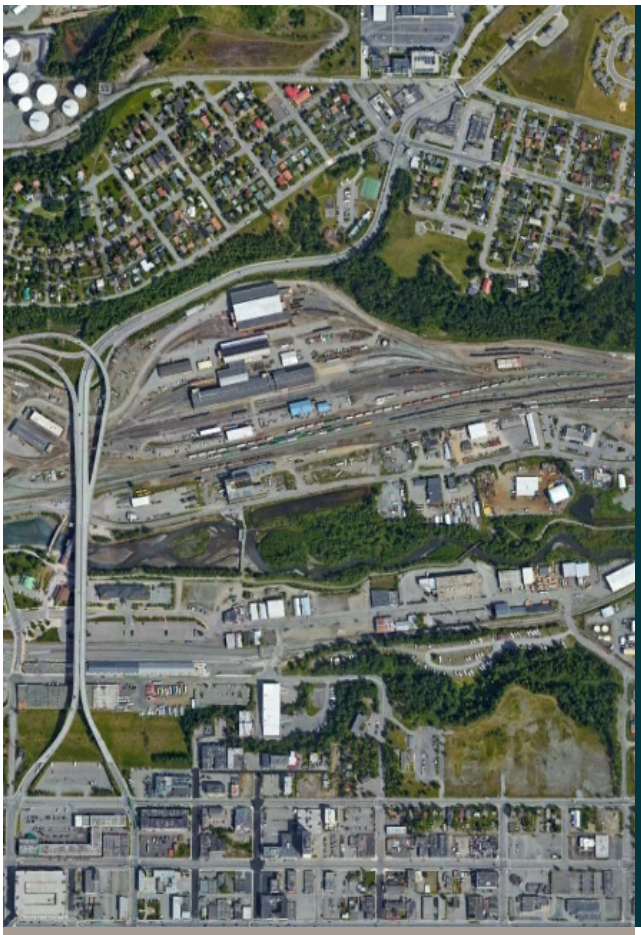


DOT&PF Project No.: CFHWY00296
Federal Project No.: 0001598

AMATS: Ingra-Gambell Couplet Extension Reconnaissance Study

September 2026

This planning document may be adopted in a subsequent environmental review process in accordance with 23 USC 168 Integration of Planning and Environmental Review.

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

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Appendix A: Preliminary Design

List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADEC	Alaska Department of Environmental Conservation
AMATS	Anchorage Metropolitan Area Transportation Solutions
ANMC	Alaska Native Medical Center
ARRC	Alaska Railroad Corporation
DCM	*Design Criteria Manual*
DOT&PF	Alaska Department of Transportation and Public Facilities
FHWA	Federal Highway Administration
ft	foot/feet
GB	*Green Book*
hazmat	hazardous materials
HMA	Hot Mix Asphalt
HPCM	*Highway Preconstruction Manual*
ICAP	Indirect Cost Rate Proposal
KAC	Knik Arm Crossing
max	maximum
min	minimum
MOA	Municipality of Anchorage
mph	mile(s) per hour
MTP	Metropolitan Transportation Plan
N	North
N/A	not applicable
NWP	Nationwide Permit
PEL	Planning and Environmental Linkages
POA	Don Young Port of Alaska
ROM	Rough Order of Magnitude
ROW	right-of-way
RV	recreational vehicle
S-G	Seward Highway to Glenn Highway
TIP	Transportation Improvement Program
USACE	U.S. Army Corps of Engineers
W	West
WOTUS	Water of the United States

1. Introduction

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Anchorage Area Metropolitan Area Solutions (AMATS), in partnership with the Federal Highway Administration (FHWA), has reviewed and identified alternatives that would extend Ingra and Gambell Streets (Ingra-Gambell Couplet) to Ship Creek Avenue or Whitney Road as identified in the AMATS 2015–2018 Transportation Improvement Program (TIP)[1]. The study area is located within Sections 7, 8, 17, and 18; Alaska Township 13 North (N), Range 3 West (W), U.S. Geological Survey topographical maps Anchorage A-8 NW; Latitude 61.222611°N, Longitude 149.873553°W, within the Municipality of Anchorage (MOA).

This reconnaissance-level engineering study evaluates three access extensions from the Ingra-Gambell couplet to the Don Young Port of Alaska (POA). Alternatives should improve circulation between the National Highway System and POA, reduce congestion, enhance safety, and improve freight mobility in north Anchorage.

The “No Action” alternative would not have any right-of-way (ROW), environmental, utility, or other impacts. It would not modify existing routes or improve connectivity to the POA.

The following alternatives were advanced to a 15-percent design level to evaluate geometric feasibility, constructability, multimodal integration, and planning-level cost estimates:

- Alternative 1: Whitney Road
- Alternative 2: Ship Creek Avenue
- Alternative 3: 1st Avenue

A viaduct spanning the entire Ship Creek area to Government Hill was originally proposed in the reconnaissance study’s AMATS 2015–2018 TIP nomination packet but was removed before the nomination was finalized; therefore, it was not evaluated.

The evaluation incorporates findings from prior engineering studies, stakeholder input, and freight planning data. Each alternative was analyzed for impacts on ROW, utilities, and environmental resources; bridge structural requirements; safety for all transportation modes; and traffic operations.

1.1 Summary of Prior Studies

A comprehensive body of planning and technical documentation, public input, and identified transportation needs has been compiled through prior planning efforts, most recently through the Seward Highway to Glenn Highway (S-G) Connection Planning and Environmental Linkages (PEL) Study, prepared by DOT&PF and funded by AMATS. Table 1 summarizes studies with a scope similar to the proposed extension of Ingra and Gambell Streets into the Ship Creek area. Collectively, the resources support consistency with adopted planning objectives, applicable engineering standards and criteria, and identified community and transportation priorities.

[1] https://www.muni.org/Departments/OCPD/Planning/AMATS/Pages/2015_2018_TIP.aspx

Table 1: Summary of Existing Data and Prior Reports

Study	Description	Relevant Findings
AMATS Major Corridors Study (MOA, 1982)	Provide AMATS Policy Committee with a comparative analysis of alternative transportation improvements in Northside (Bragaw to the Central Business District), Seward (Tudor to 3rd Avenue) and 15th Avenue bypass corridors.	All three corridors should be considered in tandem and would require difficult tradeoffs to accomplish long-range goals. There was no evident "best" alternative to meet anticipated 2000 traffic volumes. Combinations of multiple alternatives should be considered in future analyses.
Ship Creek/ Waterfront Land Use Plan (MOA, August 1991)	Establishes a long-range vision for redeveloping the Ship Creek waterfront, emphasizing improved public access, transportation connectivity, and compatibility between residential, industrial, commercial, recreational, and transportation uses, including the POA and ARRC.	Set primary goals for revitalization, improved access, economic diversification, preservation of historic and natural resources, and integration of the area into MOA. Proposes Ingra Street as the eastern access to the Ship Creek area. Realign and reduce grade on Ingra Street to not limit winter access to the Whitney-Post industrial area. 1st Avenue is recommended for reconstruction as a new two-lane connector between 1st and 3rd Avenues.
Ingra Street Extension Location/Design Study Report, Preliminary Draft (MOA, October 1994)	Provide a connection from 3rd Avenue to Ship Creek Avenue supporting a future direct truck route from Whitney Road to Gambell or Ingra Street that does not pass through the Ship Creek Landing Development, should such a truck route become necessary.	Improve freight circulation by eliminating railroad crossing delays, improving local circulation, and integrating with other planned transportation improvements within the Ship Creek area.
Ship Creek Multi-Modal Transportation Plan (MOA, 2000)	A long-range multimodal transportation plan for the Ship Creek area, aimed at supporting economic redevelopment by improving access for trucks, pedestrians, bicycles, rail, and vehicles.	Supports the S-G Connection PEL Study objectives by enhancing connectivity between the POA, Ship Creek, and Downtown. Aligns with the Ingra/Gambell extension concepts. Identifies freight bottlenecks and modal conflicts.
Ingra/Gambell Extension Design Study Report (Draft, 2001)	Describes alternatives to improve access to the southern side of Ship Creek from the Ingra/Gambell Couplet. A Whitney Road alternative was not analyzed. In all cases, provisions for future POA access improvements were incorporated into the alternatives developed for this study.	No formal recommendation was included in the draft (final report was never published); however, the discussion consistently portrays the Ship Creek Avenue Alternative as the preferred long-term solution because it eliminates railroad conflicts, provides the best geometry, has the highest capacity, best supports redevelopment, provides the greatest multimodal benefits, and remains expandable for future regional transportation improvements.

Study	Description	Relevant Findings
Ship Creek Framework Plan (Anchorage Economic Development Corporation, February 2014)	An urban design vision for transforming Ship Creek into a mixed-use, pedestrian-friendly waterfront district. Recommends trail networks, public spaces, and a relocation of Whitney Road to improve circulation.	Partially meets the S-G Connection PEL Study purpose and need. Supports nonmotorized and land use goals. Realignment of Whitney Road and improved Ingra/Gambell access align with the PEL study alternatives. Lacks modal performance data but supports environmental and community values.
Anchorage Freight Mobility Study (AMATS, June 2017)	Region-wide freight plan identifying multimodal bottlenecks, freight flows, infrastructure gaps, and prioritization strategies.	Provides valuable regional freight context. Aligns well with the S-G Connection PEL Study's focus on freight movement, particularly in the POA and Ingra/Gambell corridor. Complements, but does not replace, corridor-specific design analysis.
Seward to Glenn Connection Planning and Environmental Linkages Study (DOT&PF, September 2026)	Provide an evaluation of options that improve mobility, safety, access, and connectivity between the Seward Highway, 20th Avenue, the Glenn Highway/ Airport Heights, and the POA.	Identification of 9 phases, which include 16 projects that would directly connect the Seward and Glenn Highways, reduce freight traffic through Ingra and Gambell, and improve the multimodal transportation network between 15th Avenue and the POA.

Notes: ARRC = Alaska Railroad Corporation

These studies, along with the data and input collected through the S-G Connection PEL Study's public, agency, and stakeholder outreach have informed the evaluation framework for this study, guiding the identification of feasible alternatives and supporting alignment with community, freight, and mobility objectives. They also provide important context for integrating the Ingra-Gambell Couplet extension alternatives into the broader S-G Connection PEL Study framework.

1.2 Future Development Coordination

Several proposed and planned projects are located between 3rd Avenue and the POA. Of these projects, the Knik Arm Crossing (KAC), Denali View RV Resort, and Ship Creek Framework Plan are directly located in the route of evaluated alternatives.

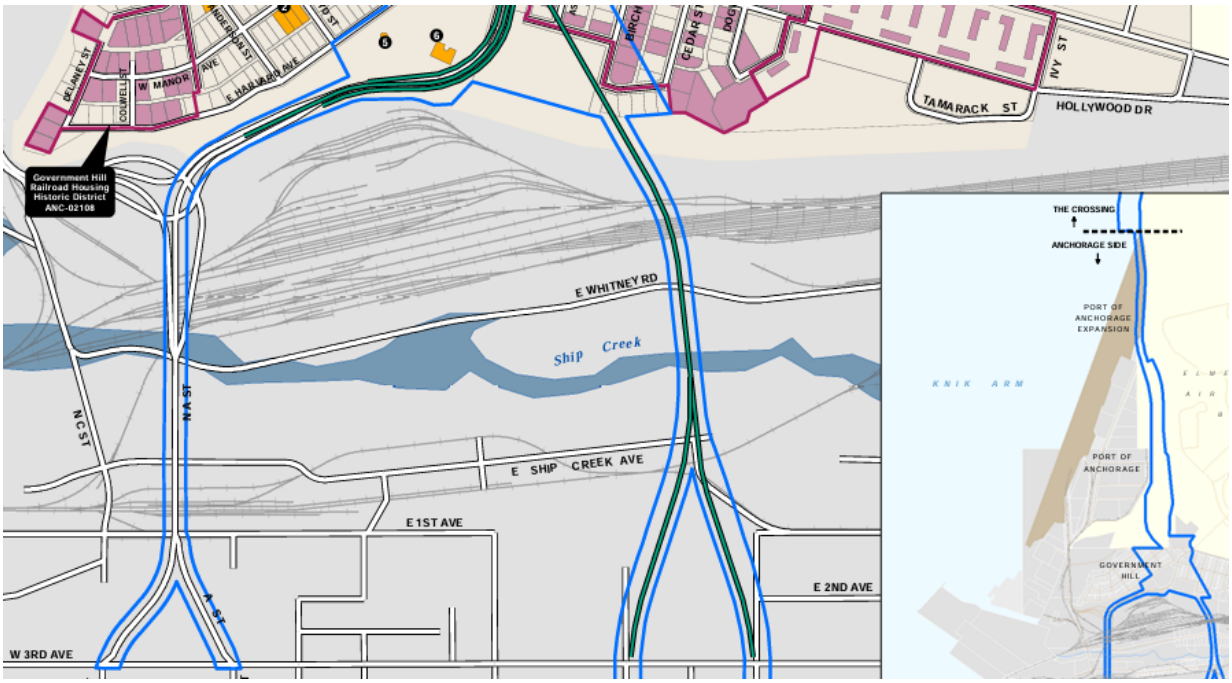
1.2.1 Knik Arm Crossing

The KAC project is a concept that connects the POA to Point MacKenzie in the Matanuska-Susitna Borough. The KAC Project's[2] area of potential effect[3], shown in Figure 1, proposed extending the Ingra-Gambell Couplet to tie into Government Hill, pass through a tunnel under the neighborhood, then continue along the bluff above the POA. The KAC project proposes the same alignments between 3rd Avenue and the viaduct as all three Ingra-Gambell Couplet

[2] As of September 2026, the KAC project is not under construction and does not have committed funding. It remains a long-term concept connecting Anchorage to the Matanuska-Susitna Valley. DOT&PF is conducting a feasibility study to assess the potential for a tunnel crossing.
[3] Available at: https://ia801500.us.archive.org/5/items/215464-fed-rod-knikarmcrossing/215464-fed-rod-knikarmcrossing.pdf. Figure 1C on page 240/409 of the PDF.

extension alternatives. The northern components of the KAC options can be constructed without being in conflict as the Ingra-Gambell routes drop in elevation and curve westward. This allows for the KAC viaduct over the Ship Creek industrial area to be constructed at a higher elevation and span toward the north or northwest without conflicting with the lower POA access structure(s) and vehicle clearance. The KAC project is not currently funded; if it becomes funded in the future, the KAC project alternatives and an extension of Ingra and Gambell to the POA should be considered together.

Figure 1: KAC Project's Area of Potential Effect



Source: Knik Arm Crossing Record of Decision, Appendix A

1.2.2 Denali View RV Resort

During 2025, the Anchorage Assembly[4] approved plans to develop the Denali View RV Resort on the former Alaska Native Service Hospital parcel located between Ingra and Gambell Streets, north of 3rd Avenue. The final Phase 3 of the project includes up to 135 recreational vehicle (RV) spots, a playground, pickleball courts, a shop, trails, and a memorial garden honoring Alaska Native history. The project intends to have a 10- to 15-year design life and includes minimal structures with foundations. The project is currently under development. Figure 2 shows Phase 1 of the project[5]. While portions of the development would conflict with the Gambell extension alignment, impacts could potentially be minimized by avoiding the more permanent project elements.

[4] The Anchorage Assembly passed an ordinance on June 24, 2025, authorizing Anchorage Community Development authority to begin development: https://alaskapublic.org/news/economy/2025-07-03/anchorage-assembly-gives-go-ahead-for-rv-resort-in-east-downtown

[5] Anchorage Community Development Authority Power Point Slides showing the three proposed Phases for Denali View RV Resort: https://www.muni.org/Departments/Assembly/SiteAssets/Pages/Community%20and%20Economic%20Development%20Committee/Denali%20Veiw%20Concept.pdf

Figure 2: Phase 1, Denali View RV Resort



Source: Anchorage Community Development Authority, The Denali View RV Resort PowerPoint Presentation

1.2.3 Ship Creek Framework Plan

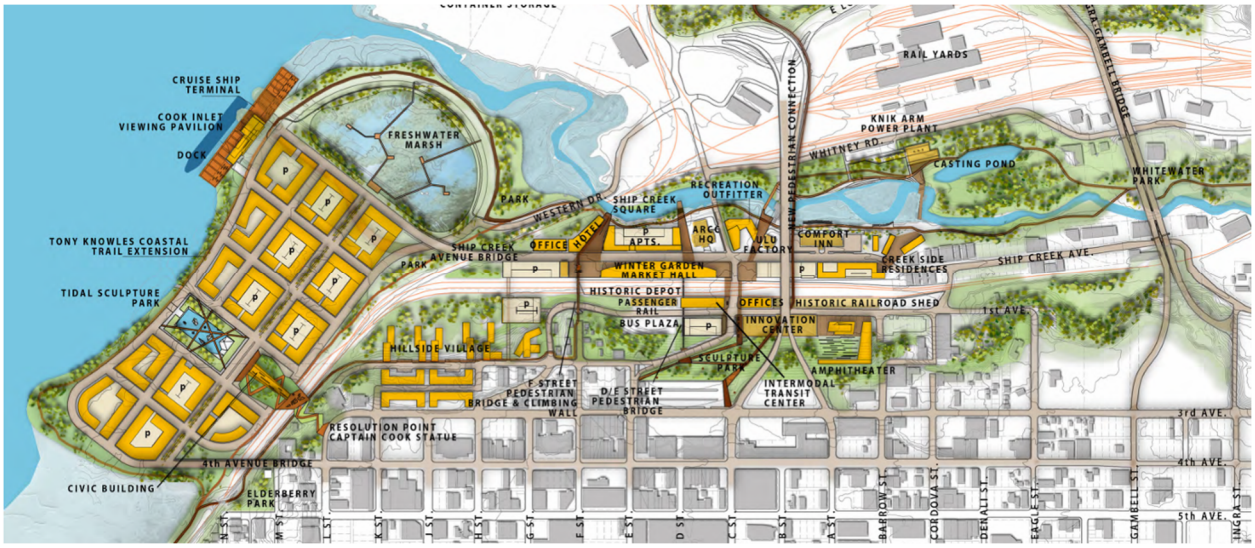
The *Ship Creek Framework Plan* (2014)[6] supplements the goals and objectives of the 1991 Ship Creek/Waterfront Land Use Plan[7] and provides a long-term vision for the urban reinvestment and redevelopment of the Ship Creek area. The plan area extends from the Knik Arm shoreline to the Cook Inlet boat launch. The northern boundary generally follows the northern bank of Ship Creek on the west and the southern edge of the rail yard on the east. The southern boundary is defined by 3rd Avenue. The study area also includes the Ingra and Gambell Street corridors.

