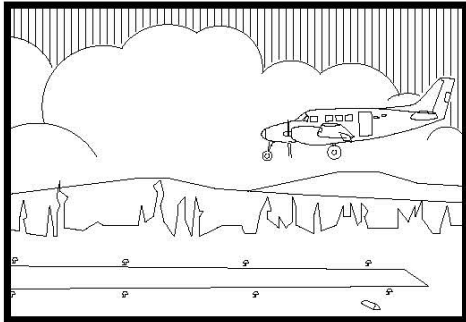


# DESIGN STUDY REPORT

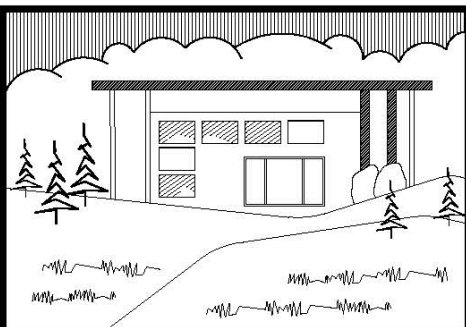
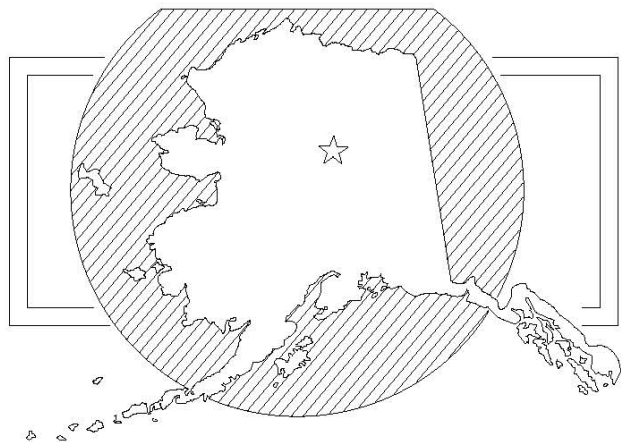
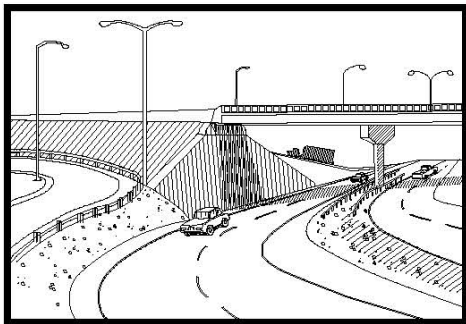
## Old Steese Highway Shoulder Widening

NFHwy00527/0002(472)



# STATE OF ALASKA

Department of Transportation  
and Public Facilities



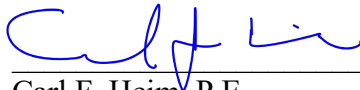
*NORTHERN REGION*

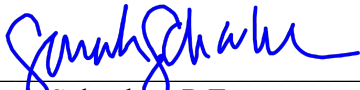
*November 2022*

DESIGN APPROVAL

OLD STEESE HIGHWAY SHOULDER WIDENING

PROJECT NO. NFHWY00527 / 0002(472)

Requested by:  11-29-2022  
\_\_\_\_\_  
Carl F. Heim, P.E.  
Engineering Manager  
Northern Region  
Date

Design Approval  
Granted:  12/2/2022  
\_\_\_\_\_  
Sarah Schacher, P.E.  
Preconstruction Engineer  
Northern Region  
Date

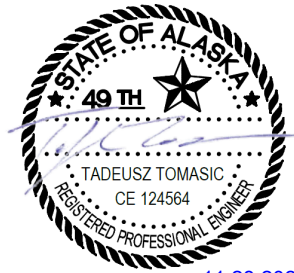
Distribution: NR Design Directive 20-01 Distribution

DESIGN STUDY REPORT  
FOR

OLD STEESE HIGHWAY SHOULDER WIDENING

PROJECT NO. NFHWY00527 / 0002(472)

PREPARED BY: Tadeusz Tomasic, P.E.



11.28.2022

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
NORTHERN REGION DESIGN, ENGINEERING, & CONSTRUCTION  
NOVEMBER 2022

OLD STEESE HIGHWAY SHOULDER WIDENING  
PROJECT NO, NFHWY00527 / 0002(472)

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## INTRODUCTION/HISTORY

The Old Steese Highway is a rural collector located North of Fairbanks and supports an Average Annual Daily Traffic (AADT) of 1,400 vehicles per day. The highway is located in flat terrain with total truck volume of 3.75%.

A crash analysis on the corridor of the Old Steese Highway from Gold Dredge #8 to the Fox Intersection examined 1 fatal, 2 serious injury, and 2 property damage only (PDO) crashes over a 4 year time period. An additional fatal crash occurred outside the analysis period within the project limits. Current shoulder widths within the corridor vary between 2 inches to 2 feet, averaging 1 foot.

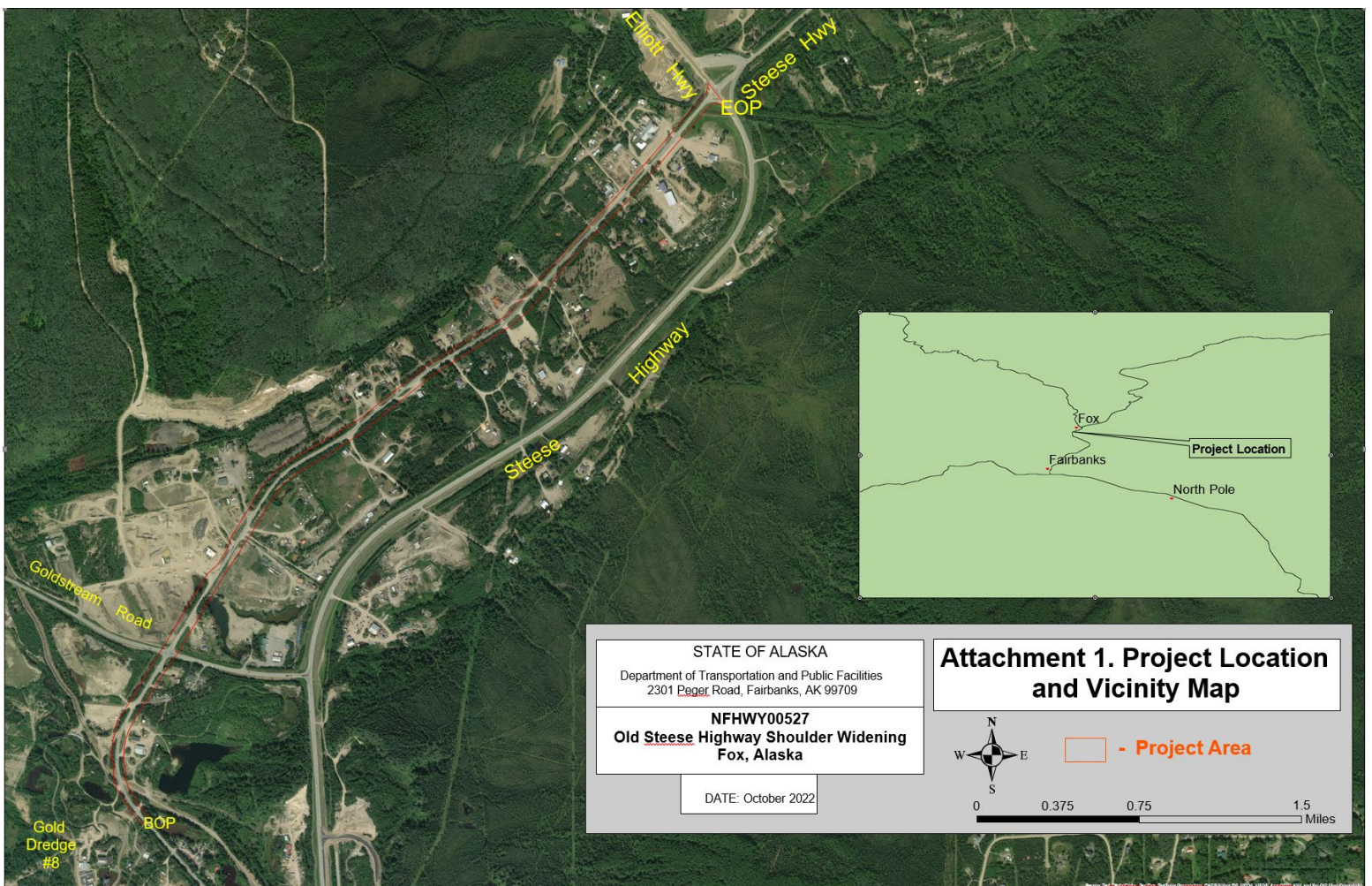


Figure 1: Location and Vicinity Map

## **PROJECT DESCRIPTION**

The Alaska Department of Transportation & Public Facilities (DOT&PF) proposes to construct data driven highway safety improvements on the Old Steese Highway (see Figure 1). Improvements will include reconstructing and widening the highway with 6 foot shoulders. The new roadway will be approximately 10 feet wider than existing. The shoulders will accommodate bicycles and pedestrians. The crash analysis indicates that increasing the shoulder width to 6 feet will provide a 23% crash reduction run-off-road, head on, and sideswipe crashes (See Appendix C for Crash Reduction Factor work sheet).

The project includes the following elements:

- Construction of 6 foot shoulders.
- Minor realignment to horizontal curve nearest BOP to conform to current design standards.
- Replacement of existing guardrail to conform to current design standards.
- Raising crossing overhead utilities at 6 locations from a vertical clearance of 18 feet or less to 20.5 feet or more.
- Construction of drainage ditches.
- Replacement of old culverts.

## **DESIGN STANDARDS**

The design standards followed for this project are:

- *A Policy on the Geometric Design of Highway and Streets (GB)*, 2011, American Association of State Highway and Transportation (AASHTO).
- *Alaska DOT&PF Highway Preconstruction manual (PCM)*, State of Alaska, Department of Transportation and Public Facilities (ADOT&PF).
- *Alaska Flexible Pavement Design Manual*, 2004, ADOT&PF, and associated software.
- *Alaska Traffic Manual (ATM)*, 2016, ADOT&PF.
- *Roadside Design Guide*, 2011, AASHTO.

The project design designation and design criteria are included in Appendix. A design speed of 50 miles per hour was selected in accordance with PCM and GB guidance. Old Steese Highway is a rural collector with flat terrain.

