and chimneys within the earth and was often mixed with other rock".(4) Once the ore had been dug from the ground, it needed to be crushed so the gold

The only method to get lumber to the mines before the roads were built from the railroad sidings. 1890 photo Dave Digerness Collection p. 367 Silver San Juan





Red Mountain Town
Typical Mine Building
Richard B. Jackson
Collection
From Silver San Juan

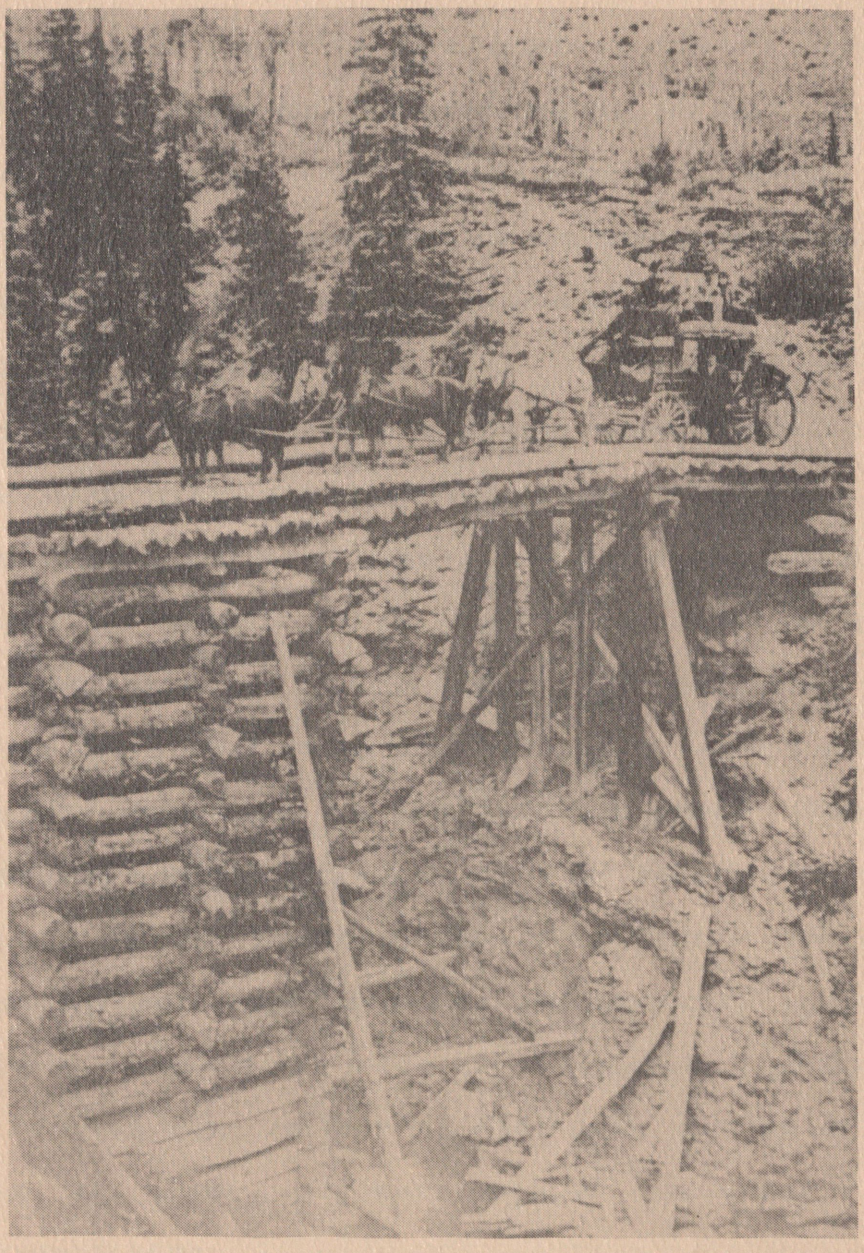
could be removed either by washing as placer gold or by an evaporative process using quicksilver (mercury).

To crush the ore, smaller operations often used an arrastre, which was the Spanish version of a circular stone mill with ancestry in ancient Egypt. Larger volumes of ore were processed by a stamp mill, in which weights called 'stamps' were raised and dropped on the ore to crush it. These mills could be either steam or water powered.

This process of extraction extended further as the ore declined in quality. Lower grade ore needed to be smelted to roast the gold out. Smelters had to be constructed, and ore transported farther.

As the ores became less rich, more complicated processes were necessary and greater volumes of material, both ore and supplies, were needed to process out an equal amount of gold. Mining required lumber to build the mills, coal to fire the steam engines, and conveyers to move the ore.

As the mining areas grew, pack trails were replaced by roads built by enterprising men anxious to take advantage of the sudden influx of people. Most of the early roads were toll roads as the states had not yet become involved in road building - indeed there was no



Otto Mears Toll Road Bear Creek Falls Toll Gate about 1890 (H. H. Buckwalter photo, State Historical Society of Colorado Collection) Silver San Juan

State of Colorado, only a territory, when these first roads were built. Freight to the camps was hauled over these roads and tne extra cost of tne "toll" was reflected in the freight rates. The Freighter was essential to the continuance of the camps. "With the first rush, freighters and packers arrived simultaneously, over roads barely passable, the freight that they carried almost as valuable as the minerals sought by the miners. Of the two methods, wagons had the advantage, since pack trains carried fewer goods at higher cost. The ability of the pack train to go where the freight wagon could not retained them a continuing snare of the business." (5)

Otto Mears, a Russian immigrant, was one of the major toll road builders in tne Southwest Colorado region. His legend now describes him as "the pathfinder of tne San Juans". Mears subsequent expansion into railroads is representative of the transportation progression.

THE RAILROADS

Mountain railroads were "built for the prime purpose of turning marginal mines into big producers".(6) At the same time, as William Palmer most prominent of all Colorado railroad figures noted, "A population engaged in mining is by far the most profitable of any to a railway." (7)

The railrods and mining camps were mutually beneficial. "The coming of the railroad was a momentous occasion for the mining community. It heralded as clearly as anything else, the end of the old frontier and the beginning of a new era. The reliance on the horse and wagon faded before the iron rail and steam engine. The slowness and seasonal nature of wagon and riverboat were replaced by fast transcontinental transportation." (8) The railroads offered the advantage of large volume transport, could carry heavy loads of single items such as stamp mills, and were not as limited by weather as the wagon or pack string. Above all, railroads were cheaper than other forms of transportation.

The large railroad that most affected Colorado was the Union Pacific. The main line for the Union Pacific actually went through southern Wyoming with a branch line to Denver - - the hub of all Colorado mining. It

was, therefore, appropriate the Colorado railroads began in Denver with the Denver and Rio Grande, the most prominent and dominant of the Colorado lines.

The D & R G was initiated by General William Jackson Palmer, a Union Officer in the Civil War. A cultured gentleman, Palmer's manners and cultured habits were strange to the mountains. "He was as out of place following in the footsteps of say, Jim Bridger, as a cowboy in full hair pants regalia of the time would have been at Blenheim Palace." (9) In spite of this, Palmer's ability to generate construction funds was more than welcome in this undeveloped land full of mining potential.

> It wasn't as if, in the year 1870, the Rocky Mountain region of Colorado needed a railroad . . . . The reason Colorado had to have a railroad had nothing to do with any rational appraisal of its economy; it was an emotional compulsion . . . . Railroad fever was a disease that was epidemic throughout the entire North American continent at the time . . . . Railroads not only brought communities into being; the absence of them could put communities out of business. (10)

Palmer's original intent was to build a line to connect Denver (and thus the Union Pacific) with the southern part of the state and beyond into Old Mexico. Palmer's initial purpose and direction shifted to an entirely new pattern within a few years as the directors discovered the many wonderful sources of revenue for the railroad hidden in the mountains to the west.

At this juncture it would be appropriate to discuss the term 'narrow gauge' since the focus of this paper is on narrow gauge railroad buildings, and the railroads discussed are of that variety. The gauge of a railroad is the distance between the centers of the rails; most railroads in the country today use what is known as the standard gauge which is four feet, eight and a half inches. The origin of this distance is said to have been the standard spacing of Roman chariot wheels. This has apparently been a satisfactory and long proven dimension.

The mountains created limitations for a railroad which could be solved by making the 'rolling stock', or equipment which runs on the rails, smaller. The cuts and road bed could be narrower with less earth moved; grades could be steeper and curves sharper. Most Colorado mountain railroads elected to standardize their gauge at three feet. At places where these lines intersected the standard gauge roads it was not uncommon to have three rail track so that both types of equipment could negotiate the same route.

The Denver and Rio Grande was the principal narrow gauge railroad in Colorado and almost all other narrow gauge lines connected to it. The narrow gauge portion existed from October 27, 1870, when the first branch was

chartered, until the mid 1970's when its short scenic branch from Durango to Silverton was sold to a private company.

This narrow gauge network spread over the mountainous portion of the state, into northern New Mexico and west beyond the Colorado border. During its existence it build new lines, abandoned unprofitable branches, and absorbed competing carriers which had come out second best in the competition.

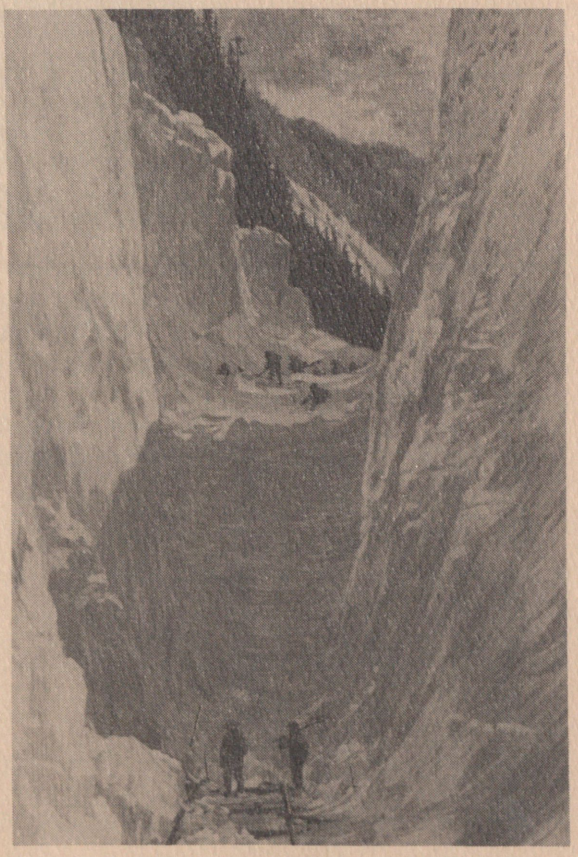
One of these unlucky competitors was the Denver, South Park and Pacific (D S P & P), a road which concentrated in the central Colorado mountains. It served, by different routes, many of the same camps as the D & R G and was often involved in track laying races with the General Palmer's crews to be the first to arrive at a new town. The D S P & P is probably the best known for constructing the first tunnel, the 'Alpine', through the Continental Divide. This line began in 1872, two years after the D & R G, and portions of its right-of-way still exist as the property of existing standard gauge roads.

There were at least ten other narrow gauge railroads built. The only lines now in existence are the scenic lines which were portions of the D & R G and a restored segment of what was originally the Denver and

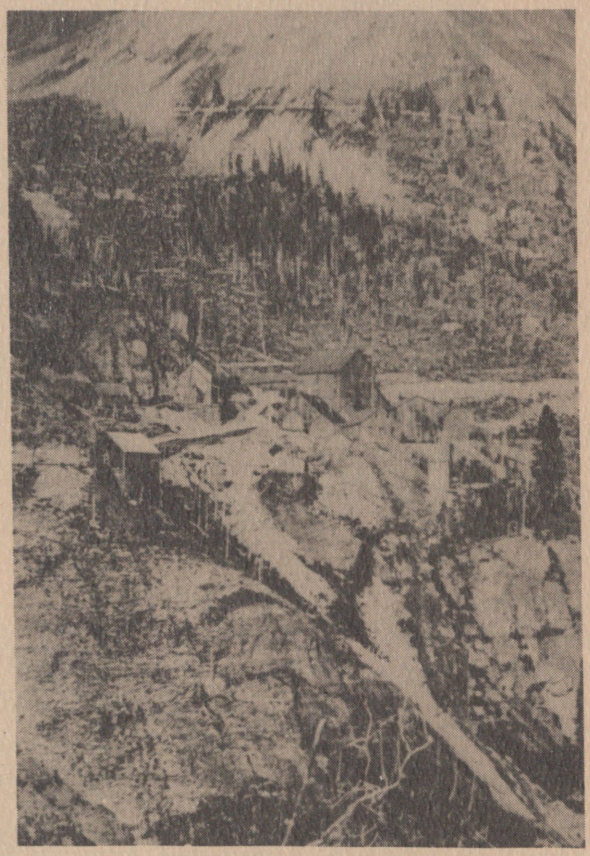


Monte Ballough Photo
Jackson C. Thode
Collection

Cumbres Pass 1909 R.G.S. #2 Rotary Plow
Helping to Clear the D & R G Line



Sometimes hand work
was the only way to
open the line p. 327
Rio Grande Mainline
No Artist Credit



This photo of the Smuggler Union Mine taken about 1901 illustrates the steepness of typical terrain in Southwestern Colorado
Mallory Hope Ferrell Collection
Silver San Juan By Byers