This plan uses the same initial route as all three proposed alternatives for the Ingra-Gambell Couplet Extension. Figure 3 shows the proposed development provided in the *Ship Creek Framework Plan*[3].

[6]https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/ShipCreekFrameworkPlan.aspx. Chapter 6 Design Concepts

[7] https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/ShipCreekLandUsePlan-1991.aspx. The Waterfront Land Use Plan was prepared by the Department of Economic Development and Planning. It was adopted in 1991 and superseded the Generalized Land Use Plan, Anchorage Bowl Comprehensive Development Plan for the area encompassing the lower Ship Creek Vally

Figure 3: *Ship Creek Framework Plan* Proposed Development



Source: MOA Ship Creek Framework Plan, Chapter 6 Design Concepts

2. Project Description

This reconnaissance engineering study focuses on evaluating northbound extensions of Ingra and Gambell Streets toward the POA. These extensions are analyzed for their compatibility with both the broader S-G Connection PEL Study corridor alternatives and operational requirements of the POA.

Each extension was assessed for its feasibility and integration potential with existing roadways, other corridor concepts (particularly in relation to connection geometry), freight routing, and vehicle traffic redistribution. The goal is to identify which alternative(s) best supports freight access, minimizes impacts on surrounding infrastructure and the community, and complements future regional mobility improvements. Evaluation criteria include:

- Geometric feasibility
- Freight vehicle accommodation (including double-trailer combinations)
- Integration with S-G Connection PEL Study concepts
- POA connectivity
- Environmental, community, and ROW impacts
- Impacts on existing vehicle traffic networks
- Alaska Railroad Corporation (ARRC) and freight considerations

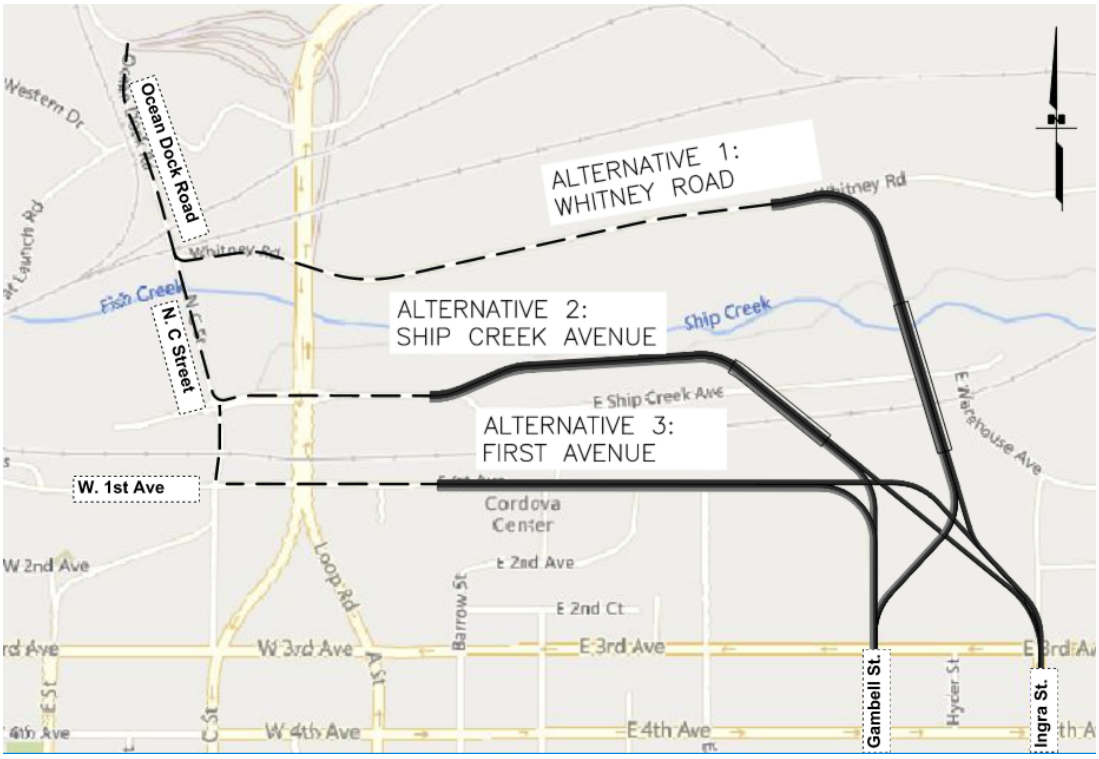
These categories reflect both design-based and operational considerations, and they allow for a consistent evaluation across all three alternatives.

3. Methodology and Alternative Descriptions

The Ingra-Gambell Couplet Extension alternatives were designed to comply with applicable federal, state, and municipal planning and design standards. The process began with a review of previous engineering studies, traffic forecasts, travel demand models, and public input to

identify the corridor's needs, constraints, and operational priorities. Figure 4 shows the three proposed extension alternatives from Ingra and Gambell Streets tying into existing roads to reach the POA.

Figure 4: Ingra-Gambell Couplet Extension Alternatives



Each alternative was assessed for its geometric and operational feasibility, impacts on traffic performance, constructability challenges, environmental implications, ROW requirements, and compatibility with regional freight and transit operations.

Each alternative was developed using design standards appropriate to the agency responsible:

- State-owned roadway segments follow DOT&PF standards.
- Municipally owned roadway segments adhere to the MOA *Design Criteria Manual* (DCM)[8].
- Pedestrian and bicycle infrastructure followed MOA DCM guidelines.
- Bus infrastructure considerations, such as stop location and design, were based on roadway classification and transit guidance from MOA.

Stakeholder coordination was a key element of the alternative design process. Input was collected from freight stakeholders, municipal agencies, ARRC, and AMATS. Freight Workshop discussions and public meetings helped shape evaluation priorities, especially regarding truck access, double-trailer operations, rail conflicts, and multimodal connectivity.

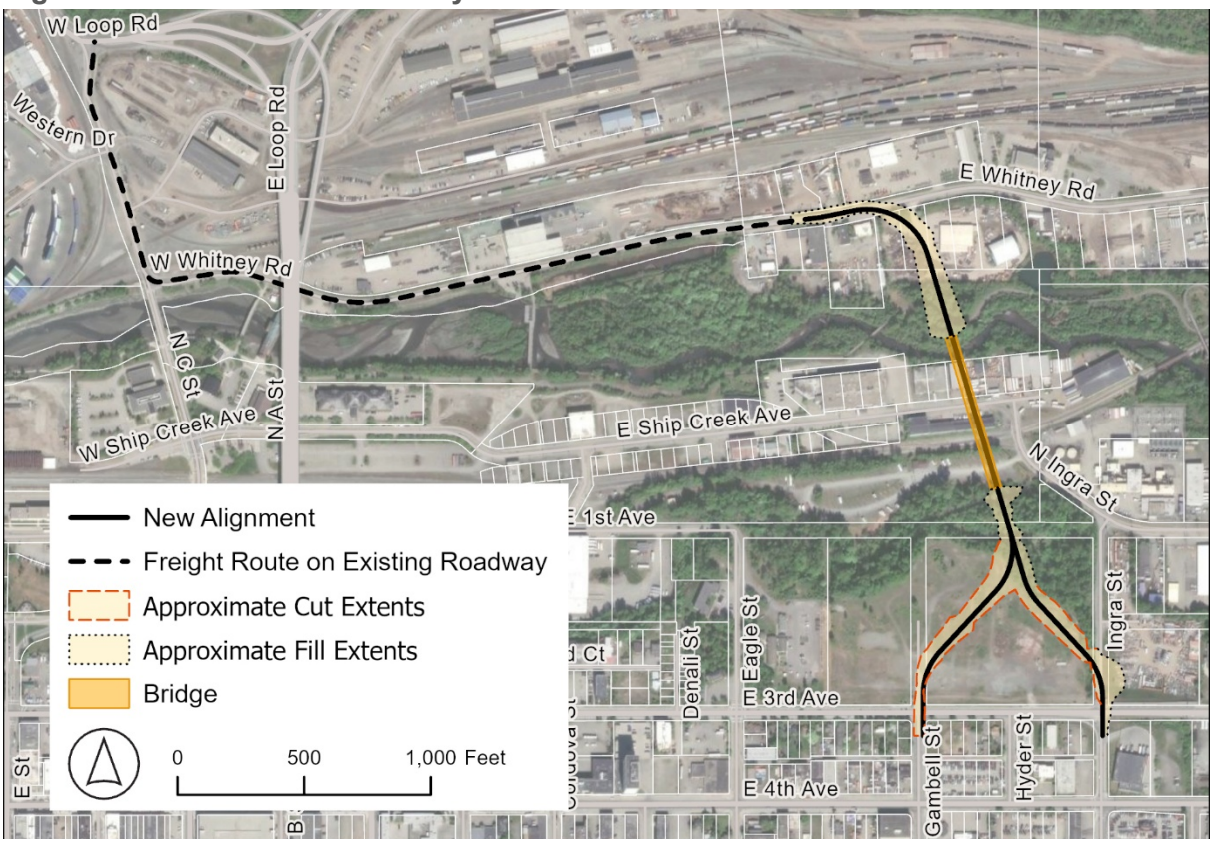
[8] The MOA Design Criteria manual is being updated. The current adopted version is available here: https://www.muni.org/Departments/project_management/Pages/DesignCriteriaManual.aspx

Each extension was advanced to a 15-percent design level to support consistent comparative analyses. Preliminary plan and profile sheets of the design concepts were developed to evaluate logical phasing opportunities, utility constraints, ROW and land use impacts, constructability challenges, truck maneuverability, compatibility with long-term freight access goals, and non-motorized facilities (see Appendix A).

3.1 Alternative 1: Whitney Road

The Whitney Road Alternative, shown in Figure 5, would extend the Ingra-Gambell couplet north from 3rd Avenue through the former Alaska Native Medical Center (ANMC; site of the former Alaska Native Service Hospital) parcel. The alignment would transition to a viaduct over the bluff, ARRC rail corridor, Ship Creek, and the Ship Creek Trail before connecting to Whitney Road. Freight traffic would access the POA via the existing Whitney and Ocean Dock Roads.

Figure 5: Alternative 1: Whitney Road



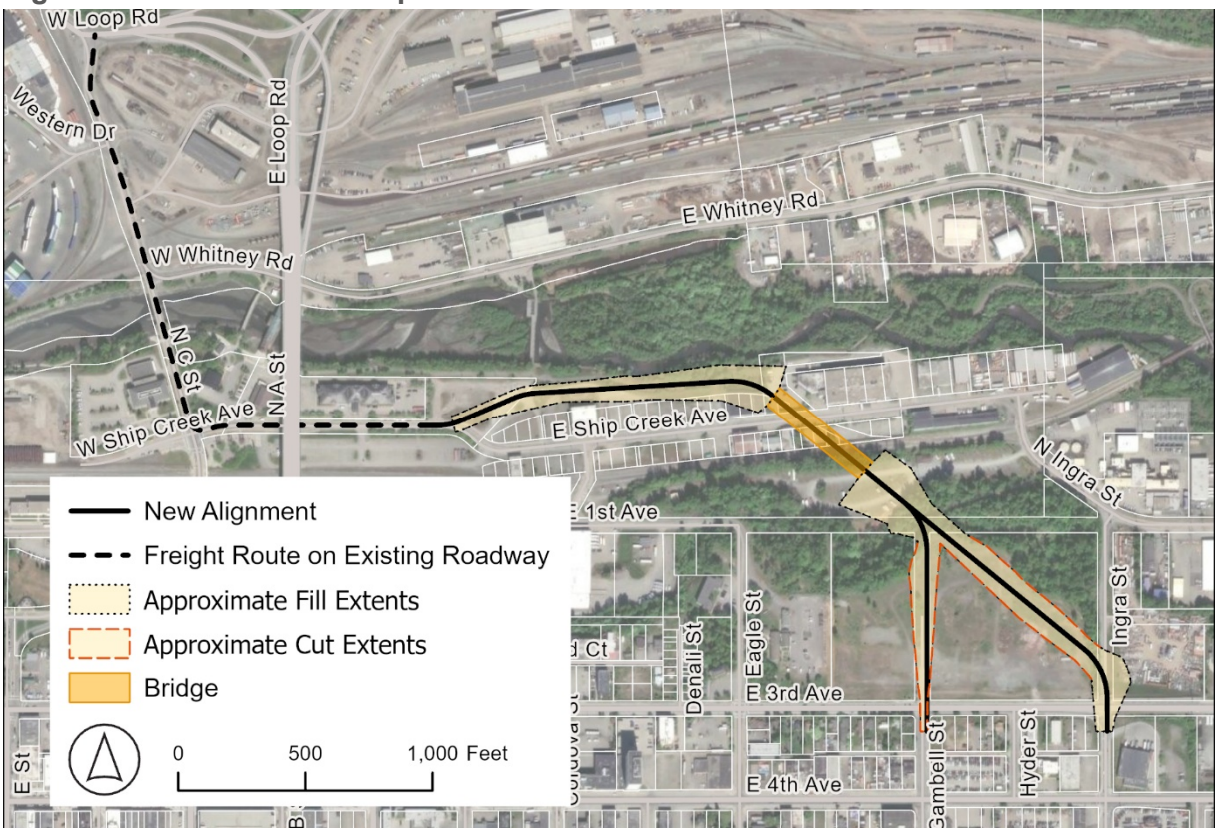
Reconnaissance engineering focused on identifying the optimal Whitney Road tie-in location and confirming the bridge could meet ARRC-required vertical clearances over the railroad tracks. Existing ROW and land use conditions were also evaluated to determine the feasibility of widening Whitney Road to accommodate shoulders and non-motorized facilities.

A prior reconnaissance study[9] recommended improvements to Ocean Dock Road and the C Street Ramps intersection to accommodate anticipated freight growth and mitigate operational issues and safety concerns. *AMATS: Ocean Dock Road Reconnaissance Engineering Study*[10] evaluated additional improvements to mitigate rail crossing conflicts, improve maintenance operations, and improve non-motorized facilities between Whitney Road and Roger Graves Road.

3.2 Alternative 2: Ship Creek Avenue

The Ship Creek Avenue Alternative, shown in Figure 6, would extend the Ingra-Gambell couplet at grade northwestward from 3rd Avenue through the former ANMC parcel. The alignment would then transition to a viaduct over the bluff, the ARRC rail corridor, and Ship Creek Avenue before curving southwestward and tying into Ship Creek Avenue. Freight traffic would use the existing Ship Creek Avenue and Ocean Dock Road to access the POA. The proposed bridge structure would span the rail corridor while maintaining the vertical clearance required by ARRC.

