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# 292

A HISTORY OF THE CANADIAN PACIFIC RAILWAY IN GLACIER NATIONAL PARK, BRITISH COLUMBIA 1884-1930

by David A.A. Finch 1987

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#### Abstract

This report details the history of the impact of the Candian Pacific Railway on Glacier National Park and the Rogers Pass area for the period from 1884 to 1930. This 46 year period encompasses events from the original construction of the line through the park to the last efforts to rebuild Glacier House. The narrative describes in detail how the route was chosen and built. Each bridge in the park is described and the changes at each of the major structures is explained in detail. In addition to the line and supporting structures for the roadbed, the company also built 37 snowsheds in the park to protect the line. The history of the avalanche protection system is described up to and including the current approaches. Next, a complete history of the need for a dininng station at Glacier House, its almost immediate growth into a significant mountain resort in the CPR hotel chain and the eventual demise of the hotel is augmented by a description of as many details as possible regarding the management, personnel, structures and services associated with the site. Photographs, both historic and modern, charts, site plans, floor plans, other related illustrations and appendices together provide valuable supplementary documentation to the text. Finally, this report concludes with recommendations for the preservation of the existing remains of these historic structures and the interpretation of these ruins through various reconstruction, trail clearing and publication projects. This report concludes that the cultural history relating to the impact of the CPR on Glacier National Park and particularly the Rogers Pass area is significant and therefore worthy of preservation. After the resources are stabilized

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they also deserve further interpretation within the scope of existing visitor services and interpretive programs.

Precis

This report investigates the history of the Canadian Pacific Railway's impact on Glacier National Park from 1884 to 1930 in four main sections in addition to introductory, concluding and appendix sections. Beginning with the economic decision by CPR management to request a southern route for the railway rather than the prearranged location through the Yellowhead Pass, Section I details all the major decisions which were made during the cold winter of late 1884 and early 1885 as well as the short dry summer of 1885 as James Ross fought with a harsh environment, insufficient capital, major engineering problems and setbacks and finally pushed a weak first link In an through the Pass before snow fell later that fall. attempt to create an all-weather route through a most inhospitable area, as detailed in Section II, the company next invested millions of dollars in a passive systems of snowsheds and other avalanche protection devices which proved costly to build and maintain and were also ultimately unable to assure reliable passage through the Pass. Eventually the Summit route and accompanying snowsheds were replaced by a subsurface route through a five mile long passage known as the Connaught Tunnel. Although not the only alternative to continued travel through the Pass, the Connaught Tunnel and an 1988 successor solve the problems of avalanche control for rail traffic in the Pass while an aggressive system of avalanche "reaping," or forced premature sliding, along with modern concrete snowsheds today protect the automobile route from most of the hazards originally encountered by Canada's first transcontinental rail line.

Soon after the installation of the original track and

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concurrent with the construction of the first snowsheds, the company built a small dining station just west of the Pass which eventually became a widely-known resort, Glacier House. Part III relates how an engineering decision and subsequent track relocation created a perfect location for the dining station near the foot of a glacier in the otherwise inhospitable Rogers Pass region. From its early days servicing hungry passengers out of a dining car parked on a siding to the later period of its height of popularity with almost 100 bedrooms and services and facilities to delight the traveller, vacationer or mountaineer, the growth of the hotel is recounted in detail. Throughout the text of these three sections references are made to the remaining aspects of cultural history of these three major areas of human interaction with the wilderness area. Without exception, not a single original structure remains intact from the 1880s but the ruins and documents which describe their history together provide a solid basis for understanding the history of this area.

Based on the findings of the report, immediate preservation suggestions and future interpretive options are detailed in the section devoted to recommendations. The first priority must be given to the stabilization of the piers at Loop Creek, the stone culvert at Glacier Creek and the extant ruins at Glacier House. Thereafter, interpretive options include utilization of abandoned trackbed for future trails, including a trail to a late nineteenth century stone masonry bridge structure and its intriguing mountainside source only a few hundred feet above. Other sections of trackbed could also be cleared in order to provide trails from the Loops to Glacier House and from the site of the hotel to the Interpretive Centre at the Pass for those park visitors either

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unwilling or unable to challenge the more ambitious trails in a park known for steep hikes. The reconstruction of a partial snowshed along one of these trails, showing five separate construction stages, is recommended in order to illustrate the long-since abandoned and demolished snowsheds which protected rail traffic through the Pass for over 30 years. And finally, some level of interpretation of the Glacier House ruins is advisable. Trail cutting, sign erection, construction of an historically accurate reproduction of the observation tower, development of an audio-visual presentation utilizing stills or film, and the publication of a booklet to guide interested wanderers through the ruins are all possible options for greater interpretation at the abandoned hotel site. The relocation of snowplows and a dining car to relevant areas in the Pass or reconstruction of additional Glacier House structures is more capital intensive and should not be seriously considered until the above preservation and interpretive options have been implemented or deemed inadvisable.

In its conclusions this report finds the resources available to interpret the cultural history of the Rogers Pass area in Glacier National Park to be incomplete but still comprehensive enough to require immediate preservation and perhaps allow for a significant level of interpretation and even reconstruction of the history of the CPR in the Selkirk mountain park from 1884 to 1930.

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Acknowledgements

Many sources are consulted when preparing a report. However, much useful material is discovered through people who act as additional finding aids when the library and archival systems either do not or cannot be perfectly thorough. The staff at the many repositories visited during the research portion of this project were usually quite helpful but key individuals made the research come alive through their knowledge of the source material or advice on future directions for search.

Keith Webb at the Rogers Pass Interpretive Centre was most helpful in guiding my search through the many files in that office. At the Revelstoke Museum help was provided by Kathy English. Just before moving on to a new phase in his career, Glenbow Chief Archivist Bill McKee provided important direction regarding railway records in Canada. Other Glenbow staff members including Douglas Cass, Len Gotselig, Lindsay Moir and Catherine Myhr as usual provided direction, advice and encouragement. Bob Turner at the British Columbia Provincial Museum, Gabrielle Blais at the Public Archives of Canada as well as David Jones and Jimmy Shields at Canadian Pacific Railway Corporate Archives all assisted directly or indirectly in finding materials relevant to this study. Ian Sumpter with Parks Canada and his recent surveys of the trackbed and Glacier House ruins provided expert criticism and direction to this report. Rick Lalonde carefully redrew floor and site plans as well as the maps included herein. To these and the many sources cited in the endnotes and bibliography I express my thanks.

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Simplified Timeline of Activities in Rogers Pass (Relevant Part of report or page number indicated)

1884 Preparations made to put line thorugh the Pass - 3 1885 A first line is completed - see Part I 1886 Snowsheds built - see Part II Glacier National Park established Glacier House Chalet opens - 66-70 T.C. Sorby designs chalet Mr. Wharton as manager - 93 1887 Running water installed at Glacier House - 86 H.A. Perley becomes manager of Glacier House - 90-104 1888 Rotary snowplows introduced to Rogers Pass - 61-2 1892 1st Annex for Glacier House opens, Bruce Price probably designed the structure - 63-76 Bowling alley built about this time - 72-3 Observation tower built about this time - 114 1897 Electricity installed at Glacier House - 90 Miss A.E. Mollison becomes Glacier House manager - 103 First professional guide arrives at Glacier House - 112 1898 Jean Morrison arrives at Glacier House to act as assistant manager - 104 1899 Mrs. J.M. Young becomes manager of Glacier House - 104 Outfitting business begins at Glacier House - 117 1900 All original trestles and bridges in the park replaced with permanent steel or masonry structures during a decade around the turn of the century - see Part I 1904 Second Glacier House Extension, also called The Wing or the Second Annex, opens - 77-8 Designed by F.M. Rattenbury Footings for additional Rattenbury structure poured

about this time but were never utilized

- Nakimu Caves begin a 25 year development 115
- 1909 Dining cars put on trains through the Pass and meals were no longer served to passengers at Glacier - 117
- 1910 Snowslide killed 52 workmen in the Pass 61
- 1916 Connaught Tunnel opened thereby bypassing Glacier House many bridges and the Loops as well as most of the snowsheds - 35-6
- 1920 A.H. Devnish and Oscar Dahl managed Glacier House from about this date until it closed in 1925 - 104
- 1925 Glacier House closed permanently
- 1926 Plans drawn for new Glacier House hotel 117
- 1929 Glacier House buildings demolished by contractor 118

For the tourist the Rogers Pass story is full of mystery, excitement and intrigue. But for the railway builders of the 1880s, with track racing west across the plains and snaking east from the Pacific, pressure was on to find a route through the Selkirk range of the Columbia Mountains. With his first glimpse of the pass that today bears his name, Major Rogers' challenge was over. He had located the route and left to others the nearly impossible tasks of building and maintaining a railway through some of the most inhospitable country in western Canada.

The Pass is still a major obstacle to transcontinental train travel. A second tunnel will open in 1988 to supplement the first tunnel which burrowed under the Rogers Pass and went into service in December, 1916. But from 1885 to 1916 the only route through the Pass was over and through a complicated system of bridges and snowsheds. Although this pass never exceeded the maximum grade of 2.2%, trains travelled slowly over the high bridges and around the tight corners. In order to keep weight down the railway ran its trains without dining cars through the mountains. Dining stations along the route served train passengers until well into the twentieth century. Dining cars on sidings were the first such stations but eventually special hotels with large dining rooms were built at Glacier, Field and North Bend. As a system the bridges, snowsheds and the hotel at Glacier made the Rogers Pass a viable, if sometimes unreliable, link in Canada's first transcontinental railway.

A strictly chronological narrative of the construction and maintenance of the various structures which allowed trains to travel through the Pass would be unnecessarily complex. Therefore, although the chronology will overlap considerably, this report will first document the construction of the trackbed and its supporting bridge structures which went into service in 1885. A study of avalanche control and snowshed construction and maintenance will be followed by a detailed history of the dining station which became known as Glacier The original line, bridges and showsheds remained in House. use until the Connaught Tunnel was put into service in 1916. Glacier House continued to entertain guests for another eight years but, after fours years of disuse, was finally demolished in 1929. This study will primarily chronicle the events from the early 1880s until the 1930s and the last futile attempts to rebuild a hotel at the abandoned site of Glacier House. However, in addition to the historical account of these structures, the report will also identify the extant ruins which date back to the period and make recommendations as to their relative importance. Suggestions for preservation of the resources are followed by alternatives for interpretation and restoration.

# Part I Railway Trackbed and Bridge Construction

## Introduction

Although the construction of the railway and its bridges through the Rogers Pass and the area now known as Glacier National Park was important to the Canadian Pacific Railway, the company did not deem worthwhile the retention of records that related to the construction process until almost ninety years later. When it finally established a corporate archives in 1972, concerted efforts were made to conserve as much material as possible. However, given the massive size of the organization, much important material is still located regionally in CPR offices, hotels and private collections of current and former employees. Additional material also found its way into the hands of local museums as well as regional, provincial and federal archives. During the search for material for this report, seldom has the logical location for information proved to be the actual repository. Therefore, as can be gleaned from the footnotes and bibliography, the sources on which the following material is based are varied and in some cases less than comprehensive.

## Conditions in the Mountains

By the fall of 1884 James Ross, CPR Manager of Construction for the mountains, had begun to tackle the massive job of putting a line through the Selkirks. In an attempt to get a head start on the short mountain summer season, Ross and a few contractors were working on the eastern slope of the Pass. In a letter dated December 18, 1884, Ross wrote CPR Vice President W.C. Van Horne:

The work progresses well in the Selkirks in spite of the extreme cold weather. The thermometer has ranged between ten and thirty degrees below zero for the last week.

I was afraid of the work on the East slope there being so much earth work and expecting the long slopes to frost and heave while under construction would necessarily make the work expensive and troublesome; fortunately the snow is not deep and altogether we are doing much better than I anticipated though our contractors will not make any money if they come out even. However, I warned all contractors that made up their minds to stay during the winter how it would be and I let the weak ones go.

Later in the letter while discussing the bridges he wrote: I shall be obliged to make a trip East to organize and get some good men to raise these high bridges.<sup>1</sup>

Ross needed more than just good men. From end of track at Beavermouth the line had to climb 1867 feet in 22 miles to the Pass. He still needed a route down the west side of the Pass, one that would stay clear of the avalanche swept slopes of Mount Cheops. Once he found the route it was still a 2900 foot drop over a 46 mile length before the railway arrived at Revelstoke. Dodging slide paths where possible, finding suitable footings for the numerous temporary trestle bridges and supplying his workmen with millions of feet of material

for the various structures were all challenges which still confronted Ross.<sup>2</sup> (Imperial measurements are used throughout this report as it was the standard system used during the entire period covered by this study.)

## Sources of Materials

Acquiring lumber for the numerous temporary trestle and bridge structures as well as for ties and snowsheds was a major preoccupation for Ross in the fall of 1884. The CPR had the right to fell timber along the right of way during the original construction period but it appears additional material was brought in from other areas. By January, 1885, no less than three saw mills were producing lumber and additional men were occupied hewing large bridge timbers by hand. A fourth saw mill was expected in February and bridge work was proceeding as materials arrived. Pile drivers were at work at the various major bridges and bridge crews were ready to start as soon as timber arrived.<sup>3</sup>

Stationed at Donald in the fall of 1885, an employee of the Department of the Interior, T.S. Higginson, charged Ross with willful waste of timber. T.L. Fox, a contractor making lumber from CPR lands in the the Selkirks:

...was instructed by James Ross, superintendent of construction, to waste all the siding, by which I mean he was instructed to cut four large slabs off the logs instead of sawing them into boards.

Higginson went on to recommend that the CPR be given only specific tracts from which it could take its timber in order to assure that the cuttings were complete and not merely

haphazard and wasteful.<sup>4</sup>

An investigation ensued and Ross denied that any waste had occurred. C. Drinkwater, Secretary of the CPR, responded to the recommendation of specific timber cutting areas:

With reference to Mr. Higginson's suggestion, that the company should be restricted to a particular section on which to cut timber, I am directed to state that such a course would be impracticable. The work of cutting has ceased for the present, and will not resume until the spring, and considering the character of the country, you will readily understand that it would be impracticable to draw logs any great distance to a saw mill.

I may add that there is every desire on the part of this company to preserve the timber and prevent its waste, and most positive instructions have been given to this effect.

This interchange of letters to the department seems to indicate that timber was cut along the line where it was convenient, attempts were made to conserve the resource and the company was allowed to pursue its timber requirements in the Selkirks without being required to report its activities to the Department of the Interior as was normally expected of all other business engaged in timber operations.<sup>5</sup>

Although it is likely that local timber was used wherever possible in the construction of the bridges, the supply of good bridge timber was quickly exhausted. Mr. R. Balfour, imspector of CPR bridges in 1888 commented that British Columbia fir was extremely good for bridge work and that the company was using large quantities of it in the mountain bridges.<sup>6</sup> Large dimensional fir was probably unavailable locally in the Selkirks by this time and the railway was shipping its carloads of timbers from sawmills at New Westminster, British Columbia.<sup>7</sup> Prices for this material were quoted at "Bridge and wharf plank and lumber from \$12 to \$16 per M (1000) feet."<sup>8</sup> In 1890 the same Mr. Balfour, by this time at work for the Qu'Appelle, Long Lake and Saskatchewan Railway Company, ordered long bridge timbers from the Brunette Saw Mills Company at New Westminster, British Columbia and shorter material from sawmills in the Selkirks adjacent to Donald.<sup>9</sup>

Other materials were also acquired locally if possible. Ties were accepted by the CPR from contractors all along the line. A Mr. T. Kirkpatrick, stationed three miles east of Donald, delivered 17,016 ties to the railway for use in the Selkirk mountains.<sup>10</sup> Ballast pits were also established by the CPR along the line. Permanent pits at Stephen and Hector, east of the Selkirks, were major operations and furnished ballast for the surrounding area.<sup>11</sup>

Rock for stone arch bridges, culverts and the massive stone pillars at Five Mile (Loop) Creek probably came from a local source or sources. Replacement of the original wooden trestles and bridges with more permanent masonry and steel structures did not begin in the Selkirks until well into the the last decade of the century and was completed in the early 1900s. Van Horne outlined company policy with regard to bridge upgrading on the section from Fort William to Winnipeg in 1887:

Where it could be done without materially increasing the outlay, earth embankments have been substituted for timber trestles. The wooden truss bridges are being renewed in wood, because of the high price of iron-work and the crowded condition of all the bridge works, and

because iron structures would require masonry piers and abutments, which would excessively increase the outlay. The bridges so renewed are, however, of a very substantial description and will be good for nine or ten years. Having only recently opened the transcontinental line, the railway had no money to expend on expensive permanent structures on the prairies or in the mountains. Finally, ballasting and showshed construction dominated the activity in the Selkirks. Only after eastern bridges were completely rebuilt was money allocated to upgrading the western line.<sup>12</sup>

Detailed construction histories for each major bridge structure in Glacier National Park will follow below. However, some general questions regarding the permanent structures continue unanswered. First, the nationality of the rock cutters and stone masons remains a point of conjecture since no records exist to provide details about them. Circumstantial evidence suggests Italian cutters and Scottish masons probably did the work since the company later utilized the services of such craftsmen in the construction of the Banff Springs Hotel.<sup>13</sup> Retired CPR corporate historian Omer Lavalee credits European masons with the work.<sup>14</sup> Mary Daem, a long-time Revelstoke resident, claims that local recollections identify Italians as responsible for the work and that many settled in Revelstoke and continued their trade in the area. In all likelihood the CPR hired European stonemasons and sent them across the country, upgrading foundations, bridges, culverts and supporting pillars as they went. It is interesting to note that the Trans-Siberian railway, in the process of installing permanent structures on its line at this same time, also employed Italian and Scottish craftsmen.<sup>15</sup>

Next is the still unresolved question of the location of the quarries for the massive amount of rock which was installed in these structures. CPR reports provide no information regarding these quarries and the company apparently did not hold fast to the principle of using local material when possible. For example, the rock for the Pacific Coast Terminal of the CPR in Vancouver was brought from Calgary<sup>16</sup> and Tyndall limestone was imported from Garson, Manitoba for construction of much of the Banff Springs Hotel.<sup>17</sup> In a review of the town of Stonewall, Manitoba, a trade journal in 1889 reported:

Excellent building stone is found on the townsite, and during the rapid construction of the C.P. Railway, a large amount of stone was taken out for bridging and other purposes on the railway. At this time about 150 men were employed in the stone quarries. This helped to boom the place.<sup>18</sup>

Although this account directly describes CPR bridge construction with stone, the limestone produced from these Manitoba quarries bears no similarity to the quartzite found in the bridge, culvert and pillar structures in the park.

In 1911 the Geological Survey of Canada listed two quarries yielding a light gray granite near Nelson further south in British Columbia. According to the Survey "The stone is used entirely by the railway (CPR) for culverts and bridges."<sup>19</sup> By the time of this report, however, all stone structures had been erected in the park and the great distance involved in transporting rock from Nelson to the Rogers Pass would seem to make the effort useless when adequate granitic material could be found in the immediate area. Although no quarries have been definitely located in or near the Pass it

is possible that they have been obscured by natural growth over the years. Quarries at Albert Canyon apparently were not opened until well after this period of early construction and they only provided ballast, not building stone or first class masonry material, to the railway. One final set of records further confounds this issue. As will be cited in the detailed bridge reports below, costs for rock cutting and transportation seem to imply that the stone was brought in for some of the structures while on others no costs are cited even though rock work was extensive. In spite of this confusing body of evidence, it seems likely that the rock for the various masonry structures in the Rogers Pass area came from a local but still unlocated quarry or quarries, was worked by Italian stonecutters and installed by Scottish stonemasons.

Rail for the original line came west across the advancing The original track was, at 70 pounds per foot, heavier line. than the 56 pound rail which was set down in the prairies. The Selkirks received a priority for heavy rail during the construction period as the company expected heavy engines would be necessary to pull loads through the Pass. Thereafter the line through the Pass merited less importance as traffic was light and expansion elsewhere was more rewarding financially. Some track was replaced in the Selkirks with 80 pound stock by 1903 but not until 1906 or 1907 was the track in the Pass replaced with the heavier rail. Similarly, it was not until 1912, four years after 85 pound steel became common elsewhere, that this heavier rail was installed in the Pacific Division. Since then 130 pound rail became standard in 1931 and the modern line consists of 132 pound continuous welded rail and treated ties.<sup>20</sup>

Before any track could be laid numerous culverts,

trestles and bridges had to be constructed. By early 1885 Ross had men working on all the structures from the end of track, at Beavermouth, to the Summit of the Rogers Pass. The final track location west of the Summit was still not confirmed but first the challenges of the late winter had to be overcome. Snow, at ten to twelve feet in depth, completely buried trees when they were felled for construction purposes and had to be dug out of their snowy confines. The snow slides were even more extensive than first expected and in that first winter seven men were buried in avalanches, two of whom died. In spite of the hardships, grading was complete to the first major bridge in the park by the end of March, 1885.21

## Mountain Creek

Just inside the present boundary of Glacier National Park, Mountain Creek bridge was the first major bridge structure in the Selkirks. (Figure 1 shows this bridge and Figure 2 is a map of the park with all major bridges indicated.) Although Ross was in charge of the overall project in the mountains, various engineers were given responsibility for individual bridges. The first major structure was entrusted to P. Turner Bone and he described the supply route tote-road and his living situation:

The location of the railway in the Selkirks up Rogers Pass to the summit, presented an aspect in striking contrast to that of the location from the Kicking Horse Flats to Beavermouth. The railway in that section, as already shown, kept close to the river, crossing and

re-crossing it, wherever necessary to get the most economical location; and the tote-road, in general, rose high above it - particularly at the Golden Stairs. But in the Selkirks, it was the railway that, after having once crossed the Beaver River, rose above both it and the tote-road; in some places as high as from 200 to 300 feet.

In thus climbing the Selkirks, the rail had to cross a number of deep gulches cut in the mountain side by tributaries of the Beaver; and it was over these gulches that the largest and highest bridges were required. As these bridges were situated widely apart, and were all to be built during the winter about the same time, it was not practicable for one engineer to look after them all. So this work was apportioned among three...

Close to the railway bridge over the Beaver, there was another bridge of an entirely different type. It was a pack-trail bridge consisting of three logs pinned together, and spanning a narrow gorge of the river. Over it the pack-horses of the locating engineers had crossed back and forth when the line was being located. Although no longer in use, this unique relic was then still existing; and I made a sketch of it which I added to my collection.

The log house which served as my winter camp was situated between Mountain Creek and Cedar Creek, and was close to the tote-road. It served its purpose well, for we passed the winter in it most comfortably. Ellison, too, appreciated it for he became a frequent visitor, and often stayed overnight.<sup>22</sup> (See Figure 3) In January, 1885 Ross cabled Van Horne: "Pile drivers are at

work on Mountain Creek and all timber for it will be on the ground inside of one month. This is our heaviest structure containing over one million feet of timber."<sup>23</sup>

In spite of an early start, work on Mountain Creek ran behind schedule and Ross was forced to account to an extremely demanding Van Horne:

As for the bridging, when you take into consideration the fact that the trees were still growing when I was in Montreal that are now framed and erected for such bridges as Mountain, Surprise and Stoney Creeks, (the last one only partially) together with a dozen other truss and high bridges containing four or five million feet of timber, the record is not so very bad. I don't think you could have got an iron bridge firm to do such work.<sup>24</sup>

Although not the highest of the bridges, the original Mountain Creek trestle contained the most lumber at over two million board feet.<sup>25</sup> The structure was complete by May 6 but during April the railway was hit by a major labour disruption. The CPR, chronically short of capital, had neglected to pay the workers in the Selkirks since the end of the previous year except for minimal sums for expenditures at the camp stores. Exasperated by such unjust treatment, the workers held spontaneous minor strikes which culminated in a confrontation between Ross, protected by his police escort Captain Steele and a few constables, and 150 irate workers. Arrests were made and prisoners were spirited away in the middle of the night. At this critical juncture Steele and his men were withdrawn from the Selkirks to attend to the Riel Rebellion and Ross quickly deputized 25 men with rifles, thereby establishing his own private police force. Thus

protected, Ross and the paymaster then went west, paying each worker back wages for January and February and, after each group was told of the results of the confrontation which sent men to jail, the men agreed to return to their work. Caught between a cash-poor company and some 2,500 unpaid workers, Ross guickly guelled the labour strife and construction proceeded.<sup>26</sup>

On a lighter note, Bone recollected an incident when Ross came to inspect the bridge:

When Mountain Creek bridge was practically completed, Ross came along, and I accompanied him on the bridge on his usual thorough inspection of the work. There were some planks of the staging underneath the deck, still in place. Seeing these, he wanted to get down to them to make some inspection there. To do this he squeezed his body through the deck between the ties. But he could get no further. He looked up to me and laughed; and said he couldn't get his head through. It may seem odd that he could get his body through a space that was too narrow for his head. But that was how he was built; a slim body, but a large head.<sup>27</sup>

No sooner was this first major bridge built than Ross had to provide a system for its protection. After a cold winter and much snow, the summer was warm, the weather was dry, and fires threatened to burn all local timber and ignite the bridges. Ross implemented various schemes to protect the structures and by 1890 a reliable system was introduced:

Besides the section gangs, each trestle-bridge has its special watcher who gets three dollars per day, lives in a little hut by himself, and whose business it is to examine the whole length of the bridge after the passage of each train, to see that no injury has occurred or that it has not caught fire. Along the bridge, on top, are a row of barrels of water which he can use for extinguishing fire. Should however anything serious occur he has a telephone in his hut, by which he may communicate with the section gangs on either side of him.<sup>28</sup>

The enormous size of the trestle at Mountain Creek made it not only susceptible to fire but also to deterioration. Although the bridge timbers were solid and well ventilated, they were also not treated with a preservative and were not expected to last more than ten to fifteen years at best. Therefore, plans were quickly implemented to fill the trestle with earth and create a permanent support for the track. On gullies of less massive proportions, trainloads of fill were routinely brought to the trestle and dumped over the edge of the track. Given the size of this project, the railway brought in a large steam shovel and attempted to move adjacent earth to achieve the desired result. The earth moving giant arrived at the beginning of the 1888 summer season but even its capacity proved incapable of the task at hand.<sup>29</sup>

In 1897, E.J. Duchesnay, Superintendent of the Selkirk and Shuswap section of the CPR decided to apply a hydraulic technique to fill in the trestle at Mountain Creek. The CPR had already filled two gullies along the Fraser River to the west in this manner and he was confident of success at this large valley.

... the Co. is now completing a large embankment, across the wide ravine of Mountain Creek, near the summit of the Selkirk Range. This bridge has a total length of 1,071 ft., & is 155 ft. in depth, & is fully described & illustrated in the "Treatise on Wooden Trestle Bridges" by W.C. Foster. The cost of installation of this hydraulic plan has been very great. A flume 2 miles long had to be built along a very broken side hill, steep & rocky, & across the path of many snowslides. The stream of Mountain Creek is rapid, & in this distance of 2 miles from the railway track it rises over 380 ft. A dam was built across, so as to divert part of the stream into the flume at its head. The water is thus brought down in this flume, built 4 ft. wide, & on a gradient of 20 ft. per mile, so the flow of water is of uniform volume & speed throughout. It empties into a reservoir, or box, called "Penstock," which stands at a height of 180 ft. above the railway track. A line of steel pipes 14 inches in diameter is connected with this reservoir, & leads to the present pit on the east side, a distance of 2,200 ft. Although the cost of building the flume, laying the pressure pipe line, & all other installation expenses amounted to a very large sum, the ultimate cost of the material retained in the embankment will prove a great saving to the Co. over other methods. It is expected this will be at least 50% & probably more with favorable circumstances.

There are 2 distinct operations, viz: 1st. Washing the bank down, leading and delivering it by means of a series of sluice boxes to where the filling is to be made. 2nd. Retaining & impounding the material after it is deposited. In hydraulic mines, the first operation only is done, since the tailings or gravel after the gold has been extracted are of no further use, therefore are deposited to the nearest dumping ground & allowed to go to waste.

The pipe line terminates in what is called a "Monitor" or "Giant" so constructed with ball joints, that the large volume of water, emerging under great pressure can be controlled & directed with greatest ease. There is a gate, a short distance behind the "Giant" which acts as a valve & closes the water when necessary. The piper & monitor men direct the jet of water at the foot of the bank of gravel, soon a cave-in of the bank takes place, & the water, gravel & boulders all run into the sluice boxes placed at the lowest point of the working pit. The sluice boxes, 33 in. high by 2 ft. high are built of planks, with the bottom covered pieces of old steel rails so as to prevent the wear. When necessary to have the line of these sluices turn any small or large angle, the forward length of sluice boxes has to be built a few inches lower, so to prevent the gravel from blocking the sluice, & forming bars at the turning point. They are on a steep or 8% grade, running down to the point of unloading, generally at the centre of the embankment to be made. Thus the gravel and all the filling material is carried to the proposed filling. Now begins the difficulty of controlling, holding this material in its partly liquid state from wasting itself all over the country. Not only is it necessary to control it, but it must be held within the limits of the slope, usually 1.5 to 1, or angle of rest of earth embankment. This is done by alternative rows of logs & brush, hand laid along the outside face of the filling, each row receding the required distance to form the slope required. All the gravel, rocks etc., are thus held back and the water only is allowed to fall over, & run down

the face of the embankment already built. The filling at Mountain Creek began in August 1897, & continued till Oct, 1897, when the winter weather stopped all possibility of work. It was resumed again last May & in all probability will be completed this fall...The volume of water used may be reckoned as 800 miner's inches, under a pressure of 180 feet.<sup>30</sup>

Concurrent with the hydraulic filling at Mountain Creek the company also began placing deck plate and deck lattice girders as support for the track. During 1898 two 40' deck plate girders were installed on steel towers which in turn were based on masonry foundations. That same year a 104'2" deck lattice girder, also supported by steel towers on masonry foundations was installed. In 1900 two additional 104'2" deck lattice girders were put in place on similar support systems. Two 30' deck plate girders were placed on towers and masonry That same year the two final deck plate foundations in 1902. girders, 64'5" in length were installed on crib abutments. From the sequence of deck plate and deck lattice girder installation dates it appears that girders over the central portion of the river gully were replaced first and ones closer to the edges subsequently. Final grade for the track as it crossed the completed structure was 2.14 per cent. $^{31}$  (See Figures 4 to 7 for examples of Howe truss, deck plate girder, deck lattice girder and through lattice girder bridge structures)

By 1929 heavier train loads forced the railway to install additional towers to help support the 1902 structure. In 1976 construction began on a new bridge just 150' upstream from the original span. Completed in 1978, it was 585' long, 135' high, boasted the latest technology in concrete ballasted deck and cost \$3.8 million. Yet another bridge, 315' in length, has been constructed downstream for the new lower line which will utilize the 1988 tunnel.<sup>32</sup>

As CPR bridge construction and maintenance crews worked on the line, a bridge numbering system was used for identification. The first major structure constructed in the park was given a number and its location was described by a mileage distance from the beginning of the subdivision. Thus, the Mountain Creek bridge was 71.3 miles from Field, the eastern border of the Mountain Subdivision of the Pacific Division. Over the years line changes, such as minor reroutings due to snowslide problems or bridge changes and the effects of major decisions such as the construction of the Connaught Tunnel, have necessitated numerous corrections to the exact mileage of each of the following bridges. However, for the purposes of this study a CPR bridge report approximately 1910 will be used as the standard. Unless otherwise footnoted all bridge information in this report is from this file.<sup>33</sup> Major changes which have occurred since that time will be noted in the text.

## Bryants Creek

Although major bridge structures became known by the name of the creek or river they crossed, many smaller tributaries were unnamed and their corresponding culverts, trestles or bridges were only identified by track mileage. A detailed list of all these and the major structures is included as Table 1 and each major stone arch or culvert, wooden or steel bridge is also described in the text below. At mile 72.5 the original 1885

trestle structure was replaced in 1906 with a 30' masonry arch. Expenses for this structure totaled \$5270.90. The Bryants Creek stone arch bridge at mile 73.4 replaced the original wooden trestle in 1900. Erection of this 50' arch began June 2 and was completed September 21 for a total cost of \$6433.28. Overall bridge length is 83'.<sup>34</sup>

## Cedar and Sturdee Creeks

P. Turner Bone, responsible to Ross for the supervision of the Mountain Creek bridge, also oversaw the work at mile 73.7, Cedar Creek.<sup>35</sup> In 1897 the wooden structure was replaced with deck plate and through lattice girders on masonry abutments. The current 222' bridge consists of two deck plate girders and a deck truss. Two-tenths of a mile west lies the abandoned site of Sturdee siding named after British Admiral Sturdee who saw service in the 1914 Battle of the Falkland Islands. At mile 74.2 a 102' through lattice girder on masonry abutments crosses over a creek variously named Sturdee or Raspberry. The current through plate girder bridge is 107' long.<sup>36</sup>

## Mud Chute

Mud Chute bridge, at mile 74.5, was the next stone arch structure. Started on September 19, 1900 and completed November 5 of the same year, this 40' masonry arch cost \$4790.65 to construct. Weep holes were added to its architecture in recent years to discharge water from the interior of the structure. This bridge was not over a water course but spanned a seasonal slide path for snow and mud.

#### Surprise Creek

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Track arrived at the almost completed Surprise Creek bridge, mile 75, on May 30, 1885. Ross predicted its completion in a week and under the able supervision of Engineer Stoess, who later worked on snowshed construction, the structure soon carried trains across a gully nearly 200' above the creekbed. Crossing over an unexpected, sharp gully, it was appropriately named Surprise Creek. Even though brush was cleared from the approaches to this bridge, it caught fire three times in the hot, dry summer of 1886 only to be saved each time by the In 1897 the original timber structure track crew. (Figure 8) was replaced by a deck plate girder, steel arch and deck lattice girder just downstream on masonry abutments. The longer deck lattice girder gave way under the weight of two engines early on January 28, 1929. Engineman Woodland and fireman Griffith died. (Figure 9) Using the site of the first wooden bridge, the Hamilton Bridge Company and the Canadian Bridge Company erected a new span in seventeen days and service was restored on February 6, 1929. In September, 1977 the CPR replaced the timber ties with concrete ones, thereby initiating a new era in CPR bridge bed construction. Further downstream a culvert allows the route for the 1988 tunnel to cross Surprise Creek.37
Stoney Creek

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At mile 76.7, the Stoney Creek bridge gave Engineer Swan and Ross an exceptionally hard time. Ross wrote Van Horne in March, 1885:

Pending decision about the probable slides in the gulches between Mountain Creeks, suspended work but now the matter is fully decided and men have resumed. Stoney Creek is going slowly owing to the foundations being difficult: the narrowness of the gulch make[s] it impossible to work at more than two benches at a time, and owing to the rock being shaky, they have to be taken out carefully. All the other bridges are well ahead.<sup>38</sup> By May 6 he was starting to show concern:

Surprise and Stoney foundations are heartbreaking. The rock is so uncertain and unsatisfactory that it has been very difficult to make good foundations there. His June 18 letter read:

I today returned from a trip over the whole work. I wired you this p.m. that the track would cross Stoney Creek on July 24th and I fully expect that this programme will be carried out. We have had exceptionally bad fortune with this structure; during my absence in the west, a waterspout or some immense body of water came down, bringing an enormous amount of debris with it and blocking up the foundations of the high tower over which the men lost two days.<sup>39</sup>

By June 21 it became apparent that the projected completion date would not be met. Men were put on shifts around the clock but misfortune still conspired against the bridge. A forest fire consumed 14 cars loaded with timber for the bridge and men immediately had to begin felling trees to provide lumber to complete the structure. Having just located the line down the western slope, Ross attempted to forestall Van Horne's displeasure at the slow pace of progress in the Selkirks:

I wish you could find time to come up here and go over the ground once and I am quite confident that your mind would be entirely relieved of any anxiety from the satisfaction you would feel in escaping the construction of the damnable line we proposed to build and the complete success of the new line. After the snow left the ground we found the work on the new line to consist of very little rock. It is in every way a complete success and worth a years delay.<sup>40</sup>

Completing the bridge in early August Ross reported:

As far as I possibly could I thoroughly tested Stoney Creek bridge; the high tower was perfectly rigid with a heavy train of rails crossing it. Some little work will have to be done in the way of removing any rock that might tumble down and strike the towers...

The erection took seven weeks from the time they commenced to put the first timber in the tower and ten days of that time was lost owing to the death of two men and wet weather...

This completes the last very high bridge on the East Slope of the Selkirks and they have all been difficult structures, but they are as good as can be made in wood. I will guarantee them for "Consolidated," "Decapod" or any similar class of engine you wish to run over them. The foundations have been an extremely difficult matter, more especially those of Stoney Creek, and if they have taken longer than I thought they would, one reason is the extreme care we took to secure the best foundations.

I am using an electric light for finishing up our bridges, or for laying a little track to reach a bridge that might be on the way, and it has worked very satisfactorily so far.<sup>41</sup>

The completed structure was not an insignificant achievement. Because of its engineering challenges, the bridge was easily the highest on the CPR route, Ross retained C.C. Schneider, a consulting civil engineer from New York to design the wooden Howe truss structure. G.H. Duggan drew the detailed plans for the company. At 452' in length and 228' from its base to track level it was the tallest such structure in the world.<sup>42</sup> (Figure 10) In 1893 the wooden bridge was replaced with deck lattice girders and a steel arch on masonry abutments. It boasted an overall length of 484', a clear span of 336' and it supported the track 325' above the creek bed. (Figure 11) Massive renovation of this structure beginning in June, 1928 enabled the old bridge to continue its task. (Figure 12) Downstream a 700' long bridge supports the track of the 1988 grade. 43

Cascade Creek

At Cascade Creek, mile 80.3, a stone arch was installed in 1898. William S. Vaux Jr. described the system utilized by the CPR to protect its wooden structures but eventually many, including the one at Cascade Creek, had to be given a more permanent solution:

Several other bridges have been reconstructed in a most substantial way, one of the principal factors in

the design being to allow the avalances of mud and snow to pass safely beneath them. In the old wooden bridges, a few examples of which still remain, the "flurry" caused by the slide passing beneath was withstood by heavy rods of iron anchored to "dead men" on the upper side of the valley. Cribwork to the right and left deflected the slide so that it passed between the supports instead of carrying them with it. But even with the most substantial construction and care in design it has not been possible to save some of the bridges from total destruction. The structure spanning Cascade Creek was swept away six times before it was replaced by a single arch of masonry, which, it is expected, will withstand all attacks.<sup>44</sup>

CPR Chief Engineer Peterson, described the rationale for installing the many stone bridges and piers across the country:

We have adopted stone structures at a good many of our crossings, instead of iron, as we find that by building these structures under a rubble masonry specification they can be built as cheaply as iron, besides being much more substantial, & while being as cheap, & in some cases cheaper, are much more economical, as they do not require painting, special floors or any repairs.<sup>45</sup>

The 1885 structure at Cascade Creek was finally made permanent in 1898 with the installation of a 60' stone arch on solid rock foundations at a cost of \$15,597.32. Although the stream is relatively small and issues forth from the side of the mountain only a few hundred feet above the bridge, the new structure also had to withstand frequent snow, mud and rock slides on this steep eastern shoulder of Mount Tupper. A

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solid structure, it remains in immaculate condition far above the TransCanada Highway and only a short hike up a service road and along the abandoned track bed in prime bear habitat. Although the original wooden structures proved incapable of providing a reliable crossing over Cascade Creek, the stone arch structure appears intent on peacefully spanning the small tributary for many more years. (Figure 13 provides an early view of the bridge and Figures 128 to 130 are of the existing structure)

## Rogers Pass

Upon arrival at the Rogers Pass itself no major bridges were required and the only named watercourse, at first called Bear Creek and later renamed Connaught Creek, was crossed with nothing more substantial than a cedar box culvert. Even before crossing the almost completed Stoney Creek bridge, Ross conveyed in a telegram just how much faster the work down the western slope would proceed:

Owing to favorable conditions weather west slope have covered every foot by short contracts and had outfits back from Crossing River. Largest contractors are now moving part of their outfits west and by end of July two thirds entire force will be concentrated on work and close it up so fast that western parties will hardly know it is commenced when completed. After crossing Stoney Creek do not expect track will even see graders if present weather continues will do much better than indicated in letter twenty first.<sup>46</sup> But all his problems were not behind him. Van Horne constantly compared Ross' progress with that of A. Onderdonk, the contractor working east whom he eventually met at Craigellachie. By August 14 his only response to yet another challenge to meet Onderdonk's faster track laying record was:

We cannot get ties distributed throughout, as there are many sections on the snowslides and where the timbers have been burnt where suitable timber cannot be got: there are no ties on the first six miles west of the Summit. 47

Nine days later he telegraphed:

Track laid six miles beyond Summit. Will be delayed ten days by tunnel sixteen miles west of Summit. Everything progressing well.<sup>48</sup>

This last telegram was sent from the Summit, as the station at the crest of the Pass was called before it was renamed Rogers Pass. Although the decision to build various railway related structures in the Pass was logical because it was the only relatively horizontal land in a mountainous area where the terrain was mostly vertical, no permanent settlement was established in the Pass from the day the line crossed the Summit on August 14, 1885 until well into the 1960s.