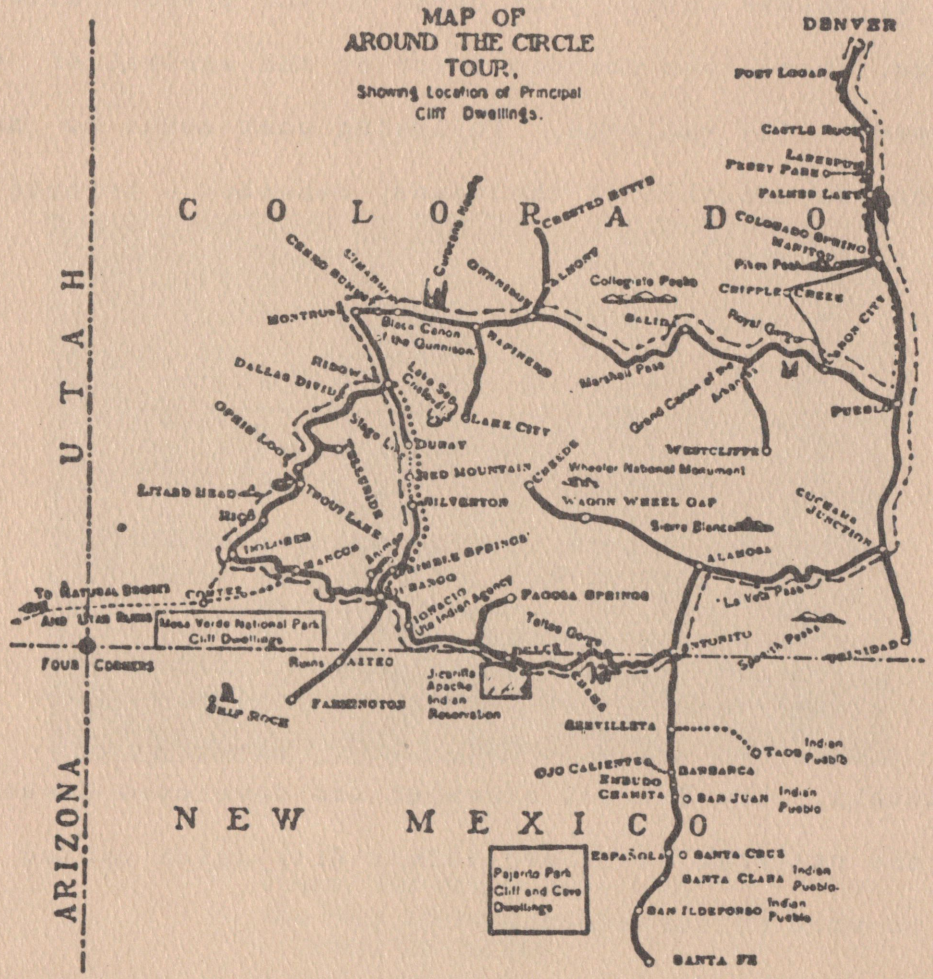
South Park called the Georgetown Loop. Several factors led to their demise. Many of the easily obtainable mineral sources were exhausted. The added expense of producing the "refractory" or difficult to extract ores, combined with several crashes and panics of the precious metal markets during the late ninteenth and early twentieth centuries made mining economically unfeasable. By the late 1930's trucks had developed to the point where they could compete with rail transportation and they were a much more flexible form of conveyance. Weather was another factor. Although trains could handle the elements better than horses they were severly limited in the high mountains. The Mears roads were often shut down from three to five months a year and the costs of clearing and repairing them in the spring was astronomical.

Of the terrain serviced by the narrow gauge lines, the southwestern Colorado mountains was the most difficult to penetrate. It has been said that the majority of the ground is over 45 degrees in pitch and almost none of it is level. These mountains also happened to be where a good share of the precious minerals were located.

The Denver and Rio Grande was the main line source of transportation to tap this mineral treasure. The D & R G standard gauge line extended to Antonito in the

southern portion of the San Luis valley in Colorado. From Antonito the line was narrow gauge traveling south to the Colorado-New Mexico border then west along the border and the Toltec Gorge over Cumbres Pass, then down the south side into Chama, New Mexio. This is the portion of the line now jointly owned by the states of New Mexico and Colorado comprising tne Cumbres and Toltec Scenic Railroad. From Chama the line turned west to Durango, a major division point, coal source, and smelter city; and then north to Silverton and the San Juan mountains. At Silverton, the railroad connected with what became known as the "Mears Short Lines" -- three small narrow gauge railroads that serviced the mines of the high San Juans. The D & R G also connected at Durango with the Rio Grande Southern, another Otto Mears project which serviced the western fringes of the San Juans, joining another branch of the D & R G at Ridgeway north of the San Juan Range.

Many towns along the railroad owe their existence to the company which laid the rails. These compaies not only hired the people who populated the towns, they also supplied these people as well as the surrounding enterprises. In some cases the railroad companies actually developed the real-estate. The importance of having the railroad serve a town is shown in the case of the city of Durango, Colorado, a town that was developed



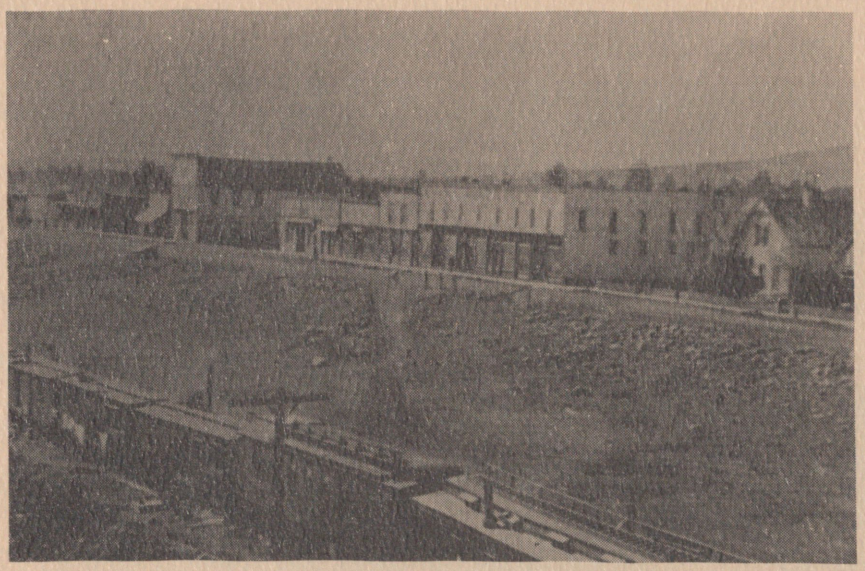
Route Map from D & R G Tourist Publication
of 1913 Around the Circle

and built by tne Denver and Rio Grande Railroad. The town of Animas City, just north of the present site of Durango, had been founded prior to the arrival of the railroad. The railroad, following what seems to have been common practice of the times, demanded a tribute or dowry to serve the town.

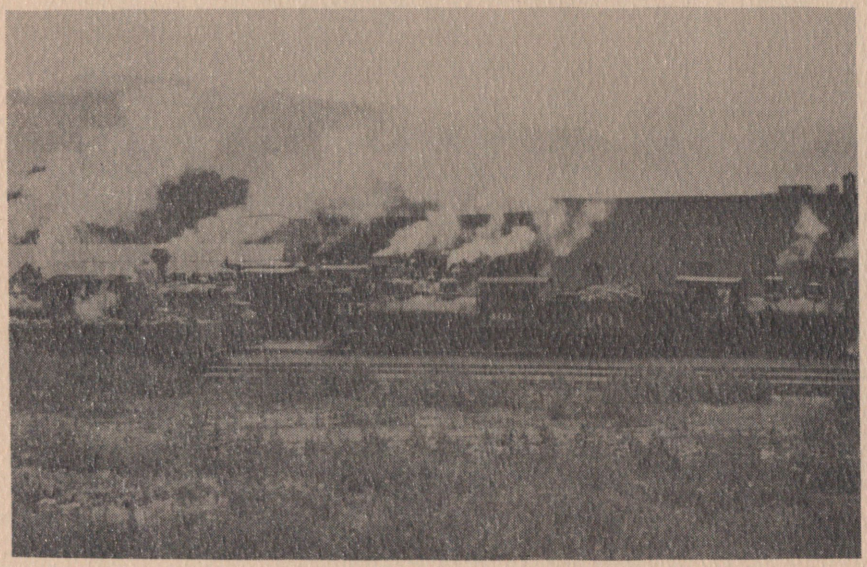
> "Exactly what it was is unknown, but if past examples held true, they wanted land for a depot or right of way, purchase of company stock, help in grading, or a combination of these. If such aid failed to be forthcoming, the railroad threatened to establish a rival community, a pattern already practiced at Trinidad and Pueblo. Misjudging its own significance and failing to read history, Animas City stood pat; haggling produced no compromise." (11)

Ultimately, the D & R G surveyed and developed Durango, and tne railroad by-passed Animas City which caused the town to soon falter and die.

Chama, New Mexico, the site of this project, was built by and for the railroad. It was a tent camp for construction workers by September of 1880 and the rails reached the town on December 31, 1880. By January 1881, the railroad was available for regular service and engaged as a railhead for further construction west to the San Juan mountains.



Chama, New Mexico 1924 from
the Edna Sanborn Collection
Ticket to Toltec



The Rio Grande Engine House at Chama. The Portion of the wall behind the tender on Engine 401 is still standing. This photo was taken in 1908 by Fred Jukes and is from Narrow Gauge in the Rockies.

CHAMA, NEW MEXICO

Chama, elevation 7,863 ft., is located at the foot of the Cumbres Pass, elevation 10,015 ft. The steep (for a railroad) 4% grade to the top of the pass required a large fleet of helper engines. This need, along with the requirement to service the engines running westward to Durango, caused the town and rail facilities to be planned and built as a major division point. The primary business of the station was to maintain the rolling stock, and there was no initial major attraction to the railroad as a shipping or receiving point. About 1886, tne lumber industry developed as a result of the market generated by the railroad ties, bridge timbers and building construction lumber needed for the railroad. As timber close to town was depleted branch narrow gauge logging railroads were built to reach outlying stands. This industry flourished until the 1930's and a mill still operates in Chama. Another on-going revenue of the railroad here was the shipping of cattle and sheep produced by the local ranchers. This activity started early in the life of the railroad and continued until the D & R G terminated service in September of 1967.

The present population of Chama is about 1,000 people. The town is supported by cattle and sheep ranching, a small oil field to the west of town, and, of course, the Cumbres and Toltec Scenic Railroad.

Recreation is becoming an important part of the town's economy with snowmobiling in the nearby mountains as a popular winter sport.

With the exception of the Foster Hotel on main street and possibly a few other buildings within the town, most of the structures appear to have been built much later than the 1880's. The major buildings in the railroad yard were built in 1899-1900 according to information from the preservation study and dates on the construction drawings. These buildings include the depot and the roundhouse (the remaining west wall and machine shop date from 1899). The original six stall roundhouse was built in 1881 and burned down in 1899. It was replaced in 1899 by a nine stall roundhouse but the newer larger engines would not fit and it was dismantled in 1955. The log bunkhouse and the section house on the northwest corner of the site date from the early 1880's. The Cumbres and Toltec Line constructed a new engine house east of the old machine shop in 1977-1978.

BUILDINGS & STRUCTURES

It is impossible to separate the railroad buildings from the enterprise that they supported. Mountain railroads were more concerned with getting into operation than they were in building great facilities. The initial stations were often log buildings, followed by 'balloon frame' construction if the camp survived.

An early twentieth century expert and experienced railroad executive, John A. Droege of the New York, New Haven, and Hartford Railroad wrote that, "While balloon-frame stations were often logical as initial ones, they should be replaced by more substantial and hence more attractive depots as soon as business warranted the expenditures." (12) As pointed out in The Country Railroad Station, "Designing small low cost stations that would satisfy both the business requirements and demands for buildings that would be the object of civic pride emerged as a source of continuing concern for the late nineteenth and early twentieth centuries." (13)

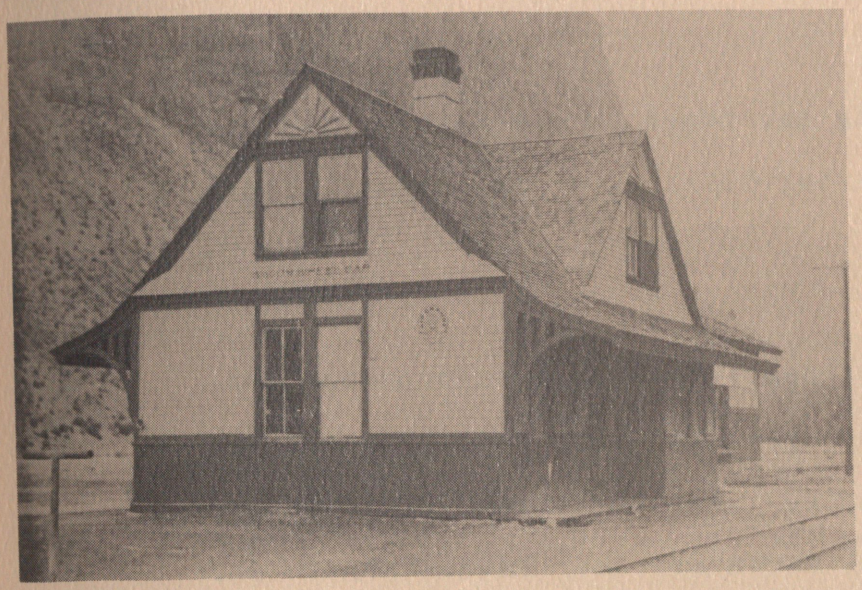
Most railroads (then and now) did not have a building department, but a bridge and building department. This department was responsible for all of the structures including bridges, round houses, turntables, switch shacks, water tanks and depots. The buildings were often constructed from a standardized set of plans which were modified to suit the purpose of the specific building site.

Most narrow gauge stations met the same basic needs - accomodating both passenger and freight service. Known as 'combination stations' they usually consisted of a passenger waiting area on one end, a freight and baggage terminal on the other and agent space in the center to facilitate handling both operations. Occasionally there were separate buildings for freight service and passenger service.

