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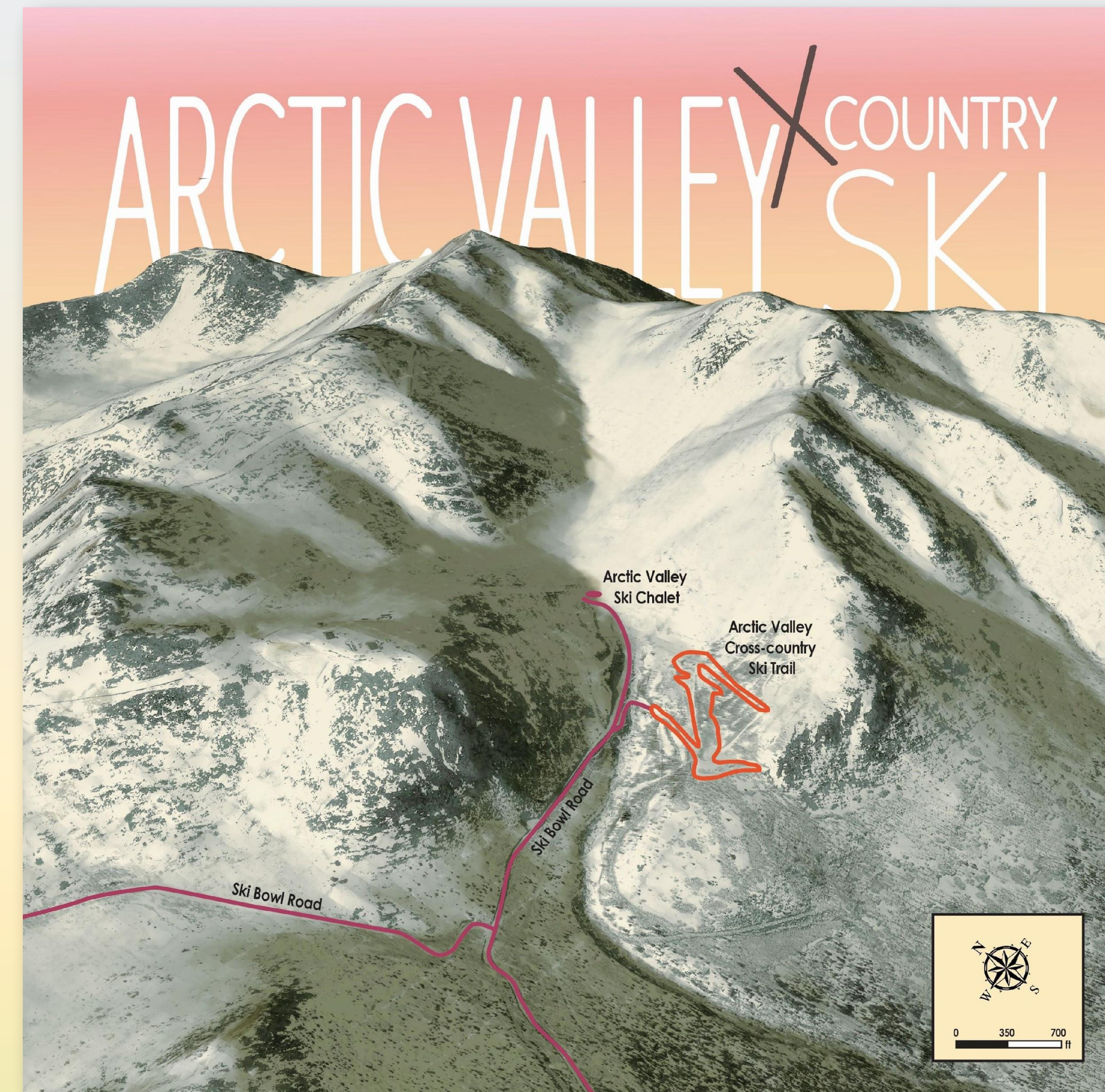
