Draft H&H Report

Any design or recommendations must meet or exceed those included in the F&G/DOT MOA.

http://dot.alaska.gov/stwddes/desenviron/assets/pdf/procedures/dot_adfg_fishpass080301.pdf

Pg. 1, 2nd paragraph, 2nd sentence – Choose another word for "backing", maybe justification.

Pg. 2, Location Map – Show airport and Mile Post's at 5-mile intervals. Show Pilot Point, referenced on page 3.

Pg. 3, last sentence – Choose another word for "petered out". (not yet an industry accepted hydrologic term)

Pg. 5, 2nd paragraph, 1st & 2nd sentences –replace "believe" with "assumed".

Last paragraph – If from page 4, the flows "..high flows jump the banks..", it is "..a relatively common occurrence..", and "..there are no high banks for flood waters to overcome, almost any high flow event floods out into the forest.", shouldn't some component of the overflow discharge be included, if it overtops on a regular basis?

Pg. 6 – Show culvert locations and low point of road.

Pg. 7 – "poor construction" or inadequate culvert sizing? Beaver ponds will tend to attenuate flows.

Pg. 9, Table 2 – Would suggest checking inputs to HY-8, or use a different software program, because this table indicates that the roadway may overtop on almost a yearly basis. What is the storage capacity behind the road embankment?

Proposed Site characteristics, 2nd bullet – Are the USGS road and Saddlebag Glacier Road the same road? On the three plan sheets (COP 43, 44 & 45), there are several places where the 48-foot and 49-foot contour lines cross the road centerline. Where is the low point of 48.80'?

Proposed culvert design – How were the culverts sized, if the embedment depths were not entered into HY-8? Did you use "User Defined" option for the culvert shape in HY-8? Was the fish-passage substrate, subtracted from the area of the waterway area?

F&G/DOT MOA requires a minimum 20% burial of pipe arches and boxes.

Provide detail of low-flow channel within culvert, and include low-flow analysis.

Pg. 10, Table 3 – Proposed culvert grade should more closely match channel grade. Include discharge and velocities for Q_{fish}.

Table 4 – How can the culvert be sized to pass the 100-year flood event, at 0.8 times the culvert rise, but the roadway is overtopped at a significantly smaller discharge?

Has there been any discussion about designing a high-water crossing, at the low-point of the highway embankment, so that the road is not completely wash-out, and can be quickly repaired? See Armored Embankment details in attached PDF.

Draft Geotech Report

Any design or recommendations must meet, or exceed, those included in the DOT&PF Standard Specifications for Highway Construction, and culvert manufacturer specifications.

http://www.dot.state.ak.us/stwddes/dcsspecs/index.shtml

We would not recommend either an open-bottom culvert, or a concrete headwall in any of the proposed culvert crossings. Please consider an aluminum box with full invert, or an aluminum structural plate pipe arch. Remove and revise all references to concrete footings.

Pg. 5, 2nd paragraph – Culvert Embedment Material is composed of -2" material with 0-6 % minus 200, and extends 18 inches on both sides of culvert, and 12 inches from top and bottom of culvert.

3rd paragraph – For QA/QC, include reference to MSTF Table for Backfill and Foundation Fill for Major Structures.
http://www.dot.state.ak.us/stwddes/dcsconst/assets/pdf/mstf_highway_hl.pdf

4th paragraph – Lifts should not exceed 8 inches (uncompacted) per Section 203 Standard Specs.

5th paragraph – Consider specifying a capillary cut-off layer, if silts may be incorporated into the lower portion of the embankment.

Pg. 6, 2nd paragraph – Consider stabilizing foundation with alternating layers of geotextile and clean gravel.

For all site recommendations:

Review ConTech Structural Plate Design Guide for specifications, and soil-bearing limitations.