Before abandoning the Summit to the fury of snowslides, the CPR located the Rogers Pass station at four different sites in attempts to avoid avalanches and service its needs. The first temporary station, at the Summit of the Pass, was replaced in 1886 by a permanent station two miles northeast where the line crossed Bear (Connaught) Creek. On January 30, 1899 an avalance plummeted from the slope of Mount Macdonald, covering the station and killing all eight people at the site. The third location opened halfway between the first two sites and by 1900 a roundhouse, station, turntable and living quarters served the needs of the railway. In 1909, a 2.6 mile diversion of the railway yard allowed for a larger yard. The station building itself was relocated a short distance north and became the fourth site for Rogers Pass station. (Figures 14 to 17) None of these structures remain today although the present tourist facilities and park maintenance structures occupy this same general area in an otherwise avalanche prone Pass.<sup>49</sup>

## Glacier (Illecillewaet) Creek

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Considering the trials and setbacks involved in laying track up the eastern slope to the Summit, Ross and his men must have experienced jubilation as they galloped down the Illecillewaet River valley to the west. The first bridge of any consequence, at mile 87.4, was named Glacier (Illecillewaet River) Creek bridge after the source of its waters in the nearby Great (Illecillewaet) Glacier. This bridge was replaced in 1900 with a stone culvert structure spanning 51' at a total cost of \$12,501.13. (Figures 18, 19 and 20) This structure still stands today although the Illecillewaet River waters have severly eroded the southwestern river bank at the bridge, undermined the stability of the leading edges of the masonry structure causing some of it to be washed away, and threatened the remainder of the bridge. Recent attempts to forestall further destruction have been successful but the once complete structure must be carefully guarded against further deterioration. This may necessitate intervention in the form of construction of an additional retaining wall to protect the trackbed from excessive erosion. (Figure 115)

The Loops

At mile 90 stood the first of many trestle structures which crossed back and forth over Five Mile (Loop) Creek and the Illecillewaet River as the track sought protection from snowslides and an acceptable grade not exceeding 2.2 per cent. Originally, the track had been located across the southern, avalanche swept slopes of Mount Cheops through a massive system of snowsheds and some very expensive tunnels. Instead, a cheaper, faster but longer series of curves crossing over four trestles avoided locating the line across the treacherous southern slopes of Mount Cheops. This series of curves became known as the Loops and Five Mile Creek was renamed Loop Creek.

By March 5, 1885 Ross was still undecided as to the exact route of the Pass:

Regarding the slides, our present line on the West Slope if adopted means large additional cost of construction. I have examined as carefully as I could in the time, all the important slides on this slope, and projected on paper, by the contours taken during location, such changes as would be necessary to throw the snow over the grade by shedding and tunnelling; the most formidable slides, twelve in number, occur between the fourth and fourteenth miles west of the Summit, and their appearance and destructive power are terrific; I see quite plainly that no temporary work in the way of building a line that can be thrown further into the hill sides afterwards will answer for these twelve slides. If they are not annual (I am convinced they are) or if the Mountain side had a

regular slope so that temporary work could be used to work into the permanent line, there would be an excuse to adopt the temporary plan, but to get any kind of line we have to go in for heavy work which would in no way serve our purpose in throwing the snow...

From my projected lines I estimate it will take 8,350 feet of shedding and about 1,400 feet of tunnelling to operate the line with any safety over these twelve slides.<sup>50</sup>

Within days of this pessimistic analysis Ross telegraphed Van Horne with a new idea and described it in more detail in a letter:

As I telgraphed you I have a remedy for the dangerous slides on the west slope which if it turns out to be a success will save us half a million dollars.

On my way west, I noticed on the other side of the Ille-Cille-Wait[sic] that there were no large slides or any marks of very dangerous ones and I determined on my way back to examine the question thoroughly, comparing each side, carefully tracing by my eye and a level where a line would strike the opposite side. I knew the difficulty would be for the first three of four miles west of the Summit in getting down, but I found by running up a valley that came into the Ille-Cille-Wait[sic] two miles west of the Summit we could gain distance and so reach the valley earlier. It looks very feasible...It will lengthen the line somewhat but I consider that as nothing compared to the safety of future operations...I am forwarding this to catch our weekly mail knowing your anxiety.<sup>51</sup>

By March 25 Ross was convinced his new route was the answer to

### the problem:

Since I sent you the message of last week... the engineers ran a loop line which had been projected upon paper before sending the message. As far as work is concerned, this line is a success and puts us down in the bottom of the valley where we can much more easily protect against the slides and beyond any question of doubt make the line perfectly safe to operate; ... This new line will be three miles longer than the present location, it will have the objectionable features of the long "S" curves, while on the other hand it will cost some four to five hundred thousand dollars less to make it a safer line and on the whole there will be several hundred degrees less curvature upon it than upon the present location. No time must be lost in deciding upon the location as contractors are upon the ground, many with their men... If you decide upon adopting this line, you can refer to the St. Gothard Ry. where in order, under similar circumstances, to be in a position to place their line in the bottom of the valley so as to protect against avalanches, they introduced several spiral or rising curves lying entirely in tunnels...For my own part, I regret being obliged to submit this line but there are so many objectionable features on the present location and the more you examine them, the less you like them...<sup>52</sup> Ross' enthusiasm quickly waned as Van Horne pressed for

prompt completion of the line. He was soon making lengthy explanations for falling further behind schedule:

Now for the West Slope. It was 6th April before our new line was finally decided upon; we had then only a preliminary location to go upon and it was a most

difficult time to locate owing to the loops, the character of the country, adapting the line to avoid the slides and the great depth of snow upon it (the old line took two seasons to locate and we did not use one foot of it) and when the line was located we could not tell anything about the material as the ground was covered with snow and it was quite impossible for me to adjust the contractors until I know something about the material. Then again I had contractors located on the old line, their camps built and half a million dollars worth of supplies distributed over it. I determined that under the circumstances there was nothing for it but to wait and fit the line properly (the contractors could not move their supplies) as I considered, as I stated to you before, the question of a proper location in the Selkirks as the keystone of the whole Mountain work. It was the first week in May before I could distribute and place the contractors on their work, and I could make no programme for completion until they had the work opened up and I had gone over it, which I did on my last trip.53

In another letter he gave more details of the process: You must understand that the work on the new line west of the Summit was not put under contract until the first week of May. Until I got the contractors to open it up I could not make any programme for its completion and did not want to say when it would be finished until I had every piece of the work at my finger tips, and contractors placed to cover it. I expected a great deal more rock and so estimated it but I am delighted to say that the line has turned out in every way most

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satisfactory, both as to cost and getting it completed early. The question of a proper location on the first 18 miles west of the Summit has been a most anxious one for me, as I considered the whole success of the line depended upon it and during the past two months I have been considerably more anxious upon this subject than to fix a date for completion. Now however I see my way clearly and I am guarding every point where there is any probability of delay, and working night and day forces upon such points.

I carried out the programme of the company in '83 and '84 and will do so this season even if we are a little late.<sup>54</sup>

In the years that followed all trains passing over the Loops travelled slowly as they negotiated the tightest turns in this part of the mountains. By 1906 these structures were all replaced by masonry or concrete pillars and some of the approaches were filled in to make the spans shorter. (Figures 21 to 26 show this change) Speed restrictions on train travel through the Loops continued until the Loops were taken out of commission. Timetable #15 of June 6, 1909 restricted speed to 8 miles per hour and Timetable #31 of October 29, 1916 allowed a maximum of 12 miles per hour. With the exception of one pier at the 2nd crossing of Five Mile (Loop) Creek which toppled when struck by an avalanche, all these features stand to this day. The Connaught Tunnel rendered the Loops obsolete in 1916 but the remaining structures stand as a mute tribute to an engineering triumph over challenging topography on the western approach to the Rogers Pass.

The lst(upper) and 2nd(lower) crossings of Five Mile (Loop) Creek at mile 90 and 90.4 as well as the 1st and 2nd

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crossings of the Illecillewaet River at mile 90.8 and 91.2 respectively constituted the four crossing which were referred to as the Loops. The remaining bridges, west of the Loops to the park boundary, crossed the Illecillewaet and its tributaries.

# Other Illecillewaet River Crossings

At mile 91.3, the 3rd crossing of Five Mile (Loop) Creek was replaced in 1906 with an 80' deck plate girder on concrete abutments for a total cost of \$9880.90. The 3rd crossing of the Illecillewaet at mile 92.2 was replaced in 1896 by a 100' through lattice girder on crib abutments. Cougar Creek crossing at mile 92.4 came next and its original 45' wooden structure was rebuilt in 1902. At mile 95.1 the 4th crossing of the Illecillewaet was replaced in 1900 with a 100' through lattice girder on masonry abutments. The 5th crossing of the same river, at mile 95.4, was reworked in two stages. The central span was replaced with a 100' deck lattice girder in In 1906 the adjoining structures were replaced with 30' 1898. deck plate girders. Total expenditure exclusive of cost of main span was \$11,063.34. Cariboo Creek at mile 97.8 received a 33' deck plate girder on abutments in 1907. Cost for this work was \$3851.76. In 1896 the bridge at the 6th crossing of the Illecillewaet at mile 97.9 was replaced with a 100' through lattice girder on crib abutments. The last major bridge, over Flat Creek at mile 98.3, was replaced in 1902 by a 42' deck plate girder at a cost of \$4480.33.

In general, the line and its bridges through the Pass received a low priority in the CPR bridge upgrading program. Time was of the essence for Ross during the construction phase and on the 46 mile section between Beavermouth and Albert Canyon, 201 bridges totalling over 3.5 miles in cumulative length were built in that busy 1885 season. Of this total 118 bridges were 16' long or less and 11 were 6' long. Most of these smaller structures were replaced with culverts later on and major bridges were eventually replaced but not until long after similar structures on the line east of the mountains had been renewed. Although the company claimed that most of its temporary bridge structures had been replaced by 1895, few of the Selkirk structures were replaced in the 1890s and most of the permanent work was only completed in the early years of the twentieth century.

### The Connaught Tunnel

The decision to bore a tunnel through Mount Macdonald was the next major event in the history of the bridges in the park. Alternate solutions to the problems of the Pass had been considered. Rerouting the track around the Big Bend was dismissed since it would add significantly to the length of the route and still necessitate pusher engines on steep sections of the line. A double-tracked line through the Pass with new wooden or concrete snowsheds was projected to be more costly than the tunnel. The new location also eliminated many bridges, including the Loops, did away with the need for the snowsheds in the Pass and lowered the maximum track elevation from 4342' at the Summit to 3794' at the highest point in the tunnel. The tunnel construction contract was awarded July 1, 1913 and completed December 6, 1916, one month ahead of

schedule, for a total cost of \$5.5 million. (Figure 27) Bridges from mile 77.3 at Cache Creek to mile 91.3 at the 3rd crossing of Five Mile (Loop) Creek were put out of service as a result of this new route. Glacier station was also moved from the Glacier House location to a new site just west of the tunnel. (Figures 28 and 29 show the new station and its floor In the month from September 18 to October 18, 1917 most plan) of the track was removed from the old line for use elsewhere due to heavy demands for construction materials as a result of material shortages during World War I. Double-tracking through the tunnel was part of an ambitious plan during the early years of the century to double the entire CPR line. This proved untenable after World War I and in 1958 the tunnel was converted to single track to allow passage of higher loads. With the opening of the 1988 tunnel the Pass will once again boast double-tracking.55

Merely pushing a preliminary line through the Selkirks did not constitute a complete, all weather route and Van Horne was aware that much more money and work was needed to create a reliable line out of this valiant first route. Work had to begin immediately on an extensive system of snowsheds to protect the line. The task of locating the line through the treacherous Pass had been successfully accomplished by Ross. To others would fall the considerable responsibility of making the route safe for year-round traffic and maintaining a track which would regularly receive as much as 60' of snowfall each season.

## Part II Avalanche Protection and Snowsheds

Major A.B. Rogers has been immortalized as the surveyor who found the route through the Selkirk mountains. Less well known is his inability to locate tunnels in appropriate locations. First he suggested a tunnel be built at Banff, through a minor geological feature. To this day Tunnel Mountain is without a tunnel since it was much easier to just go around it and into Banff on the west. His surveyor Charles Shaw convinced him that a tunnel was not necessary. Perhaps if Shaw had been with him in the Selkirks he would have suggested a tunnel under Mount Macdonald and saved many lives as well as years of struggle with avalanche control problems.<sup>56</sup>

## Reasons for Choosing the Rogers Pass

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In spite of such facile conjecture, the CPR was obviously in no position to burrow an expensive tunnel in the early 1880s. Neither was it fully aware of the cost in time, energy, money and lives that would be exacted from it during the next thirty years as it attempted to keep a year-round line open through the Rogers Pass. Van Horne had insisted that the route be as direct as possible in order to keep total mileage to a minimum. Theoretically, the most direct route would not only cost less to build and maintain but, more importantly, it would ensure the fastest possible passage from one end of the

transcontinental line to the other. Whether or not the route through the Pass was in fact more economical to operate is a matter of conjecture. Nevertheless, the CPR was almost totally unprepared for the massive task it faced as it committed itself to defensive avalanche protection systems. Eighty years later an aggressive avalanche control program was designed and implemented in support of a highway but for the first thirty years of railway history in the Pass the company depended on a passive, defensive system. Locating the line, where possible, away from known slide paths and designing bridges, culverts and trestles to accomodate mud, rock and snow slides in addition to watercourses were all aspects of this avalanche protection program which were covered above in Part I of this report. The construction, maintenance and upgrading of a series of massive snowsheds, where avoidance was impossible, constituted the remainder of this program.

### Snowfall in the Pass

Even in the headlong rush to "shove" the line through as quickly as possible, as Ross often wrote to Van Horne, he took care to note the enormous amount of snow which fell in the Pass. Although the pleasant if short summer months can still create the illusion of tranquil alpine splendour in the beautiful valleys of the Rogers Pass area, even the most casual observer is also impressed with the large expanses of mountainside which are unable to retain anything more than short scrub and undergrowth due to regular annual avalanche activity.

During the winter of 1885-86, although overseeing the few

brave contractors who attempted to work in the Pass in spite of inhospitable conditions, Ross also anxiously observed snowfall accumulation and avalanche activity along the proposed track route. His analysis and warning on February 19, 1885 read:

I find that the snow-slides on the Selkirks are much more serious than I anticipated, and I think are quite beyond your ideas of their magnitude and of the danger to the line.

I can see quite plainly that the present location of the line will not be safe - more particularly so on the west slope (across the south side of Mount Cheops) where the slides already aggregate more than two miles in width. At one point within this distance, ten slips came down within six days, piling the snow 50 feet deep and 1800 feet in length along the located line.

The effect of the wind during the progress of the slide is something terrific, wrecking trees over two feet in diameter and scattering small timber and brush for a height of three hundred feet up the opposite side of the mountain.

'No train would be safe if caught in such a tornado' is the expressed opinion of all the engineers who have been near the slides as they occurred. I could hardly believe the effect to be so great, it I had not seen it myself in the Rocky Mountains.

It is quite evident if you want me to build a safe line, more time must be taken to finish the Construction so as to give us an opportunity of adjusting the line in order to make it as safe as possible. All our engineers are on the ground where the slides occur, or are likely to occur, and have every opportunity of seeing the effect.

The great trouble we are labouring under at present is that the men are frightened. Seven have already been buried in different slides, though fortunately, only two were killed. Although the anticipated slides on Bear Creek, from which I expected we would lose both property and lives, have not yet taken place, if by any carelessness a bad accident or a series of them should occur, I cannot tell what the consequences may be.

From the information I have at present, you should be prepared to spend \$500,000 over Schreiber's estimate from the Crossing of the Beaver to the Crossing of the Columbia, and anticipate a delay in completing construction. I would suggest sending an Engineer at once, who has been on Selkirks' slope this winter, with a letter of introduction from you, to the Central Pacific people, to get all the information he can about their slides and their method of treating them etc...If you think well of this, wire me, and I will pick out a suitable man. <sup>57</sup>

## Location of the Route

Two weeks later Ross' report still reflected his problem and indecision regarding the location immediately west of the Pass. His quandry is perfectly expressed at the end of the following quote:

After running ten miles of preliminary line on the other side of the valley, west of the Summit, we conclude that it is better to stay on the side we are. We could not get the additional distance I expected, consequently had to keep the line up the Mountain side where we expected to be on the flats; besides, after examining more fully into the "slide question," on the first seven miles there were fully as many to protect against and below this point, where the slides are more serious, they extended up the valley on the opposite side. It is about a case of "when you are on one side, you wish you were on the other." <sup>58</sup>

As noted previously, the eventual location of the line so that it arched gracefully up towards the Great (Illecillewaet) Glacier before continuing on the south side of the Illecillewaet River valley as well as the creation of the Loops circuitously avoided the time consuming and costly construction of snowsheds and tunnels across the avalanche swept slopes of Mount Cheops. But the demand for snowshed protection was still beyond the imagination of the engineers and CPR officials who had committed themselves to fight an enemy of unknown size, strength and ferocity.

With final location and construction through the Pass completed, Ross moved on to complete his section of line and eventually meet Onderdonk's eastern bound work at the now famous location of the driving of the last spike at Craigellachie on November 7, 1885. He had met his challenges and held up rather well under the withering demands of an almost merciless Van Horne and the similarly challenging geography of the Beaver and Illecillewaet River valleys. To others Ross left the onerous responsibility of assessing the demands for snowsheds, their necessay load carrying abilities and the never-ending maintenance and protection of a considerable number of fire-prone wooden structures.

### Engineering the Snowsheds

The CPR eventually appointed engineers to construct sheds beginning in the summer of 1886, but the previous winter at least three engineers were stationed in the area with directions to record snowfall and corresponding avalanche activity. Granville C. Cunningham, Division Engineer, was charged with these duties from Raspberry Creek to the Summit and his peer, Engineer Chisholm, from the Summit west thirteen Another engineer watched the conditions further west. miles. Their observations led to the designation of 35 locations for snowshed construction within the park. Snowfall in the Pass areas was relatively light as compared with the previous winter and those in subsequent years when as much as 60 feet of snow has fallen. Nevertheless, the estimate of work necessary to protect the line which was forwarded to Van Horne in June, 1886 was little less than astounding. Almost five miles of snowshedding was required at a total cost of \$1,126,034. Sawn or hewn lumber amounted to 17,768,000 FBM. Over one million linear feet of round timber and piling was also needed to augment the framed snowshed structures. 59

In addition to CPR engineers, the Office of Government Inspecting Engineer stationed at the "Summit of Selkirks" and manned by James A. Dickey reported his own observations and commented on those of the CPR engineers to Collingwood Schreiber, Engineer in Chief, Ottawa. Having just saved the CPR from yet another financial crisis after its still unfinished line proved to be a critical link in the transportation of troops west to quell the Riel Rebellion in

1885, the government wanted its own observer on site to report the hazards which would befall a year-round rail route through the Selkirks. The following excerpts from Dickey's reports reveal just how mild the weather was that first winter season:

13th January, 1886

On the 4th of this month snow slides came down at Stations 201,215 and 230, east of summit of Selkirks. I ran a line of levels over the first two, and found quantity of snow in cut from 201 to 205.50 to be 7,221 cubic yards, equals 2,437 tons, at 25 per cubic foot; and in cut from 213.50 to 219.50 to be 14,220 cubic yards, equals 6,527 tons, at 34 lbs. per cubic foot. The slide at 230 was a very small one, being only 100 feet wide and 5 feet deep. These are the only slides that have taken place on the line of railway in the Selkirks up to this date.

23rd January, 1886

Since writing you on the 13th inst, we have had some cold weather, the thermometer going as low as 30 degrees the night before last...On the 14th inst, another slide came down at 2.30, size 100 ft. wide and 10 ft. deep, and on the 18th one came down at Station 190 of the same size...Yesterday I noticed several pieces of ice 14 ft. by 16 ft. on top of the slides at 201 and 215 having evidently dropped from the extreme mountain top.

lst February, 1886

...The slides which have come down to date, can easily be carried across the line of railway by sheds.

20th February, 1886

...we have had an unusual amount of high wind, and this, no doubt, accounts for the heavy slides at Stations 19 and 300, as the constant drifting has filled the pockets in the mountain side with snow...The weather is now quite mild, and the snow going rapidly under the influence of the warm winds. There is only about 3 feet of snow, at the present time, over the top of the rails.

13th March, 1886

As I anticipated, by putting in the loop, and getting the location into the bottom of the valley of the Illicilliwait[sic], the track on the west slope is almost entirely removed from any danger from snow slides...Although Mr. Chisholm's observations show a great deal of actual snow fallen, still on the level there is now only 5 feet...No slides have come down, and I feel pretty certain, from last year's experience none will, excepting perhaps a few caused by the heat of the sun, which never amount to anything.

lst April, 1886

...Since my last report, we have had more snow than I anticipated, but it was of a very light character and would offer no opposition to trains. For the past week the weather has been extremely fine and the snow is going rapidly. During this time the heat of the sun brought down a few small snow slides, but they came very slowly and a very small proportion reached the track.

10th April, 1886

... The warm weather of the past ten days has brought down a great many snow slides from the mountain tops, but they only reached the track at five points... coming very slowly and doing no damage to speak of... You can form, perhaps, a better opinion of how little these slides brought down by the heat of the sun have affected the line, when I tell you that six weeks ago a temporary telegraph line was erected...the poles being merely stuck in the snow, and it has only been disturbed twice...There is about 2 feet of snow on the level here now.<sup>60</sup>

By May, 1886 Harry Abbott, general Superintendent for the newly designated Pacific Division which extended from Donald, just east of the Rogers Pass, to the Pacific coast, was pushing his men to open the line. On May 6 his report read:

I was up as far as [Cascade Creek] yesterday, and examined the places where two of the largest slides on the Mountain came down. I found the cuttings full of hard packed snow, and this condition of things exists as far West as the Slides occur, so that we have to cut through a depth of from 3 to 35 or 40 feet of snow at these points. All the other cuttings have given away, more or less, and earth and rock slides block the track at every one of them, so that it will take us fully a fortnight to get the track opened up to Neilson's, which point the gangs working from the Second Crossing had reached last evening. There are now about 400 men at work clearing the line, and Contractors have 150 Carpenters and Axemen on the ground, ready to commence operations on the snow sheds...There are also 300 men now on the way between Canmore and Donald, and another 350 are being forwarded from Montreal and vicinity...<sup>61</sup>

On May 10 only 17 miles of track remained to be opened in the Selkirks. It was not until the end of May, however, that this last snowcovered length of track, including the Summit and the Loops, was cleared and train traffic could begin passing through the Selkirks for the short 1886 season.<sup>62</sup>

#### Snowshed Construction

Hundreds of men were hired to help with the construction of the snowsheds in the Selkirks. Supervision for these workers was as follows. Representing the CPR was Chief Engineer J.H. Armstrong and under him were Divisional Engineers Sykes for the east slope and Earle for the west. Contractors for the 1886 work were William Mackenzie on the east with a Tom Holt supervising his supplies and Ross and McDermid on the west with their supplies being handled by W.G. Neilson. According to P. Turner Bone, an engineer working under Sykes on the eastern slope, the work was completed by early November and was favored by almost completely dry weather. His recollections of the work are as follows:

The snowsheds were quite simple structures composed of heavy timbers. They had a sloping roof, corresponding to the slope of the ground at the site on which they were built, to allow the slides to sweep over them. So there was no great difficulty in building them.

As the railway, however, was now in operation, and trains were passing regularly to and from the coast, care had to be taken to keep the track - over which the snowsheds were built - free from obstruction.

I well remember the particular care that had to be taken when the first train, with tea from the Orient for the New York market, passed through. This train had the right of way over all other traffic; and we were well forewarned of its coming. As we stood by the side of the track on the look-out for it, it passed at express speed down grade on the eastern slope; with brakemen on top of the cars, holding on to the brakes; and the mountains re-echoing the siren sound of the engine whistle. On another occasion, when the train on which Sir John A. Macdonald, Premier of Canada, was passing through the mountains, we saw him viewing the scenery from a seat fixed up for him on the cow-catcher in from of the engine. As the engine came puffing up grade, it was not going at anything like the speed of the tea train. So we were able to get a close view of the distinguished traveller; and to note his facial expression. Facing the wind as he was, his eyelids kept up a continual blinking; and it is doubtful if he was really enjoying his ride.<sup>63</sup>

Although engineers such as Bone were literate and preserved their recollection of life in the Pass while supervising snowshed construction, the daily life of the workers is harder to reconstruct. The Calgary newspaper correspondent at Donald reported; "I find Donald unusually dull. Contractors have engaged all the idle men in town and shipped them to the Selkirk summit where snow sheds are under construction."64 Another newspaper noted that every train coming from the east was bringing men to Donald for work on the snowsheds.<sup>65</sup> The large demand for labourers on the project apparently exceeded local wage labour capacity. Once contractors finished their work they paid their hundreds of employees and everyone left for other work in central or eastern Canada.<sup>66</sup> (Figures 30 to 34 show living and working conditions for these workers)

One tourist observed the ethnic background of the snowshed workers on the basis of nineteenth century class consciousness:

Besides these gangs of men specially connected with the railway company, the contractors for building snow-

sheds, cribs, and bastions, or glances as they are called, for protection against avalanches, had their gangs. Some of these men were employed in the dangerous occupation of felling timber on the steep mountain sides and shooting the logs downwards. One fine fellow was killed at this work and several were injured while we were in the Selkirks. These men get three or more dollars per day, and their board costs less than a dollar per day, so for steady men there is here a good chance of saving money. These gangs were composed of men of all nationalities, Italians and Swedes seemed however to predominate. Casuals occasionally passed along the track by way of seeking work. They were usually of rascally appearance, and though we were hard up for packers, these unemployed were the last to look to for help.<sup>67</sup>

Source of Snowshed Material

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Evidence of the exact source of all the material for the snowsheds is not available but the following sketchy details provide circumstantial proof. On May 6, 1886 Ross wrote Van Horne:

I stopped Hogg going to Scotland and he is now on his way over the Central Pacific examining into the snow and avalanche sheds on that road, as we will have to put in some of these sheds as we construct the line. Besides, by so doing, we can utilize the timber left over from sawing out for the bridges...<sup>68</sup>

Leftover cuttings from the sawmills which turned out the thousands of board feet of lumber and timbers for the bridges

and trestles would have provided some excess material but could not alone account for the snowshed construction material. Correspondence in 1887 between T.S. Higginson, Dominion Crown Timber Agent for British Columbia who was charged with the responsibility of collecting timber dues for the Department of the Interior, and his supervisor in Ottawa, John R. Hall, reveals that the railway felled most of its snowshed timber adjacent to the structures. Two timber berths had been set aside for the CPR on land near the Columbia River and Higginson reported that they were not being used as the source of snowshed timber. Harry Abbott, General Superintendent for the CPR for the Pacific Division, responded to the charges laid by the timber agent:

Referring to your favor of to-day's date regarding the cutting of timber on the company's limit near Donald, I have to inform you that I had some conversation with Mr. Drinkwater recently in Montreal on this subject and he told me that there had been no arrangement with the Government whereby we were to cut the timber required for snow sheds on the limit in question, but that we were at liberty to cut timber wherever most convenient on unlicensed crown lands same as heretofore and as is provided in the company's contract with the Government for the cutting of timber for construction purposes. I can only say in regard to your statement that if such an arrangement were made, it would be impossible for us to get the snow sheds constructed this season, inasmuch as in the first place there is no suitable timber, viz., cedar, on the limit, and the limit is so far removed from the points where the work is to be constructed that it would increase the cost enormously and

delay the work. Acting under the arrangement as I understood it from Mr. Drinkwater, I have since made contracts for the cutting of timber on the ungranted lands of the crown in the mountains convenient to the site of the work.

Hall, on behalf of the Department, informed the CPR that the timber limits on the Columbia near Donald would revert immediately to the Crown as the railway apparently had no use for the valuable properties.<sup>69</sup> Therefore, it can be surmised from this exchange that in the 1880s the CPR, through custom, established for itself the right to use timber from ungranted crown properties adjacent to its right of way through the Selkirk mountains not only in 1885, the year of construction of the original line, but also in the years thereafter.

If interpretation of timber rights came to so be understood by the CPR, it can also be surmised that the CPR took similar advantage of other building materials along its line such as stone for the bridge, culvert and pier structures as well as gravel for ballast, all of which are mentioned in Part I.

Two additional quotes provide further information regarding the materials and construction process. The first dates to approximately 1887 as it refers to the first year after snowshed construction:

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In the construction of the snow-sheds the strongest materials were used, and these were found close at hand in the forests. Cedar timbers, mostly 12 inches by 12 inches, formed the cribwork, but Douglas fir (Oregon pine) was employed in members subjected to severe transverse strains. The bents, usually spaced about five feet

centers, were built up of 12-inch by 15-inch timbers, securely braced and drift bolted together. Above a shed the ground is cleaned and leveled, with the object of giving the avalanche an upward motion, thus tending to shoot across the track. An idea may be gotten of the immense power of these avalanches from the fact that comparatively new sheds have been entirely demolished during the breaking-up of an unusually severe winter.<sup>70</sup> The second quote recounts the tragic death of a worker but also describes one process used to acquire lumber for snowshed construction.

Last Monday morning as a party of Campbell & Co's men were at work on a glance crib at shed 22, which is a short distance west of the Glacier House, one of them met with sudden death. A crib is being built on the side of the mountain, some 400 feet above the shed. A party were still farther up cutting timber, with which to build the crib. The timber is run down a slide, the men graduating its speed by the use of ropes. That morning the men above had cut down an 85-foot tree and trimmed off the limbs. The tree was too long for use, and a length was about to be cut off the butt end, when it started down the slide toward the crib. The men below were warned to get out of the way which they did by climbing over to the usual place of safety. When within one hundred feet of the crib, the tree slued out of the slide, the middle of it striking a balsam that was standing a few feet distant to one side. This caused the small end to fly back and over where the men from the crib had climbed. As the end swung around, it grazed the head and shoulders of one of the men who had stopped down to take a drink of water, but

struck a man named Cook in the back, knocking him senseless, he dying within an hour from the injuries received. The body was carried down to the camp, and Mr. Campbell, who was at Donald, telegraphed for. Judge Vowell went up on the next train and held an inquest, at which the above facts were elicited. Francis Cook, the deceased, was about 22 years old, and came from Bell Creek, Prince Edward Island, where his father now resides. He had no relatives in British Columbia, and had been on the work since July 30th. His remains were brought down on Wednesday by Mr. Campbell, and given christian burial in the Donald cemetery.<sup>71</sup>

As quoted above, Ross sent an engineer named Hogg to the Central Pacific railway to study its avalanche protection system. Differences between American and Canadian conditions were great. In the 1860s snowsheds had cost an average of \$10.25 per linear foot to construct on the Central Pacific and in 1918 the Southern Pacific paid twelve to fourteen dollars per foot to renew its sheds. Snowfall in the Selkirks was more moist and heavier and consequently, they had to be designed to hold up under avalanches which weighed 25-45 pounds per cubic foot. Cost of snowshed construction therefore averaged closer to seventy dollars per foot or almost seven times the cost of the Central Pacific structures. Some of the figures quoted in the following reports are lower but the true costs in the Selkirks would not be known until after construction was completed.

In early 1888 C.A. Stoess, Resident Engineer for the CPR Pacific Division described in detail the snowshed system used in the first two years. His lengthy but informative description follows. (Figures referred to in his report can be

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found as Figures 35 to 37 in this report)

During the season of 1886 about 4 miles of sheds in all were built to protect the line against snow slides. The design most extensively adopted is that of a crib built up to full height on the upper side of the track (see Fig.8) with the space between the crib and the hill filled in with earth as shown. On the lower side was a frame work of 12x12 in. timbers, resting on sills or piles as the conditions required. The crib was made of 12x12 in. timbers, squared on the face and round at the back, with 3 in. spaces between courses. The ties were dove-tailed to the front timbers and saddled, or let in with a square joint, at the back. The bents in all cases were 5 ft. between centres, with the ties in the cribwork breaking joints every 10 ft., with packing pieces between.

The entire timber-work in the sheds was drift-bolted together; no mortices or tenons were anywhere used, but the meeting of the stringer, plumb post and batter post was made as shown in Fig. 7. But the experience of the winter of 1886-87 showed that the space left out of the planking, for daylight, marked a, was too great, and the joint shown in the several views given was adopted, though it is somewhat weaker.

In 1886 some level sheds in through cuts were built with the sides sloping down somewhat; some had small cribs to resist the impact of the snow slides.

The figures here given show the sheds built in 1887. The timber used in the cribs was cedar exclusively, and the front logs were 10x12 in. and the back logs were "flatted" in order to obtain a dove-tail joint at both ends of the ties; the ties were round as before. The length of shedding built in the season of 1887 amounted to about 2 miles, inclusive of about 1,500 ft. for level snowfall. Hence the total of snow sheds on the line is now 6 miles and 300 feet. The sheds protecting the track against snow slides cost from \$2,500 to \$7,000 per 100 lin. ft. of shed, according to location. The sheds for level fall cost about \$800 to \$1,000 per 100 lin. ft., or we can put the price at from \$25 to \$70 per lin. ft. for the first type, and from \$8 to \$10 per lin. ft. for the second.

As built in 1887 the bents of the timber work were 5 ft. and 8 ft. centers, the design being to have a crib which would act as a retaining wall and support a framed structure above it. The struts and toe-braces were drift bolted at the ends and supported by a claet, as particularly shown in Fig. 6, where the strut butted against a post or pile.

The weight of the snow-slide material, or compressed snow, varies from 25 to 45 lbs. per cu. ft., and this is generally discharged in balls, from the size of a man's head upward, according to the state of the weather and whether the mass is wet or dry. Dry snow comes down with a great velocity and strikes a very hard blow against the structure; while wet snow descends more slowly.

Fig. 10 shows a strutted glance-fence, planked on the face, used to save length of snow-shed by diverting the slide into gullies. Split fences of a V form with the point towards the slide, have been built and so far have answered very well. In this latter fence the chief requisite is to present a sharp angle to the slide and

back this point with a very strong and heavy crib.

In answer to a question, Mr. Stoess said that in no case have they had trouble from fire in these sheds, though in summer the timber is very dry. As a precaution pipe lines have been laid to the important sheds, with hydrant nozzles every 400 ft. and a coil of 200 ft. of hose at each nozzle. But so far they have had little occasion to use these appliances, and the experience on the Austrian railroads, likewise provided with many timber snow-sheds, proves that immunity from fire is not singular to the C.P.Ry.<sup>72</sup>

Van Horne's private report to the directors of the company dated September 6, 1887 gave a succinct, if extremely roseate, summary of snowshed construction in the Pass.

From Donald to Revelstoke, 79.5 miles, crossing the Selkirk Mountains, the track is in good working order. The final ballasting is well advanced and will be completed very soon. A large amount of work has been done this season in reducing earth slopes on the mountain sides, and in moving the line out from such slopes as are likely to slide and which cannot be reduced to a proper angle without excessive cost. But the most important work in the Selkirks is the construction of sheds and other works for protecting the line against snow-fall and avalanches. The sheds provided last year were found to answer their purpose admirably, but many of them were found to be too short, and during the month of March, when the heaviest avalanches came down, their portals were filled with snow, ice and debris. To guard against this all of the sheds where difficulty occurred last winter are being extended and in a number of cases the

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original sheds are being connected by covering the intervening spaces. With few exceptions, cheaper works than those provided last year are found sufficient, being outside of the tracks of the heavy slides. Sheds are being provided at a number of new places where the experience of the past winter, which was exceptionally severe, indicated the need of them. All the timber in these works is of cedar and they will require little repair for many years. I am confident that the protection works now building, and, which will be finished before the winter, will effectually prevent any serious blockades. Succeeding winters may develope snow-slides at new points which may cause slight delays to trains, until protected, but all points where serious difficulties might occur will be fully covered by this season's work.<sup>73</sup>

As far as Van Horne was concerned, the problem of avalanche protection in the Rogers Pass had been solved.

## Initial Cost of Snowsheds

Although maintenance and construction of extensions to the snowshed system was an ongoing source of concern, as the brief summary of construction costs below details, the major expenditure on the snowshed system occurred in the first two years. During the summer and fall of 1886 some 35 sheds were built along the route of the CPR. Most of these were between a point just east of Cascade Creek and just west of the Loops. Exact expenditure for snowsheds from Canmore to Vancouver totalled \$1,477,510.08. More sheds were deemed necessary in 1887 and by the end of the construction season a total of \$691,062.46 had been expended and the number of sheds had increased to 53. Construction costs in these two years alone were almost five times the \$450,000 predicted in March, 1885. (Figure 38 is a map with the locations of the 37 snowsheds which were built in the park indicated)

In 1888, CPR divisional superintendent Marapole awarded additional contracts for snowshed and glance crib construction to McLean and Whitehead on the eastern slope and D.B. Campbell and Co. on the western slope of the Selkirks. CPR expenditures for snowsheds and related structures (the glance cribs mentioned above directed wayward snowslides over the snowsheds) from Donald to the Pacific coast totalled \$136,400.95. However, in the two subsequent years capital expenditure on the avalanche defense system totalled a mere \$3,975.95 and \$159.25 respectively. 74 In December, 1888 Marapole compiled a list of snowsheds constructed to that It is included as Table 2 and is the earliest document date. listing the snowsheds, the details of their individual lengths and their total lengths including wings. The company gradually phased out some of the snowsheds in subsequent years during the rebuilding process. By 1910 it had reduced the cumulative length of the snowsheds by over half a mile. However, after the fatal 1910 slide, the company rebuilt snowshed 17, thereby increasing the total length to more than that of the system before the 1909 revision in the Pass. (For examples of showsheds in the park, including No. 17, see Figures 32 to 34 and 39 to 41)
Fire Protection

In spite of Stoess' assertion above that fires would not prove to be a hazard to snowsheds, an early tourist noted:

The snow-sheds are also carefully inspected after every train and they are usually supplied with a complete system of water-pipes and coils of hose in case of fire. Another visitor to the area gave more details of the system:

In order to guard against destruction by fire systematic measures have been adopted. Where it is necessary to protect a long piece of track from avalanches, the sheds are divided into several short sections, with open spaces of about 200 feet between them. These open spaces are protected by heavy V shaped fences of cribwork placed above. An avalanche striking one of these fences is deflected to the right and left upon the sections of the shed and so passes, without doing harm, to the valley below. The open spaces also allow the sheds to clear of smoke very rapidly, which in winter, when all the small openings are filled with snow, would otherwise require hours. A complete system of sluices and piping leads water from the streams above to the tops of the sheds, and in case of the occurrence of fire, the watchman, who is always on duty, will be able to control it promptly. In many cases a temporary track is laid beside the shed, which is used in summer, thus greatly reducing the fire risk, and allowing the passengers to see to

better advantage some of the finest scenery.<sup>76</sup> And finally, the following account of an accident includes details of another method used for extinguishing snowshed fires.