## **DESIGN EXCEPTIONS AND DESIGN WAIVERS**

There are no design exceptions or design waivers.

## **DESIGN ALTERNATIVES**

### Use of Asphalt Treated Base (ATB)

## **PREFERRED DESIGN ALTERNATIVE**

### Use of Crushed Asphalt Base Course (CABC)

This proposed alternative would use CABC in lieu of ATB in the pavement structure typical section. Following pavement analysis and consultation with the DOT\*PF's materials and geotechnical sections, use of CABC will provide suitable support throughout the pavement's design life. Due to low truck volume and competent foundation soils consisting of mining tailings, use of the costlier ATB is not necessary.

## **3R ANALYSIS**

Not applicable.

## **TRAFFIC ANALYSIS**

Old Steese Highway is classified as a major rural collector. Present year (2022) ADT was 1,412 vehicles per day (3.75% trucks), and is projected to be 1,687 vehicles per day in the design year (2043). See the project design designation in Appendix A for additional information.

## **HORIZONTAL/VERTICAL ALIGNMENT**

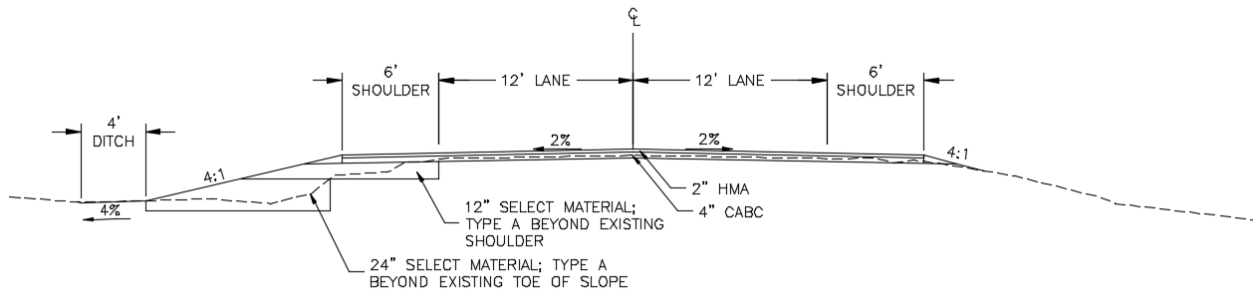
This project will reconstruct Old Steese Highway primarily on the existing horizontal and vertical alignment, however, the centerline at the first horizontal curve will be flattened and shift approximately 4.75 feet to conform to current design standards.

The terrain in the project area is flat. Existing grades throughout the project vary from 0.04% to 2.45%. Grades post-construction will be similar to existing conditions. Minor elevation adjustments will be made to balance cut/fill quantities. See Appendix D for preliminary plan and profile sheets.

## TYPICAL SECTION(S)

Insert text here.

Old Steese Highway corridor will consist of 12 foot lanes with 6 foot paved shoulders. Widening will take place primarily between BOP and guardrail section towards EOP.



**Figure 2 Old Steese Widening Typical Section**

## PAVEMENT DESIGN

The selected pavement design was evaluated using the Alaska Flexible Pavement Manual and associated software. The design life of the pavement is 20 years in accordance with the General Policy-6. The preliminary pavement design was based on General Policy-6 and General Policy-13.

The selected pavement design consists of 2-inches hotmix asphalt, type II; class "A", 4-inches of crushed asphalt base course (CABC), 12-inches of select material type A outside of existing shoulders, and 36-inches of select material type A beyond existing toe of slope. See Appendix C for the approved pavement design and engineering calculations.

## PRELIMINARY BRIDGE LAYOUT

Not applicable. There are no bridges within the project limits.



## RIGHT-OF-WAY REQUIREMENTS

All improvements will occur within existing right of way limits. Temporary Construction Permits will be obtained for driveway reconstruction. Housing encroachment on the southeast corner of the Old Steese and Goldstream intersection is within DOT&PF right of way by approximately 13 feet by 43 feet (triangular) for an area of approximately 280 square feet (see Figure 3). DOT&PF Property Management staff is working with the property owner on vacation and/or temporary permitting to rectify this issue.



**Figure 3, Encroachment**

## MAINTENANCE CONSIDERATIONS

Primary M&O concerns are rehabilitation of drainage. To address these issues, new ditches will be installed at cut locations, and new culverts will replace existing culverts at the end of their service life. The widened shoulders will increase pavement area by approximately 1.6 lane-miles through this corridor. During winter maintenance, widened shoulders will provide greater interim snow storage without altering plow operations/number of passes.

## MATERIAL SOURCES

Material requirements include paving aggregates, aggregate base course, crushed asphalt base course, and select material type A. CABC will be generated from reclamation of existing asphalt; all other materials will be contractor furnished. Commercial sources are available in the area for select materials and paving products. Material sites will be Contractor furnished.

## **UTILITY RELOCATION & COORDINATION**

Preliminary utility relocation plans (65%) and cost estimate have been developed for this project. The preliminary plans have been reviewed by the Department and affected stakeholders and comments received will be incorporated into the final design.

Utility coordination and relocation is required for this project. Alaska Communications (ACS) and Golden Valley Electric Association (GVEA) have overhead utilities crossing the Old Steese Highway at a substandard vertical clearance.

## **ACCESS CONTROL FEATURES**

No access control features are included. Old Steese Highway is not a fully access controlled facility, and access control is maintained by the driveway permitting process.

## **PEDESTRIAN/BICYCLE (ADA) PROVISIONS**

Existing shoulders average 1 foot width within project corridor. Currently, no ADA accommodations are present for cyclists or pedestrians. This project will construct 6 foot shoulders which will accommodate cyclists and pedestrians.

## **SAFETY IMPROVEMENTS**

This project involves the following safety improvements identified in the HSIP project nomination (see appendix F).

- Add 6 foot paved shoulders to reduce run-off the road type crashes
- Relocate utilities to meet vertical clearance requirements
- Adjust substandard horizontal curve near BOP to meet design speed requirements.

## **INTELLIGENT TRANSPORTATION SYSTEM FEATURES**

Not applicable. There are no intelligent transportation system features within the project limits.

## **DRAINAGE**

Drainage in the project area typically flows toward Fox Creek and Goldstream Creek. Existing ditches and culverts generally appear adequately sized for conveying surface runoff away from the roadway. Ditches and cross culverts will be constructed to accommodate the widened roadway to keep water out of the embankment. Culverts will be limited to 36" diameter.

## SOIL CONDITIONS

The corridor is located in the Tanana Hills which constitute part of the Yukon Tanana Upland. This area was the scene of gold dredging operations in the 1940s to early 1950s. The structure foundation of the road primarily consists of dredge tailings and bedrock schist. Current roadway structural conditions indicate competent foundation soils.

The average monthly air temperature, freezing degree days, and thawing degree days for Fairbanks, AK are provided in table 1. Historical climate data for the 1981-2010 was taken from the Western Regional Climate Center website. The mean annual air temperature is 27.9 F, and the freezing and thawing indices are 5,029 F-days and 3,604 F-days respectively.

Month	Mean Temperature (F)	Freezing Degree Days ()	Thawing Degree Days ()
Jan	-6.5	1192.0	0
Feb	-0.9	920.6	0
Mar	12.3	611.5	0
Apr	32.4	77.7	89.3
May	49.8	0	550.3
Jun	60.6	0	857.8
Jul	62.6	0	947.9
Aug	56.3	0	754.3
Sep	45.0	0	389.8
Oct	24.3	253.8	14.5
Nov	3.4	857.8	0
Dec	-4.0	1115.6	0
	<b>TOTAL</b>	<b>5,029.0</b>	<b>3,603.6</b>

**Table 1 Mean Monthly Air Temperature and Freezing/Thawing Degree Days.**

## EROSION AND SEDIMENT CONTROL

The area of ground disturbance is approximately 15 acres. A SWPPP will be required. The project will begin construction in 2023. During construction, erosion sediment control policy (ESCP) will consist of temporary best management practices (BMP) such as the use of fiber matting, track walking, and coverage of stockpiles to prevent erosion; and perimeter control primarily using vegetative buffer where applicable, and where buffer requirements cannot be met, use of perimeter control devices (e.g. silt fence, waddles) will be employed. Finished slopes will be seeded for permanent erosion prevention. BMPs will require using a certified weed-free native perennial grass seed mix for soil stabilization.

## **ENVIRONMENTAL COMMITMENTS**

There are no project-specific environmental commitments for this project. Approved environmental document signature page is included in Appendix B.

## **WORK ZONE TRAFFIC CONTROL**

The preferred work zone traffic control will be to maintain one way traffic during construction. Nearby intersections at Goldstream and Fox will facilitate one way closures such that commercial and residential access impacts are minimized. The contractor will be required to provide and follow a Traffic Control Plan for all phases of construction that will maintain stakeholder access within project limits. The project is not considered significant per the PCM section 1400.2.

## **VALUE ENGINEERING**

A value engineering study will not be prepared because the total estimated cost is less than the minimum threshold (PCM 450.15 and Policy and Procedure 05.01.030).