Figure 6: Alternative 2: Ship Creek Avenue



Ship Creek Avenue would likely require improvements to accommodate the increased freight traffic associated with this alternative. Design would need to evaluate bridge profile and height,

[9] AMATS: C Street / Ocean Dock Road Access Ramps Reconnaissance Study, Project No CFHWY00159 / 001572 was completed in May 2018 and is available here: https://dot.alaska.gov/creg/oceandock/docs/May2018-Engineering-Study.pdf

[10] AMATS: Ocean Dock Road Reconnaissance Engineering Study, Project No CFHWY00554 / 0001655 was completed in 2022 and is available here: https://dot.alaska.gov/creg/oceandock/

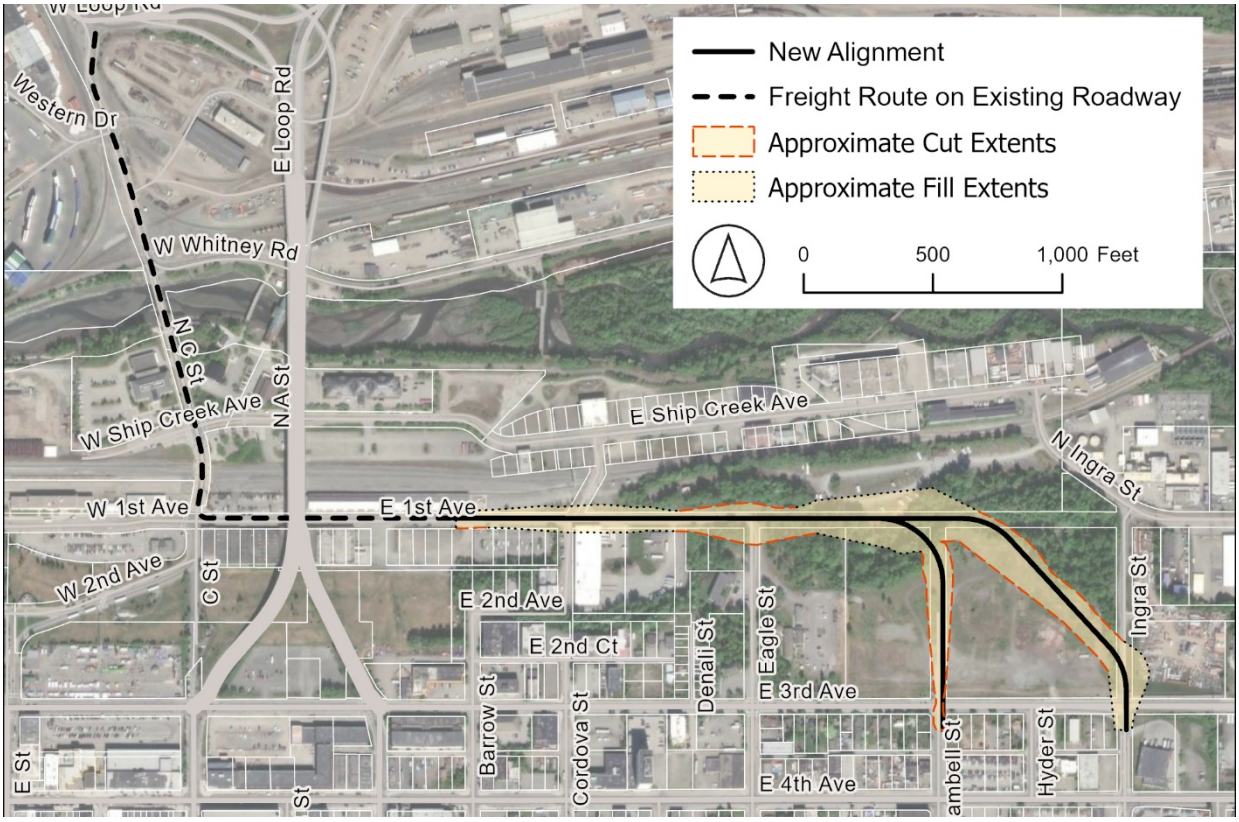
structural transitions, and roadway grade adjustments needed to maintain acceptable grades for large freight vehicles. Key constraints for this alternative include adjacent industrial land uses, limited ROW, and narrow existing roadway widths.

The alternative would require careful coordination of the bridge and roadway profiles to minimize grade changes while maintaining required clearances and accommodating the operational needs of freight traffic. These constraints, together with the limited available ROW, would be key considerations in advancing the alternative through subsequent design phases.

3.3 Alternative 3: 1st Avenue

The 1st Avenue Alternative, shown in Figure 7, would extend the Ingra-Gambell couplet corridor at grade northwestward from 3rd Avenue through the former ANMC parcel before connecting to 1st Avenue at the northern end of Eagle Street. Preliminary engineering identified several significant geometric and constructability challenges, including steep roadway profile grades; tight horizontal curves north of 32nd Avenue and at the North C Street intersection; multiple at-grade rail crossings; substantial fill requirements and potential slope instability on the northern side of the ANMC parcel west of Eagle Street; and limited ROW along 1st Avenue, including potential impacts to adjacent commercial properties.

Figure 7: Alternative 3: 1st Avenue



The conceptual design required the use of maximum allowable roadway grades and minimum horizontal curve radii, resulting in limited geometric flexibility, which may introduce concerns regarding operational safety and vehicle performance. These constraints would be particularly consequential for heavy freight vehicles and double-trailer combinations, which require greater

maneuvering space, and are more sensitive to steep grades and tight curves. Overall, the identified geometric and ROW constraints would present significant challenges to developing a safe and operationally effective freight route along 1st Avenue.

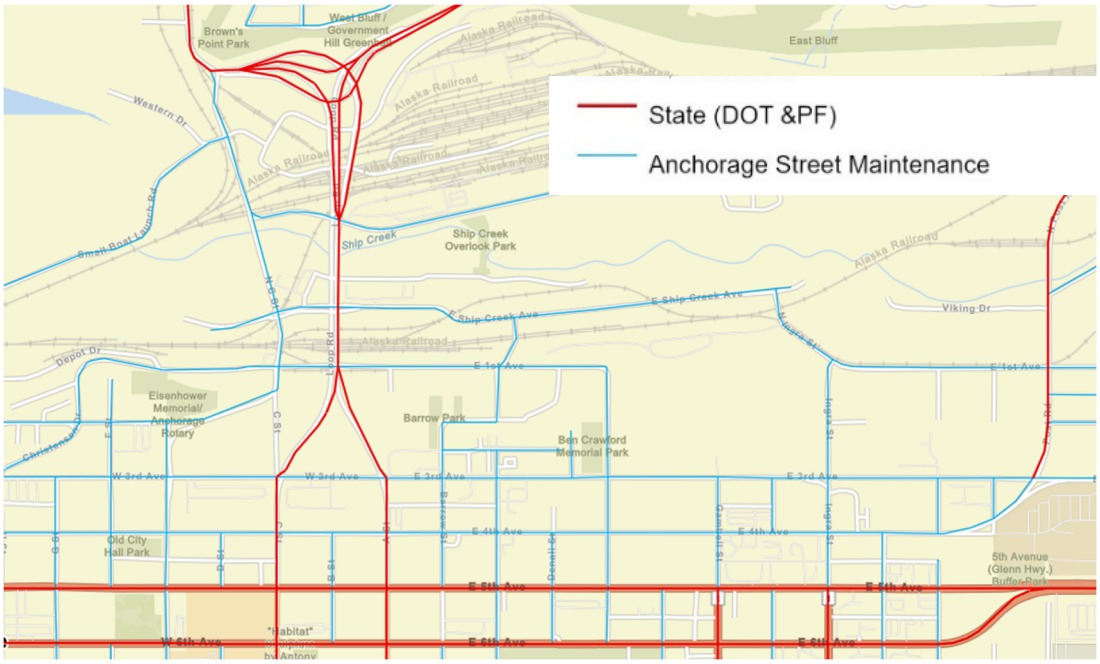
4. Design Elements

4.1 Preliminary Design Criteria

The design elements presented in this section are based on preliminary engineering alternatives developed to approximately the 15-percent design level and used the design criteria shown on Table 2. Design criteria and designations would need to be established with the project. The three Ingra-Gambell Couplet Extension alternatives are based on applicable DOT&PF design guidance. The design criteria are intended to provide a consistent basis for comparison as well as balance feasibility, operational performance, and regulatory compliance during this early-stage evaluation. As the project advances, the alternatives will require additional design development and refinement. Depending on the selected alternative, design exceptions could be sought, if needed where criteria are not met, to address geometric and ROW constraints, conflicts with existing infrastructure, or environmental considerations.

Figure 8 identifies roadway ownership and maintenance responsibilities within and adjacent to the project area. The alternatives evaluated in this study would be owned and maintained by DOT&PF. Accordingly, the governing Design Criteria are based primarily on the requirements of DOT&PF's *Highway Preconstruction Manual* (HPCM), unless otherwise noted. HPCM Figure 1100-3(b), *Highway Design Criteria Summary*, references the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*, commonly referred to as the *Green Book (GB)*, for numerous geometric and roadway design elements.

Figure 8: Roadway Ownership and Maintenance Responsibility



The project area is located within the AMATS boundary; therefore, Design Classification and improvements required per the MOA DCM should be considered for inclusion in the final design project. Any future design would also be subject to MOA's Context Sensitive Design Solutions review process, conducted by MOA's Planning and Zoning Commission. The project area is classified as an urban street under Anchorage Municipal Code 21.85.020D.

Table 2: Design Criteria Applied to Preliminary Alternatives

Design Particulars	Source	Standard	Proposed
Classification		Urban Collector Street	
Design Speed	2018 GB	30 mph	
Posted Speed	2018 GB	30 mph	
Terrain	N/A	Rolling	
Number of Lanes	2018 GB	2 lanes	
Lane Width	2018 GB	11–12 ft	11 ft
Shoulder Width	2018 GB	2–12 ft	5 ft
Curb	2018 GB	Required	Required
Buffer	HPCM	10 ft between edge of traveled way and edge of pathway	7 ft
Pedestrian Facilities	HPCM	8-ft shared use	Northbound side: 8-ft width Back of curb
Parking	2018 GB	8-ft one or both sides	Prohibited
Bicycle Facilities	HPCM Chapter 12	8-ft shared use	8-ft shared use on northbound side
Grades	2018 GB	9% maximum	4.0% maximum
Cross-Slope	HPCM Section 1130	2%	
Vertical Curvature (min) K (crest)	HPCM Section 1120	19	

Design Particulars	Source	Standard	Proposed
Vertical Curvature (min) K (sag)	HPCM Section 1120	37	
Stopping Sight Distance, min	HPCM Section 1120	200 ft	
Horizontal Curve Radius, min	2018 GB	371 ft	
Superelevation Rate, e, max	2018 GB	4–6%	4%
Vertical Clearance	2018 GB HPCM Section 1130	Overpass Port: 18.5 ft Overpass Railroad: 24.0 ft	

Notes: ft = foot/feet; max = maximum; mph = mile(s) per hour; min = minimum; N/A = not applicable

Design flexibility and operational performance were evaluated by comparing minimum and desirable design criteria and assessing a 30-mile-per-hour (mph) design speed relative to the anticipated functional classification of the roadway as an urban collector in rolling terrain. Classification is anticipated based on 1st St. as a minor urban collector, Whitney as a major urban collector, N. C St. as a minor urban collector, and ship Creek as a minor urban collector according to DOT&PF's Drakewell[11] traffic data website. These criteria provide a preliminary basis for evaluating the alternatives at the current stage of design. Future traffic and safety analyses, including a speed study, may be necessary to validate the design speed and related assumptions based on anticipated operating conditions.

Localized geometric constraints, including horizontal curves with radii below the applicable minimum criteria, may require reduced design speeds and/or design exceptions. The proposed roadway cross section is also a significant constraint. Although the preliminary typical section generally meets minimum roadway width requirements, certain pedestrian and bicycle facilities, including sidewalk and buffer widths, may require design exceptions. If the applicable exceptions cannot be granted, additional ROW may be required to accommodate the desired cross section.

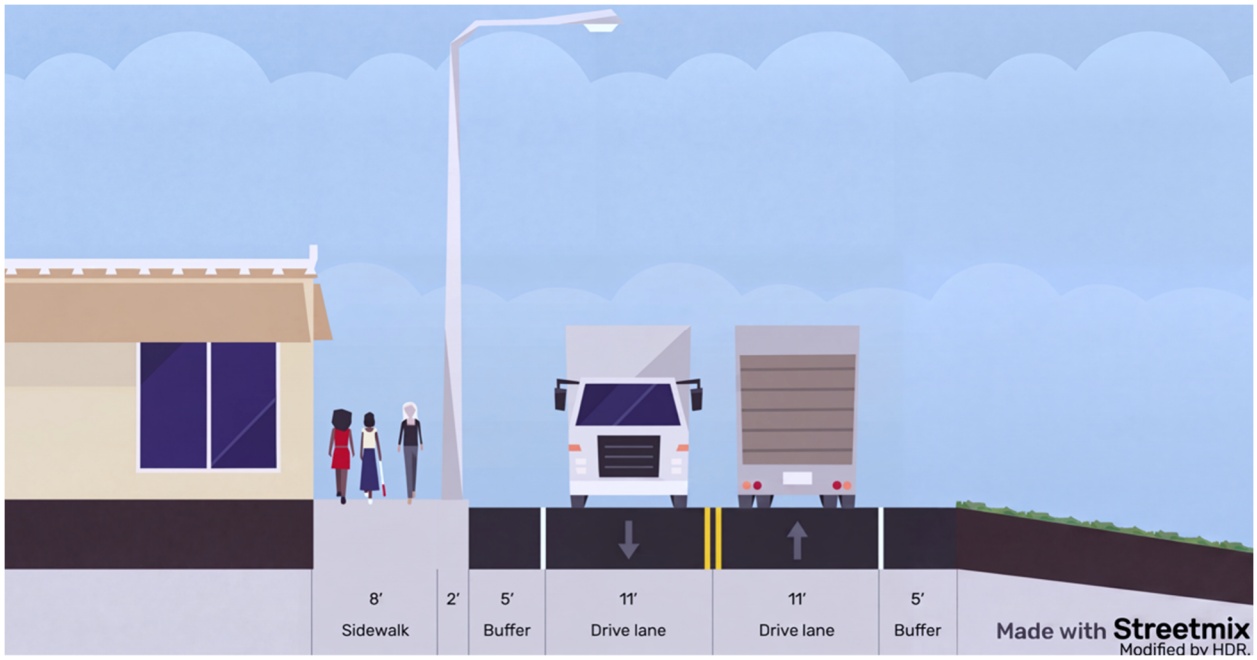
To improve safety and operational reliability for freight traffic, particularly dual trailers, the maximum roadway centerline profile grade used for preliminary design was reduced from the standard 6 percent to 4 percent. This reduced grade provides additional consideration for the acceleration, braking, and overall operating characteristics of heavy freight vehicles and establishes a more conservative basis for evaluating the alternatives.

4.2 Typical Section

The proposed typical section, shown in Figure 9, is based on minimum applicable design criteria to minimize the overall project footprint and ROW impacts. This approach is particularly important in developed urban areas where ROW acquisition could be costly or disruptive. Additional travel lanes would substantially increase the roadway width and associated ROW requirements, potentially resulting in greater impacts on existing land uses and displacement of existing users.

[11] Available here: https://alaskatrafficdata.drakewell.com/publicmultinodemap.asp

Figure 9: Typical Section



The preliminary typical section includes two travel lanes, shoulders, curb and gutter, a sidewalk on one side, and roadway lighting. The section is intended to provide a functional balance between multimodal needs, freight operations, and a compact roadway footprint.

While the cross section meets minimum criteria, further evaluation is recommended to determine whether more desirable elements such as a median along curves with tighter radii, wider shoulders, or an enhanced pedestrian buffer are feasible. These enhancements could provide long-term operational and safety benefits, especially for freight movements and non-motorized users.

Continued coordination with stakeholders and further design development will be necessary during the preliminary design and environmental document phase to refine the typical section and determine whether additional features are justified or feasible within the project's constraints.

4.3 Railroad Track Crossings

Both the Ship Creek Avenue and Whitney Road Alternatives require construction of new viaducts to span existing ARRC tracks, various roadways, the Ship Creek Trail, and Ship Creek. These structures must meet established vertical clearance requirements to ensure safe and compliant rail operations. Preliminary design reviews indicate sufficient clearance can be achieved without major complications, making these options technically feasible from a structural and regulatory standpoint.

In addition to the proposed viaducts, all alternatives may require updates to the existing railroad crossings along Ocean Dock Road to meet current safety and operational standards. The *Ocean Dock Road Reconnaissance Study* (AMATS 2022)[7] proposes to relocate the railroad track entering the POA, reducing conflicts and improving sight lines; however, a design project

has yet to be included in the Metropolitan Transportation Plan (MTP) and TIP. A Railroad Crossing Checklist will need to be performed as part of the project to make this determination. Although the couplet extension project would not include Ocean Dock Road, modernization of these crossings is recommended under a separate effort to reduce rail and freight impacts from increased truck traffic. Required upgrades proposed by the *Ocean Dock Road Reconnaissance Study* (AMATS 2022) include safety improvements, shoulder widening, non-motorized facilities, railroad crossing signalization, and railroad realignments. New or modified crossings will require the preparation of a Diagnostic Team Study.

4.4 Utility Conflicts Analysis

Shared Utility Considerations (All Alternatives): Ingra and Gambell Streets, adjacent roadways, the POA, ARRC facilities, and Ship Creek area roads are likely to have ENSTAR gas service and transmission lines, water and sewer service and mainlines, fiber optic, and overhead/underground electric lines. Survey locates will be required for design, coordination for utility relocation agreements will be needed, and coordination during construction for all alternatives proposed in this study should be anticipated.

A parcel north of 3rd Avenue, between Ingra and Gambell Streets, contains private storm drain infrastructure, as identified on the municipal stormwater asset map[12]. The condition and function of these facilities are unknown, but they may be remnants from when the ANMC occupied the site.

Alternative 1: Whitney Road: The proposed alignment includes a bridge that would potentially impact several overhead utilities, particularly near the southern approach to the viaduct. At the northern tie-in to Whitney Road, overhead power lines run near the roadway and may require relocation to accommodate the expanded cross section. Underground utilities along this corridor appear to be limited, and no major obstacles are anticipated. Available stormwater asset mapping indicates a limited number of catch basins and culverts within the project area that would require replacement or modification. These improvements are not anticipated to present significant constructability constraints.

Alternative 2: Ship Creek Avenue: The proposed viaduct would require relocation of multiple overhead utility lines. While the elevated structure avoids most underground utility corridors, Ship Creek Avenue itself includes buried infrastructure where the road returns to existing grade. These utilities may be affected during construction but are unlikely to impose major constraints, especially within areas where only surface-level modifications are needed.

Alternative 3: 1st Avenue: The 1st Avenue alignment has a greater concentration of existing utilities than the other alternatives. Both overhead and underground utilities along Eagle Street would be directly affected by the proposed grading, which includes substantial cut-and-fill sections, requiring significant utility relocations. Although 1st Avenue lacks overhead utilities, a municipal storm drain parallels the road. Because the profile along this segment closely follows

[12] Anchorage Road and Drainage Service Area stormwater Asset Dashboard: https://anchorage-street-maintenance-muniorg.hub.arcgis.com/pages/ardsa

existing grade, impacts are expected to be moderate, though adjustments may be required to accommodate widening the roadway section.