On Monday [May 28, 1888] the westbound passenger,

known as the No. 1, was flagged at snowshed seven, owing to shed thirteen being on fire. A work-train crew, in charge of Conductor Babbitt, were endeavoring to put it out. They had two water tanks on a flat car, using buckets in throwing the water. Somehow the coupling broke, and the car started down the grade eastward. A11 those on the flat jumped, except Babbitt. He put on the brake, but for some reason it would not take hold, and the car shot down the grade, through the shed on fire, colliding with No. 1. Engineer Gavin saw the car approaching and stepped from the engine. The collision jolted but did not injure the passengers, made kindling wood of the water tanks and buckets, and knocked off the pilot, sand box and smoke stack of the engine, the debris nearly burying Gavin out of sight. Babbitt stuck to his car manfully, getting pretty badly scorched coming through the shed, and only jumped when he saw the collision could not be avoided. The wreck was cleared away and No. 1 pulled up to Rodger's[sic] Pass, where it met the east bound passenger and exchanged engines, Engineer Gavin bringing the eastbound train to Donald some three hours late, his engine puffing volumes of smoke through a stack made out of a big water barrel. At the shop fittings of another engine were placed on it, and Gavin pulled west Thursday morning as though nothing had happened.77

Consequently patrols were established to guard the snowsheds. In 1912 patrols watched over sheds 1-6, 7-11, 12-14, 21-27, 28-31 and 35 and 37. Summer hours were naturally longer, probably to protect the sheds not from avalances and engineignited fires but from the frequent bush and forest fires

which raged through the Pass in dry summer months.

### Maintenance

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Even where fires were not a problem, ongoing maintenance of the avalanche protection system was both extensive and expensive. First, the original number of snowsheds proved insufficient and in 1887 and subsequent years additional sheds were built or added to in order to meet demand. Next, even though the structures were designed to withstand enormous impact and load, cave-ins and general damage to the sheds called for continual maintenance. As itemized in Table 3, for the period from 1898 to 1914, repairs were required due to damage to these structures. Also, by the second decade of this century any original material in the snowsheds was approaching 30 years of age and needed almost complete replacement. The original fir and cedar lumber was strong and well ventilated in order to prevent deterioration due to rotting but untreated wood has a relatively short lifespan. CPR contract records indicate that contracts were let to the Dominion Paving and Construction Company in May 1904 and to W.S. Harvey and Company in April, 1905 respectively for treating timber and for carbolineum painting at the mountain snowsheds.<sup>78</sup> Even though the records are incomplete and therefore inconclusive, it is reasonable to assume that preservation of the snowshed structures was an ongoing priority for the railway. Eventually the high cost of rebuilding all the snowsheds in either wood or concrete became a decisive factor in the decision to construct the first Rogers Pass tunnel.

Snowplow Technology

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Another reason for the construction of the subsurface route was to allow for safer passage through the Pass. Between 1885 and 1916, when the Connaught Tunnel was opened, more than 200 people were killed in avalanches in the park. 79 Snowsheds could not be built to protect the entire track and as a result the avalanche which claimed the most lives occurred as workers toiled during the night of March 4, 1910 to clear the track Only one of the 63 men lived between snowsheds in the Pass. to tell about the nightmare. 80 In addition to men with shovels, the CPR also utilized an assortment of snowplows in the Selkirks. At first wooden plows were attached to the front of the leading engine but these eventually were replaced with similar steel plows. Variations of the steel push plow include the massive wedge plows used on the railway today through the Pass. Canadians invented the first rotary snowplow and its design dates to the 1860s.<sup>81</sup> The CPR built eight such plows in November, 1888 and the local newspaper recorded the trials of Rotary No. 101 in the Selkirks:

Rotary snowplough(sic) No. 101, recently arrived at Donald from the Montreal shops, was given a trial on Friday. There was enough snow on the summer track at the Summit to give it a practical test. The snow was quite soft, and the plow did not work quite as satistactorily as if the snow had been dry. It was run as far west as Sicamous, and is now at Revelstoke. It is said to be the intention to keep 101 on the line west of Revelstoke.

The next month the report was better:

Rotary snowplow No. 101 was given another trial in wet snow this week. It was taken up to the summit and run through a long cut near the Glacier that had been shoveled full. When run at a slow rate of speed, it cleared the cut thoroughly, throwing the snow clear over the telegraph wires to a distance of 100 feet. The test satisfied the railroad men present that the plow would do good work in wet snow if not sent into it too fast about 6 miles an hour being found the proper speed. By 1904, a winged snowplow and a rotary were stationed at the Pass and in 1910 two more rotaries were added to the route through the Selkirk mountains. Although no longer necessary for clearing the track of avalanches in the Pass, both types of snowplows are still used for routine snow removal in the park.<sup>82</sup> (For views of various types of snowplows see Figures 42 to 47)

After a thirty year battle defending the line through the Rogers Pass, the CPR gave up forever on an all weather route over the Summit. But even as the track was removed and snowsheds were being dismantled by the company, a government official was suggesting the utilization of the old roadbed as a "carriage road."<sup>83</sup> Such a highway did not become a reality until 1962 but it indeed parallels and in places actually occupies the same roadbed as the earlier route through the Pass. However, long before the highway was opened for all-weather traffic, an aggressive avalanche investigation, control and defense program had to be implemented. Once again snowsheds, this time built of concrete, protect the route. This passive protection is augmented by a team of avalanche forecasters who, since 1959, have studied the complex weather systems which create avalanche hazards. After avalanche activity is predicted, an active blasting of a critical point on the trigger area of a slope precipitates a controlled slide. Once all potential slides have been triggered or conditions cease to be critical for avalanche hazards, avalanche debris is removed from the area where it has covered the roadway and passage through the Pass is restored.<sup>84</sup> More than one hundred years after their initial introduction, snowsheds as well as other avalanche defense systems are still maintaining an all-weather route through the Rogers Pass.

### Part III Glacier House

Dining stations along the CPR route provided refreshment to passengers on the uncompleted line and, therefore, the decision to build them in the mountains came as no surprise. But once through trains began including dining cars in the consist of equipment, many of the dining stations were phased out, In the steep mountain sections, however, the extra weight of a dining car was deemed excessive and the company chose three well-spaced locations for the construction of small hotels. At first rooms to let were kept to a minimum and a large dining room to service the appetites of a trainload of passengers was given primary importance in these buildings. Passengers almost immediately demanded overnight accomodations in order to take advantage of the beautiful mountain scenery or pursue mountaineering activities and soon the dining stations at Field and Glacier were expanded into hotels and became significant distinations.

# Choice of Location

With locations chosen at Field and North Bend, the company needed to select a parcel of land somehwere near the Rogers Pass for the third mountain dining station. The Summit was probably not considered due to the high risk of avalanches and the enormous snowfall in winter months. The Illecillewaet valley, with the first line location across the southern slopes of Mount Cheops, was also dangerous near the Pass and provided little area for a dining station as it wandered back and forth across the river valley towards the park boundary. Indeed, until well into the summer of 1885 the only feasible location for a stop was east of the Pass in the Beaver River valley. Although this valley was relatively safe from snowslides, it also contained the steepest river gorges in the Rogers Pass area and would not have provided much land upon which to perch a dining station.

Not until Ross decided to escape the dangers and costs of building snowsheds and tunnels to protect the line from the hazards of Mount Cheops did a natural location for the dining station become evident. Together with the tight curves of the Loops and Five Mile (Loop) Creek, the decision to run the track far up the valley almost to the headwaters of the Illecillewaet reduced the grade to the maxumim allowed by the CPR for permanent track. This fortuitous engineering decision solved the problem of line location across Mount Cheops and also provided a prime location for the required stop. Descending west from the Summit, with their view as yet unobstructed by the snowsheds which were built the next year, CPR employees and passengers alike must have been enthralled with the spectacular view as the train headed straight for the toe of the Great (Illecillewaet) Glacier. Just over a mile shy of the enormous icefield the train began its gentle right-hand turn and to their left lay an alpine meadow. Someone, perhaps even the expert eye of Van Horne himself, saw the potential for the site and designated it as the location of the Selkirk dining station.

CPR policy, publicly stated or privately adopted as the circumstance arose, grew to encompass its hotels in the new west. As early as May 18, 1886 company directors had announced their intentions to build hotels at Vancouver and Banff.<sup>85</sup> The Pacific terminus at Vancouver was a logical place for a hotel and office but the structure at Banff was purely intended for vacationing CPR passengers. Van Horne was quick to recognize a beautiful location as well as a captive market and for years the only access to Banff, as well as the resorts at Glacier and Lake Louise, was over the company's rails. Since the company had fought off an almost continual cash crisis throughout the construction period, capital to finance large hotels came from selling off part of its land grant. The annual report for 1888 stated:

From the proceeds of the townsites, large and handsome hotels have been built at Banff in the Canadian Rocky Mountain Park and at Vancouver...These hotels have already had a marked effect in attracting through passengers and tourists and they will soon be numbered in the available assets of the Company, in addition to those shewn(sic) in the Balance sheet.

Townsite sales of \$1,399,327.00 for 1888 more than covered the \$496,934.73 expended on the hotels at Banff and Vancouver that same year and the unrecorded amounts on the dining stations.<sup>86</sup>

# Original Structure - The Chalet

Planning for a dining station in the Selkirks seems to have preceded the completion of the line through the Pass. On November 25, 1885 architect Thomas Charles Sorby (1836-1924) of 162 St. James Street, Montreal, presented Van Horne with a bill for: "Preparing Plans, Section Elevations, Details,

Specifications for the Dining station to be erected in the Selkirks. 2.5% Commission on \$9000, \$225.00." A voucher for this amount was passed by Van Horne the next day and Sorby signed the standard CPR receipt acknowledging payment on November 30, 1885.<sup>87</sup> Sorby's original plans for Glacier House do not seem to have survived but the drawings in Figures 48 to 51 give the details of the original structure. His relationship with the CPR began in 1882 or 1883 when he arrived in Montreal from his native England. In 1886 he moved to British Columbia and designed the Hotel Vancouver and Harry Abbott's house for the company in 1887 and 1889 respectively. By 1890 he was no longer in the employ of the CPR and he moved to Victoria and practised there successfully until his death in 1924. Perhaps his major lasting personal achievement was the posthumous development of the inner harbour of Victoria into its present terminus.<sup>88</sup>

Sorby's plans for the Selkirk dining station were virtually identical to those he drafted for Fraser Canyon Hotel at North Bend. The station at Field, called Mt. Stephen House, was similar but boasted two dining rooms. Work on all three began in the summer of 1886 and by early fall Van Horne was pushing Abbott to hurry up the work at these locations so that their dining cars could be used in the East.<sup>89</sup> On October 22 G.W. Swett, Superintendent of Sleeping, Dining and Parlor-Cars for the CPR, telegraphed Montreal: "Hotel at Field ready to receive guests."<sup>90</sup> Mt. Stephen House was expanded as demand for accomodations for tourists and mountaineers increased but by 1919 the Superintendent of Yoho Park reported that it had:

been turned over by the Company to the railroad YMCA which is practically CPR only distinct from the Hotel

department. They still reserve a number of rooms for the accomodation of the public, who of course can obtain meals there, but the service is not nearly as good as formerly.<sup>91</sup>

Construction of Glacier House and its tiny station was completed shortly after the facilities at Field. In October 1886 Swett cabled Shaughnessy:

Perley that keeps eating house at Carberry is here. He will furnish hotel at Glacier providing Co. will let him have it on reasonable terms. Please wire me before

he leaves tomorrow what you are willing to do.<sup>92</sup> Montreal apparently decided against employing Perley's services at this time and on December 16, 1886 Swett requested of Van Horne:

Shall I go ahead and furnish dining hall at North Bend the same as we did at the Glacier as probably by the time we get the furnishings out there the Dining room will be ready[?]<sup>93</sup>

Twelve days later a Winnipeg newspaper which specialized in information of a commercial nature reported:

The new CPR hotel at glacier, on the summit of the Selkirks, is completed, and has been opened. The whole of the furniture and appliances were forwarded from Montreal.<sup>94</sup>

Sometime between 1906 and 1910 Kate Reed, wife of Manager in Chief of Hotels Hayter Reed, while redecorating existing CPR hotels and planning the decor for new ones, stopped at Glacier and brought the furnishings of the remote resort into line with the standards of the hotel system.<sup>95</sup> (See Figures 52, 67, 95 and 96 for interior views of Glacier House) Therefore, although the Glacier House registers first recorded guests in January of 1887, the dining hall and its few guest rooms apparently went into service in November or December of the previous year. (Appendix A gives a list of registrations at the hotel, Appendix B gives details of rates.)

While each of the dining stations was under construction, dining cars were parked on sidings parallel to the mainline at these locations and from them meals were served to hungry passengers. The Marlborough was stationed at Field and the Holyrood at North Bend but the identification of the car at Glacier during the summer and fall of 1886 remains a mystery.<sup>96</sup> The finished structure at Glacier was worth the effort as one visitor described the House in glowing terms:

The Glacier House is a very artistic building of the Swiss chalet type, coloured, externally, chrome-yellow relieved by dark brown beams and mouldings...The view from the verandah and windows of the little hotel which contains, by the way, fourteen bedrooms and a very large dining-room, panelled in stained wood - was one of fairy-like beauty.<sup>97</sup>

The only other original structure at Glacier House was a small station house. Not a standard station design, photos show that the two storey structure had one door and a single and double window facing the track. Each end of the structure included a double set of windows centred in the wall. Upstairs three dormers, each with a small window, extended the roofline towards the track and to the ends of the building. The roof was built to overhang the wall and provide a verandah for protection from the elements. The back of the frame building was uninterrupted by either dormers or windows and a chimney was centred in the roof. Decorative woodwork along the edge of the eaves and gables matched, in spirit but not design, the

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aesthetically pleasing details on the dining station. (Figure 53) Overall dimensions probably did not exceed 20' x 26'.<sup>98</sup> Floor plans for other small frame stations used by the CPR after the turn of the century suggest three rooms on the main floor; a waiting room, baggage or express room and office. Upstairs probably consisted of two bedrooms and a living room and kitchen or more likely just bedrooms if the station agent and section men utilized the dining and other facilities at the nearby dining station.<sup>99</sup> (Appendix C lists Glacier House stops by various trains for the years 1886-1917.)

More than half of the 15 bedrooms in the upper stories of the hotel were used by employees and consequently on July 17, 1887 Abbott telegraphed Shaughnessy: "Hotel cannot accomodate people wishing to remain over. Can you spare sleeper to lay over here for that purpose. Reply."<sup>100</sup> One traveller through the area stopped at Glacier House for six weeks in 1888 and somehow managed to book himself into one of the "six or seven small but snug bedrooms" which were reserved for guests. Sometimes there were no guests but...

on one occasion when we returned from an absence of several days in the mountains, we found that besides our room being occupied, our two spare tents had also been pitched to give sufficient accomodation. After that a sleeping-car was brought up and left permanently on a siding to accomodate the overflow from the house.<sup>101</sup>

First Extension - The Annex Demand for additional accomodation at the Glacier grew quickly and Marpole and Abbott apparently convinced Van Horne in

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Montreal of the need for an extension during 1888 because by 1889 plans had been drawn and revisions to them were being made to fit the terrain. Marpole warned Van Horne on September 14 that the desired location would necessitate "nearly two thousand yards excavation, two thirds bolders[sic] [and] will be costly." By September 22 Abbott had relocated the building and the new site needed almost no excavation. On October 11 Abbott wired Van Horne news of the lowest tender at just under \$9000.00<sup>102</sup> The same day he forwarded a letter which read:

I wired you today that the lowest tender for the annex to the Glacier Hotel amounted to \$8460 for the building itself and about \$500 additional will cover the cost of excavation.

I now send you a tracing, showing in red the proposed alterations, some of which are necessitated by placing the building at a higher level and on different ground from what was contemplated, necessitating the ends of the building being constructed two storeys instead of one and two as was originally contemplated.

You will see that I have added to the back of the east end rooms for bathrooms and W.C.'s. on each flat, which will keep these things together and enable the necessary pipes for drainage to be carried by the shortest cut across the grounds to a reservoir or to the creek. By using the one story for the men and the other for the women they can be kept separate and afford all the accomodation required without taking up any of the rooms in the main building.

I also propose to make the west end room on the first storey a billiard room and to raise the ceiling of

the Ladies Drawing room at the east end into the roof so as to make it 12 feet instead of 9 feet as shown on the other plan, as the room is so large I think this very desirable and it will, in my opinion, be a great deal better to have the billiard roon on the ground floor at the further end of the building, away from the ladies portion of the building, thus avoiding the noise that would necessarily be made and the inconvenience of going up and downstairs to a room in the upper storey of the present building as you suggested. If there is any room in the present building, we can utilize it for bed rooms.

The addition of the room under the ladies drawing room at the east end is a very necessary one for the accomodation of attendants and as a bell-room, where a chambermaid can be kept to attend upon the guests.<sup>103</sup>

# The Bowling Alley

Between October 1889 and June 1890 Van Horne and Abbott continued corresponding about the Annex. At some point a separate building for use as a bowling alley was also suggested and on June 6 Van Horne decided to approve it but witheld funds for the billiard room which was in the original plans for reasons outlined in the following letter to Abbott:

Referring to yours of the 30th about bowling alley and billiard room at Glacier, I think the billiard room had better be omitted for the present at least and the building cut off as indicated in red pencil. The billiard room can be added later on if need be. I understand that before July and after August there is frequently

sufficient frost at the Glacier House at night to affect billiard cushions and that sometimes even during July and August there is frost. If so the billiard season would be too short to be worth while. I suppose the bowling alley alone can be built for \$1000.00. I believe the one at Banff cost about \$800.00. I have therefore approved an appropriation for the former amount.

In an interview in 1976 Edward Feuz, a Swiss guide, remembered the short history of the bowling alley:

We had a bowling alley there [Glacier]...and then the manageress, Mrs. Young, took the thing over and made a curio store...They had a bowling alley at Glacier. This was the first amusement they had in the Canadian Rockies.<sup>105</sup>

This building had at least one more occupant. During the last few years that the train passed by Glacier House it was the home of a branch of the Union Bank. After about 1912 staff and guests did their banking at this financial outpost but a waitress at that time remembered the real reason for the branch. Construction of the Connaught Tunnel attracted numerous workers to the Pass and the Union Bank on the hotel grounds was their pay depot.<sup>106</sup> (Figure 54)

The original plans for the Annex were designed by architect Bruce Price of New York. His first commission for the CPR was a station and office building in Montreal during 1886. Price introduced the chateau style to railway hotels in Canada and this influence is apparent in his design of the Annex to Glacier House in 1889.<sup>107</sup> (See Figures 55 to 60) This 22 room Annex was never constructed for reasons stated in Abbott's letter to Van Horne on July 5, 1889.

I send you herewith Mr. Bruce Price's plan of the

proposed addition to the Glacier Hotel, but it does not seem to me that the building is calculated to meet out wants. For example, I think that the veranda should extend over the whole front of the building, instead of only at one corner, and if the building is to be placed close to the present one, the end balcony should be dispensed with.

I do not think the interior arrangements are suitable either, as there is no provision made for a billiard room.  $^{108}$ 

An acceptable design for the Annex was finally found and Price may have been the architect since the final appearance was quite similar to the orginal plans. But as the floor plans in Figures 61 and 62 indicate, the Annex, as built between 1890 and 1892, was longer and narrower than proposed in the original plan. Basically a two storey structure with a small gabled third floor which was later enlarged, the Annex provided 32 bedrooms, sittings rooms and bathrooms for the many guests. (See Figures 63, 64 and 66) Items listed as "additions to Glacier House" in the CPR Annual Reports for 1889, 1890 and 1891 for \$3,073.42, \$9,524.20 and \$7,302.63 respectively, probably account for the cost of the construction of this Annex which opened in 1892.

The construction of the Annex in 1890 caused friction between the company and the Department of the Interior over the right of the CPR to use land along the right of way. More than two years before, on January 28, 1888, the company had applied for 160 acres of land at Glacier "to prevent squatters taking possession and erecting taverns and other objectionable buildings in close proximity to the railway." The company's motives were obviously mixed. The only nearby locations where

such objectionable buildings had sprung up were at its own townsites at Rogers Pass and at Donald where it held patent on the land and was already responsible for control of community development. As it had intentions of creating a tourist stop at Glacier House, it requested the large amount of land to protect its current and future investment against the problems it could not handle elsewhere. The request appears to have been a thinly disguised ploy to acquire free ownership of a substantial block of land in the Glacier park reservation which dated from October, 1886. The Department granted instead an area 1600 feet long and 400 feet wide at Glacier and informed the company that any land in addition to these 14 acres could be purchased at the current rate of \$2.50 per Faced with a bill of \$365.00 for the additional 146 acre. acres the company decided it only needed 40 acres in total. When failure to pay the \$65.00 sum for the remaining 26 acres brought a stern warning that letters patent would not be issued until the money was received, the CPR decided on January 17, 1889 that the 14 acres of land in its possession would be sufficient. By August of that year the company was found building the Annex beyond the limits of its orginal land patent. It claimed the right to as much land as it wanted under its understanding of its charter but the Department stood firm and finally on November 12, 1890 the CPR made payment of \$65.00 for the 26 acres in dispute and letters patent were issued effective November 29, 1890. C. Drinkwater, CPR Secretary, included the following disclaimer with payment:

I am instructed, however, to state that in deciding to purchase this land the company does not withdraw, to any extent, its contention that it is entitled under its

contract to a grant of the said land free of price, but claims, and will continue to claim, that had the said contract been between individuals, the conveyance would be decreed by the courts by way of specific performance, and the company reserves the right to claim hereafter a return of whatever sum may be paid as purchase money for the said land, together with interest, or such other remedy in respect of the premises as it may be advised to seek for.<sup>110</sup>

As with the timber issue discussed in the last section of this report, in this attempt to acquire 160 acres at Glacier, free of payment, the company was apparently testing the limits of its power within the boundaries of the new park reservation.

# Other Miscellaneous Buildings

Minor structures such as laundry shacks and other small utility buildings were probably built and demolished as the need arose in the 1890s and at various dates until the closure of the hotel but the next major additions were suggested by the new Pacific Division General Superintendent Marpole in the fall of 1897. These included a servants quarter behind the hotel, a billiard room, a lunch room between the original structure and the station, an extension to the dining room and an additional floor on the Annex. (Many of these are visible in Figure 64 and can be identified from the site plan in Figure 69) Some sort of servants quarters was probably constructed at this time and the billiard room, a two-storey structure with five more bedrooms upstairs, as shown in Figures 61, 65 and 70, was also built. Probably

erected in 1898, it was placed halfway between the original structure and the Annex and was connected with each by a covered walkway. (Figures 64, 66 and 67) A separate lunch room was never built but the extension of the dining room at an estimated cost of \$1000.00 probably took place immediately to meet the ever-increasing demand on the food service by passengers and guests alike. Van Horne apparently suggested the addition of another floor to the Annex but the company's engineers decided the additional weight combined with the heavy snowfall would prove "very likely to cause damage to the building." Marpole suggested a visit by "a competent architect would prove of direct benefit in determining on the spot what should be done to meet the desires of the Vice President for generally more accomodation at the Glacier." The small third floor on the Annex was enlarged at an undisclosed date, perhaps between the late 1890s and the construction of the next major structure.<sup>111</sup>

Letters between W. Whyte, Manager of Lines West of Fort William for the CPR and Vice President T.G. Shaughnessy in Montreal indicate that confusion over the numerous proposed additions to Glacier House resulted in Van Horne sending CPR architect Maxwell out from Montreal in 1898 "to settle on proposed changes." Therefore, it is reasonable to assume that Maxwell was responsible for the decisions regarding the additions to the Annex and the dining hall and that he personally designed the billiard room structure.<sup>112</sup>

Second Extension - The Wing - Second Annex By 1900 or shortly thereafter F.M. Rattenbury was busy

inspecting the CPR hotels in British Columbia "with a view to enlarging and remodeling some and of rebuilding others, work on which is not already in progress." 113 Construction of a 54 room structure at Glacier House, often referred to as The Wing or the Second Annex, apparently began in 1902 as \$32,660.00 was paid out in December, 1902 for a hotel addition. No plans for this building have survived but it boasted an elevator, baths, a new reception area and measured approximately 35' x 190'. So well built was this last structure that 1926 plans for a new hotel included retaining the Wing as staff accomodations.<sup>114</sup> The 1903 season was probably used to install water, sewer, electricity, steam heat, the elevator and many other services because when it opened in 1904 A.O. Wheeler described it as "most luxurious and homelike...fitted with every modern accessory to comfort." 115 (See left end of Figures 64 and 66)

#### Other Proposed Structures

At least one more structure was designed by Rattenbury for the Glacier House site in 1903. Two letters to his mother in June 1903 indicate his preoccupation with a new structure. On June 14 he wrote:

I was expecting a peaceful and lazy summer as all my buildings are about completed, all at the same time, but this big Hotel[the Empress Hotel in Victoria] and another large addition for Glacier in the mountains, ordered yesterday by telephone, will keep me occupied for some time. The next day he detailed the size of the new structure:

I have just been struggling away designing another

addition to "Glacier Hotel" in the mountains - a big new wing is only just being completed - but still another was ordered the other day by telegram. It is a unique place and I am trying to get a quaint unique design. It will be a very large place when all completed - about twice as big as the Queen's Hotel, Leeds, England. [His mother was probably familiar with this building.]

By September 4 he was back in Victoria writing a letter form the Union Club:

I fancy I wrote you last week from the mountains, where I was again, inspecting the mountain hotels, which are all finished. In fact all my buildings are about finished.<sup>116</sup>

The second structure Rattenbury designed was not built although its pillar footings remain to this day. No floor plans exist for the actual structure but from a 1906 site plan overall dimensions for this large new hotel complex appear to have been 50' x 175', 40' x 200' and one "L" shaped building 85' x 85' x 35'. (For details on these and structures referred to below see Figures 68 and 69) While all previous structures had been built up valley behind the original chalet, Rattenbury's design called for a structure which would have cut across the valley at a right angle to this line of buildings, thereby restricting the view of much of the scenery from many guest rooms. Nevertheless, this structure was not built and only after demolition of the original structures was deemed necessary were plans drawn which included building a hotel across this valley.

#### Glacier House Buildings Circa 1904-6

The remainder of the structures at Glacier House appear only on site plans dated 1904 and 1906. Some of them are visible in the various photos of the entire site and the following list will explain their approximate size since these dimensions are taken from general site plans. In the absence of any other information, these sizes are useful and an attempt will be made below to explain the probable date of construction for these structures. The main buildings were built in a slight southeasterly direction from the original chalet but for orientation purposes they are herein deemed to be due south. West along the track from the small station described above sat a baggage room, 18' x 24' and an ice house 12' x 20'. Upslope from the original chalet to the west were two laundry houses, each 12' x 30', a building for Chinese help (kitchen and laundry workers) 28' x 42', and a gas (acetylene for lighting) house 16' x 20'. A shed west and uphill from the Wing was 12' x 35'. The bowling alley, 16' x 80', was the first structure east of the Annex and northeast from it stood the Swiss guides guarters, 20' x 32'. (Figure 70) Southeast from the guides guarters half way to the river, stood the helps quarters, 30' x 80', with 12 to 15 rooms, probably for non-oriental employees (Figures 71 to 74) and northeast from there just south of the railway masonry culvert and the footbridge which crossed Glacier Creek (the headwaters of the Illecillewaet River, Figure 75) sat two small structures 10' x 16' and 16' x 30' related to the stables operations. South up the creek from the bridges, approximately 600 feet from the track, sat a 18' x 22' building which was known as the power house. (Figure 76) Tents and other temporary structures are visible in some

photos but the above list, when combined with the list of major structures, constitutes an exhaustive list of the buildings at Glacier House. (See Figures 50, 51, 54, 64, 70, 75 and 77)

## Additional Architects and Ideas

At least three additional architects were involved in plans for construction at Glacier House in the early 1900s. Francis S. Swales of Montreal and London, England corresponded with Van Horne regarding a structure at Glacier during October, 1911 and H. Painter wrote from Vancouver in May 1912 attempting to clear up details "on the Glacier...situation." 117 And finally, plans for an entirely new structure on the site were designed by J.T. Alexander for the company in 1926. Of the older buildings, only the Wing was to remain in use and it would house the staff. A copy of these plans are included in this report as Figures 78 to 86. Each of the above architects, and perhaps others, gave their attention to designing new structures for Glacier. During the busy 1911 tourist season one newspaper inaccurately announced the construction of 100 additional rooms at Glacier for a total of  $190.^{118}$ The writer was obviously misinformed but had he read the following memorandum by Hayter Reed, Manager in Chief of Hotels for the CPR, dated October 23, 1911 the prediction would have been based on a very thoroughly prepared position paper:

> Report, Glacier Hotel, Glacier, B.C. for the Canadian Pacific Railway Company The essential points of the design for the Glacier

Hotel are as follows: The principle considerations have been

 To design a building which will be the "last word" as regards absolutely first class, mountain-hotel building - to make it the best that has been done,

- (A) for the comfort and pleasure of guests;
- (B) convenience and economy of administration;
- (C) performance of construction;
- (D) lowest cost of maintenance;

(E) practical arrangement for the conduct of extensions so that items "A" and "B" shall not be affected even though the work is carried on while the guests are in occupancy

(F) provision for the expeditious conduct of the work by the builders

View. 2. Great importance has been attached to obtaining from every window a view of one or more of the magnificent mountain ranges and glaciers which loom up behind and in front of the group of buildings; and to obtaining direct sunlight during at least part of the day to the maximum number of rooms especially the large public rooms. In order that the sun rays may penetrate to the farthest corners, and any suggestion of dampness avoided - bearing in mind the extreme humid climate of Glacier - the height of storeys is proportioned to the depth of rooms and verandahs are purposely avoided.

Adminis- 3. The centre of administration is at the centre of tration the building with a view point commanding the various services, main staircase elevators and entrance which are arranged round the "rotunda" or "lobby", and the latter is so arranged that the visitors arriving or departing will not interfere with the convenience of guests enjoying the use of the various public spaces.

- Bedrooms 4. The bedrooms are larger than the average in any hotel in the West, and are equal in size and proportions to those of the best and newest hotels in New York, London, Cannes, Monte Cristo, Biarritz, St. Moritz and Atlantic City.
- Bathrooms The practise adopted at the above as regards larger bathrooms so that a six foot tub with accessibly
- Closets fittings may be used and larger closets (in order that a modern lady's wardrobe trunk may be placed in same and be accessible without dragging the trunk into the room) has been adopted.
- Reception 5. The public rooms are arranged with due regard to Rooms the convenience and sensibilities of the sexes; and are, in dimensions and arrangement, approximately the same as adopted in the principal summer resorts of the United States and English frequented places of Europe.

6. The Kitchens, food, ice storage, laundry, ser-Kitchens vants guarters and power plant are placed in Servants Quarters detached buildings to the North East of the Hotel in the best position with reference to operating, Laundry Ice drainage and as regards the sun - where refuse may be shot directly into the rapid stream and without Storage Boiler being carried past any of the guests's rooms. The communications between the Kitchen and Dining Plant Rooms (the latter being arranged to the South and

West of the kitchen, thereby obtaining a view of the Illecillewaet Glacier and Van Horne Range) and with the service stairs and lifts is through a large serving pantry placed in such a central position that waiters, going to and fro will have the fewest possible steps to take.

Construc-It is proposed to construct the building of fire tion resisting material, excepting that the roofs may be covered with shingles over an inner thin shell of concrete. The rough carcase[sic] of the whole building could be most economically and expeditiously constructed of reinforced concrete, but as the site and neighborhood is strewn with boulders - which must be broken and moved anyway - it is intended to use same for facing the wall and to obtain a pleasing wall surface by using fine mortar in flushing up the joints and filling the interstices with spalls.

Maintenance The difficulties to be contended with are principally snow and dampness. To avoid damage by, and labour clearing, the snow from roofs etc. the inclination is made very steep to prevent snow lodging on same. The dormers are designed with the same object. Closed courts and porches are avoided to prevent dampness and darkness in rooms.

Extensions In order that the guests should suffer no inconvenience it will be necessary to construct Blocks A and 1 immediately and have them completed by the opening of the season. Block 2 could then be finished gradually from the West to East and a movable partition could be shifted as the work was accomplished, thus throwing the offices, amusement rooms etc. into the new scheme early in the season. The remaining parts could be carried out during the summer without causing inconvenience to guests.

Expedition

The construction unit it about 22 feet square and is practically uniform throughout. Forms can therefore be used over several times without cutting, and can be rapidly erected, taken down and moved and a large span covered at a single operation.

The approximate cost of A and 1 and 2 would be \$425,000.00 the balance of buildings exclusive of Block 5 or future or extra dining room \$250,000.00 or a total of \$675,000.00

In the parts A, and 1 and 2 - that part containing the 100 bedrooms - there are 1,424,176 cubic feet, and at .30 cents per cubic foot, the cost would be \$427,252.00

Some saving could be made by constructing partly in wood.  $^{119}\,$ 

Sadly, not a single plan for this hotel can be found. No additional structures were built at Glacier House, the 1925 season proved to be its last, and in 1929 the badly vandalized structures were levelled by a demolition contractor. (See Figure 87) The reasons for the demise of Glacier House will be covered later in this report but first details of the services available at Glacier Hotel and aspects of lifestlye in the Selkirks will be summarized.

Water Supply

As soon as the first dining station at Glacier House opened, CPR Montreal began receiving requests for money to upgrade various services. On February 1, 1887 Abbott wrote requesting two fountains:

The water service has been arranged for, the use of same directly opposite the House, and we shall place them in position immediately the snow disappears.

After investigation, Montreal found it could send fountains to Glacier House, similar to ones ordered for the dining station at North Bend for \$650.00 without bottom pan or \$850.00 with pan. Fountains were installed later that year.<sup>120</sup> Abbott also wrote Van Horne in April responding to an inquiry regarding the plumbing at the new dining station:

Your message regarding plumbing at Glacier was received this morning, and I have wired that the plumbing cannot be done until about the 1st June.

There was no time to carry the pipes into the house last autumn, and this cannot be done until the snow and frost disappear, and as the snow is up to the eaves of the hotel at present, it will take some little time before the necessary work can be done.<sup>121</sup> (Fountains

appear in Figures 53, 54, 63, 64 and 68) The water supply "directly opposite the House" was apparently east across the Illecilleweat. There, as a visitor in the first years of Glacier House service remembered:

Down through the forest above the track a cascade tumble[d] in a series of leaps of silvery foam for over 1,000 feet. A pipe from this cascade fill[ed] our fountain and supplie[d] the bath-room which proved no small luxury after days of hard travel.<sup>122</sup>

This same stream, which still supplies water to tourists in the nearby campground from its source high up on Avalanche Mountain, was variously utilized through an extensive water supply and fire protection system around the hotel grounds. It was probably augmented by a supply from Glacier (Illecillewaet) Creek as large, metal reinforced, wooden pipes can still be found alongside the path between the stone railway culvert over Glacier Creek and the Meeting of The Waters, the confluence of the Asulkan and Illecillewaet Rivers, just east across the river from the Glacier House site. (Figure 89) The extent of this water distribution system is plainly visible in the 1906 site plan for the hotel along with two septic tanks for sewage disposal. Few other details regarding this system exist except the fact that Shaughnessy approved \$2,100.00 for expenditure on a new water supply and more fire protection in 1903, concurrent with and probably directly related to, the construction of the Wing which was opened the next year.<sup>123</sup>

#### Heating System

Although relatively few guests stayed through the winter even during the busiest years, some sort of heating system was necessary for the staff and guests almost year round. The first structures were apparently heated with wood burning stoves and coal was eventually imported from Canmore mines for use along the CPR line. Obviously the steam engines used most of the coal but some was delivered to Glacier House. After 1906 mines in the Crowsnest Pass apparently serviced CPR needs in the Rogers Pass.<sup>124</sup> By 1898 Glacier House boasted a hot

water central heating system, probably originating from what Rattenbury described as an "exposed heating plant under the Annex."<sup>125</sup> R.J. Holt was paid \$550.00 on March 28, 1903 for "heating helps quarters" and \$2,150.00 for "steam heating" on December 26, 1903. The first amount seems to indicated that the helps quarters was built prior to the construction of The Wing and narrows its otherwise unknown construction date to 1902 or earlier. The second bill logically coincides with the construction of the large new Wing which opened in 1904 and boasted many modern conveniences. 126 And finally, as the following quote from a memorandum to Van Horne from Hayter Reed, Chief of Hotels, in November 1908 suggests, the heating system at Glacier House was a constant source of complaint. Detailed therein are some ambitious plans for a centralized boiler plant by architect Painter. However, his heating system was not installed and his hotel plans for Glacier House have not survived:

The heating in the Glacier buildings has been most defective, as we had stoves and boilers in each of the buildings, necessitating a great amount of labor not only in attending to these furnaces, but also labor and expense in carrying the coal. I deferred action being under the impression that at any time we might go on with the new building. As that has been deferred for the present, it was thought to take the boiler from the new wing and place it along with that in the annex. This would cost in the vicinity of \$1,700.00, and still be an imperfect job, as it would only heat the new wing and annex and not the remainder of the buildings.

I would therefore urge that the boiler plant, and in this I am strongly endorsed both by Mr. Painter and Mr.

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O'Leary, be placed across the track sufficiently close to the siding to enable us to unload the cars directly into the chutes. Mr. Painter advises me that a building 40' x 50' would cost \$4,500.00, which includes the smoke stack, and if we desired to place helps' quarters and laundry over it, an additional \$3,000.00. The idea was to connect the main building and the boiler house by a tunnel, through which the pipes might go eventually, but in the meantime, dispensing with the tunnel, and run the pipes so that they are sufficiently covered and protected from the weather.

This boiler house plant would answer no matter what direction be taken in the future.

Mr. Painter has suggested a new plan, instead of the one originally designed by Rattenbury, as shown on the attached blueprint, which I think is a preferable one. It would still retain the present dining room as one for train passengers, which is a desideratum, and obviate the necessity of going so far as was originally intended if the new building were erected.

The item of snow cleaning is a serious one, and has to be considered.

Fifteen carloads of coal have been used on an average each year, costing us about \$35.00 a car to unload. Apart from the saving in fuel, which would be I think from one-third to one-half, we would save from \$450.00 to \$500.00 a year in the unloading of the cars alone.

At present there are ten heating and hot water plants under the different buildings.

As only one of the present boilers, and this a 60

H.P. boiler, can be used in the new plant, Mr. Painter recommends two new 75 H.P. boilers be put in at a cost of \$3,500.00.<sup>127</sup>

### Lighting Systems

Lighting in the original structure was probably from lamps but soon thereafter an acetylene gas plant was installed in a building approximately 16' x 20', west uphill from the hotel.<sup>128</sup> Electricity was installed in the late 1890s or in the first years of the new century. By 1906 the site plan includes a power house approximately 18' x 22' due east from the southern limit of The Wing, across the river. The power line ran from the generating plant southwest to a point uphill from the Wing and then along through the trees parallel to the building, north to the station. Marpole wrote Whyte in 1897 informing him that tenders for electric lighting of Glacier and North Bend were coming in but not until May 18, 1903 was payment made to Hinton General Electric Company for its services at Glacier House. No amount is indicated as it appears Hinton was awarded one large contract which also included work at other mountain hotels including Lake Louise.<sup>129</sup>

R.J. Holt of Vancouver, who apparently contracted numerous construction processes at the hotel, was paid \$10,500 in 1909 for construction of a powerhouse and laundry at Glacier. Details of the work included:

Glacier House Power House and Laundry - October, 1909 Excavation, masonry etc. 6250 Drainage 110

Carpentry work	930
Milling work, finishing	
and glazing	1600
Hardware	260
Plumbing and fixtures	325
Sheet metal	700
Painting	325
TOTAL	\$10500 <sup>130</sup>

Due to a controversy over part of this bill, which was not resolved until 1914, more details have emerged. Holt brought three masons from Vancouver to do the work and rock was hauled in laundry push carts "about half a mile and was blasted by his men off the side of the track." The CPR's investigating lawyer found the claim by Holt to be reasonable and paid him an additional \$162.01 interest on the unpaid balance since the company's reasons for witholding payment were unfounded.<sup>131</sup> In 1910 another source quoted \$12,800 as the cost of the erection of the power plant and laundry building.<sup>132</sup> On September 5, 1913 Glacier House electrician Stanley B. North wrote the CPR Resident Engineer at Revelstoke seeking directions regarding repairs to a badly bent shaft on the turbine. On October 13 the engineer suggested the purchase and installation of another pulley system instead as a cheaper and more expedient solution. 133 And finally, in reply to an inquiry from A.M. Beale, Water Power Branch, Department of Interior, Ottawa on November 1, 1913 regarding the power house at Glacier, the CPR Resident Engineer at Revelstoke wrote on May 28, 1914:

I have been requested by Mr. Richardson, Div. Engr of Hydrographic Survey at Nelson, to send you the following information regarding power plant at Glacier. 1 & 3. I attach a blueprint showing dam gate and intake. The lifting gear for the gate was changed from a rack and pinion to a worm gear, of which I enclose a blueprint which is not very distinct but is the best I can get for the tracing. The intake is not shown but is for 24" pipe.