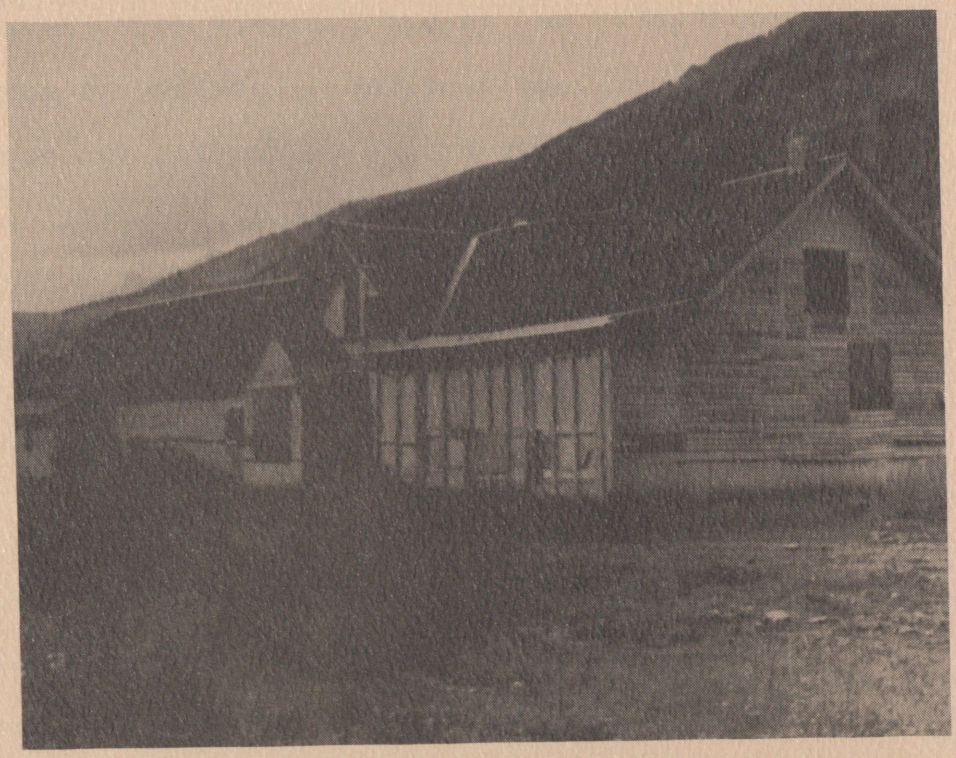
Standardized stations allowed for varied, but inexpensive exterior details. Minor architectural features - brackets, bay windows, vertical siding, hip roofs, and gables - were added to the standard design buildings. These items have been stylistically categorized as Victorian Gothic and include the decorative trims known as gingerbread.(14)

Nearly all these depots were of wood with board and batten siding. Some of the buildings in larger towns were replaced with brick or stone, but most remained wood construction. The railroads three colors - tuscan red, pullman green and 'reefer' yellow - were the colors of the depots with yellow being the most often used.

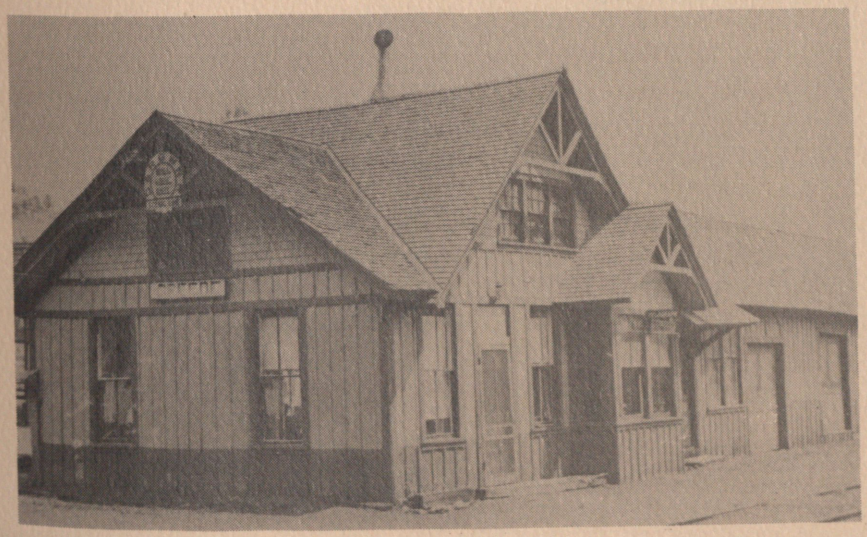
Since the agent frequently handled many functions, including ticket sales, freight handling, telegramming, bookkeeping, and often controlling train movements, he frequently was a round-the-clock employee. This coupled



Wagon Wheel Gap Depot, just down the track from Creede (below) was built from standard plans



The Southeast Corner of the Teluride Depot in great need of restoration Photo by author



This station, at Creede Colorado, is similar to the one at Chama New Mexico but has a second story over the ticket office.

with frequent housing shortages in new towns, led to many stations with living quarters on the second floor for the station agent.

"The importance of depot life cannot be overstated. The prominent role played by the depot agent or 'operator' is an example. As the company official he was probably as well known as the local physician, constable or church pastor." (15) Because the agent knew code and received all telegraph messages, he was also the town's news source and was depended upon for election results, weather reports, and commodities quotations. The telegraph was the only fast methods of long distance communication, so this was no mean position.

The railroad station was the hub of activity in the developing West. Frequently the major link with the outside, the railroad brought in goods and supplies and carried out local products; it represented prosperity and permanence, however temporary.

PROGRAM

NOTE:

These program notes were developed from a Programming Procedures checklist contained in the book PROBLEM SEEKING by Pena and Caudill. The five steps outlined in this guide and used in establishing the following program outline are:

1. Establish Goals
2. Collect and analyze Facts
3. Uncover and test Concepts
4. Determine Needs
5. State the Problem

GOALS

This project will establish a facility which will serve the visitors of the Cumbres and Toltec Railroad. The purpose of the facility will be to explain to the public the history of the railroad and how it operates. The media through which this will be done are a museum building, a walking tour of the railroad yard, and the railroad itself as a living museum. The railroad is in place and functioning. The walking tour is not fully developed, but will have its basis in the existing railroad yard. The major design focus will be on the museum.

A hotel and resturant will also be studied up to the schematic phase since the facilities in Chama are not adequate to handle the projected visitor load that the railroad is expected to generate.

The existing railroad elements must be kept intact and disturbed only to restore the situation to historic conditions. Exceptions are short segments of existing track to facilitate museum displays or modifications of original building plans to accomodate current uses or equipment.

The flow of people and things is an important aspect of this project because it involves getting

people to do several worthwhile activities and gain something from each in a short period of time. The actual train trip takes up a large portion of the day so the traffic flow from one activity to another and flow within the activities is critical. Parking and delivery of the passengers is of prime importance. For instance, when the train is in the station, traffic flow from west to east is blocked. How is this to be handled without disturbing the site? Should museum parking also serve as day parking? What about service to the hotel? How can you separate the railroad service from the visitors?

The service routes should be separated from the visitor routes. Hotel service activities should be separate from guest activities. Railroad service activities should be integrated with the public as much as possible. Motor vehicle-train conflicts should be kept to a minimum. Pedestrian-vehicle and pedestrian train conflicts should also be minimized. Curators and restoration technicians should be allowed to work in relative peace.

The site is remote from any large city and all but very small towns. Access is almost exclusively by automobile. A very few people may arrive by train and depart by auto. Parking, therefore, is a major consideration.

The intent of this project is to enhance a Living museum. We are trying to increase the public's awareness of the history of the area, the history of the specific railroad, and transportation technology as it applies to the period when the railroad was in its heyday. In the hotel the goal is to provide a pleasant stay with service and comfort as a priority. The museum will also stress service and comfort but the major goal will be to illustrate the conditions that the users of the early days railroad encountered. Employees will be low profile in the hotel, and high profile in the rail yard. The hierarchy of goals, then, will be (1) presentation (2) service (3) comfort. This seems unjust on the surface but the intention is to reflect what it was like to ride the railroad then. These trains, even first class, were not comfortable by today's standards. There should be few conflicts between these goals and most of those will be encountered on the train itself.

EXISTING CONDITIONS

In 1979, 30,000 passengers rode the train. In 1983, the count was in excess of 60,000 and the maximum expected capacity on an annual basis is 120,000 people. (These figures assume an annual operating season from April 15 to October 30.) No winter operation is considered because of the snow removal problem. Daily capacity of the train is 600 people, limited by the available locomotives and cars.

The hotel will be designed to house 100 persons per night. This limit is arbitrary and not related to train capacity. The expected winter occupancy is 50 persons per night and will serve the snowmobile traffic and other winter sports activities.

Museum traffic is expected to be 450 persons daily. All of the train passengers may not visit the museum because the train schedule fills a major part of the daytime hours. Some visitors will visit the museum the day before, or the day after, they take the train ride. Some will only take the walking tour. A few will only visit the museum and not ride the train; these will be mostly walk in traffic from the highway. The maximum load on the museum will be from 7:30 am to 10:00 am and from 5:00 pm until 6:00 pm.

The heavy operating season is from Memorial Day to Labor Day and during the Aspen color season. The museum would remain open on a limited basis during the winter months.

The Chama yard is essentially the same as it was during the early 1900's and it should be preserved as such. The new structures should be placed on the fringes of the site and should not impose on the existing fabric of the railroad. Large masses of people will be encountered for short periods of time, just before train departure in the morning and just after arrival in the afternoon. There is a need to provide for large fluctuations in the amount of people served.

There will be several nodes which relate to entry and place. The hotel, the boarding area, the yard, the museum, and parking are among these. These places also have a relationship in time because the events which occur there happen at different times.

The community as it exists today should be considered. It was built by the railroad and became a farming and ranching community when the railroad ceased to operate. The town is beginning to depend once more on the railroad for its livelihood, but this time for the ability to attract tourists, not to generate jobs directly. A large portion of the population is Hispanic. This influence is reflected in the forms of

architecture within the town. Much of the building material is adobe. False fronts are as prevalent now as they were in the early days. The few non-tourist businesses are geared to farming, ranching, and logging.

Handicapped access will be taken into consideration in all new buildings and reviewed in all older buildings considered to have public access. There may be other special interest groups to be considered such as railroad clubs, booked tours, and VIP's of the two states which own the railroad.

Existing site conditions are as follows: this is an operating railroad yard. There is a lot of coal and cinder on the ground. The axis of the yard is north-south. The major building uses are primarily as they were originally intended. The Chama River parallels the yard to the east. New Mexico State Highway and the main street of Chama border on the west. Vegetation is willow and cottonwood. The elevation of the town is 7,863 feet. The site is just above the flood plain of the river and is considered to be buildable. A fifteen foot rise from the yard to the highway borders the west edge of the site. This is a significant elevation change on a relatively flat site. Access can be gained thru the west or south boundary. The river restricts access to the north and east.

The primary building materials of the community are adobe and wood. In the railroad yard the depot is of wood and engine facilities are of masonry. Most other railroad buildings are of frame construction. There is a bunkhouse in the railyard constructed of dovetail logs. Nearly all of the other depots on the D & R G were of frame construction with board and batten siding. Roundhouses were primarily of brick to avoid the fire hazard associated with the engines. The climate, as it affects the buildings, is not harsh. Fairly large temperature fluctuations occur on a daily basis but the moisture problem is small and with regular maintenance any normal building material would be acceptable. The existing depot is in good condition after 85 years.

All of the buildings on the site except the new engine house are historically significant. They are essentially as they were in 1900 or have componenets that date from this era. There are several buildings in Chama that also date from this period. The Foster Hotel was built in 1882. Much of this building seems to be original. Other buildings on main street are adaptive re-uses of older buildings. Most are non-descript. Photo comparisons show that most turn of the century buildings have been replaced.

The Chama yard in particular and the D & R G narrow gauge in general never accomodated the crowds that the

Cumbres and Toltec now generates. The line's main passenger terminals were Durango and Silverton and even those depots never saw the 500 - 600 passenger trains that are now pulled. Passenger cars were somwhat more comfortable than the present day excursion cars and the distances traveled much greater. A special problem with the present operation is having an empty train yard at 8:00 am and sending a 500 passenger train off at 10:30. The traffic flow should direct the visitors without confusion and interference from other functions. The primary task of the traffic flow system is to get people out of their automobiles, onto the train, back off of the train, and back to their automobiles. The system also needs to get them from their accomodations to the parking lot and to and from the museum.

Flow Patterns: (To the train)

1. From the main parking lots to the main loading platform. (Pick up tickets along the way).
2. From the museum to the loading platform.
3. From the town main street to the loading platform.
4. From the railroad hotel to the loading platform.
5. From the town's motels to the parking lots or directly to the loading platform.

These patterns are essentially reversed for train arrival. Some options are:

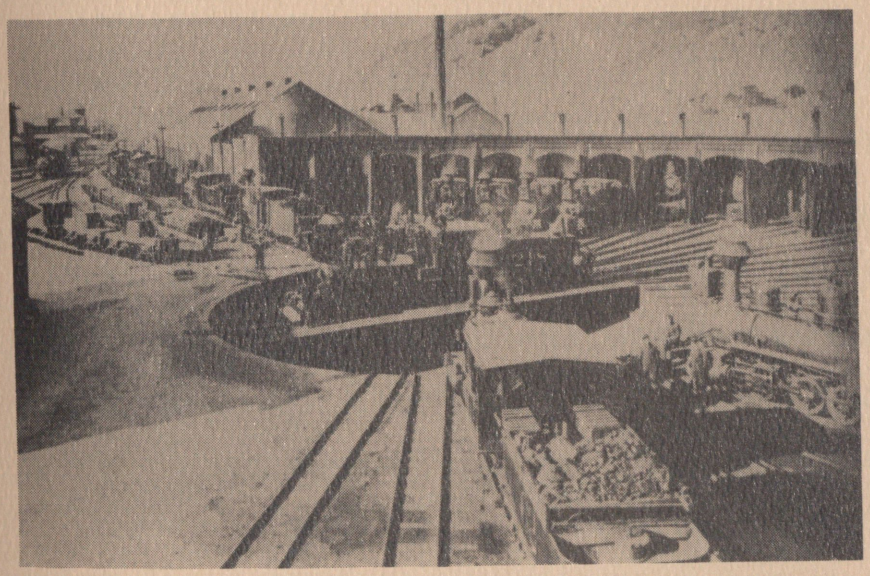
1. Park the car at any one of the above places and walk to the train.

