GLENN HIGHWAY & HILAND ROAD INTERCHANGE IMPROVEMENTS

Project No.: 0A16055 / CFHWY00917

DESIGN STUDY REPORT

ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

PREPARED BY: DOWL
5015 Business Park Blvd., Suite 4000
Anchorage, Alaska 99503

September 2025

ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DESIGN AND ENGINEERING SERVICES – CENTRAL REGION

DESIGN STUDY REPORT

For

Glenn Highway & Hiland Road Interchange Improvements

Project No.: 0A16055/CFHWY00917

Prepared by:

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Preconstruction Engineer

NOTICE TO USERS

This report reflects the thinking and design decisions at the time of publication. Changes frequently occur during the evolution of the design process, so persons who may rely on information contained in this document should check with the Alaska Department of Transportation and Public Facilities for the most current design. Contact the Design Project Manager, Galen Jones, P.E., at 907-269-0550 for this information.

PLANNING CONSISTENCY

This document has been prepared by the Alaska Department of Transportation and Public Facilities according to currently acceptable design standards and Federal regulations, and with the input offered by the local government and public. The department's Planning Section has reviewed and approved this report as being consistent with present community planning.

CERTIFICATION

The Alaska Department of Transportation and Public Facilities hereby certify that this document was prepared in accordance with Section 520.4.1 of the current edition of the department's Highway Preconstruction Manual and CFR Title 23, Highway Section 771.111(h).

The department has considered the project's social and economic effects upon the community, its impacts on the environment and its consistency with planning goals and objectives as approved by the local community. All records are on file with Central Region - Design and Engineering Services Division, Highway Design Section, 4111 Aviation Avenue, Anchorage, AK 99502.

Luke S. Bowland, P.E.	Date	Ben White	Date
Preconstruction Engineer		Chief, Planning	

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LIST OF ACRONYMS

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACS	Alaska Communication Systems
ADA	Americans with Disabilities Act
AHDM	Alaska Highway Drainage Manual
ANSI	American National Standards Institute
APDES	Alaska Pollutant Discharge Elimination System
ARL	Anchorage Regional Landfill
ATM	Alaska Traffic Manual
ATMS	Alaska Traffic Manual Supplement
AWWU	Anchorage Water and Wastewater Utility
BMP	Best Management Practice
CFR	Code of Federal Regulations
DDI	Divergent Diamond Interchange
DEC	Alaska Department of Environmental Conservation
DOT	U.S. Department of Transportation
DOT&PF	Alaska Department of Transportation and Public Facilities
DOJ	U.S. Department of Justice

ERLR	Eagle River Loop Road
ESCP	Erosion and Sediment Control Plan
FHWA	Federal Highway Administration
HPCM	Alaska Highway Preconstruction Manual
ICD	inscribed circle diameter
IES	Illuminating Engineering Society
ITS	Intelligent Transportation System
JBER	Joint Base Elmendorf Richardson
LOS	Level of Service
MOA	Municipality of Anchorage
mph	miles per hour
MS4	Municipal Separate Storm Sewer Systems
MSCVE	Division of Measurement Standards and Commercial Vehicle Enforcement
MTA	Matanuska Telecom Association
MUTCD	Manual on Uniform Traffic Control Devices
NCHRP	National Cooperative Highway Research Program
No.	Number
PGDHS	A Policy on Geometric Design of Highways and Streets
PIOP	Public Information & Outreach Plan
PROWAG	Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way
RDG	Roadside Design Guide
ROW	right-of-way
SWPPP	Stormwater Pollution Prevention Plan
SWS	MOA Solid Waste Services
TMP	Transportation Management Plan
TOP	Transportation Operations Plan
TRB	Transportation Research Board
TTCP	Temporary Traffic Control Plan
USGS	United States Geological Survey

PROJECT REFERENCES

(Documents completed under a separate cover and located in the project files)

Alternative Selection Memorandum, Glenn Highway & Hiland Road Interchange Improvements, DOWL, March 2025.

Geotechnical Data Report, Glenn Highway & Hiland Road Interchange Improvements, State of Alaska, DOT&PF, Central Region Materials, *In progress.*

Geotechnical Recommendations, Glenn Highway & Hiland Road Interchange Improvements, State of Alaska, DOT&PF, Central Region Materials, *In progress.*

Traffic Analysis Report, Glenn Highway & Hiland Road Interchange Improvements, Kinney Engineering, June 2025.

Transportation Management Plan, Glenn Highway & Hiland Road Interchange Improvements, DOWL, *In progress.*

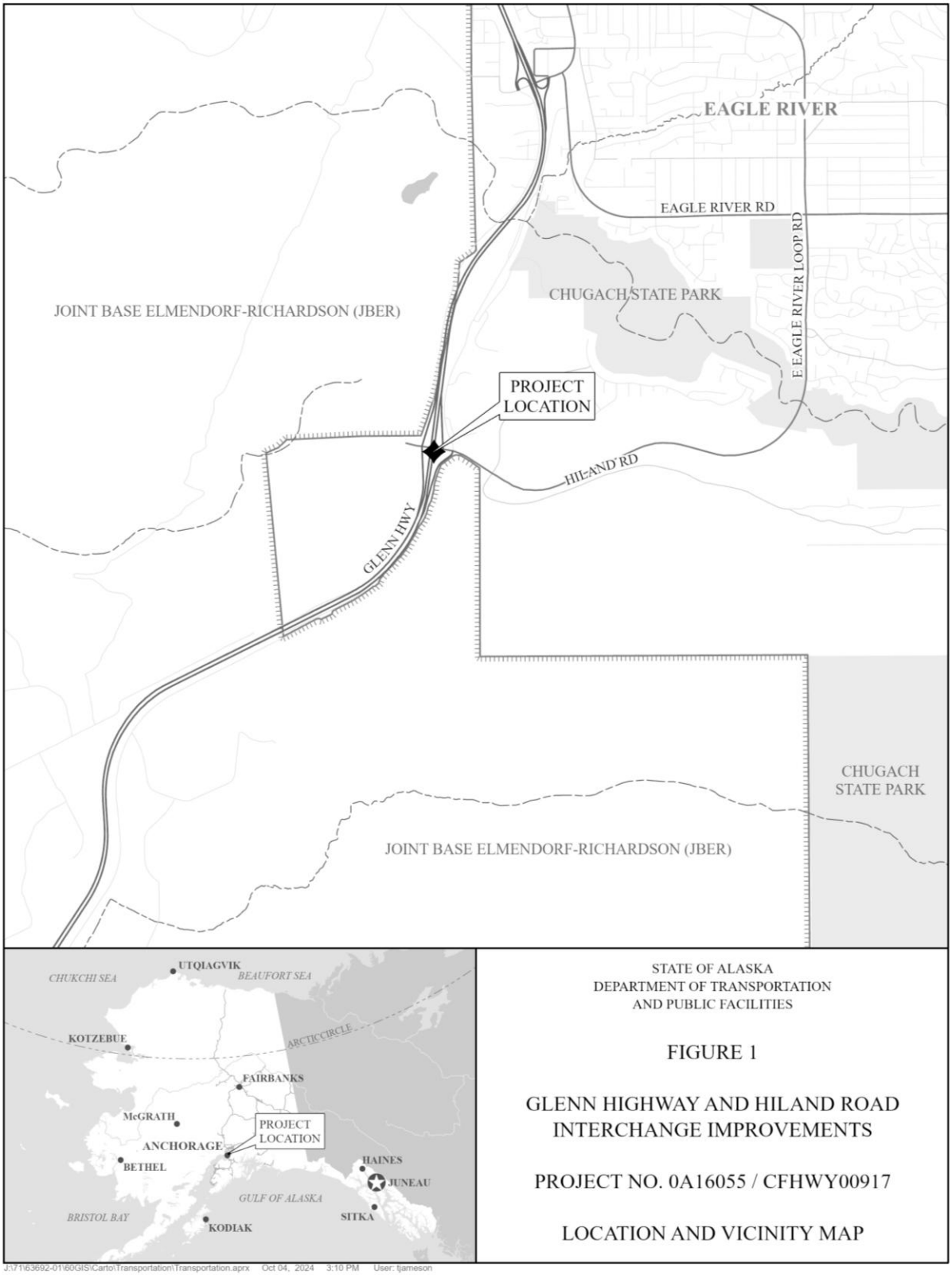


Figure 1: Location and Vicinity Map

1.0 PROJECT DESCRIPTION

1.1 Project Location and Description

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway administration (FHWA), proposes to improve the Glenn Highway and Hiland Road (Glenn-Hiland) interchange located between Mileposts 11 and 12. The project is in Sections 14 and 23, Township 14N, Range 2W, Seward Meridian, U.S. Geological Survey (USGS) Quadrangle Map Anchorage B-7; Latitude 61.295567°N, Longitude 149.589700°W, within the Municipality of Anchorage (MOA) approximately 2 miles south of the community of Eagle River, Alaska. See Figure 1 for Location & Vicinity Map.

The proposed project will evaluate alternatives at the Glenn Highway and Hiland Road interchange to make short-term improvements to increase safety and improve operations while maintaining the existing bridge over the highway.

1.2 Existing Facilities and Land Use

The Hiland Road area has limited development and land uses. The interchange was originally constructed in 1975 and connected Hiland Road to the Glenn Highway. In 1988, a connection study was conducted, and plans were developed for a directional interchange to handle the substantial traffic generated by the new connection. In the 1990s a supplemental study to the 1988 connection study was conducted and resulted in changes to the project and funding priorities. The original 1975 bridge consisted of two 12-foot-wide lanes with 2-foot-wide shoulders. As a result of the 1990s supplemental study the original bridge was expanded to increase its width to accommodate three 14-foot-wide lanes and a paved 11.5-foot-wide pedestrian pathway on the north side of the bridge. The purpose of the widening was to address growing traffic from Eagle River and sizable trucks entering the Anchorage Regional Landfill (ARL) and improve pedestrian safety while crossing the Glenn Highway.

An unofficial "Park & Ride" lot is situated on the east side of the interchange. The lot was originally on the west side of the bridge and near the ARL gate, initially constructed to provide service access to a natural gas line (see Figure 2). Following completion of the Glenn Highway bicycle path, the public began using the area as an unofficial Park & Ride for Eagle River residents, Glenn Highway bicycle path users, and Anchorage commuters.

In 2018, MOA's Solid Waste Services (SWS), in collaboration with DOT&PF, relocated the parking area to the east side of the interchange. The relocation was prompted because the original location on the west side was directly outside the landfill gate, creating safety concerns due to frequent truck traffic. The move aimed to improve safety and accommodate growing use.

Figure 2: Relocation of Unofficial Park & Ride Lot

Within the vicinity of the project area are community facilities, including the ARL, Hiland Mountain Correctional Center, Eagle River High School, and the Eagle River Campground. Also present to the south and west are Joint Base Elmendorf-Richardson (JBER) lands. The Glenn-Hiland interchange serves as an important interface between the predominantly residential areas in Eagle River and the business areas to the south in Anchorage.

1.3 Purpose and Need

The purpose of the project is to make improvements to the Glenn-Hiland Interchange, while retaining the existing bridge, to resolve poor operational performance causing safety issues and congestion. Bridge preservation work will delay the need for eventual bridge overpass replacement. The scope of work addresses the project needs by improving traffic operations for both motorized and nonmotorized users, increasing efficiency and functionality of the interchange, and reducing associated safety concerns.

The primary objectives to meet the purpose of the project include:

- Improve Lane Utilization: Encourage or direct drivers to utilize both existing westbound through lanes on Eagle River Loop Road (ERLR) to alleviate congestion during peak morning hours.
- Queuing Mitigation: Address queuing issues on ERLR that begin at the southbound Glenn Highway entrance ramp and extend through the Wolf Den Drive intersection, east of the interchange, to minimize traffic backups and delays. Daily morning peak queues entering the Glenn Highway stretch at least 1.2 miles, and can sometimes reach Briggs Bridge, over 2 miles to the east from the intersection.

- Enhanced Highway Merging: Improve the efficiency and capacity of highway merging by modifying the southbound Glenn Highway entrance ramp geometry and lane configuration.
- Improve Operations throughout the Interchange: Propose improvements that also reduce delays and improve safety for all interchange access points, including VFW Road, ARL, southbound Glenn Highway exit ramp (aka Eagle View Drive), and northbound Glenn Highway exit ramp.
- Compatibility with Future Bridge Replacement: The selected alternative should be compatible with the future bridge cross-section and elevation, requiring minimal geometric updates.
- Transit and Active Transportation Considerations: The selected alternative should improve or maintain the existing level of safety, accessibility, route efficiency, and mobility for these users.
- Maintenance Improvements: Propose bridge preservation solutions that extend the usable lifespan of the existing bridge and reduce future maintenance efforts.

2.0 DESIGN STANDARDS AND GUIDELINES

Design standards and guidelines that apply to this project are contained in the following publications:

Standards:

- A Policy on Geometric Design of Highways and Streets (PGDHS), 7th Edition, AASHTO, 2018.
- Roadside Design Guide (RDG), 4th Edition, AASHTO, 2011.
- Alaska Highway Preconstruction Manual (HPCM), DOT&PF, 2023 as amended at the time of design approval.
- Alaska Highway Drainage Manual (AHDM), DOT&PF, 2006.
- The Alaska Traffic Manual (ATM), consisting of the Manual on Uniform Traffic Control Devices (MUTCD), 2009 as amended, U.S. DOT, FHWA) and the Alaska Traffic Manual Supplement, DOT&PF, 2016.
- Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), U.S. Access Board, 2023.
- ADA Standards for Transportation Facilities, DOT, 2006.
- ADA Standards for Accessible Design, DOJ, 2010.
- Guide for the Development of Bicycle Facilities, 4th Edition, AASHTO, 2012.
- Recommended Practice for Roadway Lighting (RP-8-14), ANSI / IES, 2014.

- Highway Capacity Manual (HCM), 5th Edition, TRB, 2010.
- LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals AASHTO LRFD LTS–1–I3–OL, 2015 First Edition with interim revisions effective at time of design approval.
- Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals AASHTO LTS–6–I3, 2013 Sixth Edition with interim revisions effective at time of design approval.
- Design Criteria Manual (DCM), MOA, Project Management & Engineering Department, 2007 with 2018 revision.

Guidelines:

- Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2nd Edition, AASHTO, 2014.

Appendix A contains the project Design Criteria and Design Designation.

3.0 DISCUSSION OF ALTERNATIVES

Alternatives development began with the project team identifying potential solutions that aligned with the project's purpose and objectives, as outlined in Section 1.0, Project Description. The team adopted an iterative approach to examine concepts that offered maximum value while minimizing costs and impacts. These concepts included near-term improvements that were compatible with long-term enhancements. The initial concepts were shared at an Interchange Planning Workshop on April 30, 2024, to present a wide array of concepts and gather input from key stakeholders. After the workshop, feasible concepts were analyzed in the Traffic Analysis Report (Kinney 2025), which covered a range of primary and supplemental concepts, including some that did not resolve issues as standalone solutions. The viable concepts were refined into three primary alternatives, which were then presented at an Alternative Design Charette, along with findings from the Traffic Analysis Report and critical factors, such as Level of Service (LOS), vehicle delay, anticipated construction costs, safety analysis for vehicle and non-motorized users, utility impacts, and right-of-way (ROW) impacts. These factors are summarized in Section 11.0 (Traffic Analysis, Table 2, Alternatives and Operations Comparison Assessment).

3.1 Alternative 1 – No Build

Alternative 1, the no-build alternative, involves no construction or improvements and maintaining current conditions. Alternative 1 does not align with existing planning documents and does not fulfill the project's purpose and need.

3.2 Alternative 2 – Double Left Turn

Alternative 2 includes converting the existing ERLR westbound through lane on the bridge to a combination left-turn and through-lane. Overhead lane signage would guide drivers to use both lanes for left turns (Figure 3). The two left-turn lanes would merge in a zipper formation into a

single travel lane on the entrance ramp before reaching the southbound Glenn Highway entrance ramp. This existing tapered entrance ramp would be converted to a parallel ramp and extend along Glenn Highway to merge before the weigh station exit.

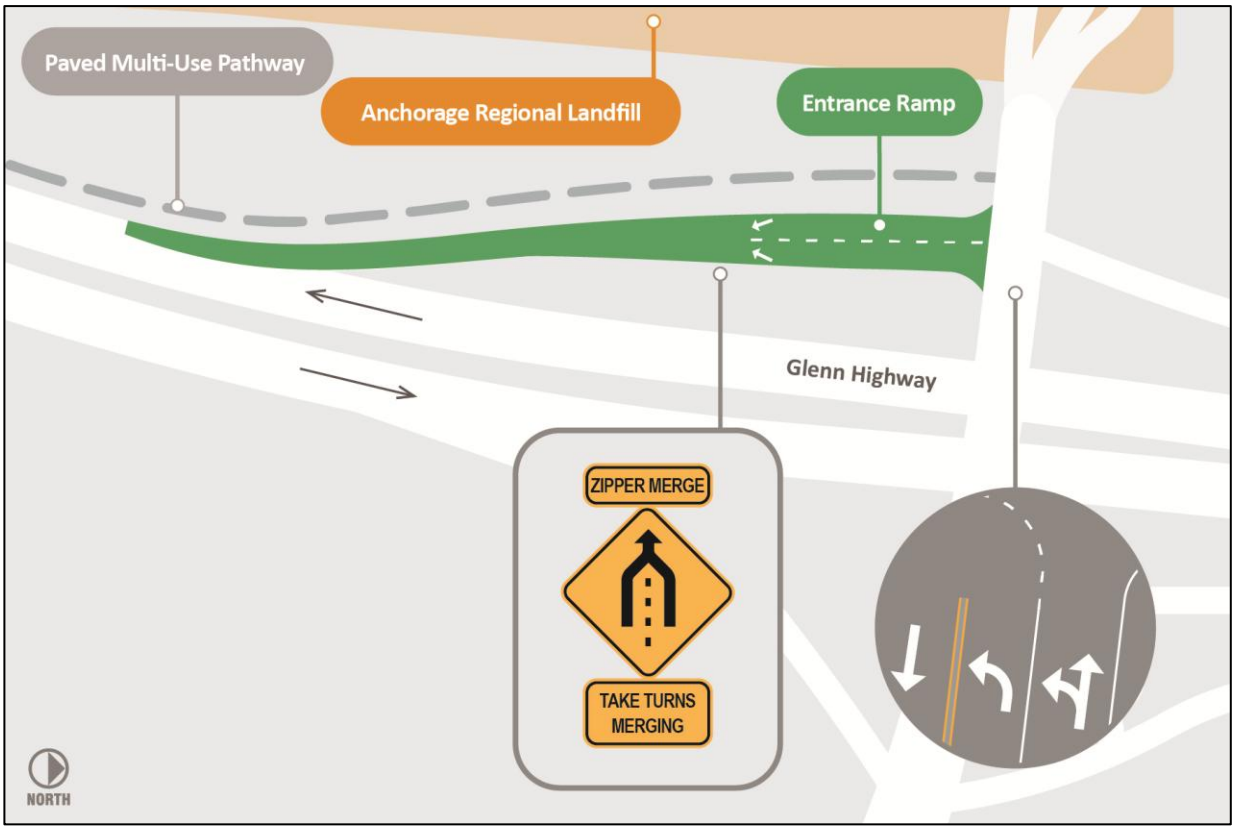


Figure 3: Alternative 2 – Double Left Turn

Benefits of Alternative 2

- No impact to ROW and utilities.
- No foreseeable risks to the project development schedule.
- Lowest cost compared to other alternatives.
- Least impacts to traffic during construction.

Drawbacks of Alternative 2

- Does not address operational deficiencies or reduce crash risk at other project area intersections along ERLR.
- Does not improve truck traffic operations.
- Does not improve existing pedestrian crossings, active transportation, or transit facilities.

3.3 Alternative 3 – Two-Lane Loop Ramp

Alternative 3 would construct a dual-lane loop southbound entrance ramp. Single-lane loop ramps are a well-known ramp style for Alaska drivers; however, Alaska does not currently have

any dual-lane loop ramps (Figure 4). This alternative would allow ERLR traffic heading to Anchorage to move freely onto the ramp from both westbound lanes with no turning conflicts. The inside westbound lane would be converted from a through lane to a combination through-right lane. Due to limited space between the existing Glenn Highway through lanes and the west bridge abutment, one of the ramp lanes would likely terminate on the ramp. This complicated merge and lane reduction could have an unintended effect on the lane utilization leading up to the entrance ramp.

A grade-separated pedestrian and bicycle tunnel connecting to the existing pathway would need to be constructed under the west intersection to enhance non-motorized safety. This would remove the need for non-motorized users to cross heavy traffic flow during the morning peak period and free-flow right turn vehicles traveling roughly 35 miles per hour (mph), regardless of the time of day.

Per the AASHTO Policy on Geometric Design of Highways and Streets, or "Green Book," (GB, 7th ed.), standard two-lane loop ramp inside radii should be no less than 180 feet. However, recent studies documented in the National Cooperative Highway Research Program (NCHRP) 227 and using AASHTO minimum turn radius given the chosen maximum superelevation at 25 mph suggests smaller radii may be warranted. Other state agencies have tightened up two-lane entrance loop ramps to 125 feet minimum and 160 feet as desired to limit ROW impacts.

Installing a smaller entrance curve radius, typically 60 feet, at single-lane loop ramps in Anchorage has reduced non-motorized crash risk and severity by lowering vehicle speeds. However, this modification would offset the intended reduction in geometric delay, resulting in ramp entrance speeds similar to those currently experienced by vehicles making the left turn onto the southbound entrance ramp.

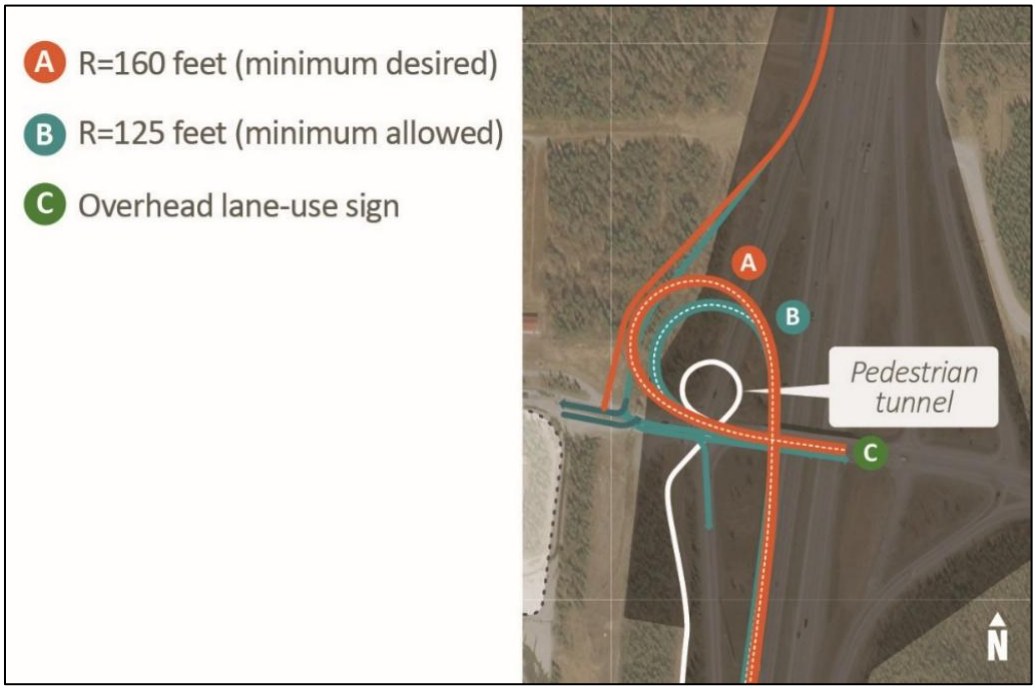


Figure 4: Alternative 3 – Two-Lane Loop Ramp

Benefits of Alternative 3

- Enhance west-to-southbound capacity.
- Provides a grade-separated pedestrian crossing.
- Less impacts to traffic during construction than the Preferred Alternative (divergabout).

Drawbacks of Alternative 3

- Does not improve operations or safety for users on the east side of the interchange, including VFW Road and the Wolf Den Drive signalized intersection.
- Requires major utility relocations (e.g., 20-inch gas main, pedestal "farm," overhead power transmission line).
- Involves multiple full- and partial land acquisitions from JBER and the MOA.
- Likely to cause significant schedule delays due to the complexity of ROW acquisition and utility agreements.
- Higher budget implications due to the cost of the pedestrian tunnel, ROW acquisitions, long southbound two-lane off-ramp realignment, major earthwork required for southbound off-ramp realignment and loop ramp installation, major utility impacts, and retaining wall along the west bridge abutment to accommodate the new entrance ramp width.
- The loop ramp's constrained space between the bridge abutment and the existing southbound Glenn Highway outside lane likely prevents fitting two lanes, a shoulder, and a painted gore, requiring vehicles to perform an atypical merge on the ramp. Accommodating two lanes would necessitate infeasible modifications to the west bridge abutment and reconstruction of the southbound entrance ramp merge area, as the two-lane merge length would extend beyond the existing ramp entrance to meet design standards.

4.0 PREFERRED ALTERNATIVE

Alternatives 2 and 3 were developed using an incremental approach, focusing on addressing the most significant traffic issues. However, the analysis revealed neither alternative addressed certain key issues and thus the Preferred Alternative (Alternative 4) was developed to explore the goal of improving traffic operations at additional intersections along ERLR.

The Preferred Alternative is a diverging diamond interchange (DDI) with roundabouts, otherwise known as a "divergabout" or "crossover roundabout" (Figure 5). This concept has not been introduced in Alaska, but functions well in other areas of the U.S. In fact, crossover roundabouts solve well-known DDI issues with frontage roads because the roundabouts provide drivers with more destination options at the node intersections than a standard DDI with signals. For example, a DDI with signals does not allow through movement for users that need to access

a frontage road on the opposite side of the node intersection, while roundabouts do allow this movement. Furthermore, a two-way frontage road can also be tied into the roundabout at the interchange node, highlighting another shortfall of a DDI with signals and the advantage of the crossover roundabouts in terms of access, especially for emergency responder and oversize-load user groups.