## **COST ESTIMATE**

The estimated costs for this project are as follows:

Design	\$394,000.00
Utilities	\$112,500.00
Right of Way	\$0.00
Construction (Includes 15.00% Engineering)	\$4,949,000.00
	<hr/>
Total Cost of Project	\$5,455,500.00

Attachments:

Appendix A: Design Criteria and Design Designation

Appendix B: Environmental Document Signature Page

Appendix C: Highway Safety Improvement Program Nomination

Appendix D: Pavement Design

Appendix E: Preliminary Plan and Profile Sheets

**APPENDIX A**

**DESIGN CRITERIA  
AND  
DESIGN DESIGNATION**

**ALASKA DOT&PF PRECONSTRUCTION MANUAL**

**Chapter 11 - Design  
PROJECT DESIGN CRITERIA**

<b>Project Name:</b> Old Steese Highway Shoulder Widening					
<input checked="" type="checkbox"/> New Construction/Reconstruction <input type="checkbox"/> 3R <input type="checkbox"/> PM <input type="checkbox"/> Other:					
<b>Project Number:</b> <input type="checkbox"/> NHS <input checked="" type="checkbox"/> Non NHS					
<b>Functional Classification:</b>	Rural Major Collector				
<b>Design Year:</b>	2043				
<b>Design Year ADT:</b>	1,687				
<b>DHV:</b>	11.90%				
<b>Percent Trucks:</b>	3.75%				
<b>Pavement Design Year:</b>	2043				
<b>Terrain:</b>	Flat				
<b>Design Speed:</b>	50 MPH				
<b>Lane Width:</b>	11 FT				
<b>Shoulder Width:</b>	<table border="1"> <tr> <td><b>Outside:</b></td> <td>6 FT</td> <td><b>Inside:</b></td> <td>0 FT</td> </tr> </table>	<b>Outside:</b>	6 FT	<b>Inside:</b>	0 FT
<b>Outside:</b>	6 FT	<b>Inside:</b>	0 FT		
<b>Cross Slope:</b>	2%				
<b>Superelevation:</b>	e max = 6%				
<b>Min. Radius of Horizontal Curvature:</b>	835 FT				
<b>Maximum Allowable Grade:</b>	6%				
<b>Stopping Sight Distance:</b>	425 FT				
<b>Vertical Clearance:</b>	20.5 FT				
<b>Design Loading Structural Capacity:</b>	HS 15				
<b>Bridge Width:</b>	None				
<b>Min. Allowable Grade:</b>	0%				
<b>Min. K-Value for Vert. Curves:</b>	<table border="1"> <tr> <td><b>Sag:</b></td> <td>96</td> <td><b>Crest:</b></td> <td>84</td> </tr> </table>	<b>Sag:</b>	96	<b>Crest:</b>	84
<b>Sag:</b>	96	<b>Crest:</b>	84		
<b>Passing Sight Distance:</b>	1835 FT				
<b>Surface Treatment:</b>	<table border="1"> <tr> <td><b>T/W:</b></td> <td>Asphalt Concrete</td> <td><b>Shoulders:</b></td> <td>Asphalt Concrete</td> </tr> </table>	<b>T/W:</b>	Asphalt Concrete	<b>Shoulders:</b>	Asphalt Concrete
<b>T/W:</b>	Asphalt Concrete	<b>Shoulders:</b>	Asphalt Concrete		
<b>Side Slope Ratios:</b>	<table border="1"> <tr> <td><b>Foreslopes:</b></td> <td>4:1, 3:1, 2:1</td> <td><b>Backslopes:</b></td> <td>3:1, 2:1</td> </tr> </table>	<b>Foreslopes:</b>	4:1, 3:1, 2:1	<b>Backslopes:</b>	3:1, 2:1
<b>Foreslopes:</b>	4:1, 3:1, 2:1	<b>Backslopes:</b>	3:1, 2:1		
<b>Degree of Access Control:</b>	No access control, permitted driveways allowed				
<b>Median Treatment:</b>	None				
<b>Illumination:</b>	None				
<b>Lateral Offset to Obstruction:</b>	None				
<b>Curb Usage and Type:</b>	None				
<b>Bicycle Provisions:</b>	6 FT Shoulder				
<b>Pedestrian Provisions:</b>	6 FT Shoulder				
<b>Misc. Criteria:</b>					

**Proposed - Designer/Consultant:** \_\_\_\_\_  
**Endorsed - Engineering Manager:** \_\_\_\_\_  
**Approved - Preconstruction Engineer:** \_\_\_\_\_

**Date:** 11.10.2022  
**Date:** 11-29-2022  
**Date:** 11/29/2022

Shaded criteria are commonly referred to as *FHWA controlling criteria for NHS high-speed roadways (design speed >= to 50 mph)*. For NHS low-speed roadways (design speed < 50 mph), the only two *FHWA controlling criteria* which apply are design speed and design loading structural capacity. For NHS routes only, controlling criteria must meet the minimums established in the Green Book, unless a design exception is approved. For all other routes, all criteria must meet the minimums established in the Alaska Highway Preconstruction Manual, unless a Design Waiver is approved.

**Design Criteria marked with a " # " do not meet minimums and must have a Design Exception(s) and/or Design Waiver(s) approved. See the Design Study Report for Design Exception/Design Waiver approval(s) and approved design criteria values.**

---

**DESIGN DESIGNATION**  
**Northern Region Planning**  
**Traffic Data & Forecasting**

---

**ROUTE NAME:** Old Steese Highway  
**CDS NO:** 150105  
**ROUTE ID:** 2581130X000  
**MILEPOINT:** 6.350-8.568  
**FUNCTIONAL CLASS:** Major Collector  
**URBAN/RURAL:** Rural

	<b>YEAR</b>	<b>AADT</b>	<b>%</b>
<b>AADT</b>	2021	1400	
	2030	1510	
	2040	1640	
<b>DHV</b>	2030		11.90
	2040		200
<b>D</b>			35-65
<b>T</b>			<b>3.75</b>
			0.10
			3.40
			0.25
		<b>Total</b>	
		Class 4	
		Class 5	
		Class 6	
<b>ESAL'S (Design Lane)</b>	To Be Provided by Design		

# Traffic Data Request Form

TDR Form-1-10/20/03

Alaska Department of Transportation & Public Facilities

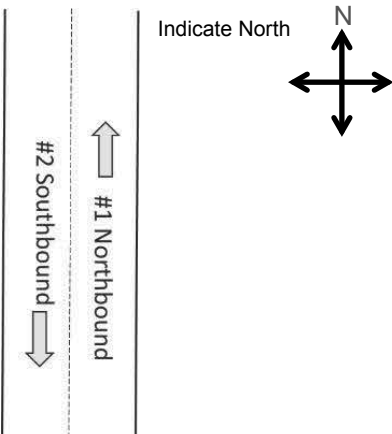

<b>Requested By:</b> Carl Heim		<b>Design Project Number:</b> NFHWY00527	<b>Date Requested:</b> 6/15/22																		
<b>Base Year:</b> 2021 <b>Base Year Total AADT:</b> 1400 <b>AADT Growth Rate Forward (%/yr):</b> 0.85 <b>End Year:</b> 2040 <b>Back Cast (%/yr):</b> <b>Begin Year:</b>		<b>Common Route Name:</b> Old Steese Hwy <b>Functional Class:</b> Urban/Rural Major Collector <b>Historic M.P. Interval:</b> 6.350-8.568	<b>CDS Route Name:</b> 150105 2581130X000 <b>CDS M.P. Interval:</b> 6.350-8.568																		
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Truck Category</th> <th>Load Factor (ESALs per Truck)</th> <th>% of Total AADT in Truck Category</th> </tr> </thead> <tbody> <tr> <td>2-axle</td> <td></td> <td></td> </tr> <tr> <td>3-axle</td> <td>See attached</td> <td></td> </tr> <tr> <td>4-axle</td> <td></td> <td></td> </tr> <tr> <td>5-axle</td> <td></td> <td></td> </tr> <tr> <td>≥ 6-axle</td> <td></td> <td></td> </tr> </tbody> </table>		Truck Category	Load Factor (ESALs per Truck)	% of Total AADT in Truck Category	2-axle			3-axle	See attached		4-axle			5-axle			≥ 6-axle			<b>Lane Configuration Sketch:</b> (Designer: Provide sketch of lane layout. Number each lane and show directions.) 	
Truck Category	Load Factor (ESALs per Truck)	% of Total AADT in Truck Category																			
2-axle																					
3-axle	See attached																				
4-axle																					
5-axle																					
≥ 6-axle																					
<b>Percent of Base Year Total AADT for Each Numbered Lane in Configuration Sketch:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr> <td>Lane # 1</td> <td>% 35</td> </tr> <tr> <td>Lane # 2</td> <td>% 65</td> </tr> <tr> <td>Lane #</td> <td>%</td> </tr> <tr> <td>Lane #</td> <td>%</td> </tr> <tr> <td>Lane #</td> <td>%</td> </tr> <tr> <td>Lane #</td> <td>%</td> </tr> </tbody> </table>		Lane # 1	% 35	Lane # 2	% 65	Lane #	%	Lane #	%	Lane #	%	Lane #	%	<b>Comments:</b> <div style="background-color: #e0e0e0; height: 100px;"></div>							
Lane # 1	% 35																				
Lane # 2	% 65																				
Lane #	%																				
Lane #	%																				
Lane #	%																				
Lane #	%																				
<b>Data Provided By:</b> Scott Vockeroth	<b>Provider's Signature:</b> 	<b>Date Provided:</b> 6/23/2022																			

Figure 6-1. Traffic Data Request (TDR) Form



<b>Submitted Data Request Type: Design Designations Request (Northern)</b>	
<b>Latest Status Update:</b>	Data Request Record has been assigned to an email address.
<b>Assigned to the following e-mail address:</b>	jill.melcher@alaska.gov; scott.vockeroth@alaska.gov
<b>Record Creation:</b>	June 15, 2022 11:52:11 AM
<b>Routed to assigned e-mail address:</b>	June 15, 2022 04:44:39 PM
<b>Request Resolution:</b>	Resolution Pending

<b>Requestor</b>			
First Name: *	Carl	Last Name: *	Heim
Email: *	carl.heim@alaska.gov		
Additional Email Contacts:	tadeusz.tomasic@alaska.gov <span style="float: right;">+</span>		
Date Needed: (AKST)	07 / 01 / 2022 <span style="float: right;">✖</span>		

<b>Project Information</b>	
Project Name: *	Old Steese Highway Shoulder Widening
Project Engineer(s): *	Carl F. Heim <span style="float: right;">+</span>
State Project Number: *	NFHWY00527
Federal Project Number: *	0002(472)
Route ID: *	150105
Milepoint (To/From): *	6.350-8.568
Construction Year: *	2023

Please select the type of project. \*

Reconstruction  
 Rehabilitation  
 New Construction  
 Other (please describe):

**Project Notes:**

Please select the project's region to view the Data Fields that are available to request. \*

Central \*  
 Northern \*  
 Southcoast \*

**Data Fields Requested: (please pick at least one) \***

Present AADT  
 Design Year AADT (Please specify Year)   
 Mid-Design Year AADT (Please specify Year)   
 Design Hourly Volume (DHV)  
 Directional Split (D)  
 Percent Trucks  
 Road Functional Classification  
 Intersection Turning Movements (Please specify Locations) \*

Please specify any other requested data fields not listed above:

Route ID	Route Name	Measure	Feature	Location	Attribute1	Attribute2	Attribute3
2581130X000	Old Steese Hwy (Fairbanks)	0.0000		Route Begin			
2581130X000	Old Steese Hwy (Fairbanks)	0.0000		Report Begin			
2581130X000	Old Steese Hwy (Fairbanks)	0.0000	AHS	Begin	Alaska Highway System: Road is not on the Alaska Highway System		
2581130X000	Old Steese Hwy (Fairbanks)	0.0000	Functional Class	Begin	Functional Class: Major Collector		
2581130X000	Old Steese Hwy (Fairbanks)	0.0000	NHS	Begin	NHS: Not NHS		
2581130X000	Old Steese Hwy (Fairbanks)	0.0000	Speed	Begin	Posted Speed Limit: 40		
2581130X000	Old Steese Hwy (Fairbanks)	0.1272	Speed	End	Posted Speed Limit: 40		
2581130X000	Old Steese Hwy (Fairbanks)	0.1272	Speed	Begin	Posted Speed Limit: 40		
2581130X000	Old Steese Hwy (Fairbanks)	2.2591	Speed	End	Posted Speed Limit: 40		
2581130X000	Old Steese Hwy (Fairbanks)	2.2591	Speed	Begin	Posted Speed Limit: 50		
2581130X000	Old Steese Hwy (Fairbanks)	4.4617	FHWA Urban Area	Begin	Urbanized Area Type: Rural Area	Urbanized Area Name: Rural	
2581130X000	Old Steese Hwy (Fairbanks)	5.8652	Traffic Link	Begin	AADT: 560	AADT Year: 2020	Traffic Link ID: AL000910
2581130X000	Old Steese Hwy (Fairbanks)	6.5209	Traffic Link	End	AADT: 560	AADT Year: 2020	Traffic Link ID: AL000910
2581130X000	Old Steese Hwy (Fairbanks)	6.5209	Traffic Link	Begin	AADT: 910	AADT Year: 2020	Traffic Link ID: AL003167
2581130X000	Old Steese Hwy (Fairbanks)	6.5209	Intersections	Point	Intersection Name: OLD STEESE @ FOX & Beistline Lane		
2581130X000	Old Steese Hwy (Fairbanks)	6.9762	Traffic Link	End	AADT: 910	AADT Year: 2020	Traffic Link ID: AL003167
2581130X000	Old Steese Hwy (Fairbanks)	6.9762	Traffic Link	Begin	AADT: 800	AADT Year: 2020	Traffic Link ID: AL000911
2581130X000	Old Steese Hwy (Fairbanks)	6.9762	Intersections	Point	Intersection Name: OLD STEESE @ FOX & GOLDSTREAM ROAD		
2581130X000	Old Steese Hwy (Fairbanks)	7.0398	Speed	End	Posted Speed Limit: 50		
2581130X000	Old Steese Hwy (Fairbanks)	7.0398	Speed	Begin	Posted Speed Limit: 40		
2581130X000	Old Steese Hwy (Fairbanks)	7.2883	Intersections	Point	Intersection Name: OLD STEESE @ FOX & Dredge Bucket Road		
2581130X000	Old Steese Hwy (Fairbanks)	7.5431	Intersections	Point	Intersection Name: OLD STEESE @ FOX & Conveyor Street		
2581130X000	Old Steese Hwy (Fairbanks)	7.7934	Intersections	Point	Intersection Name: OLD STEESE @ FOX & Beth Court		
2581130X000	Old Steese Hwy (Fairbanks)	8.0293	Intersections	Point	Intersection Name: OLD STEESE @ FOX & Kaylee Lane		
2581130X000	Old Steese Hwy (Fairbanks)	8.4153	Traffic Link	End	AADT: 800	AADT Year: 2020	Traffic Link ID: AL000911
2581130X000	Old Steese Hwy (Fairbanks)	8.4153	Traffic Link	Begin	AADT: 1200	AADT Year: 2020	Traffic Link ID: AL003168
2581130X000	Old Steese Hwy (Fairbanks)	8.5005	Intersections	Point	Intersection Name: OLD STEESE @ FOX & Ramp		
2581130X000	Old Steese Hwy (Fairbanks)	8.5309	AHS	End	Alaska Highway System: Road is not on the Alaska Highway System		
2581130X000	Old Steese Hwy (Fairbanks)	8.5309	FHWA Urban Area	End	Urbanized Area Type: Rural Area	Urbanized Area Name: Rural	
2581130X000	Old Steese Hwy (Fairbanks)	8.5309	Functional Class	End	Functional Class: Major Collector		
2581130X000	Old Steese Hwy (Fairbanks)	8.5309	NHS	End	NHS: Not NHS		
2581130X000	Old Steese Hwy (Fairbanks)	8.5309	Speed	End	Posted Speed Limit: 40		
2581130X000	Old Steese Hwy (Fairbanks)	8.5309	Traffic Link	End	AADT: 1200	AADT Year: 2020	Traffic Link ID: AL003168
2581130X000	Old Steese Hwy (Fairbanks)	8.5309		Report End			
2581130X000	Old Steese Hwy (Fairbanks)	8.5309		Route End			

## Computations and Historical Data

### Project: Old Steese Shoulder Widening

#### Historical AADTs

Traffic					Year					
Link	Start MP	Start Feature	End MP	End Feature	1980	1981	1982	1983	1984	1985
1	6.521	Beistline Dr	6.976	Goldstream Rd						
2	6.976	Goldstream Rd	8.415	Turtle Club Entrance						
3	8.415	Turtle Club Entrance	8.531	End of Road						

Link	Year														
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1		569	731	944	572	566			626		660			710	
2	800	814	790	674	751			748		752			814		
3	876				1180			1115		1361			1530		

Link	Year														
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1		704	810	843		828	982	1015	855	968	849	863	1192	1041	745
2		958	1100	939	949		1381	1334	1185	1225	1180	1213	1380	1216	1060
3		1298	1429	1528	1364	1399	2149	2040	1598	1777	1795	1836	1717	1695	1446

Link	Year					
	2016	2017	2018	2019	2020	2021
1	979	818	779	763	910	990
2	1128	1154	1065	979	800	870
3	1534	1530	1303	1451	1200	1300

**Growth Rate** 0.85% Based on previous design designations and historical trends

Growth Factors	Year	Factor
	2030	1.079
	2040	1.174

#### Future AADT

Year	AADT
2021	1400
2030	1510
2040	1640

**D Factor (30)** 35-65

**K-Factor (30)** 11.90% Obtained from Continous Count at Farmers Loop Rd West of Steese Expy

**Design Hourly Volume (DHV)**  
 2030 180  
 2040 200

#### Class Data

Station ID	Station Description	Year	Percent by Class							Total Truck %	
			4	5	6	8	9	10	13		
13920520	Farmers Loop West of Steese Expy	2021	0.10	3.40	0.25	0.00	0.00	0.00	0.00	0.00	3.75
			Load Factor	1.00	0.50	0.85	1.20	1.55	2.24	2.24	
			Number of Axles	2/3	2	3	4	5	6	7+	

**APPENDIX B**

**ENVIRONMENTAL DOCUMENT SIGNATURE PAGE**

**Environmental Documentation Approval Signatures**

Prepared by:  Date: 9/30/2021

Blair French  
Environmental Impact Analyst III

Reviewed by:  Date: 9/30/2021

Carl F Heim  
Engineer/Architect III

Approved by:  Date: 9/30/2021

Brett Nelson  
Environmental Impact Analysis Manager I

**APPENDIX C**

**HIGHWAY SAFETY IMPROVEMENT PROGRAM NOMINATION**

**STATE OF ALASKA**  
**DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES**  
**Northern Region Traffic & Safety Section**

**FFY20 Highway Safety Improvement Program Candidate Projects**  
**Project Description and Cost Estimate**

**Candidate Project Name:**

20NR01 Old Steese @ Fox Shoulder Widening

**Candidate Project Location:**

This project is located on the Old Steese @ Fox between the Gold Dredge 8 property and the Steese/Old Steese/Elliott Highway intersection.

**Safety Problem Description:**

The north end of the Old Steese Highway at Fox currently has shoulders that vary from a few inches to 2-3 feet. Crashes in the area are generally from single vehicle run off the road events and have resulted in 1 fatal, 2 serious injury and 2 PDO crashes over the 4 year analysis period. An additional PDO crash was reported in this area from a sideswipe collision. Although not included in benefit cost computations, a SVROR fatal motorcycle crash occurred in spring 2019 within the proposed limits of this project.

**Proposed Mitigation:**

To mitigate these crashes, it is proposed to add 6' shoulders to the facility. This portion of the roadway is built on tailings and is stable. Because of the variation in shoulder width, the before condition is assumed to be an average of a 1' wide paved shoulder. The proposed width of the future paved shoulder of 6' provides a recovery area and as well as accommodate bicycles and pedestrians in this area.

Per the shoulder widening CRF worksheet, providing a 6' shoulder where there was once a 1' shoulder at an AADT of 1,446 is anticipated to provide a 23% crash reduction.

**Conformance with the Strategic Traffic Safety Plan:**

Reducing lane departure crashes is Strategy 1 of the Roadway Emphasis Area of the Strategic Highway Safety Plan.

**Benefit/Cost Ratio:**

This project has a benefit/cost ratio of **0.89:1**.