4.5 Access Control

Certain alignment options present challenges related to access control and intersection geometry. In several locations, proposed connections to existing roads occur along horizontal curves or steep profile grades. Such geometry may result in limited sight distance; challenging turning movements; and increased crash risk for long combination vehicles, which require larger turning radii and longer stopping distances.

To ensure safe and efficient operations, these challenges should be addressed through careful design; strategic intersection placement; and, where appropriate, mitigations such as signage, signal control, or geometric modifications. Ongoing coordination with municipal agencies and freight stakeholders will be essential to define acceptable access strategies along the selected alignment.

During final design, driveways may be relocated or consolidated to enable access to the proposed roadway centerline profile. The design should coordinate with ARRC to determine what trespass prevention measures should be included where new pedestrian facilities are being proposed adjacent to or crossing ARRC facilities.

4.6 Project Development Schedule

The following project development timeline reflects phasing for design, environmental review, ROW acquisition, utility coordination, and construction; it is intended to guide planning and stakeholder coordination. AMATS Metropolitan Planning Organization prepares and manages the TIP in partnership with city and state agencies and would be responsible for incorporating the recommended alternative into the AMATS MTP and TIP:

- Environmental Document[13] and Preliminary Design: Years 1–2
- Final Design: Years 3–4
- ROW Appraisals and Acquisitions: Years 3–4
- Utility Agreements: Years 3–4
- Certification: Year 4
- Bid, Award, and Construction: Years 5–6

4.7 Constructability

Constructability varies significantly among the three alignment alternatives and is influenced primarily by existing topography, adjacent development, inclusion of a proposed viaduct, and the extent of modifications required to existing roadways and tie-in routes serving the POA.

[13] An environmental assessment with a 2-year timeline is anticipated due to the project's proposed new roadway alignment.

The Ship Creek Avenue and Whitney Road alternatives generally present more favorable constructability conditions. Both alternatives provide opportunities to maintain traffic on existing roadways during construction, thereby reducing potential disruptions to POA operations and adjacent industrial uses. The viaduct components could also be constructed and staged independent of at-grade roadway improvements, providing flexibility in construction sequencing. The Whitney Road Alternative would require additional construction coordination and staging associated with the proposed structure over Ship Creek and the Ship Creek Trail.

The 1st Avenue Alternative presents greater constructability challenges due to the extent of roadway reconstruction, grading, and utility relocations required along Eagle Street and 1st Avenue. The constrained ROW and urban context may require full closures or long-term detours during construction, creating substantial impacts on traffic circulation and local businesses. These constraints could increase construction duration, staging complexity, traffic impacts, and disruption to local businesses and surrounding development.

4.8 Work Zone Traffic Control

Effective work zone traffic control will be essential to minimizing disruptions and maintaining safe operations for all users during construction. All proposed alternatives would affect multiple travel modes, including freight, passenger vehicles, transit, bicycles, and pedestrians. Special attention must be given to staging, detour planning, and coordination with affected agencies and stakeholders.

Key stakeholders include the Alaska Trucking Association, ARRC, MOA Planning Department, MOA Transportation Department, MOA Public Transportation Department, Heritage Land Bank, AMATS, and POA. Continued coordination will be necessary to ensure that construction schedules align with freight delivery windows, rail operations, and local traffic demands.

Although many segments of the proposed alignments could be constructed with limited disruption to existing routes, temporary closures and detours may be required within areas involving bridge construction and full-depth roadway reconstruction. Alternate routes are available for all alternatives; however, freight detours could increase travel times and affect POA operations. These impacts should be managed through phased construction; comprehensive Traffic Management and Public Information Plans; and mitigation measures tailored to freight, transit, pedestrian, and bicycle movements.

Pedestrian and bicycle safety would require specific attention during construction, particularly where sidewalk closures, temporary facilities, or shared travel lanes are necessary. Transit service could also be affected by temporary roadway or transit-stop closures; it should be coordinated with affected agencies and service providers during project development and construction planning.

4.9 Cost Estimates

Cost estimates for each alternative, as shown in Table 3, are preliminary and only intended for comparison of the alternatives and project programming in local funding plans. These estimates are based on assumptions developed at the 15-percent design level and do not yet incorporate detailed survey data, utility verification, or geotechnical analysis.

Table 3: 15-Percent Design Level Preliminary Engineering Estimate

15% Level Planning Estimate		Alternative 1: Whitney Road Total Cost	Alternative 2: Ship Creek Avenue Total Cost	Alternative 3: 1st Avenue Total Cost
Item Description	**Assumed Percent**			
HMA 1	—	$235,000	$309,000	$342,000
HMA 2	—	$352,000	$463,000	$513,000
Base	—	$336,000	$441,000	$489,000
Sub-base	—	$—	$6,651,000	$6,930,000
Excavation	—	$4,867,000	$6,106,000	$6,890,000
Sidewalk	—	$82,000	$107,000	$119,000
Curb	—	$104,000	$136,000	$151,000
Sign/Striping	—	$84,000	$111,000	$123,000
Lighting	—	$384,000	$504,000	$559,000
Bridge	—	$13,973,000	$10,868,000	$—
Subtotal	**—**	**$20,417,000**	**$25,696,000**	**$16,116,000**
Landscaping	1	$205,000	$257,000	$162,000
Drainage	5	$1,021,000	$1,285,000	$806,000
Erosion	3	$613,000	$771,000	$484,000
Survey	3	$613,000	$771,000	$484,000
Traffic Control	7	$1,430,000	$1,799,000	$1,129,000
As-Builts	3	$613,000	$771,000	$484,000
Mobilization	10	$2,042,000	$2,570,000	$1,612,000
Contingency	15	$3,063,000	$3,855,000	$2,418,000
Construction	**—**	**$30,017,000**	**$37,775,000**	**$23,695,000**
Construction Administration	10	$3,002,000	$3,778,000	$2,370,000
Environmental	5	$1,501,000	$1,889,000	$1,185,000
Design	10	$3,002,000	$3,778,000	$2,370,000
Project Subtotal	**—**	**$37,522,000**	**$47,220,000**	**$29,620,000**
Utilities	4	$1,501,000	$1,889,000	$1,185,000
ROW	—	$5,200,000	$4,945,000	$3,631,000
ICAP	5.37	$2,015,000	$2,536,000	$1,591,000
Preliminary Engineering Estimate		**$46,238,000**	**$56,590,000**	**$36,027,000**

Notes: HMA = Hot Mix Asphalt; ICAP = Indirect Cost Rate Proposal

ROW costs are estimated and are not based on official appraisal data, actual ROW acquisition, possible relocations, and limited availability of comparable properties could result in higher ROW costs than estimated. Due to the conceptual nature of the alignments, additional study is needed to determine property impacts, potential ROW acquisitions, and related compensation requirements. These factors could significantly influence the overall project cost as the design advances.

Future updates to the selected alternative's estimate should reflect refined engineering, environmental review findings, ROW needs, utility impacts, and stakeholder coordination. Final costs may also be influenced by inflation, material pricing, labor availability, and efficiencies from construction phasing.

4.10 Freight Considerations

Freight connectivity is a key consideration in evaluating the Ingra-Gambell Couplet Extension alternatives. According to traffic data[14], the Ocean Dock Road traffic recorder indicates that heavy trucks comprise approximately 43.5 percent of the daily traffic volume, corresponding to an average of approximately 890 heavy trucks per day using Ocean Dock Road to access the POA. The Seward Highway and 20th Avenue permanent traffic recorder indicates that trucks comprise approximately 6% of the approximately 46,000 daily vehicles, representing an estimated 2,800 truck trips per day on the Ingra-Gambell couplet. This traffic volume provides an indication of the freight demand that could be served by the proposed couplet extension.

Each alternative presents different opportunities and constraints for accommodating heavy vehicles, minimizing travel delays, and improving safety and connectivity near the POA. To inform the evaluation, preliminary alternatives for the Ingra-Gambell Couplet Extension and S-G Connection PEL Study were presented to the AMATS Freight Advisory Committee and Alaska Trucking Association. A separate workshop was also conducted with representatives from several trucking companies to obtain industry input regarding the feasibility of the alternatives, potential advantages and disadvantages of the alternatives, and the likelihood that the proposed improvements would influence existing freight travel patterns.

4.10.1 Alternative 1: Whitney Road

The Whitney Road Alternative was identified as the preferred alternative by freight stakeholders during the Freight Workshop. The alignment would bypass the existing, narrow North C Street bridge over Ship Creek and provide a more direct connection to the POA. Its proximity to key freight destinations, limited number of at-grade rail crossings between the couplet extension and the POA, and proposed grade separation over existing rail crossings provide operational advantages as well as the potential to reduce freight delay and rail-related conflicts.

Whitney Road is currently a constrained, narrow corridor that would require substantial improvements to safely accommodate increased heavy truck traffic. A grade-separated crossing near the POA could further improve freight travel time reliability by eliminating conflicts with multiple at-grade rail crossings. This may be particularly beneficial for hazardous materials (hazmat) carriers, for whom track spacing and required stopping distance requirements can create operational constraints at existing crossings. Additional analysis and coordination with applicable regulatory agencies may be required to confirm specific hazmat-related requirements.

This alternative would increase DOT&PF maintenance costs due to bridge inspection and additional lane miles. This alternative would also affect the Ship Creek flood zone and will require coordination with and permitting from the U.S. Army Corps of Engineers (USACE).

This was the second-most expensive alternative; it would provide similar benefits and challenges to those of the Ship Creek Alternative but at a lower cost.

[14] Data obtained from https://alaskatrafficdata.drakewell.com/publicmultinodemap.asp

4.10.2 Alternative 2: Ship Creek Avenue

The Ship Creek Avenue Alternative offers similar benefits to the Whitney Road Alternative in terms of reducing at-grade rail conflicts; however, it has the highest estimated cost of all three alternatives evaluated. This alternative's proposed alignment has a more favorable grade, and access to adjacent industrial properties is generally manageable, although some areas provide limited maneuvering space for larger trucks.

Freight operations along Ocean Dock Road and near the existing bridge remain potential constraints, particularly during periods of high freight demand. Without additional improvements to address these bottlenecks, congestion and limited operational flexibility could affect the long-term reliability of this alternative.

This alternative would increase DOT&PF maintenance costs due to bridge inspection and additional lane miles. This alternative would also affect the Ship Creek flood zone and will require coordination with and permitting from the USACE.

4.10.3 Alternative 3: 1st Avenue

The 1st Avenue Alternative has freight-related and geometric constraints. The 15-percent design level plans assumed a maximum longitudinal grade of 4 percent. Given the existing topography adjacent to the proposed alignment, maintaining this grade would require substantial cut and fill, resulting in potential ROW acquisition along much of the proposed route. The anticipated cut-and-fill limits are illustrated in the plan and profile drawings provided in Appendix A.

The proposed turning movements at Ingra Street and 3rd Avenue may be difficult to accommodate because of limited existing ROW, potential conflicts with the existing sidewalk on the eastern side of 3rd Avenue, and substantial grade changes east and north of the proposed Ingra Street extension beyond 1st Avenue. Additionally, this alternative does not provide grade separation at the existing rail crossings, which could increase the potential for freight delays and conflicts with rail operations.

The 1st Avenue Alternative does not require bridge construction, thereby avoiding the long-term maintenance costs typically associated with bridge infrastructure. The alignment also avoids impacts to the Ship Creek floodplain and may require a lower level of consultation with the USACE than Alternatives 1 and 2.

While this was the least expensive alternative, it is also considered the least favorable for freight movement.

4.10.4 Double Tractor-Trailers at Railroad Crossings

A recurring operational issue for all surface-based routes involves the frequency and spacing of rail crossings on Ocean Dock Road and North C Street. Freight regulations require vehicles, especially those carrying hazardous materials or using double trailers, to stop at each crossing. When crossings are closely spaced, this can result in trucks partially straddling tracks while stopped, creating serious safety hazards and compounding delays. Grade separation or signal

coordination improvements will be essential to resolve these bottlenecks and ensure uninterrupted, compliant access for freight vehicles.

5. Evaluation of Alternatives

Alternatives were evaluated using a consistent framework designed to assess their overall feasibility, impacts (ROW, environmental, and utilities), operational performance, and compatibility with regional and local goals for freight mobility, safety, and multimodal connectivity. The evaluation process drew from engineering analysis, stakeholder input, and planning-level assumptions developed during the 15-percent design phase.

Evaluation criteria included:

- Geometric design feasibility
- Traffic operations
- ROW requirements and adjacent property impacts
- Railroad crossing conflicts and overhead clearance
- Freight movement efficiency, including accommodation of double-trailer and hazmat vehicles
- Multimodal access, including pedestrian, bicycle, and transit considerations
- Constructability and potential for phasing
- Integration with the S-G Connection PEL Study recommendations
- Total project cost

The options were not scored or ranked numerically but were instead evaluated qualitatively to understand their strengths, weaknesses, and trade-offs. Emphasis was placed on long-term freight reliability and operational resilience as well as the ability to maintain safe and efficient movement through a constrained urban-industrial context.

All three options present opportunities and challenges. While some alignments offer more direct POA access and fewer ARRC conflicts, others face physical constraints such as steep grades or limited ROW availability.

Road network performance could be improved by providing a dedicated and efficient access point to the Ship Creek industrial area. Dedicated access would reduce freight traffic on local roadways, improve freight circulation, and enhance overall network operations within the surrounding area. The selected alternative should be evaluated through a detailed traffic and safety analysis to quantify its potential impacts and benefits, including anticipated changes in traffic patterns and the expected diversion of freight traffic to the proposed access route.

The following subsections summarize the comparative performance of each alternative and its relative ability to meet project and stakeholder goal expectations.

5.1 Alternative 1: Whitney Road

The Whitney Road Alternative is the most favorable alternative based on technical performance, operational flexibility, and long-term freight reliability. It provides a direct, grade-separated

connection to Whitney Road, eliminating the most railroad conflicts and strongly aligning with regional freight goals. This alternative also provides opportunities to improve multimodal connectivity to existing sidewalks, pathways, and trails, which aligns with goals identified in the S-G Connection PEL Study.

Design Feasibility: The alignment accommodates acceptable horizontal curve radii and roadway centerline profiles for long combination vehicles. Widening to a four-lane section would require ROW acquisition or retaining structures to stay within existing ROW. Additional design considerations are:

- The alignments northern terminus is located within a regulatory floodway with a 0.2-percent to 1.0-percent annual exceedance probability.
- Ship Creek is a designated Water of the United States (WOTUS) and will require consultation with the USACE to determine permitting requirements such as a Section 404 Permit or a Nationwide Permit (NWP).
- Changes may occur to the viewshed from adjacent properties due to the proposed bridge structure, which would span over buildings and Ship Creek.

Traffic Operations: This alternative would affect five existing intersections, reduce the number of rail crossings, and provide freight with a more direct tie-in to Whitney Road.

ROW Requirements and Property Impacts: This alternative impacts eight parcels. Preliminary design identified the need for four full and four partial acquisitions. The design includes flexibility to adjust the alignment to avoid certain properties if acquisition costs or impacts are too high or avoid active contaminated sites. According to the Alaska Department of Environmental Conservation's (ADEC's) Contaminated Sites database[15], as of September 2026, the current active site is:

- 4084: Active Chlorinated Solvents. The plume extends from Gambell Street and 4th Avenue, along the bluff adjacent to Ingra Street, and Ship Creek Avenue to just west of its intersection with North Cordova Street.

Railroad Conflicts and Clearance Feasibility: This alternative reduces at-grade rail crossings from eight to four, significantly improving safety and reducing delays. ARRC vertical clearance requirements can be met without substantial design complications.

Freight Movement Efficiency: The Whitney Road Alternative is the most reliable for heavy freight, including double trailers and hazmat vehicles. It avoids closely spaced at-grade rail crossings, which can force longer vehicles to stop across tracks, creating regulatory and safety challenges. Stakeholders at the Freight Workshop with the Alaska Trucking Association identified this route as the preferred alternative when compared to the other two alternatives under consideration; however, other routes were identified as preferred but were outside the scope of this study.

[15] Available at https://dec.alaska.gov/applications/spar/publicmvc/csp/search

Multimodal Access and Safety: This option can accommodate separate pedestrian and bicycle facilities. A separated, shared-use pathway could be included without compromising freight operations by needing narrow lanes or shoulders, supporting long-term multimodal goals.

Constructability and Phasing: This alternative is constructible. The overpass and roadway segments could be built in phases while not impacting traffic on existing roadways and maintaining access to the POA and surrounding industrial areas. Identification of construction staging locations would be the responsibility of the awarded contractor; however, large and vacant lots within the vicinity could be used. Additionally, there are contractors that currently own large parcels within the vicinity.

Integration with S-G Connection PEL Study Recommendations: The S-G Connection PEL Study recommends a phased transformation of the Ingra/Gambell couplet corridor through a series of lane reduction projects. In the near term, one travel lane would be removed in each direction on both streets, posted speeds would be reduced to 30-mph, and traffic-calming measures could be implemented. The PEL study also recommends establishing a new transit route connecting Downtown, Fairview, and the University-Medical (or U-MED) District along this corridor.

Following construction of the Fairview Bypass, the corridor would undergo a more substantial reconfiguration. Ingra Street would be converted to a two-way roadway with one lane in each direction and a center turn lane, while Gambell Street would become a 20-mph two-way main street with one lane in each direction. The PEL study also recommends upgrading transit service within the corridor to a rapid transit system, which would likely operate on Ingra Street.

