

Glenn Highway - Fort Richardson Interchange Redesign



NAKUURUK
ENGINEERING

Nakuuruk Team



Ryan Bryn,
Student Senior Project
Engineer



David Benter,
Student Senior Civil
Engineer



Lisa Krol,
Student Senior Design
Engineer



Katherine Sakeagak,
Student Project
Manager



Client and Mentors



Client: Sophia Lee, E.I.T, 673d Civil Engineer Squadron



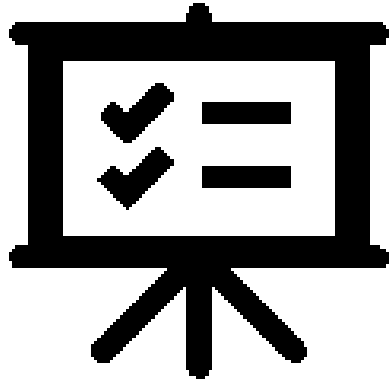
Professional Mentor: Will Webb, P.E. PTOE



Faculty Advisor: Dr. Vinod Vasudevan



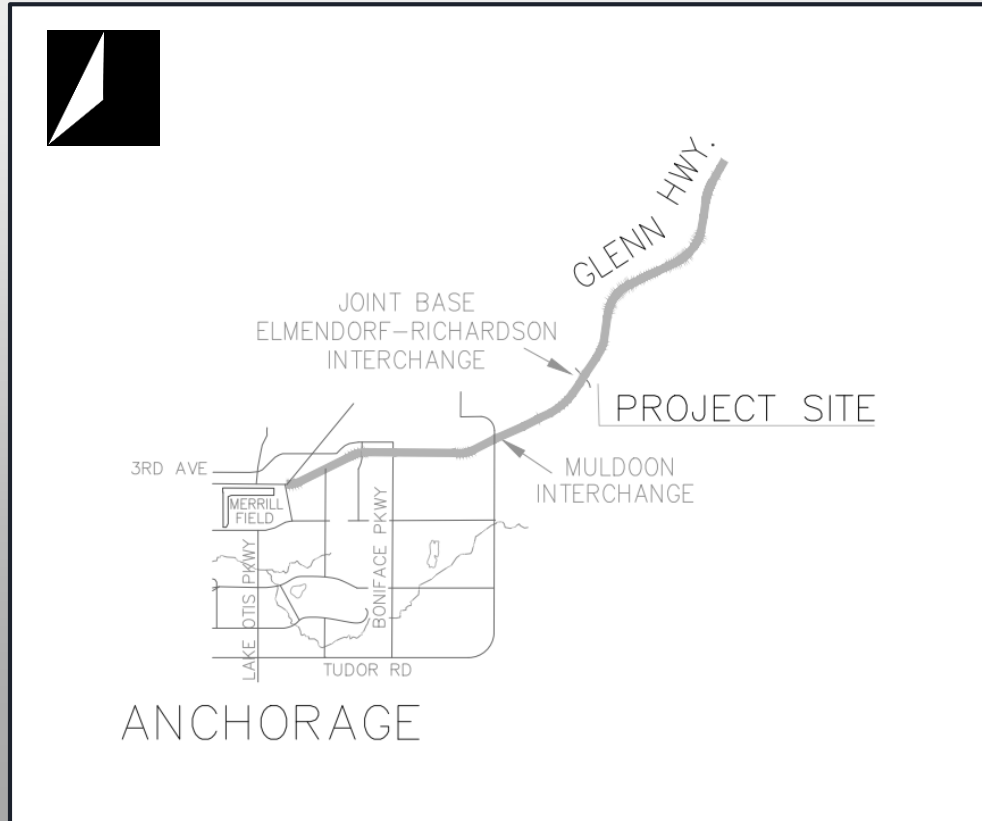
Outline