Regarding the Glenn Highway southbound entrance ramp, a two-lane parallel entrance ramp would significantly improve vehicle merging during peak traffic hours. However, due to the weigh station being located about 2,750 feet downstream from the interchange, a standard-length two-lane parallel entrance ramp would not be feasible without interfering with the weigh station exit ramp. To mitigate this, signage and maximizing the two-lane cross-section length is proposed to enhance lane utilization and facilitate smoother vehicle merging before transitioning into an extended single-lane parallel entrance ramp. Proper spacing between the highway entrance and weigh station exit ramps is essential to allow safe vehicle weaving. It is also not recommended to connect the entrance ramp merge lane with the weigh station exit ramp as an auxiliary lane because this would likely increase the frequency of non-freight vehicles unintentionally entering the weigh station.

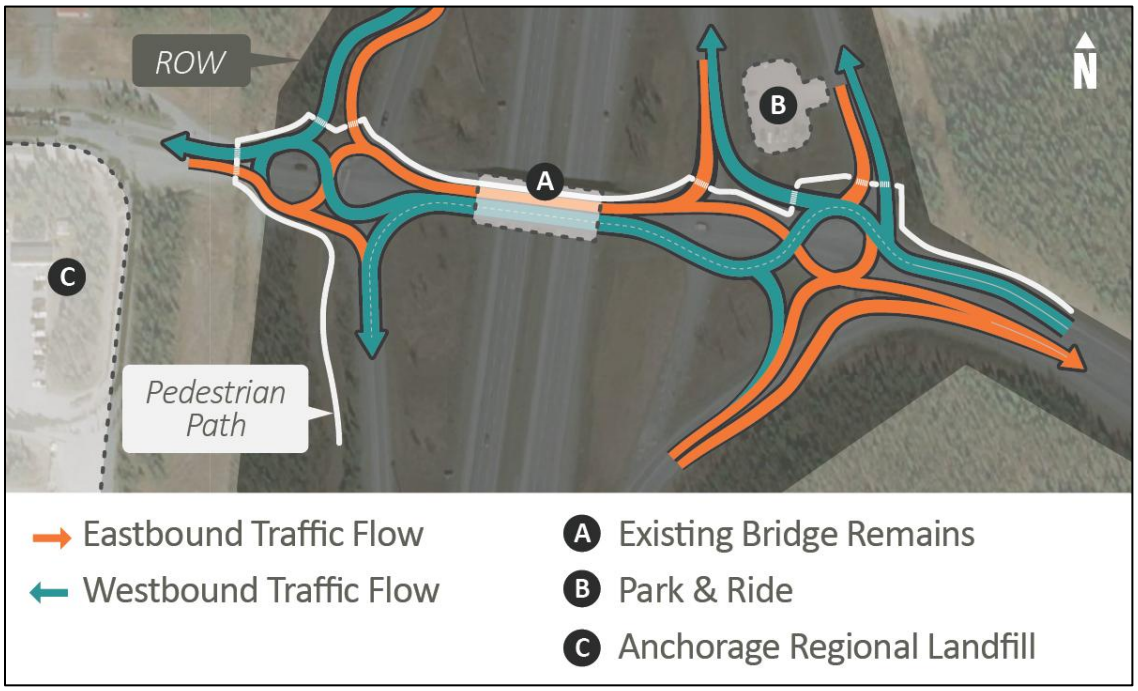


Figure 5: Preferred Alternative – Divergabout

Benefits of the Preferred Alternative

- Improves operations and performance on both sides of the interchange, including the VFW and Wolf Den Drive intersections.
- Improves safety at both ramp intersections by substantially reducing vehicular conflict points.

- Reduces or eliminates costly utility impacts from relocation of the 20-inch gas main and overhead power transmission lines.
- Avoids full parcel acquisitions from JBER, preventing associated schedule delays.
- Enhances non-motorized safety by providing pedestrian refuges and single-lane crossings at most roundabout legs.
- Streamlines transit operations by relocating the transit stop from the interchange core to a more accessible location
- Enables transit to route through the interchange more efficiently due to the reduced queues on Eagle River Road.
- Compatible with future bridge replacement.
- Effectively addresses the project's identified purpose and objectives for long-term success.
- Cost would be less than Alternative 3 (Two-Lane Loop Ramp).

Drawbacks of the Preferred Alternative

- Requires a small partial ROW acquisition at the MOA landfill entrance.
- Contra-flow vehicle movement on the bridge is a less familiar design to Alaskans.
- More costly than Alternative 2 (Double Left-Turn).

5.0 TYPICAL SECTIONS

Table 1 lists the typical section characteristics of each roadway impacted by the interchange improvements.

5.1 Roadway Segments

Table 1: Preferred Alternative – Divergabout Roadway Characteristics

ROADWAY	KEY DESIGN CRITERIA	NON-MOTORIZED FACILITIES
Interchange Ramps	• Functional Class: Interstate • Posted Speed Limit: 30 to 50 mph between the interchange and ramp connection with Glenn Highway • Lane Width: 12 feet • Inside Shoulder Width: 4 feet • Outside Shoulder Width: 6 feet	• None
VFW Road	• Functional Class: Minor Collector • Posted Speed Limit: 40 mph • Lane Width: 12 feet • Shoulder/Bicycle Lane Width: 5 feet	• Existing 2-foot shoulders will transition to 5-foot bicycle lanes and route to the multi-use path.

ROADWAY	KEY DESIGN CRITERIA	NON-MOTORIZED FACILITIES
Eagle View Drive	• Functional Class: Local Road • Posted Speed Limit: 40 mph • Lane Width: 10 feet • Inside Shoulder Width: 2 feet • Outside Shoulder Width: 2 feet	• This project will not create new facilities along existing local roads.
ERLR Between Proposed Roundabouts	• Functional Class: Minor Arterial • Posted Speed Limit: N/A (speed controlled by roundabout design) • Lane Width: 11 feet • Inside Shoulder: 2 feet • Outside Shoulder: 2 feet • Bridge Clear-Roadway Width: 40.5 feet	• 10-foot multi-use pathway will be maintained over the bridge • Pathway separated by curb and gutter • Buffer provided where space is available in existing ROW
ERLR	• Functional Class: Minor Arterial • Posted Speed Limit: 45 mph between VFW Road and ERLP/Wolf Den Drive intersection (match existing) • Lane Width: 12 feet • Inside Shoulder Width: 2 feet • Outside Shoulder Width: 8 feet (Curb and Gutter will be provided along the inside shoulder with the splitter island and along the outside shoulder near the roundabout.)	• Multi-use pathways will tie into existing facilities (width will range from 10 to 11 feet) • Pathways separated by curb and gutter • Buffer provided where space is available in existing ROW

5.2 Roundabout

The west roundabout "R1" near the ARL includes a 20-foot circulatory lane with a 6-inch mountable curb on the exterior, 4-inch low profile curb and gutter around the outer radius of the truck apron and stacked 6-inch expressway curb and gutter around the inner radius within the central island. The 6-inch expressway curb and gutter encompass the raised patterned concrete splitter islands used for channelization and pedestrian refuges between roundabout entry and exit lanes. A 10-foot separated pathway in the north quadrant wraps through the ARL legs before connecting to the existing shared-use path between Eagle River and Anchorage along the Glenn Highway. The interior and exterior truck aprons accommodate the design vehicle (WB-67) for all turning movements through the interchange while the curb and gutter maintains adequate drainage off the travelled way. The circulatory roadway maintains a 2% maximum cross-slope and grade through the roundabout to manage stormwater flows, minimize gutter spread, and capture with a nearby inlet. Minimal grades near the approach/exit legs increase visibility of oncoming traffic for yielding vehicles and pedestrians using access routes. Roundabout entrance and exit legs with tight radii curves following NCHRP 617 guidance provide adequate visibility while decreasing vehicle speeds through the roundabout. The 125-foot inscribed diameter falls

within the NCHRP 617 common inscribed circle diameter (ICD) guidance for a single-lane roundabout.

The east roundabout "R2" accommodates VFW Road, Eagle River Loop Road, and the Glenn Highway northbound exit and entrance ramps. The roundabout accommodates two Eagle River Loop Road westbound circulatory lanes and a single eastbound Eagle River Loop Road circulatory lane. The Glenn Highway northbound exit ramp contains an eastbound slip lane. The northbound entrance ramp wraps around the unofficial Park & Ride and includes a transit stop with shelter pad. The 10-foot separated path wraps around the northern half of the roundabout and connects the existing ERLR wide shoulder to the unofficial Park & Ride. The VFW southbound roundabout entrance includes a transit stop meeting the MOA DCM. All curbs, splitter islands, and drainage designs match the "R1" criteria. The two-lane section contains a 150-foot inscribed diameter meeting NCHRP 617 common ICD guidance for a multilane roundabout. The single-lane section contains a 130-foot inscribed diameter also meeting NCHRP 617 common ICD guidance for a single- lane roundabout.

The draft typical sections are provided in Appendix B.

6.0 HORIZONTAL AND VERTICAL ALIGNMENT

6.1 Horizontal Alignment

The horizontal alignment of ERLR across the bridge will remain unchanged, consistent with the existing roadway geometry. The new roundabout at the ARL entrance, located on the west side of the interchange, rotates approximately 26 degrees southward to avoid a cluster of existing utility pedestals in the northwest quadrant (Figure 6). This adjustment also minimizes impacts to the planned improvements at the ARL entrance. The eastern roundabout is designed to align geometrically with the existing ramp intersection, providing seamless integration with the interchange. All proposed ramp adjustments connect to the existing ramp alignments, except the southbound entrance ramp, which will be reconfigured as a two-lane parallel merge to enhance capacity and improve traffic flow.

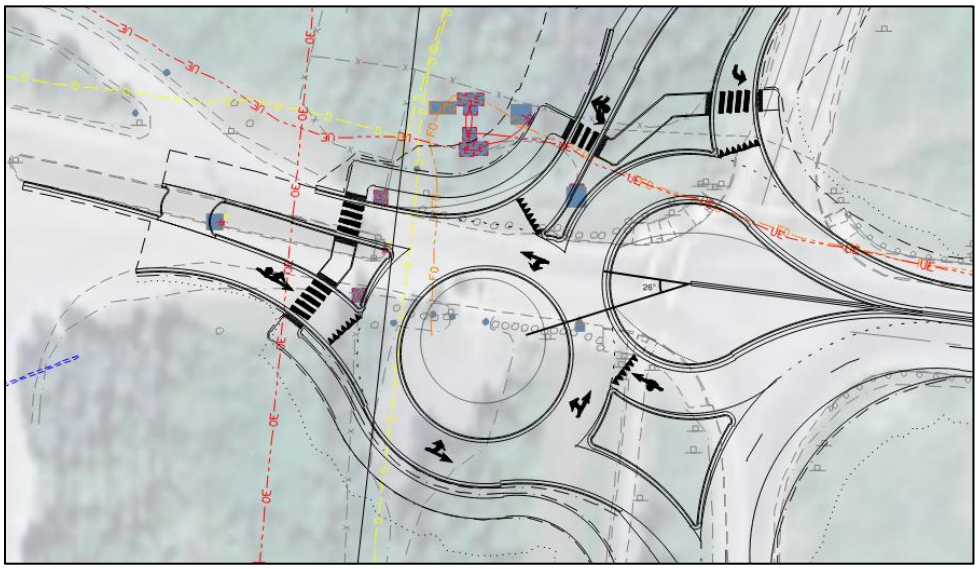


Figure 6: Roundabout Layout – West Side

6.2 Vertical Alignment

The vertical alignment of ERLR from roundabout to roundabout was designed to accommodate a future bridge replacement. The roadway profile elevations on both sides of the existing bridge minimize interchange modifications for a higher bridge that meet height clearance standards over the Glenn Highway. See Appendix C for details on the existing and future profiles and how the interchange profiles on each side integrate with the existing bridge.

7.0 EROSION AND SEDIMENT CONTROL

The project includes temporary and permanent measures to control or prevent erosion and sedimentation during and post project construction. The contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction that conforms to the DOT&PF Best Management Practices (BMPs) for Erosion and Sediment Control in accordance with the DOT&PF contract specifications and following the guidelines of the Erosion and Sediment Control Plan (ESCP) provided to the contractor. The contractor will submit the SWPPP for approval by the Construction Project Engineer. The contractor will conduct construction activities in accordance with the approved SWPPP. Appropriate erosion and siltation controls will be used and maintained in optimal condition during construction and all other exposed soils/fills will be permanently stabilized. Temporary best management practices (BMPs) will remain in place until permanent erosion and sediment control measures are in place and soil is permanently stabilized.

8.0 DRAINAGE

There are no streams or wetlands located within the project corridor. The only stormwater drain facilities within the project corridor are two inlets that discharge directly adjacent to the road fill at the existing northbound exit ramp. In addition to those two stormwater facilities, there are two crossing culverts on ERLR, east of the interchange, and a crossing culvert under the Glenn

Highway to convey drainage from the center median to drainage outside the roadway within the ROW. There are four approach culverts along the project corridor.

Currently, ERLR is a local high point for drainage, with all runoff generated from impervious areas sheet-flowing off the roadway on both sides. Curb and gutter are utilized along Eagle River Loop Road near the overpass bridge and at the intersections for the highway entrance ramps and exit ramps. Runoff generated on the interior of the highway entrance ramps and off-ramps flows to the roadside drainage for the Glenn Highway. Once runoff is collected at the Glenn Highway, the general drainage pattern is south-to-north along the highway alignment. All flow conveyed away from the highway is captured in densely vegetated areas with large depressions that capture runoff.

Stormwater will be managed under the requirements of the DOT&PF AHDM, HPCM, the contractor's ESCP, and the Municipal Separate Storm Sewer System (MS4) permit authorized by the Alaska Department of Environmental Conservation (DEC).

The improvements to the interchange will increase impervious areas and alter existing drainage patterns compared to the current configuration. There is sufficient space between the roadways within the interchange to accommodate and construct stormwater retention and/or detention ponds to collect and infiltrate roadway runoff and/or improve off-site discharge compared to existing site conditions. The runoff generated from impervious areas within the project corridor can be reduced by employing green areas with vegetation between impervious areas. A storm drain system is proposed, with inlets placed along areas with curbs and gutters to direct runoff towards these ponds. Where appropriate, regions of curb and gutter will discharge through curb openings into riprap-lined spillways that direct flow toward stormwater facilities or existing drainage paths. Storm drain inlets are placed to prevent excessive ponding or flow depths on the roadways. Vegetated ditches and swales will convey runoff to retention areas or existing drainage paths in areas without curb and gutter. Low impact design elements, such as bioswales and biofilters, will be evaluated for inclusion in the drainage design to improve runoff water quality.

8.1 Drainage within MOA and MS4 Permit Compliance

The National Pollutant Discharge Elimination System permit program originated under section 402 of the Clean Water Act 33 United States Code §1251) and requires that stormwater discharges to surface water be authorized by permit. In Alaska, DEC has primacy for issuing these permits via the Alaska Pollutant Discharge Elimination System (APDES). DEC has jointly authorized the MOA and the DOT&PF to discharge stormwater from MS4 to surface water and wetlands within the MOA through an individual MS4 permit. This permit, *APDES Permit No. AKS052558*, is effective from August 1, 2020 to July 31, 2025.

To comply with the permit; the project will incorporate, at a minimum, the pollution control measures and BMPs as required by the DEC-approved Storm Water Management Program developed by the MOA and amended by DOT&PF. Essential requirements include but are not necessarily limited to:

- The project follows the criteria set forth in the DOT&PF AHDM and the MOA Drainage Design Guidelines as modified by DOT&PF.
- The contractor will develop a SWPPP prior to construction that follows the guidelines of the ESCP provided to the contractor. The SWPPP will comply with the APDES permitting program and the Alaska Construction General Permit .
- The contractor will describe how to minimize and reduce erosion in the contractor's SWPPP.
- The contractor will comply with all permit conditions with respect to installation and maintenance of control measures, inspections, monitoring (if necessary), corrective actions, reporting and recordkeeping.
- The contractor will address all discharge in the SWPPP. The contractor will prepare a Hazardous Material Control Plan.
- The maintenance of the pipes, sewers, and other conveyances will remain the responsibility of DOT&PF.
- State of Alaska will maintain outreach and education through the State of Alaska website. Project-specific information will be posted on the project site once construction activity begins.

9.0 SOIL CONDITIONS

In progress by Central Region Materials

10.0 ACCESS CONTROL FEATURES

Is this project on an Interstate and will driveways be modified or added?
☒ Yes ☐ No

A controlled access break exists on both sides of the existing interchange for ERLR and the ARL entrance (Figure 7). The existing control access lines will need slight modifications to align with the new roundabout and ramp configurations.

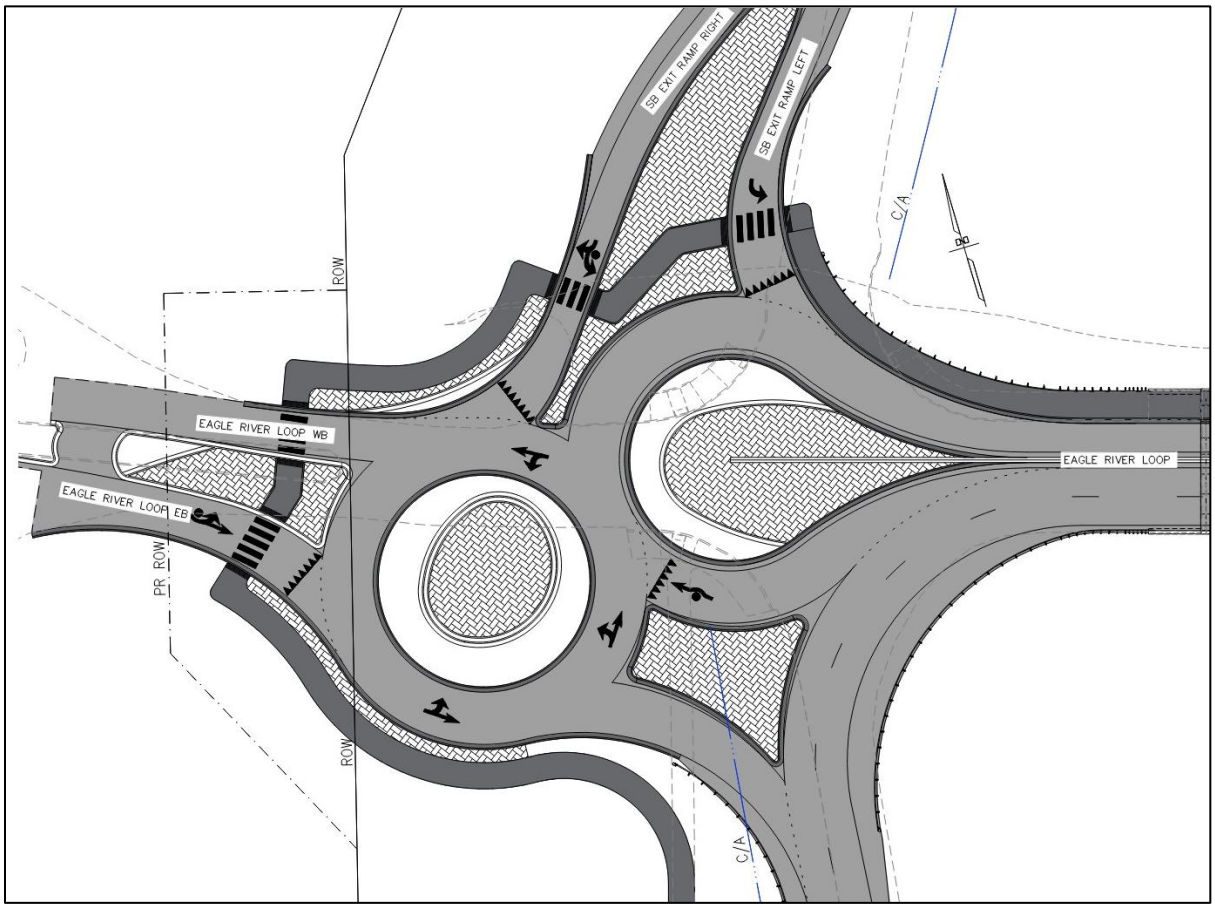


Figure 7: Existing Controlled Access

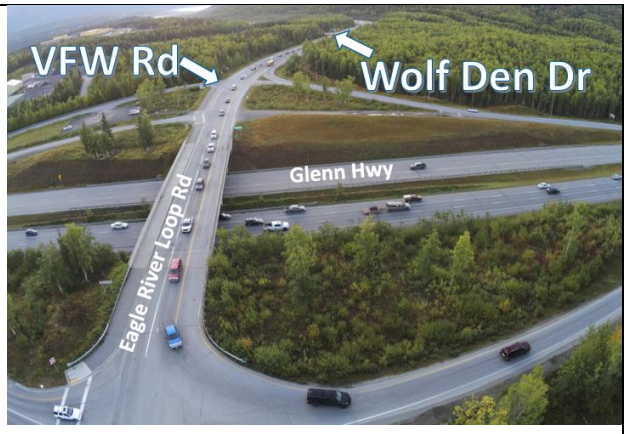
11.0 TRAFFIC ANALYSIS

11.1 Summary of Existing Conditions

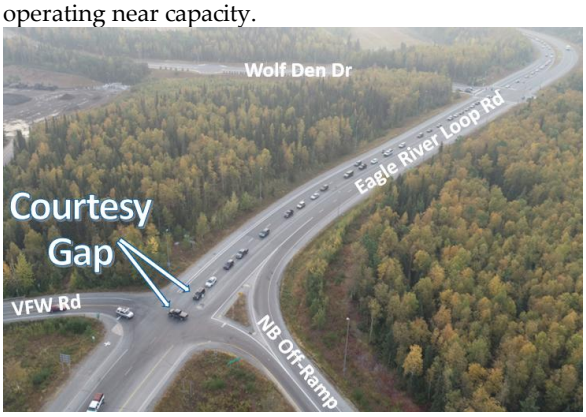
The Traffic Analysis Report (Kinney 2025) evaluated the existing and preferred alternative conditions. The following summarizes the results.

- Traffic patterns in the study area are highly directional, with traffic traveling predominantly westbound on ERLR, then turning southbound on the Glenn Highway in the morning and exiting the northbound Glenn Highway and then turning eastbound on ERLR in the evening.
- Interchange operations are severely congested during the morning peak travel time.
- Drone photos in Figure 8 show morning peak concerns are interconnected and span the entire study area, requiring solutions that comprehensively address all issues.

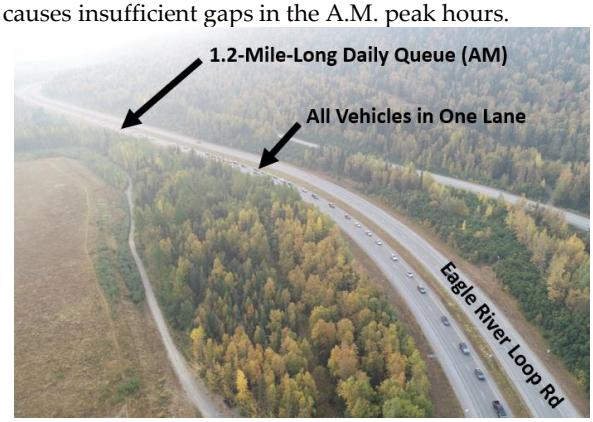
The southbound entrance ramp merge area is operating near capacity.



The rolling queue entering southbound entrance ramp causes insufficient gaps in the A.M. peak hours.



Most westbound traffic on ERLR heads south on the Glenn Highway, with over 90% using the left lane, causing uneven lane use and few gaps for side-street traffic. Some drivers stop to allow conflicting vehicles to enter, providing courtesy gaps.



The lane imbalance for westbound traffic extends beyond the signal at Wolf Den Drive/Hiland Road which causes excessive delay at the signal (5 minutes per vehicle for westbound through traffic) and long queues approaching the signal (2,000 feet or more).

Figure 8: A.M. Peak Hour Traffic Concerns

Figure 9 depicts the A.M. peak hours No-Build condition, which was projected using the forecasted growth, which is projected to be less than one percent annually through the design year of 2050. Based on existing traffic volumes forecast to 2050, congestion and long delays during the morning peak hours are expected to persist unless improvements are made to the interchange. The figure shows intersection movements that do not meet an acceptable level of service and delay in the future year with no improvements. All other interchange movements are Level of Service (LOS) C or better with delays of less than 33 seconds.

Figure 9: No Build 2050 A.M. Peak Hour LOS and Delay

11.2 Preferred Alternative Analysis

Table 2 summarizes the 2050 build conditions in the A.M. peak hour for the Preferred Alternative (divergabout) and how the findings compare to the other alternatives.