2. The pipe is 24" intake reduced to 18" and is 1000 feet long.

3. Dam is of concrete. Power house is 17 x 21' frame building, 10' ceiling, on solid rock levelled up with concrete.

4. Wheel is water turbine manufactured by S. Morgan, Smith & Co. York, Pa. Speed 900. Has 24" intake, 2 3/8" shaft having two 18" pulleys driving two dynamoes. Edison Electric light system dynamos, 25 K.W. 125 Volts, speed 1050, shunt wound, D.C. Bipolas, copper guage brushes.

Transmission line consists of two concrete #00 solid wire on 25' poles, with double cross arms, strain insulators at each end. Total length of line 1800 ft.

5. Cost of installation.

Two dynamos at \$600.00	\$1200.00
Water Turbine, about	500.00
Switch Board, Two slate panels	
consisting of two 250 A.Mp.D.P.	
Switches,	
One Rheostat,	
One 200 A.M.P. Ammeter,	
One 150 Volt Voltmeter,	
One Bracket light at \$150.00	250.00
Belting, etc	50.00

Cost of	installation in Power Ho	use	150.00
Cost of	pole line		250.00
Cost of	Construction of pole lin	ie	250.00
Cost of	dam and pipe line		4500.00
Cost of	Power House & Foundation	IS	1000.00
	r	OTAL	\$8150.00

The high cost was due to the inaccesibility of the plant and the high cost of getting in supplies.

6. Water supply is very irregular but sufficient the year round to run the plant. Heavy freshets occur during the hot season.

7. There is more power available than developed obtainable by storing water and developing the Asulkan Creek which joins Glacier Creek below the dam. How much I am unable to say not having the data.<sup>134</sup>

# Hotel Management

Most of the remaining details of life at Glacier House relate to the lifestyle of staff and guests alike. Probably no one did more to set the tone for the dining station and resort than the managers. At first the company provided meals from a dining car on the siding at Glacier while the station and hotel were being built. A Mr. Wharton was responsible for the operation and he later managed the company hotel at Field.<sup>135</sup> The next manager was not an employee of the company but a "caterer," as the newspapers of the day called him. H.A. Perley managed a hotel at Carberry and a CPR dining room (station) at Broadview in 1886. On October 22 he offered to furnish the hotel at Glacier if he could also have the
management position but the company chose to go with Mr. Wharton through the 1887 season.<sup>136</sup> Wharton's tenure at Glacier House was not without its problems. In June complaints were made to Montreal that insufficient time was allowed for passengers to take their meals at the Mountain Hotels. Conductors were instructed to "see that all passengers in the dining room and at the lunch counter...had sufficient time to get what they require(d)." At Glacier the problem of a short stop was further aggravated by a shortage of waiters but this problem was eventually resolved.<sup>137</sup>

By October Van Horne was concerned that proper management take over at Glacier House. Wharton had apparently left because Abbott telegraphed Van Horne in code: "Sermonize manse Lauriate frozen to look after Globular Humerous tomb manufactury from Montreal" which being deciphered reads: "Sent man last Friday to look after Glacier House till manager from Montreal." In the next few days Van Horne decided to lease the hotel to a third party and Abbott cabled on October 21: "I consider proposed arrangement for Globular humerous (Glacier House) the best possible provided power is reserved to change promptly if necessity arises." Harry Allison Perley was chosen and Abbott again cabled his superior: "Will see that your wishes are carried out regarding Glacier Hotel." The text of the contract between Perley and the company was dated October 26, 1887 and is as follows:

THIS AGREEMENT made between THE CANADIAN PACIFIC RAILWAY COMPANY, and HARRY ALLISON PERLEY

WITNESSES

THAT the Company has agreed to allow the said Perley to manage for his own benefit and advantage their Hotel known as "THE GLACIER HOUSE", and its appurtanences, the

Company to make no charge for the use of the house and premises, and the said Perley to have the receipts from the Hotel and Lunch Rooms, as his sole remuneration for keeping the same.

THIS AGREEMENT is made upon the following conditions, viz,

The Company to furnish free transportation for Perley and wife; also for servants going to House. Half fare to be furnished for servants leaving or discharged if requested by Perley.

The Company to furnish free transportation for supplies for Hotel between Winnipeg and Glacier, or Vancouver, or New Westminster and Glacier.

The Company to furnish fuel for House during coming winter.

Perley to take over and pay for at the cost to the Company, all provisions and supplies of all kinds now on hand.

Perley to maintain the furniture and fixtures in good condition, and to turn them back to Company in good condition at expiration of lease or at its termination by notice. And he acknowledges the correctness of the Inventory there of hereto attached.

Perley to maintain in full and in precise character all crockery, glassware, Tableware, Table and other linen, Kitchen and other utensils, and to turn them back to Company on demand in equal condition, quality and number as per inventory above mentioned.

Perley to manage the Hotel in such a way as to give entire satisfaction to the Company as represented by the Vice-President or the General Superintendent of the Pacific Division; and shall keep the Hotel and its immediate surroundings neat and clean; and shall employ a first class cook and competent waiters who shall be civil and attentive to the guests; shall serve meals to passengers and guests in the best style and so as to give entire satisfaction to the travelling public; all meals in the first class dining room to be charged for at the rate of seventy five cents each, and lodgings in the Hotel at the rate of One dollar per day; shall maintain a lunch counter where substantial clean and well cooked provisions shall be provided at rates satisfactory to the Company; shall furnish meals to train men actually employed on the trains, including Express and mail Agents; and sleeping car Porters, at rates payable by them which shall first be approved by the General Superintendent.

The object and intent of this arrangement is to secure the keeping by said Perley of a strictly first-class Hotel; and Dining Station in the very best style.

In case of the failure of the said Perley to give entire satisfaction to the Company, which shall be finally and conclusively determined by the Vice-President or General Superintendent; the Company to have the power at any time to immediately dismiss him from the management of the said Hotel and premises, and take possession of the House and everything therein without any form or process of law; and in such case an Inventory shall be taken of the suppplies in the house belonging to the said Perley, and these shall as far as they may be required for or adapted to such an Hotel, be paid for by

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the Company at the actual value without however, having regard to the freight thereof, that being remitted by the Company deducting however, any amount that may be found necessary to make good any deficiency in the amount of condition of the furniture and fixtures, table, bedroom, kitchen or other outfit belonging to the Company.

AND it is a condition of this agreement without which it would not have been entered into by the Company that the said Perley enters into the arrangement hereby agreed upon in the position of a servant of the Company, occupying the said Hotel and premises as its employee and not as a tenant thereof; and without any of the rights of a tenant thereto; that the decision of the Vice-President or General Superintendent shall be final and conclusive upon all points connected with the management of the Hotel and Lunch Table; and with the accomodation and treatment of Guests; and also upon the termination of the present arrangement for any of the causes herein mentioned; and that if so terminated the said Perley shall leave the Hotel and its contents immediately upon receiving notice therof, without attempting to avail himself of any excuse for remaining there in after such notice in default whereof the Company and its officials shall have the right to eject him therefrom without process or form of law; any claim for supplies or other things left by him in the Hotel to be thereafter settled in due course.

IN WITNESS WHEREOF, the parties hereto have executed these presents at Glacier B.C. this 26th day of October 1887.

A company auditor made an inventory of the hotel and Marpole

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stayed on until the hotel was "in good running order." G.W. Swett reported from Glacier to Van Horne on October 31:

Perley getting on well. Have had hotel cleaned from top to bottom. Discharged all old help. Will remain a day or two longer or until I am sure he is all right. Weather fine. Thermometer registered sixty above this morning.

Finally, Marpole cabled Van Horne on November 6: "New man at Glacier giving good satisfaction."  $^{1\,38}$ 

Perley's responsibilities at Glacier spanned a decade but a newspaper account of his widespread operations across the west gave some clues to his later problems at the hotel.

H.A. Perley, the well known caterer to the travelling public on the line of the C.P.R. west of Winnipeg, has lately been extending operations along the road. From having charge of the dining hall at Broadview, he has succeded to the control of the halls at Swift Current, Moose Jaw and Glacier, the last two having very recently come under his management. It is expected that the dining stations at Field and North Bend will shortly come under his control. A.E. Sutton has the position of general manager in connection with Mr. Perley's system of dining stations.<sup>139</sup>

Perley eventually was accused of neglecting his duties at Glacier House due to his other hostelry interests but an early, and largely unfounded, complaint levelled against him was brought to Van Horne's attention. Unfortunately, in September of 1888 two trains stopped at Glacier House and unloaded a total of 130 passengers on the eating facilities. Normally the train schedule saw them pass each other at the Summit of the Selkirks but as one was late, or the other early, the food service system was strained beyond what it could bear. In the mixup two CPR employees were left behind when the trains left and they complained most bitterly to Van Horne. One of these passengers was a Mr. Sheffield, CPR Manager of Hotels and he blamed Perley for the confusion. After investigating the details of the incident, Abbott placed some blame on the conductor for not making sure all his passengers were on board before leaving but mostly he upbraided Sheffield:

It seems somewhat remarkable that out of 130 passengers on that day, one of our own employees should be the only one to make a complaint, and had he been on the alert or even paid attention to what was going on, he must have known that the time for departure of the train was approaching and that he and his friend were the only ones who were behind time in getting on the train.<sup>140</sup>

Unbeknownst to him, Perley had made an enemy for life in Sheffield. While he pursued his management of various hotels he came to control the Alberta Hotel in Calgary in 1889 and later the CPR hotel in Revelstoke.<sup>141</sup> In September, 1892 Sheffield accused Perley of having too many conflicting interests when he offered the chief cook at Field a position at Glacier House or the Alberta Hotel. His stern rebuke read:

It is against the interest of good service and discipline under the circumstances to offer this man an engagement and will be looked upon by the Company as such should you offer him position.<sup>142</sup>

Sheffield apparently was unwilling to give some of his power as Superintendent of Sleeping, Dining and Parlour Cars over to Perley and his personal hotel system and also complained to CPR Vice President Shaughnessy. The latter wisely sought a second opinion, that of his Pacific Division General Superintendent Abbott, whose response was generally positive: Referring to your letter regarding a change in the

Management of Glacier House,- I must confess to some unwillingness to recommend any change being made at that point, as I consider Perley has done remarkably well, and considering the very exacting class of people we have to deal with, especially those coming from the Orient, I think the complaints have been remarkably few, and on the whole we have good reason to be satisfied with his management...

Mr. Perley has heretofore employed maid servants in the Dining room with great success, and I think we should adopt the same plan, especially if Miss Mollison has charge, giving her a good smart Porter to attend to outside work.

If this change is to be made, Mr. Perley should in fairness receive immediate notice as it would not be fair to him to allow him to go on during the winter, when the business is worked at a dead loss, and deprive him of the summer business when he could recoup himself. I will be glad, therfore, if you will telegraph me on receipt of this if you desire to have the change made, and, if so, I

will at once give Mr. Perley the necessary notice.<sup>143</sup> Shaughnessy rejected Sheffield's suggestion that Perley be removed due to Abbott's good report. Subsequently, in a handwritten letter marked PRIVATE and dated December 13, 1892 Sheffield levelled even more charges against Perley:

After perusal of Mr. Abbbott's letter to you December 5th and your turndown therein to me...I...have thought best to get together such particulars at present for your information as will enable you to say what, under existing circumstances, is best to be done...

Personally, I would much prefer, not to disturb any existing arrangements, provided we can bring about better

results in the interest of the Company...All Mr. Abbott's different communications having reference to Glacier, have all been of a tenor to sustain Perley, that it was a hard struggle for him to make ends meet. Now, as a matter of fact, you are certainly aware that probably no one of our hotels between here and Vancouver on the line of CPR under the advantages allowed, and privileges given to Mr. Perley ought to show better returns, and a good profit at the end of the year.

The advantages I speak of are these: Mr. Perley is being furnished fuel the year round free of charge. The original equipment has not been kept up and in many instances entirely worn out; the expenses or outlay by Mr. Perley in matter of renewals have been very light; the tables in Dining room show this, different patterns or styles of crockery, glassware, and linen and silver very much worn.

Kitchen equipment in bad repair, range entirely worn out, yet Mr. Perley's contract specifically states that fuel free will be furnished this house during the winter of '87 & '88 only, that he was to maintain furniture, fixtures, & equipment, keep it in good condition, from month to month. Since the original contract, an annex has been built furnishing a large number of rooms for tourists and others stopping over. This was completed and fully furnished at Company's expense.

I venture the opinion his cash receipts were a third more than any one of the other hotels of this class on the line.

If some different provisions were added to original contract with Mr. Perley wherein he would agree to make good the matters I have mentioned, replace the old and

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worthless kitchen equipment and ranges with new, bring the balance of his dining equipment up to standard, secure the services of a good chef, and give us such service as will avoid complaints in the future, you may think it best to continue him as 'tenant at will' but I cannot understand why Mr. Perley should be released from the payment of certain legitimate working expenses, as heavy cost to the Company, which all of our other hotels, and diners are religiously charged with in every monthly account.<sup>144</sup>

Unable to get rid of Perley in 1892, Sheffield finally found an excuse to oust him on November 11, 1896 in a report by his inspector of dining cars and small hotels, Mr. Pratt:

Glacier House. Cooking very inferior, in fact so much so as to be remarked on. Dining-room and equipment clean and nice, waitresses very attentive and presentable in appearance. Mr. Perley was not at hotel, so I was not able to give him my opinion of the cooking; however, since my return I met chef Marson, who advised me that he is on his way to Glacier House, so I have no doubt a

decided improvement will be made at that point. Sheffield added that he had received "unfavorable comments ...against the Glacier...by passengers within the last few months" and that with Perley's other concerns he left "the interests at Glacier in other hands to look after." Shaughnessy was finally convinced, either that Perley was giving inferior service or that Perley and Sheffield could not coexist in the CPR hotel business, and responded: "Yes we must make a change. Is another Miss Mollison available."

By November 20 Sheffield assured Shaughnessy that all accounts were settled regarding Perley's debt to the company and that he could be terminated any time.<sup>146</sup> Perley was

given notice and he responded January 15, 1897 requesting an extension till the end of summer:

...As I took this house at the beginning of the winter and operated it at a loss I should very much like to be allowed to stay on through next summer if you can see your way to do this I will consider it a great favour.<sup>147</sup>

However, it was too late. On January 5, 1897 Sheffield had received word that Miss A.E. Mollison would accept the position at Glacier. She took over from Perley effective March 16, 1897. Perley eventually retired from his hotel business to California at age 55 in 1904.<sup>148</sup>

Most accounts credit Perley with a kind disposition so the last quote relating to this early Glacier House manager will be one from the local newspaper at Donald in 1888 which recorded a humorous anecdote at his expense:

Climbing Steps Made Him Dizzy

One day this week the manager of that famous scenic resort, the Glacier house, was on the eastbound train coming up the Illecillewaet. The gentleman is usually one of the jolliest of people, that day he was quietly sad and ill at ease. The "boys" on the train tried to cheer him up, and insisted as the train was about to stop at the platform overlooking the gorge in Albert canyon, that the view from it would have a good effect. "No," the manager replied, "climbing the stairs makes me feel dizzy." The excuse seemed plausible. On arriving at the Glacier, however, the real reason was made manifest as Mr. Blank hurried into the hotel, taking the back entrance in doing so - the seat of his trousers was ripped from side to side, exposing his scarlet underwear to a crowd of the "boys," who, somehow, had caught on to

the cause of the gentleman's quiet sadness. 149 Miss Annie E. Mollison took responsibility for Glacier House during the summers of 1897 through 1899. Winters she spent at Mt. Stephen House in Field due to poor health. A Miss Morrison replaced Annie Mollison at Field and her sister Jean Mollison, manager of Fraser Canyon House at North Bend, went to Field to train the new manager. Jean arrived at Glacier March 1, 1898 and the two sisters worked together there until December 1899. Miss Julia Mary Young was then transfered from her management position at Field to Glacier House and remained "Mother" Young, as she was fondly known by there until 1920. the many guests who passed through her care in 21 years as manageress, retired to the post as librarian at the Empress Hotel in Victoria. She died on April 25, 1925 after a short bout of pnuemonia. Few details exist regarding the final managers of the hotel. An A.H. Devnish took over from Mrs. Young and Oscar Dahl was responsible for the fading hotel when it closed on September 15, 1926. Although officially closed in the fall of 1925, a few guides and climbers were allowed limited use of the facilities in the 1926 season. 150

#### Hotel Staff

Staff at the hotel changed frequently as is common in resort hostelries but the following incomplete list helps flesh out a few details. In 1888, in additional to Manager Perley, his wife and nine year old niece Alice, Mr. Hume was the secretary and the French chef was assisted by a Chinaman, three waitresses and a "boy." According to an early guest, the CPR also hired a man named "Charlie...his chief business being to watch the white stones round the fountains..." Charlie was

most likely a caretaker and his "stone watching" a sideline. In 1891 John Bebb was caretaker and John McDonald was blacksmith at the hotel. The Revelstoke newspaper reported in 1890:

Won Chong, who has been known to travellers at the Glacier Hotel as 'Charley' has bought out the store building and stock of Kwong Fook On, at Revelstoke, and

will run it as a first-class China store.<sup>151</sup> Charles Davis was a waiter, Miss Bella Thompson a waitress and C. Hansen was the gardener at Glacier in 1891. Albert Ed. Sutton served as clerk in the hotel in 1892. Albert W. Sharp was the postmaster in 1900 and J.H. Armstrong took over from him in 1901. In 1904 the postmaster was J.F. Haney, head waiter was W.S Blackwell, waiters included Sidney Barge, Chas Buchanan and J.C. Clarke, Chas. Schmidt was head cook, Miss M. E. McGibbon was 1st Assistant Manager, Miss B. McGregor was 2nd Assistant Manager and W.P. Clarke was the caretaker. By 1905 Chas. Locke was 1st chef, head waiter Betram Cleveland was assisted by Albert Cooper and Thomas Smith, Philip Webley was the manager of the linen department and Mausier Enright was the porter. Five years later Frederick Wales, as head waiter, oversaw waiters James C. Clark, Wm.P Clark, Sydney Cruise, Arthur G. Johnson, Wm. McGuire, Claude Piers and John A. Sackstone. Electrician Reginald Marcus, carpenter John Tetlock, engineer George Webb, baggageman Sydney G. Westlake, porter John W. Smith, housekeeper Miss B. MacGregor and clerk Mills K. Waters rounded out the staff. After 1916 the Wrigley's and Henderson's B.C. Directories upon which this information is based, list occupants of the new Glacier Station, just west of the Connaught Tunnel. Other sources cite Mr. Gable, of Golden, as a carpenter who did repairs around the hotel. George Ball was a general handyman,

carpenter and plumber from 1909 to 1925 and Alf Thom was a baggageman.  $^{152}$ 

Mrs. Alice Harding, a maid at Glacier from 1912 to 1914, remembered the names of many other employees. These included a gardener, Mr. Clarke, maids Pauline Todd, Nellie Ferminger, Amelia Spense, Mary Francis, Hanna Feuz, wine steward and her future husband Bill Harding, waiters Rosy(surname not given), Harry Harding, Jack Webb, Arnold and Billy Rose, Jack Stovell, Blumenhagen and Frank Lefeaux, bell hops Alex Matheson, Walter Feuz, barber Lennie Hall, porter Freddie Copp, carpenter Mr. Ball, bank clerk at the Union Bank Alex Rankin, and engineer at the power house and electrician Jack Webb. (See Figures 90 to 94) Other details she remembered included:

All the kitchen and laundry help were Chinese, so there were quite a number of them, and they kept to themselves. Chinese boys waited on table in our dining room.

Our maids dresses at both hotels (Glacier and Lake Louise) were made from a narrow blue and white stripped material, with a high collar, and we wore a large white apron over them changing into black dresses, our own, for the afternoon and evening.<sup>153</sup>

Alice Harding's recollections are important since they provide one of the few accounts of life at the hotel. A Scrapbook was started by Mrs. Young during her tenure as manageress but the hundreds of visitors who registered their impressions in it largely confinced their comments to the beauty of the surroundings or descriptions of their mountaineering exploits. A transcript of an interview with Alice Harding in 1970 is included as Appendix D. Appendix E is the account of Stanton Hope's work at Glacier House shoveling snow from the roofs part of one winter. The earliest anecdote relating to a staff member was published in the Donald newspaper in 1888.

Boycotting A Conductor

The manager of the Glacier house recently changed his dining-room help, beginning on from the east 3 really pretty girls - 1 of them especially being luscious, appearing as a ripe Jersey-shore peach. A conductor who had been taking a lay-off dropped in for dinner on the first trip after resuming duty, and being a good-looking gentleman, of course the girl who waited on him notice it, and couldn't do too much for him. She asked him if he was a new conductor on the road. He, being one of the Donald General Liars, and a great practical joker as well, replied, 'Yes.' Other 'talk' took place, and just before leaving the table, the gentleman remarked, 'I am agreeably surprised that one thing a brother conductor told me is entirely different from what I expected.' 'O, may I ask what that is?' came in a voice of liquid silver from the girl. 'Certainly; I was told that the new girls at Glacier were homely old maids, that didn't know a little bit about waiting on a table.' 'Who told you that?' viciously asked the girl, upsetting the fruit dish in her nervous anger. 'Why, the conductor that comes in from the west tomorrow,' was the 'new' conductor's reply, making for the door as he said it. The next day the conductor from the west entered the dining-room in his usual dignified way, taking a seat at the trainmen's table. The girls seemed to be a little distant, and managed somehow to wait on every one in the room without appearing to notice the conductor. He finally called one of them and asked to be waited on. The one called snappishly replied, 'O, ask some other homely old maid to

wait on you!' A second was beckoned, and he got the same answer. The third was appealed to, with the same result. It was then a clear case of going hungry or tackling the plebian lunch counter. The lunch counter was tackled. For several trips conductor Dave McKay had to take his dinner while seated on a tall stool, and only got back to the more comfortable chairs of the dining-room after the girls found out that they were being hoaxed. Now the 2 conductors do not speak as they pass by.<sup>154</sup>

#### Food Service

Glacier House eventually became an important destination in the CPR hotel system but its beginnings were firmly rooted in providing just one service: food. (See Figures 95 and 96 for dining room details) No records are available to provide details of the food management system at Glacier but numerous minor references, when consolidated, provide a rather complete story. During 1888 the merchants at Donald began deriding the CPR company store and supply car in letters to the local newspaper, claiming they were unfair competition to their unsubsidized operations. Some locals supported the company store and supply car but most wanted to get rid of the interlopers. None of the letters to the paper were signed but one author, signing a letter on December 21, 1888 with "One Who Knows" wrote:

The store and supply car belong to the Canadian Pacific Railway Company, and are operated solely for the Company's benefit. The policy of the management is not to sell goods to others than employees of the company, and when this rule has been broken, it was to accommodate the local merchant as often as the non-employee. A stock of good groceries, and provisions is always kept on hand, as the company's dining cars draw their supplies from this store.

Since the hotel was under the same management system as the dining and parlour cars, it was also probably serviced by the company store and supply cars.<sup>155</sup> Even Perley's management contract (see pages 94 to 97 above) gives no indication exactly where supplies came from as he had the right to free transportation of any such goods from Winnipeg, New Westminster or Vancouver to the hotel. A.O. Wheeler suggested mountaineers purchase their supplies at major centres such as Montreal, Toronto, Winnipeg or Vancouver if possible but that much could be found at Calgary, Golden, Revelstoke or Kamloops if purchases could not be arranged elsewhere. Some things were even available at the Rogers Pass store.<sup>156</sup>

Fresh food was logically imported from places along the railway line. Vancouver began receiving food stuffs from the prairies as soon as railway service became regular in 1887 and farmers in Manitoba immediately benefitted from the new markets.<sup>157</sup> Beginning in May, 1887 Hull and Trounce of Calgary were awarded the contract for supplying beef on the Pacific Division of the railway and in the summer of 1888 they were advertising in the Donald newspaper as "Wholesale and Retail Butchers."<sup>158</sup> By the time Jean Mollison arrived at Glacier House in the late 1890s a rancher, Mr. Palmer of Salmon Arm, was supplying good quality meat to the hotel. 159 Fresh fish was to be had at the hotel from both eastern and western sources. In September 1886 the railway was boasting "British Columbia fresh salmon is now a standard dish along the line of the C.P.R'y." In 1888 fresh Manitoba whitefish was available at Kamloops.<sup>160</sup> Although John Brewster ran a

dairy in Banff in the 1880s and 1890s and supplied the townspeople and the hotel, Glacier House probably got its supplies of milk, butter eggs and poultry from local sources or from CPR Demonstration Farms like the one at Strathmore, Alberta.<sup>161</sup> Fruit was available locally in nearby orchards to the west but California and Ontario products were also shipped along the railway.<sup>162</sup> Vegtables could also be similarly imported but in 1888 a local commercial gardener made the Donald news:

A.J. Strand of Albert Canyon has turnips that weigh 7 pounds, beets that go 3, and early York cabbages that tip the scales at 3 1/2 pounds, which proves that the mountains of the Kootenay District can produce vegtables...(he) finds a market at Illecillewaet (a mining camp), the Glacier, and Donald.<sup>163</sup>

For much of the year fruit and vegtables were imported from afar as indicated below. Glacier House had a:

...menu that combines the most delicious of fish and poultry, fresh vegtables and fluffy pastry, and fruits (about a month in advance of the season) served in charming wicker baskets on a bed of ferns and wild flowers.<sup>164</sup>

Two full menus survived from the dining room at Glacier. Their offerings, as shown in Table 4 and Table 5, give meaning to the term "a full meal." Complaints seem to attract more attention than contented after meal walks or naps and two patrons in 1904 criticised the dining room as inadequate.<sup>165</sup> Alice Harding, however, transfered to the hotel from Lake Louise specifically because the food was better at the Glacier. Also, she was quick to add, the pay at \$16.00 per month was five dollars more than at her first position.<sup>166</sup> After 1909, when dining cars were put on through the mountains, the cooks were let go in the winter. The hotel was not as busy in the long snowy winter months but a short stop was allowed at Glacier for passengers to stretch their legs and admire the view.

## Miscellaneous Lifestyle Notes

Other details of life at Glacier are sketchy. Figures 97 to 106 show some of the patterns on the porcelain used at the hotel and examples of some of the silverware. Since neither the company nor anyone else has done a study of this aspect of CPR material culture, details on the transition from one style to the next are few. Similarly vague is the chronology of Glacier House stationery. In Appendix F the first letterhead probably predates the hotel system example with the Glacier address on the left. The last example appears in blue ink as well as red and was more common after 1910. A post office was located in at the hotel until the Connaught Tunnel revisions moved the station, telegraph service and postal station down river, north of the hotel in 1917. Other post offices at Donald and Rogers Pass before the change in location for the Glacier station seem to indicate that the mail service at the hotel was specifically for its employees and patrons as these other settlements had their own facilities.<sup>167</sup> References to a hospital at Glacier House probably allude to an infirmary. A solo mountaineer in 1904 injured himself on a climb at Glacier and was "laid up in the hospital at Glacier House with a sprained leg and several bruises." The only survivor of the terrible avalanche accident in the Rogers Pass during the winter of 1910 was attended to by the Glacier House physician, Dr. Hamilton. In 1914 a passenger on the train was

attended to by Dr. Gallacher at Glacier and Alice Harding remembered a doctor at the Connaught Tunnel construction camp during her years at the hotel. In spite of these references, it is unlikely that the hotel employed its own physician. Perhaps a small hospital was part of the larger complex of buildings and the divisional railway physician looked in on the ill or injured as was warranted. During construction, however, it is most probable that a doctor was employed full-time at the Connaught Tunnel camp as injuries and general health needs were considerable when many men were at work on such a large industrial project.<sup>168</sup>

## Guides

Mountaineering was quite popular at Glacier and fortuitously most of the adventuresome only needed a guide and not the services of a doctor. A gardener apparently acted as the first amatuer quide in the early years but as one of the imported, accredited, Swiss guides remembered, the guides' house at Glacier eventually had more guides than any of the other mountain hotels due to its proximity to the Glacier and many fine peaks. Climbing was also done from Field, Lake Louise and Banff but none could match the accessibility of Glacier House. The first professional guide, Peter Sarbach, came in 1897 and by the fall of 1899 Miss A.E. Mollison, the manageress of Glacier, wrote Shaughnessy requesting permission to augment Edward Feuz Sr. and Christian Hasler with more trained men. Each winter they returned to Switzerland and Feuz taught ice skating while back at home for the off season. Amongst others, Karl Schluneggar, Friedrich Michel, Jacob Muller, Charles L. Clarke, Walter, Ernest and Edward Fuez Jr.

and Christian Halser Jr. all came to the hotel over the years to work as guides. Their guides' quarters was probably built just after 1900 as the numbers of guests increased and their tenure at the hotel looked permanent. Some of these guides still utilized rooms at Glacier House after it was officially closed. Due to this ongoing interest in the hotel Edward Feuz Jr. was offered the structure for one dollar but he chose not to accept this offer from the CPR.<sup>169</sup> (See Figures 90, 91, 107 and 108 for photos of guides)

Guides led their expeditions on trails which had been opened up by the railway as early as 1890. A Professor Bryce of New York City wrote Van Horne on September 19, 1890:

... the snow and ice scenery around Glacier House recalls some of the finest parts of the Alps. If I can find time, I will write something for print about this scenery; meantime will you let me make a small suggestion for the benefit of Glacier House and the visitors who may resort thereto? All that it wants to make it a favorite resort in time to come for our many tourists who enjoy nature as well as for mountain climbers is the cutting of some more trails through the woods and up the hills. Already a beginning has been made by a trail to the foot of the nearest Glacier, 1 1/2 miles distant. I would suggest that this trail be carried further up the steep slope to the east of the lower part of this glacier, so as to give access to its middle part, where a magnificent circle of snow peaks is revealed, and that the existing trail to the top of the wooded hill which rises immediately behind the Glacier House hotel, from which visitors could walk further to a bare ridge up several hundred feet higher commanding a superb panoramic view. I enclose a plan to indicate what I mean. 170

Perhaps aware of Van Horne's weakness for flattery of "his mountains" Bryce had struck a responsive chord in the Vice President. Abbott was directed by Van Horne to estimate the cost of cutting the trails and he set it at about "\$600.00"<sup>171</sup> In the following years the CPR generally undertook responsibility for the trails south of the track until 1926. The Department of the Interior maintained other trails to the north. (See Figure 109 for view of trail to the Great (Illecillewaet) Glacier) The railway also took care of its road from the new Glacier Station to the hotel. The trail up Avalanche Mountain and the Summer House on Cascade Creek do not appear in any references until 1909. A rewarding, if steep hike, it constituted the halfway point in a longer trek up to the ridge of Avalanche Crest from which is afforded a spectacular view of the Rogers Pass as first seen by Major Rogers. Another aid to mountaineering was a telescope mounted at the top of the observation tower from which the Glacier, various peaks and others climbing the mountains could be studied. The tower itself was probably erected along with the Annex in 1890 but only after a telescope was suggested by a quest in 1898 was it installed. The tower and scope still stood in 1909 but shortly thereafter were disassembled for an undisclosed reason.<sup>172</sup> (See Figures 125 and 126) One very unusual service was afforded a group wanting to cross the swollen Illecillewaet River. A folding "Acme" canvas boat was loaned to a group of climbers by Mrs. Young and they crossed without incident.<sup>173</sup>

#### Outfitters

A succession of outfitters were stationed at Glacier House.

Mrs. Young apparently went into the "pony business" in her first years at the hotel. She hired a man to look after the ponies in the summers and eventually a local trapper, George W. Taylor, took over the business. Jimmy Simpson followed him and by 1902 Simpson and English emigre Sydney Baker were in business together with Baker stationed at Glacier. (Appendix G shows his Glacier House stationery) Baker was also a fine photographer and his photos, which he developed in a darkroom in the hotel, were sold to tourists from a curio tent. His wife ran the curio business and sold her own original 3' x 3' oil paintings for \$.75. Beads, mocassins, jade jewelry, baskets, buffalo horn napkin rings, filligree work and other trinkets were purchased from Stoney Indians in Alberta and the Indians at Stanley Park in Vancouver and sold at the tent at Glacier. Each summer the entire family moved from Banff, and later Vancouver, to the hotel to do their business. Mrs. Baker continued selling curios every summer until 1920. Her husband was institutionalized in New Westmenster in 1915 after displaying unusual behaviour. A Miss Unwin took over the curio shop when Mrs. Baker gave it up. (See Figure 54) Brewster Transport was awarded the outfitting and cartage contract by the CPR on June 1, 1917 but lost \$724.62 on the operation that first year. Brewster employees lived in quarters at the hotel and ran the business until it was terminated in 1925. <sup>174</sup> (Figures 110 and 111 show outfitting and a tally ho)

The Nakimu Caves in Cougar Valley were also closely related to the development of the railway, the hotel and the presense of employees of the Department of the Interior in the park. Between 1904 and 1931 they were developed as a tourist attraction but have since been closed to the public.<sup>175</sup> Other Fauna

In addition to the people who visited and worked at Glacier House, a variety of other animals frequented the place. Dogs, variously named Jeff (c.1888), Sport (c.1896) and Fritz (c.1902) enlivened the hotel and went on hikes with guests. On one such expedition Fritz died after a fall of 700 feet. Manager Perley's niece Alice in 1888 had a virtual menagerie of animals including a cat, "some foul" and:

...a black bear cub, which at first made night horrible by squealing for its mother, but nevertheless was a most intelligent, playful and amusing little animal. Little Alice and the bear were great friends, and until it got

too heavy she used to carry it about in her arms. The same year the editor of the Donald paper "mistook the stuffed bear on the south end of the porch of the hotel for a real live one." In 1889:

A tame Canada bear was chained to the pizza of the hotel; he had been caught in the mountains five months before we saw him, and his antics furnished considerable amusement to passengers during their stop at the Station. And finally, a grizzly and a black bear were chained near the station in 1895. Thereafter bears either refused to come near the hotel or a decision was made not to trap them.<sup>176</sup>

Reasons for Closing the Hotel and Attempts to Rebuild In 1925, after almost forty years of continuous construction and addition to the complex of buildings known as Glacier House, the hotel closed its doors to the public for the last

time. The reasons for the demise of the hotel are many but fundamentally, once the trains ceased to pass by the dining station and drop off their passengers for a quick meal, the need for the hotel was gone. The mystique of the location, remote, inaccessible except by train, buried for most of the year under a heavy blanket of snow, all conspired against the long-term economic viability of the famous resort. One after another, a long list of seemingly minor events made Glacier House archaic and superfluous. First, dining cars were put on passenger trains through the mountains in 1909.<sup>177</sup> Then the Connaught Tunnel diversion took away the only reliable linkage between the hotel and the outside world. As the CPR hotel chain grew, Glacier House was overshadowed and finally eclipsed by more accessible and popular mountain destinations such as Banff and Lake Louise. The lure of her isolation proved to be her undoing. Grandiose plans for a new structure were drawn many times, the last apparently in 1926 just after her closing. But other events in the Rocky Mountains robbed the company of any capital to build at Glacier. After a fire at Lake Louise in 1924, \$1,479,000.00 was invested in constructing a new hotel. Another blaze, at Banff in 1926, demanded an additional \$1,791,000.00 expenditure on a structure at the site of the first CPR mountain hotel.

No private citizen did more to encourage the CPR to build anew at Glacier than Major F.V. Longstaff of Victora. His records of the sequence of events between 1926 and 1929 give a clear indication of the project's consistent decline in importance in the CPR hotel hierarchy. Caretakers Hans Pieren and Mr. Downie guarded and maintained the buildings during the summer of 1926. In 1927 the furniture was moved to the new structure at Lake Louise and much of it is still in use at that site and at the Banff Springs Hotel. On February 28,

1927 Glacier House caretaker Christian Hasler wrote Longstaff: Ernest and I have been laid off as caretakers at Glacier on February 10.

There is nobody left up there, it seems strange, that they would do that in the middle of winter, no news of building, so far.

I hope that something will be done up there soon, as it is hard on me too to be out of work and so uncertain...

Longstaff apparently badgered CPR Hotel personnel regarding their plans because on June 27 Basil Gordon wrote from Lake Louise:

Up to the present the Company have not definitely decided on what exact date they will commence reconstruction at Glacier, but I feel satisfied that in the next year or two some new development will be carried out at this point.

Lack of official activity at the abandoned site apparently invited vandals and scavengers to begin the demolition of the buildings and some of this illicitly acquired loot now resides in the Revelstoke museum. (Figure 112 shows a Glacier House window) Local recollections state that scavenged goods were hidden in the surrounding woods and later retrieved. The official demolition took place in 1929. On November 22, 1929 C.D. Morris wrote Longstaff to report:

The Wrecking Contractor of the G. House, Mr. H. McHugh of Calgary completed his task about 10 days ago and has shipped all lumber doors, windows, pipe fittings etc. that was worthwhile (after tearing all Buildings down) and set fire to all rubbish left the place as it originally was before they built as near as possible in good shape now to start a new Hotel if they can only be made to see the Wisdom of it.

Longstaff pursued Empress hotel manager Coleman in Victoria and was referred on to company architect Angus. From these men he learned:

The private secretary to Coleman told me the one obstacle was the question of making the proposed hotel at Glacier pay a profit. I said that was alright if the building was properly designed as a mountain hotel and kept simple.

This morning I showed Mr. Angus the Architect the album of views of Swiss Club huts you gave me. He was much taken with new style of stone huts and houses, and appeared to get a new angle on the work altogether. We talked over some important factors for making a profit.

(a) Not to attempt to run it as a regular CPR hotel, but to rent it to a suitable man who would take charge for a number of years and run it as a second class hotel, with a small but hard-working staff.

(b) A real frontier[sic] who would live there with his family all the time and get to know the whole Park and look after the building in the winter.

(c) The building to be of stone with steep metal roof and the inside very plain. Also very few rooms with baths and those few reserved for guests who stay over a week. The fact of having few rooms with baths would keep away the people one desires to keep away.

However, circumstances beyond even Longstaff's persuasive influence resulted in a decrease of \$919,650.00 in CPR hotel earnings for 1930 and a further drop of \$372,337.00 the following year. The CPR Annual Report for 1930 accurately predicted "...all hotel improvements completed..." and the Depression of the 1930s assured no construction would proceed at Glacier House in the next decade.<sup>178</sup> Also, a decision to build the TransCanada Highway around the Big Bend and not through the Rogers Pass made the site unaccessible to motorists. Not until the 1960s, when the highway was finally opened through the Pass, was the abandoned meadow which once boasted the Glacier House Hotel once again accessible to the travelling public.

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# Part IV Recommendations

As a body of cultural resources, the trackbed, bridges, piers, snowsheds and Glacier House ruins bear testimony to a significant period in the history of the Rogers Pass. Since similar structures were built elsewhere and their ruins are also extant, these Rogers Pass features are not unique examples of railway technology. They are, however, the remains of the only railway related structures in the Rogers Pass area of Glacier National Park and therefore merit careful preservation and possible intervention to protect them from destruction. After their safety is assured, interpretation and limited restoration should also be considered.