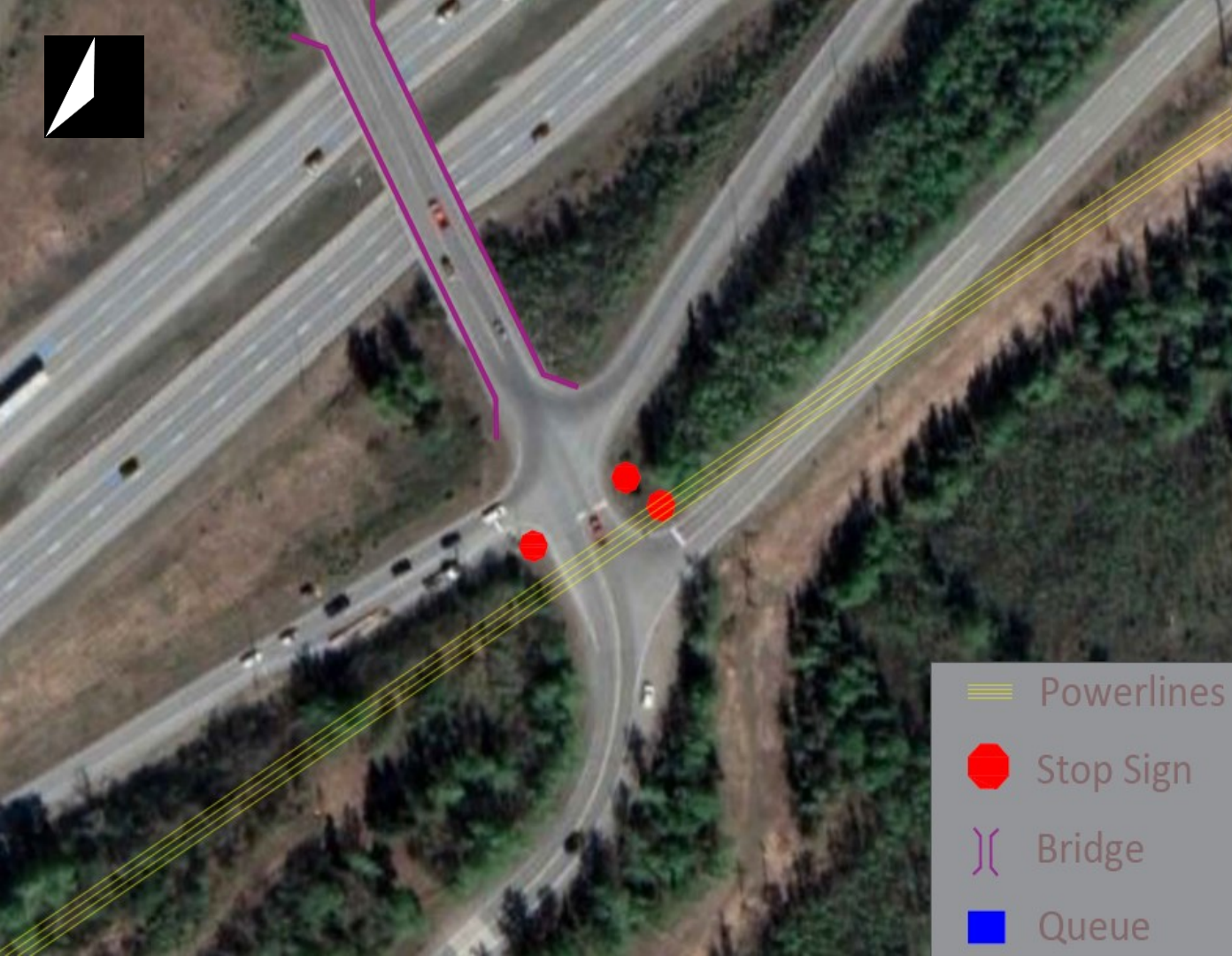




- ❖ Project Background
- ❖ Project Scope
- ❖ Alternatives
- ❖ Planning and Conceptual Design
- ❖ Estimated Project Budget



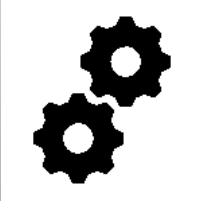
Project Location





-  Powerlines
-  Stop Sign
-  Bridge
-  Queue

Project Constraints



Project Overview

- ❖ Eliminate congestion and confusion
- ❖ No disruption to overhead utilities
- ❖ Enhance safety



Deliverables

Phase 1:

- Proposal
- Contract

Phase 2:

- Limited Alternatives Analysis
- Traffic Study & Analysis
- Pavement Design

Phase 3:

- Horizontal & Vertical Alignment for Chosen Design
- Design Study Report



Alternatives

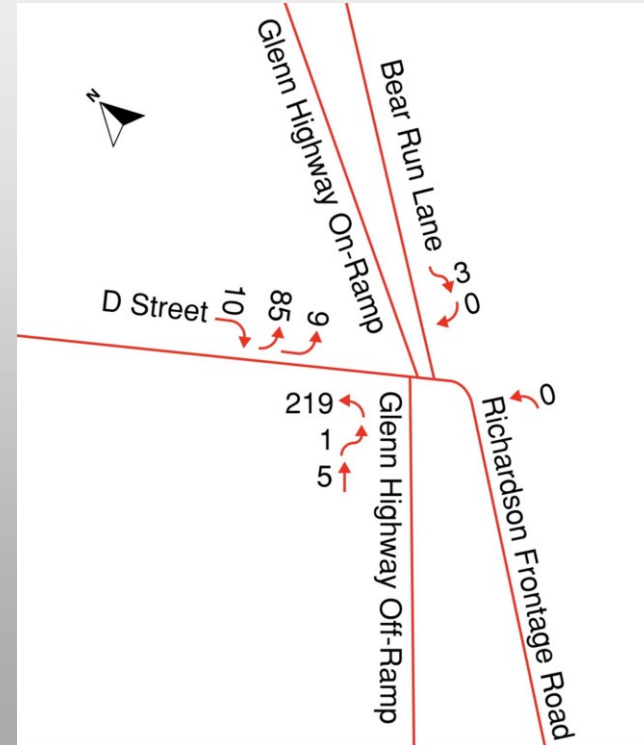


Chosen Design



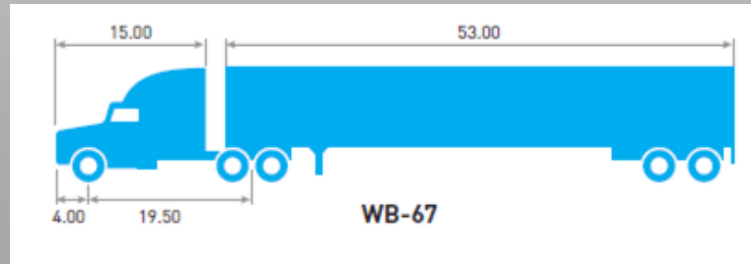
Traffic Analysis

Capacity Analysis	EB Leg	WB Leg	NB Leg	SB Leg
Entry Volume, Veh/hr	104	3	225	0
Entry Capacity, veh/hr	1127	830	1029	905
v/c Ratio	0.09	0.00	0.22	0.00
Level of Service	A			

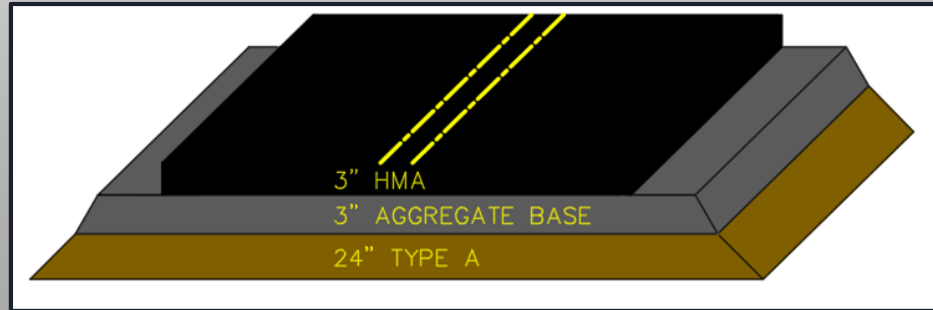


Design Criteria

Design Speed	Lane Width	Stopping Sight Distance (SSD)	Present ADT	Mid-Design ADT	Design ADT	Design Turning Vehicle
65 MPH Off-ramp	12 ft	645 ft	2850	3615	4407	WB-67
35 Arterial Streets	12 ft	250 ft				



Typical Section



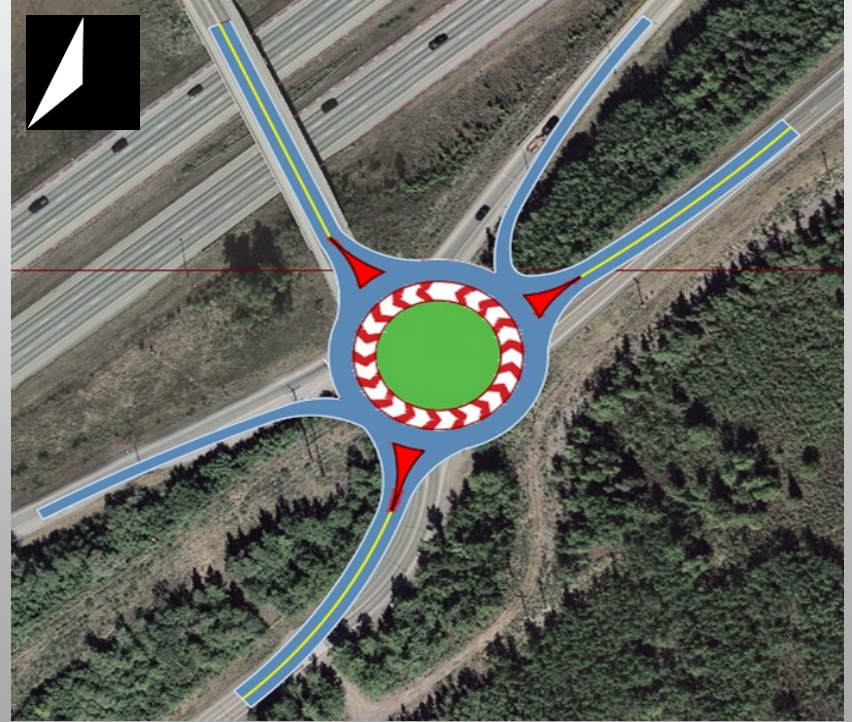
Project Budget and Cost Estimate

		COST (\$)
Total Billed to date	\$	61,470
Project Budget	\$	63,832
Budget Remaining	\$	2,362
Project Total	\$	3,487,719.00



Summary

- ❖ Purpose and Need
- ❖ Final Design
- ❖ Project Cost Estimation



Thank you!

Questions?

