



## Interagency Consultation

### Air Quality Conformity

#### Meeting Agenda

Monday, August 5, 2024, 12:00 – 1:00 PM  
100 Cushman Street, Suite 215 (Key Bank Building)

**To join the Zoom Meeting via computer, go to:** [www.fastplanning.us/keepup/zoom](http://www.fastplanning.us/keepup/zoom)

**Zoom Meeting Phone Number:** 1 (253) 215-8782, enter **Meeting ID:** 864-6268-4303

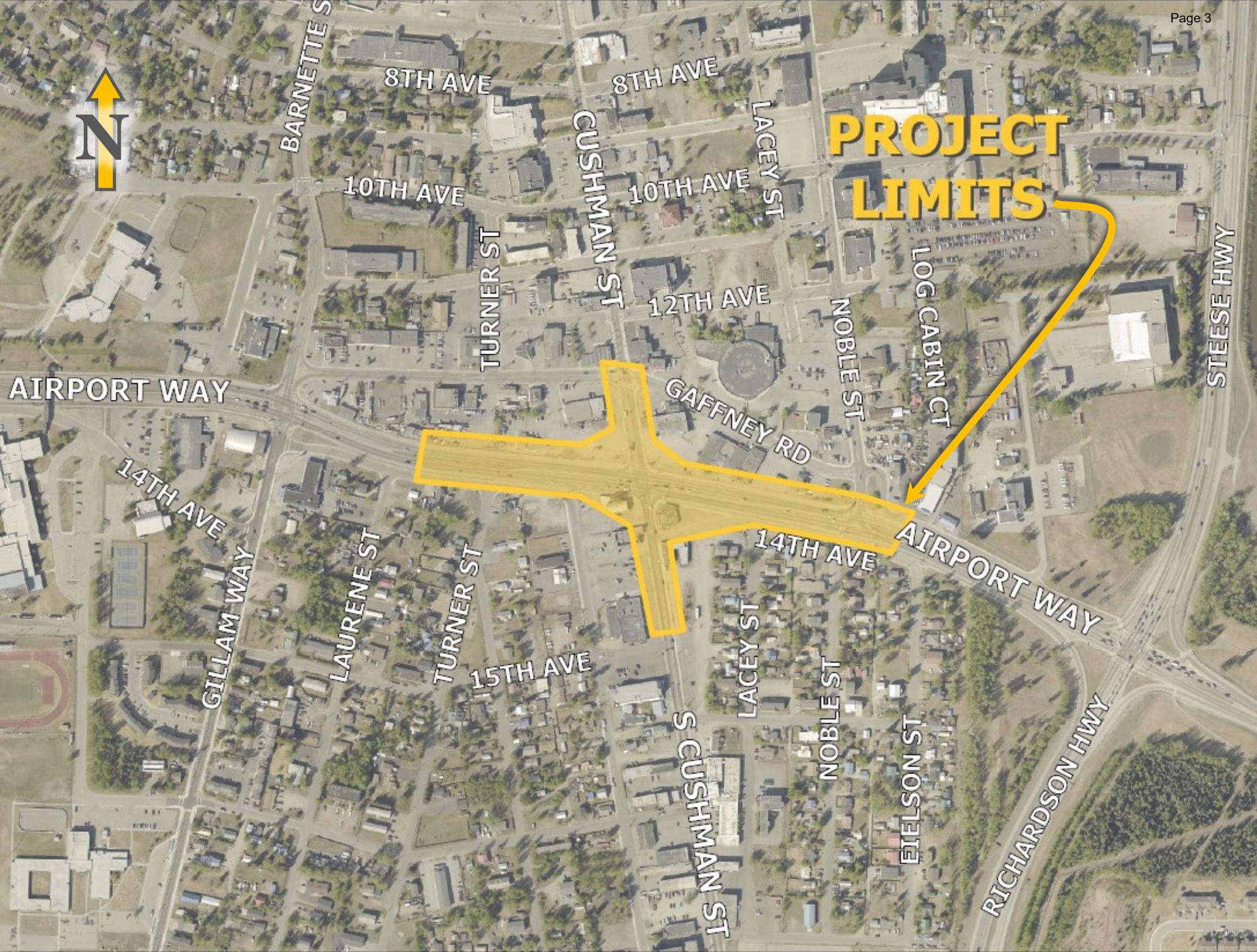
1. Call to Order
2. Introduction of Members & Attendees
3. Public Comment Period
4. Project Review: **Cushman Street/Airport Way Intersection Improvements**
  - Consideration of Exemption under 40 CFR 93.126 & 127 *Pg 2*
5. Project Review: **Cowles Street Reconstruction**
  - Consideration of Exemption under 40 CFR 93.126 & 127 *Pg 28*
6. **Highway Safety Improvement Program (HSIP) & Preventative Maintenance (PM) Programs**
  - Seeking guidance from Interagency Consultation (IAC) team on how to handle TIP/STIP Amendments for these programmatic projects during a Conformity Freeze *Pg 63*
7. Next Steps
8. Adjournment

