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Guide to Collection

**Burrell, Robert**

**Robert Burrell Slide Collection, 1975-1977**

**PCA 522**

95 color slides

Processed by: James Simard  
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**BIOGRAPHICAL NOTE**

Bob Burrell (b. 01/21/1954) is a resident of Saint Paul, Minnesota. Bob is married to Cathy Davis Burrell and together they have three sons. Bob met Cathy in Skagway, Alaska while working as a surveyor for the Alaska Department of Transportation on the Klondike Highway project in 1977. During the summer of 1977, Cathy and two friends ventured from Saint Paul, Minnesota to Skagway to work in the hospitality industry and find adventure. What resulted from this adventure in Skagway are 32 years of strong bonds and lasting friendships.

Bob moved to Petersburg in 1967 with his parents. Bob's father was a general contractor on Midkof Island until he retired in 1986. Bob graduated from Petersburg High School in 1972. During the summers of 1974 to 1977, Bob worked for the Alaska Department of Transportation as a surveyor. In the summers of 1975 and 1977, he worked on the Klondike Highway project and lived in Skagway. In 1978, after graduating from Oregon Institute of Technology, he left Alaska to begin an engineering and surveying career and raise a family in St. Paul, Minnesota. A month before leaving, Bob and his wife Cathy hiked the Chilkoot Trail and made a promise to each other at the end of the Trail to return to hike it again in 25 years. Bob and Cathy returned to Skagway in June of 2003. Together with friends from Juneau, Bob and Cathy made the 33-mile journey over the Trail.

### **SCOPE AND CONTENTS NOTE**

The images depict the construction and surveying activities of a 9.5-mile segment of the Klondike Highway. These images were taken during the summer months of 1975 and the spring and summer months of 1977. The collection includes a brief history of the Klondike Highway construction written by Robert Burrell who was an Alaska Department of Transportation (ADOT) surveyor working on the highway project.

### **BRIEF HISTORY OF THE CONSTRUCTION OF THE KLONDIKE HIGHWAY**

The construction depicted in the 95 images was a highway project for the final leg of a 9.5-mile section of the Klondike Highway. The starting point of the road project was located at the ending point of previously constructed Alaska Department of Transportation highway about 5 miles northeast of Skagway. The ending point was at the Canadian border. In the 1960's and early 1970's, the first segments of the Alaska portion of the Klondike Highway were constructed starting in the City of Skagway.

In this segment of construction, the Alaska DOT was presented with gargantuan design challenges as steep terrain, deeply shaped gorges, and rock topography required a project to be constructed by blasting out the side hill of a granite mountain. Along with the rock excavation work, the bridge designers had to determine a method to construct a bridge from one side of a 200-foot deep gorge. Equipment and labor accessibility to the north side of the bridge was physically impossible. The only way to construct the bridge (William Moore Bridge) was from the Skagway (south) side and that was contingent upon 6 miles of pioneer road in the final segment of highway being built. The bridge design that was used was a suspended cantilevered steel box girder type structure. At the time of the design, this bridge type was only used one other time in the United States. This design was so specialized that only a Japanese steel manufacturer and fabricator would provide the materials. The obvious challenge was in the excavation of rock materials and the filling of embankment sections with the blasted (shot) rock.

Construction of this segment of highway began in the spring of 1975. Central Construction Company from Seattle, Washington was awarded the contract for nearly \$11 million. This contract was one of the first Alaska Highway projects costing over \$1 million per mile for just a two lane gravel-surfaced road with no purchase of land for right-of-way. The construction was done over four work seasons (April-October) with substantial completion occurring in the fall of 1978. Additional costs were incurred due to the shortage of excavated materials. The author does not know what these costs amounted to.

The road is clearly an engineering and construction achievement. In addition, it is a passage to stunningly beautiful scenery and a link to a resource abundant Yukon Territories.

### INVENTORY

- 1 ADOT surveyor John Svenson, resident of Juneau, marking slope stake information on a survey stake. Image taken June 1975
- 2 ADOT surveyor Kraig Norheim, resident of Petersburg, operating a surveyor's transit for a slope staking crew. Image taken June 1975
- 3 ADOT surveyor Steve Stewart, resident of Juneau, taking break from the work. Image taken June 1975
- 4 ADOT surveyors hiking into the work site. It was typical to hike 1 mile in and out each day over extremely rugged terrain. Image taken June 1975
- 5 Central Construction (CC) laborer from blasting crew getting materials. Image taken June 1975
- 6 CC laborers setting up the drilled area for rock blasting. Image taken June 1975
- 7 CC drill operation using an air track type drill. Image taken June 1975
- 8 CC laborer moving an air track drill. Image taken June 1975
- 9 ADOT chief of surveys, Barry Rohm, taking a break from the control surveying session. Image taken July 1975
- 10 The work site after a rock blast. . Image taken July 1975
- 11 A train from the White Pass and Yukon Railroad (WP&YRR) heading for Bennett, B.C. Picture shot from the worksite. Image taken July 1975
- 12 A transit is being set-up for the surveying slope stake operation. Image taken July 1975
- 13 Approximately 3 miles from the Canadian border, the image depicts the terrain where the roadway alignment lies. Image taken July 1975
- 14 ADOT surveyor, Barry Rohm, standing near a point of intersection (Road PI) of the alignment. The survey crew re-established the location and perpetuated this point. Image taken July 1975
- 15 ADOT surveyors, Barry Rohm and Kraig Norheim, waiting for the fog to lift before resuming control survey work for the road alignment. Image taken July 1975