2. Drop the family off at a drop off point near the loading platform and one person park the car and walk to the loading platform.

The railroad is full of symbolism and organizational devices. The tracks are extremely linear and create very strong axes. The turntable provided a focus for many activities, the shape of the roundhouse was directly related to this device. Water tanks are easily recognizable as forms which stand on their own. The signage has forms which are unique to the railroad. All of this symbolism can be used to generate design ideas.

Path and signage should not only lead people in an orderly manner to where they need or want to go but it should also prevent access to private or dangerous place. This is a living museum and should be as accessable to the public as much as possible without putting the people in danger. Entry to the project as well as the buildings should be well defined. Arrival by foot or vehicle should be an event just as the arrival of the train was an event in the time when the train was the main transportation of the town.

Steam powered railroads are dirty. In the times when people rode these trains for transportation this inconvenience was accepted. The train ride today also



Western Collection
V. G. Jackson
Narrow Gauge in the
Rockies p. 96
Turntable and
Roundhouse at
Salida about 1900



The Spanish Style
Depot at Montrose
Colorado

brings some dust and dirt but it should be confined to the rail yard.

Not much can be said about the environmental aspects of a circa 1900 coal fired railroad except that it is a heavy polluter. The smoke and the smell are part of the product being sold here. Fortunately, the output volume is low enough to have a minimal impact on the surrounding environment.

The other major environmental consideration is solar energy. The site is located in "solar country", nothern New Mexico being a pioneer area in solar energy development, and the buildings will respond to solar and climatic demands within the envelope of meeting functional issues.

Land use policy is as follows: the total holdings of the railroad within Chama will be considered for use. All of it, for the scope of the project, will be considered to be buildable. Water channels will be protected. There is no zoning to deal with, but uses will be considered as if a reasonable zoning regulation were in force.

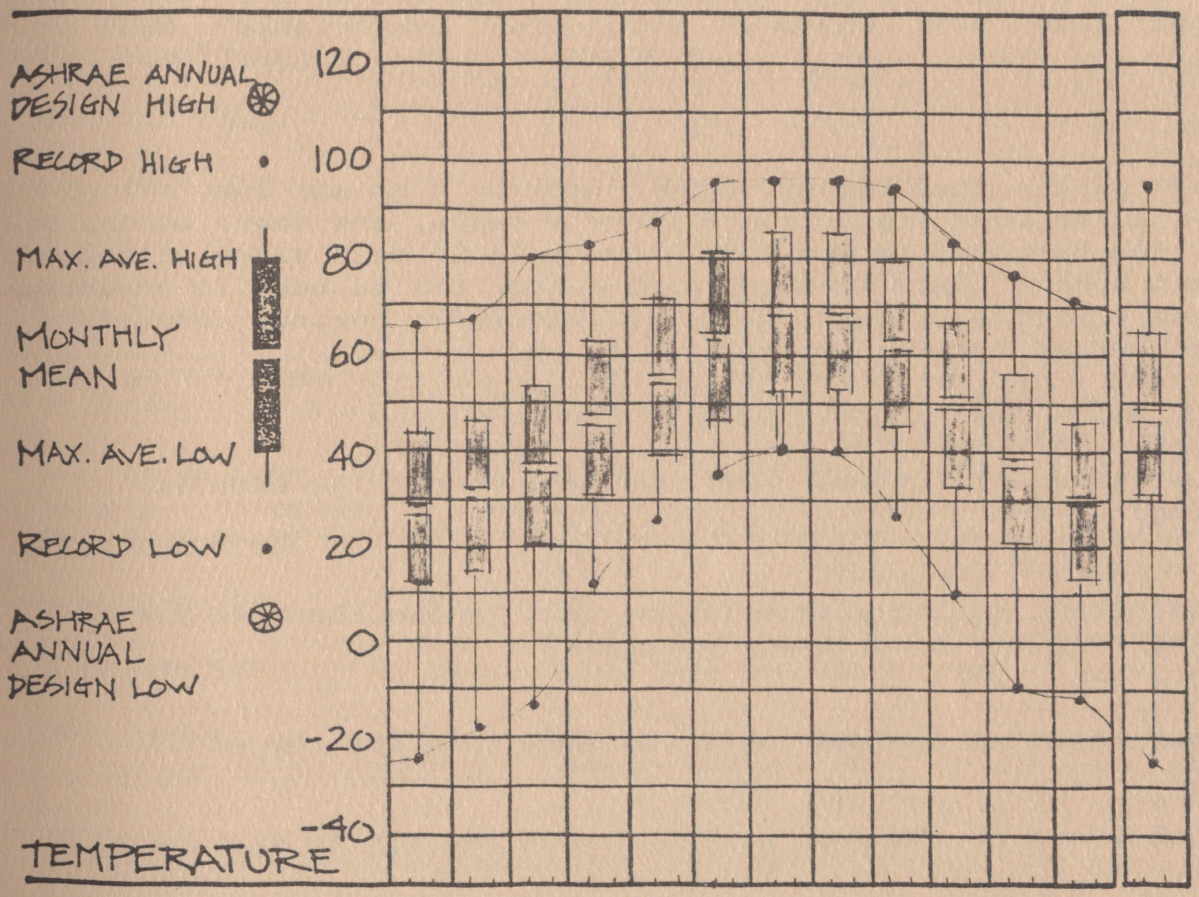
The hotel will probably be located on the main street and will address the imagery of the forms on main

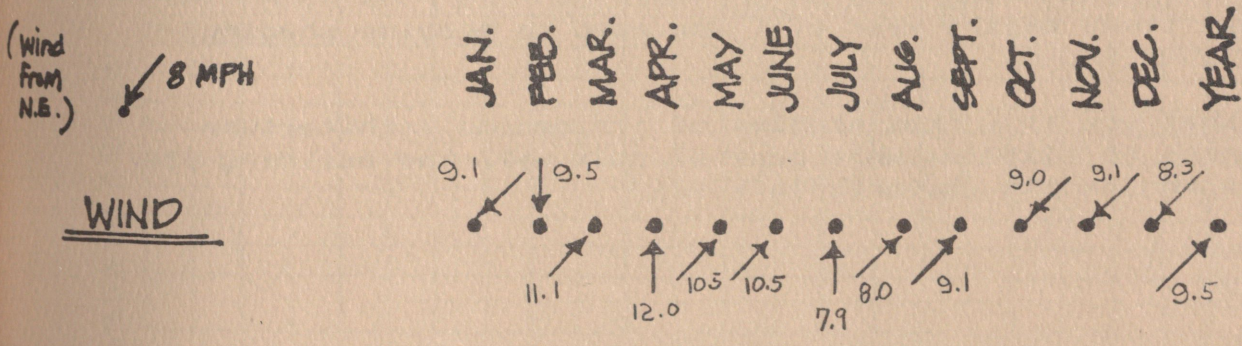
street as well as in the railroad yard. The hotel, as an image generator, should carry the visitor back to 1900. The style of the hotel may turn out to be Victorian but the conveniences should be 1987. So will the construction and fixtures unless, as is sometimes the case, the 1890 ones work better.

The depot is now fully utilized and contains the railroad management offices. These offices were once the living quarters of the station agent. A possible projected use is a lunch or breakfast counter.

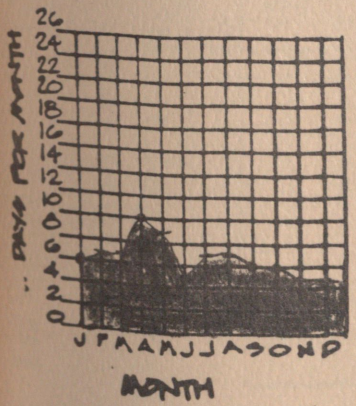
CLIMATE ANALYSIS

• TEMPERATURE & WIND CHART





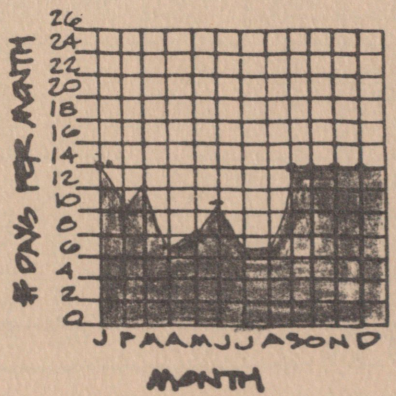
CLOUDY DAYS



P. CLOUDY DAYS



CLEAR DAYS



CITY: RATON, NEW MEXICO **LATITUDE:** 37° N

D

SUMMARY OF CLIMATIC IMPLICATIONS

Evaluate the information you have recorded to answer the following:

1. How would people classify your climate for much of the year: too hot? too cold? too dry? too humid? comfortable? WHY?
   MOST OF THE TIME [illegible] RANGES ARE [illegible] THE COMFORT ZONE BUT THE CLIMATE IS WITHIN EASILY CONTROLLED LIMITS. HUMIDITY TENDS TOWARD THE DRY SIDE BUT ALSO WELL WITHIN LIMITS
2. In what months does the difference between high and low temperatures seem significant? (For example, are there months in which the temperature/humidity line falls on both sides of the comfort zone?) Such large diurnal swings can be used to advantage in some climates by storing heat or coolth in periods when it is not needed for use in the periods when it is.
   JULY AND AUGUST ARE ON BOTH SIDES OF THE COMFORT ZONE THE LOCATION (HIGH DESERT) TYPICALLY HAS LARGE SWINGS BETWEEN TEMP. EXTREMES
3. At what times of the year will you want to use the wind for cooling? VERY LITTLE COOLING IS APARENTLY NEEDED. JULY AND AUGUST. TRAIN RIDERS ARE IN THE HIGH MOUNTAINS DURING THE HEAT OF THE DAY.
4. At what times of the year will you want to use the wind for cooling only if you also add moisture?
   SAME AS 3
5. At what times of the year will you want to block the wind?
   TEMPS. ARE COLD OCT. - APRIL WHEN THE TEMP LINES DO NOT PENETRATE THE COMFORT ZONE.
6. At what times of the year will you need the sun to stay warm?
   ALL MONTHS EXCEPT JULY AND AUGUST. EVEN THEN DURING MORNING HOURS
7. At what times of the year will you need to provide shading?
   JULY AND AUGUST
8. From what you know from studies of indigenous architecture responses to climate, what general role will the building play in keeping people comfortable in:

   -summer:

   -autumn:

   -winter:

   -spring:

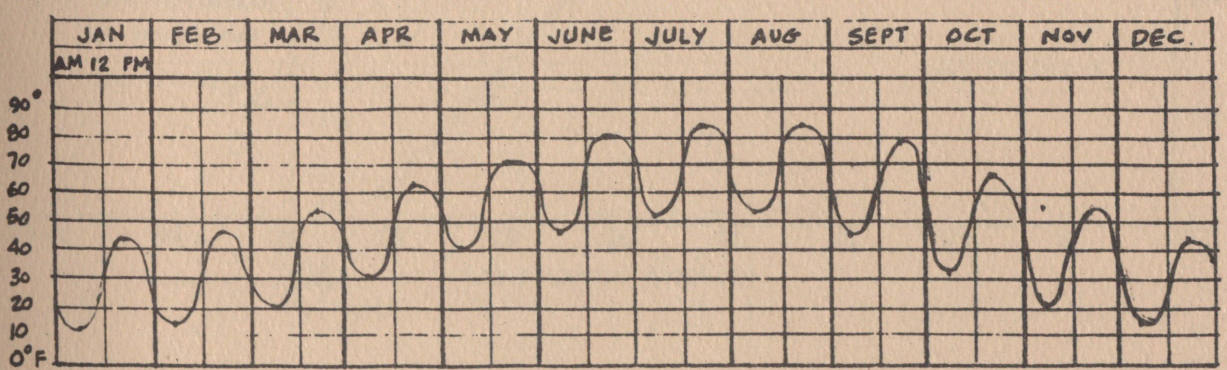
CITY: RATON N. M. LATITUDE: 37° N

MONTHLY TEMPERATURE AND RELATIVE HUMIDITY CHARTS

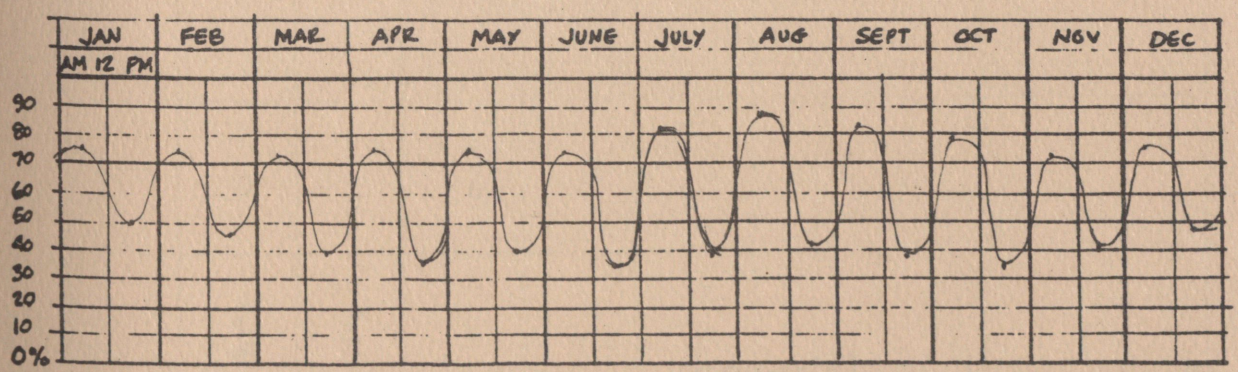
	Jan.	Feb.	Mar.	Apr.	May	June
Ave. High Temp:	42.9	47.6	53.6	63.3	71.3	80.9
Ave. Low Temp:	11.7	15.7	20.2	31.6	39.1	47.4
Ave. High RH:	77	75	72	74	75	74
Ave. Low RH:	50	46	39	36	40	36
Mean Temp:	27.3	31.7	36.9	47.5	55.2	64.2

