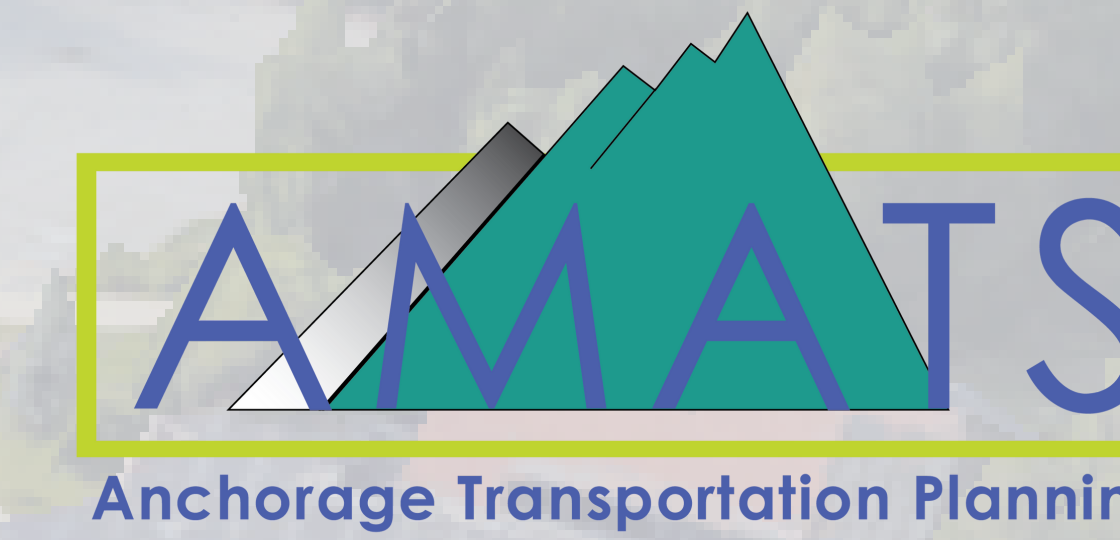


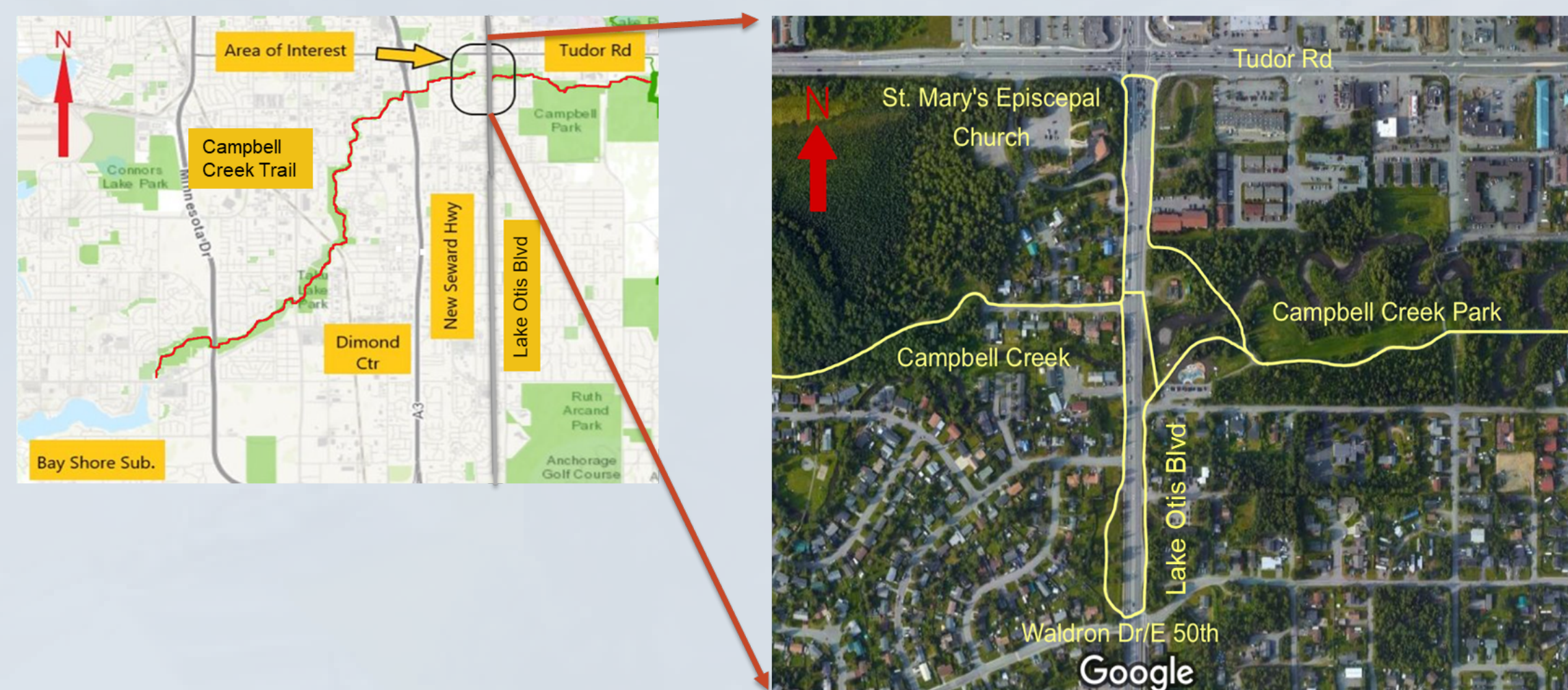
AMATS: Campbell Creek Trail Crossing at Lake Otis Parkway