Collectively, these improvements are intended to enhance multimodal travel and neighborhood connectivity; however, they would also make Ingra and Gambell Streets less attractive routes for freight traffic traveling to and from the POA south of Downtown.

Under this option, eastbound and westbound traffic accessing the corridor would rely on 5th Avenue. However, Project 9 of the PEL study recommends reducing the number of travel lanes on 5th Avenue and converting it to a complete street. The project would also lower posted speeds along the segment adjacent to Merrill Field. As a result, 5th Avenue would also become a less desirable route for freight traffic.

Integration with Possible Future Developments: The KAC project includes variants that propose extensions of both Ingra and Gambell Streets toward the POA. The KAC project's proposed bridge is much longer than that proposed by the Whitney Road Alternative. The KAC project proposes extensions to the bluff that borders the southern side of Government Hill. If Alternative 1 advances, coordination with the KAC project concepts may be required to evaluate consistency between the proposed alternatives, bridge limits, and potential future improvements.

The proposed Gambell Street extension under Alternative 1 would directly conflict with the planned Denali View RV Resort's proposed pickleball courts, several RV sites, and other planned improvements. Depending on the resort's anticipated design life as well as timing of any future Ingra and Gambell Street extensions to the POA, coordination between the projects may be necessary to minimize impacts to the resort and avoid conflicts with planned facilities.

The *Ship Creek Framework Plan*[16] proposes extending Ingra and Gambell Streets on a bridge to East Loop Road along the southern Government Hill bluff. This bridge would span farther than is proposed by this Alternative 1. If Alternative 1 advances, coordination with this adopted MOA plan may be required.

Overall: The Whitney Road Alternative offers the best balance of design feasibility, operational performance, and long-term benefit. It addresses critical freight mobility issues, reduces risk by reducing rail and freight conflicts at crossings, and supports multimodal integration. It is recommended for advancement into the preliminary design and environmental analysis (National Environmental Policy Act) phase.

5.2 Alternative 2: Ship Creek Avenue

The Ship Creek Avenue Alternative presents a viable option that resolves some key freight mobility issues and offers grade separation over ARRC rail lines. While not as favorable as the Whitney Road Alternative, it remains a functional alignment with fewer geometric challenges than the 1st Avenue Alternative.

Design Feasibility: This alignment generally meets design standards, with manageable grades and turning geometry. However, the narrow ROW width along Ship Creek Avenue as well as the proximity of existing structures and access points limit the ability to expand or add separated multimodal facilities without acquiring ROW. Additional design considerations are:

- The alignments northern terminus is located within a regulatory floodway with a 0.2-percent to 1.0-percent annual exceedance probability.
- Ship Creek is a designated WOTUS and will require consultation with the USACE to determine permitting requirements, such as a Section 404 Permit or a NWP.
- Changes may occur to the viewshed from adjacent properties due to the proposed bridge structure, which would span over buildings and Ship Creek.

Traffic Operations: The connection improves access to the POA but retains some circulation constraints at Ocean Dock Road and nearby intersections as described in the AMATS: Ocean Dock Road Reconnaissance Study[17]. Localized congestion may persist during peak freight periods. This alternative would affect six existing intersections, reduce the number of at-grade rail crossings, and provide freight with a more direct tie-in to Ship Creek Avenue.

ROW Requirements and Property Impacts: Property impacts are moderate and concentrated along Ship Creek Avenue, where commercial and industrial uses are present. Acquisitions may be required, particularly near the bridge tie-in and areas where the new roadway transitions to existing grade. Preliminary design identified the need for eight full and four partial acquisitions. If advanced, the design may need to be adjusted to avoid an active contaminated site. According

[16] Available at: https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/ShipCreekFrameworkPlan.aspx
[17] Available at: https://dot.alaska.gov/creg/oceandock/docs/ODR-Full-Report.pdf

to ADEC's Contaminated Sites database[18], as of September 2026, the following active contaminated sites in the project area are:

- 4084 Active: Chlorinated Solvents. The plume extends from Gambell Street and 4th Avenue, along the bluff adjacent to Ingra Street, and Ship Creek Avenue to just west of its intersection with North Cordova Street.
- 4626 Active: Chlorinated Solvents. The plume extends from North Cordova Street and 1st Avenue to North C Street just south of Ship Creek.

Railroad Conflicts and Clearance Feasibility: The proposed bridge eliminates two at-grade rail crossings, significantly improving safety and reducing delays. Vertical clearance requirements can be met without substantial design complications.

Freight Movement Efficiency: The alignment supports freight operations by reducing rail crossing delays and offering a direct route into the POA. However, freight vehicles over-tracking/turning radius should be considered during design when considering placement of sidewalks, pathways, or other facilities in the alignment ROW within the industrial zone.

Multimodal Access and Safety: There is potential to include sidewalks and bicycle facilities, but ROW limitations and tight corridors may require selection of the narrower options within the design criteria range, acquisition of ROW, or retaining structures. Multimodal elements may be narrower or require phased implementation.

Constructability and Phasing: This alternative is constructible. The overpass and roadway segments could be built in phases while minimally affecting traffic on existing roadways and maintaining access to the POA and surrounding industrial areas. Identification of construction staging locations would be the responsibility of the awarded contractor; however, large and vacant lots are within the vicinity that could be used. Additionally, there are contractors that currently own large parcels within the vicinity.

Integration with S-G Connection PEL Study Recommendations: This option would face similar challenges as the Whitney Road Alternative in integrating with the recommendations of the S-G Connection PEL Study.

Integration with Possible Future Developments: Alternative 2's conflicts are similar to Alternative 1. If Alternative 2 advances, coordination with the KAC project concepts may be required to evaluate consistency between the proposed alignments, bridge limits, and potential future improvements.

The proposed Gambell Street extension under Alternative 2 would directly conflict with the planned Denali View RV Resort planned development. Depending on the anticipated design life of the resort and the timing of any future Ingra and Gambell Street extensions to the POA, coordination between the projects may be necessary to minimize impacts on the resort and avoid conflicts with planned facilities.

[18] Available at https://dec.alaska.gov/applications/spar/publicmvc/csp/search

The *Ship Creek Framework Plan*[19] proposes extending Ingra and Gambell Street on a bridge to East Loop Road along the southern Government Hill bluff. The bridge would span farther than is proposed by this alternative. If Alternative 2 advances, coordination with this adopted MOA plan may be required.

Overall: The Ship Creek Avenue Alternative is a technically viable alternative that addresses key freight and safety challenges through grade separation. This alternative is the most expensive of the three alternatives under consideration and has more geometric and ROW constraints than the Whitney Road Alternative; however, it remains a feasible secondary option and should be retained for continued evaluation.

5.3 Alternative 3: 1st Avenue

While the 1st Avenue Alternative provides a connection between the Ingra-Gambell couplet and the POA without the need for an expensive viaduct, it introduces substantial limitations that affect its viability, especially for freight operations.

Design Feasibility: The 15-percent design alternative was developed using a maximum longitudinal grade of 4% and tried to balance cut and fill quantities along the horizontal alignment. The resulting earthwork limits extend beyond the existing right-of-way (ROW), with most of the impact occurring within currently undeveloped areas. The extent of these impacts could potentially be reduced through the incorporation of retaining structures; however, additional evaluation would be required to assess their feasibility, structural requirements, and associated costs.

The slope/bluff located north of 3rd Avenue would require geotechnical investigation to characterize existing conditions and evaluate slope stability. The results would inform the feasibility of the proposed alignment and the need for potential stabilization measures.

This alternative also presents the same potential challenges at the intersection of 3rd Avenue and the proposed extension of Ingra Avenue to the north as the other two alternatives.

Traffic Operations: This alternative would impact five existing intersections and does not reduce conflict or delay at existing at-grade rail crossings.

ROW Requirements and Property Impacts: Proposed roadway embankment slopes within the commercial setting along 1st Avenue result in ROW impacts. Preliminary design identified the need for 4 full and 12 partial acquisitions. Significant cut and fill would likely affect multiple adjacent properties with limited room for alignment shifts or mitigation. Retaining walls could be used to maintain the proposed footprint within the existing ROW. The cost of maintaining and constructing retaining walls versus ROW acquisition should be further evaluated if this alternative is advanced to design. The design may need to be adjusted to avoid active

[19] Available at: https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/ShipCreekFrameworkPlan.aspx

contaminated sites. According to ADEC's Contaminated Sites database[20], as of September 2026, current active sites include:

- 4084 Active: Chlorinated Solvents. The plume extends from Gambell Street and 4th Avenue, along the bluff adjacent to Ingra Street, and Ship Creek Avenue to just west of the intersection with North Cordova Street.
- 4626 Active: Chlorinated Solvents. The plume extends from North Cordova Street and 1st Avenue to North C Street just south of Ship Creek.

Railroad Conflicts and Clearance Feasibility: This alternative would not provide a reduction in the number of at-grade rail crossings compared with Alternatives 1 and 2. Freight traffic would continue to encounter multiple stop-and-go conditions, increasing the potential for train-vehicle conflicts and operational delays.

Freight Movement Efficiency: This alternative is less suited for freight than the other alternatives. Tight turning geometry, less flexibility to reduce grades, and no reduction in the number of at-grade rail crossings result in little to no improvement in double-trailers' and hazmat trucks' ability to navigate the corridor safely and efficiently.

Multimodal Access and Safety: Limited ROW and steep embankment slopes leave little room for dedicated pedestrian or bicycle infrastructure. Opportunities for multimodal improvements are minimal, increasing the risk of conflicts with freight vehicles.

Constructability and Phasing: This alternative would be constructed on new and existing alignments. As with the other alternatives, construction would be expected to impact existing utilities and the existing storm drainage system, potentially requiring utility relocations and/or adjustments.

Existing traffic volumes on 1st Avenue are relatively low. Full roadway closures and temporary detours may be required during construction, depending on the extent and duration of work within the existing roadway. However, the relatively low traffic demand on 1st Avenue may reduce the operational impacts associated with temporary closures or detours. According to Drakewell[21], the 2025 average annual daily traffic (AADT) on 1st Avenue was approximately 960 vehicles per day.

Integration with S-G Connection PEL Study Recommendations: This option would face similar challenges as the Whitney Road and Ship Creek Alternatives in integrating with the recommendations of the S-G Connection PEL Study.

Integration with Possible Future Developments: Similar to Alternatives 1 and 2, this alternative would need to coordinate with the proposed designs for the KAC project, Denali View RV Resort development, and the *Ship Creek Framework Plan* for the extension of Gambell and Ingra Streets. This alternative does not propose a bridge structure, and design could evaluate

[20] Available at https://dec.alaska.gov/applications/spar/publicmvc/csp/search
[21] Available at: https://alaskatrafficdata.drakewell.com/publicmultinodemap.asp

the feasibility of the Gambell and Ingra extensions connecting to 1st Street under any bridge structure proposed by the KAC project or *Ship Creek Framework Plan*.

This alternative could result in greater impacts to the Denali View RV Resort because the proposed alignment would affect a larger portion of the existing parcel between Gambell and Ingra Streets north of 3rd Avenue. The potential impacts may need to be evaluated in coordination with the resort's planned improvements and the timing of any future street extensions.

Overall: The 1st Avenue Alternative presents substantial challenges for a project with high cost and limited benefit. It performs poorly across nearly all evaluation criteria and is not recommended for further consideration.

6. Recommendations

Based on the comparative evaluation presented in this reconnaissance study, **Alternative 1: Whitney Road offers the strongest overall performance in terms of freight mobility, geometric feasibility, and long-term operational reliability of the three alternatives evaluated**. Its ability to span numerous rail crossings using a viaduct, provide a high-mobility corridor closer to the POA than other options, accommodate double-trailer and hazmat freight, and minimize impacts to developed property positions it as the most effective and least impactful option.

Alternative 2: Ship Creek Avenue is considered a viable secondary alternative but introduces greater geometric and ROW challenges than the Whitney Road Alternative. The 1st Avenue Alternative is not recommended for further consideration since it faces operational challenges related to grades, intersection geometry, a high number of railroad crossing conflicts, and the greatest potential for conflicts with the Denali RV Resort and adjacent properties and structures.

Despite these findings, the study does not recommend advancing any of the three alternatives currently. Since these alternatives were originally developed, the transportation planning context has changed significantly with completion of the Seward Highway to Glenn Highway Connection PEL Study and its final recommendations. The PEL recommends transportation improvements intended to improve safety and livability in Fairview and reduce regional and freight traffic through the neighborhood. An Ingra-Gambell extension would provide an additional north-south freight connection through the Fairview area and could attract additional freight traffic to the neighborhood, which warrants further evaluation in the context of the PEL recommendations.

A broader freight reconnaissance study is needed before selecting an Ingra-Gambell Couplet Extension alternative for further development. That study should evaluate the need for and role of an Ingra-Gambell extension within the transportation network recommended by the PEL, including potential effects on freight routing, Fairview, the Port of Alaska, and connections to the regional highway system. The study should also account for current and planned land uses, including the Municipality of Anchorage's plan to develop an RV park on the former ANMC property in the area of the proposed alignments.

If an Ingra-Gambell Couplet Extension is considered for further study, the following issues should be evaluated as part of the broader freight reconnaissance effort:

- Coordination with ARRC to further define bridge design requirements over rail facilities
- Further evaluation of ROW and property access impacts based on the 15-percent design footprint
- Review of the proposed typical section and roadway function in coordination with stakeholders to ensure it aligns with a future project's purpose and need
- Coordination with the forthcoming Port Access Reconnaissance Study recommended by the S-G Connection PEL Study
- Coordination with any efforts related to the KAC and Denali View RV Resort projects

These issues should be considered together with the S-G Connection PEL recommendations before advancing any Ingra-Gambell Couplet Extension alternative into project development. Until that broader evaluation is completed, the Whitney Road, Ship Creek Avenue, and 1st Avenue alternatives should remain conceptual corridors for future consideration rather than recommended projects.

7. Area Plans, Guidance Documents, and Standards

Area Wide Plans

- Anchorage Bicycle Plan, Non-motorized Transportation Plan, MOA (2010)
- Areawide Trails Plan, MOA (1997)
- MTP 2050 Metropolitan Transportation Plan, MOA (2024)

Planning and Technical Reports

- AMATS Major Corridors Study, MOA (1982)
- AMATS: Anchorage Freight Mobility Study, AMATS (2017)
- Ship Creek Waterfront Land Use Plan, MOA (1991)
- Ship Creek Multi-Modal Transportation Plan, MOA (2000)
- *Ship Creek Framework Plan*, Anchorage Economic Development Corporation (2014)
- S-G Connection PEL Study:
  - Traffic Forecast Memorandum, DOT&PF (2022)
  - Travel Demand Modeling Report, DOT&PF (2022)
  - Origin-Destination Study, DOT&PF (2022)
  - System Performance Memo, DOT&PF (2023)
  - Purpose and Need Statement, DOT&PF (2023)
  - Recommended Alternatives Selection Criteria Memo, DOT&PF (2024)
  - Public Meeting #4 Comments and Responses, DOT&PF (2024)
  - Pedestrian and Bicycle Count Study, DOT&PF (2024)
  - Detailed Alternatives Report, DOT&PF (2025)
  - Public Meeting #5 Public Outreach Summary, DOT&PF (2025)

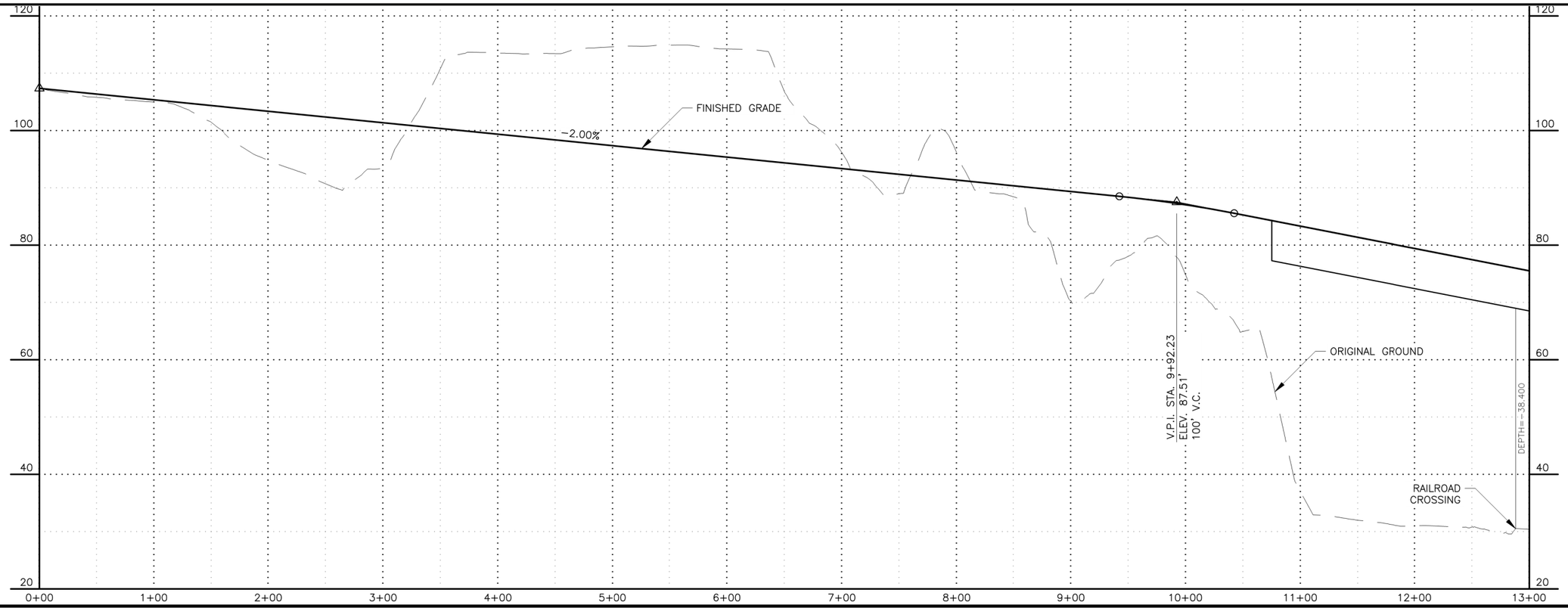
- Alternative Refinement and Initial Screening Report, DOT&PF (2025)
- Level 2 Screening and Recommendations Report, DOT&PF (2025)
- S-G Connection PEL Study report, DOT&PF (2026)