**Cost Estimate:**

Preliminary Engineering (Phase 2):	\$400,000	FFY 20
Right of Way (Phase 3):	\$0	
Utilities (Phase 7):	\$0	FFY 23
Construction (Phase 4):	\$3,625,000	FFY 23

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**TOTAL: \$4,025,000**

**HQ Reporting Information**

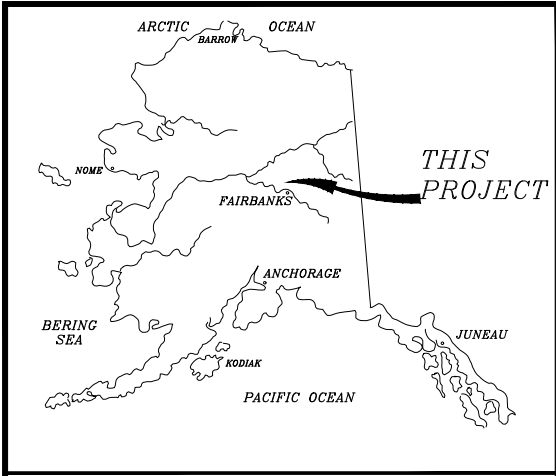
*Old Steese @Fox*

<i>CDS Route</i>	150105
<i>Milepoint Range</i>	6.3500-8.568
<i>Ownership</i>	State
<i>Speed Limit</i>	50 mph south of Goldstream Rd; 40 mph north of Goldstream Road
<i>Functional Class</i>	Major Collector
<i>2015 ADT</i>	1446

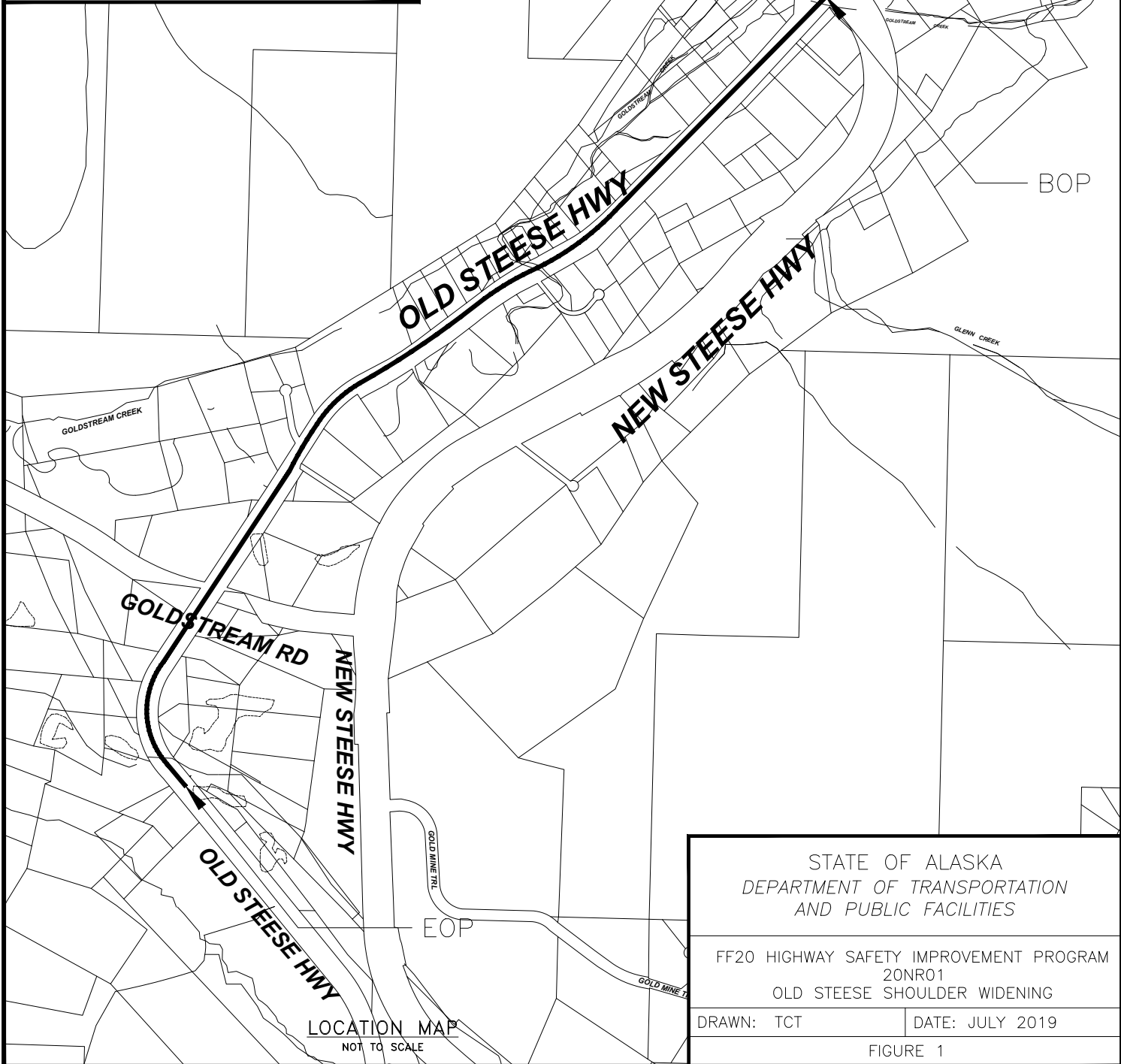
**Attachments**

- Vicinity Map
- Shoulder Widening CMF Worksheet
- Project Ranking Worksheet
- Construction Cost Estimate
- Crash Data





VICINITY MAP  
NOT TO SCALE



LOCATION MAP  
NOT TO SCALE

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES	
FF20 HIGHWAY SAFETY IMPROVEMENT PROGRAM 20NR01 OLD STEESE SHOULDER WIDENING	
DRAWN: TCT	DATE: JULY 2019
FIGURE 1	

<b>Crash Reduction Factor for Shoulder Improvements on RURAL TWO-LANE HIGHWAYS</b>				
<b>I N P U T</b>	<i>Road:</i>	<i>From:</i>	<i>To:</i>	
	<b>AADT (assumed constant across improvement)</b>			<b>1446</b>
	<b>BEFORE Improvement</b>			
	Existing Shoulder Width, in feet	select from pulldown list ==>		<b>1</b>
	Existing Shoulder Type	select from pulldown list ==>		<b>Paved</b>
<b>AFTER Improvement</b>				
Proposed Shoulder Width, in feet	select from pulldown list ==>		<b>6</b>	
Proposed Shoulder Type	select from pulldown list ==>		<b>Paved</b>	
<b>C O M P</b>	AMF - Accident Prediction based on Shoulder Width (Figure 3.)		1.291	
	AMF - Accident Prediction based on Shoulder Type (Table 3.)		1.000	
	AMF Product - Accident Prediction for BEFORE Shoulder Width & Type		1.291	
	AMF - Accident Prediction based on Shoulder Width (Figure 3.)		1.000	
	AMF - Accident Prediction based on Shoulder Type (Table 3.)		1.000	
AMF Product - Accident Prediction for BEFORE Shoulder Width & Type		1.000		
<b>Crash Reduction Factor (- is reduction, + is increase)</b>			<b>-23%</b>	

Accidents susceptible to correction: Single Vehicle ROR, Same and Opposite Lane Sideswipe, Head-on

Source: FHWA -RD-99-207

"Prediction of the Expected Performance of Rural Two-Lane Highways"

The composite shoulders represent a shoulder for which 50 percent of the shoulder width is paved and 50 percent of the shoulder width is turf.

Alaska DOT&PF  
Highway Safety Improvement Program  
**Project Ranking Worksheet**

Red fields are input fields.  
Black fields are fixed,  
computed, or derived.

HSIP Project Name:	<b>20NR01 - Old Steese @ Fox Shoulder Widening</b>		
Analysis Period:	1/1/13	to	12/31/16
Form Completed by:	Pam Golden		Date: 7/5/19

<b>Miscellaneous Data</b>	
Rate of Return:	3%
No of years of crash analysis	4

<b>Crash Cost Data</b>	
Crash Severity	Crash Cost
Property Damage Only:	\$21,300
Minor Injury:	\$213,000
Serious Injury:	\$1,064,000
Fatality:	\$2,129,000

**Predicted Change in Crashes due to Improvement(s)**

Imprv Type Num	Improvement	Type of Crash Susceptible to Reduction or Increase due to Improvement	Reduction Factor (+ or -)	# of Crashes Susceptible to Reduction or Increase			
				PDO	Min	Ser	Fat
301	widen shoulders from 1' to 6'	ROR, Head on, Sideswipe	-23%	3		2	1
<b>Total Crashes Susceptible to Reduction or Increase:</b>				3		2	1
<b>Predicted Change in Crashes:</b>				-1		-0.5	-0.2
<b>Predicted Change in Crash Cost (\$1,000):</b>				-15		-489	-490

**Benefit/Cost of Improvements (Safety and M&O Benefits Only)**

Improvement	Total Proj Cost (K)	Ann M/O Cost (K)	Life of Impvt (yrs)	Predicted Change in Crashes			Predicted Change in Crash Cost	Annualized Safety and M&O Benefits	Annualized Constr. and M&O Costs	Benefit Cost (Safety and M&O Benefits only)	
				PDO	Min	Ser					Fat
widen shoulders from 1' to 6'	4025	7.5	20	-0.7		-0.5	-0.2	-\$993,807	\$248,452	\$278,043	0.9 : 1
<b>Subtotals:</b>				-0.7		-0.5	-0.2				
<b>Totals/Averages:</b>	4025	7.5	20.0			-1.4		-\$993,807	\$248,452	\$278,043	0.89 : 1

**Benefit Cost Formula (Safety and M&O Benefits Only)**

$$\text{B/C Ratio} = \frac{(\text{Estimated Annual Reduction in Crash Cost}) + (\text{Decrease in Ann Maintenance Cost, 0 if increase})}{(\text{Annualized Construction cost}) + (\text{Increase in Ann Maintenance cost, 0 if decrease})}$$

**Combined Effects of Multiple Countermeasures**

$$CRF_{combined} = \left[ 1 - \left( 1 - \frac{CRF_1}{100} \right) \left( 1 - \frac{CRF_2}{100} \right) \dots \left( 1 - \frac{CRF_n}{100} \right) \right] * 100$$

Compute a combined Crash Reduction Factor (CRF) only for crash types jointly influenced by dissimilar improvements at the location of interest. Consider limitations of this formula as discussed in TRB Special Report 214 Designing Safer Roads, 1987, pg. 253-255.