In general, the Glacier House ruins are the most important features in this park since no other CPR dining station was developed in quite the same way as this early food stop. Next most important is the avalanche protection system and its extant ruins. Even though snowsheds and snowplows were utilized elsewhere, the Rogers Pass has always been the most dangerous mountain pass in the Canadian transportation system and its defence has a long history. Third most important is the site of the Loops and their associated piers, diversions and embankments. Although this technology was used elsewhere, the loop configuration was unique in Canadian railway transportation implementation and was utilized only because all other preferable applications could not be made to fit the terrain. Finally, the original 1885 trackbed is the least important aspect of the cultural history when compared with the above features. However, its history is interesting, the views it offers are expansive and it also presents some

creative opportunities for preservation and interpretation of the history of this park.

The recommendations which follow are based upon three principles. First, existing cultural artifacts must be preserved from deterioration due to natural and man-made These include such varied forces as erosion by hazards. watercourses, destruction by avalanches and vandalism by the Destruction of snowsheds remains by seasonal slides public. cannot be prevented but extant ruins of bridges and Glacier House ruins can be stabilized or protected to prevent further damage. Once the resources are protected from these hazards, interpretation of their history based upon their relative importance is recommended. Thirdly, where ruins prove historically significant and financial resources are available, partial restoration of the original structures is recommended in order to enhance the interpretive process. Preservation of the resources must in all cases take precedence as without the artifacts the interpretation cannot proceed. Therefore, listed below are the five major sites or features which comprise the cultural resources in the Rogers Pass area in order of historical importance as well as three recommendations for immediate preservation of the extant cultural resources listed under Group A: First Level Considerations. An additional 13 recomendations fall under the category of Group B: Second Level Considerations since they are interpretive in nature and can only be considered after the resources are stabilized.

Sites or Features Listed According to Historical Significance

1. MOST IMPORTANT SITE: Glacier House and associated ruins.

- 2. SECOND MOST IMPORTANT FEATURE: Avalanche protection system.
- 3. THIRD MOST IMPORTANT SITE: The Loops and associated piers.
- 4. FOURTH MOST IMPORTANT FEATURE: Bridges and culverts.
- 5. LEAST IMPORTANT FEATURE: Trackbed.

Recommendations Listed According to Danger of Deterioration and Historical Significance to the Interpretation of the Pass

Group A: First Level Considerations

- 1. Keep piers at the Loops from falling into rivers.
- 2. Protect Glacier Creek stone culvert from destruction.
- 3. Stabilize extant ruins at Glacier House site.

Group B: Second Level Considerations

4. Create a Glacier House history slide show for Centre.
5. Clear paths and place signs at Glacier House ruins.
6. Reconstruct section of snowshed.
7. Publish booklet to serve as guide to Glacier site.
8. Open up section of trackbed from Glacier to Pass.
9. Conduct guided tours of Glacier House site.
10. Reconstruct tower at Glacier House.
11. Open up path to Cascade Creek and its source.
12. Open up trackbed trail from Glacier to Loops.
13. Install dining car on siding at Glacier.
14. Reconstruct original Glacier House Chalet.
15. Open up other trackbed trails.
16. Winged and rotary snowplow displays.

Details of Reccomendations

Each recommendation listed above is filled out with more details in the paragraphs below.

#### Group A: First Level Considerations

1. Keep piers at the Loops from falling into rivers. Although these structures are not the most important in the park, one has fallen and others may fall. Natural erosion is not necessarily harmful but if one of these piers were to fall into one of the rivers it could be washed away and not be available for interpretation. The present interpretive trail does a commendable job explaining the reasons for these structures. Figures 113 and 114 show views of the first two crossings of Five Mile (Loop) Creek.

2. Protect Glacier Creek stone culvert from destruction. Whereas there are several stone arch bridges along the line, this is the ONLY such culvert in the park and it must be protected from further deterioration. Figures 18-20 provide historic views of this structure and Figure 115 shows the same structure in late summer, 1986.

3. Stabilize extant ruins at Glacier House site. Although most of the footings and basements at this site are not suffering from the elements, in some cases natural growth may threaten basement walls and such growth should be cut back. Vandalism is also an evident problem at this site and the public should be reminded of the importance of leaving the ruins for others to visit. An education program to this end could be added to the other displays at the Interpretive Centre. Park visitors could be reminded that destruction or removal of any objects in the park is in violation of the principles of conservation as well as the law.

Group B: Second Level Considerations

4. Create a Glacier House history slide show for Centre. Resources available for such a presentation include hundreds of related photographs, much recently compiled factual and anecdotal information which is included in this report as well as modern photos of the site which could relate the present ruins to past glory.

5. Clear paths and place signs at Glacier House ruins. A self-guided walking tour through the site augmented with signposts which explain each view, building or similar feature would provide a much needed interpretive element to an otherwise totally incomprehensible clutter of overgrown ruins. See Figures 116 to 118 for views of current state of ruins.

## 6. Reconstruct section of snowshed.

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Showsheds roofs and outer walls were all demolished intentionally or by snowslides over the years and the remaining ruins, although interesting due to their age, fail to convey the size and strength of the original structures. Constructing the Interpretive Centre to resemble a snowshed was creative but the reconstruction of a shed on the site of an old structure would be better. Upslope from Glacier House a location for a partial reconstruction could be chosen. See Figures 119 and 120 for views of the remains of snowshed No. 20 at this location and Figures 121 and 122 for details of snowshed construction. Using these existing remains as an historical context, a section of shed could be erected. Ten foot sections could show crib construction first, with the addition of bents in the next section, roof substructure in the next, partial planking in the fourth and a completed shed in the fifth. Other possible locations for this project include the trail at the Loops or the Abandoned Rails trail

between the Interpretive Centre and the Pass cairn.

7. Publish booklet to serve as guide to Glacier site. A modest booklet, which could also serve as a guide document for a self-guided tour through the ruins, could be published.

8. Open up section of trackbed from Glacier to Pass. An existing trail from the Interpretive Centre to the Pass cairn is already in use and is marked with helpful signs. From the cairn, due south, the old trackbed crosses the new highway and heads for the abandoned site of Glacier House. If new growth were cleared from this route the gently descending grade would be a perfect stroll for those park visitors who are unable or unwilling to tackle the more ambitious steep trails. Figures 123 and 124 show trackbed at southwestern end of the Pass area.

9. Conduct guided tours of Glacier House site. Guided tours of the Glacier House ruins could augment the paths, signs and booklet mentioned above when interpretive budgets allow.

### 10. Reconstruct tower at Glacier House.

From its central location in the midst of the ruins, visitors could look down on the remains of the old hotel and be oriented by maps and historic photographs towards different areas of the grounds. In addition, from such a tower visitors could view the surrounding peaks and valleys as well as obtain a spectacular view of the glacier. The tower's original function as a viewpoint is as relevant today as it was in the 1890s. See Figures 125 and 126 for historic views of this tower. Properly designed and reconstructed using photographs

for reference, the tower would be much less prone to vandalism than an enclosed structure, would require only minimal maintenance and could be used on an individual basis without requiring interpretive officers or any other full-time staff.

11. Open up path to Cascade Creek and its source. On the eastern slope access to the original line can be achieved via a road from just below the first concrete automobile snowshed. Once on the right of way the Cascade Creek stone arch bridge is only a short walk downgrade. Since no original wooden trestles or bridges exist, this masonry bridge is one of the best examples of pre-1900 bridge technology. Access to the site is good and the source of the creek is only a short hike upstream from the structure. The view northeast, down the Beaver River valley, is exceptional from either the bridge or the source of the creek. To make this location accessible to the public a minimal amount of brush and fallen deadwood should be cleared. Otherwise only a small parking lot, a trailhead sign and a few interpretive displays at the bridge and headwaters of the creek would be necessary. Figure 13 shows this bridge in 1899, Figure 127 shows the source and Figures 128 to 130 are views of the current structure.

12. Open up trackbed trail from Glacier to Loops. The trackbed from Glacier House to the interpretive trail at Loop Creek could also be cleared, thereby allowing for another modestly inclined trail. See Figure 131.

13. Install dining car on siding at Glacier. Track could be installed on the right of way at the Glacier House site and a dining car similar to the one which serviced

train passengers in 1885 and 1886 could be open for viewing.

14. Reconstruct original Glacier House Chalet. The 1886 structure would be interesting to rebuild and would provide for some good on-site interpretation of the various ruins at the original hotel location.

#### 15. Open up other trackbed trails.

Other sections of trackbed could be brushed, gravelled and opened for use but remote sections would probably receive limited useage by park visitors. If "mountain bikes" were ever allowed in this park the old railway right of way would be a natural place for their use.

### 16. Winged and rotary snowplow displays.

If they could be acquired or reconstructed, full scale models of winged or rotary snowplows or the original equipment could be installed near the interpretive centre for visitors to view and tour. For the immediate future, however, the current "Snow War" movie admirably illustrates the history of avalanche protection in this park.

In conclusion, the remaining cultural resources as described in this report comprise a significant body of material for the historical interpretation of human impact upon Glacier National Park. Original bridge structures were temporary at best but many of their immediate successors still exit to this day. The permanent stone arch and stone culvert structures at Cascade Creek and Glacier (Illecillewaet) Creek respectively are two fine examples of 19th-century engineering in a railway application. Both will last for many more years in their present condition if they are inspected regularly and

action is taken immediately when destructive forces threaten. As a unit, the piers at the Loops similarly deserve preservation for their technological significance and should also be guarded against destruction. Preservation of the ruins at Glacier House is important and attempts to guard these resources from natural and human hazards should be given a high priority. Other structures are nearly impossible to protect and must be seen as ruins which cannot be stabilized. Original snowshed structures, like their bridge counterparts, were temporary at best, needed constant repair, and became obsolete after the track was relocated through the Connaught Tunnel in 1916. None of them remain in their entirety since they were taken down for material in 1917 and subsequent years. Preservation of these ruins is practically impossible since avalanches still thunder down the slopes and continue to erode these remains but after the above structures have been stabilized interpretation of these snowshed ruins could be augmented with the reconstruction of an example of a snowshed. Similarly, some sort of interpretation of the Glacier House ruins is necessary if they are not to remain a mute, undergrowth-covered and largely unintelligible reminder of the history of an early CPR dining station and mountain resort. Based on the historical record, preservation and intervention to protect the various structures and ruins in the park is imperative. Where possible, interpretation of these existing cultural resources in the Rogers Pass area must also be given a high priority.
### Conclusions

Given the task of reconstructing the events which together make up the history of the impact of the Canadian Pacific Railway on Glacier National Park and the Rogers Pass area and setting the extant ruins of the structures in an historical context in order to make recommendations for their preservation and interpretation, the limitations of the final report clearly reflect the source material which was available for consultation. All reasonable repositories of information were investigated first with the expected mixture of both success and failure in acquiring the necessary documentation to make this report complete. Although CPR Corporate Archives staff has been reduced to two employees from a previous quotient of six and labours without the direction of a chief archivist or cooperation from many sectors of its vast corporate family, this repository provided more useful information than ony other single source. Therefore, records for the technological history of the track, supporting structures and snowsheds area virtually complete. Primary documentation regarding Glacier House is almost, by contrast, non-existent and many of the details recounted in this report which relate to the construction, operation and demolition of the hotel come from as diverse sources as archives other than that of the CPR and hotel basements and even then little or none of it from any logical primary sources. Most annoying is the inability to unearth any records regarding the financial operations of the hotel, manager's papers or other documentation which would flesh out the history of Glacier House. The quest for other details regarding the hotel met

with mixed success as is shown with newly unearthed blueprints showing the floor plans of at least some of the structures and detailed site plans from the middle years. (See Figures 29, 48-49, 55-62, 68-69 and 178-186) The inability of the author to recreate more of these details is perhaps best measured against the task of locating information for a hotel which closed some sixty years ago and which was a part of a large corporate structure which established its archives nearly half a century after the last rubble fires burned themselves out in the ruins at Glacier House.

In spite of the limitations of the sources and the final report, a significant amount of detail exists reqarding the impact of the CPR on the Rogers Pass. Extant ruins of the trackbed, bridges and other supporting structures, snowsheds and the numerous structures at Glacier House can now be placed in an historical context and weighed in this qualitative balance. To some degree each of these aspects of cultural history in the park are currently being preserved and interpreted but the ruins, when combined with the rich historical records and the background of the area, become even more critical to the overall understanding and interpretation of the history of the Rogers Pass area in Glacier National Park from 1884 to 1930.

#### ENDNOTES

- 1 James Ross, to W.C. Van Horne, December 18, 1884, CPR Incoming Correspondence file 7886.
- 2 W.K. Lamb, <u>History of the Canadian Pacific Railway</u> (New York: Collier Macmillan Publishers, 1977), p. 119
- 3 Ross to Van Horne, January 8, 1885, CPR file 8117
- 4 T.S. Higginson to Hon. Thomas White, Minister of the Interior, October 28, 1885, in <u>Sessional Papers</u> (No. 35), 1886 (Ottawa, Queen's Printer, 1886), p. 259
- 5 C. Drinkwater to John H. Hall, January 4, 1886, in <u>Sessional Papers</u> (No. 35), 1886, (Ottawa, Queen's Printer, 1886), p. 256.
- 6 Commercial (Winnipeg), 30 April, 1888, p. 839.
- 7 Ibid., 30 February, 1888, p. 597.
- 8 Ibid., 1 October, 1888, p. 37.
- 9 Ibid., 21 April, 1890, p. 716.
- 10 Statement of Ties, 1889, accepted by the CPR, <u>Sessional</u> Papers (No. 31A) 1890, p. 47.
- 11 <u>Sessional Papers</u> (No. 34), 1892, pp. 84-86.
- 12 W.C. Van Horne to Directors of CPR, September 6, 1887, Montreal, pp. 2-5.
- 13 Bart Robinson, Banff Springs, The Story of a Hotel (Banff, Alberta: Summerthought, 1973), p. 51.
- 14 Omer Lavallee, <u>Van Horne's Road</u> (Toronto: Railfare Enterprises Limited, 1974), p. 205.
- 15 Eric Newby, <u>The Big Red Train Ride</u> (New York: St. Martin's Press, 1978), p. 119.
- 16 <u>Railway and Shipping World</u> (Toronto), November, 1898, p. 235.
- 17 Robinson, op. cit., p. 73.

- 18 Commercial, op. cit., 6 May, 1889, p. 821.
- 19 Geological Survey of Canada, Summary Report, <u>Sessional</u> Papers (No. 26), 1911, p. 157.
- 20 World, op. cit., December, 1899, p. 351, April, 1907, p. 255, Roger C. Burrows, <u>Railway Mileposts: British Colum-bia, Volume 1: The CPR Mainline Route: From the Rockies to the Pacific</u>, (North Vancouver, B.C.: Railway Mileposts Books, 1981), p. 3, Gary G. Backler, "The C.P.R.'s Capacity and Investment Strategy in Rogers Pass, B.C., 1882-1916," M.Sc. Thesis, University of British Columbia, 1981, pp. 242-3.
- 21 Lavallee, op. cit., pp. 194-5.
- 22 P. Turner Bone, C.E. <u>When the Steel Went Through</u> (Toronto: The McMillan Company of Canada Limited, 1947), pp. 102-3.
- 23 Ross to Van Horne, January 8, 1885, CPR file 8117.
- 24 Ibid., June 21, 1885, CRP file 9706.
- 25 Burrows, op. cit., p. 43, Lavallee, op. cit., p. 193.
- 26 Lavallee, op. cit., p. 199-204.
- 27 Turner Bone, op. cit., p. 107.
- 28 Ibid., p. 92.
- 29 Truth (Donald) 30 June, 1888, p. 8, 1 September, 1888, p. 7.
- 30 <u>World</u>, op. cit., December 1898, p. 269.
- 31 CPR Bridge Repair Information, Rogers Pass Interpretive Centre, file 1758.
- 32 Jan Booth, <u>Canadian Pacific In the Rockies: 100 Years in</u> <u>the Rogers Pass</u> (Calgary, Alberta: The Calgary Group of the British Railway Modellers of North America, 1985), pp. 10-11.
- 33 CPR Bridge Replacement Information, op. cit.
- 34 Burrows, op. cit., p. 43.

- 35 Turner Bone, op. cit. p. 103.
- 36 Burrows, op. cit., p. 43.
- 37 Lavallee, op. cit., pp. 196, 285, Turner Bone, op. cit., p. 103, Booth, op. cit., pp. 12-13.
- 38 Turner Bone, op. cit., p. 103, Ross to Van Horne, March 18, 1885, CPR file 8999.
- 39 Lavallee, op. cit., 204-5.
- 40 Ross to Van Horne, June 21, 1885, CPR file 9706.
- 41 Lavallee, op. cit., p. 206.
- 42 Lavallee, op. cit., p. 200, John Murray Gibbon, <u>Steel of</u> <u>Empire</u> (New York, Indianapolis: Bobbs-Merrill Co., 1935), p. 272, Booth, op. cit., p. 14.
- 43 Booth, op. cit., p. 151.
- 44 William S. Vaux, Jr., <u>The Canadian Pacific Railway, From</u> <u>Laggan to Revelstoke</u>, B.C. after p. 42 in Glacier House Scrapbook, Archives of the Canadian Rockies, M352f, 1900, p. 80.
- 45 World, op. cit., May, 1898, p. 64.
- 46 Ross to Van Horne, June 29, 1885.
- 47 Ibid., August 14, 1885, CPR file 10507.
- 48 Ibid., August 23, 1886, CPR file 10507.
- 49 Booth, op. cit., pp. 18-20.
- 50 Lavallee, op. cit., p. 196.
- 51 Ibid., p. 199.
- 52 Ibid.
- 53 Ross to Van Horne, June 21, 1885, CPR file 9706.

```
54 Ibid., June 18, 1885, CPR file 9706.
```

55 D.M. Bain, <u>Canadian Pacific in the Rockies</u> (Calgary, Alberta: The Calgary Group of the British Railway Modellers of North America), Volume 6 (1980), pp. 115-16, Volume 2 (1978), p. 11, John S. Marsh, "The Spiral and Connaught Tunnels," in <u>The CPR West: The Iron Road and</u> the Making of a Nation, ed. H.A. Dempsey (Vancouver/ Toronto: Douglas & McIntyre, 1984), Backler, op. cit., pp. 44, 74, 243-5, 299, 333, 340.

- 56 Marsh, op. cit., p. 171.
- 57 Lavallee, op. cit., p. 194.
- 58 Ross to Van Horne, March 18, 1885, CPR file 8769.
- 59 Lavallee, op. cit., p. 241.
- 60 James A. Dickey to Collingwood Schreiber, January 13, 1886 to April 10, 1886 in <u>Sessional Papers</u> (No. 35) 1886, pp. 2-3.
- 61 Lavallee, op. cit., p. 244.
- 62 Ibid., p. 245.
- 63 Ibid., pp. 122-128.
- 64 Daily Herald (Calgary), 22 July, 1887.
- 65. Commercial, op. cit., 11 July, 1887, p. 838.
- 66 For example, snowshed contractors D.B. Campbell and Co., contractors for area west of Summit, in November 1888 paid \$50,000 to their 150 employees who had installed 1,500,000 BF (board feet) of timber and lumber, and left for work in Ontario grading the CPR with intentions of more snowshed work in the Selkirks in 1889. Truth, op. cit., 24 November, 1888, p. 1.
- 67 William Spotswood Green, <u>Among the Selkirk Glaciers</u> (London and New York: Macmillan and Co, 1890), p. 93.
- 68 Lavallee, op. cit., p. 205.
- 69 May 27, 1887 to June 30, 1887 in <u>Sessional Papers</u> (25a) 1888, pp. 25-9.
- 70 Vaux, op. cit., p. 78.
- 71 <u>Truth</u>, op. cit., 18 August, 1888, p. 1.
- 72 Backler, op. cit., pp. 57, 91, <u>Engineering News</u> (Chicago), 21 January, 1888, pp. 38-9
- 73 Van Horne to CPR Directors, op. cit., pp. 4-5.

- 74 Vaux, op. cit., p. 75, Lamb, op. cit., p. 139, Backler, op. cit., p. 57, Truth, op. cit., 30 June, 1888, p. 7, CPR Annual Reports 1886 to 1890 inclusive.
- 75 Backler, op. cit., p. 124, Green, op. cit., p. 92.
- 76 Vaux, op. cit., pp. 78-80.

- 77 Truth, op. cit., 2 June, 1888, p. 3, Backler, op. cit., p. 127.
- 78 Contracts and Proposals Book, 1903-10, CPR Archives, Montreal, p. 88.
- 79 John Woods, <u>Snow War</u> (Toronto, Ontario: National and Provincial Parks Association of Canada, 1983), p. 32.
- 80 Robert D. Turner, <u>Railroaders: Recollections from the</u> <u>Steam Era in British Columbia, Sound Heritage Series</u> <u>Number 31</u> (Victoria, British Columbia: Provincial Archives of British Columbia, 1981), pp. 8-15.
- 81 James C. Bonnar, "The CPR Co. and its contributions towards the early development and to the continued development of Canada" British Columbia Provincial Archives, Victoria, J/F/B64/v.6, pp. 26-9. See also Bain. op. cit., Volume 3, p. 26, Woods, op. cit., pp. 28-31, Edward F. Bush, "Canadian Railway Technology" 1982 (Parks Canada: Microfiche Report Series 76), Rotary Snow Plows, Their History, Construction Etc., <u>Canadian Railway and</u> <u>Marine World</u> (Toronto), March 1913, pp. 101-5.
- 82 <u>Truth</u>, op. cit., 24 November, 1888, 15 December, 1888, Backler, op. cit., p. 127.
- 83 Superintendent of Yoho Park to Department of the Interior, July 22, 1918, PAC/RG84/Volume 490/File G17-CP4/ Part 1.
- 84 Woods, op. cit., p. 44, P.A. Schaerer, "Planning Avalanche Defense for the Trans-Canada Highway at Rogers Pass B.C., in <u>Engineering</u> Journal (Montreal), March,

1962, pp. 31-38.

- 85 <u>Commercial</u>, op. cit., 18 May 1886, p. 1.
- 86 CPR Annual Report, Montreal, 1888.
- 87 Van Horne correspondence, op. cit., file 11437.
- 88 From correspondence with Robert G. Hill, B.Arch, editor and compiler of <u>The Biographical Dictionary of Architects</u> in Canada, 1800-1953, (forthcoming), October 26, 1986.
- 89 Van Horne to Abbott, September 14, 1886, CPR Letterbook No. 18, 1886, pp. 256-8.
- 90 Swett to Shaughnessy, October 22, 1886, CPR file 4923.
- 91 Superintendent, Yoho Park to S.W. Mitchell, Secretary Treasurer, Alpine Club of Canada, Sidney, British Columbia, January 16, 1919, PAC Edmonton/RG84/E85-6/148, Box 3.
- 92 Swett to Shaughnessy, op. cit., loc. cit.
- 93 Swett to Van Horne, December 16, 1886, CPR file 15272.
- 94 Commercial, op. cit., 28 December, 1886.
- 95 E.J. Hart, <u>The Selling of Canada: The CPR and the</u> <u>Beginning of Canadian Tourism</u> (Banff, Alberta: Altitude Publishing, 1983), p. 87.
- 96 Swett to Van Horne, op. cit., loc. cit.
- 97 Mr. Arthur Spragge, "Our Wild Westland," part X, DI, III (September 7, 1889), p. 155.
- 98 See site plan in Figure 68.
- 99 For standard plans of CPR stations see J.W. Orrock, <u>Railroad Structures and Estimates</u> (New York: John Wiley & Sons, 1909 or 1918) or <u>CPR Co. Standard Plans</u>, Montreal, 1916, Chief Engineer's Office.
- 100 Abbott to Shaughnessy, July 17, 1887, CPR file 11923.
- 101 Green, op. cit., pp. 63-4.
- 102 Marpole to Han Horne, September 14, 1886, CPR file 25626, Abbott to Van Horne, September 22, 1889 CPR file 25626

and October 11, 1889, October 11, 1889, CPR file 24876.

- 103 Ibid., CPR file 25626.
- 104 Van Horne to Abbott, June 6, 1890, Van Horne Letterbooks, Roll 30, Letterbook 37, p. 760.
- 105 Interview with Edward Feuz, April 9, 1976, Archives of the Canadian Rockies, ACR/NT 130-1(1).
- 106 Interview with Alice Harding, see Appendix D for details.
- 107 Harold D. Kalman, <u>The Railway Hotels and the Development</u> of the Chateau Style in Canada (Victoria: University of Victoria Maltwood Museum Studies in Architectural History Number One, 1968), p. 7.
- 108 Abbott to Van Horne, July 5, 1889, CPR file 24876.
- 109 CPR Annual Reports, 1889, p. 30, 1890, p. 27, 1891, p. 23.
- 110 For details of this interaction see <u>Sessional Papers</u> (No. 25) 1891, pp. 45-51.
- 111 Marpole to W. Whyte, November 8, 1897, CPR file 67883.
- 112 Whyte to Shaughnessy, November 4, 1897 and November 12, 1897, CPR file 44206.
- 113 World, op. cit., November, 1902 p. 379.

- 114 Contracts and Proposals Book, op. cit., W.L. Putnam, <u>The Great Glacier and its House</u> (New York: American Alpine Club, 1982), p. 47, Harding Transcript, Appendix D to this report.
- 115 A.O. Wheeler, The Selkirk Range (Ottawa: Government Printing Bureau, 1905), p. 371.
- 116 F.M. Rattenbury Letters, Special Collections Library, University of British Columbia, Vancouver, British Columbia.
- 117 Francis S. Swales to Van Horne, October 9, 1911, CPR Van Horne Incoming Correspondence, M7492/82.5.631.26, W.S. Painter to Van Horne, May 11, 1912, CPR Van Horne

Incoming Correspondence, M7492/82.5.652.10.

- 118 World, op. cit., December, 1911, p. 1133.
- 119 Hayter Reed to Van Horne, October 23, 1911, CPR file 97211.
- 120 Abbott to Shaughnessy, February 1, 1887, CPR file 4923.
- 121 Abbott to Van Horne, April 4, 1887, CPR file 16363.
- 122 Green, op. cit., p. 66.
- 123 Anthony A. Barrett & Rhodri Windsor Liscombe, <u>Francis</u> <u>Rattenbury and British Columbia</u>: <u>Architecture and</u> <u>Challenge in the Imperial Age</u> (Vancouver, British Columbia: University of British Columbia Press, 1983) p. 148.
- 124 CPR Co. Proceedings of the Meeting of Western Lines Officials held at Trail B.C., February 12-13, 1906, p. 105.
- 125 <u>World</u>, op. cit., May, 1898, p. 67, Barrett and Liscombe, op. cit., p. 356.
- 126 CPR Contracts and Proposals Book, op. cit., p. 87.
- 127 Reed to Van Horne, November 20, 1908, CPR file 88426.
- 128 World, op. cit., May, 1898, p. 67.
- 129 Marpole to Whyte, November 8, 1897, CPR no file number, Contracts and Proposals Book, op. cit. loc. cit.
- 130 Glacier Power House and Laundry Costs, Archives of the Canadian Rockies M282/f.2, October, 1909.
- 131 Revelstoke Museum, CPR Papers, 76.15.250/f.45528.8.
- 132 World, op. cit., May, 1910, p. 361.
- 133 Revelstoke Museum, 76.15.250/f.45528.71.
- 134 Ibid., f.45528.2.

135 John S. Marsh, "Glacier National Park Datebook, 1881-1971," Prepared for National and Historic Parks Branch, Department of Indian and Northern Affairs, Revelstoke, B.C. 1972, Rogers Pass Interpretive Centre file 312, p. 9, Truth, op, cit., 4 August, 1888.

- 136 <u>Commercial</u>, op. cit., 6 July, 1886, p. 84, Swett to Shaughnessy, October 22, 1886, CPR file 4923.
- 137 Whyte to Van Horne, June 20, 1887, Abbott to Van Horne, June 24, 1887, June 30, 1887, CPR file 17215.
- 138 Abbott to Van Horne, October 17, 21, 26, 1887, CPR file 18442, Swett to Van Horne, October 28, 1887, CPR file 4923, October 31, 1887, CPR file 18442, Marpole to Van Horne, November 6, 1887, loc. cit.
- 139 <u>Commercial</u>, op. cit., 19 December, 1887, p. 1.
- 140 Abbott to Van Horne, September 26, 1888, CPR file 21868.
- 141 Putnam, op. cit., p. 187.

- 142 Sheffield to Perley, September 6, 1892, CPR file 4452.
- 143 Abbott to Shaughnessy, December 5, 1892, CPR file 22691.
- 144 Sheffield to Shaughnessy, December 13, 1892, CPR file 22691.
- 145 Ibid., November 11, 1896, CPR file 43779.
- 146 Ibid., November 20, 1896, CPR file 38727.
- 147 Sheffield to Perley, January 6, 1897 and Perley to Sheffield, Jan 15, 1897, CPR no file numbers.
- 148 Sheffied to Shaughnessy, Jan 5, 1897, CPR no file number, Putnam, op. cit., p. 193.
- 149 Truth, op. cit., 29 September, 1888, p. 6.
- 150 Putnam, op. cit., loc. cit., James A Shields, CPR Corporate Archives to W.L. Putnam, June 13, 1975, F.V. Longstaff Papers, British Columbia Provincial Archives, Add.Mss 677/Volume 396/ File 196, Marsh, op. cit., p. 9, Putnam, op. cit., p. 198.
- 151 Green, op cit., p. 64, <u>Kootenay Star</u> (Revelstoke), September 27, 1890, p. 2.
- 152 Wrigley's and Henderson's <u>B.C. Directories</u> for years indicated, F.V. Longstaff, "Historical Notes on Glacier

House," n.d. p. 3, Marsh, op. cit., p. 10.

- 153 Letter from Alice Harding to Archives of the Canadian Rockies, September 1, 1970, ACR/M 109.
- 154 Truth, op. cit., October 6, 1886, p. 6.
- 155 For details of this dispute see <u>Truth</u>, op. cit., December 15, 1888, p. 5, December 22, 1888, pp. 1,4.
- 156 Wheeler, op. cit., pp. 367-8.
- 157 <u>Commercial</u>, op. cit., 15 August, 1887, p. 949, 24 September, 1888, p. 8-9.
- 158 Ibid., 10 May, 1887, p. 1, 4 August, 1886, p. 7.
- 159 Jean Mollison, Longstaff Papers, op. cit.
- 160 <u>Commercial</u>, op. cit., 7 September 1886, p. 1, 12 March, 1888, p. 670.
- 161 E.J. Hart, <u>The Brewster Story: from pack train to tour</u> <u>bus</u> (Banff, Alberta: EJH Literary Enterprises - Published by Brewster Transport Company, Ltd., 1981, S.J. Ferns & H.S. Ferns, <u>Eighty-Five Years in Canada</u> (Winnipeg, Manitoba: Queenston House Publishing Co, Ltd., 1978), pp. 93-127.
- 162 Truth, op. cit., 21 July, 1888, p. 8.
- 163 Ibid., 4 August, 1888, p. 5.
- 164 Madge McBeth, "Glacier" booklet at Vancouver Public Library, NW/971.12/N86/PAM/1925. p. l.
- 165 Marsh, op. cit., p. 9.

- · · · · ----

- 166 Harding transcript, op. cit., p. 4.
- 167 Longstaff, op. cit., p. 3, <u>Commercial</u>, op. cit., 16 March, 1888, p. 1.
- 168 Crag and Canyon (Banff), 3 September, 1904, p. 4, Turner, op. cit., p. 14, Revelstoke Museum, op. cit., September 15, 1914, CPR file 76.15.115/f.016400, Harding transcript, op. cit., p. 27.
- 169 Edward Feuz, op. cit., A.E. Mollison to Shaughnessy,

August 20, 1899, CPR file 57161, Wheeler, op. cit., pp. 62, 322-3, Putnam, op. cit., p. 203.

- 170 Bryce to Van Horne, September 19, 1890, CPR file 29840.
- 171 Abbott to Van Horne, November 3, 1890, file 29840.
- 172 Glacier House Scrapbook, 1896-1910, p. 25, September 19, 1898, p. 59, September 16, 1900, CPR, "The Challenge of the Mountains" 1909, p. 59.
- 173 Wheeler, op. cit., p. 44.
- 174 Feuz to Longstaff, November 20, 1950, Longstaff Papers, op. cit., Volume 383, file 39, R.F. Green, Victoria House of Commons to Superintendent of Parks, Ottawa, September 1, 1915, PAC/RG84/Volume 141/f,G-16-4, Hiram S. Baker interview September 17, 1983, Archives of the Canadian Rockies NT 146-1, Edward Feuz interview April 9, 1976, Archives of the Canadian Rockies NT 130-1(1), Cecil Smith interview November 18, 1979, Archives of the Canadian Rockies NT 88-1, Agreements between the CPR and Brewster, 1917-1919, Archives of the Canadian Rockies, M82/32.
- 175 John S. Marsh, <u>A History of Glacier House and Nakimu</u> <u>Caves, Glacier National Park, B.C.</u> (Peterborough, Ontario: Canadian Recreational Services, 1979.
- 176 Glacier House Scrapbook, op. cit., 1896, p. 5, Wheeler, op. cit., p. 345, Green. op. cit., pp. 64-5, <u>Truth</u>, op, cit., 14 July, 1888, p. 6, William Seward Webb, <u>Califonia</u> <u>and Alaska and over the Canadian Pacific Railway</u> (New York and London: G.P. Putnam & Sons, 1891) p. 189.
- 177 Backler, op. cit., p. 193.
- 178 CPR Annual Reports, 1924, 1930, 1931, World, op. cit., May, 1926, p. 239, Rick Ryckman interview November 18, 1979, Archives of the Canadian Rockies, NT 88-2, Longstaff Papers op. cit., Volume 383/f. 48, Volume 391/

f. 147, Volume 396/f. 196, Volume 403/f. 287.

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Backler, Gary G. "The C.P.R.'s Capacity and Investment Strategy in Rogers Pass, B.C., 1882-1916," M.Sc. Thesis, University of British Columbia, 1981.

Bain, D.M.

<u>Canadian Pacific in the Rockies</u>. The Calgary Group of the British Railway Modellers of North America, Calgary, Alberta, Vol. 2, 1978, Vol. 6, 1980.

Barrett, Anthony A. and Rhodri Windsor Liscombe. <u>Francis Rattenbury and British Columbia: Architecture and</u> <u>Challenge in the Imperial Age</u>. University of British Columiba Press, Vancouver, British Columbia, 1983.

Bone, P. Turner, C.E. When the Steel Went Through. The McMillan Company of Canada Limited, Toronto, 1947.

Bonnar, James C. "The CPR Co. and its contributions towards the early development and to the continued development of Canada," n.d., n.p., British Columbia Provincial Archives, Victoria, British Columbia, J/F/B64/v.6.

Booth, Jan. Canadian Pacific In the Rockies: 100 Years in the Rogers Pass. The Calgary Group of the British Railway Modellers of North America, Calgary, Alberta, 1985.

Burrows, Roger C. <u>Railway Mileposts: British Columbia, Volume 1: The CPR</u> <u>Mainline Route: From the Rockies to the Pacific</u>. Railway <u>Mileposts, North Vancouver, B.C., 1981</u>.

Bush, Edward F. Canadian Railway Technology. Parks Canada, Microfiche Report Series 76, Ottawa.

Canada. Parliament. T.S. Higginson to Hon. Thomas White, Minister of the Interior, in <u>Sessional Papers</u>, 1886, No. 35. Queen's Printer, Ottawa, 1886. James A. Dickey to Collingwood Schreiber, in <u>Sessional Papers</u>, 1886, No. 35, Queen's Printer, Ottawa, 1886. Various authors, May 27, 1887 to June 30, 1887 in <u>Sessional</u> <u>Papers</u>, 1888, No. 25a, Queen's Printer, Ottawa, 1886. "Statement of Ties, 1889, accepted by the CPR," in <u>Sessional</u> <u>Papers</u>, 1890, No. 31A. Queen's Printer, Ottawa, 1890. <u>Sessional Papers</u>, 1891, No. 25. 1891. <u>Sessional Papers</u>, 1892, No. 34. 1892. "Geological Survey of Canada, Summary Report," in <u>Sessional</u> <u>Papers</u>, 1911, No. 26. 1911. p. 157.

Canadian Pacific Railway.

<u>Annual Reports</u>, CPR, Montreal, 1886-1890, 1924, 1930, 1931. CRP Co. Proceedings of the Meeting of Western Lines Officials held at Trail B.C., February 12-13, 1906. Contracts and Proposals Book, 1903-10, CPR Archives, Montreal, 1903-10. Letterbook No. 18, 1886, pp. 256-8. Letterbook No. 37, p. 370. <u>Standard Plans</u>, CPR Chief Engineer's Office, Montreal, 1916.W.C. Van Horne Incoming Correspondence/ Office of the Vice-President, Montreal, 1884-7. "W.C. Van Horne to Directors of CPR," Montreal, September 6, 1887.

Canadian Railway and Marine World (Toronto) from August 1912 to December 1936, prior to 1912 called <u>Railway and Shipping</u> <u>World</u>, thereafter called <u>Canadian Transportation</u>. 1913 March, pp. 101-5. 1926 May, p. 239.

Cavell, Edward. Legacy in Ice: The Vaux Family and the Canadian Alps. The Whyte Foundation, Banff, Alberta, n.d.

Commercial (Winnipeg). 1886 18 May, p. 1. 6 July, p. 84. 1887 11 July, p. 838. 15 August, p. 949. 7 September, p. 1. 19 December, p. 1. 1888 30 February, p. 597. 12 March, p. 670.

--- -- -- --- --

16 March, p. 1. 30 April, p. 839. 24 September, pp. 8-9. 1 October, p. 37. 1889 6 May, p. 821. 1890 21 April, p. 716.

Crag and Canyon (Banff). 1904 3 September, p. 4.

Daem, M. and E.E. Dickey <u>A Short History of Rogers Pass and Glacier Park</u>. Revelstoke, British Columbia, 1965.

Daily Herald (Calgary). 1887 22 July.

Engineering Journal (Montreal). "Planning Avalanche Defense for the Trans-Canada Highway at Rogers Pass, B.C.," March, 1962.

Engineering News (Chicago). 1888 21 January, pp. 38-9.

....

Ferns, H.S. <u>Eighty-Five Years in Canada</u>, Queenston House Publishing Co. Ltd., Winnipeg, Manitoba, 1978. Fraser, Esther.

The Canadian Rockies: Early Travel and Explorations. M.G. Hurtig Ltd, Edmonton, Alberta, 1969. Wheeler. Summerthought Ltd., 1978.

Gibbon, John Murray. <u>Steel of Empire</u>. Bobbs-Merril Co,, New York, Indianapolis, 1935.

Green, William Spotswood. Among the Selkirk Glaciers. Macmillan and Co., London and New York, 1890.

Hart, E.J.

The Brewster Story: from pack train to tour bus. EJH Literary Enterprises/Published by Brewster Transport Company, Ltd., Banff, Alberta, 1981. The Selling of Canada: The CPR and the Beginning of Canadian Tourism. Altitude Publishing, Banff, Alberta, 1983.

Henderson's British Columbia Directories for various years.

Kalman, Harold D.

The Railway Hotels and the Development of the Chateau Style in Canada. University of Victoria Maltwood Museum Studies in Architectural History Number One, Victoria, British Columbia, 1968.

Kootenay Star (Revelstoke).
1890
27 September, p. 2.

Lamb, W.K.

. \_. ... ..

<u>History of the Canadian Pacific Railway</u>. Collier Macmillan Publishers, New York, 1977.

Lavallee, Omer. Van Horne's Road. Railfare Enterprises Limited, Toronto, 1974.

Marsh, John S. "Glacier National Park Datebook, 1881-1971," prepared for National and Historic Parks Branch, Department of Indian and Northern Affairs, Revelstoke, 1972. <u>A History of Glacier House and Nakimu Caves, Glacier National Park, B.C.</u> Canadian Recreational Services, Peterborough, Ontario, 1979. "The Spiral and Connaught Tunnels," in <u>The CPR West: The Iron</u> <u>Road and the Making of a Nation</u>. ed. H.A. Dempsey, Douglas & McIntyre, Vancouver/Toronto, 1984.