## Project Review

### **Cushman Street/Airport Way Intersection Improvements**



# PROJECT LIMITS



AIRPORT WAY

14TH AVE

GILLAM WAY

LAURENE ST

TURNER ST

15TH AVE

S CUSHMAN ST

LACEY ST

NOBLE ST

EIELSON ST

RICHARDSON HWY

BARNETTE S

8TH AVE

CUSHMAN ST

10TH AVE

TURNER ST

12TH AVE

GAFFNEY RD

8TH AVE

10TH AVE

LACEY ST

NOBLE ST

LOG CABIN CT

STEESE HWY

## Identified Concerns

# Proposed Improvements

### Safety

Intersection crash rate is higher than statewide average for similar intersections

- Provide channelized right turn lanes for each approach
- Add designated left-turn lanes on Cushman Street
- Provide positive offset left-turn lanes on Airport Way approaches to Cushman Street to improve sight distance for left-turning east and westbound traffic

### Capacity

Long delays for southbound and northbound travellers

- Provide channelized right turn lanes for each approach
- Add designated left-turn lanes on Cushman Street
- Upgrade signal controls to decrease vehicle delays which will improve air quality at the intersection

### Pedestrian / Bicyclist Safety and Access

Long crossing distances for pedestrian and bicyclist

- Upgrade sidewalk and pathway facilities for improved travel surface and conformance with the American with Disabilities Act (ADA)
- Construct raised refuge islands to reduce pedestrian and bicyclist crossing distances and exposure to vehicles

### Community and Economic Development

Cushman Street is a "signature" street important in Downtown Fairbanks

- Add landscaping to enhance the area and enhance the regional quality of life
- Upgrade sidewalks to accomodate pedestrians and bicyclists
- Tie intersection in with the recently constructed Cushman Complete Streets

### Air Quality

Long vehicle delays and poor traffic operations lead to high emissions and increased fuel use

- Alteration of intersection geometrics and addition of auxilliary lanes and upgraded signal controls will decrease delays thus improving fuel use, reducing emissions, and improving air quality

# Airport Way/Cushman Street Intersection Reconstruction

IRIS Program No. Z640780000  
Federal Project No. 0002312

## Traffic and Safety Analysis Report

November 2016



Prepared For:  
Alaska Department of  
Transportation &  
Public Facilities

Prepared By:  
Kinney Engineering, LLC



Jeanne M Bowie, PE, PhD, PTOE

## 6 Recommendations

The identified concerns for the intersection include the following:

- Higher than average crash rate compared to similar facilities.
  - Rear-end and sideswipe crashes on northbound approach
  - Left-turn crashes between eastbound and westbound vehicles
  - Right-angle crashes involving eastbound through vehicles
- Poor LOS for the northbound movements
- Inadequate capacity in the 2040 design year
  - Northbound movements (LOS F)
  - Westbound left turns (LOS E)
  - Southbound left turns (LOS E)
- Numerous access points on Cushman Street within the functional area of the intersection

Signal Control Option 3 is recommended, as it provides the most benefit to the Airport Way intersection with Cushman Street. Option 3 has the following improvements:

- Expand the northbound approach to include two through lanes and exclusive left-turn and right-turn lanes.
- Provide right-turn channelization for all the approaches.
- Offset all left-turn lanes.
- Install flashing yellow arrows for permissive-protected left-turn movements.