Table 2: Alternatives and Operations Comparative Assessment

	Evaluation Criteria	(Alt 1) No Build (2050)	(Alt 2) Double Left	(Alt 3) Dual-Lane Loop Ramp	(Alt 4) Divergabout
	Operations & Capacity				
LOS	Glenn Highway SB Exit Left	F	F	A	C
	Glenn Highway NB Exit Left	F	E	E	A
	VFW SB Left/Right	F	F	F	B
	ERLR at Wolf Den WB Thru	F	F	F	F
Delay (sec/veh)	Glenn Highway SB Exit Left	1830	102	9	24
	Glenn Highway NB Exit Left	301	41	41	7
	VFW SB Left/Right	76	54	54	14
	ERLR at Wolf Den WB Thru	326	74	74	74
	Improved Lane Utilization	No	Yes	Yes	Yes
	Accommodates Truck Traffic	Yes	Yes	Yes	Yes
	Accommodates Oversized Vehicles	Yes	Yes	Yes	Yes
	Safety Performance				
	Reduces Turning Conflicts	No	No	Yes	Yes
	Improves Non-Motorized Conflicts	No	No	Yes	Yes
	Impacts				
	Minimizes ROW Impacts	Yes	Yes	No	Yes
	Reduces Utility Impacts	Yes	Yes	No	Yes
	Reduces Environmental Impact	No	No	No	No
	Cost Effective				
	Alternative Cost	N/A	$4.9M	$15.8M	$12.8M

Worse Condition

No Improvement

Improvement

Most Advantageous

The following summarizes the alternatives analysis findings:

- Alternatives 1, 2, and 3 do not meet the project goals and objectives for all critical movements.
- Alternative 2 will have below minimum LOS (LOS D) at all critical movements while slightly improving the Glenn Highway northbound Exit Left to a LOS E. Per AASHTO GB Table 2-3 (7th ed.), the minimum LOS along an arterial or collector is LOS D.
- Alternative 3 will improve the Glenn Highway southbound Exit Left to a LOS A and reduce the Wolf Den Drive intersection westbound through movement delay; however, no other movements will be improved.
- Alternative 4 has the greatest LOS improvement and brings all critical movements up to a LOS C or better except the Wolf Den Drive intersection westbound through movement; however, the delay is significantly improved from 380 sec/veh to 70 sec/veh.
- Besides the No-Build (Alternative 1), Alternative 2 is the lowest cost alternative, but it may be viewed in a negative light by the public due to multiple previous studies in the project area and minimal improvements resulting from those studies.

- Alternatives 1 and 2 do not improve truck-turning movements. Alternative 3 slightly improves truck operations through the interchange given the dual-lane loop ramp directs traffic onto the southbound Glenn Highway entrance ramp without competing with landfill egress traffic, reducing the landfill traffic delay. Alternative 4 gives trucks increased priority through the interchange and improves the Glenn Highway northbound to southbound (and southbound to northbound, although less critical) U-turn movements.
- Alternatives 3 and 4 improve pedestrian access within the project area. Alternative 2 was kept at a no improvement rating because the existing crossings would be maintained. Alternative 3 improvements include replacing the Glenn Hiland southbound crossing with a pedestrian tunnel. While Alternative 4 increases the total eastbound to westbound lane crossings by one, from 7 to 8, the divergabout reduces crossing width from two opposing lanes at one time to only one lane at a time by adding pedestrian refuges. Furthermore, the roundabout designs promote slower vehicle speeds exiting the roundabouts at each crosswalk.
- Alternative 4 optimizes transit operations through the interchange due to reduced queues on Eagle River Road and relocating the transit stop from the interchange core.
- Alternative 4 most comprehensively meets the project goals and objectives and will accommodate future interchange developments.

12.0 SAFETY IMPROVEMENTS

The Traffic Analysis Report (Kinney 2025) evaluated the diverging diamond aspect of the Preferred Alternative as the alternative that addresses operational concerns, with implied and direct safety benefits. While the crash analysis notes that historical crash rates in the project area are not unusually high (primarily icy/snowy road-related run-off-road crashes on segments and left-turn/angle crashes at intersections due to failing to yield), the DDI is designed to enhance safety through reduced conflict points and improved user experiences. Below is a summary of the key safety improvements for the Preferred Alternative:

Reduction in Conflict Points

- The divergabout creates fewer conflict points and reduces number and severity of crashes when compared to traditional signalized diamond interchanges. This directly addresses the predominant intersection crash types identified in the Traffic Analysis Report (left turn and angle crashes from drivers failing to yield to ERLR through traffic).
- By allowing left- and right-turn movements to ramps without crossing opposing traffic (vehicles cross to the left side of the road over the bridge and back), the DDI minimizes opportunities for yield-failure crashes. For example, one documented crash at the VFW Road/Northbound Exit Ramp involved a vehicle accepting a "courtesy gap," which the DDI's improved operations (e.g., minimal delays at southbound ramps) could reduce by eliminating the need for such risky maneuvers.

Improved Pedestrian and Non-Motorized Safety

- The divergabout reduces two direction conflicts for pedestrians, who will now cross one direction of traffic at a time. Configurations include two yield-controlled crossings and four uncontrolled crossings, an improvement over the No-Build scenario (few conflicts, most stop-controlled with one uncontrolled).
- Pedestrian delay at unsignalized crossings remains low (1-3 seconds per pedestrian during peak hours), with "no delay" or "unlikely" risk-taking behavior. This reduces personal irritation and potential jaywalking, especially compared to the No-Build 40-second delays at the Wolf Den Drive/Hiland Road signal (high likelihood of risk-taking).
- Overall, non-motorized connectivity is marked as an improvement from No-Build supporting safer multimodal travel.

Operational Improvements Leading to Indirect Safety Gains

- The divergabout significantly reduces vehicle delays (e.g., minimal delay at southbound ramps, acceptable delay at Wolf Den Drive signal with balanced lane usage), addressing congestion that contributes to frustration and unsafe behaviors like courtesy gaps or aggressive merging.
- The divergabout provides significant improvements in vehicle delay for key movements (e.g., westbound ERLR to southbound Glenn Highway), which could lower crash risks associated with capacity limitations and lane imbalances (e.g., over 90% of westbound traffic using one lane, leading to insufficient gaps and delays exceeding 1-5 minutes).
- The divergabout improves merge operations (LOS C in A.M. peak vs. LOS D in No-Build), reducing turbulence and potential rear-end or sideswipe crashes at the entrance ramp.

Additional safety improvements include:

- Enhanced Nighttime Visibility. Nighttime decision-making at the Glenn–Hiland interchange relies on drivers' ability to detect roadway geometry, traffic control devices, and other users at critical conflict points, including diverges/merges, ramp terminals, under-structure zones, and pedestrian/bicycle crossings. Continuous, uniform illumination at these locations enhances object detection, improves gap acceptance, reduces late or erratic maneuvers, and facilitates incident response. The lighting design adheres to the Illuminating Engineering Society (IES) RP-8 recommended practice for roadway and parking facility lighting. Light poles will be positioned with a 5-foot offset from the back of guardrail installations where applicable. In other areas, light poles will utilize breakaway foundations and be placed 17 feet from the edge of the traveled way. Pedestrian illuminance at divergeabout crosswalks will be provided 5 feet above finished grade, following IES RP-8-18 guidelines. Roundabouts, due to their continuous flow, require enhanced visual cues compared to yield-, stop-, or signal-controlled intersections. Illumination of all signage, geometric elements, opposing vehicles, and pedestrian crossings is critical to support informed driver decisions regarding speed and direction.

- Upgraded Lighting. The lighting plan for the ERLR and Glenn Highway interchange project includes replacing existing high-tower lighting impacted by construction with energy-efficient, low-glare LED lighting to minimize light pollution. The new LED fixtures will provide equivalent or improved illuminance while reducing energy consumption and environmental impact.
- Installation of a rigid barrier on the bridge to separate opposing traffic flows, reducing the risk of collisions.
- Signage for the project includes standard roadway and pedestrian signage to guide traffic effectively. In addition, overhead signage is being evaluated to clearly communicate routing through the divergabout, enhancing navigation and safety.

13.0 RIGHT-OF-WAY REQUIREMENTS

The interchange is constrained by limited ROW on the western side, bordered by ARL and JBER lands, and on the east by Alaska Mental Health Trust Authority and MOA lands (Figure 10).

The preferred alternative requires limited ROW acquisition at the ARL entrance, aligning with the MOA Solid Waste Services (SWS) planned upgrades to the ARL entrance (Figure 11). Following initial coordination with SWS, the design incorporates a snowplow truck turnaround for MOA Maintenance and Operations to plow the ARL approach and perform a U-turn (Figure 11). Additionally, a path allows ARL trucks to cross from ERLR westbound to eastbound, requiring ARL flagging to manage access when queues extend back to the roundabout. The project team will continue coordinating with SWS to integrate their entrance improvements with this project.

Temporary construction easements and permits may be necessary to support modifications to the ARL approach and construction of the southbound entrance ramp.

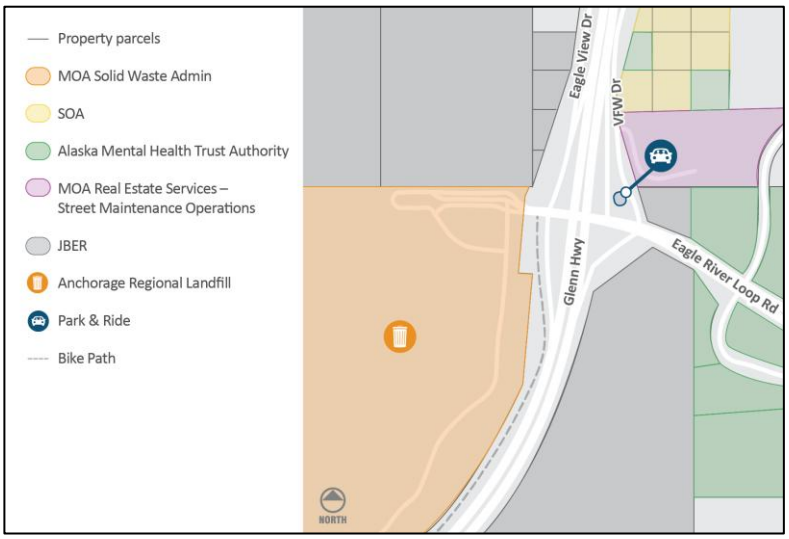


Figure 10: Existing ROW

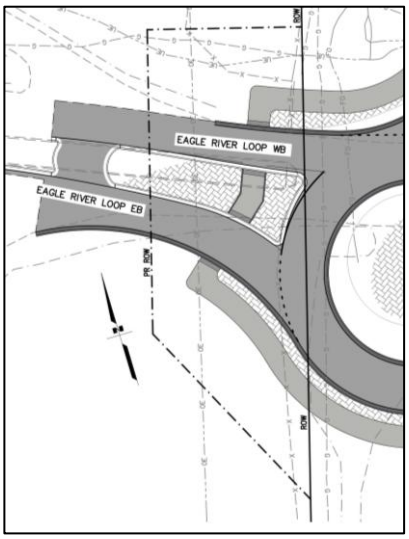


Figure 11: Propose ROW

14.0 PEDESTRIAN AND BICYCLE FACILITIES

14.1 Existing Non-Motorized Facilities

An 11.5-foot-wide multi-use path runs along the northern side of the Glenn Highway bridge, connecting VFW Road to ARL (Figure 12). This path links the unofficial Park & Ride lot to the Glenn Highway multi-use pathway (Figure 13). Marked crosswalks are provided at the uncontrolled crossing of the northbound Glenn Highway entrance ramp and at the stop-controlled intersections of ERLR and the southbound Glenn Highway ramps. The shoulders of ERLR are designated as a paved shoulder bicycle facility. At the Wolf Den Drive/Hiland Road intersection, marked crosswalks with pedestrian signal heads are provided for the north, west, and south legs of ERLR. Sidewalks are present on both sides of Wolf Den Drive. A wide shoulder on the east side of VFW Road transitions into a separated pathway approximately 0.5 mile north of the interchange.

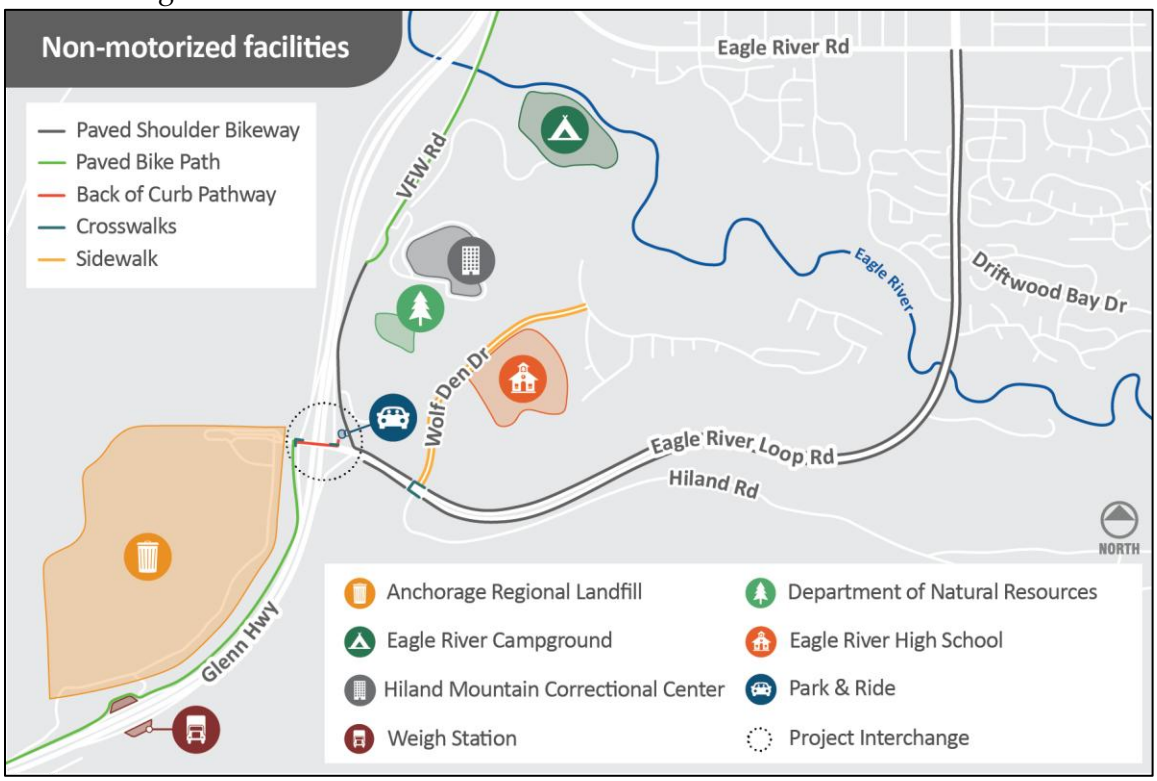


Figure 12: Existing Non-Motorized Facilities

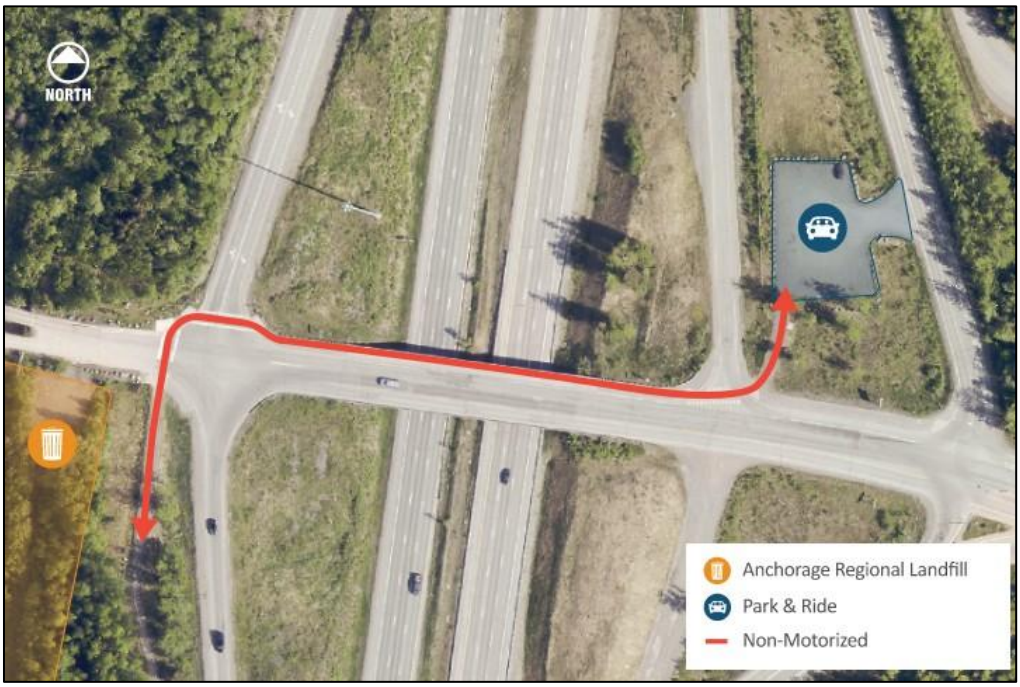


Figure 13: Multi-Use Pathway Connection from Unofficial Park & Ride to Glenn Highway Pathway

14.2 Existing Transit Route 92

The interchange is served by the MOA People Mover Transit Route 92, which operates between downtown Anchorage and Eagle River. The route includes a stop near the unofficial Park & Ride lot adjacent to the interchange (Figure 14).

Figure 14: Existing Transit Route 92

14.3 Preferred Alternative Non-Motorized Facilities

The Preferred Alternative prioritizes pedestrian safety and accessibility by integrating key infrastructure enhancements at the interchange. Pedestrian refuges and single-lane crossings will be implemented at each roundabout leg to improve safety and streamline pedestrian flow (Figure 15). The existing multi-use pathway on the northern side of the Glenn Highway bridge will be retained but reduced to a 10-foot width to accommodate the separation of opposing traffic lanes in the divergabout design (see Figure 17 in Section 20: Bridges).

Additional enhancements under consideration include the installation of wayfinding signage to guide pedestrians efficiently through the interchange, providing clear navigation and enhanced user experience.

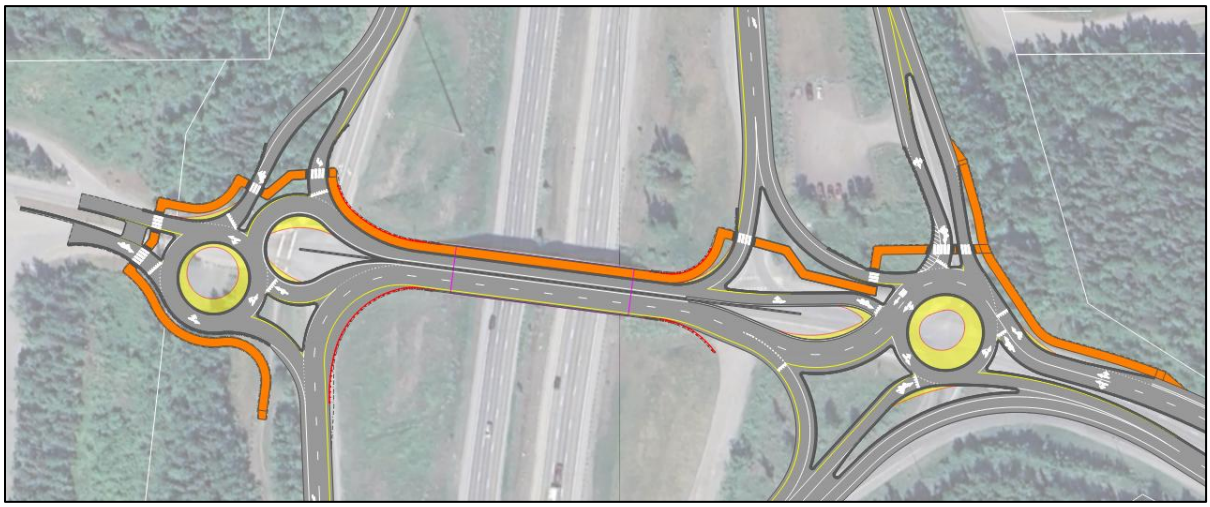


Figure 15: Pedestrian Routing

14.4 Transit Stop Relocation and Layout

For the transit facilities, the preferred alternative streamlines transit operations by relocating and separating the transit stop from the interchange core to two more accessible locations which enables transit to route through the interchange more efficiently due to anticipated reduced queues on Eagle River Road.

During summer months, Route 92 operates northbound on the Glenn Highway to Eagle River and returns southbound via VFW Road to serve the transit stop. In winter, VFW Road is a lower-priority route for snow removal compared to the Glenn Highway, so Route 92 travels both inbound and outbound via the Glenn Highway when VFW is not clear. The proposed transit stop layout accommodates both seasonal operations (Figure 16).

The project team is actively evaluating concepts for the transit stop, with ongoing discussions to refine the design. A working meeting with MOA Transit is scheduled for October 2025 to gather insights on the future of Route 92 and potential route modifications.

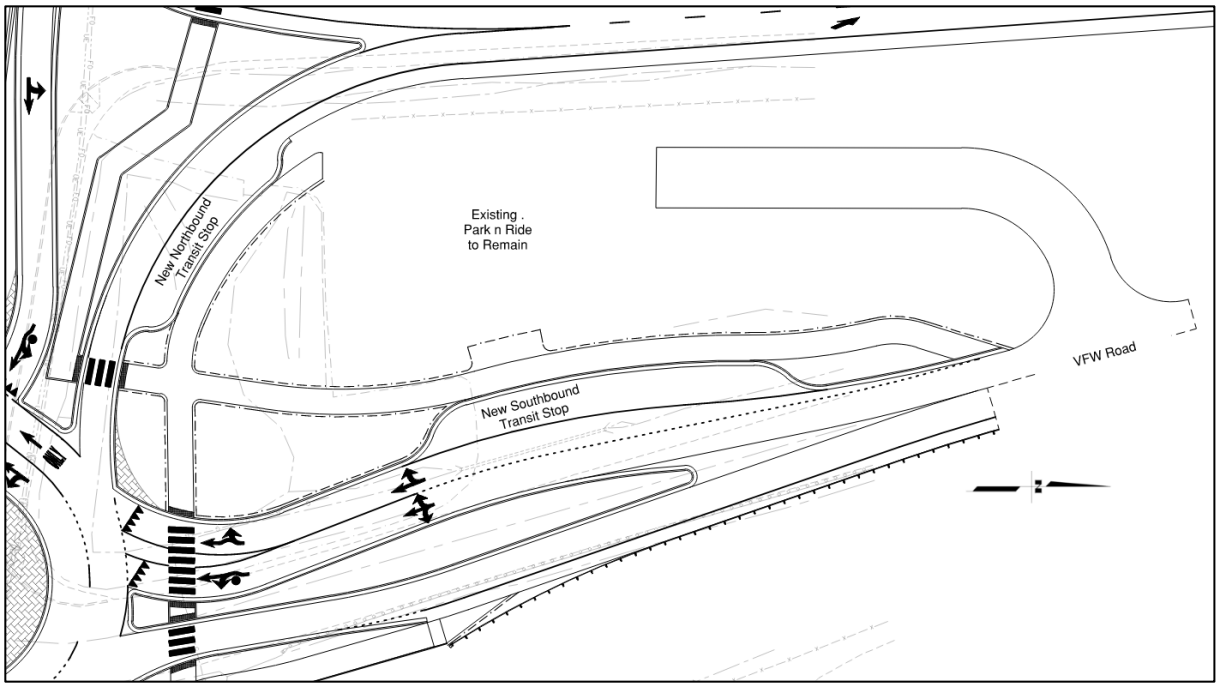


Figure 16: New Tansit Stop Location and Layout

15.0 UTILITY RELOCATION AND COORDINATION

Utility companies with facilities in the project limits include ENSTAR, Matanuska Telecom Association (MTA), Alaska Communication Systems (ACS), and Anchorage Water and Wastewater Utility (AWWU). Utilities will require relocation and agreements will need to be developed, at select locations throughout the project, to address the following conflicts:

15.1 Utility Company

TBD. In progress

15.2 Utility Company

TBD. In progress

16.0 PRELIMINARY WORK ZONE TRAFFIC CONTROL

The HPCM Section 1400.2 sets forth the criteria for determining if a project is "significant" for purposes of determining the level of effort required in developing a Transportation Management Plan (TMP). Significant Projects fall into either a Category 1 or Category 2 classification.
The project meets the criteria for a Category 2 Significant Project and a full TMP, including Temporary Traffic Control, Transportation Operations, and Public Information & Outreach Plans (PI&OP)will be developed.

The TMP will be included by reference and will be provided to construction staff. The following sections summarize the major points of the plan.

16.1 Transportation Management Plan

A TMP will be developed to comply with HPCM Section 1400.3.1 with the intent to:

- Involve stakeholders as appropriate.
- Provide information on potential construction impacts on traffic mobility during public hearings and meetings.
- Identify existing road users, including vulnerable road users.
- Consider whether road capacity under anticipated construction conditions needs to be analyzed.
- Consider whether there are safety concerns that need to be addressed.
- Consider whether it is appropriate to include a Transportation Operations Plan (TOP) and/or Public Information Plan (or portions thereof).
- Consider access requirements for the contractor, inspectors, and other agency stakeholders to get in and out of: work zones; storage and stockpile areas; and the project office.
- Consider whether any utilities hinder access to perform the work.
- Coordinate with the Division of Measurement Standards and Commercial Vehicle Enforcement (MSCVE) to identify existing and pending oversize/overweight vehicle permits that will require accommodation on the project.
- Consider whether there is adequate room and ROW to perform the work with the size and types of equipment expected.
- Ensure anticipated temporary construction impacts are consistent with the relevant section in the Environmental Document.

16.2 Temporary Traffic Control Plan

A Temporary Traffic Control Plan (TTCP) will be developed as part of the TMP which will be used along with the contractor's specific TTCP. The TTCP will be developed to safely guide and protect the traveling public in work zones, in accordance with the ATM, Chapter 9 of the AASHTO Roadside Design Guide and the project specifications. The contractor's TTCP will be assessed and approved by the department.

16.3 Public Information & Outreach Plan

A PIOP will be developed as part of the TMP. It specifies the ways and means that the project will be used to inform the public of upcoming activities impacting local stakeholders, the roadway users, and public entities. The PIOP contains measures to inform stakeholders of project scope, expected work zone impacts, closure details, and recommended action to avoid impacts and changing conditions during construction. Measures to disseminate information include:

- Contractor's Worksite Traffic Supervisor

- Department's Construction section through the Department 511 system
- Television, radio, social media, and/or newspaper
- Other location-specific communication tools.