- 16 ADOT project engineer, Vern Hirsch and ADOT geologist, Steve Lowell, evaluating the rock foundation conditions for the eventual William Moore bridge. Image taken August 1975
- 17 ADOT surveyor, Allan Culbreath, clearing loose rock and overburden debris for the bridge foundation evaluation. Vern Hirsch is standing behind. Image taken August 1975
- 18 The future William Moore Bridge will cross this raging torrent of water. Image taken August 1975
- 19 The future William Moore Bridge is to be constructed in the gorge area of the waterfall (located in the lower center the image). Image taken August 1975
- 20 Image facing towards Skagway. The early stages of road construction can be seen just left of the tree in the foreground (one will see the narrow sliver of gray running horizontal through the green vegetation and trees). Image taken August 1975
- 21 Helicopter picking up the bridge foundation inspection team. Image taken August 1975
- 22 Helicopter about to land to pick-up the second members of the bridge foundation team. Image taken August 1975
- 23 The panoramic view of the Canadian side of the eventual Klondike Highway. Image taken August 1975
- 24 ADOT surveyors having fun flying a kite on a windy April day along the road grade. Image taken April 1977
- 25 ADOT surveyor, Jim Stolpe of Petersburg, displaying the aeronautic marvel that amused the surveyors for 15 minutes or so. Image taken April 1977
- 26 ADOT surveyor, John Svenson, carefully operating the controls of the aeronautic marvel. Image taken April 1977
- 27 A panoramic view of the William Moore Bridge taken from a scenic overlook area approximately a half mile away. Image taken April 1977
- 28 From same overlook as in #27, the road grade is visible in the center and right side of the image. Image taken April 1977
- 29 Facing towards Skagway, an image of the unplowed road grade. Image taken April 1977
- 30 The William Moore Bridge with the main column supports rising to the sky and stayed cables supporting the deck structure covered in several feet of snow. Image taken April 1977
- 31 The pylon structure with stayed cables visible used to support the main columns of the William Moore Bridge. Image taken April 1977
- 32 Central Construction's air track drill buried in snow. Image taken April 1977
- 33 A view of the WP&YRR from the road grade. Image taken April 1977
- 34 The road grade is visible after contractor snow plowing and melting. Image taken April 1977
- 35 A view of the WP&YRR from the road grade. Image taken May 1977
- 36 ADOT surveyor, Harold Medalen of Petersburg, on the road grade. Image taken May 1977
- 37 A panoramic view of the William Moore Bridge (lower left of the image). Image taken May 1977

- 38 Contractor's operating engineer performing snow plowing with a D-8 Cat. Image taken May 1977
- 39 ADOT surveyors blessing the road prior to setting up road alignment stationing hubs. Image taken May 1977
- 40 Contractor's air track drill resting on a very steep slope to correct improper pre-shear blasting vertical wall slopes. Image taken May 1977
- 41 A different perspective of Image 40, indicating how precarious the drilling work could be. Image taken May 1977
- 42 Large air compressor unit used to provide compressed air to the air drilling equipment. In the top center of the image an air track drill is visible on the topside of the rock face. Image taken May 1977
- 43 The highway at subgrade elevation. Notice the large embankment that was necessary to maintain a design grade of over 8% (8 feet of rise for every 100 feet of run). Image faces towards Skagway. Image taken May 1977
- 44 Three CC drillers making corrections to the pre-shear rock face at the bottom of the slope. Image taken May 1977
- 45 Two drill towers are visible on a foggy and misty day. Image taken May 1977
- 46 ADOT surveying crew cross sectioning at the top of rock face. Image taken May 1977
- 47 Hewlett-Packard electronic distance measuring device being used by the control surveying crew. This equipment was beginning to become standard issue in the industry; but cost, at the time, did not permit widespread use by ADOT surveying crews. Image taken May 1977
- 48 View of the highway looking back station toward Skagway. Note the William Moore Bridge and an incredible perspective of the roadway excavations and embankments. Image taken May 1977
- 49 Mountain visible along the road construction near the Moore Bridge. Image taken June 1977
- 50 ADOT surveyor, Van Sundberg of Juneau, setting up the transit. Image taken June 1977
- 51 A different view of ADOT surveyor, Van Sundberg, setting up the transit. Image taken June 1977
- 52 ADOT surveying crew preparing for a set-up at a control station along the White Pass & Yukon Railroad grade. Note the highway excavation and embankment area at the top two thirds of the image. Image taken June 1977
- 53 View of the roadway embankment and excavation areas from the WP&YRR. Image taken June 1977
- 54 Contractor loader operator placing shot (blasted) rock boulders into rock buggy end dump. Image taken June 1977
- 55 ADOT surveyor checking centerline control hubs. Image taken June 1977
- 56 Drill operators preparing the air track drills for shear wall corrections. Image taken July 1977
- 57 Drill operators performing production hole drilling for a blast spread. Image taken July 1977
- 58 Drill operator moving the air track as the drill operation is preparing the spread for rock blasting. Image taken July 1977