Based on the CRF values for the proposed improvements, Option 3 would have reduced the crashes during the study period by 18 of the 94 crashes. Providing an exclusive northbound left-turn lane would remove the decelerating left-turning traffic from the traffic continuing at speed through the intersection, possibly reducing the number of rear-end and sideswipe crashes on the northbound approach. To mitigate the left-turn crashes, the positive offset left-turn lanes would improve the sight distance for opposing left-turning traffic to determine available gaps between the through vehicles. However, expanding the northbound approach and offsetting the left-turn lanes would increase the crossing distances on all the approaches. The proposed right-turn channelization would help reduce crossing distance, but increase the number of crossings pedestrians and bicyclists would need to cross the intersection.

Under Option 3, the intersection as a whole is expected to operate at LOS B. The added northbound through lane increases the northbound approach capacity and improves the northbound movements from LOS F to LOS C for the northbound right and to LOS D for the northbound left and northbound through movements. The southbound left-turn movement would improve from LOS E to LOS D. This option also has the greatest positive effect on the westbound left turn delay, improving the movement from LOS E to LOS B. Additionally, in comparison to the other proposed options, Option 3 has the shortest increase in delay for the southbound through movements.

Option 2 should also be looked at in more detail. This option results in the same delay improvements for the southbound left and all eastbound and westbound movements as Option 3. Option 2 also has similar improvements on the northbound approach as Option 3 (LOS F to LOS

Airport Way/Cushman Street Intersection Reconstruction

Z640780000/0002312

Traffic and Safety Analysis Report

November 2016

C or D) but with slightly longer delays. Construction costs may be lower for Option 2 as compared to Option 3.

The turn-lane lengths were calculated using *NCHRP Report 279: Intersection Channelization Design Guide*. The turn-lane lengths are based on 95<sup>th</sup> percentile queues and, if approaching speeds exceed 35 mph, deceleration. Table 27 below present the recommended turn-lane lengths.

<b>Turn Lane Movement</b>	<b>Turn-Lane Length (ft)</b>
Northbound Left-Turn	150
Northbound Right-Turn	150
Westbound Left-Turn	400
Westbound Right-Turn	350
Eastbound Left-Turn	400
Eastbound Right-Turn	350

Table 27: Recommended Turn-Lane Lengths

In terms of the functional area of the intersection, the northbound left-turn and right-turn lanes would extend past 14<sup>th</sup> Avenue to the east of Cushman Street, creating more conflicts at this access point. The westbound left vehicles exiting and southbound left vehicles entering 14<sup>th</sup> Avenue would be required to traverse through four lanes in order to complete the turning movement. Thus, closing 14<sup>th</sup> Avenue's access to Cushman Street is also recommended; this will reduce conflicts between traffic queued at the Airport Way intersection and traffic entering and leaving 14<sup>th</sup> Avenue from Cushman Street.

The recommended turn lane lengths would also lengthen the upstream functional area on Airport Way; however, no driveways are affected because of the controlled-access on Airport Way.

Option 3 is consistent with most of the objectives of the planning studies. The purpose of the Airport Way Reconnaissance Study and the MTP were to develop alternatives to mitigate the deficiencies identified on the corridor. Of all the proposed options, Option 3 would provide the most operational benefit, while mitigating the identified safety concerns. To reduce the pedestrian crossing distance increased by the positive offset left-turn lanes and be consistent with the NMTP's objective to improve the safety of non-motorized transportation, it is recommended that the left-turns be offset to meet but not exceed the required sight distance. Option 3 is inconsistent with the roundabout proposed in the Vision Fairbanks Downtown Plan but has the potential to be landscaped in such a way to serve as a gateway to the downtown area.

Figure 19 on page 54 presents a preliminary concept with recommended lane geometry. The proposed posted speed is 45 mph on Airport Way, 25 mph on Cushman Street north of Airport Way, and 30 mph on Cushman Street south of Airport Way. This concept widens Airport Way to the north to accommodate the offset left-turn lanes. To preserve the two-way use of the 14<sup>th</sup> Avenue frontage roads, it was necessary to widen Airport Way to the north, as opposed to the south. This concept widens the northbound approach to include a left-turn lane, two through lanes, and a right-turn lane. The widening occurs on both sides of the Cushman Street to allow the southbound approach to remain on its existing alignment. This concept was used to estimate the approximate cost of construction, which is shown in Table 28 on page 55.