The traveling public should not be caught unaware of any closures, detours, delays, night work, or any potentially disruptive activity.

16.4 Transportation Operations Plan

The department will coordinate with relevant public agencies and event organizers and incorporate means and methods for minimizing traffic impacts with the contractor not covered by the TTCP or the PIOP within the project plans.

17.0 STRUCTURAL SECTION AND PAVEMENT DESIGN

In progress with Central Region Materials

Pavement recommendations will be provided in Appendix D.

Material sources for this project will be contractor supplied.

18.0 COST ESTIMATE

The project cost estimate is as follows:

Preliminary Engineering	$	2,800,000
Right-of-Way	$	300,000
Utility Relocation	$	1,100,000
Construction	$	16,000,000
Total	$	20,200,000

19.0 ENVIRONMENTAL COMMITMENTS AND CONSIDERATIONS

The proposed project does not involve any unusual circumstances or significant environmental impacts; it meets the criteria for classification as a Categorical Exclusion per 23 Code of Federal Regulations (CFR) 771.117. A Categorical Exclusion for the project was approved on June 4, 2024. A copy of the document is included in Appendix E.

The contractor will be required to prepare and implement a SWPPP in accordance with Section 7.

The contractor will be required to dispose of solid waste at a DEC approved landfill. The contractor will be responsible for obtaining all necessary permits and clearances for materials sites, disposal sites, and staging areas unless DOT&PF has already obtained all necessary permits.

20.0 BRIDGES

Interchange Bridge No. 1237, designed with a 75-year service life, is currently approximately 50 years old and remains in good structural condition. To maintain continued functionality for the duration of its design life, the bridge will be retained for this project but requires routine preventive maintenance. Maintenance activities will focus on the existing pavement, railings, structural concrete elements (including girders, abutments, and piers), and the waterproofing membrane to preserve the bridge's integrity and safety.

As part of the proposed improvements, the north pathway will be narrowed from 11.5 feet to 10 feet to accommodate the proposed travel lanes and separation for opposing directions of travel on the bridge. This modification removes 1.5 feet of the existing pathway and potentially removes empty conduits within the utilidor (Figure 17).

The bridge's current vertical clearances, 16 feet 2 inches southbound and 16 feet 4 inches northbound, do not meet the minimum vertical clearance requirement of 18.5 feet specified in HPCM Table 1130-1 for State Highways over State Highways, from the Port of Alaska to the North Slope. The proposed interchange configuration continues to support ramp access for oversized vehicles, facilitated by structurally supported concrete vehicle paths through the roundabouts.

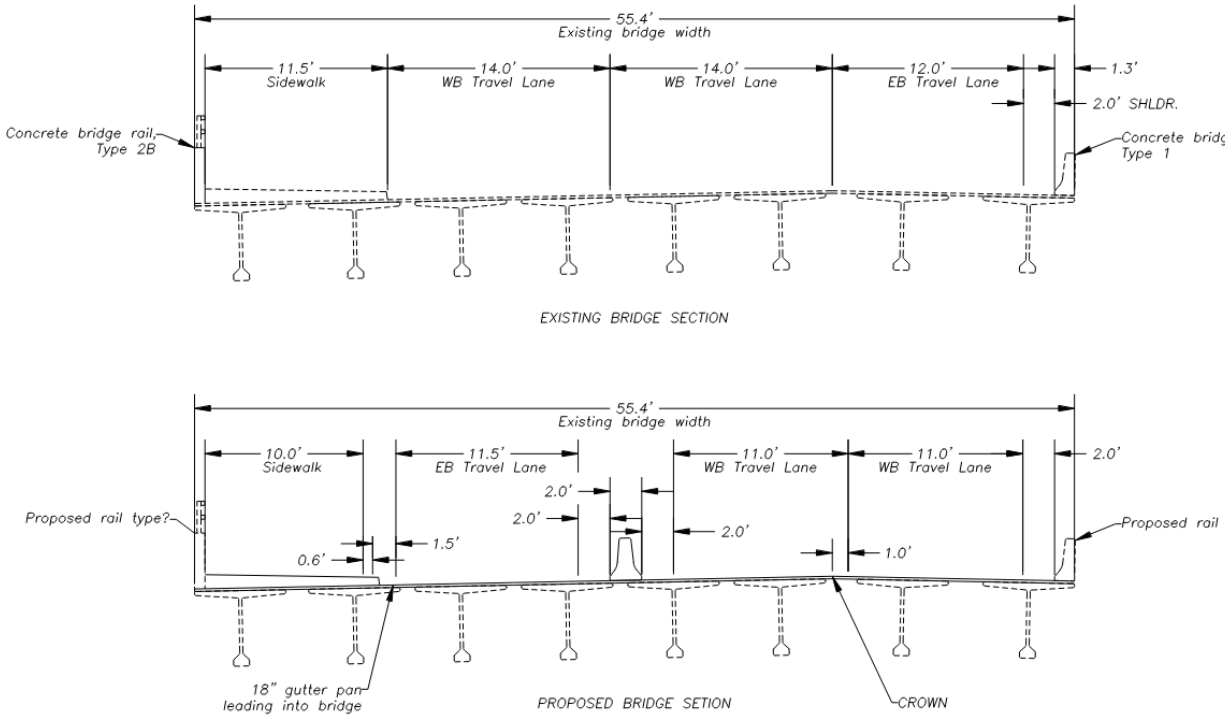


Figure 17: Bridge Preservation

21.0 EXCEPTIONS TO DESIGN STANDARDS

There are no exceptions to design standards for this project.

22.0 MAINTENANCE CONSIDERATIONS

Maintenance of the interchange and ERLR will remain the responsibility of the State of Alaska and the local DOT&PF Maintenance and Operations station in Anchorage. VFW Road will continue to be maintained through the winter months by the MOA through the TORA agreement.

Maintenance efforts through the intersection will increase by the installation of drainage features and additional roundabout features such as additional striping, signing, and lighting. Snow removal efforts will also increase with the installation of medians and curb ramps at the roundabout.

Landscape plans for the project will take the approach of restoring and enhancing areas affected by construction. All disturbed areas will be revegetated with low-maintenance native grasses to improve visual aesthetics and reduce long-term maintenance costs. Additionally, the proposed roundabouts will incorporate colored concrete to visually distinguish truck aprons from the raised median, enhancing both functionality and visual appeal. The roundabout central islands will be landscaped with vegetation and hardscapes to enhance visibility, improve safety, and serve as gateways to south Eagle River and the ARL.

Short-term maintenance efforts will decrease since the existing pavement, signing, and striping are being replaced by federal funding.

23.0 ITS FEATURES

No Intelligent Transportation System (ITS) elements are included in the project.

APPENDIX A

Approved Design Criteria and Design Designation

PROJECT DESIGN CRITERIA

Project Name: Glenn Hwy & Glenn Highland Rd Interchange Improvements Design Services

State Project No.: CFHWY00917 Federal Project No.: 0A16055

Functional Classification Urban Arterial Terrain: Level

Eagle River Loop Road, Glenn Hwy Southbound Ramps to VFW Rd ADT: Design Criteria between the two Roundabouts

Present ADT (2023): 7985 Mid-Design ADT (2040): 8045 Design ADT (2050): 8080

DHV (%): 20% Trucks (%): 5% Directional Split (%/%): 95%/5%

Pavement Design Year: 2050 Pavement Design ESAL: N/A

Design Turning Vehicle: WB-67 (WB92D for GH NB to SB U-turn)

Project Type: New Construction/Reconstruction NHS: ☐ Non-NHS: ☒

FHWA 10 CONTROLLING DESIGN CRITERIA		SOURCE	STANDARD	AS PROPOSED	EXCEPTION[1]
Design Speed[1]		GB, Sec. 2.3.6.3, p. 2-26; Sec. 7.3.2.1, p. 7-36	20-45 mph[a]	25 mph	Choose an item.
Lane Width	Travel	GB, Sec. 7.3.3.2, p. 7-39	10-12 ft	11-11.5 ft[b]	Choose an item.
	Auxiliary	N/A	N/A ft	N/A ft[b]	Choose an item.
Shoulder Width	Outside	GB, Sec. 4.7.3, p. 4-22	2 ft	2 ft	Choose an item.
	Inside	GB, Sec. 4.7.3, p. 4-22	2 ft[c]	2 ft	Choose an item.
	Auxiliary	N/A	N/A ft	N/A ft	Choose an item.
Horizontal Curve Radius, min[3]		GB, Sec. 3.3.6.2, p. 3-54, Table 3-13	181ft	181 ft	Choose an item.
Superelevation Rate, e, max		GB, Sec. 3.3.6.2, p. 3-53	N/A[d]	N/A[d]	Choose an item.
Stopping Sight Distance (SSD), min		GB, Sec. 3.2.2.2, p. 3-4 Table 3-1	155ft	155 ft	Choose an item.
Grade	Min.[2]	GB, Sec. 7.3.2.6, p. 7-38	0.3%	0.65%	Choose an item.
	Max.	HPCM Sec. 1120.2.3, p. 1120.1 & GB, Sec. 7.3.2.6, p. 7-38, Table 7-4a	7%[e]	1%	Choose an item.
Cross Slope		HPCM, Sec. 1130.1.2, p. 1130-1	2%	2%	Choose an item.
Vertical Clearance, Overhead Utilities		HPCM, Sec. 1130, p. 1130-5, table 1130-1	20.5 ft[f]	20.5 ft	Choose an item.
Design Loading Structural Capacity[1]		N/A	N/A	N/A	Choose an item.

OTHER DESIGN CRITERIA		SOURCE	STANDARD	AS DESIGNED	WAIVER
Superelevation Transition, Δ		GB, Sec. 3.3.8.2.1 p 3-62	1:135	1:135	Choose an item.
Bridge Clear-Roadway Width		GB, Sec. 7.3.5.1, p. 7-51	42 ft (existing)	26 ft (WB) 15.5 (EB)	Choose an item.
Vertical Curvature (min)	K (crest)	GB, Sec. 3.4.6.2, p. 3-170, Table 3-35	12	20.96	Choose an item.
	K (sag)	GB, Sec. 3.4.6.3, p. 3-176, Table 3-37	26	27.90	Choose an item.
Lateral Offset to Obstruction		GB, Sec. 7.3.4.2, p. 7-50	1.5-4 ft[g]	1.5-4 ft	Choose an item.
Surfacing Material		HPCM, Sec. 1130.3, p. 1180-1	HMA	HMA	Choose an item.
Clear Zone	Slope (fill)	RDG, Sec. 3.1, p. 3-3, Table 3-1	4:1	4:1	Choose an item.
	Width (fill)		16-18 ft	N/A	Choose an item.
	Slope (cut)		4:1	4:1	Choose an item.
	Width (cut)		14-16 ft	N/A	Choose an item.
Bicycle Lane Width		N/A	N/A	N/A	Choose an item.
Sidewalk/Pathway Width		GDBF, Sec. 5.2.1, p. 5-4	10-14 ft	10 ft	Choose an item.
Intersection Sight Distance*, Passenger Car	Left Turn (GB Case B1)	N/A	N/A	N/A	Choose an item.
	Right Turn (GB Case B2)	N/A	N/A	N/A	Choose an item.
	Crossing (GB Case B3)	N/A	N/A	N/A	Choose an item.
Passing Sight Distance		N/A	N/A	N/A	Choose an item.
Degree of Access Control		HPCM, Sec. 1190.3, p. 1190-2 GB, Sec. 2.5.4, p. 2-45	Full Control		Choose an item.
Median	Treatment	GB 7.3.3.5, Page 7-41	Raised Concrete		Choose an item.
	Width		4 ft	≥ 4 ft	Choose an item.
Illumination		RPRL	Continuous		Choose an item.
Curb Type		CRSD	CRSD		Choose an item.

Notes:
CRSD - *Central Region Standard Detail*
GDBF - *AASHTO Guide for the Development of Bike Facilities, 2012*
GB - *AASHTO A Policy on Geometric Design on Highways and Streets, 2018*
RDG - *AASHTO Roadside Design Guide, 2011*
HPCM - *Alaska Highway Preconstruction Manual*
RPRL - *IES Recommended Practice for Roadway Lighting (RP-8-14)*

[1] *On low-speed roadways (<50 mph) on the NHS, only Design Speed and Design Loading Structural Capacity require a Design Exception; all other criteria require a Design Waiver. For projects off the NHS, all criteria require a Design Waiver.*
[2] *Minimum grade is not one of the FHWA 10 Controlling Design Criteria and will require a Design Waiver for any variance.*
[3] *Given roundabout exit/entrance speed design, Glenn Highway SB terminal to VFW Road follow GB low-speed streets in urban areas.*

[a] *All values obtained uses a 60 mph design speed, assuming Glenn Highway Design Speed is 70 mph.*
[b] *Ramp speed varies 35-65 mph. APCM states non-NHS highways with short grades < 500' may be 1% steeper than the GB.*

Proposed by: _____ Date: _____
Designer (Consultant or Staff)

Recommended by: _____ Date: _____
Engineering Manager

Accepted by: _____ Date: _____
Regional Preconstruction Engineer

PROJECT DESIGN CRITERIA

Project Name: Glenn Hwy & Glenn Highland Rd Interchange Improvements Design Services

State Project No.: CFHWY00917 Federal Project No.: 0A16055

Functional Classification: Freeway Terrain: Rolling

*Interchange Ramps (**Highest ADT**):*

Present ADT (2023): 6380 Mid-Design ADT (2040): 6425 Design ADT (2050): 6455

DHV (%): 21.84 Trucks (%): 5 Directional Split (%/%): 100/0

Pavement Design Year: 2050 Pavement Design ESAL: N/A

Design Turning Vehicle: WB-67

Project Type: New Construction/Reconstruction NHS: ☒ Non-NHS: ☐

FHWA 10 CONTROLLING DESIGN CRITERIA		SOURCE	STANDARD	AS PROPOSED	EXCEPTION[1]
Design Speed[1]		GB, Sec. 10.9.6.2.1, p. 10-105, Table 10-1	35-60 mph[a]	60 mph	Choose an item.
Lane Width	Travel	GB, Sec. 3.3.11.2, p. 3-109 & p. 10-121, Table 3-27	12 ft	12 ft	Choose an item.
	Auxiliary	N/A	N/A	N/A	Choose an item.
Shoulder Width	Outside	GB, Sec. 10.9.6.3.2, p. 10-121	6-10 ft	6 ft	Choose an item.
	Inside	GB, Sec. 10.9.6.3.2, p. 10-121	2-4 ft	4 ft	Choose an item.
	Auxiliary	N/A	N/A ft	N/A ft	Choose an item.
Horizontal Curve Radius, min		GB, Sec. 3.3.5, p. 3-43, Table 3-9	1330 ft	2000 ft	Choose an item.
Superelevation Rate, e, max		GB, Sec. 10.9.6.2.14, p. 10-111 & Sec. 8.2.6, p. 8-4	6%	6%	Choose an item.
Stopping Sight Distance (SDD), min		GB, Sec. 3.2.2.2, p. 3-4, Table 3-1	570 ft	570 ft	Choose an item.
Grade	Min.[2]	GB, Sec. 3.4.2, p. 3-130	0.3%	0.3%	Choose an item.
	Max.	GB, Sec. 10.9.6.2.12, p. 10-110, Table 10-2	3-7%[b]	6.82%	Choose an item.
Cross Slope		GB Sec. 10.9.6.2.14, p. 10-111	2%	2%	Choose an item.
Vertical Clearance, Overhead Utilities		HPCM, Sec. 1130, p. 1130-5, table 1130-1	20.5 ft	20.5 ft	Choose an item.
Design Loading Structural Capacity[1]		N/A	N/A	N/A	Choose an item.

OTHER DESIGN CRITERIA		SOURCE	STANDARD	AS DESIGNED	WAIVER
Superelevation Transition, Δ		GB, Sec. 3.3.8.2.1, p. 3-62	1:200	1:200	Choose an item.
Bridge Clear-Roadway Width		N/A	N/A	N/A	Choose an item.
Vertical Curvature (min)	K (crest) **Vd = 35 mph**	GB, Sec. 3.4.6.1, p. 3-170, Table 3-35	29 ft	33.25 ft	Choose an item.
	K (sag) **Vd = 60 mph**	GB, Sec. 3.4.6.1, p. 3-176, Table 7-37	136 ft	192 ft	Choose an item.
Lateral Offset to Obstruction		GB, Sec. 10.9.6.3.1, p. 10-122	Min, 4 ft (Lt.) Min, 6 ft (Rt.)	Min, 4 ft (Lt.) Min, 6 ft	Choose an item.
Surfacing Material		HPCM, Sec. 1180.3, p. 1180-1	HMA	HMA	Choose an item.
Clear Zone	Slope (fill)	RDG, Sec. 3.1, p. 3-3, Table 3-1	4:1 or flatter	4:1 or flatter	Choose an item.
	Width (fill)		24-28 ft	19.94 ft	Choose an item.
	Slope (cut)		4:1 or flatter	4:1 or flatter	Choose an item.
	Width (cut)		18-20 ft	26.58 ft	Choose an item.
Bicycle Lane Width		N/A	N/A	N/A	Choose an item.
Sidewalk/Pathway Width		N/A	N/A	N/A	Choose an item.
Intersection Sight Distance*, Choose an item.	Left Turn (GB Case B1)	N/A	N/A	N/A	Choose an item.
	Right Turn (GB Case B2)	N/A	N/A	N/A	Choose an item.
	Crossing (GB Case B3)	N/A	N/A	N/A	Choose an item.
Passing Sight Distance		N/A	N/A	N/A	Choose an item.
Degree of Access Control		HPCM, Sec. 1120.3.3, p. 1120-1; 1190.3, p. 1190-2 GB, Sec. 2.5.4, p. 2-45	Full Control		Choose an item.
Median	Treatment	N/A	N/A		Choose an item.
	Width		N/A ft	N/A ft	Choose an item.
Illumination		RPRL	Conflict Areas		Choose an item.
Curb Type		N/A	N/A		Choose an item.

* Attach calculations

Notes:
CRSD - *Central Region Standard Detail*
GDBF - *AASHTO Guide for the Development of Bike Facilities, 2012*
GB - *AASHTO A Policy on Geometric Design on Highways and Streets, 2018*
RDG - *AASHTO Roadside Design Guide, 2011*
HPCM - *Alaska Highway Preconstruction Manual*
RPRL - *IES Recommended Practice for Roadway Lighting (RP-8-14)*
SUP – Shared Use Path

[1] *On low-speed roadways (<50 mph) on the NHS, only Design Speed and Design Loading Structural Capacity require a Design Exception; all other criteria require a Design Waiver. For projects off the NHS, all criteria require a Design Waiver.*
[2] *Minimum grade is not one of the FHWA 10 Controlling Design Criteria and will require a Design Waiver for any variance.*
[3] *Given roundabout exit/entrance speed design, Glenn Highway SB terminal to VFW Road follow GB low-speed streets in urban areas.*

[a] *All values obtained uses a 25-mph design speed between roundabouts.*
[b] *11' to 11.5' travel lanes through bridge only. Travel lane >12' outside bridge footprint.*
[c] *A 2' shy distance between curb/barrier and travel lane.*
[d] *Criteria following low-speed urban street standard (superelevation not required and lateral forced sustained by side friction only.*
[e] *APCM states non-NHS highways with short grades < 500' may be 1% steeper than the GB.*
[f] *Includes 20' + 6" in buffer in note 2.*
[g] *A 1.5' lateral offset should be provided from face of curb, 3' from face of curb at intersections, and 4' at locations without curb from the ETW.*

Proposed by: _____ Date: _____
Designer (Consultant or Staff)

Recommended by: _____ Date: _____
Engineering Manager

Accepted by: _____ Date: _____
Regional Preconstruction Engineer

DESIGN DESIGNATION

State Route Number: **2301006X000** Route Name: **Eagle River Loop Road**

Project Limits: **Southbound Glenn Highway Ramps to Hiland Road Overcrossing Bridge (east end)**

State Project Number: **CFHWY00917** Federal Aid Number: **0A16055**

Project Description: **Glenn Highway & Hiland Road Interchange Improvements**

Design Functional Classification:

- ☐ Freeway
- ☐ Rural Arterial
- ☑ Urban Arterial
- ☐ Other
- ☐ Collector, type
- ☐ Local Recreational Rd.
- ☐ Local Resource Recovery Rd.
- ☐ Rural Local Rd.
- ☐ Urban Local St.
- ☐ Local Service Rd.

Project Type:

- ☑ New Construction - Reconstruction
- ☐ Preventive Maintenance (PM)
- ☐ 3R
- ☐ HSIP

Project Design Life (Years): ☐ 5 ☐ 10 ☑ 20 ☐ 25 ☐ 30 ☐ Other

Traffic Projections:

	Current Year	Construction Year	Mid - Life Year	Design Year
	2023	**2030**	**2040**	**2050**
2-Way AADT*	**7,985**	**8,010**	**8,045**	**8,080**
2-Way DHV (AM Peak)	**1,593**	**1,600**	**1,610**	**1,615**
Peak Hour Factor	**0.85**	**0.85**	**0.85**	**0.85**
Directional Distribution	**95 / 5**	**95 / 5**	**95 / 5**	**95 / 5**
Recreational Vehicle Percentage (RV%)	**Included in CV%**	**Included in CV%**	**Included in CV%**	**Included in CV%**
Commercial Vehicle Percentage (CV%)	**3%**	**3%**	**3%**	**3%**
Compound Growth Rate	**0.04%**	**0.04%**	**0.04%**	**0.04%**
ESALs	**ESALs not analyzed per the direction of DOT&PF PM**			
Pedestrians (Number/Day)	**30**	**30**	**30**	**30**
Bicyclists (Number/Day)	**100**	**100**	**100**	**100**

*Use AFPDM Traffic Data Request Form, Figure 6.1 for pavement design. Form 6.1 is available on-line at: http://www.dot.state.ak.us/stwddes/dcsprecon/assets/pdf/other/traffic_data_req_form.pdf

Design Vehicle: W-67; Oversized: WB-92D

Level of Service (Urban Only): C or D

Design Speed: 45

Terrain: ☑ Level ☐ Rolling ☐ Mountainous

Attach intersection diargrams to this document, when appropriate

Signed by: Luke Bowland
775BE2E04D534FE...

APPROVED _____ DATE 7/16/2025

Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form

DESIGN DESIGNATION

State Route Number: **2301006X000** Route Name: **Eagle River Loop Road**

Project Limits: **Hiland Road Overcrossing Bridge (east end) to Wolf Den Drive/Hiland Road**

State Project Number: **CFHWY00917** Federal Aid Number: **0A16055**

Project Description: **Glenn Highway & Hiland Road Interchange Improvements**

Design Functional Classification:

- ☐ Freeway
- ☐ Rural Arterial
- ☑ Urban Arterial
- ☐ Other
- ☐ Collector, type
- ☐ Local Recreational Rd.
- ☐ Local Resource Recovery Rd.
- ☐ Rural Local Rd.
- ☐ Urban Local St.
- ☐ Local Service Rd.

Project Type:

- ☑ New Construction - Reconstruction
- ☐ Preventive Maintenance (PM)
- ☐ 3R
- ☐ HSIP

Project Design Life (Years): ☐ 5 ☐ 10 ☑ 20 ☐ 25 ☐ 30 ☐ Other

Traffic Projections:

	Current Year	Construction Year	Mid - Life Year	Design Year
	2023	**2030**	**2040**	**2050**
2-Way AADT*	**13,440**	**13,480**	**13,535**	**13,590**
2-Way DHV (AM Peak)	**2,045**	**2,060**	**2,065**	**2,075**
Peak Hour Factor	**0.85**	**0.85**	**0.85**	**0.85**
Directional Distribution	**85 / 15**	**85 / 15**	**85 / 15**	**85 / 15**
Recreational Vehicle Percentage (RV%)	**Included in CV%**	**Included in CV%**	**Included in CV%**	**Included in CV%**
Commercial Vehicle Percentage (CV%)	**2%**	**2%**	**2%**	**2%**
Compound Growth Rate	**0.04%**	**0.04%**	**0.04%**	**0.04%**
ESALs	**ESALs not analyzed per the direction of DOT&PF PM**			
Pedestrians (Number/Day)	**30**	**30**	**30**	**30**
Bicyclists (Number/Day)	**100**	**100**	**100**	**100**

*Use AFPDM Traffic Data Request Form, Figure 6.1 for pavement design. Form 6.1 is available on-line at: http://www.dot.state.ak.us/stwddes/dcsprecon/assets/pdf/other/traffic_data_req_form.pdf

Design Vehicle: W-67; Oversized: WB-92D

Level of Service (Urban Only): C or D

Design Speed: 45

Terrain: ☑ Level ☐ Rolling ☐ Mountainous

Attach intersection diargrams to this document, when appropriate

APPROVED Signed by: Luke Bowland 775BE2E04D534FE... DATE 7/16/2025

Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form

DESIGN DESIGNATION

State Route Number: **1060000N051** Route Name: **Glenn Southbound On-Ramp**

Project Limits: **Eagle River Loop Road to Glenn Highway**

State Project Number: **CFHWY00917** Federal Aid Number: **0A16055**

Project Description: **Glenn Highway & Hiland Road Interchange Improvements**

Design Functional Classification:

- ☑ Freeway
- ☐ Rural Arterial
- ☐ Urban Arterial
- ☐ Other
- ☐ Collector, type
- ☐ Local Recreational Rd.
- ☐ Local Resource Recovery Rd.
- ☐ Rural Local Rd.
- ☐ Urban Local St.
- ☐ Local Service Rd.