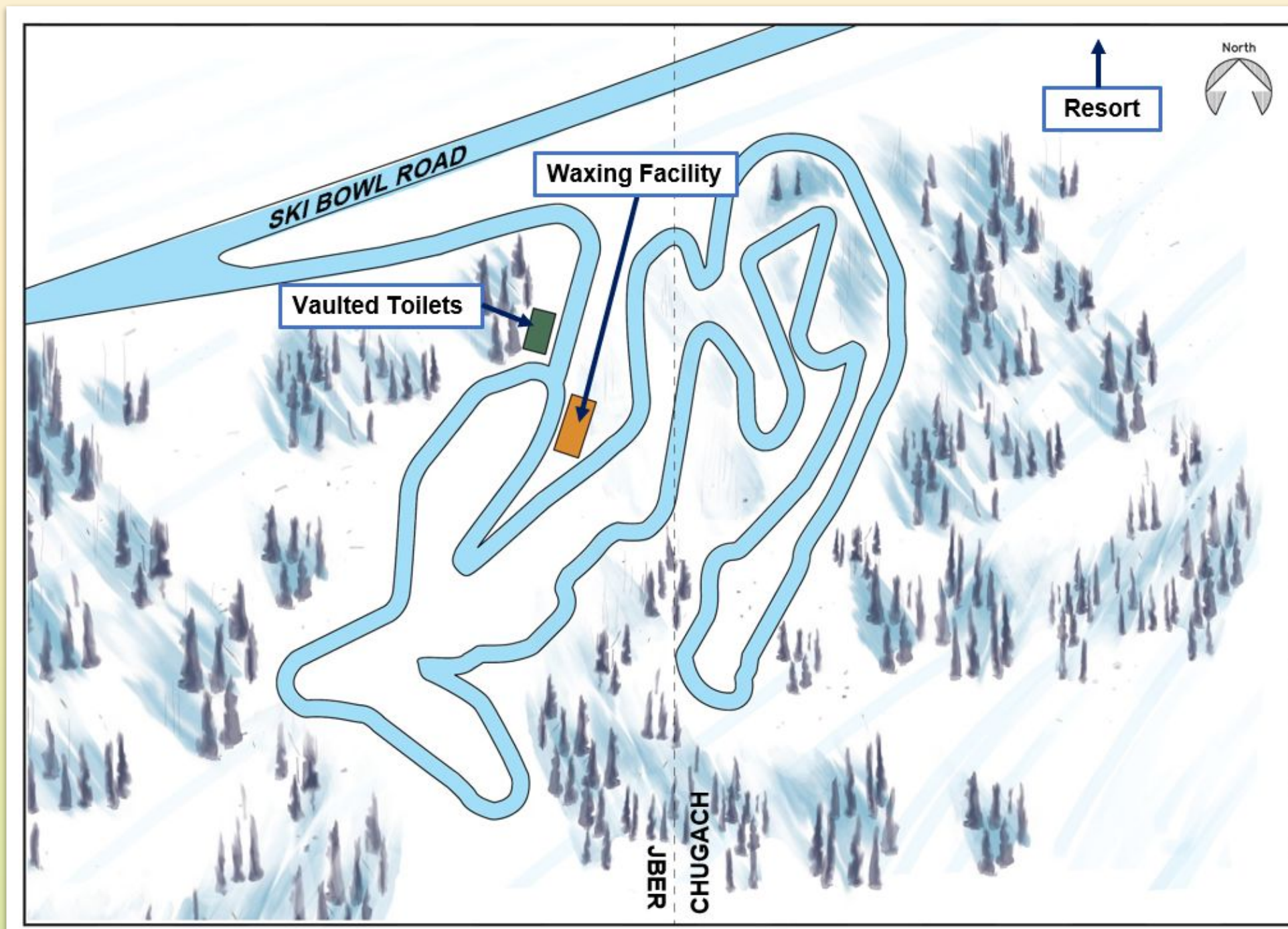
Department of Imaginary Engineering