Airport Way/Cushman Street Intersection Reconstruction  
Z640780000/0002312  
Traffic and Safety Analysis Report  
November 2016

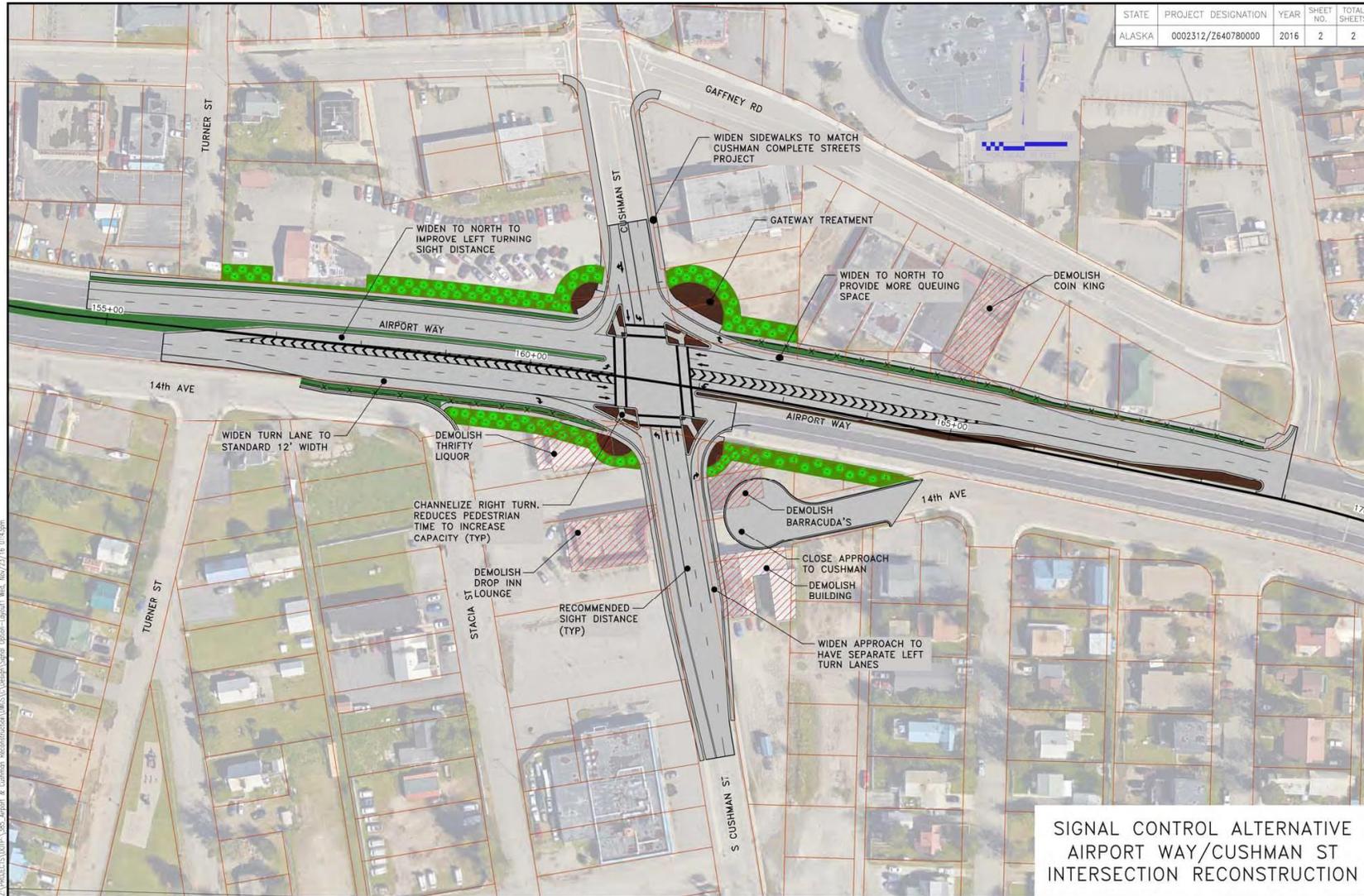
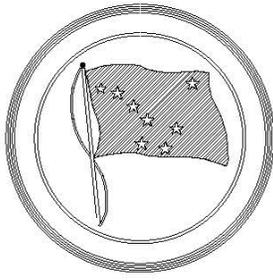