Project Type:

- ☑ New Construction - Reconstruction
- ☐ Preventive Maintenance (PM)
- ☐ 3R
- ☐ HSIP

Project Design Life (Years): ☐ 5 ☐ 10 ☑ 20 ☐ 25 ☐ 30 ☐ Other

Traffic Projections:

	Current Year	Construction Year	Mid - Life Year	Design Year
	2023	**2030**	**2040**	**2050**
2-Way AADT*	**6,180**	**6,195**	**6,210**	**6,225**
2-Way DHV (AM Peak)	**1,520**	**1,530**	**1,535**	**1,540**
Peak Hour Factor	**0.88**	**0.88**	**0.88**	**0.88**
Directional Distribution	**100 / 0**	**100 / 0**	**100 / 0**	**100 / 0**
Recreational Vehicle Percentage (RV%)	**Included in CV%**	**Included in CV%**	**Included in CV%**	**Included in CV%**
Commercial Vehicle Percentage (CV%)	**3%**	**3%**	**3%**	**3%**
Compound Growth Rate	**0.03%**	**0.03%**	**0.03%**	**0.03%**
ESALs	**ESALs not analyzed per the direction of DOT&PF PM**			
Pedestrians (Number/Day)	**30 (on trail)**	**30 (on trail)**	**30 (on trail)**	**30 (on trail)**
Bicyclists (Number/Day)	**100 (on trail)**	**100 (on trail)**	**100 (on trail)**	**100 (on trail)**

*Use AFPDM Traffic Data Request Form, Figure 6.1 for pavement design. Form 6.1 is available on-line at: http://www.dot.state.ak.us/stwddes/dcsprecon/assets/pdf/other/traffic_data_req_form.pdf

Design Vehicle: W-67; Oversized: WB-92D

Level of Service (Urban Only): C or D

Design Speed: 50

Terrain: ☑ Level ☐ Rolling ☐ Mountainous

Attach intersection diargrams to this document, when appropriate

Signed by: Luke Bowland
775BE2E04D534FE...

APPROVED _____ DATE 7/16/2025

Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form

DESIGN DESIGNATION

State Route Number: **1060000F051** Route Name: **Glenn Southbound Off-Ramp**

Project Limits: **Glenn Highway to Eagle River Loop Road**

State Project Number: **CFHWY00917** Federal Aid Number: **0A16055**

Project Description: **Glenn Highway & Hiland Road Interchange Improvements**

Design Functional Classification:

- ☑ Freeway
- ☐ Rural Arterial
- ☐ Urban Arterial
- ☐ Other
- ☐ Collector, type
- ☐ Local Recreational Rd.
- ☐ Local Resource Recovery Rd.
- ☐ Rural Local Rd.
- ☐ Urban Local St.
- ☐ Local Service Rd.

Project Type:

- ☑ New Construction - Reconstruction
- ☐ Preventive Maintenance (PM)
- ☐ 3R
- ☐ HSIP

Project Design Life (Years): ☐ 5 ☐ 10 ☑ 20 ☐ 25 ☐ 30 ☐ Other

Traffic Projections:

	Current Year	Construction Year	Mid - Life Year	Design Year
	2023	**2030**	**2040**	**2050**
2-Way AADT*	**770**	**780**	**795**	**810**
2-Way DHV (PM Peak)	**88**	**90**	**95**	**95**
Peak Hour Factor	**0.83**	**0.83**	**0.83**	**0.83**
Directional Distribution	**100 / 0**	**100 / 0**	**100 / 0**	**100 / 0**
Recreational Vehicle Percentage (RV%)	**Included in CV%**	**Included in CV%**	**Included in CV%**	**Included in CV%**
Commercial Vehicle Percentage (CV%)	**5%**	**5%**	**5%**	**5%**
Compound Growth Rate	**0.19%**	**0.19%**	**0.19%**	**0.19%**
ESALs	**ESALs not analyzed per the direction of DOT&PF PM**			
Pedestrians (Number/Day)	**0**	**0**	**0**	**0**
Bicyclists (Number/Day)	**10**	**10**	**10**	**10**

*Use AFPDM Traffic Data Request Form, Figure 6.1 for pavement design. Form 6.1 is available on-line at: http://www.dot.state.ak.us/stwddes/dcsprecon/assets/pdf/other/traffic_data_req_form.pdf

Design Vehicle: W-67; Oversized: WB-92D

Level of Service (Urban Only): C or D

Design Speed: 50

Terrain: ☑ Level ☐ Rolling ☐ Mountainous

Attach intersection diargrams to this document, when appropriate

Signed by: Luke Bowland
775BE2E04D534FE...

APPROVED _____ DATE 7/16/2025

Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form

DESIGN DESIGNATION

State Route Number: **1060000F050** Route Name: **Glenn Northbound Off-Ramp**

Project Limits: **Glenn Highway to Eagle River Loop Road**

State Project Number: **CFHWY00917** Federal Aid Number: **0A16055**

Project Description: **Glenn Highway & Hiland Road Interchange Improvements**

Design Functional Classification:

- ☑ Freeway
- ☐ Rural Arterial
- ☐ Urban Arterial
- ☐ Other
- ☐ Collector, type
- ☐ Local Recreational Rd.
- ☐ Local Resource Recovery Rd.
- ☐ Rural Local Rd.
- ☐ Urban Local St.
- ☐ Local Service Rd.

Project Type:

- ☑ New Construction - Reconstruction
- ☐ Preventive Maintenance (PM)
- ☐ 3R
- ☐ HSIP

Project Design Life (Years): ☐ 5 ☐ 10 ☑ 20 ☐ 25 ☐ 30 ☐ Other

Traffic Projections:

	Current Year	Construction Year	Mid - Life Year	Design Year
	2023	**2030**	**2040**	**2050**
2-Way AADT*	**6,380**	**6,400**	**6,425**	**6,455**
2-Way DHV (PM Peak)	**1,393**	**1,395**	**1,405**	**1,410**
Peak Hour Factor	**0.94**	**0.94**	**0.94**	**0.94**
Directional Distribution	**100 / 0**	**100 / 0**	**100 / 0**	**100 / 0**
Recreational Vehicle Percentage (RV%)	**Included in CV%**	**Included in CV%**	**Included in CV%**	**Included in CV%**
Commercial Vehicle Percentage (CV%)	**4%**	**4%**	**4%**	**4%**
Compound Growth Rate	**0.05%**	**0.05%**	**0.05%**	**0.05%**
ESALs	**ESALs not analyzed per the direction of DOT&PF PM**			
Pedestrians (Number/Day)	**0**	**0**	**0**	**0**
Bicyclists (Number/Day)	**0**	**0**	**0**	**0**

*Use AFPDM Traffic Data Request Form, Figure 6.1 for pavement design. Form 6.1 is available on-line at: http://www.dot.state.ak.us/stwddes/dcsprecon/assets/pdf/other/traffic_data_req_form.pdf

Design Vehicle: W-67; Oversized: WB-92D

Level of Service (Urban Only): C or D

Design Speed: 50

Terrain: ☑ Level ☐ Rolling ☐ Mountainous

Attach intersection diargrams to this document, when appropriate

APPROVED Signed by: Luke Bowland 775BE2E04D534EE... DATE 7/16/2025

Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form

DESIGN DESIGNATION

State Route Number: **1060000N050** Route Name: **Glenn Northbound On-Ramp**

Project Limits: **Eagle River Loop Road to Glenn Highway**

State Project Number: **CFHWY00917** Federal Aid Number: **0A16055**

Project Description: **Glenn Highway & Hiland Road Interchange Improvements**

Design Functional Classification:

- ☑ Freeway
- ☐ Rural Arterial
- ☐ Urban Arterial
- ☐ Other
- ☐ Collector, type
- ☐ Local Recreational Rd.
- ☐ Local Resource Recovery Rd.
- ☐ Rural Local Rd.
- ☐ Urban Local St.
- ☐ Local Service Rd.

Project Type:

- ☑ New Construction - Reconstruction
- ☐ Preventive Maintenance (PM)
- ☐ 3R
- ☐ HSIP

Project Design Life (Years): ☐ 5 ☐ 10 ☑ 20 ☐ 25 ☐ 30 ☐ Other

Traffic Projections:

	Current Year	Construction Year	Mid - Life Year	Design Year
	2023	**2030**	**2040**	**2050**
2-Way AADT*	**840**	**850**	**860**	**875**
2-Way DHV (PM Peak)	**139**	**140**	**140**	**140**
Peak Hour Factor	**0.83**	**0.83**	**0.83**	**0.83**
Directional Distribution	**100 / 0**	**100 / 0**	**100 / 0**	**100 / 0**
Recreational Vehicle Percentage (RV%)	**Included in CV%**	**Included in CV%**	**Included in CV%**	**Included in CV%**
Commercial Vehicle Percentage (CV%)	**4%**	**4%**	**4%**	**4%**
Compound Growth Rate	**0.17%**	**0.17%**	**0.17%**	**0.17%**
ESALs	**ESALs not analyzed per the direction of DOT&PF PM**			
Pedestrians (Number/Day)	**0**	**0**	**0**	**0**
Bicyclists (Number/Day)	**0**	**0**	**0**	**0**

*Use AFPDM Traffic Data Request Form, Figure 6.1 for pavement design. Form 6.1 is available on-line at: http://www.dot.state.ak.us/stwddes/dcsprecon/assets/pdf/other/traffic_data_req_form.pdf

Design Vehicle: W-67; Oversized: WB-92D

Level of Service (Urban Only): C or D

Design Speed: 50

Terrain: ☑ Level ☐ Rolling ☐ Mountainous

Attach intersection diargrams to this document, when appropriate

APPROVED Signed by: Luke Bowland 775BE2E04D534EE... DATE 7/16/2025

Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form

DESIGN DESIGNATION

State Route Number: **2301005X000** Route Name: **VFW Road**

Project Limits: **Eagle River Loop Road to Hesterberg Road**

State Project Number: **CFHWY00917** Federal Aid Number: **0A16055**

Project Description: **Glenn Highway & Hiland Road Interchange Improvements**

Design Functional Classification:

- ☐ Freeway
- ☐ Rural Arterial
- ☐ Urban Arterial
- ☐ Other
- ☑ Collector, type Minor Urban
- ☐ Local Recreational Rd.
- ☐ Local Resource Recovery Rd.
- ☐ Rural Local Rd.
- ☐ Urban Local St.
- ☐ Local Service Rd.

Project Type:

- ☑ New Construction - Reconstruction
- ☐ Preventive Maintenance (PM)
- ☐ 3R
- ☐ HSIP

Project Design Life (Years): ☐ 5 ☐ 10 ☑ 20 ☐ 25 ☐ 30 ☐ Other

Traffic Projections:

	Current Year	Construction Year	Mid - Life Year	Design Year
	2023	**2030**	**2040**	**2050**
2-Way AADT*	**1,100**	**1,140**	**1,205**	**1,270**
2-Way DHV (PM Peak)	**154**	**155**	**155**	**165**
Peak Hour Factor	**0.77**	**0.77**	**0.77**	**0.77**
Directional Distribution	**50 / 50**	**50 / 50**	**50 / 50**	**50 / 50**
Recreational Vehicle Percentage (RV%)	**Included in CV%**	**Included in CV%**	**Included in CV%**	**Included in CV%**
Commercial Vehicle Percentage (CV%)	**5%**	**5%**	**5%**	**5%**
Compound Growth Rate	**0.54%**	**0.54%**	**0.54%**	**0.54%**
ESALs	**ESALs not analyzed per the direction of DOT&PF PM**			
Pedestrians (Number/Day)	**>20**	**>20**	**>20**	**>20**
Bicyclists (Number/Day)	**>50**	**>50**	**>50**	**>50**

*Use AFPDM Traffic Data Request Form, Figure 6.1 for pavement design. Form 6.1 is available on-line at: http://www.dot.state.ak.us/stwddes/dcsprecon/assets/pdf/other/traffic_data_req_form.pdf

Design Vehicle: W-67; Oversized: WB-92D

Level of Service (Urban Only): D

Design Speed: 40

Terrain: ☑ Level ☐ Rolling ☐ Mountainous

Attach intersection diargrams to this document, when appropriate

Signed by: Luke Bowland
775BE2E04D534FE...

APPROVED _____ DATE 7/16/2025

Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form

APPENDIX B

Typical Sections

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0A16055/CFHWY00917	2026	B1	B10

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DRAWING LOCATION
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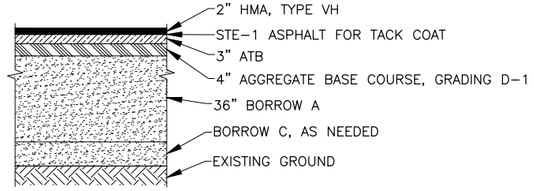
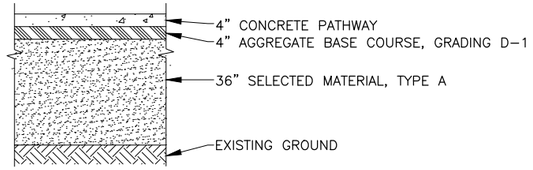
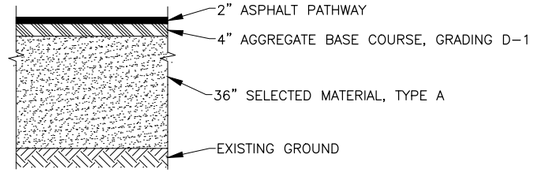


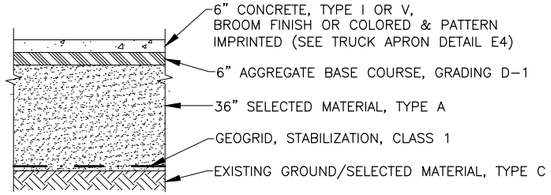
PAVEMENT STRUCTURAL SECTION NO. 1



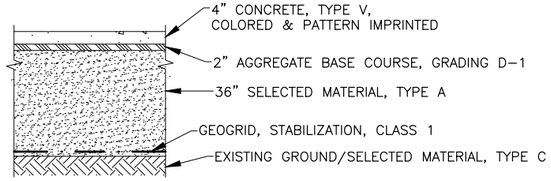
SIDEWALK STRUCTURAL SECTION NO. 1



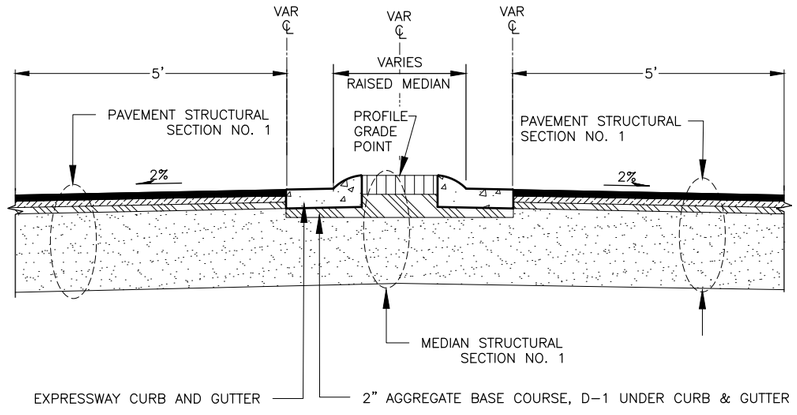
PATHWAY STRUCTURAL SECTION NO. 1



TRUCK APRON STRUCTURAL SECTION NO. 1



MEDIAN STRUCTURAL SECTION NO. 1



RAISED MEDIAN DETAIL

TYPICAL SECTION NOTES:

1. WITHIN TWO (2) DAYS AFTER PAVING, PLACE AGGREGATE BASE COURSE, GRADING D-1 AGAINST PAVEMENT EDGE TO ENSURE THERE IS NO VERTICAL DROP AT THE EDGE OF PAVEMENT.
2. GEOTEXTILE SHALL BE USED WHERE SEPARATION IS NEEDED BETWEEN SILTY SOIL AND ROADWAY SECTION AS DIRECTED BY THE ENGINEER.
3. SEE "F" AND "G" SHEETS FOR INTERSECTION, MEDIAN OPENING, LANE DIRECTION CHANGE, CIRCULATORY ROADWAY, CURB RETURNS, BEGINNING AND ENDING STATIONS, AND OFFSETS.
4. PAVEMENT FINISHED GRADE SHALL BE 1/4" ABOVE THE GUTTER PAN.
5. UNLESS OTHERWISE NOTED, EXPRESSWAY GUTTER PAN SHALL MATCH THE ROADWAY CROSS SLOPES. MOUNTABLE DEPRESSED, ROLLED, AND EXPRESSWAY GUTTER PANS SHALL MATCH THE ROADWAY CROSS SLOPE IN THE HIGH SIDE OF SUPERELEVATED AREAS. USE A 25-FOOT TRANSITION LENGTH, FROM POINT OF ZERO CROSS SLOPE TO INSIDE OF THE HORIZONTAL CURVE.
6. TRANSITION LONGITUDINALLY AT 10H:1V BETWEEN PAVEMENT STRUCTURAL SECTIONS 1, 2, AND 3.
7. CUT AND FILL LINES SHOWN IN THE F-SHEETS ARE ACCURATE TO WITHIN 2 FEET. WARP SLOPES TO STAY WITHIN RIGHT-OF-WAY AS DIRECTED BY THE ENGINEER.
8. PATHWAY CROSS SLOPE SHALL TRANSITION OVER A 20' MINIMUM LONGITUDINAL DISTANCE WHEN ALTERNATING BETWEEN TYPICAL SECTIONS WITH OPPOSITE CROSS SLOPE DIRECTIONS, ROTATE THE PATHWAY AROUND ITS INNER EDGE.
9. FOR ALIGNMENT LOCATION AT SPLITTER ISLANDS AND TRUCK APRONS, SEE G SHEETS G3-G5.
10. SIDE SLOPES ARE SHOWN AS HORIZONTAL TO VERTICAL.

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

GLENN HIGHWAY & HILAND ROAD INTERCHANGE IMPROVEMENTS

TYPICAL SECTIONS

①	CROSS-SLOPE VARIES, SEE GRADING PLAN
◇1	6" MOUNTABLE CURB AND GUTTER
◇2	EXPRESSWAY CURB AND GUTTER
◇3	LOW PROFILE CURB AND GUTTER

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0A16055/CFHWY00917	2026	B2	B10

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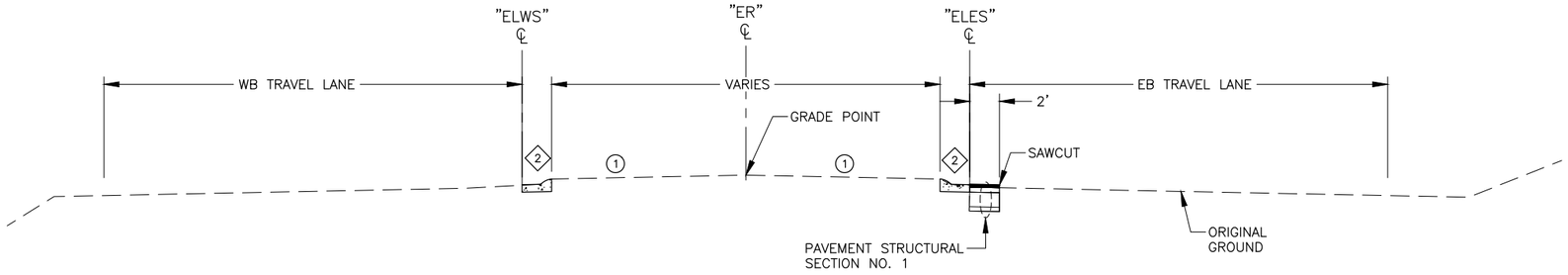
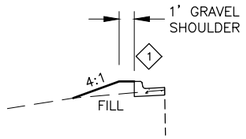


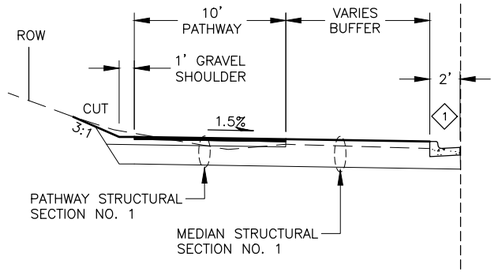


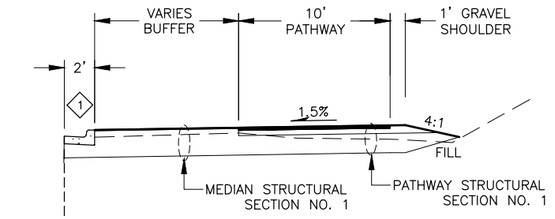
EAGLE RIVER LOOP ROAD
EASTBOUND SPLITTER ISLAND TAPER

STA "ER" 504+50.30 TO STA "ER" 505+15.36

CURB EXCEPTION

STA "ER" 505+83.82 TO STA "ER" 505+97.22



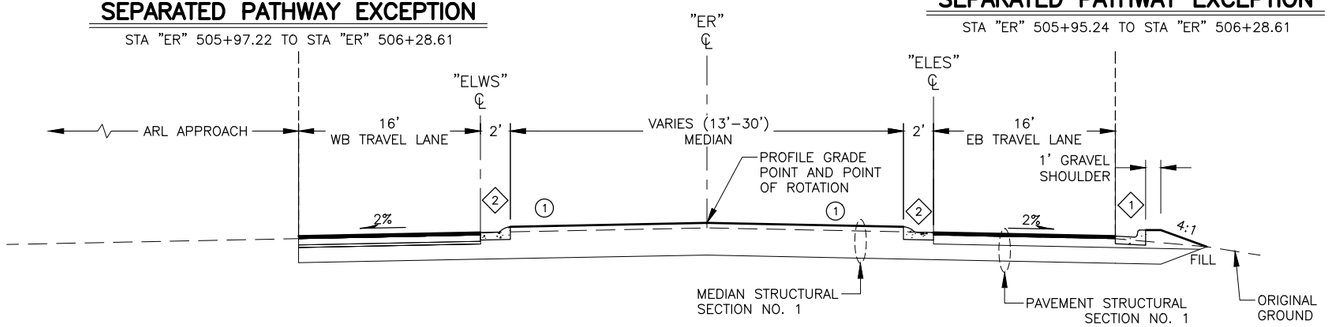


SEPARATED PATHWAY EXCEPTION

STA "ER" 505+97.22 TO STA "ER" 506+28.61

SEPARATED PATHWAY EXCEPTION

STA "ER" 505+95.24 TO STA "ER" 506+28.61



EAGLE RIVER LOOP ROAD (WEST)

STA "ER" 505+15.36 TO STA "ER" 506+28.61

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TYPICAL SECTIONS

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NO.	DATE	REVISION

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ALASKA	0A16055/CFHWY00917	2026	B3	B10

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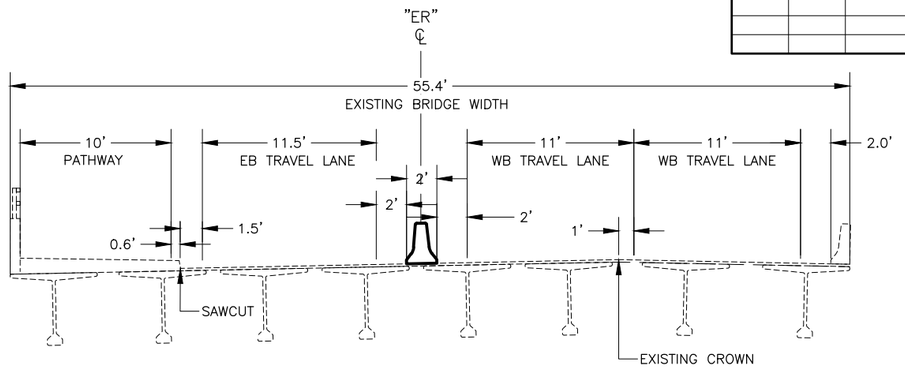
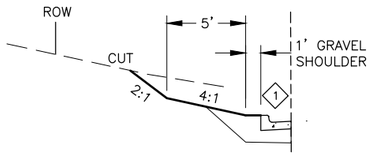
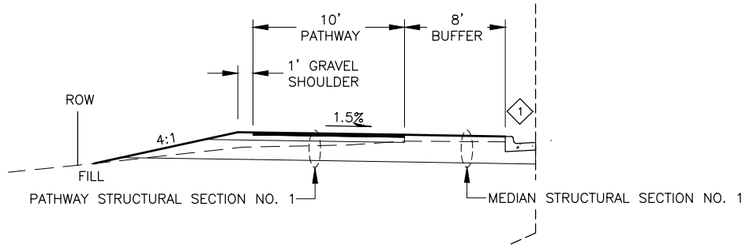


PROPOSED BRIDGE SECTION
EAGLE RIVER LOOP ROAD (BRIDGE)
STA "ER" 509+76.15 TO STA "ER" 511+84.15

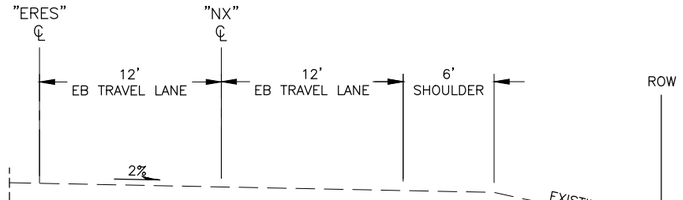
FILL SLOPE EXCEPTION
STA "ER" 521+63.46 TO STA "ER" 523+38.09



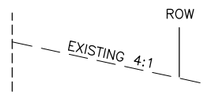
CURB AND GUTTER EXCEPTION
STA "ER" 516+16.76 TO STA "ER" 518+30.13