- 59 Powder crew is preparing the drill site for the eventual blast. Image taken July 1977
- 60 A perspective of the drill operation, with compressors in the foreground and the drills completing the image to the background. It was common for drills spreads to be strung out nearly a half-mile. Image taken July 1977
- 61 ADOT surveyor, Jim Stolpe, operating the T-16 theodolite to set centerline hubs. Image taken July 1977
- 62 The roadway nearly at finished grade. Note the guardrail posts are set indicating that grade work is near completion. Image taken July 1977
- 63 An eerie looking William Moore Bridge shrouded in fog and mist. Image taken July 1977
- 64 ADOT surveyor roped off to perform cross sectioning of the excavation slope face. Image taken July 1977
- 65 Vertical perspective of the cross section operation on the rock face. Image taken July 1977
- 66 ADOT surveyor, Jim Stolpe, setting up the transit for slope staking. Image taken August 1977
- 67 A completed transit set-up for slope staking. Many of the set-ups were on steep side slopes requiring the instrument operator to be creative when reading angles and taking slope measurements. Image taken August 1977
- 68 ADOT survey crew taking a slope distance measurement for the cross sectioning/ slope staking operation. Image taken August 1977
- 69 ADOT surveyor positioning himself for a transit reading and slope measurement. Note the steep terrain and massive rock topography. Image taken August 1977
- 70 ADOT surveyor, Sue Williamson from Skagway, is preparing slope stake lath and hubs. Image taken August 1977
- 71 ADOT surveyors taking a short break from the slope staking operation. Image taken August 1977
- 72 ADOT surveyor and professional mountaineer, John Svenson preparing for some off-hours climbing near the job site. Image taken August 1977
- 73 ADOT surveyor, John Svenson, clowning for the camera. Image taken August 1977
- 74 ADOT survey crew staking out for a culvert installation near the William Moore Bridge. Image taken August 1977
- 75 The image depicts the contractor's drill spread. The silver threads in the picture are aluminum pipes that supplied compressed air to the drills. Image taken August 1977
- 76 The contractor's powder crew foreman is preparing the blasting delay devices. Image taken August 1977
- 77 The powder crew laborers hauling Tovex (explosive agent) to begin preparing the drill holes. Image taken August 1977
- 78 Work area just seconds before a controlled rock blast. The following three images show various sequences of the blast. Image taken August 1977

- 79 The explosion sequence of the blast. Image taken August 1977
- 80 The explosion complete, fine particles and dust are evident. Image taken August 1977
- 81 The dust fallout from the explosion. Image taken August 1977
- 82 The contractor's large D-8 and similar dozers used to push the rock boulders created from the blast to construct the embankment section and the pioneer road. Image taken August 1977
- 83 Another view of image 82. Image taken August 1977
- 84 Contractor beginning rough grading of the road subgrade. Image taken August 1977
- 85 Transporting shot boulders and rock to the embankment area using large capacity rock end dumps. Image taken August 1977
- 86 Another view of the hauling, placing, and finishing of the embankment area to subgrade elevation. Image taken August 1977
- 87 Similar image as #86. Image taken August 1977
- 88 Contractor front-end loader operator performing grading of the road surface. Image taken August 1977
- 89 ADOT surveyor, Stewart Wright of Petersburg, operating the level for subgrade elevation hub staking. Image taken August 1977
- 90 Contractor's rubber tired backhoe used to excavate and set culvert structures. Image taken August 1977
- 91 Contractor's rock crusher used to produce the finishing aggregates for the road surface. Image taken August 1977
- 92 The front-end loader operator dumping crushed aggregate base into a belly dump transport truck. The material was the finishing surface material for the road grade. Image taken August 1977
- 93 Contractor's air track drill working in a waterfall area. Image taken August 1977
- 94 Members of the contractor's survey crew. Image taken September 1977
- 95 The party chief of the contractor's survey crew. Image taken September 1977