McBeth, Madge. "Glacier" booklet at Vancouver Public Library, NW/971.12/N86 /PAM/1925.

Newby, Eric. The Big Red Train Ride. St. Martin's Press, New York, 1978.

Orrock, J.W. <u>Railroad Structures and Estimates</u>. John Wiley & Sons, New York, 1909 or 1918.

Provincial Archives of British Columbia. Victoria. F.V. Longstaff Papers, Add.Mss 677/Volume 383/f. 48, Volume 391/f. 147, Volume 396/File 196, Volume 403/f. 287.

Public Archives of Canada. Ottawa. R.F. Green, Victoria, House of Commons to Superintendent of Parks, Ottawa, September 1, 1915, PAC/RG84/Volume 141/f, G-16-4. Superintendent of Yoho Park to Department of the Interior, July 22, 1918, PAC/RG84/Volume 490/File G17-CP4/Part 1. Superintendent, Yoho Park to S.W. Mitchell, Secretary Treasurer, Alpine Club of Canada, Sidney, British Columbia, January 16, 1919, PAC (Edmonton) RG84/E85-6/148, Box 3.

Putnam, W.L. <u>The Great Glacier and its House</u>. American Alpine Club, New York, 1982.

<u>Railway and Marine World</u> (Toronto) July 1906 to July 1912, before 1906 called <u>Railway and Shipping World</u> and after 1912 called <u>Canadian Railway and Marine World</u>. 1907 April, p. 255. 1910 May, p. 361. 1911 December, p. 1133.

<u>Railway and Shipping World</u> (Toronto) 1898 to 1905, thereafter called <u>Railway and Marine World</u> until August 1912. 1898 May, p. 67. November, p. 235. 1899

December, p. 351. Revelstoke Museum. Canadian Pacific Railway papers for the Mountain Subdivision. Robinson, Bart. Banff Springs, The Story of a Hotel. Summerthought, Banff, Alberta, 1973. Rogers Pass Interpretive Centre. CPR Bridge Repair Information, file 1758, n.d., circa 1910. Spragge, Arthur. "Our Wild Westland," part X, DI, III, September 7, 1889. Truth (Donald). 1886 6 October, p. 6. 1888 2 June, p. 3. 30 June, pp. 7,8. 14 July, p. 6. 21 July, p. 8. 4 August. 18 August, p. 1. 1 September, p. 7. 29 September, p. 6. 24 November. 15 December, p. 5. 22 December, pp. 1,4. 1889 24 November, p. 1.

---- --- ---- ----

Turner, Robert D.

Railroaders: Recollections from the Steam Era in British Columbia, Sound Heritage Series Number 31. Provincial Archives of British Columbia, Victoria, British Columbia, 1981.

University of British Columbia, Special Collections. F.M Rattenbury Letters.

Vaux, William S. Jr.
"The Canadian Pacific Railway, From Laggan to Revelstoke,
B.C." after p. 42 in Glacier House Scrapbook, Whyte Museum of
the Canadian Rockies.

Webb, William Seward. California and Alaska and over the Canadian Pacific Railway. G.P. Putnam & Sons, New York and London, 1891.

Wheeler, A.O. The Selkirk Range. Government Publishing Bureau, Ottawa, 1905.

Whyte, Jon and Carole Harmon. Lake Louise: A Diamond in the Wilderness. Altitude Publishing, Banff, Alberta, 1982.

Whyte Museum of the Canadian Rockies. Agreements between the CPR and Brewster, 1917-1919, M82/32. Hiram S. Baker interview September 17, 1983, NT 146-1. Edward Feuz interview, April 9, 1976, NT 130-1(1). Glacier House Scrapbook, 1896-1910. Glacier Power House and Laundry Costs, M282/f.2, October, 1909. Alice Harding interview, May 18, 1970, NT 50-1. Rick Ryckman interview November 18, 1979, NT 88-2. Cecil Smith interview November 18, 1979, NT 88-1.

Woods, John. <u>Snow War</u>. National and Provincial Parks Association of Canada, Toronto, 1983.

Wrigley's British Columbia Directories, various years.

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YEAR Number of Registrants 708 1887 -1888 - 10201889 - 1136 1890 - 1084 1891 - 1291 1892 - 13171893 - 1051 1894 - 831 1895 -774 1896 - 816 1897 - 12191898 - 764 \*1912 - 5419 1913 - 5057 1914 - 4009 1915 -12977 1916 - 3985 \*1920 - 3779 1921 - 32231922 - 3792 \*1924 - 3325 1925 - 3100

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\* Figures for 1899-1911, 1917-1919 and 1923 not available. Compiled from Department of Interior Reports and Glacier National Park Papers, op. cit.

Appendix B. Rates for services at Glacier House, 1886-1925.

Da	ate	Service and details of costs			
18	886 <sup>1</sup>	Rooms - per day	\$1.00		
	•	Meals	.75		
19	09 <sup>2</sup>	Lodging – per day, American plan*	3.50	and	up
	_	Special weekly rates available			
19	911 <sup>3</sup>	Swiss guides, per day	5.00		
		Guides supply ropes and axes			
		Outfits and ponies - Baker			
		Illecillewaet Glacier and return,			
		time allowed 2 hours	1.00		
		Asulkan Glacier and return,			
		time allowed 4 hours	2.00		
		Marion Lake and return,			•
		time allowed 3 hours	1.50		
		Overlook on Mt. Abbott,			
		time allowed 6 hours	3.00		
		Cascade Summer House and Avalanche			
		Basin, time allowed 3 hours	1.50		
		Caves of Cheops (Nakimu Caves) via			
		the Loop and Cougar Brook return-			
		ing by the same route, or over			
		Baloo Pass and Rogers Pass	4.00		
		Additional time per hour	.50		
		Raincoats and luncheon bags are			
		provided free to riders			
*	American	plan includes room, meals and servic	es.		
Date	Service and details of costs				
-------------------	------------------------------------	-------------			
1914 <sup>4</sup>	Lodging - per day, American plan	4.00 and up			
1915 <sup>5</sup>	Outfits and ponies (Changes in 191	11			
	rates listed below)				
	Marion Lake	2.00			
	Nakimu Caves	5.00			
	Divided skirts or rain coats rer	nted			
	at, per day	.50			
	Ponies, flat rate per day	3.00			
	Single meals <sup>6</sup>	1.00			
1917 <sup>6</sup>	Livery rates - Brewster				
	Station to Hotel	.25			
	Heavy luggage	.25			
	Special trap - 2 people	1.50			
	- 3 people	2.50			
1918 <sup>6</sup>	Team and driver, half day	1.50			
	whole day	2.00			
	Coal haulage, station to hotel				
	per 2000 pounds (one ton)	.70			
1919 <sup>6</sup>	Station to hotel	.50			
1925 <sup>7</sup>	Swiss guides, per day	7.00			
	Livery rates				
	Station to hotel	.50			
	2 pieces baggage free				
	Additional pieces of baggage	.25			
	Heavy baggage	.50			

-

Date		Service and details of costs			
1925		Rogers Pass with carriage, team			
		and driver, round trip			
		2-3 persons	4.50		
		4-5 persons	7.50		
		Motor tally-ho, six or more, each	1.00		
		Nakimu Caves 5 miles			
		2-3 persons	6.00		
		4-5 persons	9.00		
		Tally-ho			
		(when operated) per person	3.00		
		Pony trips from Glacier, round trip			
		Illecillewaet Glacier	2.00		
		Marion Lake	3.00		
		Asulkan Glacier	3.00		
		Overlook, Mount Abbott	4.00		
		Nakimu, return either			
Baloo	Pass	4.00			
		Flat Creek	4.00		

Footnotes:

1 H.A. Perley management contract, 1886, op. cit.

2 CPR Annotated Timetable, July 20, 1909.

3 Wheeler, op. cit. pp. 33-5.

4 CPR Annotated Timetable, 1914.

5 CPR Resorts in the Canadian Rockies(sic), 1915(?).

6 CPR Annotated Timetable, December 15, 1915.

7 CPR Resorts in the Rockies(sic), 1926 (?).

Appendix C. Train stops at Glacier, B.C., 1885-1917

Date of	Name of Train	Direction of Travel	and Time*
schedule		West	East
December			
13, 1885	Thursdays arrive Donald	a.16:00**	
	Fridays leave Donald		d.7:00**
November			
11, 1888	Pacific Express No. 1	a.12:35	
		d.13:05	
	Eastern Atlantic Expres	s No.2	d.14:00
			d.14:30
July			
12, 1889		13:05	14:30
June			
25, 1897		a.13:40	a.11:50
		d.14:10	a.12:20
October			
15, 1906	3rd Class #71 Fast Frei	ght f.1:15**	
	lst Class #97 Passenger	a.14:20	
		1.14:50**	
	3rd Class #72 Fast Frei	ght	£.4:39
	lst Class #96 Passenger		a.12:07
			f.12:37
[Codes: *	24 hour clock is used o	n the railway, 2pm.	= 14:00
* *	a.= arrival, d.= depar	ture, f.= train only	y stops
	if flagged, l.= leave,	s.= stop]	

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	Date of schedule June	Name of Train	Direction	of Tra West	vel and Time* East	
-	6, 1909	#71 Daily Freight		2:27	#72 4:42	
÷		#1 Passenger		3:41	#2 <b>2:</b> 27	
		<b>#97</b> Passenger	a	13:15 #	#96 a.13:50	
			1.	13:50	1.14:20	
		#5 Passenger	· a	.12:09	#6 a.8:57	
			1.	12:44	1.9:27	
	July					
	20, 1909	Imperial Limited		2:27	3:41	
		Atlantic Express			a.13:50	
					1.14:20	
		Pacific Express	a	.13:15		
			1.	13.50		
	June					
	25, 1911	#1 Imperial Limited		12:43**	* *	
		Western Express		3:54		
		#2 Imperial Limited 1	Daily		14:54***	
		Eastern Express			3:24	
	August					
	1912	Vancouver Express		3:54		
		Imperial Limited	a	12:43		
			1.	12:53		
		Toronto Express			13:24	
		Imperial Limited			a.14:44	
					1.14:54	
	[Codes: *	24 hour clock is used	d on the rai	lway, 2µ	pm = 14:00	
	** a.= arrival, d.= departure, f.= train only stops					
		if flagged, l.= leav	ve, s.= stop			
	*	** A ten minute stop v	was allowed t	co view	the scenery	
		at Glacier House ev	ven though a	meal st	top was not	
		necessary as the t	rains now ind	cluded o	lining cars.]	

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Date of	Name of Train	Direction	of Travel	and Time*
schedule			West	East
October				
29, 1916	#981 3rd Class Seattle	Freight	5:35	
	#951 3rd Class Coast Fi	reight	10:45	
	<b>#3 lst Class Passenger</b>		f3:20	
	#1 lst Class Passenger	S	.14:40**	
	#86 4th Class Freight			24:00
	#952 4th Class Seaboard	l Freight		19:10
	#84 4th Class Freight			12:50
	#82 4th Class Freight			6:20
	#2 lst Class Passenger			s.15:07
	<b>#4 lst Class Passenger</b>			f.3:47
December				
10, 1916	At west end of Connaugh	nt Tunnel,	new locat	ion of
	Glacier Station, B.C.	Train no D	longer run	s past
	the hotel at Glacier Ho	ouse. Passe	engers tak	en from
	the station to the hote	el by Baker	or Brews	ter.
	#l Passenger	s.	14:33	
	#3 Passenger	s	<b>3.3:</b> 13	
	#2 Passenger			s.15:08
	#4 Passenger			s.3:48
September				
30, 1917	#3 Passenger		3:58	
	#1 Passenger		15:20	
	#4 Passenger			3:13
	#2 Passenger			14:36
[Codes: *	24 hour clock is used of	on the rail	lway, 2pm.	= 14:00
**	* a.= arrival, d = depar	ture, f.=	train onl	y stops
	if flagged, l.= leave,	s.= stop		
*** A ten minute stop was allowed to view the scenery				
. at Glacier House even though a meal stop was not				
	necessary as the trai	ins now inc	luded din	ing cars.]

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Appendix D. Transcript of Interview with Alice Harding.

Interviewee: Alice Harding, age 78
Hostess: Susan B. Davies
Location: Archives of the Canadian Rockies, NT 50-1
111 Bear Street, Banff, Alberta
Date: May 18, 1970

The original tape was transcribed for this report by Sharon Peckham in Calgary on November 15, 1986. The transcript was checked by David Finch. It is, to the best of our knowledge, an accurate account of the text of the tape. However, if something appears unclear in the transcript please consult the original tape. The initial "I" in the lefthand margin of the text refers to the interviewee and "H" the the hostess, Susan B. Davies.

The text of the transcript begins on the following page.

- I. There's probably some things that I'm not quite sure about now you know it's over 50 years ago.
- H. I realize that.
- I. .. see I'm 78 now and I was about 21 or so when I was up there.
- H. When you first went.
- I. In 1914 I was there. I would be 22.
- H. How did you go to Glacier House had you read about it in the newspaper?
- I. I had heard about Lake Louise because that's where I went first. I was up there and I just loved the mountains - it was beautiful and because I had never been anywhere (I came from London England).
- H. Oh did you! Well maybe we'd better backtrack a little now. What brought you to Canada?
- I. It was London, England I came from and I had been working in Vancouver came straight to Vancouver and then from there I heard about Lake Louise and my sister was out here with me and we decided we'd go up there. So we wrote to the CPR in Vancouver and then they sent us up there.
- H. What did you do at Lake Louise?
- I. I was a chambermaid.
- H. I see.
- I. So was my sister. (...)I was a waitress because when all the girls were shipped back to Montreal because they brought them in by the coach lines the bell boys and the waitresses all came from Montreal and they came down in the coach lines 2 to 3 coaches so when they went back the whole bunch of them went back at the same time, you see, so there was only about 3 of us left and of course you did everything you knew what was to be done I was up there to make conversation...

- A. Do you remember what summers that...
- I. That was summer of 1913.
- H. Now, were they working on the Painter Wing?
- I. It was new at that particular time but that's the older structure that's there now...sort of the white building. They were building it at the time and it wasn't finished.
- H. Now in 1913 did they have the residences the staff residences?
- I. Yes. That was behind the main hotel. That was the main hotel was where the main concrete block...you know the one that goes this way... that was where the old hotel was.
- H. Do you remember the Swiss guides?
- I. Yes.
- H. Did you yourself do any climbing?
- I. Yah Mt. Saddleback. I climbed up there.
- H. It would be quite an experience coming from England.
- I. Yah we were up there I was up there. Up in the (...) right at the top .... I guess it's a way down below - after 50 years...
- H. Now what did you do the following winter?
- I. We went down back to Vancouver.
- H. I see.
- I. And I worked there in Vancouver.
- H. Now, were you married at this time?
- I. No.
- H. I see. Now how did you land at Glacier House?
- I. I had my sister with me and we wrote to Glacier House and asked to be transferred there. Now I must back track. From Lake Louise I went back to England for a visit.

- H. Oh. For how long?
- I. For the winter. My father had been not very well and they wrote and so I went back and I was there all winter and then I wrote from England to Montreal to Glacier House because (I don't know whether I should say this) I didn't like the food at Lake Louise.
- H. Oh! Well, that's par for the course.
- I. I was talking to one of the girls there now and she says the food hasn't improved.
- H. No. No.
- I. What I knew was that Glacier House' food was very good Mrs. Young, she was...oh well, she was very, very nice.
- H. Now this is the Mrs. Young who has been the hostess for quite a while?
- I. She was the manageress.
- H. What was her first name?
- I. Now I can't remember.
- H. You don't recall.

- It seems to me her initials were J. M.
- I. Well then it must be Julia. I think it would be Julia.
- H. Because we read about a Mrs. Young and her initials are mentioned in some book (perhaps the Selkirk Range) but we were curious and wondered...
- I. I have an idea it was Julia. I can't be certain about that, but if she's saying it was a 'J' I imagine that's what it was.

Mrs. Mc Gibbon was assistant manager.

H. I see. Now you didn't write directly to Mrs. Young tho'. You wrote to...

- I. I wrote to Montreal and from there I told them where we wanted to go. I said we would like to get up to Glacier, so they wired Mrs. Young and she said it was okay so we went to Glacier.
- H. Oh good. And what was your position at Glacier?
- I. It was house...a chambermaid there too. I hadn't done anything to get up there.
- H. Now did someone recommend Glacier House to you?
- Well, someone said the food was better there and of course when you are young the food means quite a bit.
- H. That's true.
- I. And not only that there was more money in it. Glacier House paid \$16 a month and they didn't deduct a dollar for doctor whereas at Lake Louise we just got \$12 a month and \$1 a month was deducted for the doctor.
- H. That's interesting, and yet they're all part of the same company.
- I. It's all part of that Mrs. Young she took our side.
- H. I see. Now, did your sister go with you?
- I. She went with me. And then at the end of each season we went back to Vancouver and then came back to Glacier in the summer months. It was a longer season too - whereas Lake Louise is only from the middle of May until the middle of September.
- H. And how long was it at Glacier House?
- I. We'd go up there about the beginning of April and get back about the middle of October.
- H. Oh. Well that's almost half a year.
- I. A good 5 months anyway.

- H. Now, was there any changes in the Hotel in the time that you were there?
- I. No, no. No changes at all.
- H. And was Mrs. Young there all along.
- I. Mrs. Young was there, I think, until the hotel closed down because of the Connaught Tunnel - the trains didn't come up there any more. See, they didn't get the traffic. An so I suppose the CPR was boosting Lake Louise and Banff more, although myself, I think there's much more to Glacier than there is at the other 2 places.
- H. Now tell me did you meet your husband at Glacier House?
- I. Yes, he was a waiter there.
- H. And was he from Canada?
- I. No, he was from Sommerset, England.
- H. Oh. And what was his position there?
- I. He was a waiter.
- H. Now there would be one major dining room, I presume.
- I. Well, yes. The...now I can't recall the head waiter's name right now...he and his wife - his wife was housekeeper up there and he was head waiter and they went to...they lived in Revelstoke in the winter months.
- H. And this was quite a busy place when you were there?
- I. Yes. It was quite busy, yes.
- H. Isn't that interesting. How many would they have on staff?
- I. They had more waiters than girls. There was only about...there'd be about 5 'maids, 5 or 6 'maids and there would be a linen maid, and...ah... there would be another girl in the chalet. You know, there was a section right on the station platform - that was the real chalet, and then behind that was what they called the annex, and beyond that was the wing - that was the new reception. It was almost like three sections.

- H. Do you recall any celebraties stopping at Glacier House?
- I. Well, Teddy Roosevelt stayed there.
- H. When you were there?
- I. When we were there, yes.
- H. And what was the occasion?
- I. Oh, I can't tell you the occasion. I took his picture on the platform. I don't know whether I gave it to Mrs. Stewart or not. If I didn't I possibly have it at home. I wouldn't be sure now.

And then there was the Maharaj Petonai - he was up there with his retinue of wives.

And then quite a few times the contractors' wives who were building the Connaught Tunnel - they were up there quite a bit.

## H. One never stayed during the winter?

I. No,no. It wasn't actually closed down, except for the chalet. The rest of the buildings, the wing and the annex was closed down during the winter months but the chalet itself was open because it was right on the station platform and we would have maybe the travellers coming through. My husband was up there one winter - all through. Like, for a whole year he was up there and his brother was up there with him and then during the snow periods they would have to shovel the snow and the snow was piled higher than their heads - just like a little tunnel, going through to their quarters to the hotel.

- H. So it would be your husband that took the winter pictures?
- I. Yes, he was there.
- H. I was wondering whether you had been there.
- H. What was your husband's first name?
- I. Harry. And some of the guys I think are still alive. Walter Feuz is still alive. He's in Golden. He knew my husband.
- H. And Edward is still alive.
- I. Yes, Edward. And I think Chris Lesler.
- H. No. He's dead now.
- I. He's dead is he? Oh, he passed away.
- H. The area seems to be a beautiful one and it seems there are a lot of pictures of people hiking and riding.
- I. They're mostly staff. The pictures in the album they would be mostly staff.
- H. Now, who had the horses?
- I. Mrs. Stewart was asking and you know, I can't think of the name now.
- H. You don't recall the name George Harrison?
- I. No, I don't think so.
- H. ...because he did have horses at one stage at Glacier. That's not during the time when you were there.
- I. No, I don't think so. The man was up there with his wife and they had the curio tent and they had the rental of the horses too.
- H. I'm trying to find out who had the concession there.
- I. I know it just as plain as can be but I can't recall ....
- H. Well, perhaps if you think of it sometime you can write us and let us know.

- I. Yes, I could do that.
- H. Well did you do quite a bit of hiking in the vicinity?
- I. Yes. Up at Glacier, yes.
- H. And what was one of your favorite hikes?
- I. Up to the Glacier, or the meeting of the waters. The meeting of the waters I think was just about a half a mile's hike from the hotel and we could do that, you know, during the afternoon when we weren't working. We used to go up to the glacier itself quite a bit because it was closer in. I haven't been there recently so I don't know how far back it is. And I was up Mt. Abbott and then there's...up the avalanche trail to Lookout point across from the hotel just right up there, there's lookout point there. And we'd often go up to Roger's Pass.
- H. Now, were there any buildings left of Roger's Pass area?
- I. When we were there there were buildings but there's nothing there now.There's pictures there I gave Mrs. Stewart the odd picture.
- H. There's one of the large avalanche that came down.
- I. Yes, I remember that. That was in 1910. That was before I was up there but that really was a bad one. So many men were killed and when they were clearing this particular slide another slide came down on top of them.
- H. Well tell me, while your husband was there during the one winter did he work in the chalet?
- I. Yes, he worked in the chalet.
- H. I see. And did he enjoy the winter.
- I. Yes. He didn't mind.

- H. I guess it would still be fairly busy with the trains coming through...
- I. Well the trains were...let me see, there was one in the morning and one in the afternoon. I think there were two. Or no...I guess in the winter time there would just be one in the morning and one in the afternoon, but I think in the summer time there were two in the morning and two in the afternoon, going both ways.
- H. Do you recall many people coming there to do climbs?
- I. For what? For working?
- H. No, they were climbing in the...
- I. Oh! Climbing there.
- H. I guess you saw a lot of the guides?
- I. Yes, well we didn't see too much of the guides. They had their own quarters. And so there's the men, you know the staff, were like what we call the "boy's quarters" - they had their huge bungalow over there, I think it's in that book there. We used to have dances in the boy's quarters - the girl's, maybe when it wasn't very busy we'd go over there and we'd have a dance. And my sister had a little dulcitone - it was something like a small piano, and they would play that for the dances. And then if one of the track men (I've forgotten what they called him now - there's a name for the work that he did) he would call the square dances for us. It was quite fun.
- H. It would have been marvelous. You definitely preferred Glacier to Lake Louise.
- I. Oh! Over and over again.
- H. Did you ever come up to Lake Louise or into Banff when you were at Glacier House?

- I. No.
- H. You never...you never left it?
- I. No.
- H. And how many summers were you there?
- I. I was up there '14, '15 and '16 I was up there 3 summers and my husband was up there 5 and my sister was up there 4.
- H. And when did you meet your husband?
- I. 1914 the first year I went there. He...we almost came over on the same boat, we just missed coming over...strange! When you look back at it!
- H. Oh yes. Where is your sister now?
- I. She's in California.
- H. Now, does she have photographs or records?
- I. I know she has. But she said that...she didn't have the camera, I was the one that had the camera. But I'm sure she must have had pictures. I've asked her to look them up to see if she has any but I haven't heard from her.
- H. You don't know of anyone else who might have photographs or ...?
- I. Now you see, I'm 78. The others must be just as old. You see, we were about the two youngest on the whole staff so that at the age I am, well the others must be older.
- H. Well, we're very fortunate to have these pictures because they're a marvelous historical record and, even geologists and people that are studying the recession of the glaciers find these pictures, especially of the Illecillewaet Glacier....
- Well, those particular pictures are really nice. They are really very good pictures I thought.

- H. Now I notice there are quite a few pictures in your album of people up on a glacier. Now would this be the Great Glacier, or the...?
- I. Yes, the Great Glacier. If it's on a glacier there...didn't it mention it there?
- H. In some places it did and I presumed it would be the same one...
- I. Yes, because most of those...there's a few odd ones taken at Field and there may be some of Victoria or Winnipeg but they're not very...most of the pictures there were on the glacier.
- H. I think you have a picture also of the mine entrance at Field.
- I. That was the entrance to the tunnel. Is that what you were thinking?
- H. Oh, perhaps. Were you ever...? 🗄
- I. They were building the Connaught Tunnel when we were there and it would be pictures of it. You know there's sort of an open space and then there would be like a track with the little carts on it where they were bringing the stuff out.
- H. But, I thought there was also a picture of the mine at Field. Now, I may be wrong. I just wondered if you recalled...
- I. I don't remember. There wasn't a mine up at Glacier.
- H. No, not at Glacier. This would be at Field. Did you ever go to Field?
- I. No, I didn't go to Field.
- H. Well, perhaps it was your husband in Field?
- I. No, I don't think he was working there not to my knowledge anyway.
- H. Yes well I must be...
- I. But it could be a picture taken by his brother because I think that he worked at Field during the winter months.

- H. Now this is interesting you've got 'Our Home'.
- I. That's the base quarter. That's what we called the base quarter.
- H. That's a beautiful location.
- I. Yes. And all the waitresses were there.
- H. Now these would be...
- I. No that's my brother-in-law. And these were housemates.
- H. Now this was your husband's brother that's connect?
- I. Yes.
- H. And what was his name?
- I. William.
- H. William.
- I. ....Bill Hardy. And this here is more of the staff.
- H. Now, who was this gentleman?
- I. That's the same fellow.
- H. Oh well see, these aren't labelled. It's nice to have these for identification.That's Bill then. And what did he do?
- I. He was a wine clerk a wine steward.
- H. Some of these are....
- I. That's number 14 coming down the track.
- H. Did you used to know the numbers of even the trains?!
- I. Oh yes. Number 1 and number 2, 11 and ....
- H. What about this road? Now this road..
- I. That was...I think that's what we used to call the government road. There was a road that led down right on towards the Nakimu caves.
- H. Oh, I see. Now, were you ever in the caves?
- I. Yes, I was in the caves.

- H. And they did have tours through the caves at that time?
- Yes. Mr. Deutschmann- he was the one that found them. He would take tours through there.
- H. Were they very popular?
- I. Well, I don't know whether they were popular I don't think very many people knew about it.
- H. They would have to walk up to the entrance of the caves.
- I. Yes but you would hire a horse, you know, a pony and ride up. But we would walk up, we wouldn't...
- H. I thought it was very interesting because they're doing studies on the caves now and from what I've gathered it's rather a dangerous...they're quite...
- I. You mean the caves are? Of course there was a huge chamber in one of them - huge chamber. Of course we had a...like a miner's lamp on our foreheads when we went through, when we were taking...
- H. And they charged you admission?
- I. They didn't charge us.
- H. Exactly. Well that's nice.
- I. I don't know what they would charge the tourists.
- H. Where was this Deutschmann from?
- I. I think he was an American.
- H. And did he just come up for the summers?
- I. No, I think he had been prospecting in that district all along, that territory and the story goes that he was chased by a bear and he went into the cave and that's how he discovered them. Of course I don't know whether that's true or not.

- H. Now you see, there's some pictures taken it looks like maybe in the early Spring. And I just wondered who had taken these.
- I. That would be our brother-in-law. He would have taken them.
- H. Your brother-in-law.
- I. My brother-in-law. He took them.
- H. The silver mine.
- I. That was when he was working at Field that particular winter. He would be probably he would have been up there.
- H. And did he work in the mine?
- I. No, no. He worked in a hotel at Field. A CPR hotel.
- H. Now what is this building here.
- I. I don't think it's a building. That could be some buildings, back of the hotel would be the girl's quarters. That could also be the laundry - it depends on how close it is.
- H. I'm just going to start here at the beginning again.
- I. That's Mrs. Young.
- H. This is Mrs. Young.
- I. That is Mrs. Young. And that's Miss McGibbon. That was her assistant. This was the gardener - he was a good gardener - and that was the chef.
- H. You don't recall their names?
- I. I can't recall it right now.
- H. She' a very distinguished...
- I. She was a very nice person and she was very considerate. You know, when we came from Montreal, my sister and I, they got us to sign a paper and when we asked about it he said it was oh it was just to say that we would promise to work up there until the end of the season. Now that paper came West and was sent to Mrs. Young. Mrs. Young called

us into her office and said "Did you know what you signed on these papers?" and we said "Yes" - that we were to stay until the end of the season. She says "No. You signed away your wages to pay for your trip from Montreal to Glacier". That trip - well, the cost of our journey from Montreal to Glacier was to come out of our wages. She said "If I did that you would have absolutely nothing at the end of the season".

- H. She stayed year round.
- She stayed the year round. She'd only come into Vancouver maybe for a little holiday but she stayed all the year round. She died in Vancouver.
- H. Was that her home?
- I. I don't...I think she just came to Vancouver when the hotel closed down.
- H. And who did she marry?
- I. I couldn't tell you. She had never had a husband as long as I knew her.
- H. Oh! I see it was Miss Young.
- I. No-she was Mrs. Young, but I expect her husband passed away I think perhaps he was an employee of the CPR and...
- H. Isn't that marvelous, and of course in the mountains...
- I. That was pretty the Asulkan Glacier. That was an awfully pretty trail leading on to there.
- H. And you took most of these pictures.
- I. My husband. They're not....
- H. There are quite a few. Now these...

- H. Icefields and glaciers...now would this be the Illecillewaet Glacier?
- I. Yah that was glacier.
- H. And Cougar Valley these are beautiful. Did you do quite a bit of riding?
- I. Not an awful lot. But we also went up through Balu Pass. We crossed over. We went up through the Nakimu Caves. We went into the Nakimu Caves and then came out of there. We went up over the Balu Pass and came around Roger's Pass and then along Mt. Avalanche trail and back home to Glacier.
- H. Now, in pictures such as this when you are on the glacier it appears here as though you are roped.
- I. Yah. I don't know who they are.
- H. Did you ever go up on...
- I. No, I didn't go up, just a little ways, not right up. But that's possible some of the staff - most likely. That looks like my brother-in-law there.
- H. Would they go with a Swiss guide?
- I. Yes they'd go up with a Swiss guide.
- H. There must have been quite a few people who went up on the glacier with the guides.
- I. That's pretty up there too Marian Lake. That's on the way up to Mt. Abbott.
- H. Now here this picture....
- I. That's the entrance to the Nakimu caves. That's Mr. Deutschman. Yah, that one there. That was the telegrapher at Glacier and those are two waiters.

- H. You don't recall their names.
- I. No. Now see, that's up at Nakimu Caves. That's my brother-in-law up there.
- H. That's the lookout point, isn't it.

I. Yah.

H. Now, who is this?

I. That's the telegrapher.

H. She must have been holding...

I. Yah, that's her there and he was an employee at the tunnel.

H. Now, the tunnel....?

I. Oh, the Connaught Tunnel that they were building.

H. The construction.

I. Yes, the construction of the tunnel. That's the same girl.

H. They must have used quite a bit of dynamite.

I. Yah I think so.

H. Did you ever go down and go into the tunnel when they were...

I. We didn't go into the tunnell..

H. You weren't allowed?

- I. No. I don't know whether we weren't allowed...we didn't go down.
- H. Yes. Well, now. Were there quite a few Chinese working on the tunnel.
- I. No I don't think so. They were mostly white men. I know one man who went in there, into the tunnel, he was working on the tunnel, but he had TB\* and he didn't know it and then he collapsed inside there and that's how they found he had TB.

H. Is that right?

\*TB - Tuberculosis

- H. Now this is the tongue of the Illecillewaet Glacier?
- I. Yah. That's the glacier. No. That's the ice caves. Some of the guides used to dig out caves so that you could go into it and see what it was like.

That's Walter Feuz, and that's my brother-in-law. He was just a bell boy when I went up there and he took up for...any time he got a chance to go up with one of the guides...

- H. Now was your brother-in-law quite active when it came to climbing?
- I. I don't think he was any more active then the rest of us.(garbled). This boy here was the plumber.
- H. Oh, isn't that interesting. If you think of any of their names...
- I. I know this fellow's name. His name was Carl Henkin.
- H. The one in the centre?
- I. Yes. He was German and of course in 1914 when the war broke out and of course he...I don't know what happened., he....
- H. And what was his position at Glacier House?
- I. He was a waiter at Glacier. And this was a waiter. All three of them are waiters. That's my brother-in-law and my husband. That's the plumber. That was one of the employees' little fella. He was up there with his wife and little boy. He was working up there too. That was Mrs. Young's niece. He was the head gardener and that is the telegrapher...the same girl. I don't know who she was but that's the same girl there. I don't know who he is.
- H. You had beautiful gardens there.
- I. Yes.
- H. Was it the same gardener?

- I. Yes the same gardener. That's the same girl.
- H. Mrs. Young must have been really disappointed when the tunnel went through.
- I. Yah- but...it's progress you know. So many snowslides there and it was dangerous.
- H. Do you recall when she died?
- I. No, I cannot give the date now.
- H. Now, your husband must have taken these pictures.
- I. That is the chalet itself. And that's another...you know where they had been shovelling away some of the snow. This is what they call the annex. And that's the wing - that's the newer building.
- H. These are lovely pictures that he took.
- I. Yah. They're very nice pictures. They're almost like photographer's pictures.
- H. What about this small little place?
- I. That looks like the Swiss guides' home where they lived.
- H. And this one it's almost buried.
- I. It's possible the Swiss guides' place because it's small. That's the chalet there...the other side. This down here, that's the government road that runs down there.
- H. Those were the main ones, I believe.
- I. You can see the tracks, the railway tracks they came in a huge horseshoe. See that's where the slides all used to come down.
- H. Was there a point of someone being out to greet the train?
- I. No well, when the train would come in it would be right on the platform there - there would be the baggage man and the porter to meet them. And of course the hotel - the entrance to the hotel was right on the platform

- H. Tell me, had Mrs. Young worked with other CPR hotels?
- I. No I don't know that.
- H. Now, who's this?
- I. That's that same girl in the other ...
- H. Telegrapher.
- I. Now this... (garbled).
- H. (Garbled).
- I. That was the....I think that's the Raj Petarnia an Indian Prince. And this is the - I think it's the Union Bank. I have tried to recollect what happened to it because there used to be one in Vancouver and I think it was absorbed by one of the bigger banks and I've been dying to know who absorbed it because there isn't a Union Bank in Vancouver now.(garbled).Yes, we did our banking there. Of course, you see they also helped with the construction crew. You see, they paid them there.
- H. And what about a Post Office?
- I. I think the Post Office would most likely be you could get stamps and things like that in the hotel.
- H. And what are these? They almost look like foundations.
- I. I don't exactly know what they are. Whether they intended to build there or not, but those stones were there when we were there and nothing was ever done while we were there.
- H. And now where was this in relation to....?
- I. I think they're just on this grass just further, over this way. There's the meeting of the waters. That was pretty. Now, that's my sister, and that's my brother-in-law. She's Mrs. Todd now.

- H. Mrs. Todd. And what's her first name?
- I. Pauline.
- H. Now who's this gentleman?
- I. He was one of the waiters. There's the entrance to the tunnel there now, I think.
- H. Now here's another picture here, of the entrance to the Nakimu caves.
- I. That looks like Charlie Parker. He was a track man cleaning up the track or something like that - I can't remember his exact position but, anything that he did on the tracks - section man - I couldn't think of the name.
- H. He was a section man.
- I. ... I don't know who he is.
- H. Now, the Glacier Station....
- I. That's the Glacier Station. That's right down...it's on...just before you go into the tunnel. That was the original - not up at the hotel. This is the one that leads into the tunnel.
- H. Tell me, when you were at Glacier during those summer months, did you ever leave the area did you ever go to Revelstoke?
- I. No I didn't.
- H. You just stayed right at...
- I. I just stayed right at Glacier.
- H. You never felt that you were a little confined or...
- I. No, no. I just loved it up there.
- H. It must have had a lot to do with the management then, of Mrs. Young?
- I. Well of course we had our work to do. But when our work was done well, that was that and we did have time, you know, to go around a little bit.

- H. And how did you do say on tips?
- I. Well, not too bad. I wouldn't say that we did very well.
- H. What about your husband, now. Did he..was he ever maitre d'?
- I. No, but he was maitre d' at the Georgia Hotel in Vancouver.
- H. Oh, I see. You don't recall the name of the maitre d' at Glacier House?
- I. ...I wish I could I know it well enough...I think it was Mr. Taylor...no, I don't know.
- H. These are fairly good I'll have to go over names. But you found there was quite enough entertainment for the staff?
- I. Well, I don't think we were bored or anything like that.
- H. I think that it's a marvelous experience that you had especially when you think that the place is no longer there and a chapter of the mountain history is closed.
- I. More it's a pity that CPR didn't do something about that. They could have, easily enough. But I suppose no one was sufficiently interested.
- H. What was the colour of the siding?
- I. It was in a brown shingle finish shingle stain.
- H. Now, these are fairly well covered. This is the huge avalanche I was referring to.
- I. Yes, that's the one. I should have been more careful and not folded it but you know when you're young...you don't...
- H. Now power house. There are two or three of these at Lake Lousie and, would this be you and your sister?

I. That was me - no she was the wife of the head waiter.

H. I see, I see.

I. That was the time that we went to Moraine Lake by horse back (because you couldn't go any other was). We also went up Mt. Saddleback. I remember we started an. avalanche. We thought that we would make a shortcut - instead of going down the way we went up we thought we could come straight down.

. -..

H. Well, apart from the food being rather unsavoury, did you enjoy your summer at Lake Louise?

I. Oh yes, I liked it.

- H. And who was the head housekeeper there then? ...you don't recall? I can't remember who it would be 2 or 3 years ago when I worked there but...
- I. No...I can't tell you. I know she had very blonde hair but I think it was peroxide blonde anyway. But she was quite nice - she was very, very nice - And the other- the assistant housekeeper, I remember her name - her name was Taylor - I think it was Miss Taylor. Yet I can't remember the other one.
- H. When you were at Glacier and Lake Louise in general these CPR hotels there was a very formal atmosphere from what I gather...
- I. Well the...
- H. I mean, your relationship to the guests was...

I. Oh yes, oh yes...

H. And very businesslike...

I. Sort of brisk, you know...

- I. We were a lot friendlier at Glacier than at Lake Louise. At Lake Lousie...H. Because it was a smaller place?
- I. It might be because it was smaller or because it would be more informal because of Mrs. Young. It think that was her attitude that made it more informal. She was informal herself - she didn't stand on ceremony for anything. I had her room to do quite often - you know, to take care of - she had two rooms, and she was always nice to me, very, very nice to me and very considerate.
- H. Well, she wouldn't have much of a staff problem people leaving and...
- I. No, oh no. You went up year after year. And if there was some way the waiters and the waitresses could get up there they would...they'd get up there.
- H. Now, your husband was he there in 1913?
- I. Yes, he was there in 1913. He was up there, I think, from 1912 (1911 or 1912) he was up there, for a number of years. And then of course in 1914 he'd just been back to England and came out with his brother.
- H. I see that was the first time his brother came out?
- I. Yes that was the first time his brother was out here. He also had a brother in Medecine Hat who was a minister there of the Church of England in Medicine Hat. It was because of him that my husband came out and then when my husband went back home he brought his brother out with him.
- H. Now, did he go back during the First World War?
- I. No. He didn't. He didn't go back home. That was the last time he went back to England until 1950. But I went back in between.

- H. Now tell me what did you do in the summers of the years following?
- I. I got married.
- H. Well you got married now but did you go to Vancouver.
- I. Most of us went back to Vancouver.
- H. His business was in the hotel business.
- I. Yep. When he came to Vancouver he worked at the Vancouver Club there during the Winter months and then he went back to Glacier. And latterly, he was at the Georgia from the time it opened until 1943 as superintendent (maitre d' or superintendent of services, whatever you like...in the catering end of it) and he would arrange for all the conventions and weddings, receptions and the dining room and the coffee shop - he had charge of all of that.
- H. And how long was he there?
- I. From 1927 to 1943.
- H. Well, that's quite the record isn't it?
- I. And then he was the...the Georgia Hotel opened up in 1927 and the Prince of Wales came out and stayed at the Georgia Hotel and then from then on...after he quit the Georgia Hotel he had 3 months off, resting, because it was really strenuous - he'd be working 'til 1 or 2 o'clock in the morning, starting at 9 in the mornings...an awfully long day.
- H. It seems to me it would be very hectic...
- I. It was very, very hectic and he'd had his fill, I guess you might say, so that ...
- H. So you live in Vancouver now?
- I. I'm in Vancouver now. I like it there.