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Arctic Valley is one of the most untapped recreational areas in south central Alaska. The terrain and proximity to Anchorage and Eagle River make it an ideal place to take the family any time of year. With temperatures cooler than coastal zones, it has potential to be the future of cross-country skiing near Anchorage.

The UAA Ski Team along with support from the Anchorage Ski Club, have requested a public use cross-country ski trail on the border of Chugach State Park and Joint Base Elmendorf Richardson.



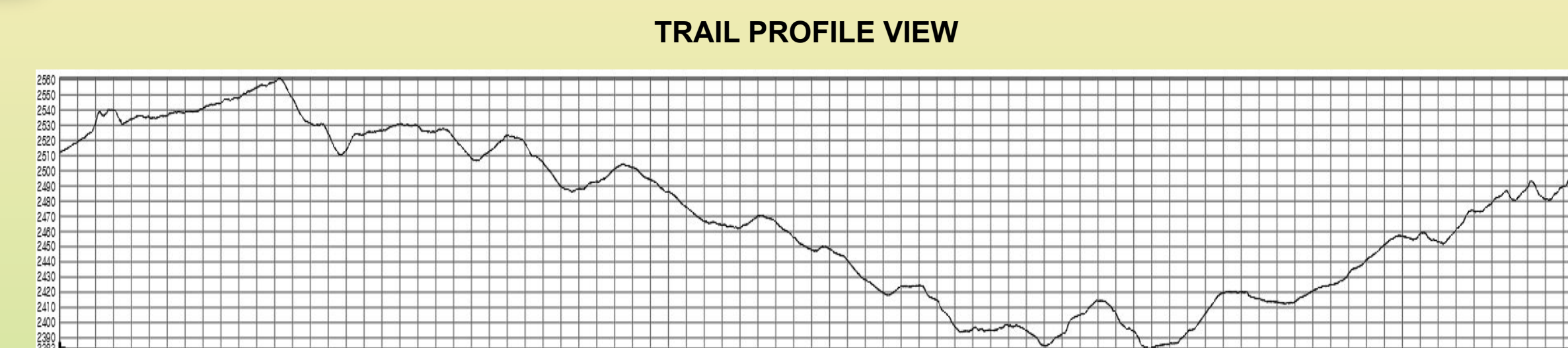
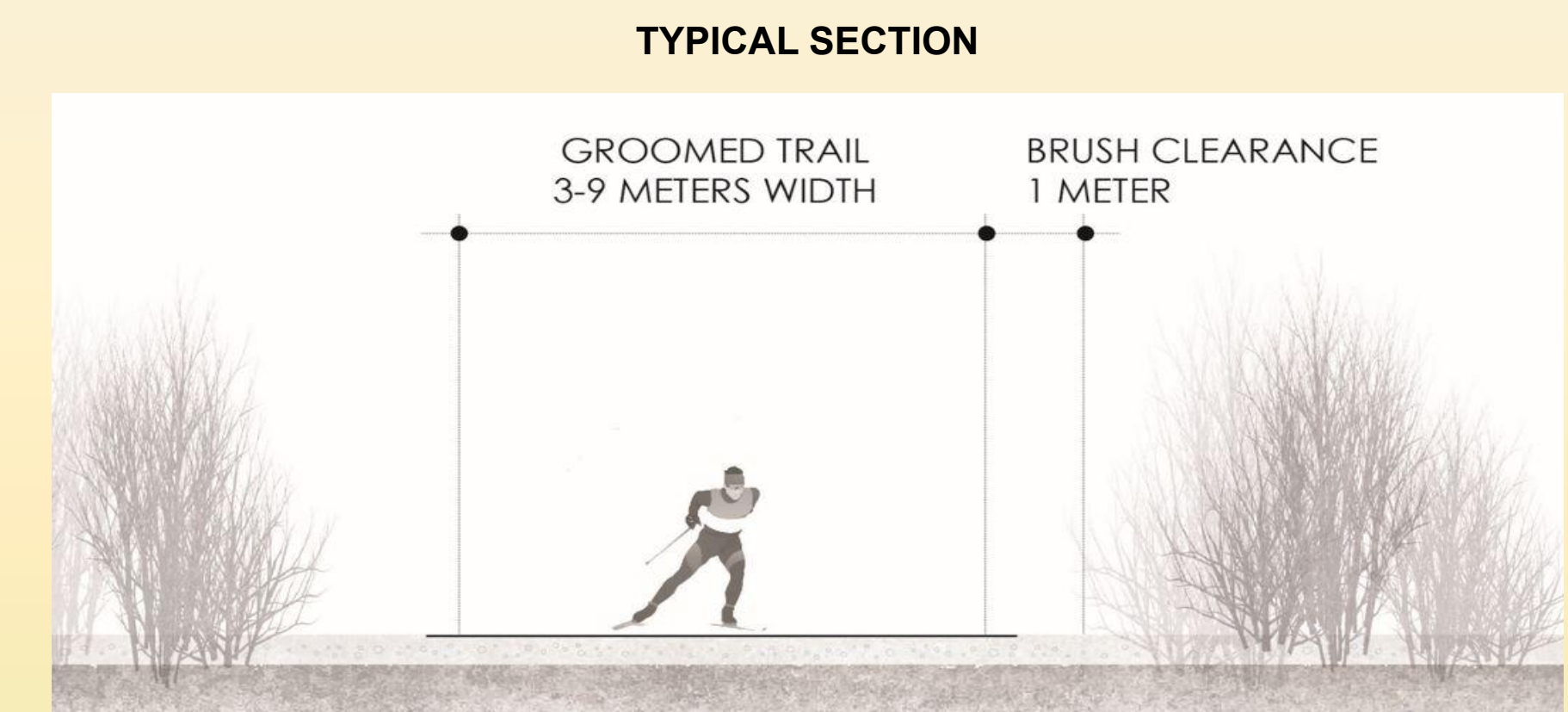
OUTCOME:

Course Design

- The original course length had to be shortened from 3km to 2.5km due to FIS limitations of the Total Climb (TC) of the course, in combination with the tight space the mountainside offered.
- Trail contains some downhill sections exceeding FIS standards, requiring greater amounts of earthwork.
- Created 65% design drawings.
- Recommendation for the placement of vaulted toilets and a waxing facility.
- Trail design is cost-effective and low maintenance.

Permitting

- Arctic Valley Cross-Country Ski Trail is now a consideration for the 2022 Arctic Valley land lease renewal from Alaska State Parks. We have brought this project into official recognition.
- Successfully communicated with JBER to confirm their requests in order to progress this project forwards.



INITIAL GOAL: Create a 3km cross-country ski trail sanctioned by the International Ski Federation (FIS) to be used for recreational and elite level skiing. The trail must test the skier in a technical, tactical and physical manner, while also being enjoyable to ski by all skill levels. The trail must utilize as much of the natural terrain as possible with a balanced course of both uphill and downhill sections. Terrain must be distributed 1/3 uphill, 1/3 downhill, and 1/3 undulating.

The proposed trail utilizes many of the graded surfaces already in place from past development. Only short sections and edges will need to be cut and filled to begin building the loop.

DESIGN CONSIDERATIONS:

Course Design

- FIS standard compliance
- Minimize earthwork by using natural slopes as much as possible
- Necessary additions to course such as vaulted toilets, waxing building, warmup sections, and space to set up warming tents.

Environmental Aspects

- Avoiding excessive side cuts
- Managing water flow and drainage
- Employing materials and finishing that blend into the natural surroundings
- Rehabilitation/reforestation of the site, pre and post event
- Avoiding bridges where possible. They are expensive, have an impact on the nature, can be future obstacles, and make future changes more difficult.

Legal Aspects

- Land ownership
- Government authority regulations
- Environmental regulations

Citation Block

- Aalberg, J. (Ed.). (n.d.). FIS Cross-Country Homologation Manual (6th ed., pp. 9-30, Tech.). Retrieved February, 2019, from <https://www.fis-ski.com/>.
- UAA Civil Engineering Department (2019). Request for Proposal CED 201901 ARCTIC VALLEY CROSS-COUNTRY SKI TRAIL. Unpublished manuscript, University of Alaska Anchorage, Anchorage, AK.
- Kastning, A. (2018). Arctic Valley Cross Country Ski Trail Proposal. Unpublished manuscript.