	July	Aug.	Sep.	Oct.	Nov.	Dec.
Ave. High Temp:	85.7	84.7	79.2	67.2	56.4	46.1
Ave. Low Temp:	52.4	52.5	44.8	32.5	20.5	13.6
Ave. High RH:	82	88	81	79	72	76
Ave. Low RH:	39	41	38	36	40	48
Mean Temp:	69.1	68.6	62.0	49.9	38.5	29.9

DIURNAL TEMPERATURE CYCLES



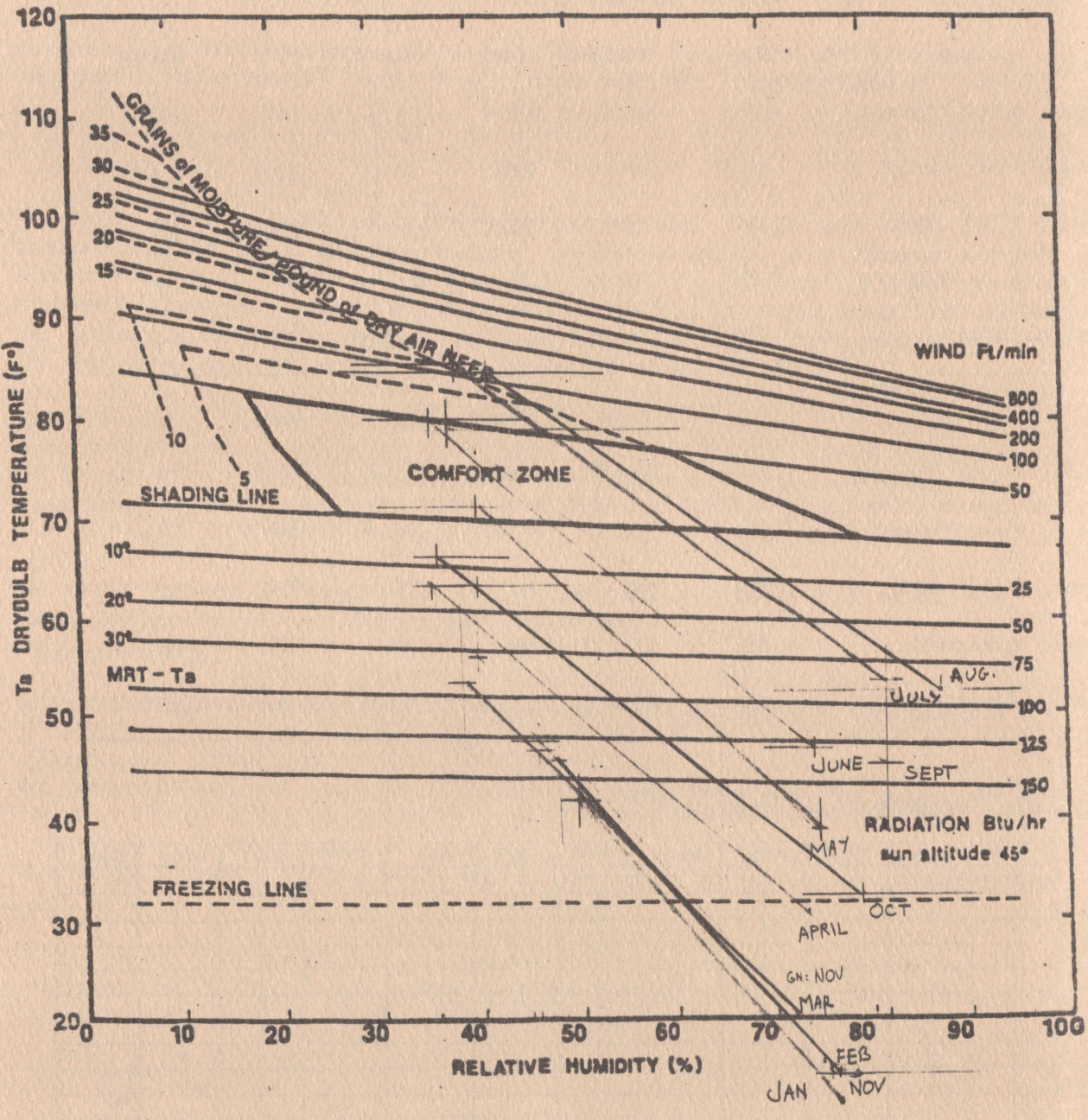
DIURNAL RELATIVE HUMIDITY CYCLES



RATON, NEW MEXICO

A

AREN'S BIOCLIMATIC CHART



CITY: ~~ALBUQUERQUE N.M.~~ RATON NEW MEXICO LATITUDE: ~~35° N.~~ 37°

B

Sun Angles
Chama N.M.

	MARCH 21			JUNE 21			SEPT 21			DEC 21		
	AZI	ALT	PROF	AZI	ALT	PROF	AZI	ALT	PROF	AZI	ALT	PROF
SNRZ	90°E	0		4:40AM 119°E	0		90°E	0		6:10AM 61°E	0	
AM 10:00	44°E	45°		71°E	62°		44°E	45°		30°E	24°	
NOON	0°	54°		0°	77°		0°	54°		0°	30°	
PM 2:00	44°W	45°		71°W	62°		44°W	45°		30°W	24°	
SNST	90°W	0		7:15PM 119°W	0		90°W	0		4:45 PM 61°W	0	

Profile ∠ Windows Oriented ° from True S.

Sun Time −8 min

Azimuth ∠ from True South

S O L A R C A L C U L A T I O N S

Actual Project Latitude — 36 degrees 53 minutes N.
Actual Project Longitude — 106 degrees 35 minutes W.

Sun Angle Calculator — 36 degree chart

Sun Time: Su. T. = St. T + Et. + 4(Sm - L)

For Chama June 21 10:00

Su.T. =10:00 + 2min. + 4(-1.5)
Su.T. = 9:52

Sun Time = Std. Time - 8 min.

PROBLEM STATEMENT

The Cumbres and Toltec Railroad is a unique part of history that could not be replaced and could be duplicated only with great difficulty. The visitor comes to be entertained and to view the historic technology. He or she is a family member, senior citizen, or railroad buff. His or her stay should be a transformation to the late 19th century.

The two major structures are to be a hotel for the accomodation of railroad riders and a museum to help explain what the railroad is all about. The hotel should be an experience of the elegance of the era when "dinner in the diner" was a gastronomic treat and service was the benchmark of competition for the riders. The museum must give the visitor a sense of the place that he is in, the historic role of the railroad in the town, and the reasons for which the railroad was built. It should also show the people how railroads functioned from repairs in the roundhouse to the clearing of snow from the high pass main line. Working examples are the most effective way.

The site is long and narrow, accessable only on one end and one side. The river presents an opportunity to buffer the hard lines of the technology. Determination to preserve the existing operation as it is, requires

new construction to be placed on the east and west edges of the project. This creates conflicts with trains, vehicles, and pedestrians that must be dealt with. The museum must be integrated with the operation without interfering with it. The hotel should also give access without interference. Limits of the integral site should be defined.

The role of the facility has changed from a major division point to a major passenger terminal. The visitors need to be served without disturbing the historic value of the existing yard.

The railroad is full of forms and symbols. The town also contains form-giving devices and both sources should be considered when designing. The natural forms of the river and the mountains also present opportunities. The theme of this project is history. Some buildings on main street date to the building of the railroad. The existing railroad structures date from the turn of the century. All of these examples will influence the project.

This railroad is jointly owned by the states of New Mexico and Colorado and it is operated by a leasing company. It survives on operations generated revenue, donations, and volunteer help. It is an assumed

condition that the funds for the project could be generated through the above sources plus bonds and appropriations.

There is a finite limit to the number of passengers that the train can carry. The railroad does not expect to house and feed all of the passengers; only to offer an experience that will complement the train ride. The expansion of the museum will depend more on the amount of material to be displayed than on the number of visitors.

FUNCTIONAL LISTING

OF

SPACES

FUNCTIONAL LISTING OF SPACE

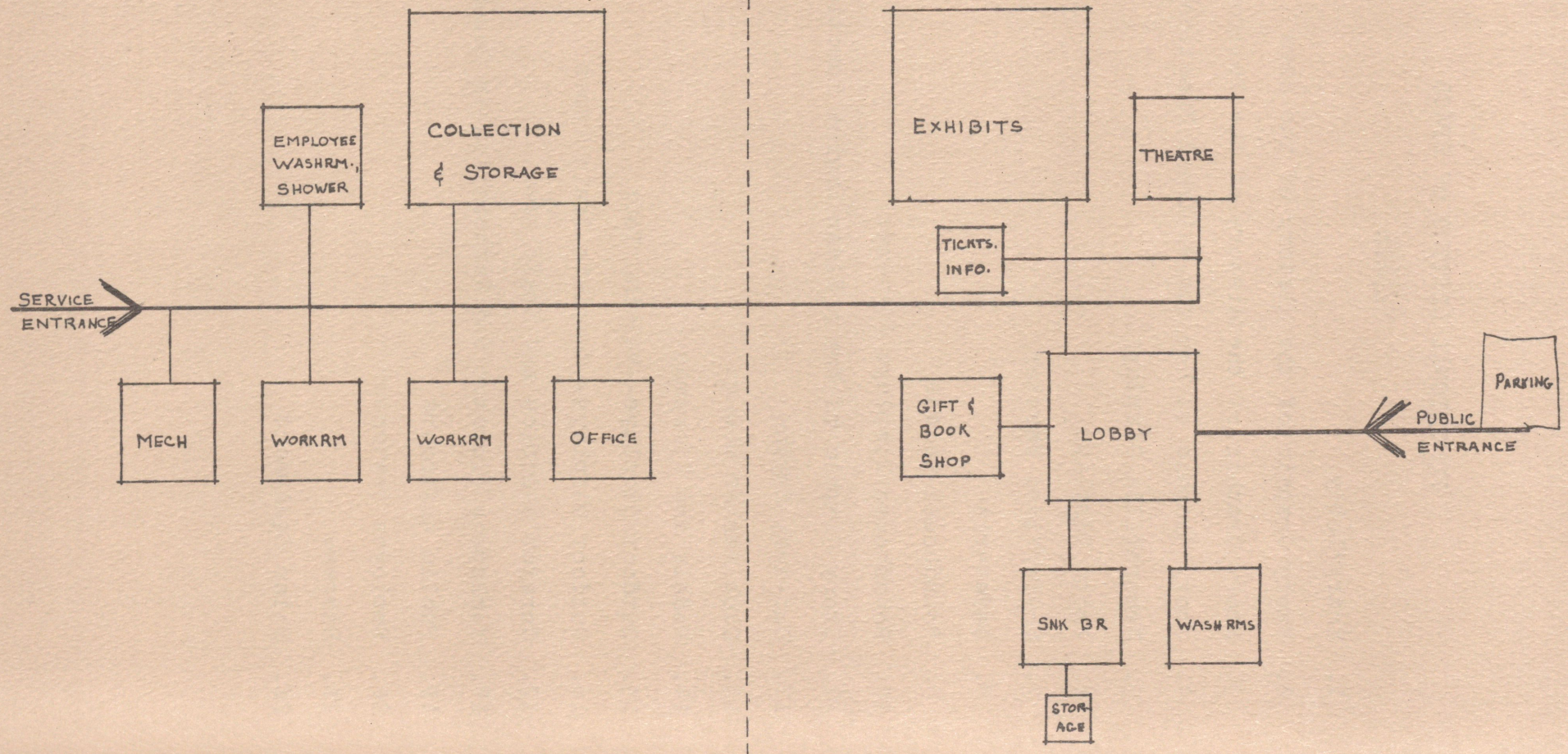
MUSEUM

1. Entry/Lobby
2. Story Graphic of the History of the Area
3. Story Graphic of the History of the Railroad
4. Story Graphic of How the Railroad Functions
5. Memorabilia Displays
6. Photo Displays
7. Movie/Video Theater
8. Cafeteria
9. Roundhouse Access
10. Roundhouse Displays (General)
11. Story Graphic of How A Steam Engine Functions
12. Cut-away Engine
13. Club Member Lounge
14. Models and Dioramas
15. Outdoor Displays--Walking Tour
16. Outdoor Displays--Complete Train Types
17. Curator's Office and Staff Area
18. Workspace (Curator and Restoration in Roundhouse)
19. Public Restrooms
20. Employee Restrooms
21. Storage
22. Solar Equipment

Space Relationships
Museum

Staff Areas

Public Areas



BUILDING TYPE MUSEUM

Space Name: Entry/Lobby

Predicted daily use: 400 **Maximum capacity:** 150

Area required: 500 sq.ft

Function:

visual Guide visitors to other Museum functions, provide crowd control and ticket sales.

mechanical HVAC Possible solar wall location

acoustical separate and dampen

electrical Lighting, Utility outlets

adjacency Theatere, Museum displays, Cafeteria, Restrooms

codes UBC, Elec., Mech., exiting and Handicapped

BUILDING TYPE MUSEUM

Space Name: Regional History Story Graphic

Predicted daily use: 300 **Maximum capacity:** 20

Area required: 300 sq. feet

Function:

visual To display in graphic form the history of the area other than the railroad.

mechanical Air, temperature humidity controls.

acoustical Absorb sound.