Design Guidance and Standards

- Americans with Disabilities Act Standards for Accessible Design (2006, 2010)
- DCM, MOA (2007, with 2018 revisions)
- GB, AASHTO (2018)
- Guide for the Development of Bicycle Facilities, AASHTO (2012)
- HPCM, DOT&PF (2025)
- Lighting Handbook, FHWA (2012)
- Roadside Design Guide, 4th Edition, AASHTO (2011)
- Safe Routes to School Manual, MOA (2025-2026)
- Urban Street Design Guide, National Association of City Transportation Official (2013)

Appendix A:
Preliminary Design



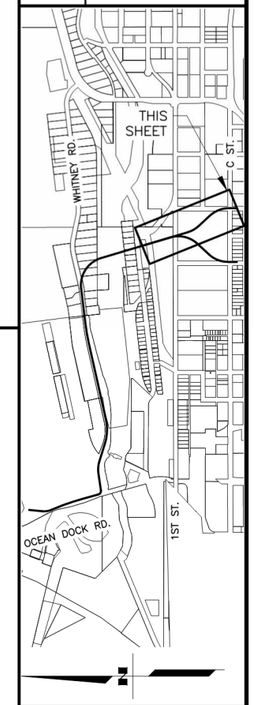


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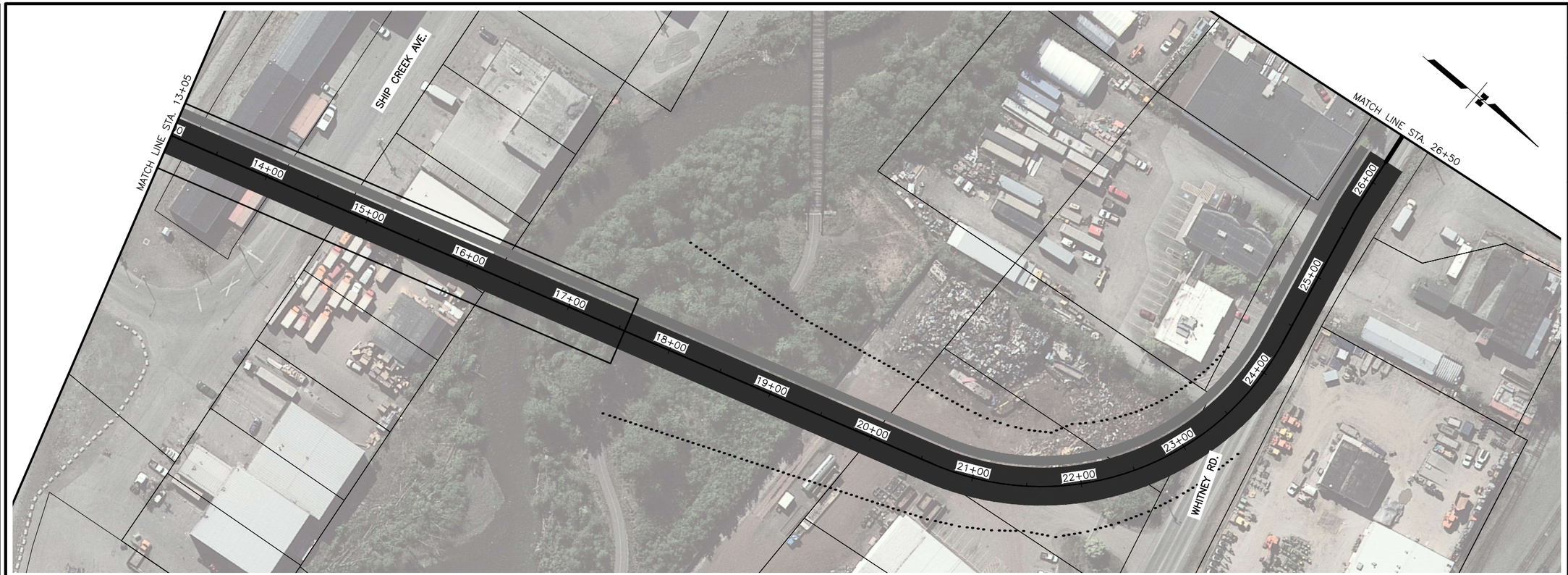
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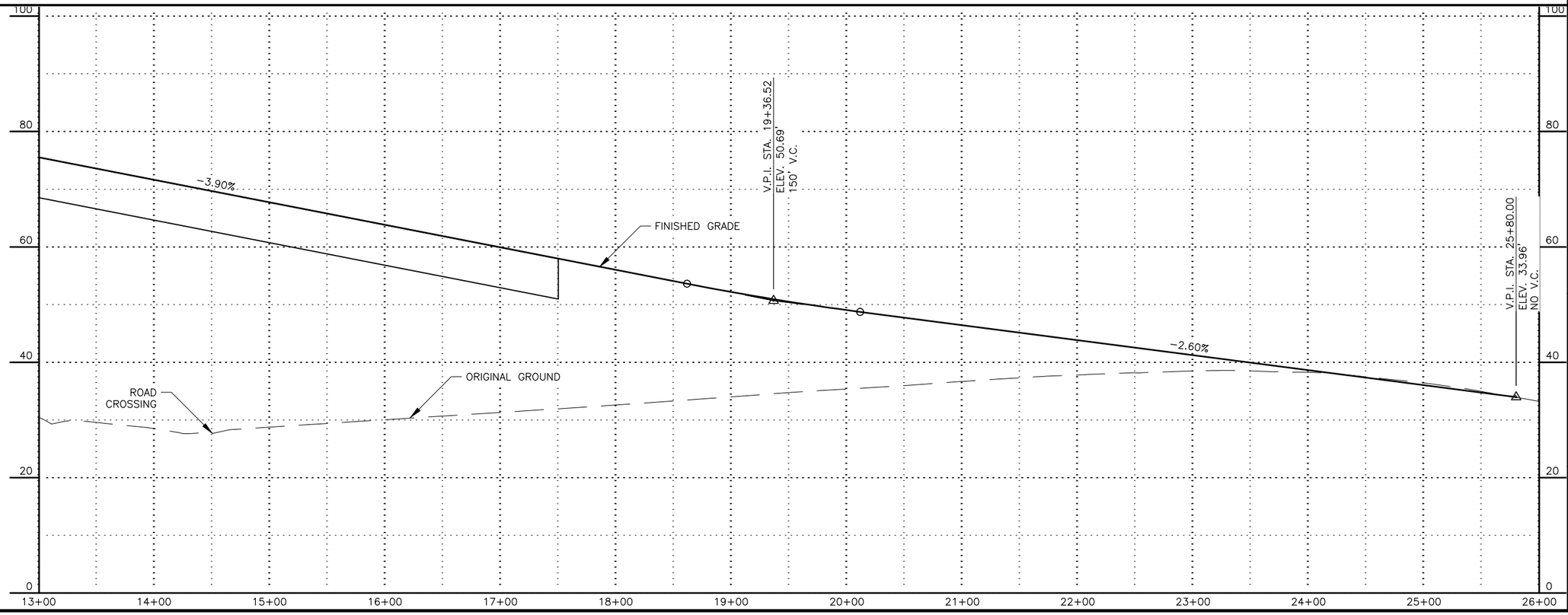
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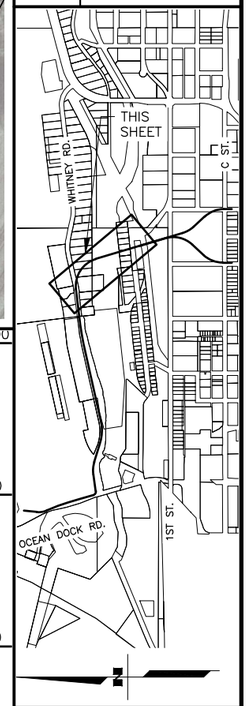


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Ingra - Gambell Couplet Extension Alternative 1: Whitney Road

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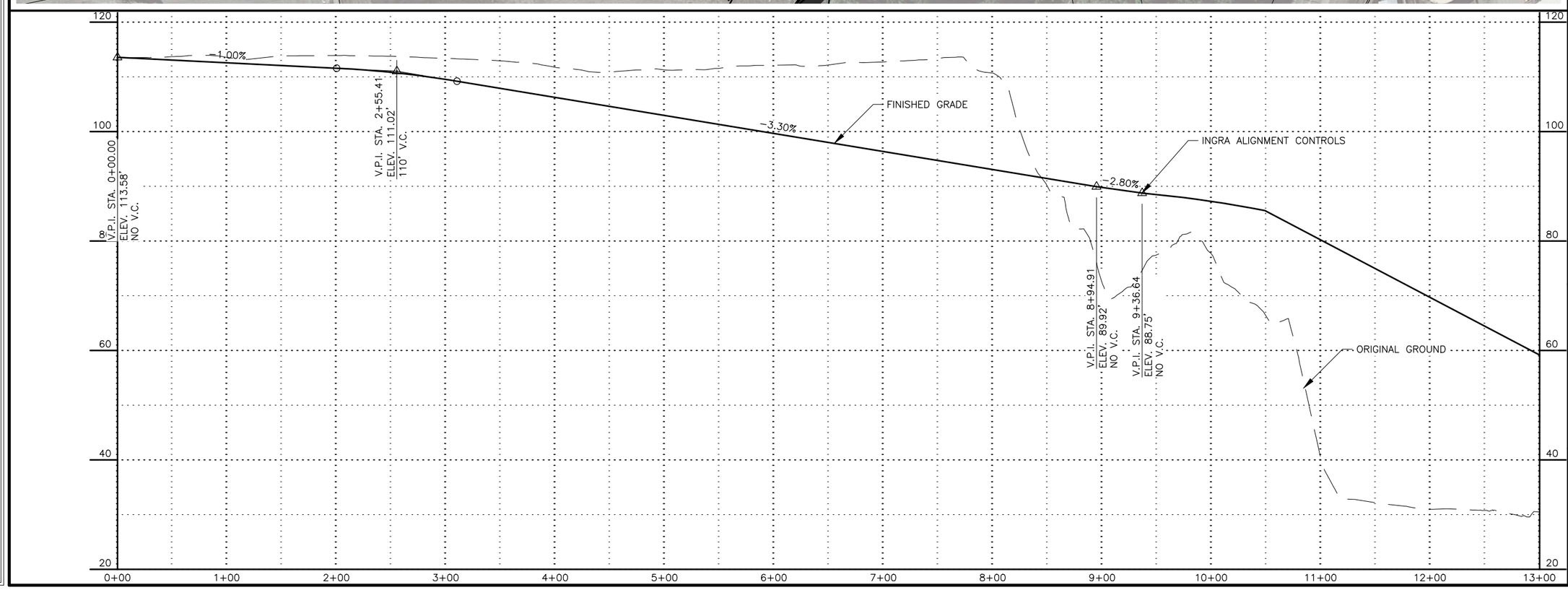
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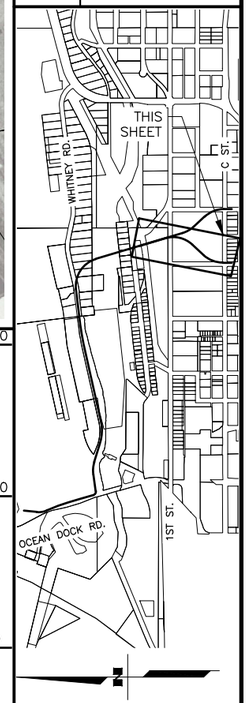


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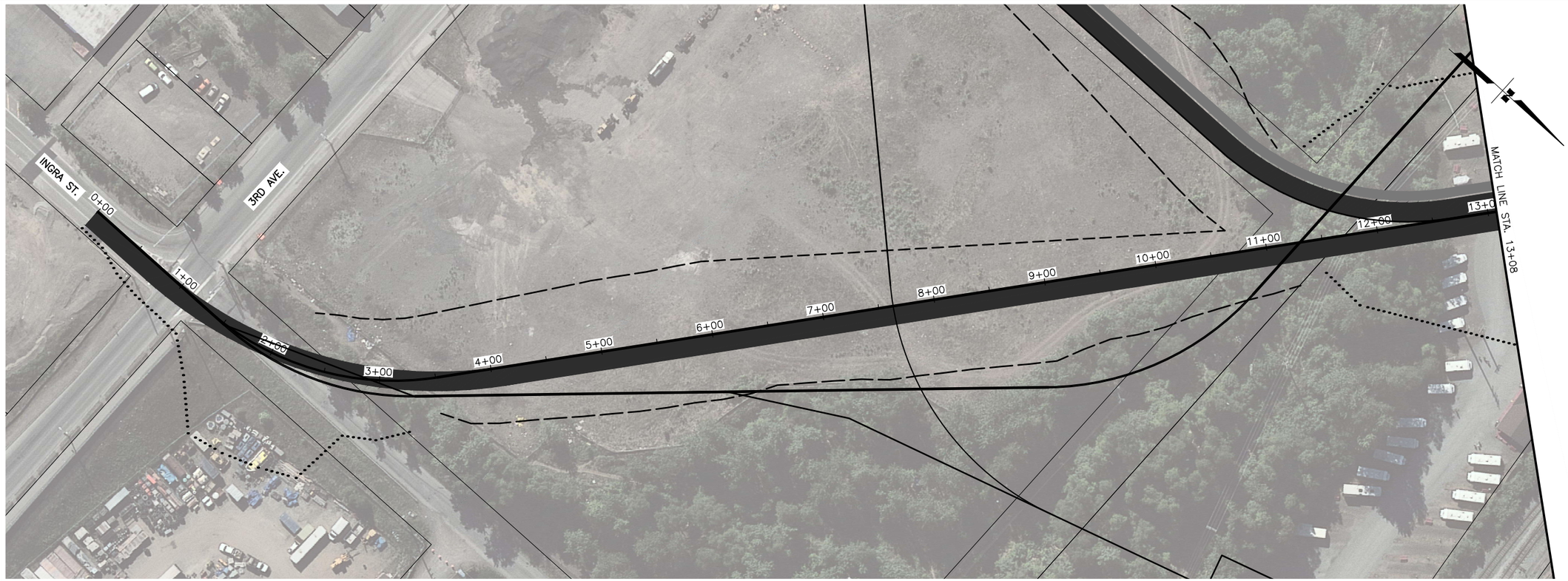
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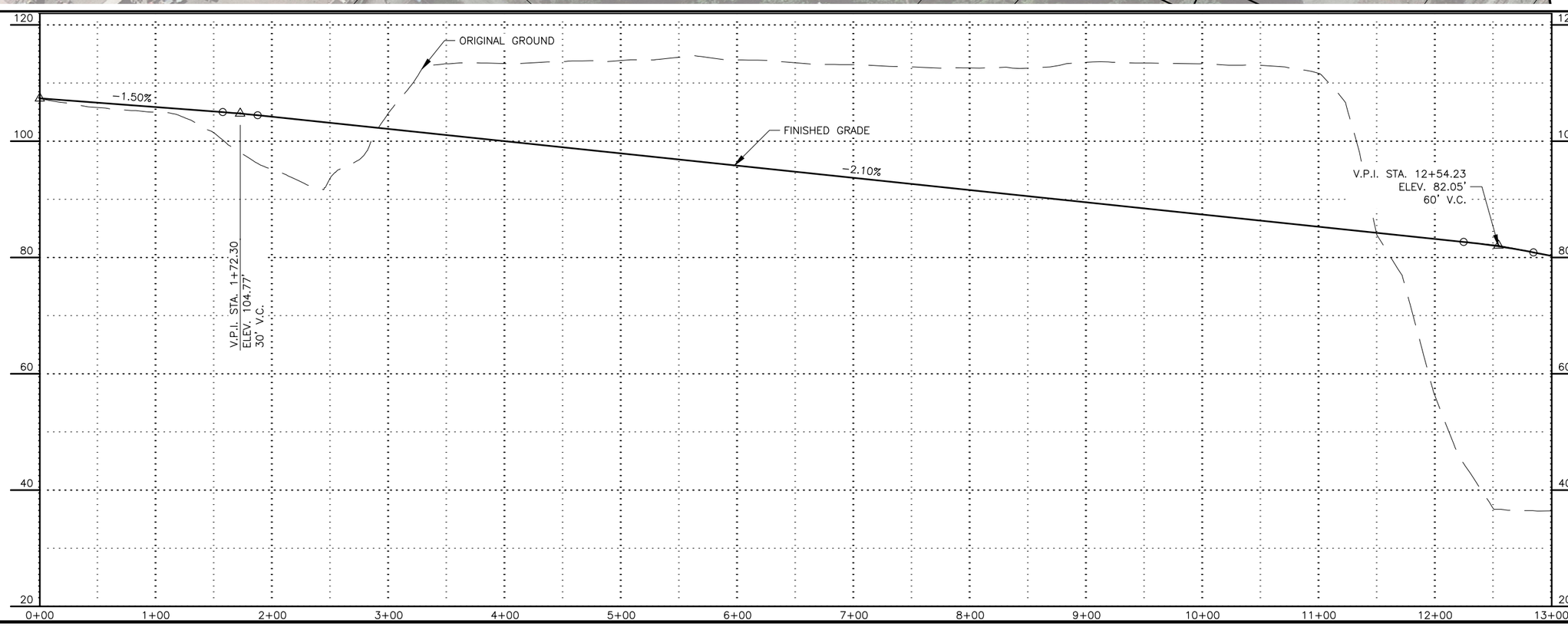
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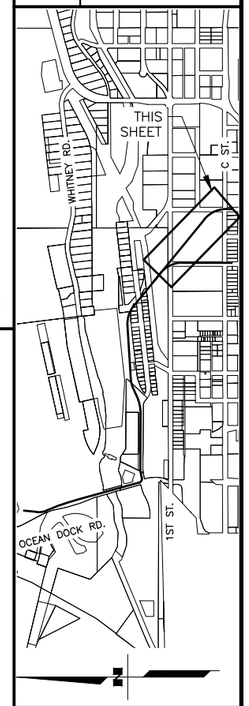