**PHASE 4 PLANNING LEVEL ESTIMATE**

<u>Item</u>	<u>Avg Width</u>	<u>Avg Depth</u>	<u>Avg Length</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price*</u>	<u>Cost</u>	<u>Design Comments</u>
Driveway Approach				40	EA	\$1,500	\$60,000	
Permanent Seeding	26 ft		10,400 ft	6.2	ACRE	\$5,000	\$31,038	
Landscaping					LS	\$0	\$0	
Erosion & Pollution Control Admin					LS	\$5,000	\$5,000	
Temporary Erosion & Pollution Control					LS	\$15,000	\$15,000	
SWPPP Manager					LS	\$10,000	\$10,000	
Utility Relocates (GVEA, ACS, GCI, etc.)					LS	\$0	\$0	
Construction Surveying				15	Crewday	\$2,500	\$37,500	
Camp					LS	\$0	\$0	
Lodging / Perdiem					LS	\$0	\$0	
							<i>Subtotal</i>	\$2,008,865
<b>Traffic Maintenance &amp; Traffic Control</b>	<small>(use 8% rural to 18% urban)</small>			12%	of Subtotal		\$241,064	
<b>Miscellaneous Items</b>	<small>(consider removal items, inlets, fence, signing, detours, etc.)</small>			15%	of Subtotal		\$301,330	
							<i>Subtotal</i>	\$2,551,258
<b>Mob/Demob</b>				10%	of Subtotal		\$255,126	
							<i>Subtotal</i>	\$2,806,384
<b>Construction Engineering (CENG)</b>				20%	of Subtotal		\$561,277	
							<i>Subtotal</i>	\$3,367,661
<b>ICAP</b>				7.64%	of Subtotal		\$257,289	
							<b><i>Total Phase 4 Cost</i></b>	<b>\$3,625,000</b>

Date Range Chosen:

01/01/2013 - 12/31/2016

Variable Filters:

Route

OLD STEESE @ FOX (150105) From: 0 To: 8.53

Time of report run: 6/18/2019 8:02:51 AM

Crash Number	Reporting Agency	Route	Milepoint	AADT	DateTime	Street	Num	Crash Severity	CU Driver Contributing Circumstance 1	CU Most Harmful Event
201469892	Alaska State Troopers	150105	6.8396	1041	10/19/2014 1:11:00 AM	OLD STEESE @ FOX	1	Suspected Serious Injury	Ran Off Roadway	Tree (Standing Only)
201639871	Driver Report	150105	7.0007	745	1/19/2016 10:15:00 AM	OLD STEESE @ FOX	2	No Apparent Injury	Failed to Keep in Proper Lane	Motor Vehicle In-Transport
201356829	Driver Report	150105	7.002	1041	10/27/2013 9:37:00 PM	OLD STEESE @ FOX (CDS ROUTE 150105)	1	No Apparent Injury	Null value	Null value
201589244	Alaska State Troopers	150105	7.2083	1060	8/2/2015 3:14:00 PM	OLD STEESE @ FOX	1	No Apparent Injury	Ran Off Roadway	Overturn/Rollover
201666826	Alaska State Troopers	150105	7.4123	1060	7/17/2016 1:41:00 AM	OLD STEESE @ FOX	1	Suspected Serious Injury	Ran Off Roadway	Overturn/Rollover
201666948	Alaska State Troopers	150105	7.4218	1060	10/22/2016 12:00:00 AM	OLD STEESE @ FOX	1	Fatal Injury (Killed)	Ran Off Roadway	Overturn/Rollover
201539087	Driver Report	150105	7.6652	1060	4/6/2015 3:20:00 PM	OLD STEESE @ FOX	1	Null value	Null value	Ditch
201666670	Alaska State Troopers	150105	7.9441	1060	4/24/2016 4:52:00 PM	OLD STEESE @ FOX	2	Suspected Serious Injury	Unknown	Motor Vehicle In-Transport
201366067	Driver Report	150105	7.9509	-2147483648	7/5/2013 6:51:00 PM	OLD STEESE @ FOX	2	No Apparent Injury	Null value	Motor Vehicle In-Transport
201645719	Driver Report	150105	8.4475	1060	6/22/2016 4:00:00 PM	OLD STEESE @ FOX	2	No Apparent Injury	Other Contributing Action/Circumstance	Motor Vehicle In-Transport

limits that may be mitigated with the proposed project

**APPENDIX D**

**PAVEMENT DESIGN**

Traffic Data for Design and Historic ESALS

Design Data Input		Historic Data Input	
Design Construction Year:	2023	Historic Construction Year:	
Design Length in Years:	20	Backcast % per Year:	
Base Year:	2021		
Base Year Total AADT:	1,400		
Growth Rate % per Year:	0.85		

% of Base Year AADT for Each Lane		% of Base Year AADT for Each Lane	
Lane	%	Lane	%
1	35	1	
2	65	2	
3	0	3	
4	0	4	
5	0	5	
6	0	6	

Truck Category	Load Factor	% AADT	Truck Category	Load Factor	% AADT
2-Axle (Class 5)	0.50	3.4	2-Axle (Class 5)	0.50	
3-Axle (Class 6,8)	0.85	0.25	3-Axle (Class 6,8)	0.85	
4-Axle (Class 7,8)	1.20	0.1	4-Axle (Class 7,8)	1.20	
5-Axle (Class 9,11)	1.55	0	5-Axle (Class 9,11)	1.55	
>=6-Axle (Class 10,12,13)	2.24	0	>=6-Axle (Class 10,12,13)	2.24	

Design Lane AADT:	926	Historical Lane AADT:	
Computed Design ESALs:	149,082	Computed Historical ESALs:	

Construction Year ESAL Calculations				Historical Construction Year ESAL Calculations			
Truck Category	% AADT	Load Factor for Truck Category	ESALs	Truck Category	% AADT	Load Factor for Truck Category	ESALs
2-Axle (Class 5)	3.4	0.5	5,746				
3-Axle (Class 6,8)	0.25	0.85	718				
4-Axle (Class 7,8)	0.1	1.2	406				
5-Axle (Class 9,11)	0	1.55	0				
>=6-Axle (Class 10,12,13)	0	2.24	0				
Total Construction Year ESALs:			6,870	Total Historic Year ESALs:			

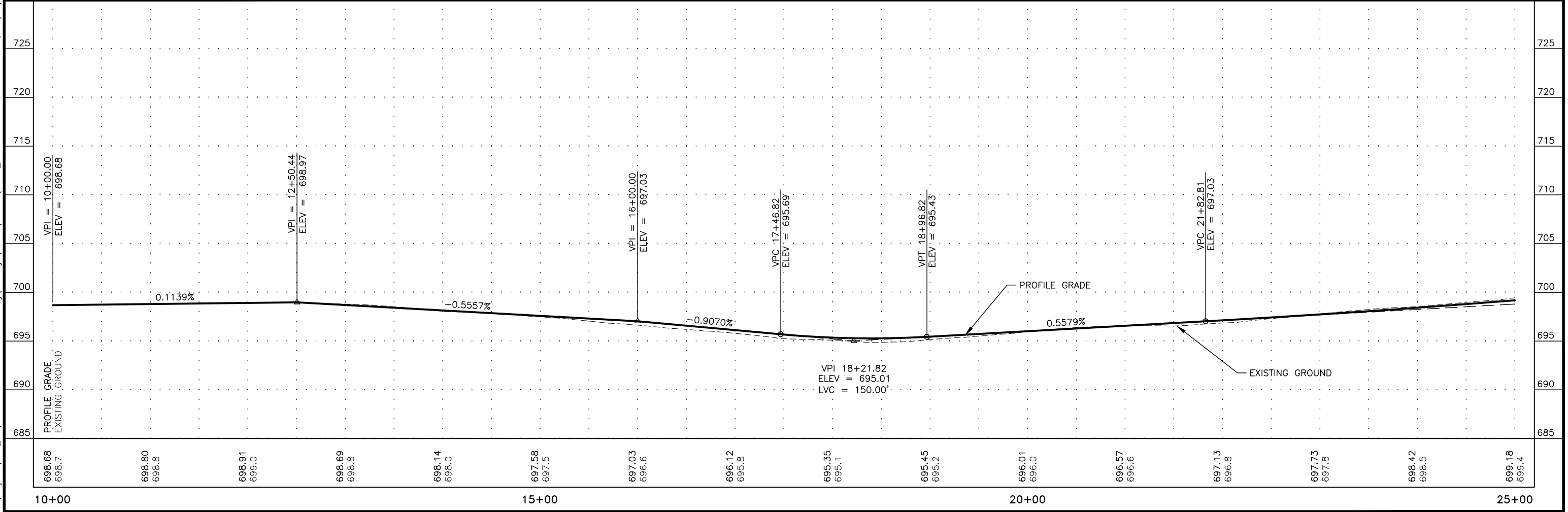


Project Name: Old Steese Widening		Project Number: NFWHY00527		Analysis Date: 10/11/2022		Project Status	
Design Type: New Design		Designer: tctomas		Unit: US Customary		All layer damages less than 100%.	
Project Location: CHENA HOT SPRINGS		Tire Load (lbs)		Load Description: ESAL			
Design AADT: 1,400		Tire Press. (psi)		Load Loc (in)			
Spring%: 9		110		X: 0			
Summer%: 33		13.5		Y: 0			
Fall%: 8		0		Eval Loc (in)			
Winter%: 50		6.75		X: 0			
Total%: 100		0		Y: 0			
Layer		Asphalt Properties		Modulus (ksi)		Poisson's Ratio	
Critical Z Coordinate (in)		Air%:		450		0.30	
1.98		5		400		0.30	
1.99		5.5		400		0.30	
Name: Asphalt Concrete (Modified Asph.)		Density (pcf)		1200		0.30	
Use TAI: Yes		148		Season		Total Damage:	
Thickness (in): 4.01		Air%:		Spring		0.60	
Name: Crushed Asph. Base Course		Asphalt%:		Summer		0.69	
Use TAI:		Density (pcf)		Fall		0.69	
2		Asphalt%:		Winter		4.03	
Thickness (in): 12.01		Air%:		Spring		Total Damage:	
Name: Select A P200<10%		Asphalt%:		Summer		0.60	
Use TAI:		Density:		Fall		2.24	
6.01		Asphalt%:		Winter		4.47	
Thickness (in): 0		Air%:		Spring		Total Damage:	
Name: Select C P200>30%		Asphalt%:		Summer		13.20	
Use TAI:		Density:		Fall		3.65	
18.02		Asphalt%:		Winter		5.31	
Thickness (in):		Air%:		Spring		Total Damage:	
Name:		Asphalt%:		Summer		11.36	
Use TAI:		Density:		Fall		0.66	
0		Asphalt%:		Winter		1.73	
Thickness (in):		Air%:		Spring		Total Damage:	
Name:		Asphalt%:		Summer		0.66	
Use TAI:		Density:		Fall		1.73	
18.02		Asphalt%:		Winter		0.42	
Thickness (in):		Air%:		Spring		Total Damage:	
Name:		Asphalt%:		Summer		0.98	
Use TAI:		Density:		Fall		3.79	
0		Asphalt%:		Winter		0.98	
Thickness (in):		Air%:		Spring		Total Damage:	
Name:		Asphalt%:		Summer		0.98	
Use TAI:		Density:		Fall		3.79	
0		Asphalt%:		Winter		0.98	