- H. When did you..did you come back to see Glacier House before it was torn down?
- I. No.
- H. You didn't?
- I. No.
- H. It must be rather sad for you.
- I. Well, yes, I was very disappointed when we went through in about 1963 you know, on the highway, - it opened up and we went through - and I was very, very disappointed because Glacier'd been - there was no more...there wasn't even a sign up to say that Glacier House had ever been or that the Hotel had ever been there.
- H. No, it's unfortunate actually, and the Historic Sites branch ...should attempt to do something - should attempt to put a landmark there.
- I. Yah there should be a plaque or something you know to let people know that there was once a hotel there - that was one of the (almost) first hotels..I think that was the very first ...you know, Glacier might have been the first because that was right on the station and it was just the smaller one, you see.
- H. Now, I really don't know the dates.
- I. Banffwent up in about 1907 or something like that...so I think Glacier might have been...
- H. Oh, no, Banff Springs was up in the 1880's 1886 the Banff Springs Hotel. What was I going to ask you...oh yes - about your wages. You said you got \$16 a month...
- I. \$16 a month at Glacier.
- H. Now that included your room and board...

- I. Yes, board and your room everything. It included everything.
- H. Now would you get a raise at all in the three or four years.
- I. No that was \$16, but even that was considerabley more than \$11. \$12 and \$1 deducted for the doctor...oh!
- H. That was incredible. Did they have a doctor at Glacier House?
- Not actually at Glacier House, no. But there was a doctor down at the camp - the construction camp.
- H. Do you recall any accidents or casualties while you were there?
- I. No, well we wouldn't hear about them anyway because the..
- H. No, I was wondering about mountaineering casualties.
- I. Oh, I see...no I don't think so. Actually anyone that went mountaineering went with a guide. There was a Mr. Baxter used to go up there quite a lot. He belonged to the Alpine Club. And he used to be up there ever summer.
- H. Do you recall Mr. Wheeler?
- I. I don't recall him personally but he was up there. He wasn't on my floor so I don't remember him.
- H. And, ammm...
- I. There was another one that used to go up there regularly and I don't remember who he was. When you stay on another floor you wouldn't really know.
- H. Well perhaps we should have a cup of tea.

Appendix E. Stanton Hope recollections of Glacier House.

The following is an edited quote from <u>Rolling Around the</u> <u>World-for Fun</u>, by Stanton Hope, Chapters 7 and 8, pages 73 to 91. This interesting book was published in New York by George H.Doran Company in 1925. It includes seventeen illustrations.

The text of this quote begins on the following page.

## UP-COUNTRY TO THE GREAT GLACIER

Early in December I struck one of the most extraordinary jobs of my career - a job that landed me many a league from overcrowded Vancouver for the remainder of the winter.

One morning I picked up the 'Daily Province', and saw the following advertisement: "Wanted, four men to handle snow at Glacier. - Apply C. C. Croup, C.P.R. Depot." dashed to my room, made a lightning change into the picturesque garb I sported for pick-and-shovel enterprises, and proceeded to the railway depot. To my chagrin, C. C. Croup, the local manager, had left his office and was not expected back until nine o'clock on the following Monday morning. Borrowing a sheet of notepaper and an envelope, I penned a brief missive informing him that I was one of the four men he was seeking for the Glacier job. Then I went home and discovered from Mrs. Shrewsbury that Glacier was situated about four thousand feet up in the Rocky Mountains and was "just some fifty degrees colder than the North Pole." She also volunteered the information that if I went there I should die.

Notwithstanding the cheerful prediction of my landlady, I again put in an appearance at the Canadian Pacific depot in Vancouver early on Monday morning to discover to my consternation that fully a hundred men were thronging the stairway and corridors outside the manager's room. Just as I was reflecting sadly on my small chance among so many eager applicants, a door opened and a man who turned out to be C. C. Croup himself, poked his head out.

"Is Hope there?" he bawled.

Although startled at hearing my name called I was not slow in responding, and soon wormed my way through the struggling mass of humanity into the manager's office. Also three others nearest to the door were allowed inside the room.

At the manager's roll-top desk was sitting a broadlybuilt individual with a chin like a pugilist's, whom I rightly guessed from the deference shown him by Croup was none other than J. Pierce O'Halloran, the superintendent of the Western Section of the C.P.R. line. The three men - two hard-bitten Kanucks and a young Welshman - ranged themselves before this captain of industry and I took up my position with them, anxious to hear the details of the snow-handling job.

From O'Halloran's terse, business-like statement, we gathered he required us to proceed to Glacier that very afternoon, there to keep the roofs of the Canadian Pacific Hotel - famous as the Glacier House - free from snow and icicles. The roofs, he explained, were constructed of cedar shingles and if snow and ice were allowed to remain, these wooden tiles would crack and break beneath the weight.

Fixing the Kanuck on the right of the line with his steely-grey eyes he rasped in the voice of a Company Sergeant-Major: "Have you ever shovelled snow off roofs before?" "N-no, can't say I hev," stammered the applicant, "but\_\_\_\_\_" "Get out of it!" roared O'Halloran, and then he fired at us three who remained the same fatal question which had put the lid so effectually on the Kanuck's snow-shovelling aspirations. Very fortunately, as it turned out, we other three had done little else during our lives except shovel snow off roofs. And by a curious coincidence a Scotsman who was ushered into the room by Croup in place of the unlucky applicant, was also a youth of vast experience, he having practised the profession of shifting snow from roofs in Glasgow for years prior to his emigration west. "All right! I guess you four fellows will do,"

"All right! I guess you four fellows will do," said the superintendent. "You'll have to sign a contract to stay five months at Glacier at twenty-five dollars a month, plunk down twenty 'bucks' deposit, leave by the threethirty train to-day and take up this kit."

He held before our gaze a long list of articles such as items of warm clothing, moccasins, rubber knee-boots, coarse woolen "German" socks and other wear necessary to health and comfort at a place four thousand feet up in the mountains in the depth of winter.

"Now, do you all agree to the conditions?" demanded O'Halloran, glaring at each of us in turn.

Our faces lengthened considerably at the mention of the twenty dollars deposit, and I, for one, had good reason for looking glum considering that the sum total of wealth at my disposal in the whole city consisted of but one coin -a nickel- which jingled with prosperous sound among the keys in my pocket.
However, the thought of that surging mob of desperate applicants outside - many of whom would have deposited gladly a twenty-dollar bill for the privilege of getting clear of the pitiless coast city with an assured job to take up elsewhere - acted as a sharp spur to us in making up our minds. And, with the others, I agreed glibly to the conditions laid down by the great O'Halloran.

The contract was read through with bewildering speed, O'Halloran adding:

"Now, boys, put down your twenty 'bucks' and sign this little document."

Reluctantly, my three companions drew their slender wads of "green-backs" from their pockets and counted out the sum demanded as deposit. In answer to O'Halloran's inquiring glance I murmered that I "did not usually carry so much on me" - a perfectly true statement on which, however, the big boss of the Western line placed his own construction. To my astonishment, instead of consigning me to the outer darkness, he commended me for my "caution."

"If other folk would only follow your practice, sonny," he said, "and not carry more'n five bucks about with 'em, the hold-up men would soon be trading their guns for shovels. Bring the deposit before half after two this afternoon.:

We were about to file out of the office when the stockily-built Welshman, who had been standing to the right of me throughout the proceedings, drew his wad of notes out again.

"Look here, pard," he said to me, "to save you the trouble of coming back here again this afternoon, I'll set up your deposit for you and you can give me the money back later."

My first impulse was to refuse this generous offer, and reveal my financial status; but then the thought occurred that after a few weeks at Glacier I should be able to repay the loan with interest. So I stammered out my thanks to the Welshman and the superintendent scribbled out a fourth receipt and handed it to me.

Outside, the Welshman and I missed the two Canadians, and as we strolled up-town together I took the opportunity to explain the financial predicament I was in. But the Welshman, whose name I discovered was Tom Owen, merely laughed easily:

"That's all right, old man," he said; "don't worry!" I guessed as much when we were interviewing O'Halloran but I recognized you were from the Old Country like myself."

Shortly after three o'clock we humped our kit down to the C.P.R. depot where we met the other two who introduced themselves to us as Jock Miner and Buddy Quinn. Leaving Vancouver without regret at three-thirty, we arrived at Revelstoke at the foot of the mountains, at nine a.m. the next day. From there our train was hauled on the long upgrade by three powerful mountain-climbing locomotives to

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Glacier, the well-known resort in the heart of the Selkirks, where we alighted shortly after noon.

Glacier itself consists solely of the Canadian Pacific hotel, which, though popular with tourists during the summer season, serves merely as a dining-station for train passengers in the winter.

On arrival my eyes were not drawn so entirely to the distant bulwark of towering peaks as to the scenery in the immediate foreground - the hotel's imposing array of snow-covered roofs. The manager of Glacier House at once put us in the charge of a French-Canadian called Michel, who led us to our quarters in a small lodge on a rise behind the hotel.

After the comparatively mild climate of the coast, we felt severly the biting cold. By changing into some of the heavy winter garments we had brought from Vancouver we experienced a certain amount of relief, but strive as we might we could not make ourselves comfortable in the lodge, for the steam radiators obstinately refulsed to exude the slightest degree of warmth.

At seven o'clock on the following morning before breakfast, we turned out for a preliminary canter over the roofs under the direction of the French-Canadian. From the tool-shed Michel supplied us with long-handled shovels and four ropes, to each of which was attached a couple of large, steel grab-hooks. He informed us that there was now over two feet of snow on the roofs of the hotel, and pointed out the one over the dining-room as an easy proposition upon which to try our 'prentice hands.

Having been instructed in the method of using the ropes, we prepared to set about the task. My companions very politely allowed me to go first, and I mounted the high ladder, steadied by Tom Owen, with a far greater show of confidence than I actually felt. Reaching the edge of the snow-covered roof, I threw the rope across the gable and had the satisfaction of feeling the steel hooks grip the shingles at the first attempt. Then, having gradually tested my weight on it, I drew myself up.

But hardly had I raised myself clear of the ladder than there was a sudden splintering of wood and the hooks flew out from the broken shingles. In my downward descent I was successful in clearing the roof of at least two square yards of snow which fell with a resounding thud on the heads of my astonished comrades below. Fortunately for them and for me, I managed the grasp the ladder and there I hung, desperately trying to assume and upright position on the rungs, while Michel roared advice from the ground beneath.

However, my next attempt to fasten the rope was more successful, and soon all four of us were busily at work with our long-handled shovels. To such effect did we tackle the job that by breakfast-time we had not only cleared the roof of snow, but had also removed from the eaves the great icicles hanging from them, some of which were eight or ten feet long, and as thick as a man's body.

So pleased were we with our initial efforts that my comrades and I agreed that once we had cleared the entire expanse of roofs of the Glacier House, we should have a very cushy time keeping them free from the snow. But we were soon undeceived on this score. Often in a single night twenty-four inches of snow would fall, and the total snowfall at Glacier for that winter was no less than forty feet!

Soon we developed into snow-shifting experts, and so confident did we become that with the exception of the cautious Welshman, we discarded the ropes altogether once we had hauled ourselves on to a roof by their aid.

On one occasion, through this foolish temerity, I might have sustained a serious accident had it not been for the pluck and promptness of Tom Owen. A patch of snow on which I was standing parted company from the roof <u>en bloc</u>, but fortunately just as it appeared that I should be precipitated to the railings of a verandah forty feet below, Owen who was secured by his rope, grasped my coat and held me suspended over the edge of the roof. We both experienced some anxious moments wondering whether the shingles in which the hooks of the rope were fastened would stand the strain, until Michel came running to my rescue with a ladder.

When we had finished our work on the roofs, we would creak our way back to our quarters in the little lodge at the back of the hotel, and with icy fingers discard our garments - boots, socks, moccasins and underclothing - in one solid mass, for it was impossible to get them apart until they had thawed out on the steam radiators.

To those who have seen a gang at work upon the slush of an English town after a fall snow, snow-shovelling will appear a particularly chilly and uninteresting occupation. But prosaic is the last adjective that could be applied to the job upon which we were engaged at Glacier...

## ... AN ESSAY AT TRAIN JUMPING

When an extra heavy fall of snow had put dire strain upon the extensive roofs of the hotel and it was a matter of urgency to render the building less Christmassy in effect, we stalwarts of the Great Glacier Snow-shifting Brigade would divide ourselves into two opposing camps. The invariable arrangement was Tom Owen and I against Jock Miner and Buddy Quinn. We would take one slope of a roof and they the other, making small wagers in tobacco which accrued to the side clearing their slope of the roof first.

When work was slack we improvised other methods for keeping busy and happy in the keen mountain air. If the ground were well padded with snow-drifts below the building, we would toboggan down the roofs on our shovels, or take sides and hold a battle royal, flinging the snow over the ridge of the roof in shovelfuls at the opposing forces to the accompaniment of gales of laughter, which I have reason to believe, occasioned the dignified hotel manager deep pain at times. Only once was he moved to protest against the noise we made, for there were no guests at the time to consider.

On that occasion he emerged from his office and, standing spread-eagled in the snow below the roof, his hands grasping the lapels of his coat, he politely but firmly requested us to curb our exuberance. Tom Owen and I, peering over the ridge of the roof, kept mute, while Buddy Quinn, who with Jock Miner was standing on a ridge of snow bordering the overhanging edge of the roof, acknowledged the manager's protest. From our position of vantage the Welshman and I overheard the following conversation:

The Manager: "Hi, my men, kindly kick up less row!" Quinn (innocently): "Row?"

M.: "All that laughing and tomfoolery. Get on with your work!"

Q.(quietly but firmly pressing down the ledge of snow with his foot): "Guess it does sound kinder strange for a fellow to be happy at work."

M.: "Don't be impertinent, my man, and don't fool away any more of your time. When you've cleared that roof, I'll see you have something else to do. Now get on with it and-----"

Q.: "Look out below!"

Quinn bounded like a chamois on to a firmer portion of the snow ledge as the part beneath his feet went shooting overboard. The manager, up to his knees in snow, was handicapped in his movements, and before he could get clear a mass of snow descended on his head, bowling him full length on his back. After that little contretemps, he allowed the French-Canadian Michel to be his mouthpiece with regard to the delinquencies of the Glacier Snow-shifting Brigade...

...On many a radiant, crackling night when Nature was wearing her best evening-gown of violet and silver, my comrades and I would sally forth with other members of the hotel staff to pursue the exhilarating sport of bob-sleighing down a run which we had made in our spare time. The run descended abruptly for two or three hundred yards down a steep slope near the hotel, to the ice-covered station platform. A large sleigh packed with smooth hard snow was placed across the railway lines, and as trains were few and far between and their glaring headlights gave ample warning of their approach, we always had plenty of time to remove the sleigh if necessary. A cutting made in the great bank of snow thrown up on the far side of the line by the rotary snow-ploughs, gave access to the second portion of the run which dipped sharply into the Illecillewaet Valley.

The station-master, who was a sober man, put a stopwatch on some of our bob-sleigh runs and affirmed that our speed sometimes topped the mile a minute rate. Whether so or not, the sport was exhilarating as an iced lager to the thirsty Sahara traveller. That first swift descent on the whipping cane toboggan through the crisp night air, the flying dash across the station platform and the snow-covered sleigh, the hair-raising leap through the narrow aperture in the great snow bank and the final speedy glide down the valley, provided unadulterated thrills to which an aeroplane ride is mere The grand thrill of all, however, was only achieved boredom. if you missed the opening through the snow-wall. Then the bobsleigh would leap the wall like a Grand National veteran and the odds were ten to one you would describe a few graceful curves through the air to disappear completely from view in one of the snow-drifts bordering the course. Only after one of the waiters had smashed his shoulder was it considered advisable to make a few modifications in our Glacier bobsleigh run.

When Nature was in ill-humour the snow would descend for days on end, obliterating the entire landscape in a heavy white blanket, or an avalanche or blizzard would sweep the mountain fastnesses. One January afternoon while my comrades and I were shifting the snow and icicles from one of the highest of the hotel roofs, the sky assumed a tinge of that deep purple colour which so often precedes the island hurricane, the desert sandstorm and other rabid natural phenomena.

Working frantically, we fairly made the snow fly in an effort to clear the roof and be free to seek the shelter of our quarters in the lodge before the threatened storm burst. Unfortunately, in my haste I disloged one of the wires which acted as a stay to a high chimney, and thus, when the two Kanucks and Tom Owen had finished their share of the job, I was faced with the task of repairing the damage. The others hurried away to the lodge, admonishing me to make haste and follow them.

But attaching the wire to the staple in the eaves was no easy task and before my half-frozen fingers could complete the job, a swirl of icy wind and driving snow announced the burst of the blizzard. Before I could attempt to withstand the onslaught of the weather, I was swept from my balance. The wire tore from my grasp and I went hurtling from the roof to the ground, forty feet below.

For one fleeting second I had the impression that a sudden, bone-shattering jar was imminent, and then I shot many feet down into a deep snowdrift. The depth of snow proved my salvation, and I was duly grateful to it, as badly shaken and scared, I wormed my way out until my head and shoulders were above the surface and I could breathe freely again. Almost blinded by the swirling snow of the blizzard, I gradually forced my way through the drift, my one idea being to reach the wall of the building from which I had fallen, and guided by that, to seek shelter in the first door I came to.

But the hotel and all the outhouses were totally obliterated from view, and after staggering several yards, it became unpleasantly apparent that in my stuggles to escape from the drift I had lost all sense of direction. In addition, I was minus my fur-lined cap, and as my mitts which had been retained by the leather thong round my neck had become filled with snow, the chance of incurring frost-bite made the situation one of jeopardy.

Although the spot where I had fallen into the drift could not have been more than ten paces from the building, the hotel might have been miles away for the difficulty presented in locating it. How many circles I described and how far I wandered in the blizzard before falling across the Canadian Pacific Railway track - literally as well as figuratively speaking - I never knew. After wandering up and down the rails I eventually discovered the platform of the Glacier Station, and then it was a simple matter to reach the hotel, which bordered it.

I had heard of the danger incurred by persons suffering from frost-bite who enter a warm room, but not wishing to stay outside in the cold a moment longer than I could help, I grabbed a handful of snow as I went in, and put plenty of beef into the process of restoring the circulation to my nose and frost-bitten ears.

When I entered the hotel I was greeted with a loud guffaw from Michel.

"Mon Dieu!" cried the French-Canadian, throwing up his hands. "You have rubbed ze nose too strong - zere ees no skin left on heem!"

It was only too true. Not having any feeling in my frost-bitten proboscis, my exertions had been a trifle overvigorous and my facial beauty was spoiled for the rest of the winter.

At the end of my second month at Glacier I had completely squared off my debt to Tommy Owen and had put by a few dollars

for my own future use. By this time I was getting rather fed up with the frigid weather of the moutains, and began thinking lovingly of warmer climes. I had a strong desire to leave Canada for a visit to Japan and China, and only the knowledge that there was not the remotest chance of working a passage on one of the ships plying from the Western ports until the Spring, kept me from applying to the manager for my release from the snow gang...

... My idea was to return to Kamloops where I had friends, and as Oatze definitely refused to give me the railway pass due according to the terms of the agreement, I decided to "jump" a train and thus beat my way down-country. Before setting out, I aranged with Buddy Quinn to send along my kit-bag later, and thus I had no luggage to hamper my movements.

Dark clouds were racing across the silver face of a new moon and the temperature was in the neighborhood of zero when I "hit the ties" to where a portion of the tracks winds its way round a mountain side and makes a series of sharp twists and turns between Ross Peak and the Cougar Mount, famous under the name of The Loops. Knowing that all trains were bound to slacken speed while passing these hairpin bends, I stamped up and down waiting for a westbound freight to put in an appearance. By the time that most of my enthusiasm had ebbed out of my gumboots and I heartily wished myself back in the cosy warmth of the hotel, the headlight of a train moving like the white finger of Fate across the night appeared in the direction of Roger's Pass. The sensation I experienced as the freight wound its way through the snowsheds, was akin to that of a schoolboy expecting the appearance of the dentist's assistant at the waiting-room door with a compelling, "Next, please!" At intervals between the sheds it came roaring into the open, its dazzling headlight brilliantly illuminating portions of the mountains and forests, and I shivered and watched with the fascination of a rabbit viewing an approaching snake. It was my first essay at trainjumping and mentally I decided that it was a much overrated method of beating one's way.

After what seemed an eternity, the freight came lumbering round the Loops. I kept out of sight behind a miniature rock bluff until the two mighty engines had thundered past, and swung myself aboard a box-car half-way down the train. No trainman was visible and I was heartily thankful for the fact, for I was well aware that a bitter feud existed between the brakesmen employed on the trains in the West and the trainjumping fraternity which consists chiefly of hoboes and other desperate and penurious individuals, and that I might expect short shrift at the hands of any trainman who detected my presence.

## Appendix F. Glacier House Stationery Samples

## GLACIER HOUSE

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GLACIER HOUSE

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# S. H. BAKER

C.P.R. GUIDE AND OUTFITTER. DEALER IN FURS AND CURIOS.

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# GLACIER, B.C.

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# Table 1 List of Culverts, Trestles and Bridges in Glacier National Park, from Mountain Creek to Flat Creek

All struct	ures installed during 1885 unless	otherwise noted.
Mileage (I	Distance from beginning of subdivis	sion at Field)
71.3 Mou	untain Creek (See page 11 for deta	ils)
	Timber bridge later replaced by st	teel structures
72.2	Cedar box culvert, 26' x 2' x 1'	
72.3	Cedar box culvert, 31' x 2' x 1'	
72.41	Cedar box culvert, 32' x 1'9" x 1	T
72.5	Trestle bridge 112 feet long repla	aced in 1906
72.54	Cedar box culvert, 31'6" x 2'4" x	1'9"
	Replaced in 1906 by concrete pipe	21' x 24"
	Materials cost \$48.65, labor \$42.5	50 for total of
	\$91.15	
72.58	Cedar box culvert, 31' x l' x 2'	
72.7	Cedar box culvert, 23'6" x 2'4" x	1'9'
	Later replaced by tile culvert, no	o details
72.82	Tile culvert pipe, 1900, 250' x 24	4" and masonry
	catch pit	
	Costs exclusive of fill	
	Installation	\$125.90
	Freight and handling	119.46
	Quarry	110.00
	Cement	135.00
	Excavation	279.40
	Building ends	464.90
	Maintenance of traffic	11.55
	Cost of pipe	981.00
	Superintendence and plant	126.06

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	Sub-totals	
	Material	1200.00
	Labour	1153.27
	Total	\$2353.27
	Above pipe extended in 1906 with	34' x 24"
	concrete pipe	
	Costs	
	Material	77.85
	Labor	104.30
	Total	\$182.15
72.83	Concrete pipe, 1906, 72' x 24"	
	Costs	
	Material	176.90
	Labor	142.30
	Total	\$319.20
72.85	Cedar box culvert, 24' x l' x 2'	
72.9	Cedar box culvert, 24' x l' x 2'	
73.3	Cedar box culvert, 39' x 3' x 1'6	5 "
73.4	Bryants Creek, stone arch bridge	
	Started June 2, 1900, finished	l September
	21, 1900.	
	Length of bridge overall 83',	span 50'
	Grade 2.39%	
	Quantities of masonry:	
	lst class 33 cubic	: yards
	Rubble 334 cubic	: yards
	Total 367 cubic	: yards
	Statement of costs	
	Installation	\$191.00
	Freight and handling	368.25
	Quarry	990.00
	Stone cutting	793.95

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Cement 561.00 Excavation 358.00 Building 1485.35 678.12 Falsework Maintenance of traffic 404.21 603.40 Superintendence and plant Sub-totals Material 700.00 Labour 5733.28 Total \$6433.28 Cedar box culvert, 31' x 3' x 2'6" 73.43 73.5 Cedar box culvert, 19' x 2' x 2' 73.7 Cedar Creek, Deck Plate and Through Deck Lattice Girders erected in 1897 2 24' Deck Plate Girders on masonry abutments 1 171'8" Through Deck Lattice girder on masonry abutments Grade rising 2.2% westward 106' from creek to trackbed 73.9 Cedar box culvert, 33' x 2'6" x 2' 74 Cedar box culvert, 30' x 2' x 1'6" 74.2 Raspberry Creek or Sturdee Creek 102' Through Lattice Girder placed on masonry abutments after original construction 74.5 Mud Chute stone arch installed in 1900 Started September 19, 1900, finished November 5, 1900 Note: Numerous weep holes Arch crossed slide path for snow and mud Grade 2.14% Quantities of masonry lst class 51 cubic yards

	Rubble	267	cubic	yards	
	Total	318	cubic	yards	
	Statement of costs				
	Installation			\$152.60	
	Freight and handl:	ing		370.62	
	Quarry			863.16	
	Stone cutting			581.10	
	Sand			9.75	
	Cement			391.50	
	Excavation			200.35	
	Building			1175.15	
	Falsework			400.36	
	Maintenance of tra	affic		272.85	
	Diversion of strea	am		75.30	
	Superintendence an	nd pla	int	297.91	
	Sub-totals				
	Material			500.00	
	Labour			4290.65	
	Total		Ş	\$4790.65	
74.9	Surprise Creek, replaced	1897 w	ith fo	ollowing	:
	Grade 2.2%				
	50' Deck Plate Girder d	on mas	onry a	abutment	5
	289'8" Steel arch on ma	asonry	abutn	nents	
	102'6" Deck Lattice Gir	der d	on masc	onry abu	tments
	(See page 21 for detail	ls)	/		
75.3	Williamsons Creek, origina	ally E	lowe tr	uss 80'	span
	in 1900 on changed alic	gnment			
	Tile pipe culvert, 400	x 24	", ins	stalled	1900
	Statement of costs				
	Installation			\$22.50	
	Freight and handl	ing		80.65	
	Quarry			45.00	

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Cement 64.50 293.75 Excavation Building ends and laying pipe 274.90 Cost of pipe 338.40 Superintendence and plant 122.87 Sub-totals Materials, exclusive of fill 500.00 742.57 Labour Total \$1242.57 Cut Bank Creek, originally a Howe truss 80' span, 75.32 carried out by snowslide, January, 1900, filled in same year in changed alignment Cedar box culvert, 31' x 2' x 2' Cedar box culvert, 80' x 2' x 2' 75.4 75.5 Snow Bank Creek, filled in 1904 on changed alignment Truss was struck by snowslide January, 1902 and January, 1903 and carried out January, 1904. Ravine filled up solid 1904, and water diverted along side of gully in a cedar box, crossing under track near Cut Bank at mile 75.32. 75.8 Old Tank Creek, original Howe truss 150' span filled in during 1902 on changed alignment. Heavy slides here. Tile culvert pipe, 200' x 24" 76.7 Stoney Creek, see text for additional details Original trestle replaced 1893 with: Two 60' deck lattice girders on masonry abutments Four 60' deck lattice girders on steel pedestals One 90' deck lattice girder on steel pedestals Steel arch, 336' long on masonry retaining walls and steel pedestals 76.9 Cedar box culvert, 27' x 3' x 1'6" Cedar box culvert, 38' x 2'6" x 1'6" 77.1

77.3	Cache Creek, replaced in 1909 with 8 track stairs,				
	15' x 9" x 15"				
77.4	Cedar box culvert, 63' x 3' x 1'6"				
77.7	Cedar box culvert, 24' x 2'6" x 1'6"				
78.0	Bear Creek tank				
	Cedar box culvert, 37' x 4'6" x 4'				
78.5	Cedar box culvert, 19' x 3' x 1'				
79.4	Cedar box culvert, 21'6" x 2' x 1'				
79.6	Cedar box culvert, 27' 2'5" x 2'9"				
79.73	Cedar box culvert, 13' x 2' x 1'10"				
79.9	Cedar box culvert, 38 x 2' x l'9"				
80.0	Cedar box culvert, 32' x 2' x 1'10"				
80.1	Cedar box culvert, 26' x 2' x 3'				
80.25	Cedar box culvert, 20' x l' x 2'				
80.29	Cedar box culvert, 50' x 2'9" x 2'				
80.3	Cascade Creek, original trestle replaced in 1898 wit	h			
	a 60' stone arch span on solid rock foundations				
	Grade 2.10% (See page 24 for details)				
	Snowslides pass under this structure				
	Statement of costs				
	Installation \$400.00				
	Masonry 4939.46	4939.46			
	Plant and supplies 60.01	60.01			
	Subtotal 5399.47				
	Labour 10197.85				
	Total \$15597.32				
80.5	Cedar box culvert, 22'6" x 2'6" x 1'				
80.9	Cedar box culvert, 35' x 3' x 2'				
81.3	Cedar box culvert, 19' x 3' x 2'				
81.4	Cedar box culvert, 20'x 2' x 3'				
81.5	Cedar box culvert, 20' x 2' x 2'				
82.5	Cedar box culvert, 34' x l'9" x 4'				

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- 83.1 Cedar box culvert, 86' x 4' x 5'
- Bear Creek at old Rogers Pass, retired by 1916 revision 83.3 also known as Connaught Tunnel Cedar box culvert, 45' long trestle, double bents, gravel and boulder base Replaced in 1908 with 44' concrete rail culvert in which old rails were used as supports, cast in concrete to make a culvert Replaced in 1908 with 14' concrete arch span for an 83.6 overall length of 59' 84.5 Cedar box culvert, 34' x 3' x 3', 1908 Cedar box culvert, 21' x 3' x 2', 1909 84.7 84.9 Cedar box culvert, 50' x 3' x 3', 1909 Cedar box culvert, 18' x 3' x 3', 1909 85.0 85.81 Cedar box culvert, 25' x 1'9" x 1' 85.95 Cedar box culvert, 17'6" x 1' x 1'6" 86 Cedar box culvert, 16' x 1'9" x 1'6" Cedar box culvert, 25' x 4' x 3' 86.1 Cedar box culvert, 11' x 2' x 1'6" 86.15 Cedar box culvert, 11' x 2' x 1'6" 86.2 Cedar box culvert, 15'6" x 1'6" x 3' 86.24 Cedar box culvert, 15' x 2' x 1'4" 86.28 86.58 Cedar box culvert, 11'6", x 2' x 2'6" Concrete pipe culvert, 46' x 24", 1906 87 Cost: material 106.96, labor 82.60, total 189.55 Concrete rail culvert, 23' x 6', 1907 87.3 Cost: material 142.80, labor 364.60, total 507.40 87.4 Glacier (Illecillewaet) Creek, replaced 1900 with a stone culvert, 25' span, 51' long overall Gravel and boulder base Ist class masonry 53 cubic yards Rubble 1096 cubic yards

Construction costs Installation \$477.89 1059.29 Freight and handling 1975.00 Quarry 418.20 Stone cutting 1813.50 Cement Excavation 1517.05 Building 3124.98 665.07 Falsework Diversion of stream 370.40 1079.75 Superintendence and plant Sub-totals Material 2000.00 10501.13 Labor Total \$12501.13 88.1 Cedar box culvert, 35' x 3' x 2' Cedar box culvert, 35'6" x 3' x 3' 88.2 Cedar box culvert, 27' x 3' x 2' 88.3 Cedar box culvert, 28' x 2' x 1'6" 88.36 Cedar box culvert, 25' x 2' x 1'9" 88.40 Cedar box culvert, 30' x 2' x 2' 88.45 Cedar box culvert, 30' x 3' x 1'6" 88.5 88.7 Cedar box culvert, 13' x 2' x 1'6" Cedar box culvert, 17' x 1'9" x 3' 88.88 90 1st Crossing Five Mile (Loop) Creek (Part of Loops) Obsolete after 1916 diversion, Connaught Tunnel put all loop trestles and piers out of commission. Replaced in 1906 by 3 80' deck plate girders and a 30' deck deck plate girder, all on masonry piers Three piers, masonry abutments, gravel and boulder base, bridge on 10% curve Piers, east to west, #1 54' high

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223 #2 54' high #3 47' high Cost of permanent structures Steel spans \$8822.90 freight on 2113.85 erection of 3685.22 Excavation for foundations 2694.80 Masonry, 1080 cubic yards at 12.25 3510.00 labor for installation 9720.00 Timber in deck 532 Maintenance of traffic (B&B) 1129.50 Engineering and superintendence 634.97 Sub-totals Materials 14978.75 Labor 17864.49 Total \$32843.24 2nd Crossing Five Mile (Loop) Creek (Part of Loops) Retired in 1916, Connaught Tunnel diversion Grade 2.2%, five masonry piers built between 1901-5 Piers, east to west, #1 63' tall, 13'6" base, 7' top #2 75' tall, 15' base, 7' top #3 81' tall, 15' base, 7' top #4 82' tall, 15' base, 7' top #5 80' tall, 14' base, 7' top Deck plate girders installed 1904, 2 x 97' x 11'6" 1906, 4 x 97' x 11'6" 1 x 65' 11'6" Cost of permanent structures

90.4

224 Steel spans, cost of \$25128.95 freight 4395.78 erection 7791.70 Excavation for foundations 3353.73 Masonry 3333 cu.yrds @ 9.50 368.96 31394.54 labor for 1092.00 Deck Maintenance of traffic 895.42 Sub-totals Material 30985.69 Labor 45776.99 \$76762.68 Total 1st Crossing Illecillewaet River, also retired in 1916 90.8 Part of system known as the Loops 1906, deck plate girders installed 2 x 65' 1 x 106' Note: these girders installed on concrete, not masonry pillars as compared to the above Details of costs Steel spans, cost of \$7318.95 1792.04 freight erection 3120.48 Excavation for foundations 1331.67 Concrete 734 cu.yrds. @ 9.25 2202.00 4587.50 labor 44.00 Pile abutment 110.00 labor Deck 399.00 Fill 54400 cu.yrds. @ .42 22848.00 Maintenance of traffic 747.00 Engineering and

	superintendence	592.80	225
	Sub-totals		
	Material	11755.99	
	Labor	33337.45	
	Total	\$45093.44	
91.2	2nd Crossing Illecillewaet Rive	r (Part of Loops)	
	Also retired by Connaught Tu	nnel revision in 19	16
	Deck plate girders instal	led	
	1898 one 80'		
	1906 2 x 55'		
	Details of cost, exclusiv	e of main span	
	Spans, cost of 2 50' D.	P.G. \$2197.73	
	freight	492.18	
	erection	828.44	
	Moving span to piers, l	abor 110.14	
	Excavation for foundati	ons 544.20	
	Masonry 439 cu.yrds @ 1	1.25 364.25	
	labor	4574.50	
	Pile abutments	68.00	
	labor	94.00	
	Deck	182.00	
	Fill 17400 cu.yrds @ .4	1	
	labor	7034.00	
	Maintenance of traffic	496.60	
	Taking out old deck	634.15	
	Engineering and		
	superintendence	148.84	
	Sub-totals		
	Material	3304.16	
	Labor	14464.87	
	Total	\$17769.03	
91.3	3rd Crossing Five Mile (Loop) C	reek (Part of Loops	, )

	Also retired by Connaught Tun	nel 1916 diversion
	Deck plate girder installe	d, 1906
	80' span on concrete abu	tments similar to
	those described at Mile	91.2
	Details of cost	
	Span, cost of	\$2267.37
	freight	631.06
	erection	1104.12
	Excavation for foundatio	ns 446.90
	Concrete 369 cu.yrds.@ 1	0.00 1070.10
	labor	2619.90
	Filling	1229.60
	Maintenance of traffic	246.85
	Engineering and	
	superintendence	122.00
	Sub-totals	
	Material	4111.53
	Labor	5769.37
	Total	\$9880.90
91.7	Cedar box culvert, 25'6" x 3'	x 1'6"
92.2	3rd Crossing Illecillewaet River	
	Through lattice girder instal	led in 1896
	100' long on crib abutment	s, later filled
	No costs for this operation l	isted
92.3	Cedar box culverts, 36'6" x t	wo 4' x 3'6"
92.4	Cougar Creek	
	Rebuilt in 1902, 45' span, no	details
92.7	Cedar box culvert, 36' x 3'10	" x 4'
93.7	Cedar box culverts, 37' x two	4'8" x 4'
94.4	Cedar box culvert, 55' x 4' x	2'6"
94.7	Cedar box culvert, 42'6" x 4'	x 2'6"
95.1	4th Crossing Illecillewaet River	

Rebuilt in 1900, 100' through	1 lattice girder on
masonry abutments, no addi	itional details
95.2 Replaced by deck, no date, 42	2'5" H.D.G.(?)
95.4 5th Crossing Illecillewaet River	2
Main span, 100' deck lattice	girder installed 1898
Note: stone bridge seats on c	concrete abutments
Cost of Permanent work	
Cost of span	\$1050 <b>.</b> 59
erection	328.70
Excavation for foundation	ons 395.60
Concrete in abutments	
188 cu.yrds. @ 12.00	592.00
Labor	1664.00
Deck	60.00
Labor	43.60
Filling and cleaning up	192.00
Bridge seat stones	162.00
Superintendence	15.08
Sub-totals	
Material	1702.59
Labor	2800.98
Total	\$4503.57
Deck plate girders, 2 x 30',	were installed 1906
on masonry piers built sam	ne year
Cost of permanent work (ex	clusive of main span)
Deck plate girders, 2 x	30' \$1230.02
freight	298.80
erection	546.60
Masonry 693 cu. yrds @ 1	11.50 2656.50
labor	5313.00
Excavation	588.78
Moving main span	86.96

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	Floors of 30' spans	122.00	228
	Labor	133.48	
	Superintendence	87.20	
	Sub-totals		
	Material	4307.32	
	Labor	6756.02	
	Total	\$11063.34	
95.9	Cedar box culvert, 49' x 5'	' x 4'10"	
96.6	Cedar box culvert, 36' x 2'	x 2'	
96.9	Cedar box culvert, 20'6" x	3' x 1'	
97	Cedar box culvert, 50' x l'	x 3'	
97.3	Cedar box culvert, 34' x 2'	x 2'	
97.8	Cariboo[sic] Creek, replaced w	vith 33' deck plate	
	girder 1907		
	Note: stone bridge seats or	n concrete abutments	
	Cost of permanent work		
	Cost of span	\$698.20	
	Erection of span	364.90	
	Excavation for foundat	ions 312.00	
	Abutments, concrete		
	<b>166</b> cu.yrds @21.00	498.00	
	labor	1494.00	
	Deck	42.00	
	labor	32.00	
	Filling ends & cleanir	ng up 208.16	
	Bridge seat stones	155.00	
	Superintendence, etc.	46.50	
	Sub-totals		
	Material	2612.76	
	Labor	1239.00	
	Total	\$3851.76	
97.9	6th Crossing Illecillewaet Riv	ver	

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	Renewed in 1896 with 100' throu	gh lattice girder on
	crib abutments	
98.1	Cedar box culvert, 31'6" x 5' x	3'6"
98.3	Old Flat Creek replaced by deck pl	ate girder, no date
	Note: stone bridge seats on con-	crete abutments
	Cost of permanent work	
	Cost of span	\$1062.80
	Erection of span	346.90
	Excavation for foundations	284.40
	Pile foundations	80.00
	labor	141.00
	Concrete abutments	
	172 cu.yrds. @ 11.50	688.00
	labor	1290.00
	Deck	58.40
	labor	44.00
	Filling, raising grade and	
	cleaning up	312.23
	Bridge seat stones	146.60
	Superintendence	26.00
	Sub-totals	
	Material	1889.20
	Labor	2591.13
	Total	\$4480.33
Additi	anal andar hav gulvarts supported th	ne line from Flat

Additional cedar box culverts supported the line from Flat Creek to the western endge of the park.

Note: The above information was extracted from CPR Bridge Repair Information, circa 1910, Rogers Pass Interpretive Centre, file 1758.