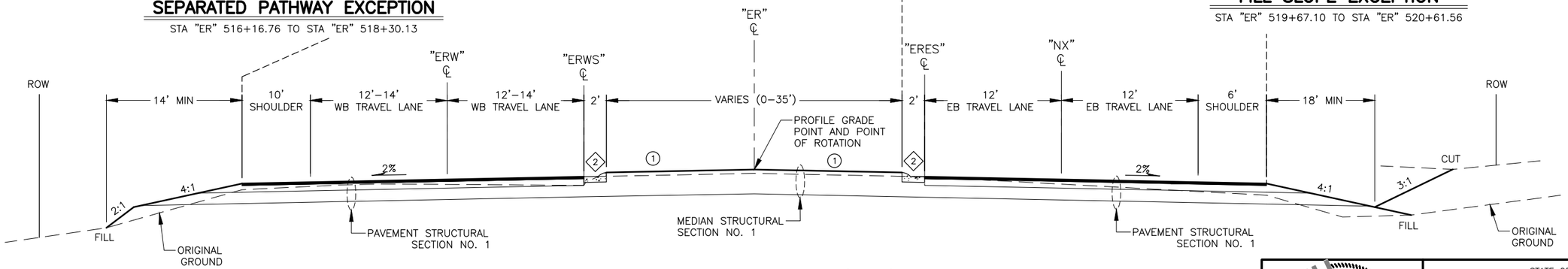
SEPARATED PATHWAY EXCEPTION
STA "ER" 516+16.76 TO STA "ER" 518+30.13



EASTBOUND IMPROVEMENTS EXCEPTION
STA "ER" 520+61.56 TO STA "ER" 523+38.09



FILL SLOPE EXCEPTION
STA "ER" 519+67.10 TO STA "ER" 520+61.56



EAGLE RIVER LOOP ROAD (EAST)
STA "ER" 516+16.76 TO STA "ER" 523+38.09

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GLENN HIGHWAY & HILAND ROAD INTERCHANGE IMPROVEMENTS

TYPICAL SECTIONS

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◇3	LOW PROFILE CURB AND GUTTER

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0A16055/CFHWY00917	2026	B4	B10

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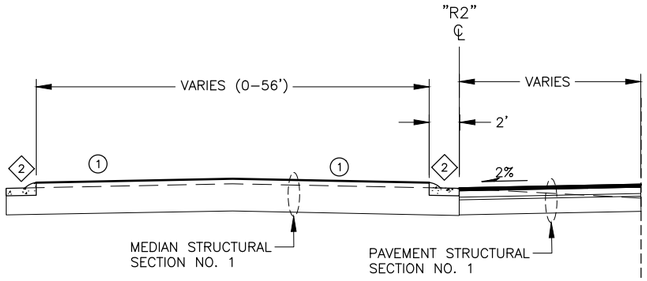
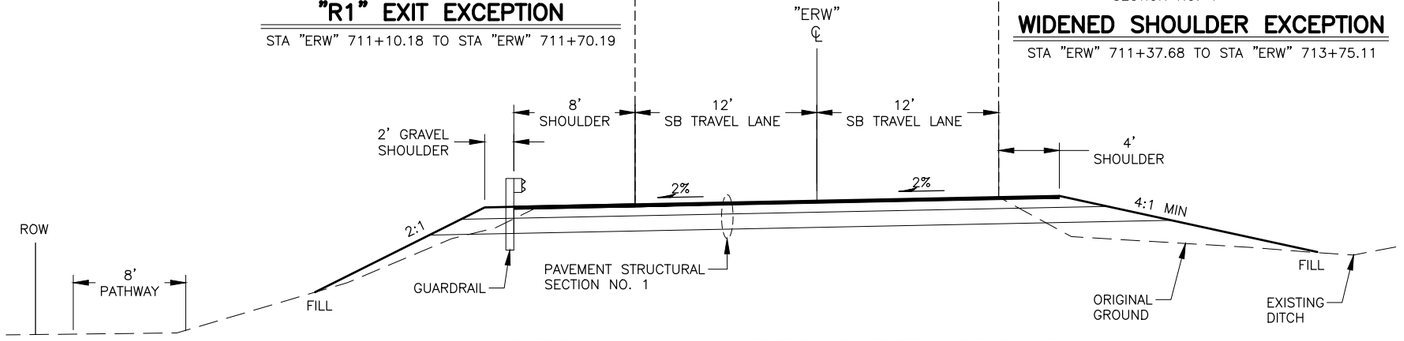


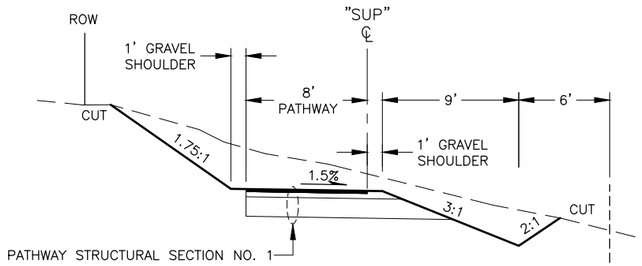
"R1" EXIT EXCEPTION

STA "ERW" 711+70.19 TO STA "ERW" 713+75.11



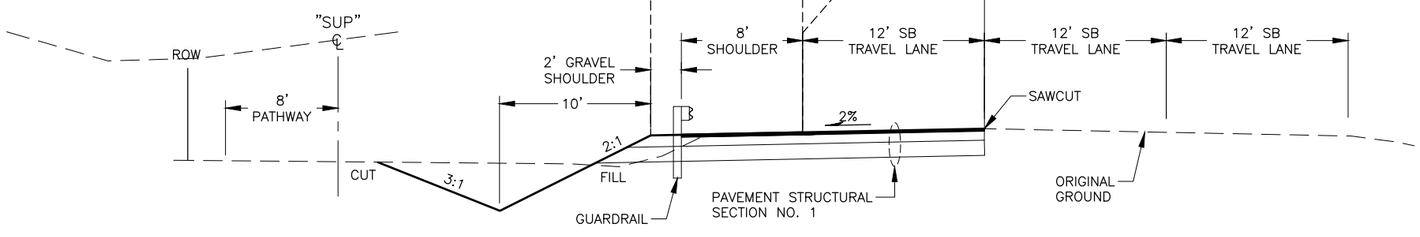
GLENN HIGHWAY SOUTHBOUND ENTRANCE RAMP

STA "ERW" 701+20.16 TO STA "ERW" 713+75.11



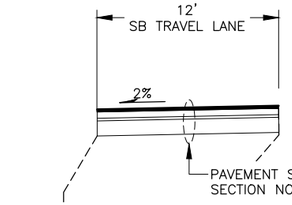
PATHWAY EXCEPTION

STA "GSF" 987+89.08 TO STA "GSF" 1003+45.55



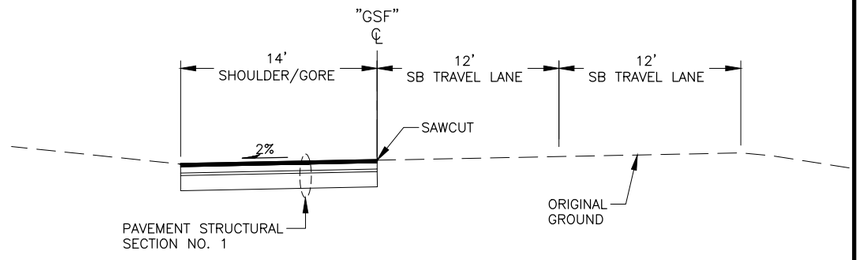
GLENN HIGHWAY SOUTHBOUND ENTRANCE RAMP

STA "GSF" 983+84.50 TO STA "GSF" 1007+84.50



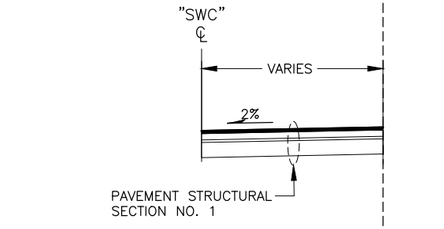
SB ENTRANCE TWO–LANE EXCEPTION

STA "GSF" 1002+84.50 TO STA "GSF" 1007+84.50



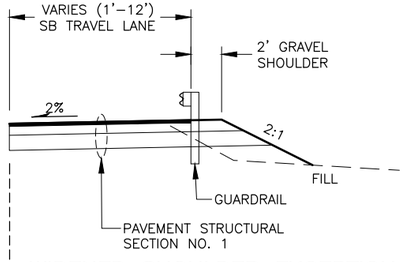
GLENN HIGHWAY SOUTHBOUND SHOULDER

STA "GSF" 1007+84.50 TO STA "GSF" 1011+12.41



"R1" EXIT EXCEPTION

STA "ERW" 711+10.18 TO STA "ERW" 711+70.19



WIDENED SHOULDER EXCEPTION

STA "ERW" 711+37.68 TO STA "ERW" 713+75.11

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AND PUBLIC FACILITIES

GLENN HIGHWAY & HILAND ROAD INTERCHANGE IMPROVEMENTS

TYPICAL SECTIONS

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◇1	6" MOUNTABLE CURB AND GUTTER
◇2	EXPRESSWAY CURB AND GUTTER
◇3	LOW PROFILE CURB AND GUTTER

NO.	DATE	REVISION

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ALASKA	0A16055/CFHWY00917	2026	B5	B10

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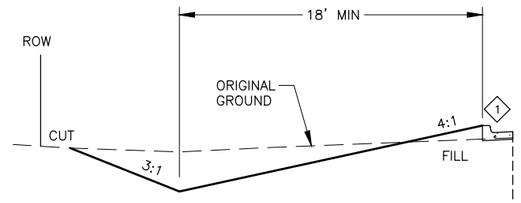
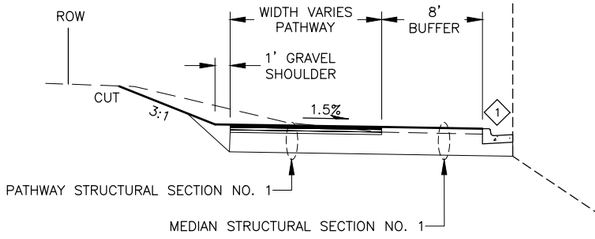


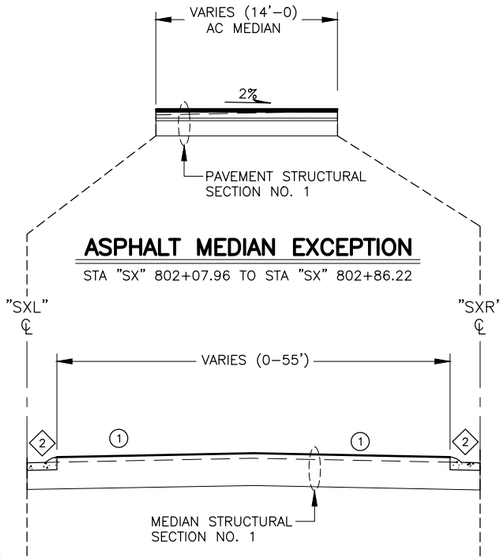
CURB EXCEPTION

STA "SX" 800+75.36 TO STA "SX" 801+09.92



SEPARATED PATHWAY EXCEPTION

STA "SX" 800+63.32 TO STA "SX" 800+75.36

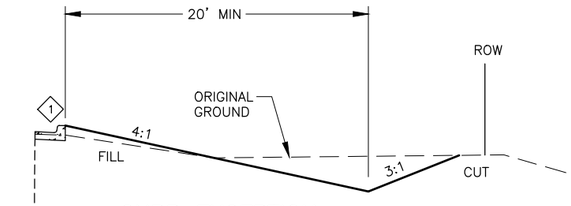


ASPHALT MEDIAN EXCEPTION

STA "SX" 802+07.96 TO STA "SX" 802+86.22

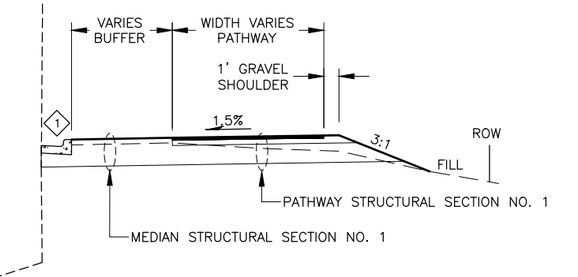
MEDIAN EXCEPTION

STA "SX" 800+63.32 TO STA "SX" 802+07.96



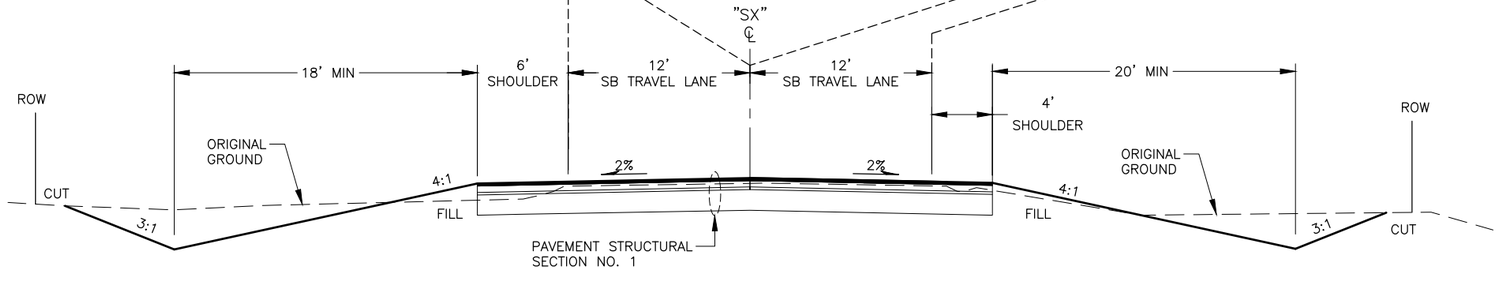
CURB EXCEPTION

STA "SX" 801+17.43 TO STA "SX" 801+77.36



SEPARATED PATHWAY EXCEPTION

STA "SX" 800+63.32 TO STA "SX" 801+17.43



GLENN HIGHWAY SOUTHBOUND EXIT RAMP

STA "SX" 800+63.32 TO STA "SX" 805+07.58

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GLENN HIGHWAY & HILAND ROAD INTERCHANGE IMPROVEMENTS

TYPICAL SECTIONS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0A16055/CFHWY00917	2026	B6	B10

①	CROSS-SLOPE VARIES, SEE GRADING PLAN
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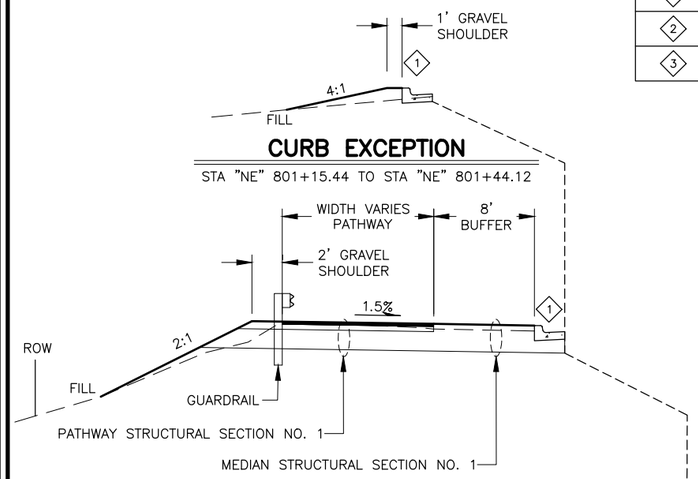
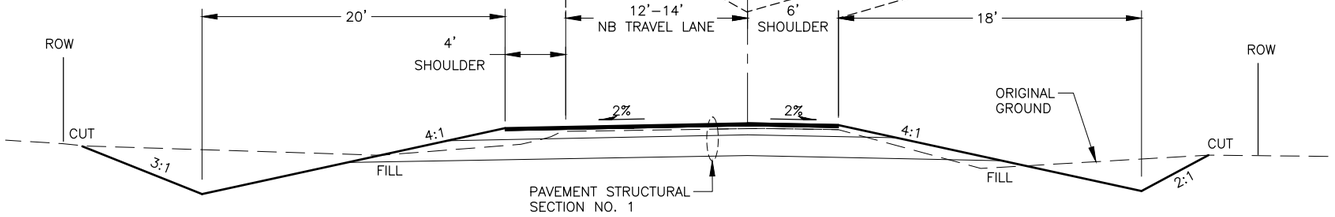


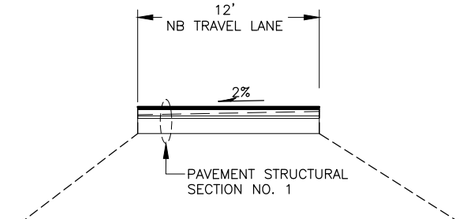
CURB EXCEPTION

STA "NE" 801+15.44 TO STA "NE" 801+44.12

SEPARATED PATHWAY EXCEPTION

STA "NE" 800+33.99 TO STA "NE" 801+15.44



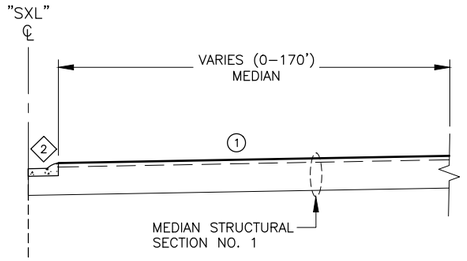


NB TRAVEL LANE EXCEPTION

STA "NE" 802+52.47 TO STA "NE" 810+26.79

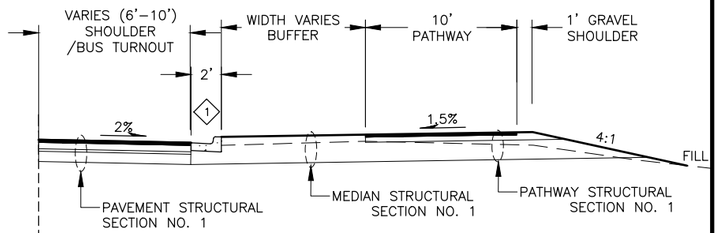
GLENN HIGHWAY NORTHBOUND ENTRANCE RAMP

STA "NE" 800+33.99 TO STA "NE" 810+26.79



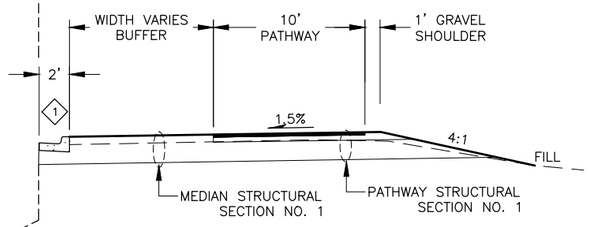
MEDIAN EXCEPTION

STA "NE" 800+50.60 TO STA "NE" 801+72.10



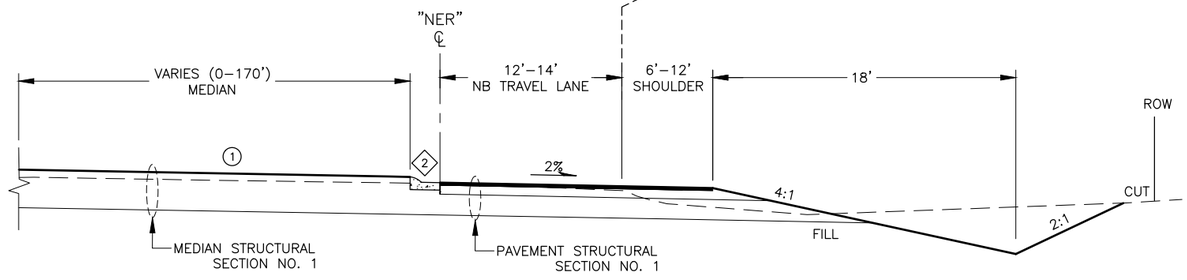
BUS TURNOUT EXCEPTION

STA "NER" 500+57.18 TO STA "NER" 502+84.00



SEPARATED PATHWAY EXCEPTION

STA "NER" 500+11.17 TO STA "NER" 500+57.18



"R3" EXIT TO GLENN HIGHWAY NORTHBOUND ENTRANCE

STA "NER" 500+11.17 TO STA "NER" 503+03.96

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

GLENN HIGHWAY & HILAND ROAD INTERCHANGE IMPROVEMENTS

TYPICAL SECTIONS

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE: AS SHOWN

DATE TIME: 9/18/2025 12:54 PM

DRAWING LOCATION: C:\DOWL_PW\0041938\00917_B01_TYP.DWG

①	CROSS-SLOPE VARIES, SEE GRADING PLAN
◇1	6" MOUNTABLE CURB AND GUTTER
◇2	EXPRESSWAY CURB AND GUTTER
◇3	LOW PROFILE CURB AND GUTTER

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0A16055/CFHWY00917	2026	B7	B10

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SCALE
AS SHOWN

DATE TIME
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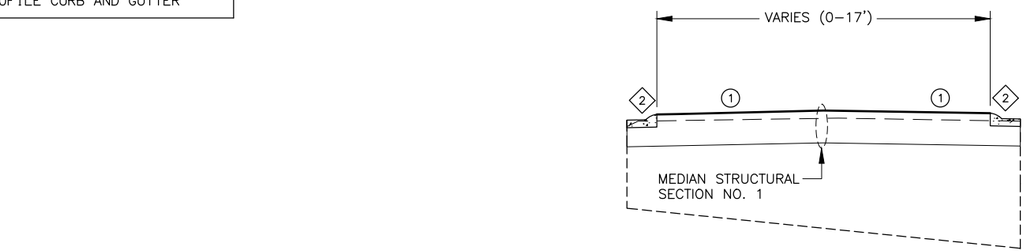
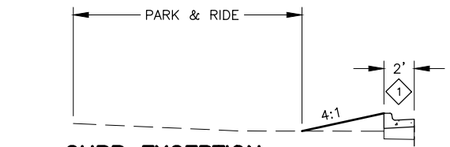


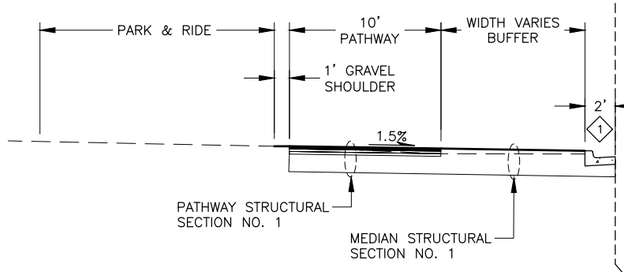
MEDIAN EXCEPTION

STA "V" 200+76.14 TO STA "V" 203+08.89



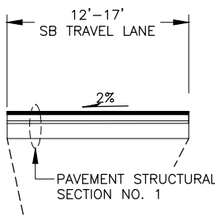
CURB EXCEPTION

STA "V" 200+75.20 TO STA "V" 201+92.15



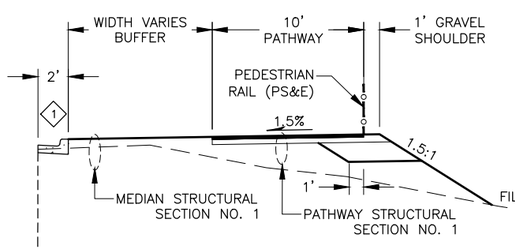
SEPARATED PATHWAY EXCEPTION

STA "V" 200+75.20 TO STA "V" 201+92.15



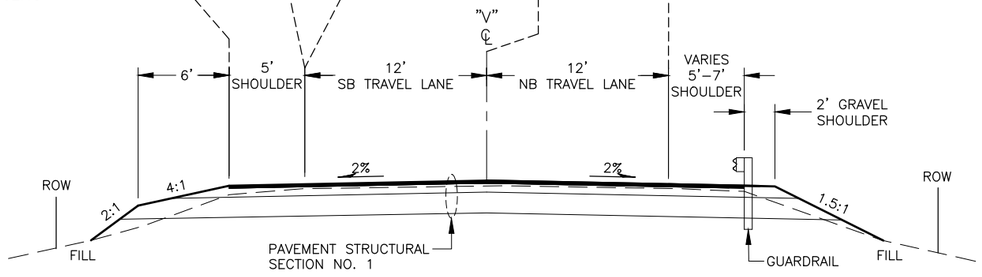
SB TURN LANE EXCEPTION

STA "V" 200+75.20 TO STA "V" 204+41.12



SEPARATED PATHWAY EXCEPTION

STA "V" 200+75.20 TO STA "V" 201+90.54



VFW ROAD

STA "V" 200+75.20 TO STA "V" 204+29.18

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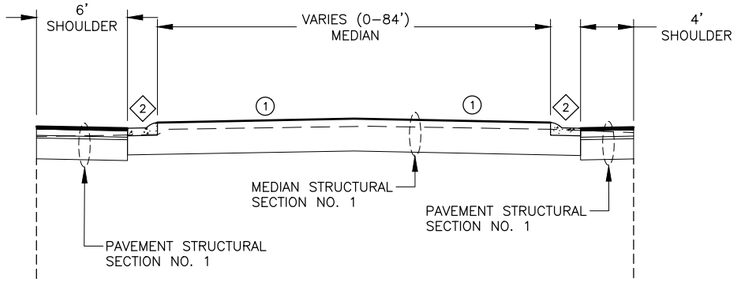
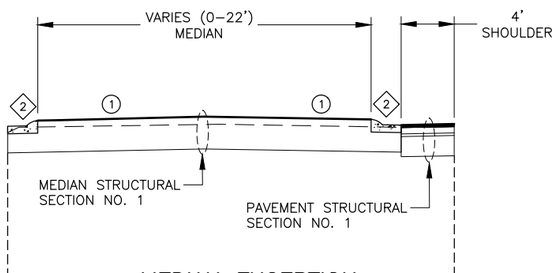