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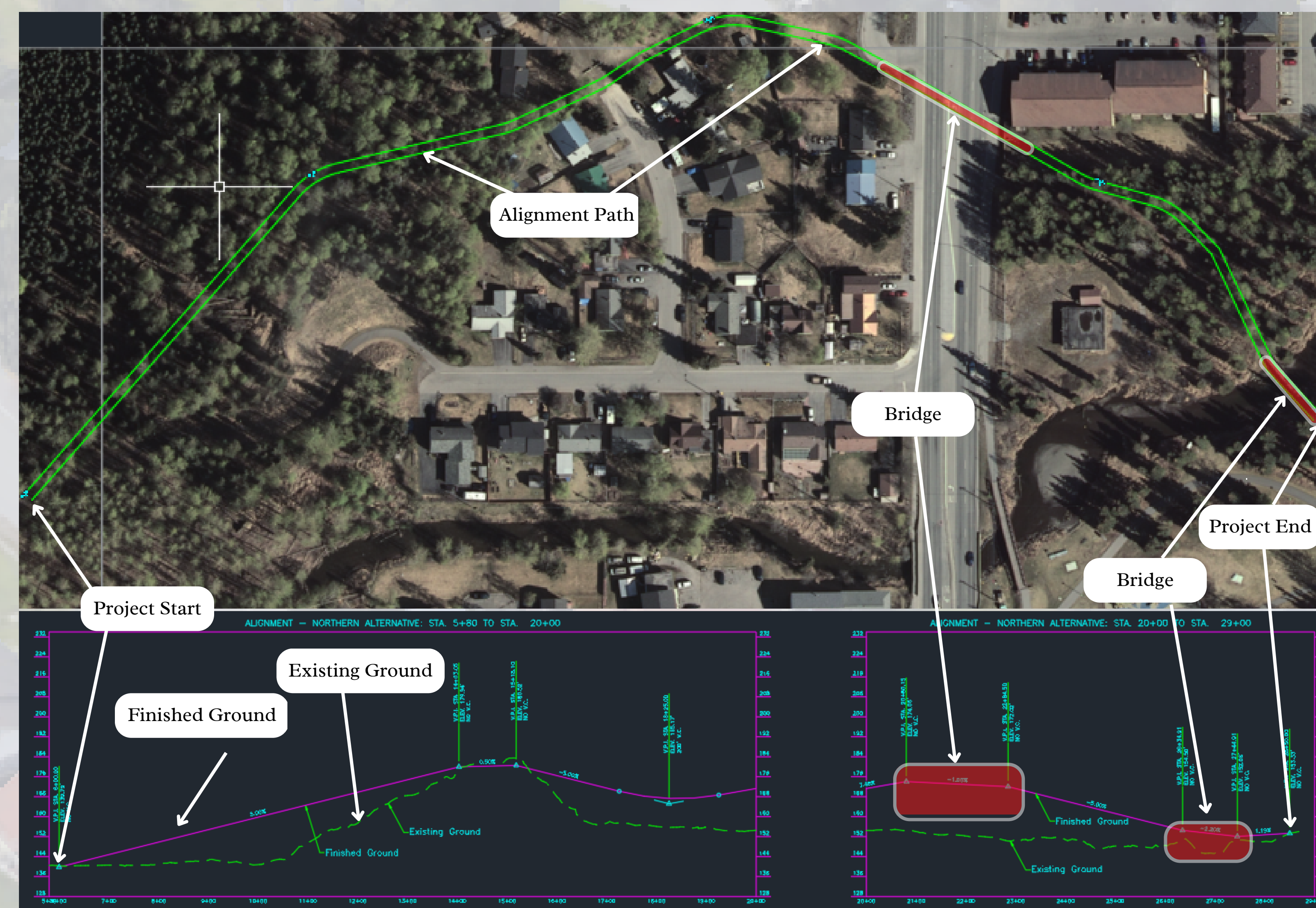


ABSTRACT

Campbell Creek trail is a 7.5-mile-long trail that serves as a vital artery for bicyclist commuters and recreationists in Anchorage. The Campbell Creek Trail crossing at Lake Otis is the only at-grade crossing in the entire trail system resulting in conflict points between bicyclists, pedestrians, and passenger vehicles. With the area's increasing urbanization and use of the Campbell Creek Trail, an improved crossing of Lake Otis Parkway is needed. The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), proposes constructing a grade-separated crossing of Campbell Creek Trail Crossing at Lake Otis Parkway. The proposed project includes completing an alternative study of options for a grade-separated crossing of Lake Otis Parkway near 47th Court.