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Table 2. Snowshed lengths, December, 1888.

Total of 53 snowsheds from mile 296.30 to 725.80 Covered portion 33,155 feet or 6.279 miles.

Number	Cove	red	Length	With	Wings	Length	Remarks
of shed	From	То	feet	From	То	feet	
1	296.30	310.80	1550	295.30	311.60,	1610	
2	276.50	285.50	900	276.50	285.75	925	
3	264.75	273.32	857	264.75	273.32	857	
4	251	257.50	650	251	257.50	650	
5	244.85	247.05	220	244.85	247.05	220	
б	239.12	243.44	432	239.12	243.44	432	
7	209.12	237.62	2850	209.12	237.62	2850	
8	196.23	208.08	1185	196.23	208.08	1185	
9 & 10	175.00	194.88	1988	175.00	194.88	1988	
11	170.40	173.36	296	170.40	173.36	296	
12	156.60	164.34	774	156.60	164.34	774	
13	142	154.37	1237	142	154.37	1237	
14	120.24	130.40	1016	120.24	130.40	1016	
			Bear Cr	eek to	Rogers	Pass	
			13955			14040	
F-4- 3.1.L	,				•		

[\* Although incorrect, this figure is on original document.]

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Numb∈	r Covei	red	Length	With W	lings	Length	Remarks
of sh	ed From	То	feet	From	To	feet	
15	10.41	14.65	424	10.40*	14.65	424	Level fall
15A			88			88	
16	22.08	25.60	352	22.08	25.60	352	
17	Break in	n chain	3098	18.50*	12.48*	3098	
18	37.30	39.95	265	37.30	40.70	340	
19	44.33	64.50	2017	44.33	64.50	2017	
20	69.44	90.32	2688	69.44	90.32	2688	
			Rogers	Pass to	Glacie	r	
			8932			9007	
21	174.70	176.15	145	174.70	176.15	145	
22	182.85	188.95	610	182.85	189.65	680	
23	191.10	193.10	200	191.10	193.10	200	
24	199.90	210.20	1030	199.90	210.20	1030	
25	212.50	213.60	110	212.50	213.60	110	
26	217.05	217.85	80	217.05	217.85	80	
27	218.66	219.46	80	218.66	219.46	80	
28	242	247	500	242	247	500	Level fall
• 29	296.60	300.20	360	296.60	300.20	360	
30 &	31 300.87	304.13	326	i11	egible	?	
32	416	421.00	500	i11	eg <b>i</b> ble	?	
33	460	466.50	650	ill:	egible	710	
			Glacier	to Ros	s Peak		
			4591			4781	

[\* Although incorrect, this figure is on original document.]

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Nu	mbe	∋r	Cove	red	Length	With	Wings	Length	Remarks
of	sł	ned	From	То	feet	From	То	feet	
34			573	577.02	402	572.70	577.02	432	
35			728.04	729.24	120	728.04	729.24	120	
36			731.10	734.65	355	731.10	734.65	355	
37			737	740	300	737	740	300	
[T]	he	abo	ove snow	vsheds w	vere al	l in Gl	acier Na	ational	Park]
38			773.56	781.71	815	773.30	782.05	875	
39			807.45	808.86	141	807.45	808.86	141	
40			815.73	821.14	541	815.73	821.14	541	
41	&	42	826.74	838.42	1168	826.74	838.42	1168	
43			894.07	895.59	152	894.07	895.59	152	
					Ross P	eak to	Illecill	lewaet	
					3994			4084	
43	A		2024 2	2024.90	90	2024	2024.90	90	
					Twin B	utte to	Revelst	oke:	
					90			90	
44			477.06	478.83	177	477.06	478.83	177	
45		4	81.265	482.285	102	481.265	482.265	5 102	
46			493.75	494.89	114	493.75	494.89	114	
46			497.00	497.97	97	497.00	497.97	97	
47	&	48	498.77	502.37	360	498.77	502.37	360	
49			505.40	505.89	49	505.40	505.89	49	
					Clanwi	lliam			
					899			899	

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Number Covered		Length	With	Wings	Length	Remarks	
of shed	From	То	feet	From	То	feet	
50	713.81	717.11	330	713.81	717.11	330	
50A			48			48	
51	719.13	720.51	138	719.13	720.51	138	
52	722.10	723.87	177	722.10	723.87	177	
53	725.80	727.81	201	725.80	727.81	201	
			Three	Valley			
			894			894	

Covered portion 33155 feet = 6.279 miles Gross length 33795 feet = 6.400 miles

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NOTE: The shed measurements are in feet and the distances are in hundreds of feet from the first station mentioned at the bottom of each section.

[The above information was extracted from R. Marpole, CPR Pacific Division Statement of snowsheds, Pacific Division, December, 1888 Vancouver City Archives/MS 358/H.A. Price Papers, p. 87.]

Table 3. Incomplete review of snowshed expenses 1889 to 1914.

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Only snowsheds 1 to 37 are included in this Table as they were
the ones within the boundaries of the Glacier National Park.
All other snowsheds listed in Table 2 were west of the Park.
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Snowshed No. 1
1888 length - 1550 (all figures in feet)
1899 rebuilt - 1429
1901 renewal
cost per ft - 19.34
1904 length - 1551
1914 See notes at end of this table for this year.
Snowshed No. 2
1888 length - 900
1900 rebuilt - 777
1900 length - 905
1901 renewal
cost per ft - 20.00
1904 length - 905

1914 See notes at end of this table for this year.

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Snowshed No. 3
1888 length - 857
1900 rebuilt - 782
1900 length - 894
1901 renewal
cost per ft - 19.34
1901 rebuilt - 112
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1904 length - 894 1914 See notes at end of this table for this year. Snowshed No. 4 1888 length - 650 1900 rebuilt - 534 1900 length - 654 1902 rebuilt - 120 1904 length - 654 Snowshed No. 5 1888 length - 220 1902 rebuilt - two sections, 161 and 61 1903 rebuilt - carbolineum applied\* 1904 length - 222 Snowshed No. 6 1888 length - 432 1900 rebuilt - 127, carried away by slide March 1900 1900 length - 434 1903 rebuilt - 178, 127, 129, carbolineum applied 1904 length - 434 1914 See notes at end of this table for this year. Snowshed No. 7 1888 length - 2850 1900 rebuilt - 1318 1900 length - 2816 1901 renewal cost per ft - 15.00 1901 rebuilt - 697 1902 rebuilt - 318, 251, 105, 127

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1904 length - 2816 1914 See notes at end of this table for this year. Snowshed No. 8 1888 length - 1185 1902 rebuilt - 48, 63, 1050, 72 1904 length - 1233 Snowshed No. 9 & 10 1888 length - 1988 1900 length - 1991 1901 renewal cost per ft - 15.00 & 20.00 respectively for below sections 1901 rebuilt - 1643, 61 1903 rebuilt - 137, 61, 89 1904 length - 1991 Snowshed No. 11 1888 length - 296 1903 rebuilt - 297 1904 length - 297 Snowshed No. 12 1888 length - 774 1902 rebuilt - 485, 271 1903 rebuilt - carbolineum applied\* 1904 length - 756 Snowshed No. 13 1888 length - 1237 1903 rebuilt - 350, 672, 30 1904 rebuilt - 183

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1904 length - 1235 1911-12 See notes at end of this table for these years. Snowshed No. 14 1888 length - 1016 1903 rebuilt - 321, 150, 545 1904 length - 1016 Snowshed No. 15 1888 length - 424 1903 rebuilt - 425 1904 length - 425 Snowshed No. 15A 1888 length - 88 1903 rebuilt - 89 1904 length - 89 Snowshed No. 16 1888 length - 352 1904 rebuilt - 154, 200 1904 length - 354 Snowshed No. 17 1888 length - 3098 1900 rebuilt - 781, 127, 190, 840, 477, 236, 545 1900 length - 3099 1901 renewal cost per ft - 6.88 1901 rebuilt - 396, 40, 120, 128 1903 rebuilt - carbolineum applied\* 1904 length - 3099

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1910-1911, 1914 See notes at end of table for these years.

Snowshed No. 18 1888 length - 265 1903 rebuilt - decision made not to renew the shed 1904 length - 265

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Snowshed No. 19

1888 length - 2017

1899 rebuilt - 1204

1900 rebuilt - 713

1900 length - 2017

1902 rebuilt - 100

1904 length - 2017

1911 See notes at end of this table for this year.
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Snowshed No. 19A 1899 rebuilt - 50 feet added 1903 rebuilt - 153 1904 length - 203

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Snowshed No. 20

1888 length - 2688

1898 rebuilt - 452

1900 rebuilt - 460, 986, 999, 233

1900 length - 2670

1901 renewal

cost per ft - 19.34

1904 length - 2670

1911 See notes at end of this table for this year.
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Snowshed No. 21 1888 length - 145 1903 - decision made not to rebuild 1904 length - 142 Snowshed No. 22 1888 length - 610 1903 rebuilt - 608 1904 length - 608 Snowshed No. 23 1888 length - 200 1903 - decision made not to rebuild Snowshed No. 24 1888 length - 1030 1903 rebuilt - 1029 1904 length - 1029 Snowshed No. 25 1888 length - 110 1903 rebuilt - 109, carbolineum applied 1904 length - 109 Snowshed No. 26 1888 length - 80 1903 rebuilt - 81 1904 length - 81 Snowshed No. 27 1888 length - 80 1904 rebuilt - 40, 81

1904 length - 121 Snowshed No. 28 1888 length - 500 1902 rebuilt - 363 1904 rebuilt - 119 1904 length - 482 Snowshed No. 29 1888 length - 360 1902 rebuilt - 175, 152, 32 1904 length - 359 Snowshed No. 30 & 31 1888 length - 326 1903 rebuilt - 48, 81, 77, 121 1904 length - 327 Snowshed No. 32 1888 length - 500 1899 or 1900 rebuilt - 502 1900 rebuilt - 502 1904 length - 502 Snowshed No. 33 1888 length - 650 1899 rebuilt - 650 1900 length - 650 Snowshed No. 34 1888 length - 402 1900 rebuilt - 328, 74

1900 length - 402

Snowshed No. 35 1888 length - 120 1901 rebuilt - 121

Snowshed No. 36 1888 length - 355 1900 rebuilt - 354 1900 length - 353 1901 renewal cost per ft - 15.00 and 19.34 1901 rebuilt - 158, 80, 115

Snowshed No. 37 1888 length - 300 1900 length - 301 1901 renewal cost per ft - 15.00 1901 rebuilt - 301

#### NOTES

\*Carbolineum, a wood preservative was applied in 1903 to various sheds at a cost of \$3.00 per linear foot.

Undated information in the file cited below indicates that cedar, spruce, hemlock and fir were all used in various snowshed structures.

[Unless otherwise indicated, all above information taken from T. Kilpatrick snowshed file at British Columbia Provincial

#### Archives, Add. Mss/323.]

Some additional snowshed information can be gleaned from the CPR files currently in the collection of the Revelstoke Museum. All citations which follow are preceeded with the call number: Museum 76.15.

### 1910

Shed No. 17 Total expended on renewal this year \$16,091 or one third of the cost of the snowshed which was rebuilt after the 1910 slide at this location. Total cost for this shed over three years was \$48,275. 8/f.22 and 165/f.192 1911 Shed No. 13 Was washed out and replaced this year for a total of \$41,652. 179/f.43552 Shed No. 17 July expenses of \$550. 151/f.36 1911 share or renewal cost \$16,091. 149/f.76 Shed No. 19 October expenses \$412. 151/f.36 Shed No. 20 July expenses \$6335. 149/f.98 September expenses \$22,810. 147/f.135 September labour \$4895, materials \$1997. 147/f.31 October payroll \$3270. 151/f. Payrolls October expenses \$23,065. 151/f.44 Sheds at or near Glacier House, numbers not given August expenses \$4370. 8/f.39 September expenses \$5309. 147/f.35

## 1912

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General expenses for Mountain Subdivision for snowsheds. \$180,500. 190/f.45373.45 Shed No. 13 General expenses \$36,515. 179/f.43552 September expenses for crib \$1606. 131/f.30 November expenses to replace washed out section of shed \$2565. 125/f.47 Sheds from Glacier to Bear Creek May labour \$4483, materials \$5060. 128/f.34 September expenses \$14,700. 131/f.30 October labour \$14,444, materials \$2899. 125/f.26 December expenses \$1300. 123/f.29 1913 Renewing sheds at Bear Creek, Hermit, Rogers Pass and Illecillewaet. July labour \$11,775, materials \$1853. 166/f.11 Request in May for 50 men for work on shed at Rogers Pass, \$2.50/day, board \$4.50/week. 193/f.45416 1914 General expenditure on Mountain Subdivision snowsheds December expenses \$38,000. 190/f.45373.33 Shed Nos. 1,2,3,6 & 7 January maintenance \$1275. 155/f.11 Shed No. 17 July expenses for tearing down part of shed \$822. 154/f.13

## DINNER

Vermicilli Soup Fish Boiled Salmon Caper Sauce

Boiled Tongue, Tomato Sauce

Boiled Ham

Roast Beef. Roast Lamb, Mint Sauce,

Entrees.

Haricot of Mutton.

Boiled and Mashed Potatoes.

Green Peas

Cabbage

Salad.

Lobster Mayonaise

Water Biscuits, Stilton Cheese

Rice Pudding - Vanilla Sauce

Apple Pie Pear Pie

Green Tea. Black English. Breakfast Tea.

Chocolate. Coffee.

Fruits.

MEALS 75 CENTS

# WINE LIST.

# Champagnes.

	Qrts.	Pts.
Louis Reederer Vin Sec	\$3.50	\$2.00
Pommery & Greno	3.50	2.00
Veuve Clicquot, (Yellow Label)	3.50	2.00
Perrier Jouet, Extra Dry Special	3.50	2.00
Clarate		
Clarets.	1 00	
st. Julien,	1.00	•50
(Specially bottled for C.P.Ry.)		
Batalley	2.00	1.00
Chateau Lafitte	3.00	2.00
White Wines.		
Sauterne	1.25	.75
(Specially bottled for C.P.Rv.)	~	
Chablis	2.00	1.00
Hockheimer	2.50	1.25
Fine Goldern Sherry	2.00	1.00
Liquouro		
Liqueurs.		~1~~~
Chartrouge	ra her <i>i</i>	jiass.
Chartreuse		
	Orts.	Pts.

-	Q1. C3 .	r co e
Ale-Dawes, Dow's, Carling's	•35	.20
Bass' Ale	•50	•25
Milwaukee Lager, (Best's)	.50	•25
Guinness' Stout,	.50	•25

Apollonaris Water,	.40	•25
English Club Soda,	• • •	.15
Belfast Giver Ale,	• • •	.15

Choice Havana Cigars. 10, 15 and 25 cents.

NOTE: The above menu is not dated specifically but a few internal hints seem to place it in the early years of the life of the hotel at Glacier. The meal price at 75 cents predates the one dallar rate for meals at the hotel in 1915. By 1915 the hotel also provided its own menu stationery but this menu has hand written additions to a standard dining car menu written into it. Dining cars were put on through the Pass in 1909 and therefore this menu probably predates that era as the dining station was closed to passengers after that year. Finally, Glacier Hotel is the inscription at the top of the menu and not the more commonly used Glacier House. The last reference to Glacier Hotel was in the late 1890s after which it was known by the Glacier House name. Based on this circumstantial and speculative evidence, this menu probably dates from the last decade of the nineteenth century.

[This information was extracted from PABC: Vertical File, CPR Menus]

Table 5. Glacier House Menu, July 27, 1915

LUNCHEON

Vegetable Soup Fried Halibut, Tomato Sauce Beef Steak & Kidney Stew with Green Peas Roast Loin Pork, Apple Sauce Cold Meats Beef, Ham, Mutton, Tongue Potato Salad Potatoes Boiled or Mashed String Beans Queen Pudding Peach Pie Cheese

Tea Coffee

### DINNER

Anchovy Toast Mock Turtle Soup Baked Salmon, Cream Sauce Stuffed Vegtable Marrow Chicken Pacossee & Dumpling Roast Rib, Beef Yorkshire Pudding Roast Spring Lamb, Mint Sauce Lettuce Salad Potatoes, Boiled or Mashed Stewed Celery Cream Puffs Deep Apple Pie Blackberry Ice Cream Cheese Fruit Coffee

[This information was extracted from Archives of the Canadian Rockies M109/Accn782]

List of abbreviations CPR - Canadian Pacific Railway Archives, Montreal CAV - City Archives of Vancouver, Vancouver DF - David Finch photos, included with report research GA - Glenbow Archives PABC - Provincial Archives of British Columbia, Victoria PAC - Public Archives of Canada, Ottawa NC - Notman Collection, Montreal WMCR - Whyte Museum of the Canadian Rockies (Where available, photographer's name listed with call number)

Page Fig. Caption or description

258 1 Engine 154 on Mountain Creek (GA/NA-4-40-3)

- 259 2 Glacier National Park original Canadian Pacific Corridor (Map)
- 260 3 Tents used during construction of original line 1885 (GA/NA-4140-41)
  - 4 A Howe truss at bridge 415A, 4th Crossing Illecillewaet River, mile 95.1. This sort of wooden bridge structure first replaced the temporary trestle units installed in 1885. (CPR/A4573)
- 261 5 Deck lattice girder support with wood trestle on either side at Bridge 410, just west of Flat Creek near the western park boundary. (CPR/A4584)
  - 6 An example of a through lattice girder. (CPR/A4569)
- 262 7 An example of a deck plate girder. (CPR/A4566)

	8	Surprise Creek bridge just after construction in the
		summer of 1885. (GA/NA-3188-34)
263	9	Surprise Creek bridge after accident, January 28,
		1929. (GA/NA-4432-11)
	10	Stoney Creek bridge, summer, 1885.
		(GA/NA-4140-31)
264	11	Stoney Creek with steel structure in construction.
		(GA/NA-4432-5)
	12	Stoney Creek with all-metal support.
		(GA/NA-4674-6)
265	13	Cascade Creek bridge, August 8, 1899. The end of
		snowshed No. 3 is clearly visible at right.
		(WMCR/NG4-551, William S. Vaux Jr.)
	14	Rogers Pass station circa 1900.
		(GA/NA-775-2)
266	15	Rogers Pass, September, 1901
		(CAV/R.H. Trueman & Co. 3307)
	16	Rogers Pass.
		(PABC/HP64440/D-3378)
267	17	Rogers Pass.
		(PAC-45557)
	18	Original trestle at Glacier (Illecillewaet) Creek.
		(CPR/A4550)
268	19	Masonry culvert under construction at Glacier
		(Illecillewaet) Creek, circa 1899 (CPR/A4613)
	20	Complete bridge at Glacier Creek, 1901.
		(CPR/A4549)
269	21	Part of the Loops, circa 1886.
		(GA/NA-4140-34)
	22	Part of the Loops.
		(CPR/A4561)
270	23	Part of the Loops.

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(GA/NA-4140-32)

- 24 Upper Loop bridge with masonry piers being built. (CPR/A4559)
- 271 25 Lower Loop bridge with masonry piers being built. (PABC/HP77685/E-348)
  - 26 Lower Loop bridge supporting eastbound train. (WMCR/NA71-1636, Byron Harmon)
- 272 27 Connaught Tunnel with train entering west portal. Note open-air observation car at end or train. (Glenbow/NA-4572-1)
  - 28 The new Glacier Station at west end of Connaught Tunnel, post 1916. (GA/NA-4572-3)
- 273 29 Redrawn floor plan of 1916 station at Glacier. Original courtesy of Canadian Transport Committee.
- 274 30 Chinese work gang near Summit, 1889. (GA/NA-3749-29)
  - 31 Construction crew beside boarding car near Summit. Note cupie doll in window at left, circ 1886-9. (GA/NA4428-4)
- 275 32 Snowshed crew with mules, circa 1886-9. (GA/NA-387-22, Boorne & May)

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- 33 Snowshed construction west of Summit, circa 1886-9. (GA/NA-4428-18, Taylor Stoess)
- 276 34 Snowshed construction east of Summit, circa 1886-9. Note bent being raised by winch. (GA/NA-4428-16, Taylor Stoess)
- 277 35-7 Figures 35 to 37 are photographic reproductions of the figures which illustrated Stoess' report.
- 278 38 Glacier National Park Canadian Pacific Railway
   Corridor including snowsheds, December, 1888. (Map)
   279 39 Snowshed No. 17 under construction at Summit of

Rogers Pass with Rogers Pass station at left. (GA/NA-1608-10, Wm. Notman and Son)

- 40 Snowshed and glance fence circa 1886-9. (GA/NA-4428-20, Taylor Stoess)
- 280 41 Snowshed plainly showing summer track to the left. (BCPA/HP24662/A-9122)
  - 42 Minimal snowplow on early engine, circa 1886-9. (GA/NA-387-11, Boorne and May)
- 281 43 Snowplow with larger wings at Rogers Pass station, circa 1886-9 on engine 402. (GA/NA-387-12, Boorne and May)
  - 44 Early wooden winged wedge plow at Rogers Pass circa 1886-9.

(GA/NA-387-14, Boorne and May)

- 282 45 Steel winged wedge plow on line between Rogers Pass and Glacier House, 1914. (GA/NA-1248-33, Leslie L. Kerry)
  - 46 Rotary C snowplow at Rogers Pass circa late 1880s. (GA/NA-2216-5)
- 283 47 Rotary snow plow in action at Rogers Pass, 1914. (GA/NA-1248-34, Leslie L. Kerry)
- 284 48 Original Glacier House chalet floorplan (undated) (Glenbow Archives CPR drawing collection)
- 285 49 Original Glacier House chalet floorplan (undated, redrawn copy of Figure 48)
- 286 50 Glacier House station and original Chalet under construction is the 1886 season. Note construction techniques and tents and rail cars for temporary housing. Passengers and workers alike ate in a dining car on the siding right of the main line. (PABC/71528/D-7155)
  - 51 Glacier House and station nearing completion in

···-

1886. Station was probably completed in September. (PAC/C2043)

- 287 52 View of lobby in Glacier House Chalet (CPR/A8189)
  - 53 Glacier House station foreground, circa 1892. (PAC/25040)
- 288 54 Bowling alley in middle foreground with fountain, curio tent and guides quarters to the left. (WMCR/NA66-1265)
- 289- 55- Bruce Price's Glacier House Annex plans, 1889.
  - 294 60 (CPR Archives, File 24876)
- 295 61 Glacier House Annex (undated) probably after the second floor was enlarged (Glenbow Archives CPR drawing collection)
- 296 62 Glacier House Annex (undated, redrawn)
- 297 63 Original Annex at Glacier House with small second floor dormer at left of photograph. (PAA/B7020, circa 1892-1904)
  - 64 Annex with enlarged second floor overhanging the original structure.

(PAC/C20495, John Woodruff)

- 298 65 Billiard hall (undated, redrawn) Original drawing part of Figure 61.
  - 66 From right to left, original Glacier House chalet, billiard hall, Annex with enlarged second floor and second annex or Wing in background at left. (CPR/A8183)
- 299 67 Billiard hall interior at Glacier House. (CPR/A8193)

300 68 Original 1906 site plan.

- 301 69 Redrawn version of Figure 68.
- 302 70 Guides' quarters with outfitting of horses being

undertaken in foreground, curio tent at far right, billiard hall above it and Chinese help quarters at top right of photograph. (PAC/C20492)

- 71 Helps quarters, for non-Orientals. (CPR/A2380)
- 303 72 Photograph of archeological dig at ruins of helps quarters showing collapsed chimney along the middle of the photograph from top to bottom. (Roll 5-2, 5-3, August, 1986)
- 304 73 Same site as in Figure 72 showing rock and cement retaining wall at back, or south end, of dig. (Roll 5-4, August, 1986)
  - 74 Same site as in Figures 72 and 73 showing pipe and stand, perhaps for a heating device. (Roll 5-1, August, 1986)
- 305 75 Footbridge at left, masonry culvert for railway at right, stables just beyond footbridge with tents beyond and other Glacier House buildings at back. (PAC/C20489)
  - 76 Power house east across the river from hotel. (CPR/A2382)
- 306 77 Tent in mid-picture is surrounded at left by the two laundry houses, the ice house and the station behind it, and the original at the far right. (GA/NA-4140-52, O.B. Buell, circa 1886)
- 307- 78- Varios plans, originals and redrawn versions, of
- 315 86 1926 plans.
- 316 87 Demolition of Glacier House in progress, July, 1929. (BCPA/1175/A-522)
  - 88 View of Glacier House showing fountain. (GA/NA-3740-40, Wm. Notman and Son, 1887)

317	89	Remains of wooden pipe, reinforced with wire
		bands, east across the river from Glacier House.
		(Roll 6-16, August, 1986)
	90	Glacier House cook in white, waiters in bowties and
		various guides, August 16, 1899.
		(WMCR/NG4-585, George Vaux Jr.)
318	91	Glacier House staff, August 25, 1898.
		(WMCR/NG4-484, Vaux family)
	92	Playing cards at Glacier House in 1914.
		(WMCR/NA66-1911)
319	93	Glacier House staff on engine 3842 circa 1914.
		(WMCR/NA66-236)
	94	Glacier House maids Pauline Todd and Alice Harding,
		circa 1914.
		(WMCR/NA66-235)
320	95	Glacier House dining room, n.d.
		(CPR/A8190)
	96	Glacier House dining room, n.d.
		(CPR/NA-1798-6)
321	97	CPR porcelain at Revelstoke Museum
		(DF 8-5, August 1986)
	98	CPR porcelain at Revelstoke Museum
		(DF 8-2, August 1986)
322	99	CPR porcelain at Revelstoke Museum
		(DF 8-0, August 1986)
	100	CPR porcelain at Revelstoke Museum
		(DF 8-7, August 1986)
323	101	CPR porcelain at Chateau Lake Louise
		(DF 11-3, December, 1986)
	102	Early CPR silver plated fork
		(DF 11-24, December, 1986)
324	103	Early CPR silver plated fork

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(DF 11-22, December, 1986)

- 104 Early CPR silver plated spoon (DF 11-20, December, 1986)
- 325 105 Early CPR silver plated knife (DF 11-21, December, 1986)
  - 106 Early CPR silver plated iced tea spoon (DF 11-3, December, 1986)
- 326 107 Glacier House guides circa 1901, bowling alley in background (WMCR/NA66-1900, R.H. Trueman & co.)
  - 108 Glacier House guides and other employees, 1906, bowling alley in background (WMCR/NA66-1277, R.H. Trueman)
- 327 109 Footbridge on trail to Great (Illecillewaet) Glacier (GA/NA-4967-45)
  - 110 General view of stable area with tents to the left and guides quarters in the background (PAC/C20498)
- 328 111 Brewster tally ho at Chateau Lake Louise, 1912, similar to Baker and Brewster tally ho at Glacier (GA/NA1263-3)
  - 112 Window from unidentified structure at Glacier House currently on display at Revelstoke Museum (DF 8-10, August, 1986)
- 329 113 Upper Loop piers showing creek and footbridge (DF 7-11, August, 1986)
  - 114 Lower Loop piers with parking lot at lower left
     (DF 7-12, August, 1986)
- 330 115 Glacier (Illecillewaet) Creek bridge from upriver (August, 1986)
  - 116 Ruins of a cellar at Glacier House
     (DF 1-14, August, 1986)

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- 331 117 Remains of a boiler in a Glacier House cellar (DF 1-8, August, 1986)
  - 118 Footing for part of unbuilt (1904) structure
     (DF 1-11, August, 1986)
- 332 119 Snowshed No. 20 on old line to Glacier House (DF 7-6, August, 1986)
  - 120 Snowshed No. 20 just before Glacier House (DF 7-3, August, 1986)
- 333 121 Nail from snowshed upgrade from Upper Loop piers (DF 2-15, August, 1986)
  - 122 Section of snowshed crib against mountainside at same location as Figure 126. (DF 2-17, August, 1986)
- 334 123 Trackbed at Rogers Pass (DF 7-17, August, 1986)
  - 124 Snowshed south from ventilation shaft for new tunnel in Rogers Pass on old line to Glacier House (DF 7-18, August, 1986)
- 335 125 Tower at Glacier House (PAC/PA9507)
  - 126 Detail showing tower at Glacier House
     (CPR/A8183)
- 336 127 Source of Cascade Creek, a short hike above the stone arch masonry structure (DF 6-5, August, 1986)
  - 128 Cascade Creek bridge. (DF 7-21, August, 1986)
- 337 129 Cascade Creek bridge, ruins of snowshed No. 3 overgrown by brush on right. (DF 4-8, August, 1986)
  - 130 Detail of Cascade Creek bridge from upgrade end of lower side (DF 6-10, August, 1986)
- 338 131 Original but unused grade across south face of Mount Cheops (DF 7-13, August, 1986)



Figure 1 Engine 154 on Mountain Creek (GA/NA-4-40-3)





Figure 3 Tents used during construction of original line 1885 (GA/NA-4140-41)



Figure 4 A Howe truss at bridge 415A, 4th Crossing Illecillewaet River, mile 95.1. (CPR/A4573)



Figure 5 Deck lattice girder support with wood trestle on either side at Bridge 410, just west of Flat Creek near the western park boundary. (CPR/A4584)



Figure 6 An example of a through lattice girder. (CPR/A4569)



Figure 7 An example of a deck plate girder. (CPR/A4566)



Figure 8 Surprise Creek bridge after construction in the summer of 1885. (GA/NA-3188-34)





Figure 9 Stoney Creek bridge, summer, 1885 (GA/NA-4140-31)

Figure 10 Surprise Creek bridge after accident, January 28, 1929 (GA/NA-4432-11)



Figure 11 Stoney Creek with steel structure in construction. (GA/NA-4432-5)



Figure 12 Stoney Creek with all-metal support. (GA/NA-4674-6)



Figure 13 Cascade Creek bridge, August 8, 1899. The end of snowshed No. 3 is clearly visible at right. (WMCR/NG4-551, William S. Vaux Jr.)



Figure 14 Rogers Pass station circa 1900. (GA/NA-775-2)



Figure 15 Rogers Pass, September, 1901 (CAV/R.H. Trueman & Co. 3307)



Figure 16 Rogers Pass. (PABC/HP64440/D-3378)



Figure 17 Rogers Pass. (PAC-45557)



Figure 18 Original trestle at Glacier (Illecillewaet) Creek. (CPR/A4550)



Figure 19 Masonry culvert under construction at Glacier (Illecillewaet) Creek, circa 1899 (CPR/A4613)



Figure 20 Complete bridge at Glacier Creek, 1901. (CPR/A4549)



Figure 21 Part of the Loops, circa 1886. (GA/NA-4140-34)



Figure 22 Part of the Loops. (CPR/A4561)



Figure 23 Part of the Loops. (GA/NA-4140-32)



Figure 24 Upper Loop bridge with masonry piers being built. (CPR/A4559)



Figure 25 Lower Loop bridge with masonry piers being built. (PABC/HP77685/E-348)



Figure 26 Lower Loop bridge supporting eastbound train. (WMCR/NA71-1636, Byron Harmon)



Figure 27 Connaught Tunnel with train entering west portal. Note open-air observation car at end of the train. (GA/NA-4572-1)

Figure 28 The new Glacier Station at west end of Connaught Tunnel, post 1916. (GA/NA-4572-3)




Figure 30 Chinese work gang near Summit, 1889. (GA/NA-3749-29)



Figure 31 Construction crew beside boarding car near Summit. Note cupie doll in window at left, circ 1886-9. (GA/NA4428-4)



Figure 32 Snowshed crew with mules, circa 1886-9. (GA/NA-387-22, Boorne & May)



Figure 33 Snowshed construction west of Summit, circa 1886-9. (GA/NA-4428-18, Taylor Stoess)



Figure 34 Snowshed construction east of Summit, circa 1886-9. Note bent being raised by winch. (GA/NA-4428-16, Taylor Stoess)



Figure 35





Figure 39 Snowshed No. 17 under construction at Summit of Rogers Pass with Rogers Pass station at left. (GA/NA-1608-10, Wm. Notman and Son)



Figure 40 Snowshed and glance fence circa 1886-9. (GA/NA-4428-20, Taylor Stoess)



Figure 41 Snowshed plainly showing summer track to the left. (BCPA/HP24662/A-9122)



Figure 42 Minimal snowplow on early engine, circa 1886-9. (GA/NA-387-11, Boorne and May)



Figure 43 Snowplow with larger wings at Rogers Pass station, circa 1886-9 on engine 402. (GA/NA-387-12, Boorne and May)



Figure 44 Early wooden winged wedge plow at Rogers Pass circa 1886-9. (GA/NA-387-14, Boorne and May)



Figure 45 Steel winged wedge plow on line between Rogers Pass and Glacier House, 1914. (GA/NA-1248-33, Leslie L. Kerry)



Figure 46 Rotary C snowplow at Rogers Pass circa late 1880s. (GA/NA-2216-5)



Figure 47 Rotary snow plow in action at Rogers Pass, 1914. (GA/NA-1248-34, Leslie L. Kerry)



Figure 49

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Figure 50 Glacier House station and original Chalet under construction is the 1886 season. Note construction techniques and tents and rail cars for temporary housing. Passengers and workers alike ate in a dining car on the siding right of the main line. (PABC/71528/D-7155)



Figure 51 Glacier House and station nearing completion in 1886. Station was probably completed in September. (PAC/C2043)



Figure 52 View of lobby in Glacier House Chalet (CPR/A8189)



Figure 53 Glacier House station foreground, circa 1892. (PAC/25040)



Figure 54 Bowling alley in middle foreground with fountain, curio tent and guides quarters to the left. (WMCR/NA66-1265)

Figure 55





















Figure 63 Original Annex at Glacier House with small second floor dormer at left end of the photograph. (PAA/B7020, circa 1892-1904)



Figure 64 Annex with enlarged second floor overhanging the original structure. (PAC/C20495, John Woodruff)



**Billiard Room Annex** Scale : 1" = 8' (Redrawn copy from Figure 61) Closet Lav Billiard Room Ground Floor Plan



Figure 66 From right to left, original Glacier House Chalet, billiard hall, Annex with enlarged second floor and second annex or The Wing in background at left. (CPR/A8183)



Figure 67 Billiard hall interior at Glacier House. (CPR/A8193)







Figure 70 Guides' quarters with outfitting of horses being undertaken in foreground, curio tent at far right, billiard hall above it and Chinese help quarters at top right of photograph. (PAC/C20492)



Figure 71 Helps quarters, for non-Orientals. (CPR/A2380)



Figure 72 Photograph of archeological dig at ruins of helps quarters showing collapsed chimney along the middle of the photograph from top to bottom. (Roll 5-2, 5-3, August, 1986)



Figure 73 Same site as in Figure 72 showing rock and cement retaining wall at back, or south end, of dig. (Roll 5-4, August, 1986)



Figure 74 Same site as in Figures 72 and 73 showing pipe and stand, perhaps for a heating device. (Roll 5-1, August, 1986)



Figure 76 Power house east across the river from hotel. (CPR/A2383)

Figure 75 Footbridge at left, masonry culvert for railway at right, stables just beyond footbridge with tents beyond and other Glacier House buildings at back. (PAC/C20489)



Figure 77 Tent in mid-picture is surrounded at left by the two laundry houses, the ice house and the station behind it, and the original at the far right. (GA/NA-4140-52, O.B. Buell, circa 1886)





FT-Η Н Π E . Ξ Θ 88 88 E Ξ L **}**-ΈE B E E F F  $\square$ ΠH Ξ EE Т Я 1900 1900 B F **THE** \$7ucco field store CPR PROPOSED EXTENSION GLACIER HOUSE FRONT ELEVATION Scale 1/16" = 1'-0 (Redrawn copy of Figure 79) Chief Engineer's Office Montreat Aug. 1926

Figure 80














Figure 87 Demolition of Glacier House in progress, July, 1929. (BCPA/1175/A-522)



Figure 88 View of Glacier House showing fountain. (GA/NA-3740-40, Wm. Notman and Son, 1887)



Figure 89 Remains of wooden pipe, reinforced with wire bands, east across the river from Glacier House. (Roll 6-16, August, 1986)



Figure 90 Glacier House cook in white, waiters in bowties and various guides, August 16, 1899. (WMCR/NG4-585, George Vaux Jr.)



Figure 91 Glacier House staff, August 25, 1898. (WMCR/NG4-484, Vaux family)



Figure 92 Playing cards at Glacier House in 1914. (WMCR/NA66-1911)



Figure 93 Glacier House Staff on engine 3842, circa 1914. (WMCR/NA66-236)

Figure 94 Glacier House maids Pauline Todd and Alice Harding, circa 1914. (WMCR/NA66-235)



Figure 95 Glacier House dining room, n.d. (CPR/A8190)



Figure 96 Glacier House dining room, n.d. (CPR/NA-1798-6)



Figure 97 CPR porcelain at Revelstoke Museum (DF 8-5, August 1986)



Figure 98 CPR porcelain at Revelstoke Museum (DF 8-2, August 1986)



Figure 99 CPR porcelain at Revelstoke Museum (DF 8-0, August 1986)



Figure 100 CPR porcelain at Revelstoke Museum (DF 8-7, August 1986)



Figure 101 CPR porcelain at Chateau Lake Louise (DF 11-3, December, 1986)



Figure 102 Early CPR silver plated fork (DF 11-24, December, 1986)



Figure 103 Early CPR silver plated fork (DF 11-22, December, 1986)



Figure 104 Early CPR silver plated spoon (DF 11-20, December, 1986)



Figure 105 Early CPR silver plated knife (DF 11-21, December, 1986)



Figure 106 Early CPR silver plated iced tea spoon (DF 11-3, December, 1986)



Figure 107 Glacier House guides circa 1901, bowling alley in background (WMCR/NA66-1900, R.H. Trueman & co.)



Figure 108 Glacier House guides and other employees, 1906 bowling alley in background (WMCR/NA66-1277, R.H. Trueman)



Figure 109 Footbridge on trail to Great (Illecillewaet) Glacier (GA/NA-4967-45)



Figure 110 General view of stable area with tents to the left and guides quarters in the background (PAC/C20498)



Figure 111 Brewster tally ho at Chateau Lake Louise, 1912, similar to Baker and Brewster tally ho at Glacier (GA/NA1263-3)



Figure 112 Window from unidentified structure at Glacier House currently on display at Revelstoke Museum (DF 8-10, August, 1986)



Figure 113 Upper Loop piers showing creek and footbridge (DF 7-11, August, 1986)



Figure 114 Lower Loop piers with parking lot at lower left (DF 7-12, August, 1986)



Figure 115 Glacier (Illecillewaet) Creek bridge from upriver (August, 1986)



Figure 116 Ruins of a cellar at Glacier House (DF 1-14, August, 1986)



Figure 117 Remains of a boiler in a Glacier House cellar (DF 1-8, August, 1986)



Figure 118 Footing for part of unbuilt (1904) structure (DF 1-11, August, 1986)



Figure 119 Snowshed No. 20 on old line to Glacier House (DF 7-6, August, 1986)



Figure 120 Snowshed No. 20 just before Glacier House (DF 7-3, August, 1986)



Figure 121 Nail from snowshed upgrade from Upper Loop piers (DF 2-15, August, 1986)



Figure 122 Section of snowshed crib against mountainside at same location as Figure 126. (DF 2-17, August, 1986)



Figure 123 Trackbed at Rogers Pass (DF 7-17, August, 1986)



Figure 124 Snowshed south from ventilation shaft for new tunnel in Rogers Pass on old line to Glacier House (DF 7-18, August, 1986)



Figure 125 Tower at Glacier House (PAC/PA9507)



Figure 126 Detail showing tower at Glacier House (CPR/A8183)



Figure 127 Source of Cascade Creek, a short hike above the stone arch masonry structure (DF 6-5, August, 1986)



Figure 128 Cascade Creek bridge. (DF 7-21, August, 1986)



Figure 129 Cascade Creek bridge, ruins of snowshed No. 3 overgrown by brush on right. (DF 4-8, August, 1986)



Figure 130 Detail of Cascade Creek bridge from upgrade end of lower side (DF 6-10, August, 1986)



Figure 131 Original but unused grade across south face of Mount Cheops (DF 7-13, August, 1986)