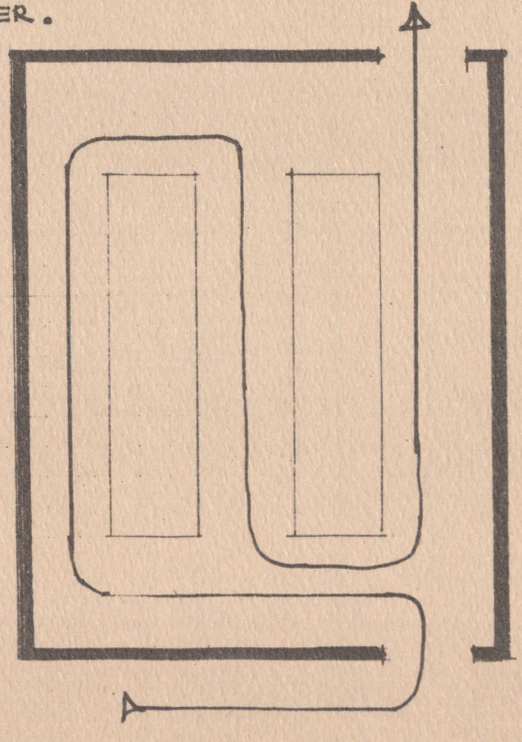
electrical Display lighting, utility outlets

adjacency Other displays.

codes Occupancy.

AN OPTION TO SEPARATE THE DIFFERENT DISPLAYS FROM ONE ANOTHER.

LIGHTING COULD BE ARTIFICIAL, TO CREATE AN EFFECT, NATURAL, OR A COMBINATION OF BOTH.



BUILDING TYPE MUSEUM

Space Name: Railroad Story Graphic (History)

Predicted daily use: 300 **Maximum capacity:** 20

Area required: Wall 60' (15-30-15) x 5' wide
300 sq. feet

Function:

visual Provide display space for a wall story graphic plus display of railroad artifacts.

mechanical HVAC

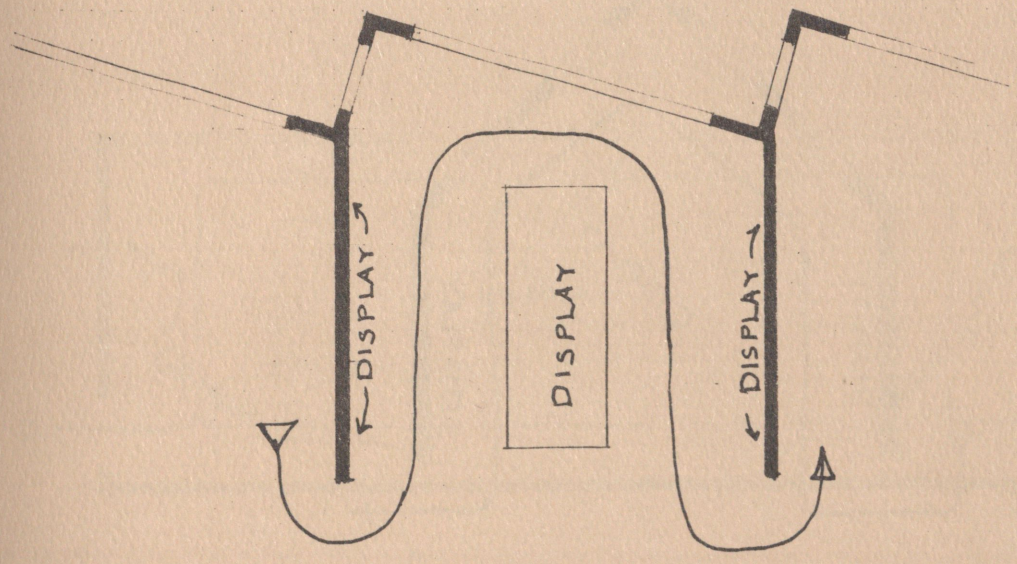
acoustical Absorb sound

electrical Utility outlets, Specialty lighting

adjacency Main entry, theatre, Caceteria

codes UBC (Incl. exiting) Mech., Elec., Handicapped

A SECOND OPTION FOR TRAFFIC FLOW WITH NATURAL LIGHTING.



BUILDING TYPE MUSEUM

Space Name: Railroad Story Graphic (Functions)

Predicted daily use: 300 **Maximum capacity:** 20

Area required: 300 sq. feet

Function:

visual Display graphic of how a steam railroad worked and display smaller items to reinforce the graphic.

mechanical Air and humidity plus filter. ventilation.

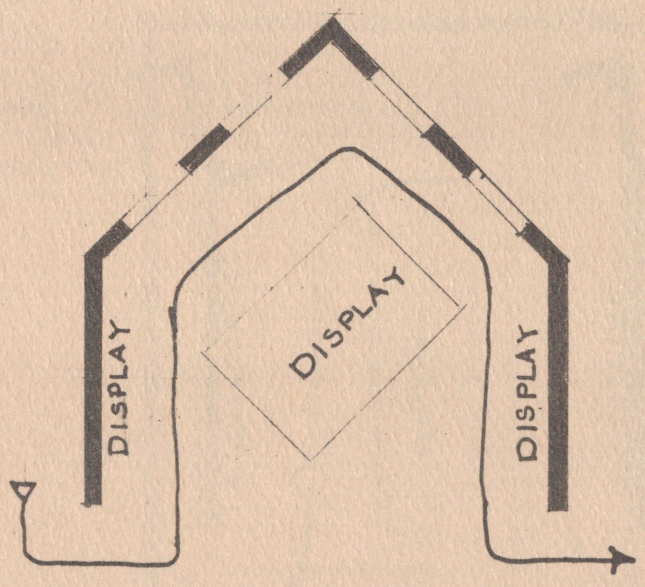
acoustical

electrical Display lighting, utility outlets.

adjacency Other displays.

codes Occupancy.

OPTION 3 TRAFFIC FLOW



BUILDING TYPE MUSEUM

Space Name: Memorabilia Displays

Predicted daily use: 300 **Maximum capacity:** 25

Area required: 500 sq. feet

Function:

visual To display objects directly related to the railroad: headlights, bells, whistles, wheels, signs, silverware, china....

mechanical Air, temperature, humidity controls.

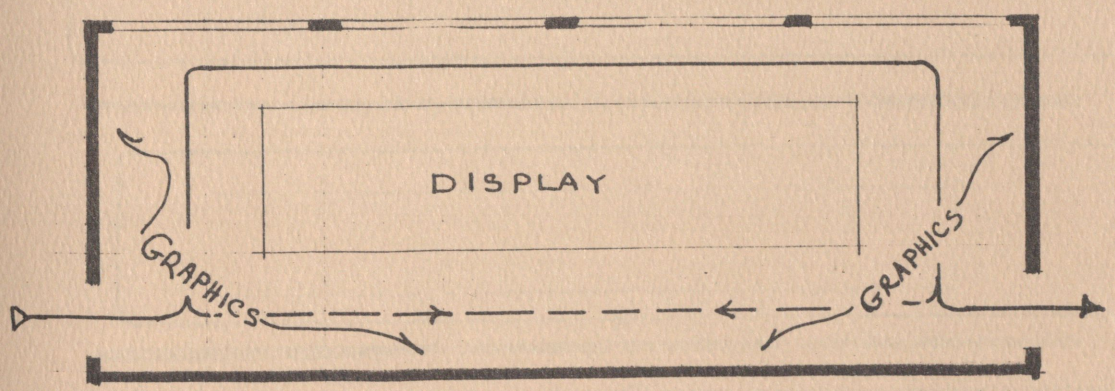
acoustical Sound absorbing.

electrical Display lighting, utility outlets.

adjacency Other displays.

codes Occupancy

OPTION 4 DAYLIT WITH SOUTH LITE



BUILDING TYPE MUSEUM

Space Name: Photo Displays

Predicted daily use: 300 **Maximum capacity:** 30

Area required: 350 sq. feet

Function:

visual Background should not distract from the photo displays

mechanical HVAC

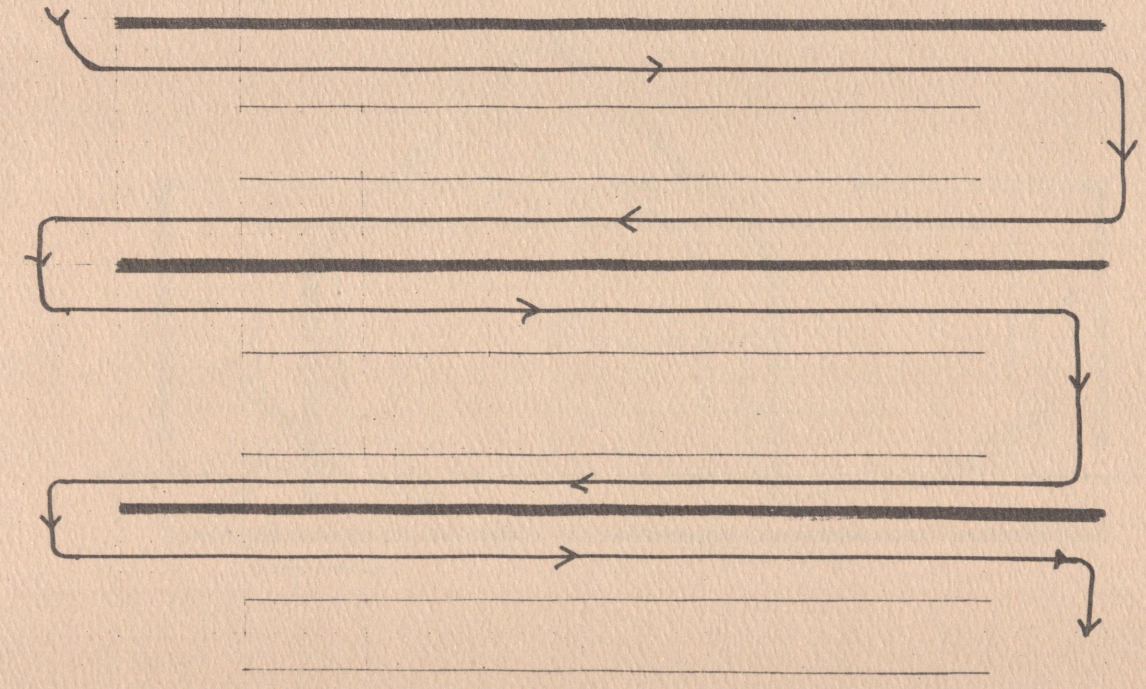
acoustical absorbtion

electrical Elec. Source for special lighting, Utility outlets.

adjacency Other museum displays

codes UBC (incl. exiting) Mech., Elec., Handicapped

CONSTANT FLOW PATTERN - OVERHEAD NATURAL OR ARTIFICIAL LIGHTING



BUILDING TYPE MUSEUM

Space Name: Movie/Video Theater

Predicted daily use: 200 **Maximum capacity:** 50

Area required: 750 sq. feet
25' x 30'

Function:

visual To show movies or give slide shows and lectures on a scheduled basis to visitors.

mechanical Movie/slide screens and projectors.

acoustical Absorb and isolate.

electrical House lights, booth lights, utility outlets, screen motor, sound system.

adjacency Lobby, visitors' desk.

codes Theater (fire, occupancy, exiting)

BUILDING TYPE MUSEUM

Space Name: Cafeteria

Predicted daily use: 300

Maximum capacity: 50
Excluding outdoor dining

Area required: 1000 sq. ft.
Including kitchen and storage

Function:

visual Blend with roundhouse

mechanical HVAC + vent hoods kitchen plumbing

acoustical Isolate

electrical 110/220 for major appliances, work lighting special effects lighting

adjacency Main entry, Museum displays, Outdoor dining

codes Elec, Mech., UBC

BUILDING TYPE MUSEUM

Space Name: Roundhouse Access

Predicted daily use: **Maximum capacity:**

Area required:

Function:

visual An open connection from the museum building to the roundhouse.

mechanical N/A

acoustical None--hear the actual sounds of the working railyard.

electrical Lighting

adjacency N/A

codes Exiting

Space Name: Main Roundhouse

Predicted daily use: 350 **Maximum capacity:** 350

Area required: 5000-7000ft

Function:

visual Present the feeling of a turn of the century roundhouse without the soil, soot, and noise. Display restored rolling stock and items found in a typical roundhouse

acoustical None

mechanical HVAC, Solar shading control,

electrical Function lighting, specalty lighting, utility outlets

adjacency Main Museum, turntable, walking tour access, restoration facility

codes UBC, Elec., Mech., Handicapped

BUILDING TYPE MUSEUM
(In Roundhouse)

Space Name: Steam Engine Story Graphic

Predicted daily use: 300 **Maximum capacity:** 20

Area required: 300 sq. feet
If a cut-away engine were used, 1300 sq. feet

Function:

visual To display the theory, in graphics, of how a steam engine functions.

mechanical Air, filter, humidity control.

acoustical Sound absorbing

electrical Display lighting, utility outlets.

adjacency Other graphic displays.

codes Occupancy

BUILDING TYPE MUSEUM

Space Name: Roundhouse Displays (Cut-Away Engine)

Predicted daily use: 500 **Maximum capacity:** 50

Area required: 1200 sq. feet

Function:

visual Natural overhead lighting and artificial enhancement--1890 flavor except for the dirt.

mechanical

acoustical N/A

electrical

adjacency In roundhouse

codes

BUILDING TYPE MUSEUM

Space Name: Club Members' Lounge

Predicted daily use: Variable **Maximum capacity:** 50

Area required: 300 sq. feet

Function:

visual Overlooks the railroad yard. To be used by club members (the railroad version of the Booster Club) and VIPs.

mechanical Wet bar, air.

acoustical Isolate

electrical Lighting, utility outlets.

adjacency Lobby. Visual contact with railroad yard. Isolate from regular guests.

codes Fire and exiting requirements. Occupancy.