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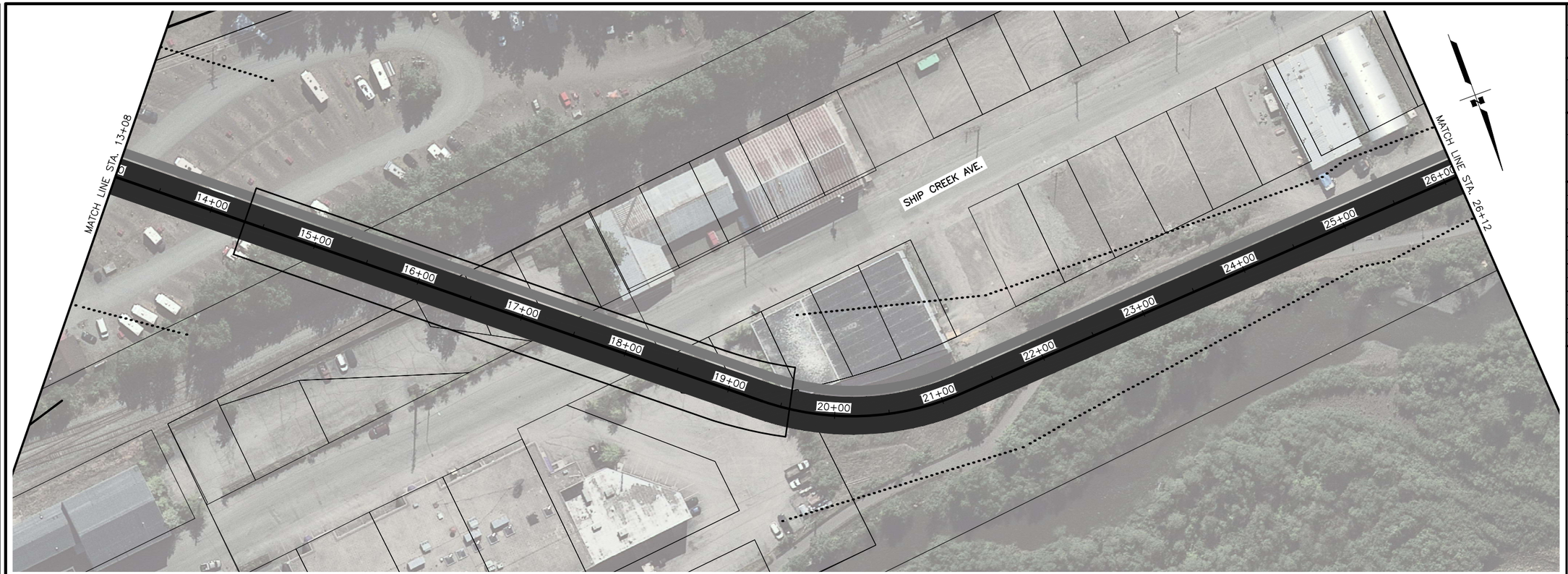


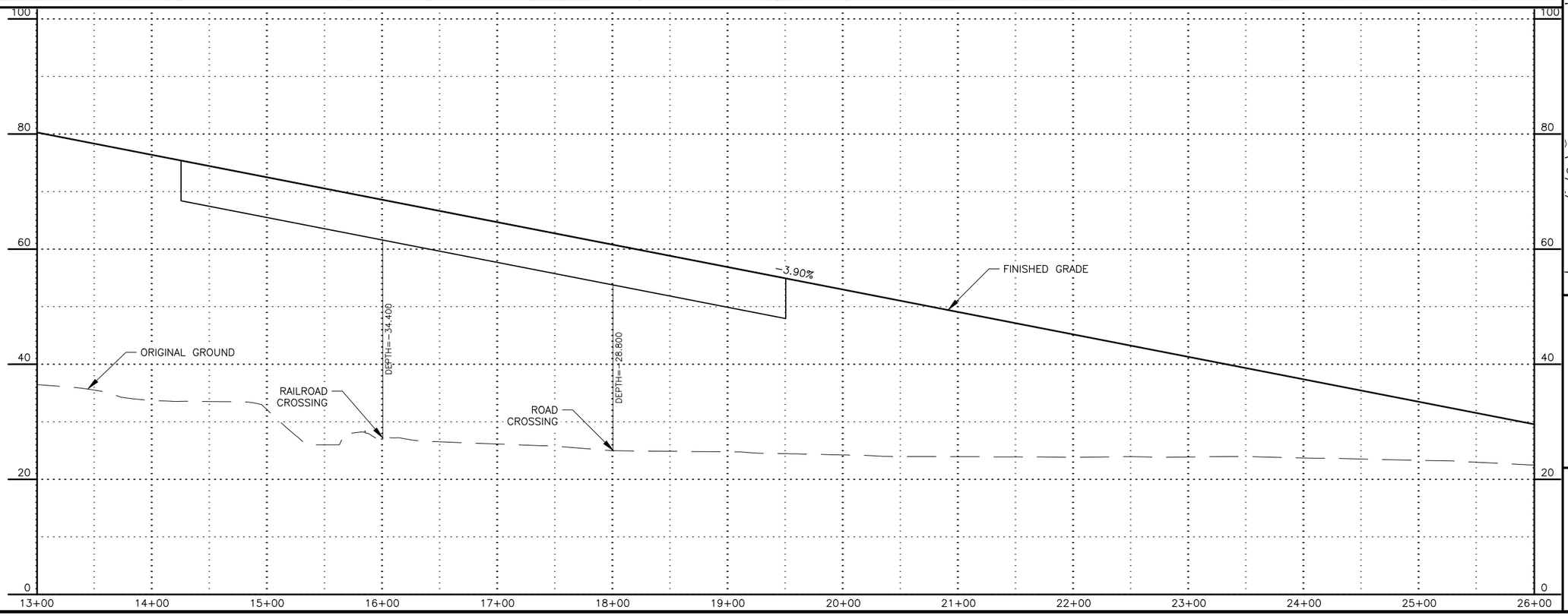
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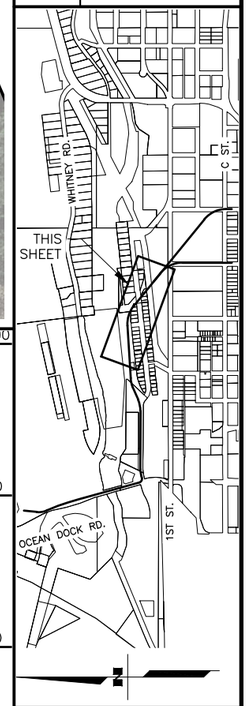


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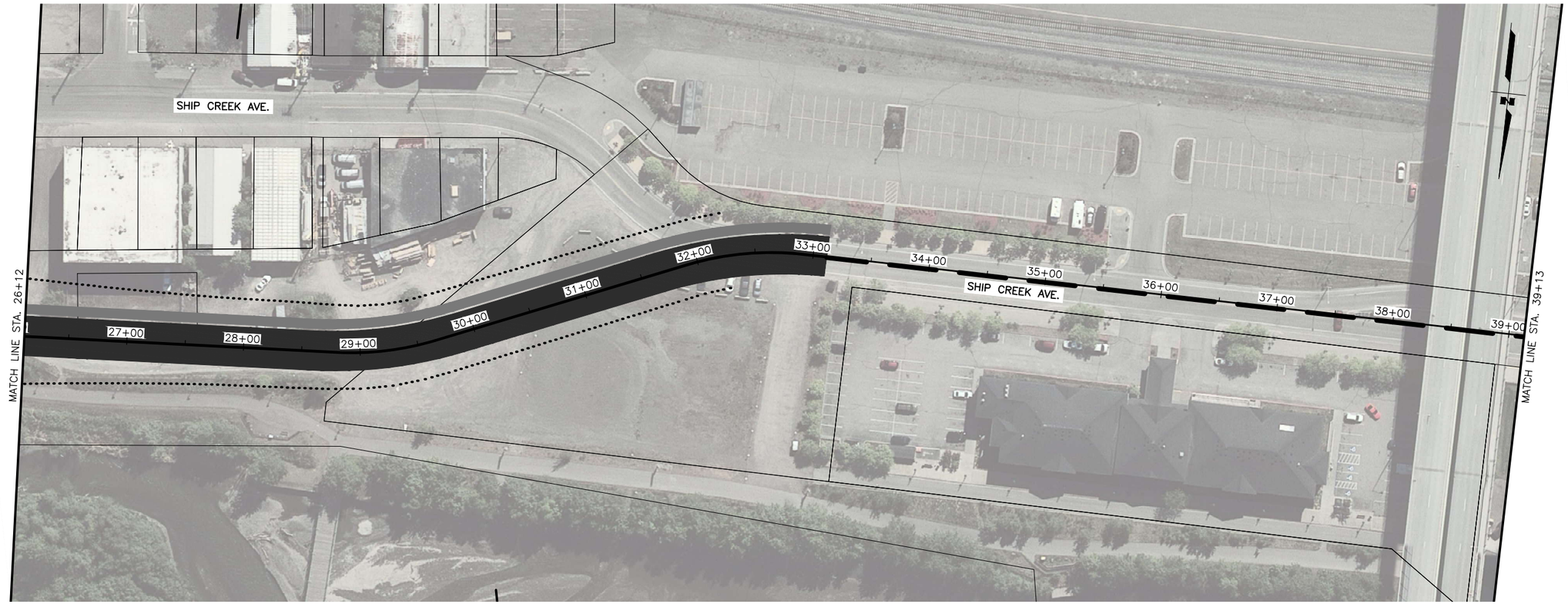
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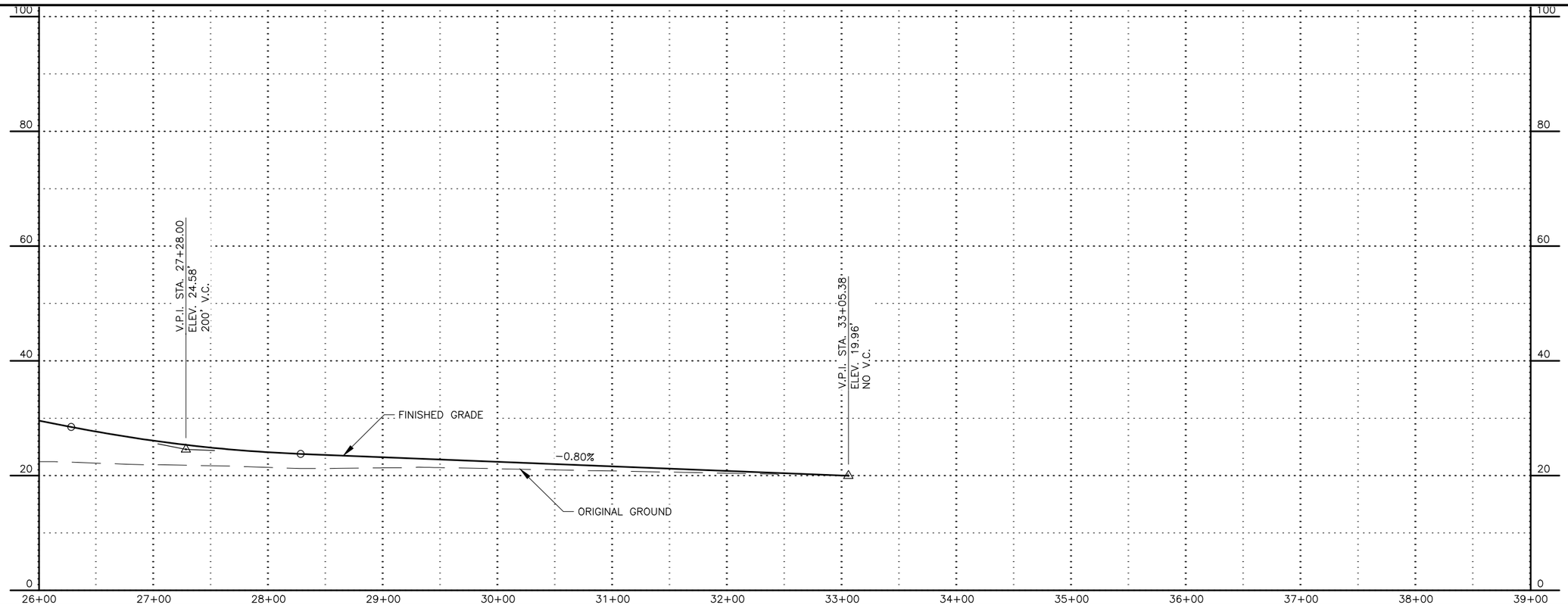
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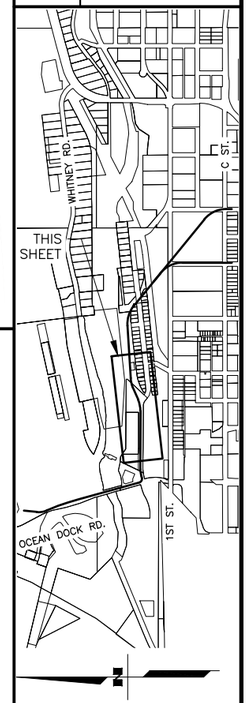




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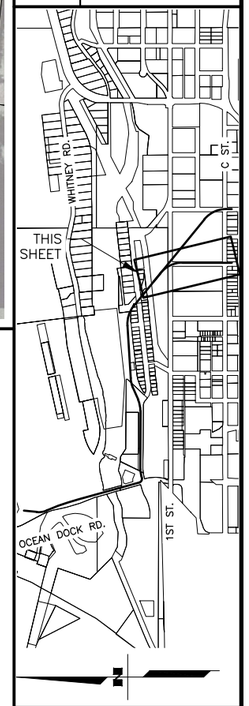


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Ingra - Gambell Couplet Extension Alternative 2: Ship Creek Ave.