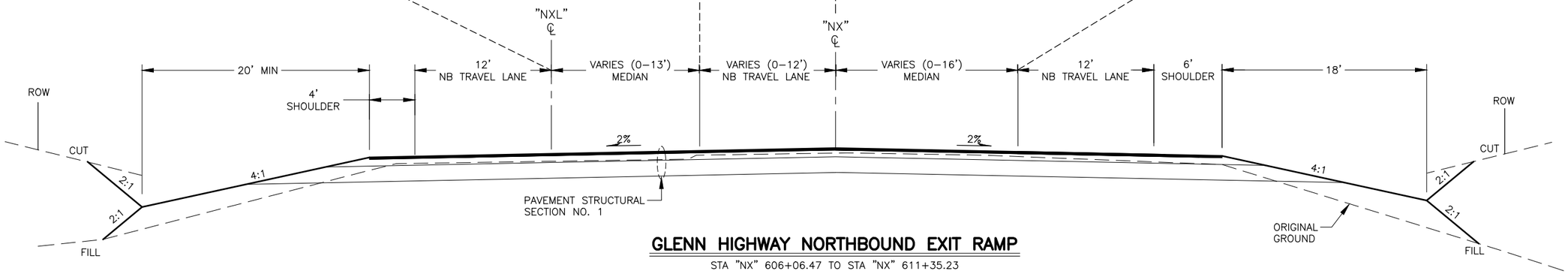
MEDIAN EXCEPTION

STA "NX" 609+80.82 TO STA "NX" 611+35.23



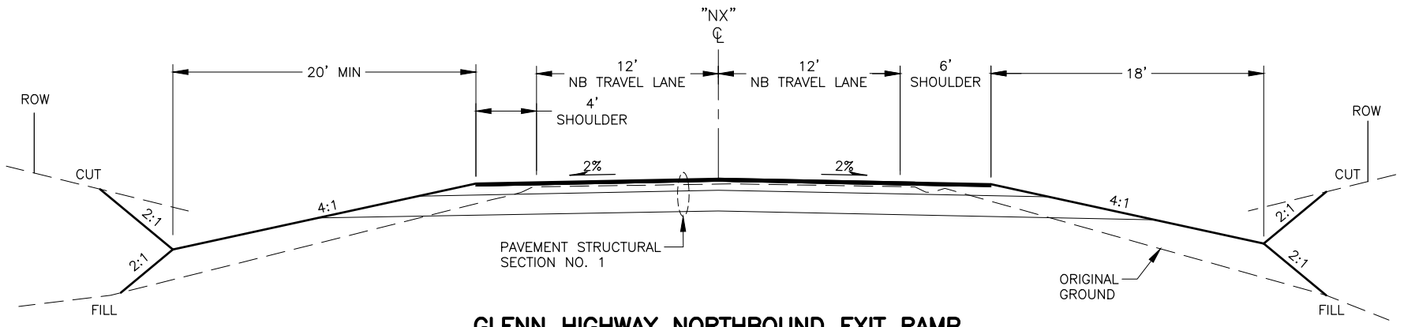
MEDIAN EXCEPTION

STA "NX" 609+92.13 TO STA "NX" 611+35.23



GLENN HIGHWAY NORTHBOUND EXIT RAMP

STA "NX" 606+06.47 TO STA "NX" 611+35.23



GLENN HIGHWAY NORTHBOUND EXIT RAMP

STA "NX" 604+53.29 TO STA "NX" 606+06.47

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SCALE: AS SHOWN

DATE: 9/18/2025 TIME: 12:54 PM

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1	CROSS-SLOPE VARIES, SEE GRADING PLAN
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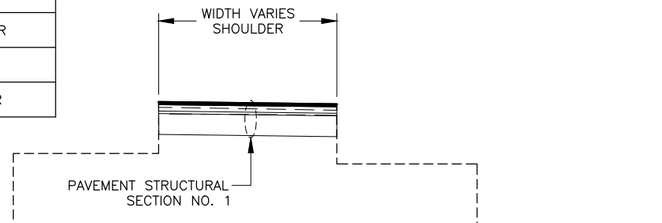
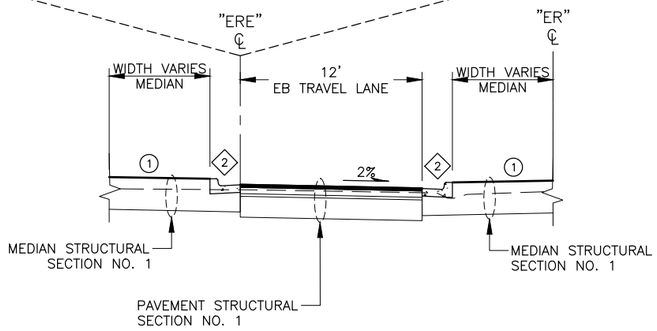
◇2	EXPRESSWAY CURB AND GUTTER
◇3	LOW PROFILE CURB AND GUTTER



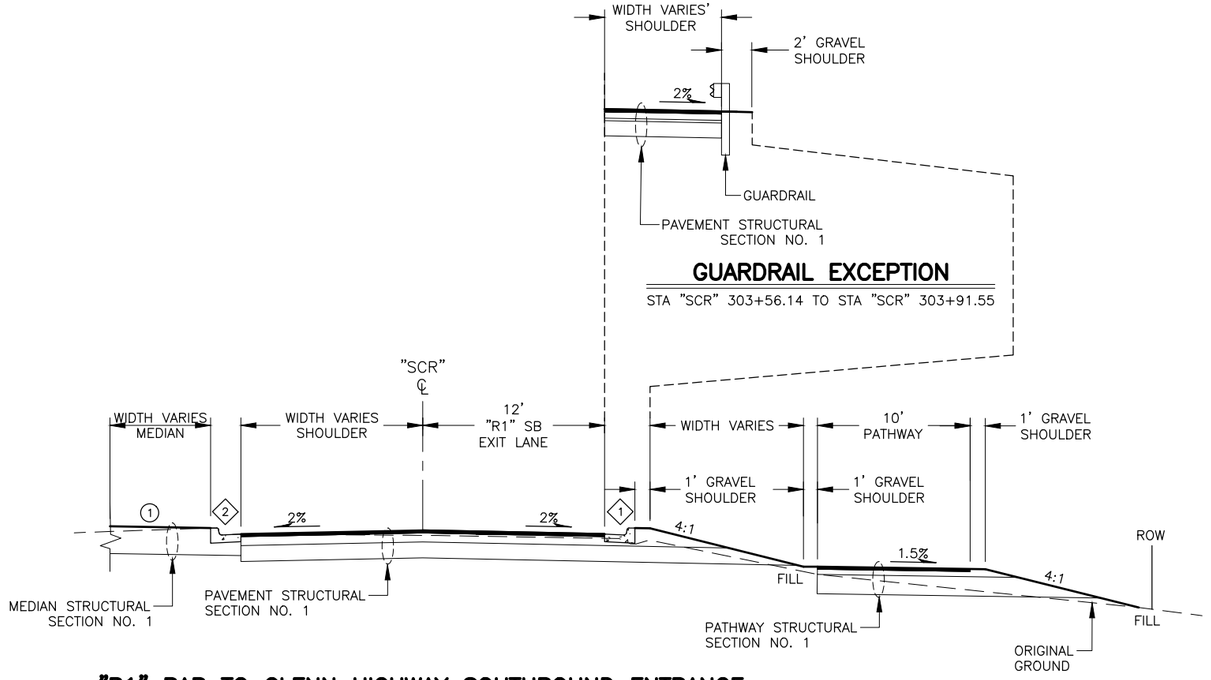
SHOULDER EXCEPTION

STA "ERE" 703+62.35 TO STA "ERE" 704+60.36



"R3" RAB EASTBOUND ENTRANCE

STA "ERE" 703+62.35 TO STA "ERE" 705+62.49

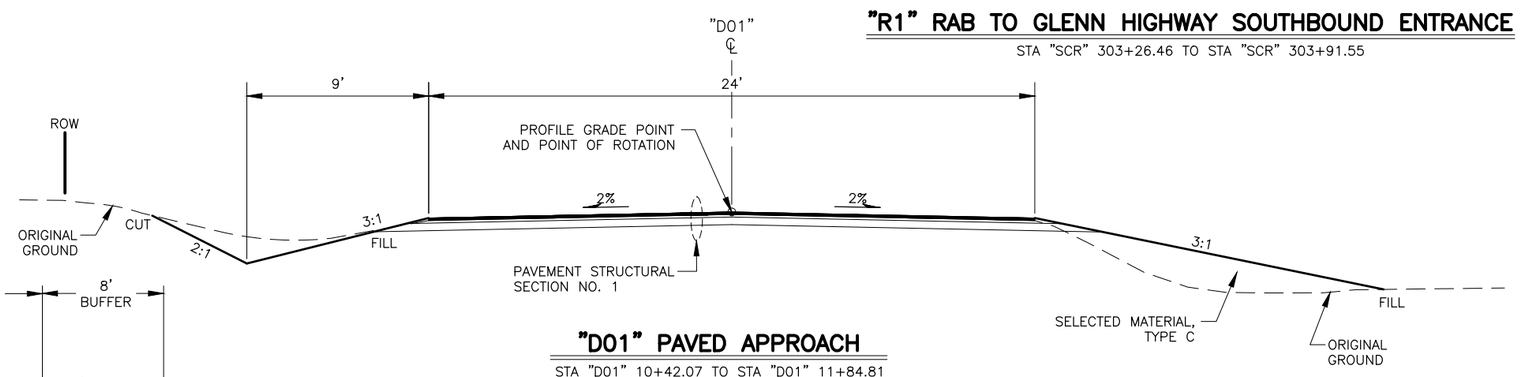


GUARDRAIL EXCEPTION

STA "SCR" 303+56.14 TO STA "SCR" 303+91.55

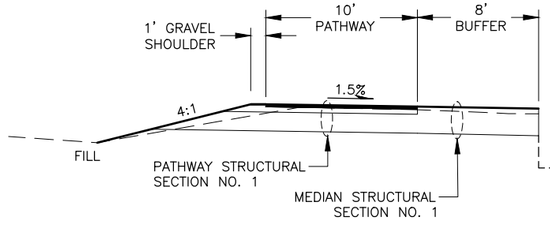
"R1" RAB TO GLENN HIGHWAY SOUTHBOUND ENTRANCE

STA "SCR" 303+26.46 TO STA "SCR" 303+91.55



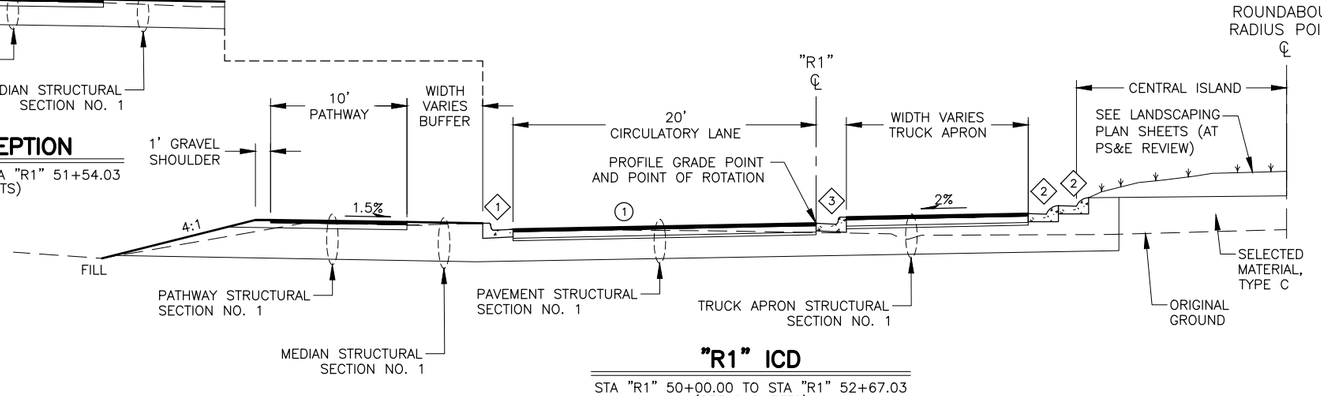
"D01" PAVED APPROACH

STA "D01" 10+42.07 TO STA "D01" 11+84.81



MEDIAN EXCEPTION

STA "R1" 50+99.57 TO STA "R1" 51+54.03
(SEE G SHEETS)



"R1" ICD

STA "R1" 50+00.00 TO STA "R1" 52+67.03
(SEE G SHEETS)

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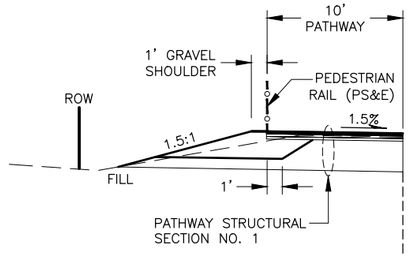
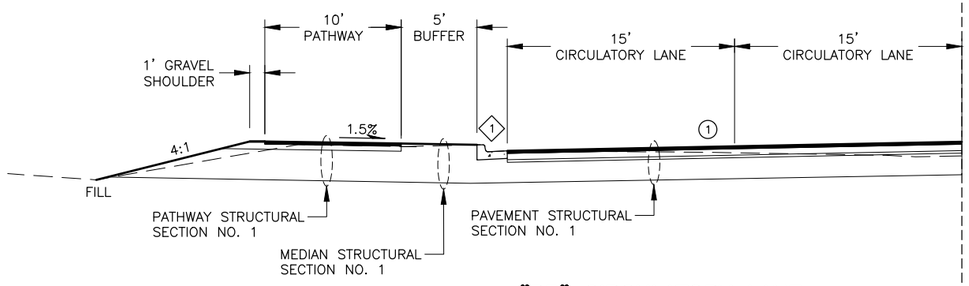


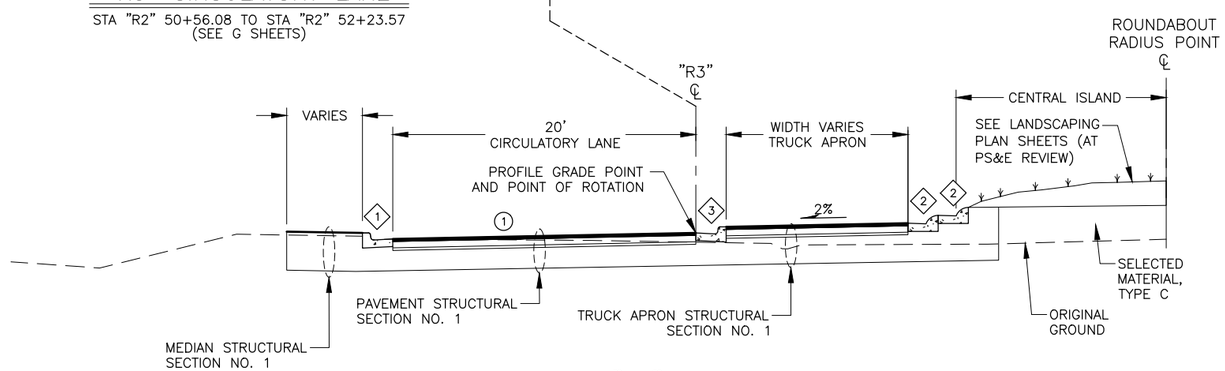
"R3" PEDESTRIAN RAIL EXCEPTION

STA "R2" 51+50.39 TO STA "R2" 52+23.57



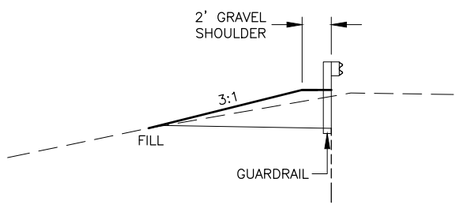
"R3" CIRCULATORY LANE

STA "R2" 50+56.08 TO STA "R2" 52+23.57
(SEE G SHEETS)



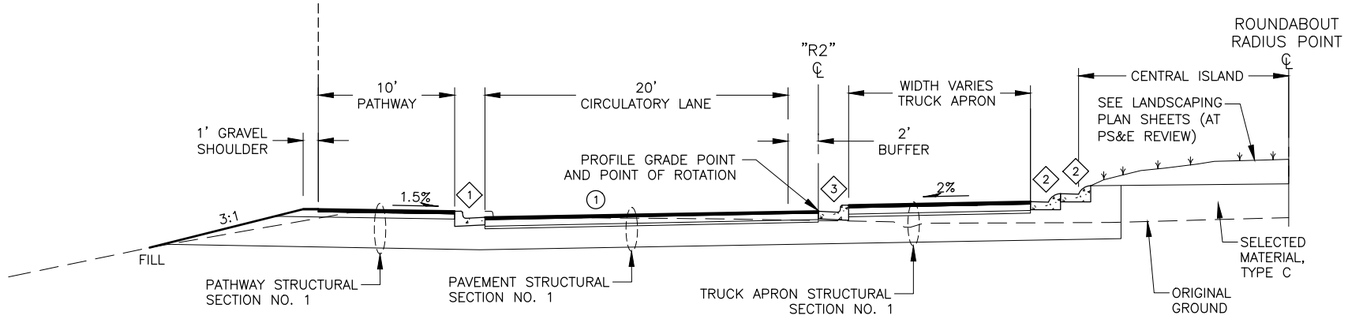
"R3" ICD

STA "R3" 50+00.00 TO STA "R3" 52+82.74
(SEE G SHEETS)



GUARDRAIL EXCEPTION

STA "R2" 52+78.99 TO STA "R2" 53+97.36
(SEE G SHEETS)



"R2" ICD

STA "R2" 50+19.14 TO STA "R2" 53+97.36
(SEE G SHEETS)

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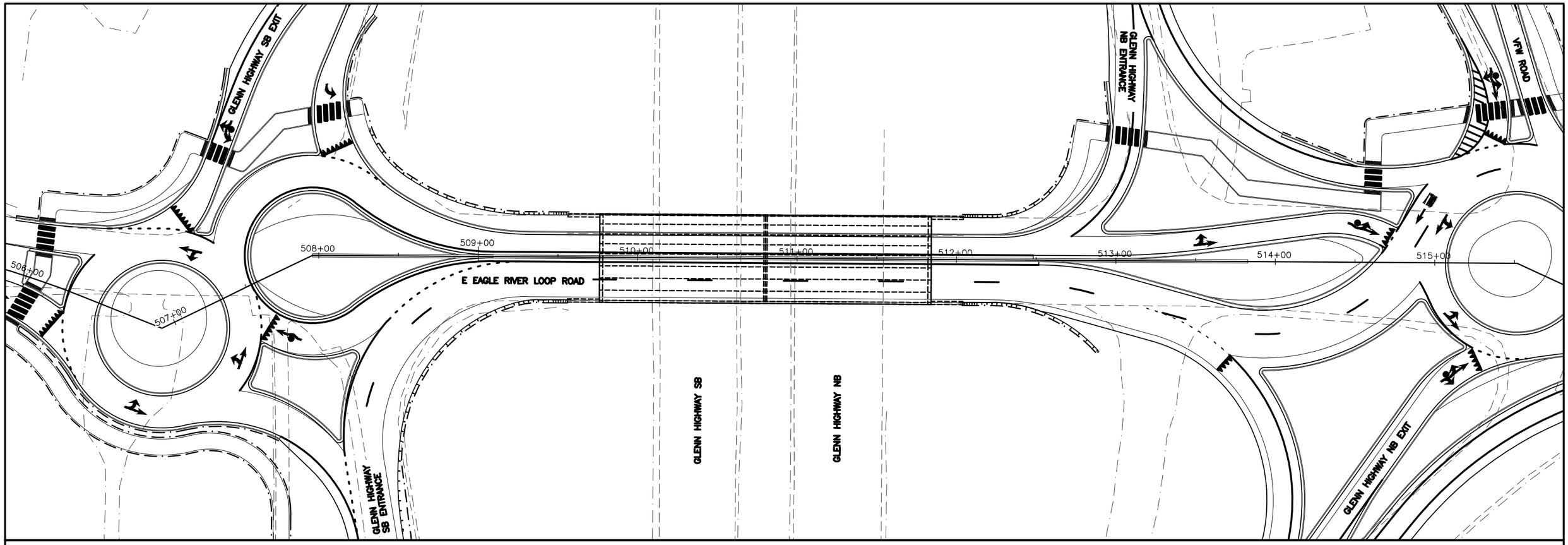
TYPICAL SECTIONS

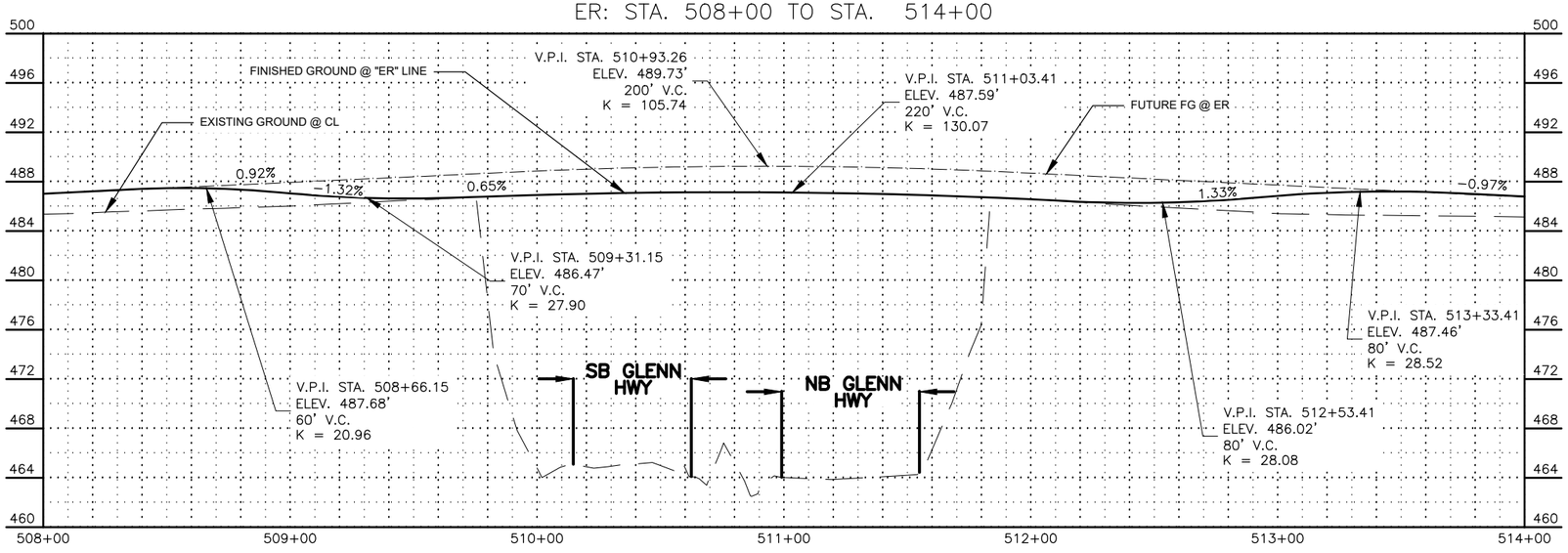
APPENDIX C

Existing and Future Bridge Profile Tie-in

0A16055: "ER" BRIDGE PROFILE VS. FUTURE PROFILE



ER: STA. 508+00 TO STA. 514+00



Glenn Highway & Hiland Road Interchange Improvements

N

APPENDIX D

Material Recommendations

APPENDIX E

Approved Environmental Document

State of Alaska
Department of Transportation & Public Facilities

CATEGORICAL EXCLUSION DOCUMENTATION FORM
(NEPA Assignment Program Projects)

The environmental review, consultation, and other actions required by the applicable Federal environmental laws for this project are being, or have been carried out by the DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated April 13, 2023 and executed by FHWA and DOT&PF.

I. Project Information

A. Project Name: Glenn Highway and Hiland Road Interchange Improvements

B. State Project Number: CFHWY00917

C. Federal Project Number: 0A16055

D. Primary/Ancillary Project Connections: N/A

E. COA Determination: 23 CFR 771.117(d)(13)

F. Project Scope:

TIP or STIP: TIP

Need ID: NHS0010

Project Scope:

Project will evaluate alternatives to make short term improvements to the Hiland Road interchange utilizing the existing bridge over the highway.

G. Project Purpose And Need:

The purpose of the project is to make improvements to the Hiland Rd Interchange with the Glenn Highway utilizing the existing bridge to resolve poor operational performance causing safety issues and congestion. Bridge preservation work will delay the need for eventual bridge overpass replacement. This work addresses the project needs by improving traffic operations for both motorized and nonmotorized users, increasing efficiency and functionality of the interchange, and reducing associated safety concerns.