BUILDING TYPE MUSEUM

Space Name: Models and Dioramas

Predicted daily use: 300 **Maximum capacity:** 20

Area required: 400 sq. feet

Function:

visual an HO scale model of the C&TSR (look, but don't touch) viewed through glass windows.

mechanical HVAC

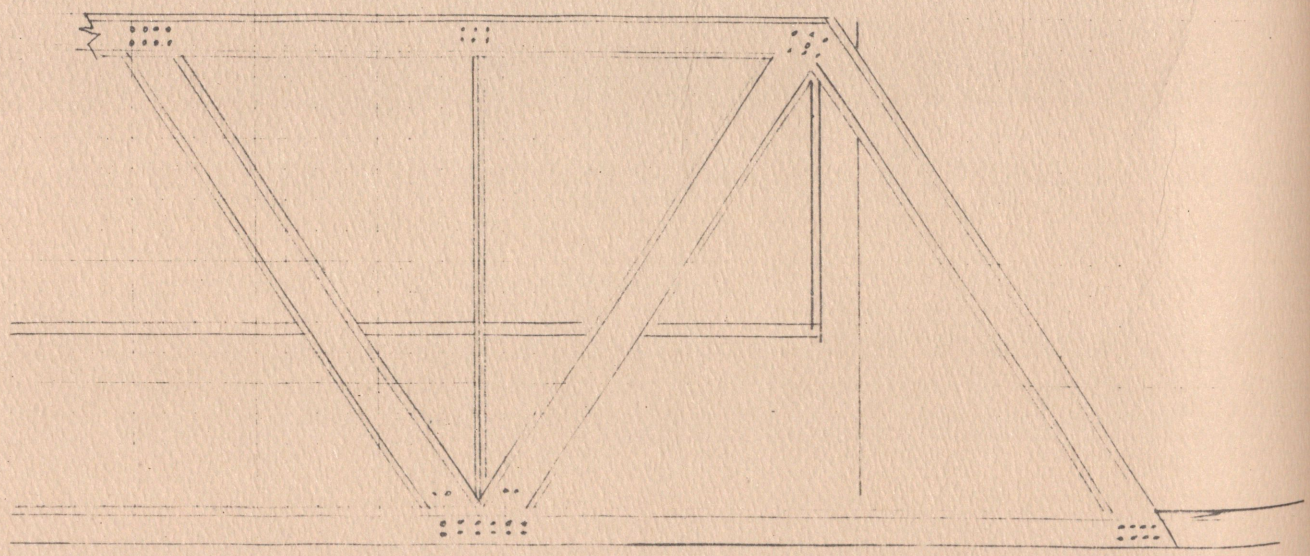
acoustical Isolate

electrical Display lighting, utility outlets, functional electrical supply

adjacency Possible transition from Museum to Roundhouse

codes UBC, Elec., Handicapped

PLATE GIRDER: TO MAKE A POSSIBLE OBSERVATION PLATFORM FOR VIEWING THE DIORAMA. THIS BRIDGE TYPE IS SIMILAR TO THRU TRUSSES USED A RAILROAD BRIDGES IN THE EARLY 1900's



BUILDING TYPE MUSEUM

WALKING TOUR

Space Name: Outdoor Displays

Predicted daily use: 500

Maximum capacity: N/A

Area required: N/A

Function:

visual This tour would be guided primarily by signage. This signage should not disturb the historic value of the existing site.

mechanical None

acoustical None

electrical Possible lighting for evening tours.

adjacency The tour should be designed so that it can start and end either at the depot or at the museum

codes UBC/ Public safety

Includes:

A. Specialty Cars
B. Complete Trains of Different Types
C. Coal Tower
D. Water Tank
E. Ash Pits
F. Bunk Houses
G. Switches
H. Turntable
I. Oil House
J. Ice House

Space Name: Outdoor Displays (Complete Train Types)

Predicted daily use: 500 **Maximum capacity:** N/A

Area required: 3 to 4 tracks --300 feet long

Function:

visual Create a sense of realism as if the train was actually ready to depart the station. Use a visual screen between depot and museum parking.

acoustical N/A

mechanical Tracks and Switches.

electrical Possible overhead outdoor lighting.

adjacency Depot, museum, and museum parking.

codes Public safety awareness.

TRAIN TYPES

1. COAL
2. CATTLE
3. OIL FIELD SUPPLY
4. SNOW REMOVAL
5. PASSENGER

BUILDING TYPE MUSEUM

Space Name: Curator's Office and Staff Area

Predicted daily use: N/A **Maximum capacity:** N/A

Area required: 450 sq. feet
15' x 30'

Function:

visual 1890's furnishings, good natural lighting.

mechanical Air conditioning and ventilation.

acoustical Isolate.

electrical Lighting and utility outlets.

adjacency Display areas, workshops, employee parking.

codes Electrical and mechanical.

BUILDING TYPE MUSEUM

Space Name: Workspace (Curator and Restoration in Roundhouse)

Predicted daily use: **Maximum capacity:**

Area required: 1200 sq. feet in museum building

Function:

visual Good natural and artificial lighting.

mechanical Good heating and ventilation.

acoustical Separate from the museum by using hallways, brick walls and insulation.

electrical Lighting, 110/220 three phase power.

adjacency Roundhouse, passage to museum.

codes Electrical and mechanical.

BUILDING TYPE MUSEUM

Space Name: Public Restrooms

Predicted daily use: 300 **Maximum capacity:** 12 ea

Area required: 150 sq. ft. ea.

Function:

visual Shield from view. entry pointed out by signage.

mechanical HVAC, Plumbing

acoustical Isolate

electrical Lighting, utility outlets.

adjacency Theatre, Cafeteria, Museum displays.

codes Elec., Mech., UBC., Handicapped.

BUILDING TYPE MUSEUM

Space Name: Employee Restrooms

Predicted daily use: 30 **Maximum capacity:** 20

Area required: 50 sq. ft. ea. plus 200 sq. ft. ea. for employee lockers and showers.

Function:

visual Minimum exposure to the public

mechanical HVAC, Plumbing

acoustical Isolate

electrical Lighting, Utility outlets

adjacency Workshop areas

codes Elec., Mech.

BUILDING TYPE MUSEUM

Space Name: Storage

Predicted daily use: N/A

Maximum capacity: N/A

Area required: 5000 Sq. Ft.

Function: Storage of materials to be restored, archives, and raw materials to be used in restoration.

visual None

mechanical ventilation

acoustical None

electrical Lighting and utility outlets

adjacency Museum displays, roundhouse, workshops

codes UBC, Elec

BUILDING TYPE MUSEUM

Space Name: Solar Equipment

Predicted daily use: N/A

Maximum capacity: N/A

Area required: 150 sq. feet

Function:

visual Trombe walls in main entry and theater.

mechanical Air movement equipment.

acoustical Quiet air movement equipment.

electrical Swith gear to run mechanical equipment.

adjacency South side of building.

codes

FUNCTIONAL LISTING OF SPACE

HOTEL

I. Front of the House

A. Rooms and Accomodations

1. Check-in
2. Information Center
3. Ticket Sales
4. Lobby/Gathering Area
5. Guest Room (Double)
6. Guest Room (Single)
7. Balcony/Patio
8. Hot Tub/Spa
9. Workout Room
10. Gift Shop
11. Conference Room
12. T.V./Movie Room
13. Ice and Vending Machines
14. Video/Game Room
15. Public (Lobby) Restrooms
16. Parking
17. Railroad Access

B. Dining and Bar

1. Fine Dining
2. Coffee Shop
3. Outdoor Dining
4. Bar

II. Back of the House

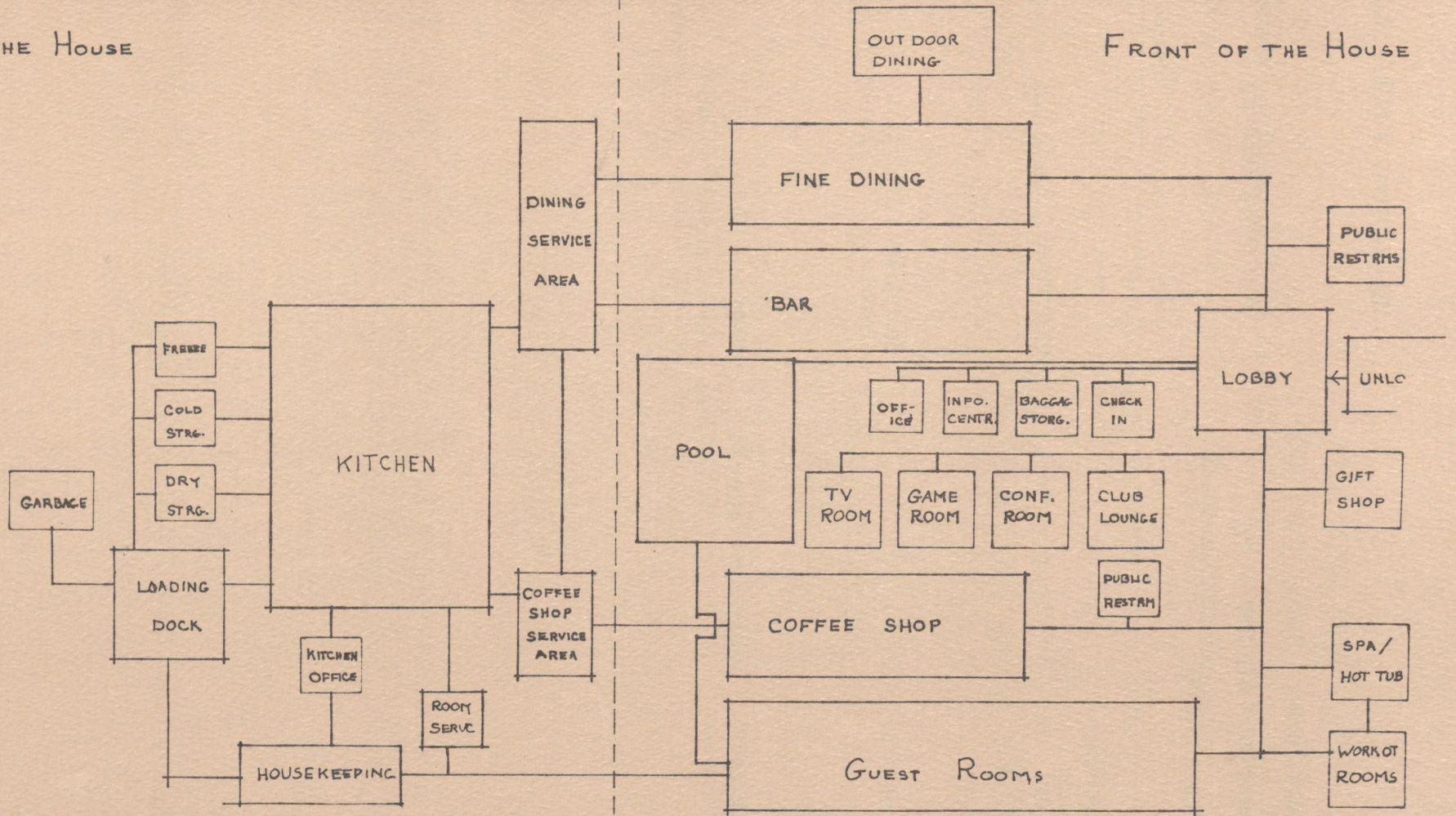
1. Kitchen (for Fine Dining)
2. Kitchen Office
3. Dry Storage
4. Cold Storage
5. Walk-in Freezer
6. Loading Dock
7. Bar Storage
8. Garbage Storage
9. Luggage Storage

Space Relationships

Hotel

Back of the House

Front of the House



BUILDING TYPE HOTEL

Space Name: Guest Check In

Predicted daily use: N/A **Maximum capacity:** N/A

Area required:

Function:

visual Easily visible from entry.

mechanical Same as lobby.

acoustical N/A

electrical Lighting, utility outlets. Telephone hookups.

adjacency Lobby, manager's office.

codes

BUILDING TYPE HOTEL

Space Name: Information Center

Predicted daily use: 50-100 **Maximum capacity:** N/A

Area required: 100 sq. feet
Could be part of the ticket sales or check in function.

Function:

visual Lobby

mechanical Same as check in.

acoustical Same as lobby.

electrical Lighting and utility outlets.

adjacency Lobby, dining, bar, public restrooms.

codes

BUILDING TYPE HOTEL

Space Name: Ticket Sales

Predicted daily use: 100 **Maximum capacity:**

Area required: Could be a part of the check-in process

Function:

visual Easily seen **mechanical** Same as check-in.

acoustical Same as lobby **electrical** Same as check-in

adjacency Same as check-in desk. **codes**

BUILDING TYPE HOTEL

Space Name: Lobby Gathering Area

Predicted daily use: 200 **Maximum capacity:** 80

Area required: 800 sq. feet

Function:

visual Victorian--wood, brass, and wallpaper.

mechanical Air and ventilation.

acoustical Absorbtion

electrical Lightening and utility outlets.

adjacency Check in, bar, hall to guest rooms, dining and coffeeshop, gift shop, public restrooms.

codes Occupancy, exiting requirements, fire.

BUILDING TYPE HOTEL

Space Name: Guest Room (Double)

Predicted daily use: 3-4 Persons **Maximum capacity:** 4 persons plus 2

Area required: 364 sq feet
13'-14' wide x 26'-30' long including bath facilities

Function:

visual Interior--Victorian flavor with modern conveniences. Exterior--Each room, if possible, an individual balcony as well as a hall exit to main lobby.

acoustical Separate each room as acoustically as possible. Double staggered stud wall and insulation.

adjacency Hallway to ice machines, lobby, game rooms, snack machines. Exits to parking.

mechanical Zone air for each individual room. Bath tub with shower, separate sink and dressing area with double basins. Stool.

electrical Plug-ins in bath and main room, utility plug-in, reading and desk lamps, main room light, radio and T.V. cable, telephone hookup.

codes Exiting requirements. Firewalls.