PREFERRED ALTERNATIVE PLAN & PROFILE



PREFERRED ALTERNATIVE

The preferred alignment (C3) will not incorporate a new pedestrian bridge crossing Campbell Creek and instead utilize the existing crossing when connecting back into the existing trails. The preferred alignment will cross Lake Otis Parkway at a skew creating an approximate bridge span of 230'. This bridge will incorporate equal width of travel as the proposed new trail sections to provide an increase in pedestrian flow. In addition, this bridge will utilize Mechanically Stabilized Earth walls (MSE) substructure walls east and west of Lake Otis in order to construct on undeveloped land.

BRIDGE TYPES



Several bridge types and materials were considered during the alternative analysis, including steel, wood, and concrete. Steel was the chosen bridge material by the client with composite decking.

ALTERNATIVE ANALYSIS AND METHODOLOGY

Our firm, B&C Engineering, Inc., conducted an analysis of seven alternative options provided by the Alaska DOT&PF for the project. During the analysis, three alternatives were found to be infeasible due to the high groundwater levels in the borehole data provided by the Municipality of Anchorage. As a result, the proposed tunnel crossings were found to be unconstructable. To evaluate the remaining alternatives, we utilized a decision matrix.



DECISION MATRIX

	ROW	Community Impacts	Environmental Impact	Utility Impact	Level of service	Overall Cost	Project Goal
No-Build	●	●	●	●	●	●	●
C3	●	●	●	●	●	●	●
C1	●	●	●	●	●	●	●
C2	●	●	●	●	●	●	●

Impact Level ● = High ● = Medium ● = Low

RIGHT OF WAY IMPACTS

The right-of-way impacts were analyzed by obtaining property values for the properties impacted by each alternative.

ENVIRONMENTAL IMPACTS

A wetland map of the project area was utilized to obtain each alternative's level of impact.

LEVEL OF SERVICE

The level of service was quantified by looking at the length of each alternative, ease of use, and impedance to vehicular traffic.

COMMUNITY IMPACTS

Community impacts were quantified by looking at the types of properties and how many families are impacted by each alternative.