H. Project Description:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is proposing to construct improvements at the Glenn Highway and Hiland Road interchange in Eagle River, Alaska. The proposed project could include:

- Bridge preservation
- Reconfiguration of access ramps, frontage roads, and intersections
- Improving or relocating non-motorized facilities
- Construction of new retaining walls and pedestrian underpasses
- Drainage improvements
- Americans with Disabilities Act (ADA) improvements
- Upgrading, replacing, or installing new roadside hardware
- Installing new lighting
- Vegetation clearing
- Utility relocations

Attachments

Environmental Consequences

Project Plans & Location Information

- Project Plans and Location Info CFHWY00917 (1).pdf
- Project Plans and Location Info CFHWY00917.pdf

Historic Properties and Cultural Impacts

- CFHWY00917 Glenn Hiland Interchange__Init_all_2.22.23.pdf CFHWY00917.pdf
- CFHWY00917 Glenn Highway and Hiland Road Interchange Improvements_FONHPA_All.doc.pdf CFHWY00917.pdf
- CHFWY00917 SHPO concurrence.pdf CFHWY00917.pdf
- Combined Findings Responses.pdf CFHWY00917.pdf
- Combined Initiation Responses.pdf CFHWY00917.pdf

Comments and Coordination

Public Involvement

- CFHWY00917_ADN Affidavit of Pub.pdf CFHWY00917.pdf
- CFHWY00917_DOT&PF Online PN Posting.pdf CFHWY00917.pdf

Agency Involvement

- Complete Pointed Scoping.pdf CFHWY00917.pdf

II. Environmental Consequences

A. Land Use and Transportation Plans	Yes	No
1. Were land use plans for this area reviewed? If yes, include source, link, and date accessed.	☑	☐

Anchorage 2040 Land Use Plan

https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/Anchorage2040LandUsePlan.aspx

4/8/2024

Anchorage 2020, Anchorage Bowl Comprehensive Plan

https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/Anchorage2020.aspx

4/8/2024

Chugiak-Eagle River Comprehensive Plan Update - December 2006

https://www.muni.org/Departments/OCPD/Planning/Publications/Documents/Chugiak-Eagle%20River%20Comprehensive%20Plan%20Update%202006/Chugiak-Eagle%20River%20Comprehensive%20Plan%20Update%202006.pdf

4/8/2024

a. Is the project consistent with land use plan(s)?	☑	☐
2. Were transportation plans for this area reviewed?	☑	☐

Anchorage 2020, Anchorage Bowl Comprehensive Plan

https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/Anchorage2020.aspx

4/8/2024

MTP2040 Link-Connect-Move Anchorage Bowl & Chugiak-Eagle River - June 2020

https://www.muni.org/Departments/OCPD/Planning/AMATS/MTP/2040/Final_FHWA_FTA_Approved/2040_MTP_Final_Approved.pdf

4/9/2024

ALASKA STRATEGIC HIGHWAY SAFETY PLAN 2023-2027

https://dot.alaska.gov/stwdplng/shsp/assets/Alaska-SHSP-2023-2027-with-VRU-Nov-2023.pdf

4/9/2024

Alaska Highway Safety Plan, Federal Fiscal Year 2024-2026

https://dot.alaska.gov/highwaysafety/assets/pdf/AKDOT_FY24-26_3HSP.pdf

4/9/2024

a. Is the project consistent with transportation plan(s)?	☑	☐

A. Land Use and Transportation Plans	Yes	No
3. Would the project induce adverse indirect and cumulative effects on land use or transportation?	☐	☑

Summary
Summarize how the project is consistent or inconsistent with land use and transportation plan(s).

Upgrade and maintenance of existing public roads and their associated elements protects assets of a safe and efficient transportation system utilized for public and private transportation as well as emergency response. This concept is consistent with the land use and transportation plans reviewed. The Anchorage 2040 Land Use Plan (2040 LUP) supplements the Municipality's Comprehensive Plan for the Anchorage Bowl. The Anchorage Bowl Comprehensive Plan, adopted by the Municipal Assembly on February 20, 2001 and amended on September 10, 2002, is a blueprint for development in the Anchorage Bowl. The plan expresses, among other ideas, the need for upgrade and maintenance of existing public roads and their associated elements as this protects assets of a safe and efficient transportation system. The project is anticipated in the metropolitan transportation plan (MTP) MTP2040 Link-Connect-Move Anchorage Bowl & Chugiak-Eagle River and in the draft 2050 MTP. The Plan identifies needs in the areas of freight, connectivity, access capacity and congestion. The project supports such concepts as preserving the existing system, improving safety, and supporting the economy while supporting federal performance measures as called for in the MTP2040. This project supports the Alaska Strategic Highway Safety Plan as well as the Alaska Highway Safety Plan in the expressed desire of each plan to move toward zero deaths on the state's roadways. Specifically, this project supports the Chugiak-Eagle River Comprehensive Plan Update section H. Transportation 2. Objectives f. "Improve, as necessary, expressway, arterial and collector roads to safely and efficiently handle projected traffic." The project is consistent with the land use and transportation plans reviewed.

B. Right-of-Way Impacts	Yes	No
1. Are there any temporary right-of-way (ROW) impacts (e.g., Temporary Construction Easements (TCEs), Temporary Construction Permits (TCPs), utility relocates, construction staging area)?	☑	☐
2. Is additional permanent ROW required?	☑	☐
a. Are there any full parcel acquisitions?	☑	☐
b. Are more than 25 partial parcel acquisitions required?	☐	☑
c. Are business or residential relocations required?	☐	☑
3. Will there be property transfer from a local, state, or federal agency?	☑	☐
4. Will the project require an ANILCA Title XI approval?	☐	☑

Summary
Summarize ROW impacts, if any. Include any project-specific commitments or mitigative measures in Section V.

ROW acquisition will include up to two full acquisitions from the Bureau of Land Management and two partial acquisitions (both sliver takes, one from the Department of Defense and one from the municipal landfill). These parcels or portions of parcels are not occupied, thus no relocations, either business or personal, will be required. No measurable impact is anticipated to the agencies due to these acquisitions. TCE and/or TCP are anticipated. All acquisitions will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

C. Environmental Justice Impacts (E.O. 12898)	Yes	No
1. Is there potential to affect environmental justice (EJ) populations?	☐	☑

Summary
Summarize EJ population impacts and mitigation, if any. Include any project-specific commitments or mitigative measures in Section V.

An April 8, 2024 review of the Environmental Protection Agency (EPA) Environmental Justice Screening and Mapping Tool was made of an area encompassing the anticipated project area. The review did not identify any EJ population within or adjacent to the project area. The proposed project would have temporary minor impacts such as detours or delays which would affect the local population during construction, however it would not be anticipated to adversely impact any group of facility users as the project is intended to positively impact the traveling public through improved traffic flow and safety. The MOA landfill and its users would experience temporary construction impacts, which would be minimized through application of best management practices (BMP) such as work timing, and traffic control.

D. Historic Properties and Cultural Impacts	**Yes**	**No**
1. Is a National Register of Historic Places listed or eligible property in the proposed Area of Potential Effect (APE)?	☐	☑
2. Was a programmatic allowance processed for the project under the Section 106 Programmatic Agreement?	☐	☑
3. Was Section 106 consultation initiated or a Direct to Findings worksheet completed?	☑	☐
a. Was a direct to findings worksheet completed?	☐	☑

b. Date Consultation Initiation Letters sent

February 22, 2023

Attachments

- CFHWY00917 Glenn Hiland Interchange__Init_all_2.22.23.pdf CFHWY00917.pdf

c. List consulting parties:

DOT&PF initiated consultation with the State Historic Preservation Officer (SHPO), Joint Base Elmendorf Richardson (JBER), the Bureau of Land Management, the Municipality of Anchorage, the Native Village of Eklutna, Eklutna Inc., Knik Tribe, Knikatnu Inc., Chickaloon Village Tribal Council (CVTC), Chickaloon Moose Creek Native Association Inc, Cook Inlet Region Inc., Eagle River Community Council and the Alaska Association for Historic Preservation.

d. Were any comments received?	☑	☐

CVTC stated the area encompassing the proposed project and current highway alignment is of cultural and spiritual significance to Dene. They recommended survey of the area.

The Cultural Resource Manager from JBER expressed interest in consulting on the undertaking.

SHPO recommended describing how the area of potential effects (APE) was defined and recommended consideration of staging areas and/or material sites for the APE. Additionally, SHPO indicated a survey of the area may be needed.

4. Was a Section 106 “Finding of Effect” completed?	☑	☐

Attachments

- CFHWY00917 Glenn Highway and Hiland Road Interchange Improvements_FONHPA_All.doc.pdf CFHWY00917.pdf

D. Historic Properties and Cultural Impacts | **Yes** | **No**

a. Date "Finding of Effect" Letters sent:

3/11/2024

b. State "Finding of Effect":

- No Effect

c. Were there any changes to consulting parties? ☐ ☑

d. Were any comments received? ☑ ☐

The Knik tribe commented that it was puzzling why this project was not done years ago. The Cultural Resource Manager from JBER indicated agreement with the DOT&PF finding and stated other coordination with JBER may be required due to their needs and requirements.

5. Date State Historic Preservation Officer (SHPO) concurred with "Finding of Effect":

3/12/2024

Attachments

- CHFWY00917 SHPO concurrence.pdf CFHWY00917.pdf

6. Will there be an adverse effect on a historic property? ☐ ☑

Summary
Summarize impacts to historic properties and mitigation, if any. List affected sites (by AHRS number only) and any commitments or mitigative measures. Also include any project-specific commitments or mitigative measures in Section V.

On March 11, 2024 DOT&PF submitted a finding of no historic properties affected by this project based upon determination of the absence of historic properties within the area of potential effect of the project. The SHPO concurred with this finding on March 12, 2024. The JBER Cultural Resource Manager noted agreement with the DOT&PF finding and stated other coordination with JBER may be required due to their needs and requirements.

Attachments

- Combined Findings Responses.pdf CFHWY00917.pdf
- Combined Initiation Responses.pdf CFHWY00917.pdf

E. Section 4(f)/6(f) Impacts | **Yes** | **No**

1. Section 4(f) (23 CFR 774)

a. Was detailed Section 4(f) resource identification conducted for this project, other than that required for Section 106 compliance? ☑ ☐

b. Does a Section 4(f) resource exist within or adjacent to the project area? ☐ ☑

2. Section 6(f) (36 CFR 59)

a. Does a Section 6(f) Land and Water Conservation Fund Act (LWCFA) resource exist within or adjacent to the project area? ☐ ☑

Summary
Summarize Section 4(f)/6(f) involvement, if any.

A review of the Anchorage Parks and Recreation Map Gallery website, the Land and Water Conservation Fund website, and the Alaska Department of Fish and Game (ADF&G) website on April 8, 2024 indicated no recreational facilities within or adjacent to the proposed project area. A multi-use trail facility exists within or adjacent to the proposed project area, however the trail is considered a transportation facility as it is within the DOT&PF ROW. The project is anticipated to require acquisition of ROW however it is not anticipated to result in a permanent incorporation, adverse temporary occupancy, or constructive use of any 4(f) resource or any conversion of any Section 6(f) resource as none is identified within or adjacent to the project area.

F. Contaminated Sites and Hazardous Materials Impacts	**Yes**	**No**
1. Include source, link, and date accessed of databases used.		
the Alaska Department of Environmental Conservation (ADEC) Contaminated Sites Database https://www.arcgis.com/apps/mapviewer/index.html?webmap=315240bfbaf84aa0b8272ad1cef3cad3 April 8, 2024		
2. Are there known or potentially contaminated sites within or adjacent to the existing ROW?	☑	☐
3. Would a documented hazardous material site be acquired?	☐	☑
4. Are there contaminated sites within 1,500 feet of where excavation dewatering is anticipated?	☐	☑

Summary
Summarize the contaminated site impacts and mitigation, if any.

A review of the ADEC Contaminated Sites Database indicated four contaminated sites identified as cleanup complete within 1,500 feet of the proposed project area, but not within the project area. The nature of the proposed project is minimally invasive, and thus is anticipated to have minimal potential for encountering hazardous materials during construction. Dewatering activities are not anticipated to occur, and if contaminated soils were to be encountered by the project, ADEC would be consulted.

G. **Floodplain Impacts (23 CFR 650, Subpart A)**	Yes	No
1. Does the project encroach into a mapped base floodplain or a potential unmapped base floodplain?	☐	☑
2. Does the project conform to local flood hazard requirements?	☑	☐
3. Is the project consistent with E.O. 11988 (Floodplain Protection)?	☑	☐

Summary
Describe any encroachments into mapped and unmapped floodplains and summarize impacts. For c(26, 27, or 28) CE classifications describe whether encroachments are functionally dependent.

An April 8, 2024 review of the on-line Federal Emergency Management Agency Flood Map Service Center indicated that a portion of the project area falls within Zone X, an area determined to be outside the 0.2% annual chance floodplain (FEMA Map Panel #0200050387D revised Sept. 25, 2009) and that the map panel for the remainder of the area is not printed. Project actions that potentially impact a base floodplains include vegetation clearing and drainage improvements (including culvert and bridge work). No mapped or unmapped floodplain encroachments are anticipated. No net change to a base flood elevation and no significant encroachment as defined in 23 CFR 650.105(q) and USDOT Order 5650.2(4)(p) is anticipated.

H. **Wetland and Waterbody Impacts**	Yes	No
1. Would the project affect wetlands or other Waters of the U.S. (WOTUS), as defined by the U.S. Army Corps of Engineers (USACE) (Section 404).	☐	☑
2. Is a USACE authorization anticipated?	☐	☑
3. Will the project involve navigable waters as defined by the U.S. Coast Guard (USCG) (Section 9)?	☐	☑
4. Will the project affect a designated Wild and Scenic River or land adjacent to a Wild and Scenic River, including those on the Nationwide Rivers Inventory?	☐	☑

a. Estimated fill quantities below:

Summary
Summarize wetland and waterbody impacts and mitigation, if any.

Review of the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory on April 8, 2024, identified no USACE jurisdictional wetlands or other WOTUS within and/or adjacent to the proposed project corridor.

I. **Fish and Wildlife Impacts**	Yes	No
1. Anadromous and resident fish habitat.		

a. Include source, link, and date accessed of databases used.

Alaska Fish Resource Monitor

https://experience.arcgis.com/experience/1a4eb07b42ff4ebb8c71ba45adaedf0c/

1/3/2024

b. Is anadromous or resident fish habitat present in project area (Title 16.05.841 and 16.05.871)?	☐	☑

I. **Fish and Wildlife Impacts**	Yes	No
2. Essential Fish Habitat (EFH).		
a. Include source, link, and date accessed of databases used.		
Alaska Fish Resource Monitor https://experience.arcgis.com/experience/1a4eb07b42ff4ebb8c71ba45adaedf0c/ 1/3/2024		
b. Is EFH present in project area?	☐	☑
3. Threatened and Endangered (T&E) Species		
a. Include source, link, and date accessed of databases used.		
On November 1, 2012, the USFWS issued a letter stating that there are no federally listed or proposed species, or designated or proposed critical habitat under USFWS jurisdiction in the Matanuska-Susitna or Anchorage areas. No impact to threatened or endangered species or critical habitat areas is expected to occur as a result of the proposed project.		
b. Are listed threatened or endangered species present in the project area?	☐	☑
4. Marine Mammals.		
a. Is the project located in the marine environment?	☐	☑
5. Wildlife Resources:		
a. Is the project in an area of high wildlife/vehicle accidents?	☐	☑
b. Would the project bisect migration corridors?	☐	☑
c. Would the project segment habitat?	☐	☑
6. Bald and Golden Eagle Protection Act.		
a. Include source, link, and date accessed of databases used.		
Southeast Alaska GIS Library, Documented Eagle Nest Sites https://data-seakgis.opendata.arcgis.com/datasets/seakgis::documented-eagle-nest-sites/explore?location=61.275482%2C-149.566552%2C12.61 4/22/2024		
b. Is the project visible from an eagle nesting tree?	☐	☑
c. Is the project within 330 feet of an eagle nesting tree?	☐	☑
d. Is the project within 660 feet of an eagle nesting tree?	☐	☑
e. Will the project require blasting or other activities that produce extreme loud noises within 1/2 a mile from an active nest?	☐	☑

I. Fish and Wildlife Impacts	Yes	No
f. Is an eagle permit required?	☐	☑
7. Is the project consistent with the Migratory Bird Treaty Act?	☑	☐

Summary
Summarize fish and wildlife impacts and mitigation, if any.

Fish

There are no water bodies within or adjacent to the project area, thus no impact to fish or EFH is anticipated.

Wildlife

Review of the ADF&G Moose-Vehicle Collisions (MVC) in Alaska MatSu webpage indicated that from 2013-2016 the project area had a single incident of MVC, however the immediate surrounding area has a higher incidence, demonstrating moderate potential for MVC. No other wildlife species found within the project area is likely to cause a similar level of common driving hazard, though other wild or domestic animals may be found in the area. Some wildlife may avoid the project area during construction activities, but the project is not likely to cause significant or adverse impacts to wildlife.

Migratory Birds and Eagle Nests

Review of the USFWS Information for Planning and Consultation (IPAC) system on January 3, 2024 indicated that migratory birds migrate through and may nest within the project area and could be disturbed by clearing operations. Vegetation clearing would be avoided from May 1 through July 15, as recommended by the USFWS guidelines. Bald and Golden eagles are found within the project area according to IPAC. Prior to construction, DOT&PF may conduct a survey of the project area to determine if active eagle nests occur within the primary (330 foot) or secondary (660 foot) zones. If active eagle nests are identified within 660 feet of the project area prior to or during construction, DOT&PF will seek guidance from the USFWS on how to proceed.

J. Invasive Species Impacts

	Yes	No
1. Include source, link, and date accessed of databases used.		

AKEPIC Data Portal

https://akepic.accs.axds.co/old/akepic.php?js_libraries_root=/old/js-libraries/js/#map?lg=f37ef462-d080-11e3-a36b-00219bfe5678&z=12&ll=61.26576%2C-149.58042

1/3/2024

2. Are invasive species present in project area?	☑	☐
3. Does the project include all practicable measures to minimize the introduction or spread of invasive species, making the project consistent with E.O. 13112 (Invasive Species)?	☑	☐

Summary
Summarize invasive species impacts and mitigation, if any.

A review of the University of Alaska, Anchorage Exotic Plants Information Clearinghouse Invasive Plants Mapper identified non-native plant surveys with positive results for non-native species. These surveys were within and adjacent to the project area. Ground cover disturbing activities would be minimized, and disturbed areas re-vegetated with native soil and seed to minimize potential introduction of invasive species, in accordance with Executive Order 13112.

K. Water Quality Impacts

	Yes	No
1. Will there be temporary degradation of water quality?	☑	☐
2. Is a public or private drinking water source or protection area within or adjacent to the project?	☐	☑
3. Would the project result in a discharge of storm water to a WOTUS? [40 CFR 230.3(o)]	☑	☐
4. Would the project discharge storm water into or affect an ADEC-designated Impaired Waterbody?	☐	☑
5. Will the project involve more than one (1) acre of ground-disturbing activities?	☑	☐
6. Is there a Municipal Separate Storm Sewer System (MS4) APDES permit, or will runoff be mixed with discharges from an APDES permitted industrial facility?	☑	☐

a. List APDES permit number and type:

APDES Permit No. AKS-052558

MS4 Permit

Summary
Summarize the water quality impacts and mitigation, if any.

During construction, ground disturbing activities and storm water runoff may result in temporarily increased turbidity of nearby streams, wetlands, and other water bodies. No WOTUS is located within or adjacent to the project area, thus any discharge to such a water body would be eventual and distant, not immediate in nature. According to the ADEC Drinking Water & Earthquakes webpage, no drinking water system sources or protection areas occur within the project area. Adverse impacts to water quality would be minimized by implementing a Storm Water Pollution Prevention Plan and utilizing BMP during construction.

L. Air Quality Impacts	Yes	No
1. Will there be temporary degradation of air quality?	☑	☐
2. Is the project located in an air quality maintenance area or nonattainment area (CO or PM-10 or PM-2.5)?	☐	☑

Summary
Summarize air quality impacts and mitigation, if any.

A review of the U.S. EPA Air Data Air Quality Monitors web page utilizing non-attainment layers for criteria pollutants indicated that the project is not located within an air quality non-attainment or maintenance area. As a result regional and project level air quality conformity is not required. The project would not increase the number of travel lanes or traffic volume; and is therefore not likely to result in an increase in CO emissions. Air quality impacts from project construction are anticipated to be minimal and temporary. No long-term impacts to air quality are anticipated as a result of the project.

M. Noise Impacts (23 CFR 772)	Yes	No
1. Will there be temporary noise impacts?	☑	☐
2. Does the project involve any of the following Type I project actions listed below (23 CFR 772.5)?	☐	☑

Summary
Summarize noise impacts and mitigation, if any.

The project includes a proposal to extend the existing turn lane into Wolf Den Drive. See attachment titled, "Project Plans and Location Info CFHWY00917 (1).pdf [Figure 2 Project Area].

Based on the definition in 23 CFR 772.5 (Item 4) which is cited below, the proposed turn lane extension does not qualify as a Type 1 project, and no noise analysis is required.

23 CFR 772.5 Definitions, Type I Project (Item 4) states:

"Proposed transportation improvement projects which are considered a Type 1 highway traffic noise project include the following: (4) The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane.

The noise generated by construction equipment will vary greatly depending upon the equipment type and model, mode and duration of operation, and specific type of work effort; however, typical noise levels may occur in the 75 dBA to 95 dBA range at 50 feet. Variations in building setbacks and land use activity zones, local intensity of specific construction activities, and spatial and temporal distribution of activities will result in varying degrees of exposure to construction noise and hence varying levels of resulting impacts. Adverse effects related to construction noise are anticipated to be localized, temporary, and transient in nature.

N. Social and Economic Impacts	Yes	No
1. Would the project affect neighborhoods or community cohesion?	☐	☑
2. Would the project affect school boundaries, recreation areas, churches, businesses, police and fire protection, etc.?	☐	☑
3. Would the project affect the elderly, handicapped, non-drivers, transit-dependent, minority and ethnic groups, or the economically disadvantaged?	☑	☐

N. Social and Economic Impacts	Yes	No
4. Would the project affect travel patterns and accessibility (e.g., vehicular, commuter, bicycle, or pedestrian)?	☐	☑
a. Would the project include temporary delays and detours of traffic?	☑	☐
5. The project will have adverse economic impacts on the regional and/or local economy, such as effects on development, tax revenues and public expenditures, employment opportunities, accessibility, and retail sales.	☐	☑
6. The project will adversely affect established businesses or business districts.	☐	☑
a. Would the project have temporary impacts on businesses?	☑	☐

Summary
Summarize social and economic impacts and mitigation, if any.

An April 8, 2024 review of the EPA Environmental Justice Screening and Mapping Tool was made of an area encompassing the project area. The review did not identify any disadvantaged social or economic groups within or adjacent to the project area. The proposed project would have temporary minor impacts such as detours or delays which would affect the local population during construction. Anticipated improvements to the nonmotorized facilities are expected to benefit pedestrians, bicyclists, and other non-drivers utilizing the facilities. The project would not be anticipated to adversely impact any group of facility users as the project is intended to positively impact the traveling public through improved traffic flow and safety. The MOA landfill and its users would experience temporary construction impacts which would be minimized through application of BMP such as work timing, and traffic control.

III. Comments and Coordination

A. Public Involvement	**Yes**	**No**
1. Was public involvement for project completed?	☑	☐
2. Was the project public noticed?	☑	☐
a. Newspaper name and date of notice:	☑	☐

Anchorage Daily News

5/26/2022

Attachments

- CFHWY00917_ADN Affidavit of Pub.pdf CFHWY00917.pdf

b. Alaska Online Public Notice date:	☑	☐

5/25/2022 - 6/24/2022

Attachments

- CFHWY00917_DOT&PF Online PN Posting.pdf CFHWY00917.pdf

c. Were public notices completed for specific resource impacts (e.g., floodplain, Section 4(f))?	☐	☑
3. Was a public meeting held?	☐	☑
4. Is there any unresolved controversy on human, natural, or economic grounds?	☐	☑

Summary
Summarize public comments and coordination efforts for this project. Discuss pertinent issues raised.

A Notice of Intent for this project was published in the Anchorage Daily News and was posted on the Alaska Online Public Notice website for 30 days. No comments were received.

B. Agency Involvement	**Yes**	**No**
1. Was an agency scoping conducted?	☑	☐

Pointed Scoping was provided to DEC on 3/6/24

Attachments

- Complete Pointed Scoping.pdf CFHWY00917.pdf

2. Was an agency scoping meeting held?	☐	☑
3. Was a field review completed with agencies?	☐	☑

Summary
Summarize agency coordination efforts for this project.

Due to the lack of impacts identified during environmental review of the project area, agency scoping needs were identified only related to DEC. Pointed Scoping was sent to this agency. No response from DEC was received. Should environmental issues be identified during construction they would be addressed to the appropriate agency for proper

disposition in compliance with law and policy.

IV. Permits and Authorizations

A. Permits and Authorizations	Yes	No
1. USACE, Section 404/10 Includes Abbreviated Permit Process, Nationwide Permit, and General Permit	☐	☑
2. Coast Guard, Section 9	☐	☑
3. ADF&G Fish Habitat Permit (Title 16.05.871 and Title 16.05.841)	☐	☑
4. Flood Hazard	☐	☑
5. ADEC Non-domestic Wastewater Plan Approval	☑	☐
6. Requires 401 Cert	☐	☑
7. ADEC APDES	☐	☑
8. Eagle Permit	☐	☑
9. Incidental Take Authorization	☐	☑
10. Local (Borough or City) permit (e.g., noise)	☐	☑
10. Other Permits	☐	☑

Summary

The above-listed permit is or may be required for this project, and will be acquired as needed.

V. Environmental Commitments

A. Environmental Commitments and Mitigation Measures [23 CFR 771.109(b)]	Yes	No
1. Are there project-specific environmental commitments for this project?	☐	☑

Summary
Summarize changes to environmental commitments and mitigation measures from original environmental document.

DOT&PF and their Contractor(s) shall:

No project specific environmental commitments apply to this project.

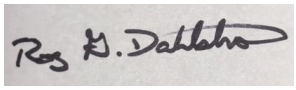
VI. Environmental Documentation Approval

A. **Environmental Documentation Approval**	Yes	No
1. Do any unusual circumstances exist, as described in 23 CFR 771.117(b)?	☐	☑
2. Does the project meet the criteria of one of the following DOT&PF Programmatic Approvals authorized in the Nov. 13, 2017 "Chief Engineer Directive - Programmatic Categorical Exclusions"?	☐	☑

Summary

The acquisition of up to two entire parcels fails to meet General Programmatic Approval Condition c. which precludes the acquisition of an entire parcel.

Environmental Documentation Approval Signatures

Prepared by:  Date: 5/22/2024

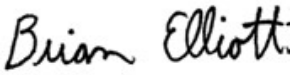
Roy Dahlstrom

Environmental Impact Analyst II

Reviewed by:  Date: 5/22/2024

Galen Jones

Project Manager

Approved by:  Date: 6/3/2024

Brian Elliott

Central Region Environmental Manager

Recommended by:  Date: 6/4/2024

Matthew Dietrick

NEPA Manager

APPENDIX F

Design Memos

At this time, no significant design changes were made after the approval of this document. The final as-built plans for this project will be available in Central Files within the Highway Design Section (4111 Aviation Avenue, Anchorage, AK 99502).