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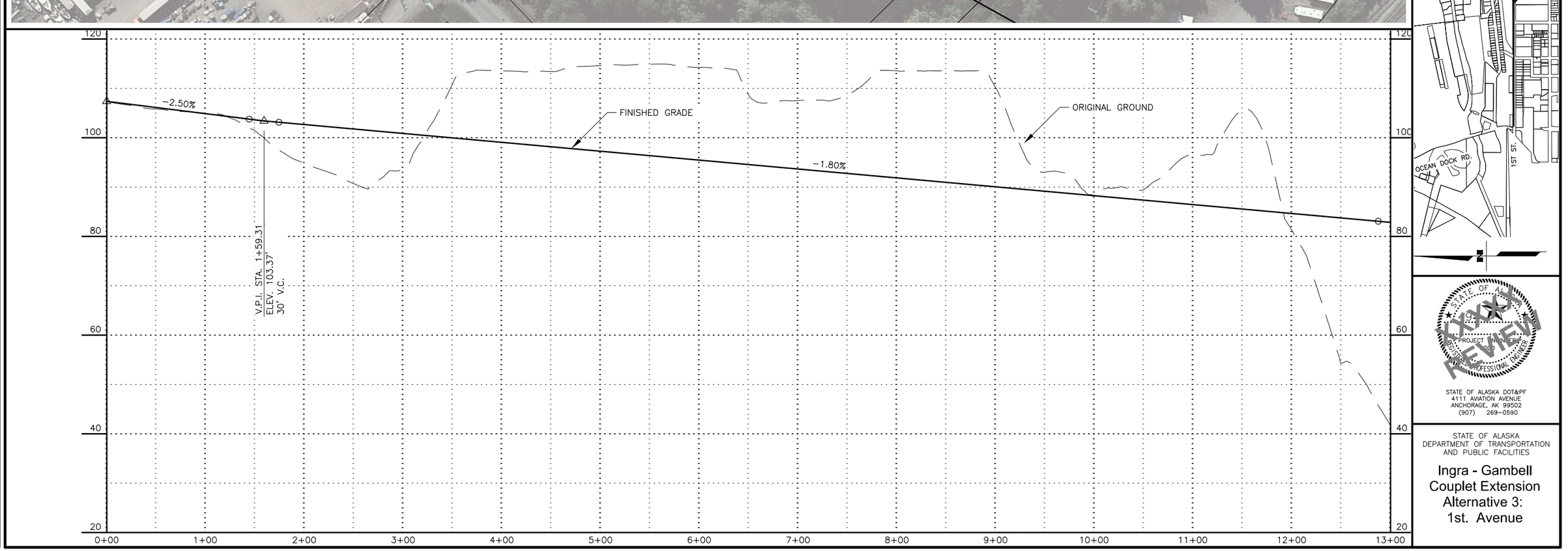
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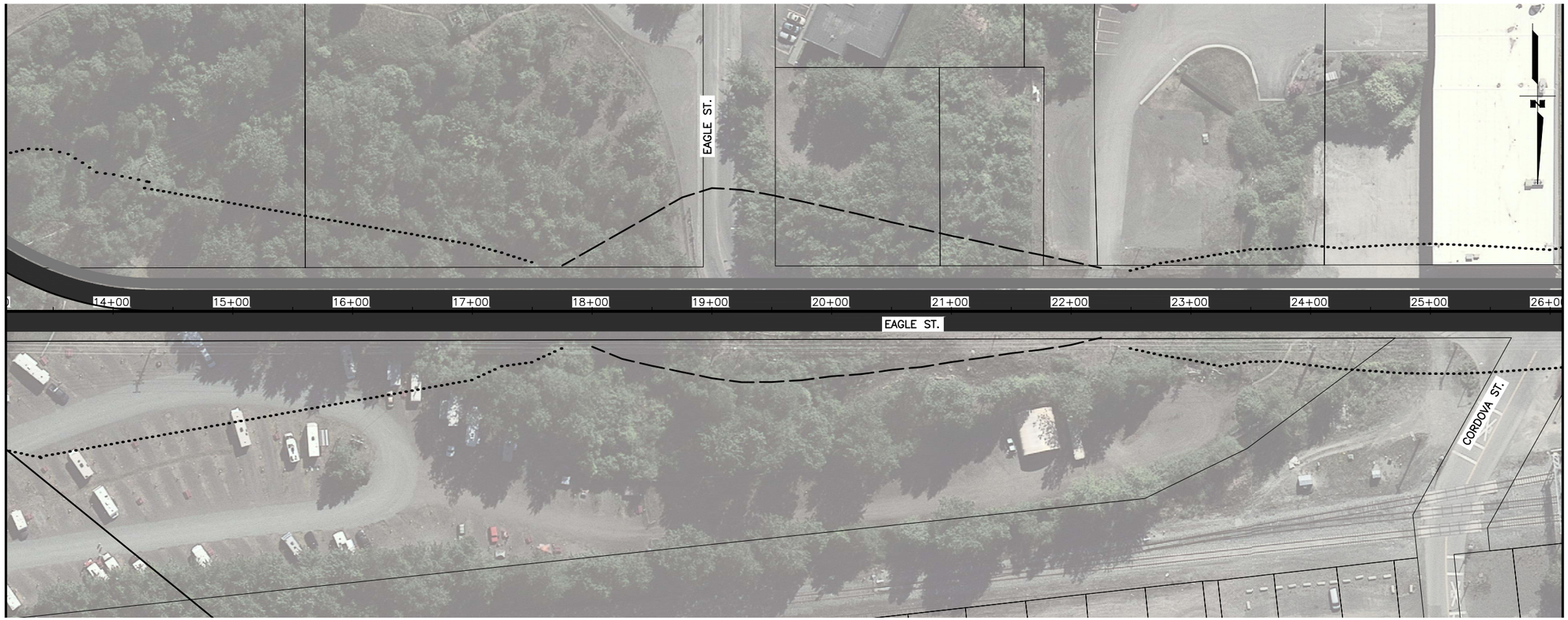
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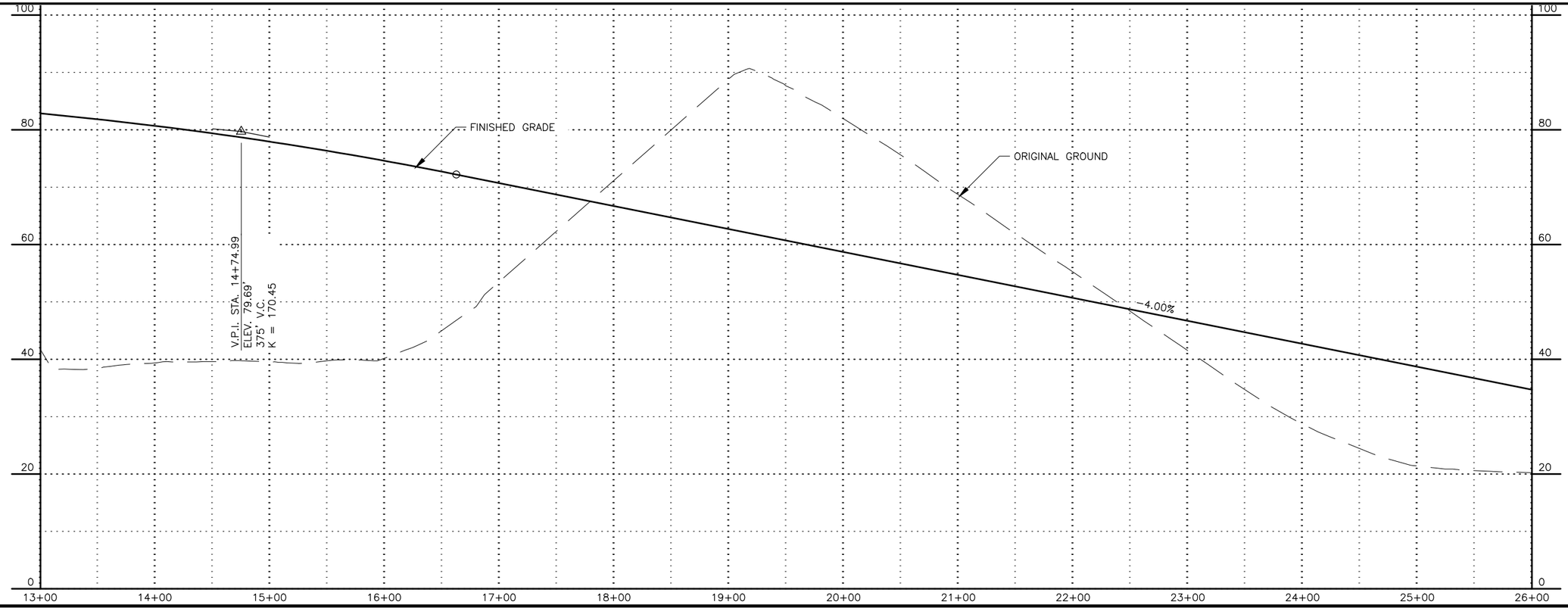
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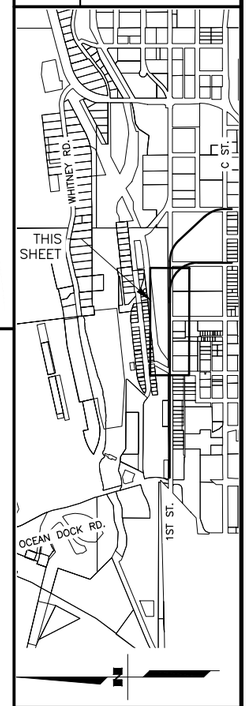




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Ingra - Gambell
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Alternative 3:
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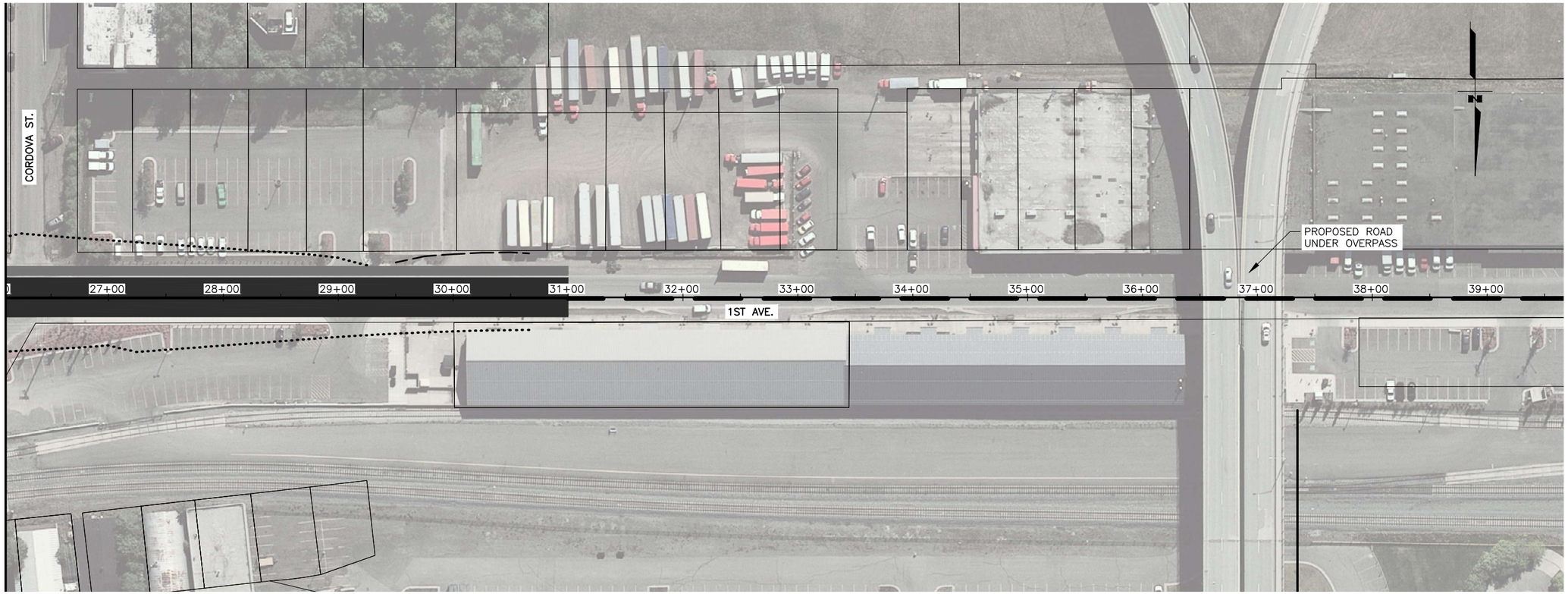
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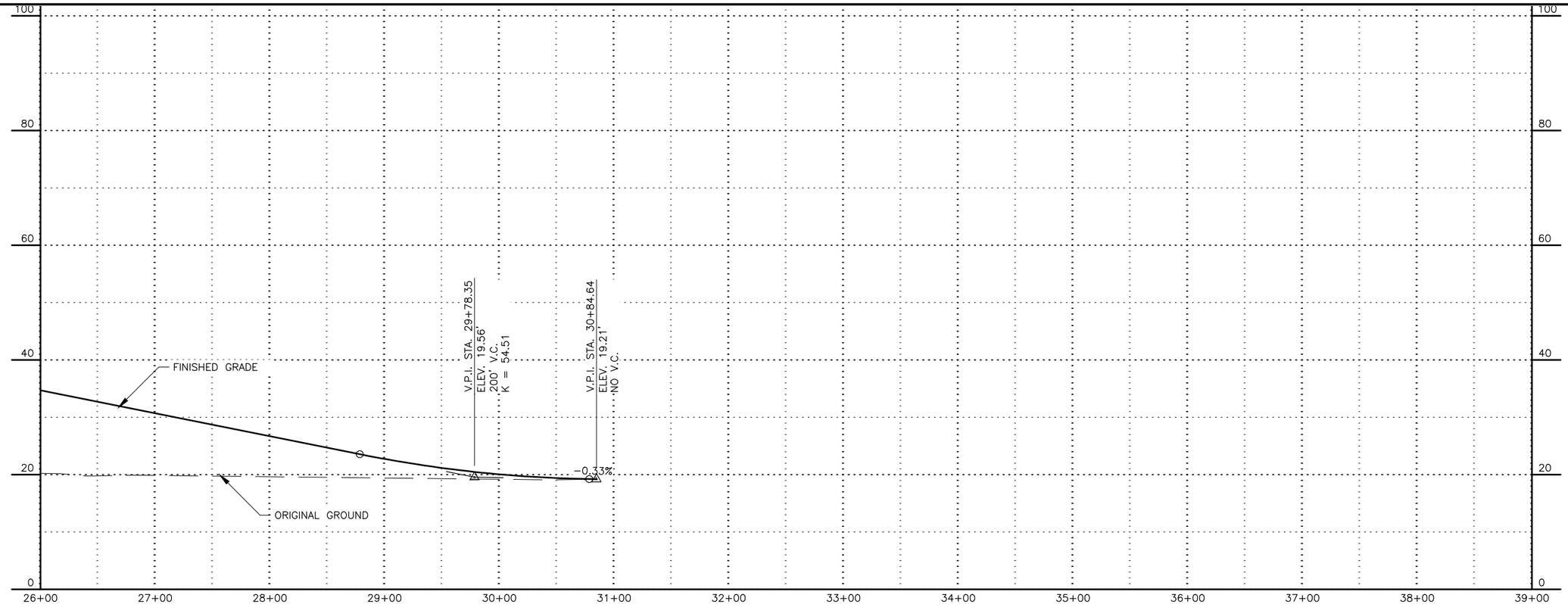
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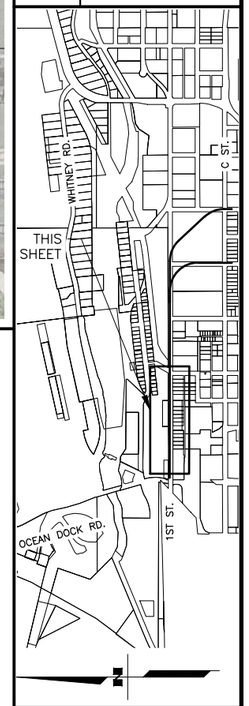


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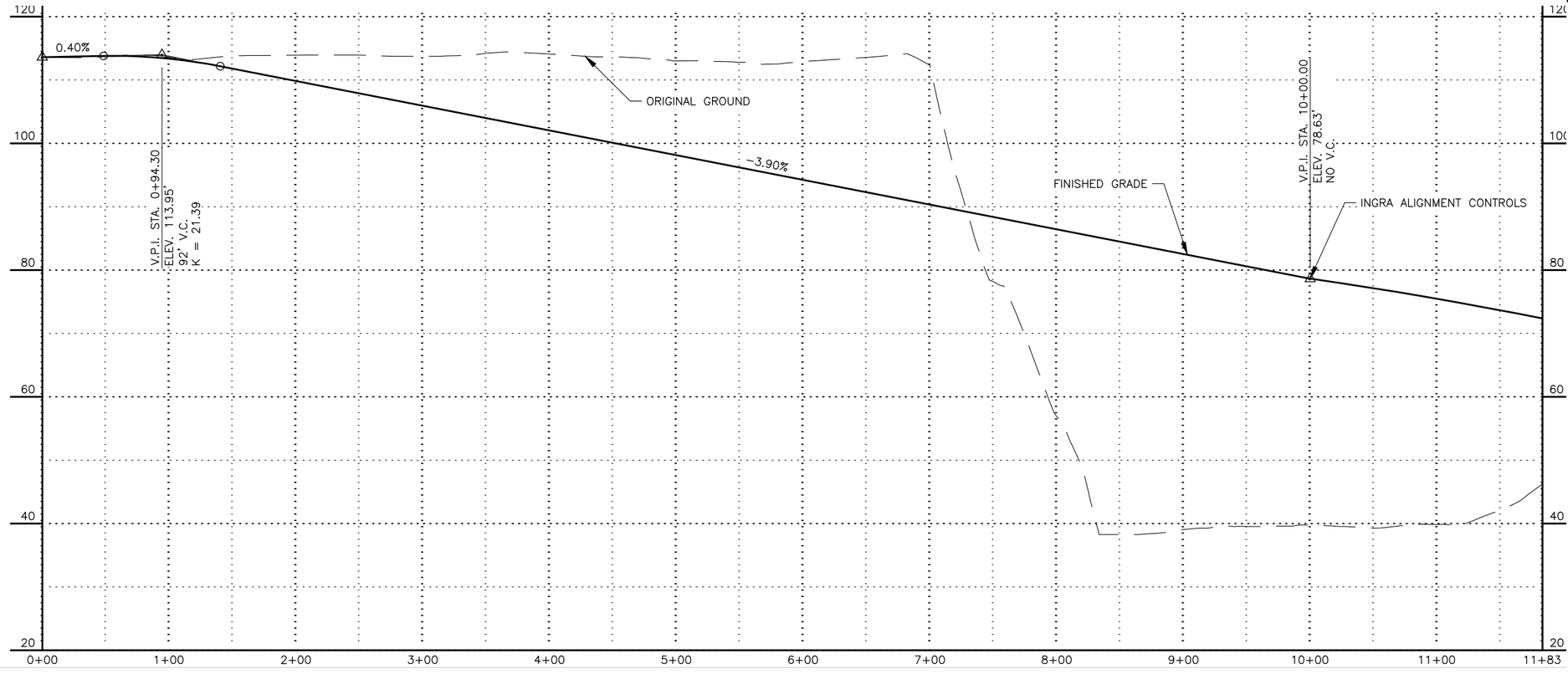
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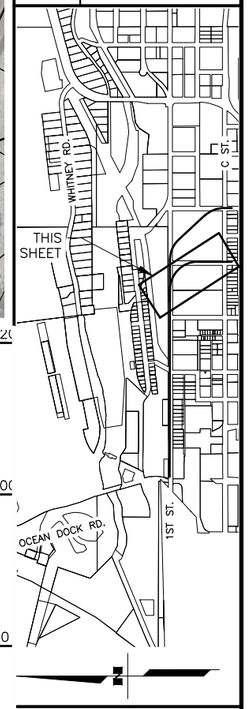


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