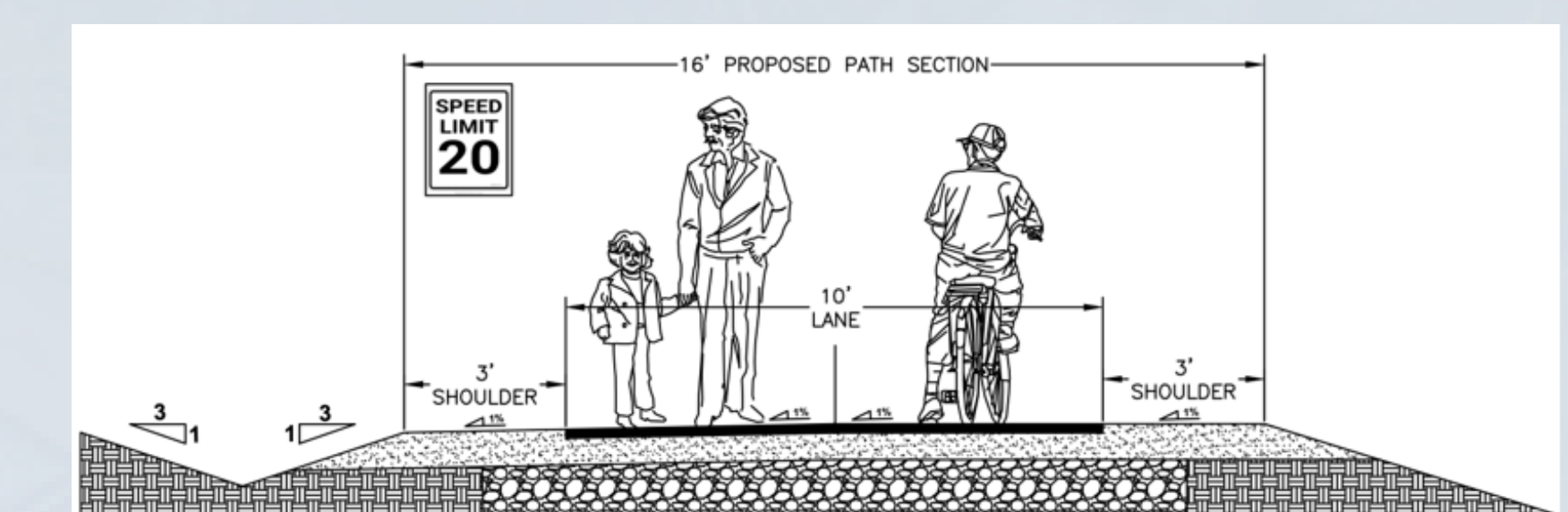
UTILITY IMPACTS

A utility scoping document and utility survey provided by Alaska DOT&PF were used to quantify the cost of each alternatives utility impacts.

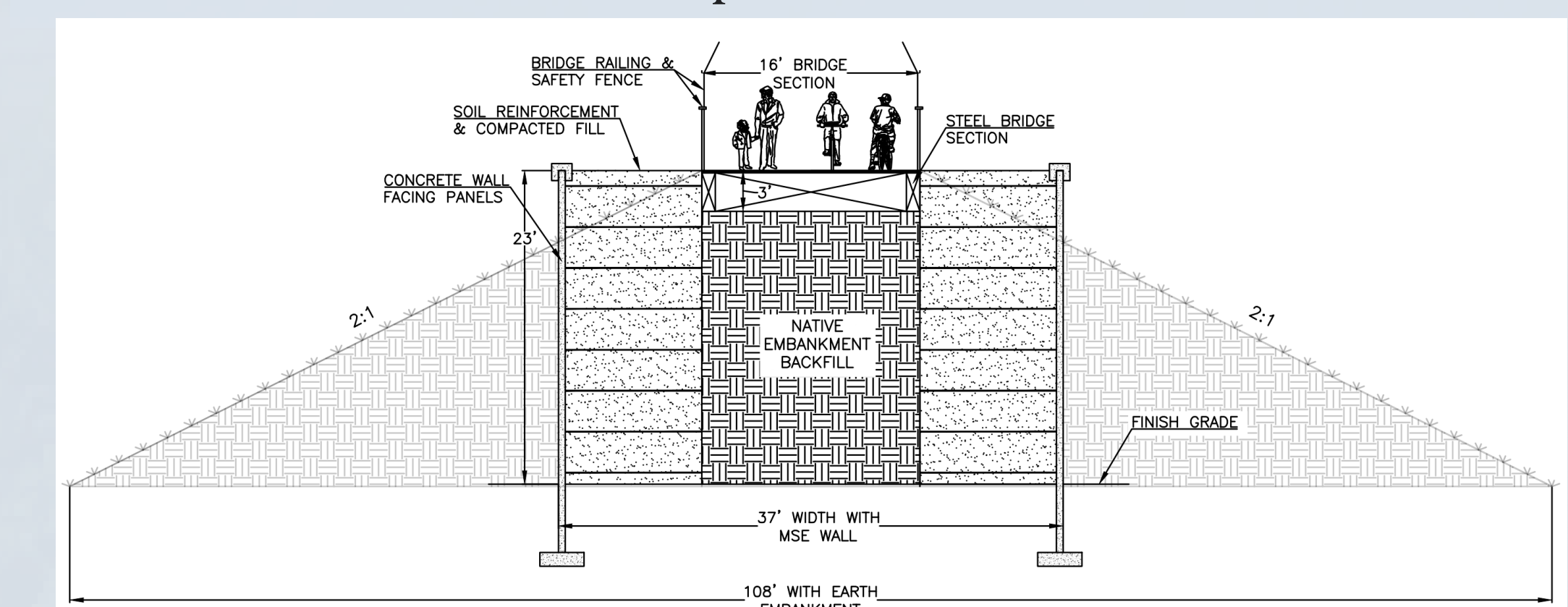
OVERALL COST

The total cost of ROW, Utilities, cost of bridge structures, and cost of earthwork and paths were summed to obtain the overall material cost.

TYPICAL SECTIONS



The paved trail will consist of a 10-foot paved path with 3-foot shoulders. The design parameters are driven mainly by the Municipality of Anchorage Design Criteria Manual. It will have less than 5% longitudinal slopes to accommodate persons with disabilities.



When choosing to construct earth substructure abutments for a crossing over Lake Otis Parkway; design criteria dictates maximum slopes of 2:1 H:V. Construction height of the preferred alternative produces 108' of material width and poses the highest impact on existing right of way with the use of a bridge. To minimize this and keep the preferred alternative constructible; the use of Mechanically Stabilized Walls or (MSE) Walls is proposed as the preferred substructure to reduce the impact to existing conditions.