BUILDING TYPE HOTEL

Space Name: Guest Room (Single)

Predicted daily use: 1-2 **Maximum capacity:** 2 plus 1

Area required:
12'-13' wide x 20'-26' long including bath facilities

Function:

visual Interior--Victorian flavor with modern conveniences. Exterior--Each room, if possible, an individual balcony as well as a hall exit to main lobby.

acoustical Separate each room as acoustically as possible. Double staggered stud wall and insulation.

adjacency Hallway to ice machines, lobby, game rooms, snack machines. Exits to parking.

mechanical Zone air for individual rooms. Bath tub with shower, separate sink and dressing area with double basins. Stool in bath and shower area.

electrical Plug-ins in bath and main room, utility plug-in, reading and desk lamps, main room light, radio and T.V. cable, telephone hookup.

codes Exiting requirements. Firewalls.

BUILDING TYPE HOTEL

Space Name: Balcony/Patio (Each Room)

Predicted daily use: 2-4 **Maximum capacity:**

Area required: 84 sq. feet
14' x 6'

Function:

visual Victorian style, a view if possible.

mechanical N/A

acoustical Screened.

electrical Lighting-weatherproof and utility outlets.

adjacency Guest room.

codes

BUILDING TYPE HOTEL

Space Name: Hot Tub/ Spa

Predicted daily use: 30 **Maximum capacity:** 15

Area required: 400 sq. feet Two Tubs
20'x 20'

Function:

visual Semi-private space. Wood deck with tile surround and drainage

mechanical Tub piping and filters

acoustical Isolate

electrical Motors and lighting

adjacency Room halls, workout rooms

codes Electrical and plumbing

BUILDING TYPE HOTEL

Space Name: Workout Room

Predicted daily use: 20 **Maximum capacity:** 5

Area required: 180 sq. feet
12' x 15'

Function:

visual Pleasant, neutral surface covering (bombproof)

mechanical Weight and workout machines

acoustical Isolate

electrical Lighting and utility outlets

adjacency Spa, room halls

codes

BUILDING TYPE HOTEL

Space Name: Gift Shop

Predicted daily use: 200 **Maximum capacity:** 15

Area required: 120 sq. feet

Function:

visual To display souvenirs and memoribilia of the trip. A small shop.

mechanical Air and ventilation.

acoustical Absorbtion

electrical Lighting and utility outlets.

adjacency Lobby, ticket sales.

codes

BUILDING TYPE HOTEL

Space Name: Conference Room

Predicted daily use: 0-20 **Maximum capacity:** 20

Area required: 200 sq. feet

Function:

visual

mechanical Air and ventilation

acoustical Isolate and absorb-tion.

electrical Lighting and utility outlets.

adjacency Lobby, guest room hallway.

codes fire and exiting require-ments.

BUILDING TYPE HOTEL

Space Name: T.V./Movie Room

Predicted daily use: 20 persons **Maximum capacity:** 15

Area required: 225 sq. feet
This could be a function of the lobby

Function:

visual Define area separate from lobby

mechanical Air and ventilation.

acoustical Isolate

electrical Lighting and utility outlets. T.V. cable.

adjacency Lobby

codes

BUILDING TYPE HOTEL

Space Name: Ice and Vending Machines

Predicted daily use: **Maximum capacity:**

Area required:

Function:

visual Not obnoxious

mechanical Plumbing for ice machine.

acoustical Suppress

electrical Lighting and utility outlets

adjacency Room hallways

codes

BUILDING TYPE HOTEL

Space Name: Video/Game Room

Predicted daily use:

Maximum capacity:

Area required: 154 sq. feet
11' x 14'

Function:

visual Pleasant, nondistracting.

mechanical Air and ventilation.

acoustical Absorbtion and isolate.

electrical Plenty of utility outlets and lighting.

adjacency Lobby, T.V. room.

codes Fire and exiting requirements.

BUILDING TYPE HOTEL

Space Name: Public (Lobby) Restrooms

Predicted daily use: 100 **Maximum capacity:** 10

Area required: 200 sq. feet (100 each)

Function:

visual Entry visible, but screened from the lobby.

mechanical Stools, urinals, sinks, floor drains.

acoustical Isolate.

electrical Lighting, ground fault utility outlets.

adjacency Lobby, bar, dining and coffee shops.

codes Plumbing, electrical. Health.

BUILDING TYPE HOTEL

Space Name: Parking

Predicted daily use: 25 vehicles for guests (4 persons/car) plus 10 cars in service drive **Maximum capacity:** 35 vehicles
Area required: Each space 20' x 9½' plus 1½' buffers
1 parking space/guest room, 1/3 employees, 2 for delivery service

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Function:

visual 1890's

mechanical Storm drains.

acoustical

electrical Flood lighting-weatherproof.

adjacency Lobby, entrance drive.

codes

BUILDING TYPE HOTEL

Space Name: Railroad Yard Access

Predicted daily use: **Maximum capacity:**

Area required:

Function:

visual Separate, but adjacent to functions of railroad.

mechanical

acoustical

electrical

adjacency

codes

BUILDING TYPE HOTEL

Space Name: Fine Dining

Predicted daily use: 80 **Maximum capacity:** 50

Area required: 16 sq. feet/person
800 sq. feet

Function:

visual Duplicate , as far as possible, the experience of fone dining in 1890. Lots of wood and wallpaper.

mechanical Service area, air conditioning and ventilation.

acoustical Absorbtion within the room. Moderate isolation. Kitchen noises should be isolated from the dining room.

electrical Lighting, some utility outlets.

adjacency Lobby, bar, room hallways, kitchen

codes Occupancy. Exiting requirements.

BUILDING TYPE HOTEL

Space Name: Coffee Shop

Predicted daily use: 100 **Maximum capacity:** 50

Area required: 14 sq. feet/person and 100 sq. feet for grill
700 sq. feet plus 100 sq. feet = 800 sq. feet

Function:

visual Pleasant. Brass, wood and wallpaper. Outside view of railroad yard.

mechanical Air conditioning and ventilation.

acoustical Isolate and absorb.

electrical Lighting and utility outlets.

adjacency Lobby, Kitchen, room hallways.

codes Occupancy. Construction. Exiting requirements.

BUILDING TYPE HOTEL

Space Name: Outdoor Dining

Predicted daily use: 40 **Maximum capacity:** 20

Area required: 15 sq. ft/person
600 sq. feet

Function:

visual Compatible with building forms.

mechanical None

acoustical

electrical Lighting--weather-proof, and utility outlets.

adjacency

codes

BUILDING TYPE HOTEL

Space Name: Bar

Predicted daily use: 60

Maximum capacity: Seating 35

Area required: 560 sq. feet

Function:

visual Victorian flavor

mechanical Coolers, sinks.

acoustical Isolate and absorbtion.

electrical Lighting, service mechanical, utility outlets. T.V. cable, sound system.

adjacency Fine dining, lobby, kitchen, storage

codes Occupancy, exiting requirements, fire, health

BUILDING TYPE HOTEL

Space Name: Kitchen

Predicted daily use: N/A **Maximum capacity:** N/A

Area required: 7 sq feet/meal/hr (Fine Dining 30meals/hour)
210 sq. feet

Function:

visual N/A

mechanical Stoves, sinks, ovens, mixers, slicers.

acoustical Isolate

electrical Lighting, utility outlets, motors.

adjacency Fine dining, bar, storage, loading dock, dish-washing.

codes Fire. Exiting requirements. Health.

BUILDING TYPE HOTEL

Space Name: Kithen Office

Predicted daily use: N/A **Maximum capacity:** N/A

Area required: 64 sq. feet
8' x 8'

Function:

visual N/A **mechanical** Air conditioning

acoustical Isolate **electrical** Lights, utility outlets. Telephone hookup.

adjacency Kithen, bar. **codes**

BUILDING TYPE HOTEL

Space Name: Storage

Predicted daily use: N/A **Maximum capacity:** N/A

Area required: 150 sq feet
10' x 15'

Function:

visual N/A **mechanical** None

acoustical N/A **electrical** Lighting

adjacency Loading dock, kitchen. **codes** Fire. Health.

BUILDING TYPE HOTEL

Space Name: Cold Storage

Predicted daily use: N/A **Maximum capacity:** N/A

Area required: 100 sq.feet
10' x 10'

Function:

visual N/A

mechanical Refrigeration pump and circulation.

acoustical Refrigeration pump noise.

electrical Lighting and pump motor.

adjacency Kitchen, loading dock.

codes Electrical, plumbing. Health

BUILDING TYPE HOTEL

Space Name: Walk-in Freezer (Kitchen)

Predicted daily use: **Maximum capacity:** N/A

Area required: 100 sq. feet
10' x 10'

Function:

visual N/A

mechanical Refrigeration pump and circulation.

acoustical Suppress refrigeration noise.

electrical Lighting and pump motor.

adjacency Kitchen, loading dock.

codes Electrical, plumbing. Health.

BUILDING TYPE HOTEL

Space Name: Loading Dock (Service)

Predicted daily use: N/A **Maximum capacity:** N/A

Area required: 48 sq. feet

Function:

visual Screen from front of the house.

mechanical Cart ramps.

acoustical Suppress truck noise.

electrical Lighting-weatherproof, utility outlet.

adjacency Kitchen storage.

codes

BUILDING TYPE HOTEL

Space Name: Bar Storage

Predicted daily use: N/A

Maximum capacity: N/A

Area required: 25 sq. feet
5' x 5'

Function:

visual N/A

mechanical Ice machine, cooler

acoustical N/A

electrical Cooler, lights, utility outlets

adjacency Bar, loading dock

codes

BUILDING TYPE HOTEL

Space Name: Garbage Storage

Predicted daily use: N/A **Maximum capacity:**

Area required: To accomodate local system

Function:

visual Screened from view.

mechanical None

acoustical Place in an area where 5a.m. pickup will not wake up everyone in the place.

electrical Lighting

adjacency Service drive. Kitchen, housekeeping, loading dock.

codes Health

BUILDING TYPE HOTEL

Space Name: Luggage Storage

Predicted daily use: **Maximum capacity:**

Area required: 100 sq. feet

Function:

visual Screened from lobby. **mechanical** None

acoustical N/A **electrical** Lighting

adjacency Lobby, check-in. **codes** Fire

FUNCTIONAL LISTING OF SPACE

DEPOT

1. Ticket Sales
2. Gift Shop
3. Vendor Service
4. Public Restrooms

BUILDING TYPE DEPOT

Space Name: TICKET SALES

Predicted daily use: 175 **Maximum capacity:**

Area required: Existing

Function:

visual This function is in existing depot, reflects the turn of the century flavor and should not be changed except for preventive mtce.

mechanical

acoustical

electrical

adjacency

codes

BUILDING TYPE DEPOT

Space Name: Gift Shop and Bookstore

Predicted daily use: 500 **Maximum capacity:**

Area required: 240 sq. ft. Inventory rather than number of shoppers will determine the size of the shop.

Function:

visual Retain the forms and materials of the original depot. Install a door off of the platform in place of one of the railroad office windows.

mechanical None

acoustical N/A

electrical Lighting and utility outlets

adjacency Depot Platform

codes UBC, Elec., exiting, Handicapped.

This shop will replace the existing railroad offices which will be moved to the upper floor on the east side of the new museum.

BUILDING TYPE DEPOT

Space Name: Vendor Cart

Predicted daily use:

Maximum capacity:

Area required:

Function:

visual This is also an existing service which should be continued.

mechanical

acoustical

electrical

adjacency

codes

BUILDING TYPE DEPOT

Space Name: Public Restrooms

Predicted daily use: 300 **Maximum capacity:** 10

Area required: 150 sq. ft. ea

Function:

visual protect from direct view
Call out entry with signage
This is an upgrade of existing facilities.

mechanical HVAC, Venting, Plumbing

acoustical Isolate

electrical Lighting and Utility outlets

adjacency Depot Platform

codes UBC, Mech, elec., Handicapped

FOOTNOTES

AND

BIBLIOGRAPHY

FOOTNOTES

[1] The Chinese were probably the most mistreated in all mining regions. Highly resented beacuse of their thrift and ability to work for less, they were seen as taking jobs away from other ethnic groups. They were also, because of their patience and diligence, able to extract significant amounts of gold by reworking placer claims that others believed to be exhausted. Duane A. Smith, Rocky Mountain Mining Camps (Lincoln, NE: University of Nebraska Press, 1967), pp. 29-34.

[2] Ibid., p. 42.

[3] Muriel Sibell Wolle, Montana Pay Dirt (Athens, OH: Sage Books, 1963), p. 16.

[4] Ibid.

[5] Smith, Rocky Mountain Mining Camps, p. 69.

[6] Robert E. Sloan and Carl A. Skowronski, The Rainbow Route (Denver: Sundance Limited, 1975), p. 9.

[7] Smith, Rocky Mountain Mining Camps, p. 137.

[8] Ibid., p. 134.

[9] Lucius Beebe and Charles Clegg, Rio Grande Main Line of the Rockies (Berkeley: Howell-North, 1962), p. 9.

[10] Ibid., p. 8.

[11] Duane A. Smith, Rocky Mountain Boom Town (Albuquerque: University of New Mexico Press, 1980), p. 7.

[12] Roger H. Grant and Charles W. Bohi, The Country Railroad Station (Boulder: Pruett Publishing Co., 1978), p. 21.

[13] Ibid., p. 18.

[14] Ibid., p. 23.

[15] Ibid., p. 3.

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