**APPENDIX E**

**PRELIMINARY PLAN AND PROFILE SHEETS**

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(472)/NFHWY00527	2022	1	7



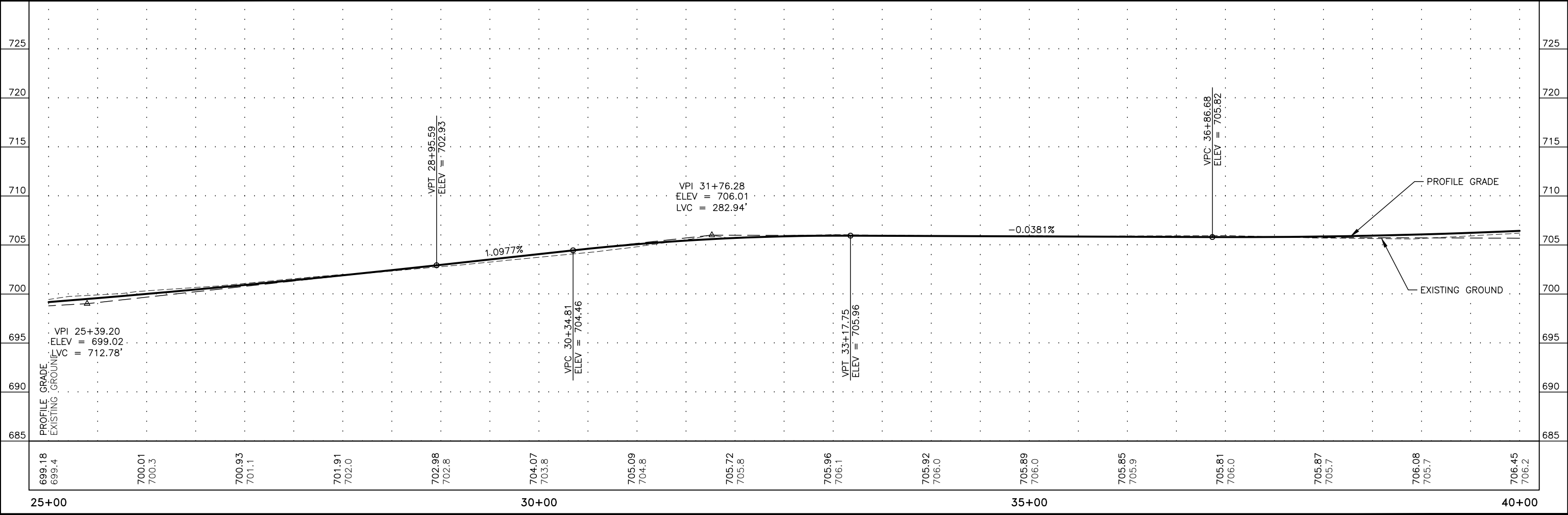
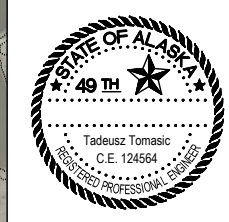
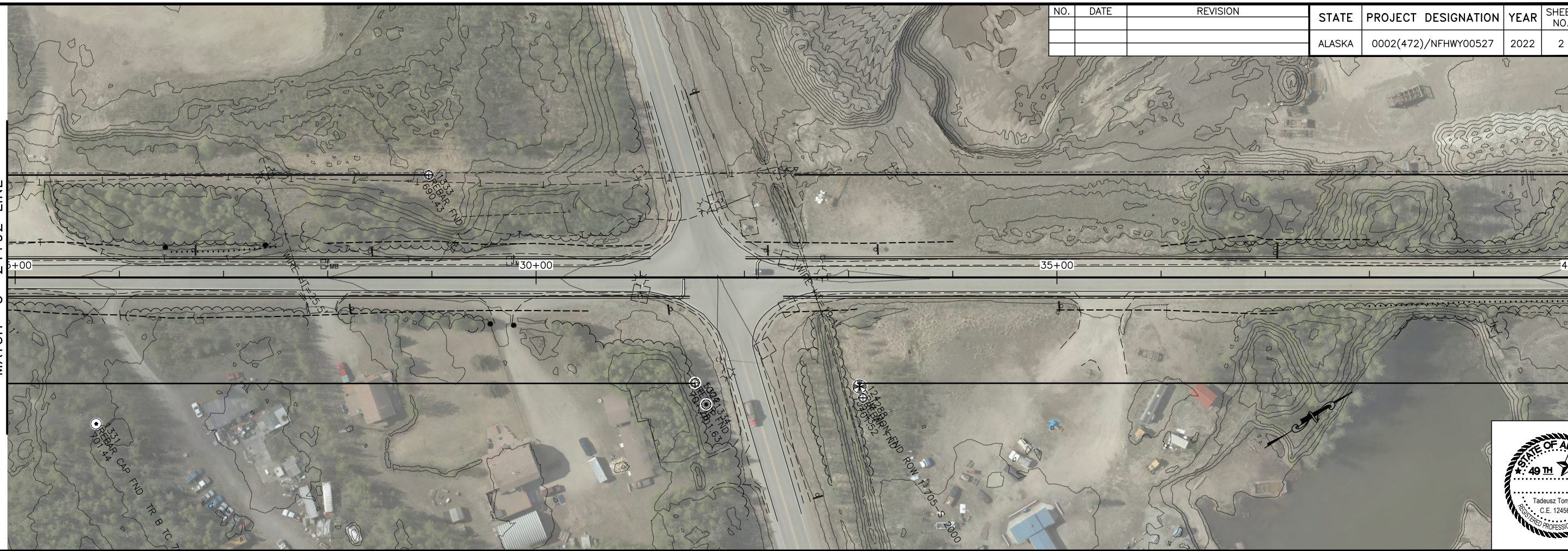
PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
 H:\Projects\Fbks\_NF\NFHWY00527-Old Steese Widening\6 Design\2 C3D\1 Plots\00527\_PandP-10+00.00-25+00.00 Tue, Oct/25/22 01:59pm

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
 H:\Projects\Fbks\_NF\NFHWY00527-Old Steese Widening\6 Design\2 C3D\1 Plots\00527\_PandP-25+00.00-40+00.00 Tue, Oct/25/22 01:59pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(472)/NFHWY00527	2022	2	7

MATCH "O" 24+92 LINE

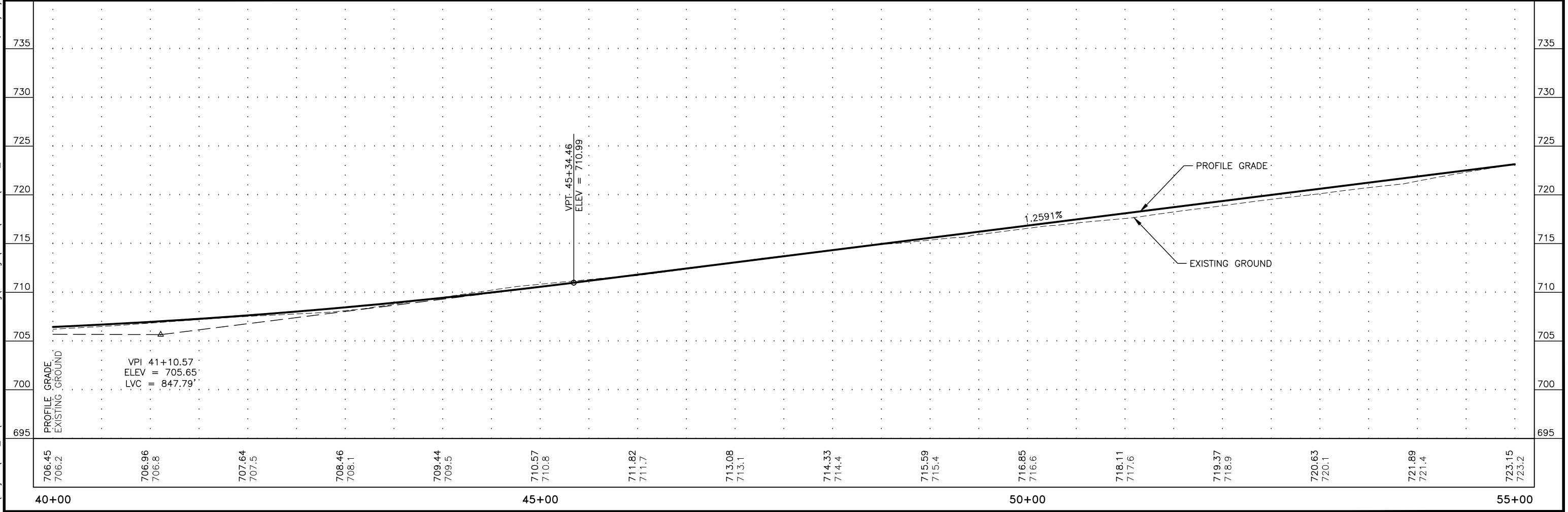
MATCH "O" 39+92 LINE



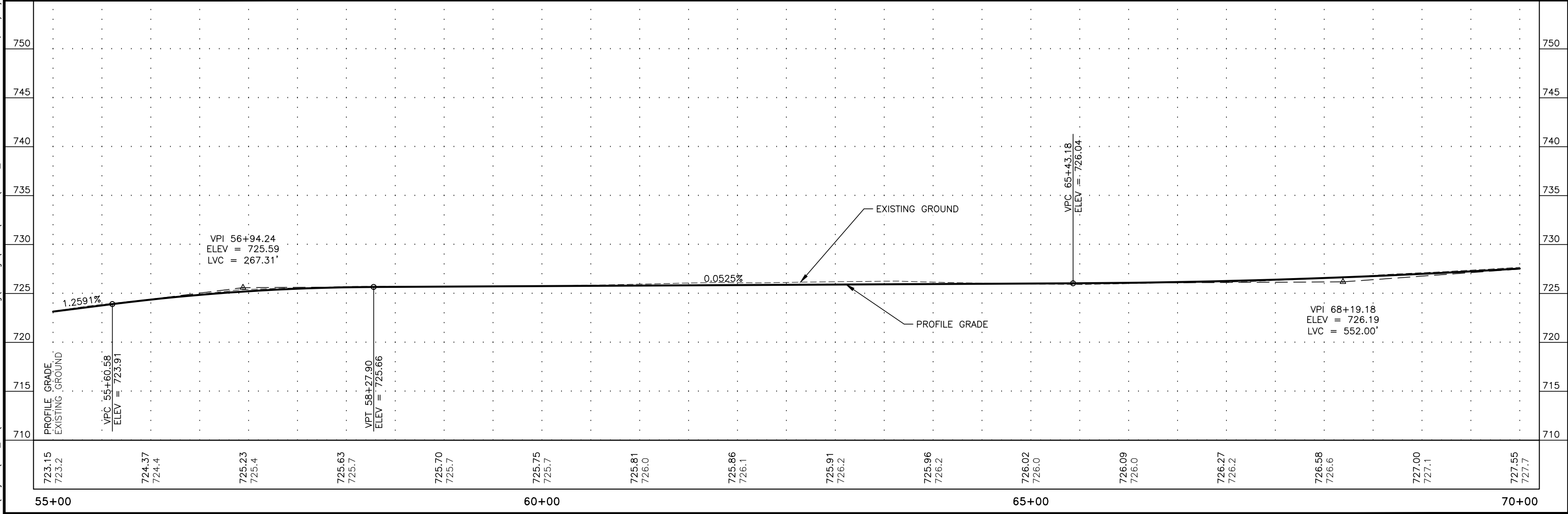
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(472)/NFHWY00527	2022	3	7



PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
 H:\Projects\Fbks\_NF\NFHWY00527-Old Steese Widening\6 Design\2 C3D\1 Plots\00527\_PandP-40+00.00-55+00.00 Tue, Oct/25/22 01:59pm

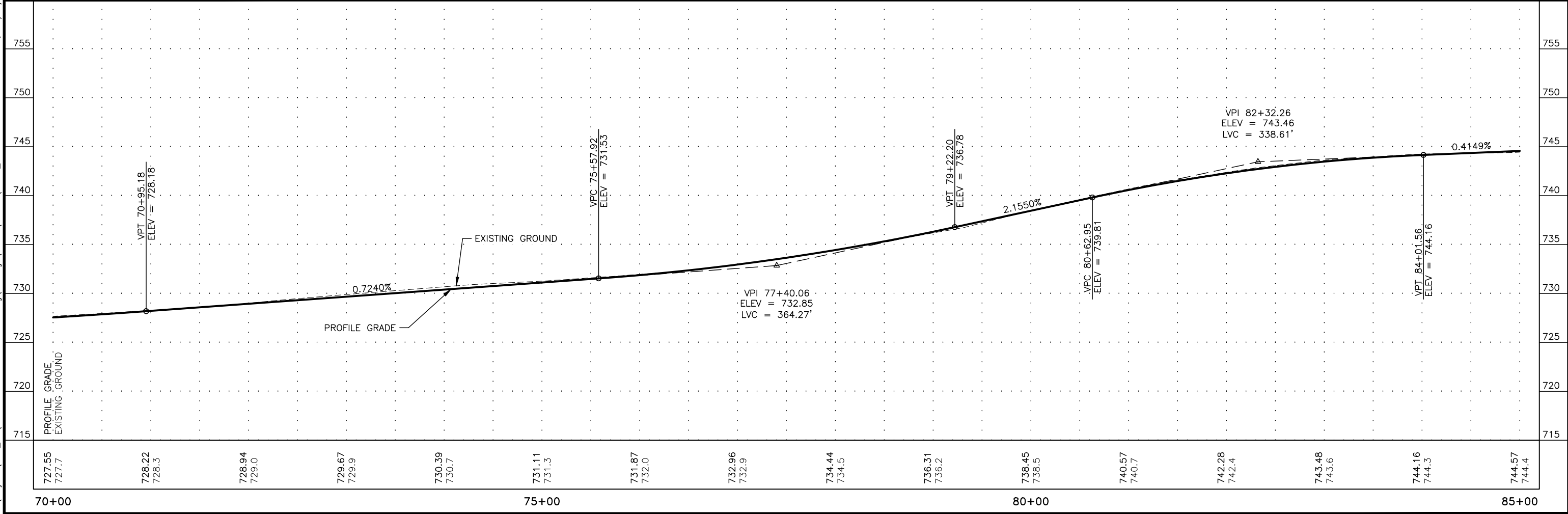


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(472)/NFHWY00527	2022	4	7



PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
 H:\Projects\Fbks\_NF\NFHWY00527-Old Steeple Widening\6 Design\2 C3D\1 Plots\00527\_PandP-55+00.00-70+00.00 Tue, Oct/25/22 01:59pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(472)/NFHWY00527	2022	5	7



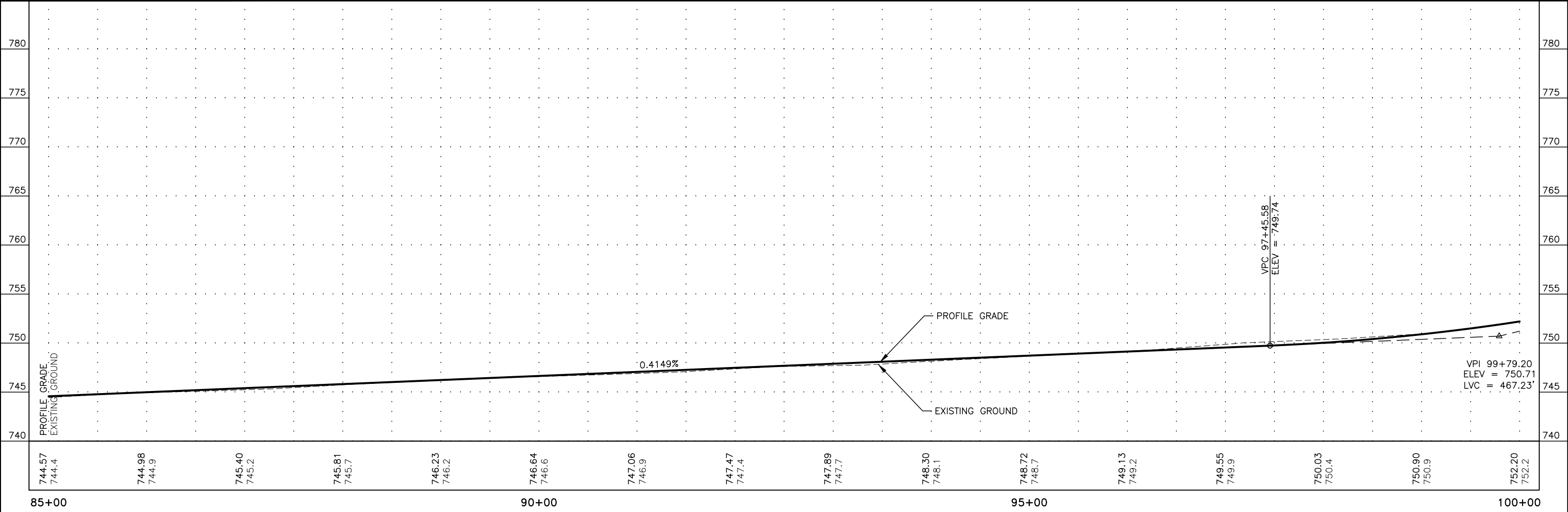
PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
 H:\Projects\Fbks\_NF\NFHWY00527-Old Steese Widening\6 Design\2 C3D\1 Plots\00527\_PandP-70+00.00-85+00.00 Tue, Oct/25/22 01:59pm

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
 H:\Projects\Fbks\_NF\NFHWY00527-Old Steese Widening\6 Design\2 C3D\1 Plots\00527\_PandP-85+00.00-100+00.00 Tue, Oct/25/22 01:59pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(472)/NFHWY00527	2022	6	7

MATCH "O" 84+92 LINE

MATCH "O" 99+92 LINE

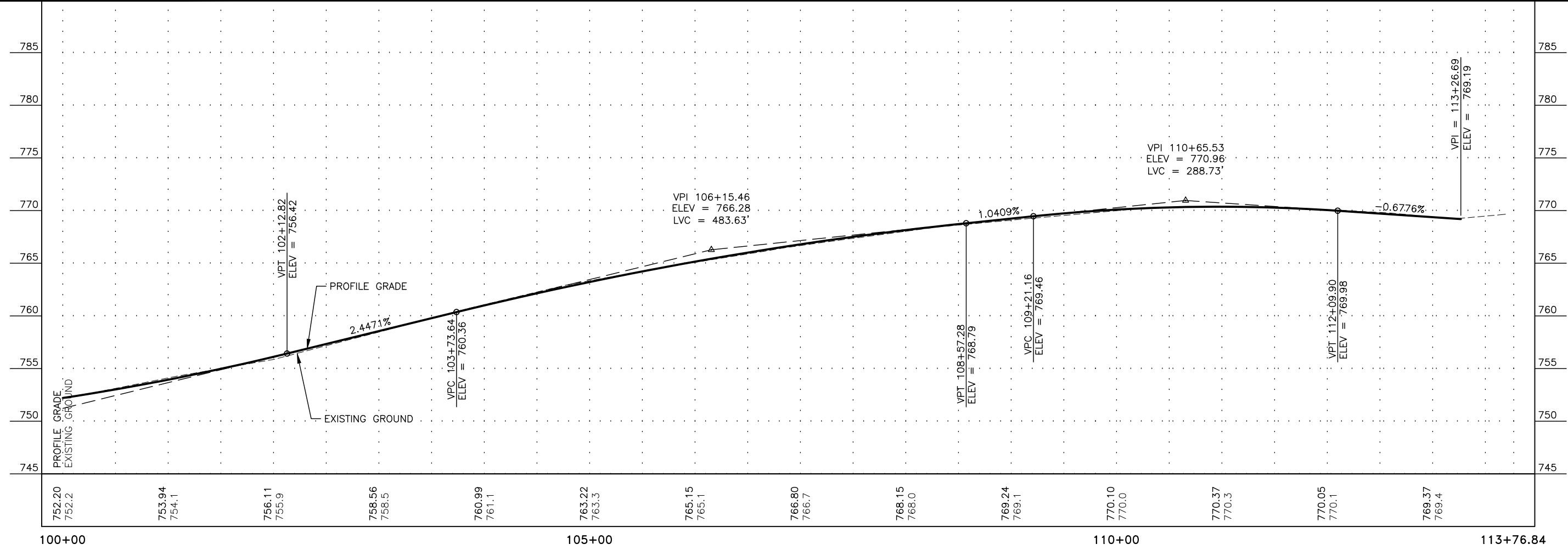




NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(472)/NFHWY00527	2022	7	7



PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
 H:\Projects\Fbks\_NF\NFHWY00527-Old Steese Widening\6 Design\2 C3D\1 Plots\00527\_PandP-100+00.00-113+76.84 Tue, Oct/25/22 01:59pm



100+00

105+00

110+00

113+76.84