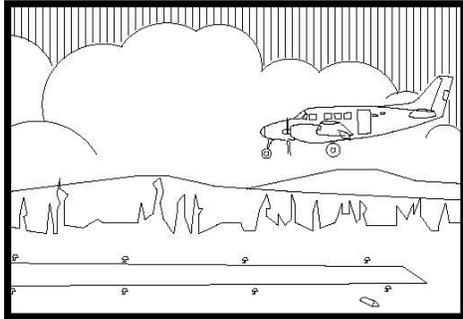
Figure 19: Recommended Design Configuration



# DESIGN STUDY REPORT

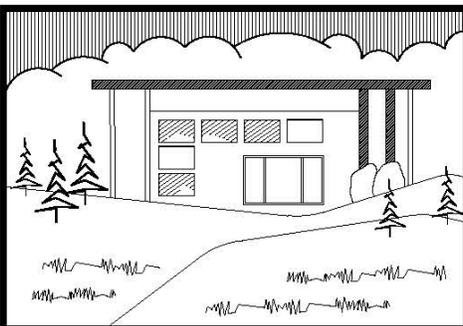
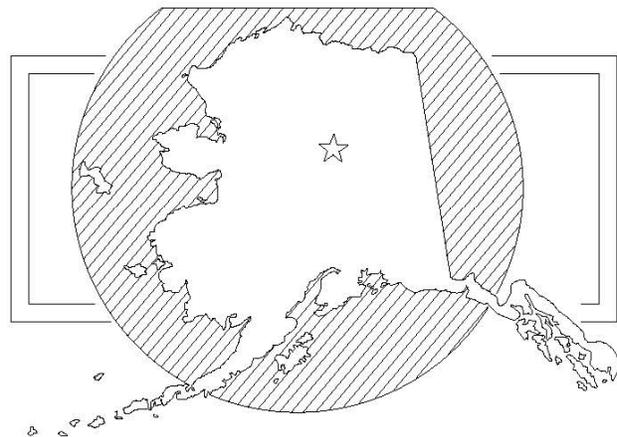
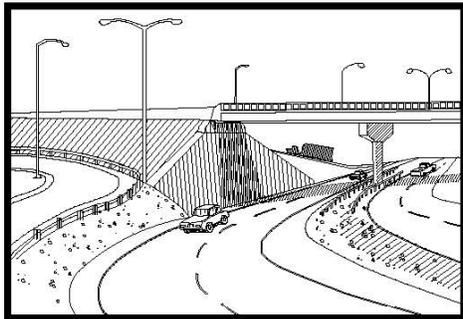
## Airport Way/Cushman Street Intersection Reconstruction

0002312/Z640780000



# STATE OF ALASKA

Department of Transportation  
and Public Facilities



*NORTHERN REGION*

*May 2020*

## INTRODUCTION/HISTORY

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), proposes to improve the intersection of Airport Way and Cushman Street<sup>1</sup> in Fairbanks, Alaska. The project is located in Section 10, Township 1S, Range 1W, Fairbanks Meridian. See Figure 1 for location and vicinity map.

Airport Way and Cushman Street are principal roads within the Fairbanks road network. Airport Way is part of the National Highway System, and serves as a key freight route, providing access to the Fairbanks International Airport and Fort Wainwright. It was last resurfaced in 2014.

Cushman Street was one of the first roads in Fairbanks and was last resurfaced in 2014. It has been designated as the “signature street” for downtown Fairbanks; connecting civic uses to retail shops and the Chena River.

The DOT&PF identified the need for safety and capacity improvements at the Airport Way/Cushman Street intersection to address vehicular crashes, pedestrian and bicycle crashes, and congestion.

The Airport Way/Cushman Street intersection is listed on state and local transportation plans. The 2016-2019 Statewide Transportation Improvement Program (STIP) lists the intersection as Need 3843. The 2040 FMATS<sup>2</sup>/FAST Metropolitan Transportation Plan lists this intersection as a “Medium Range” project with the “need” described as capacity, traffic operations, and safety improvements.

Several studies and reports for this project have preceded this design study report (DSR) and are described below:

- *Traffic and Safety Analysis Report (TSAR)*; Kinney Engineering, LLC (KE); November 2016 – The TSAR presents analyses findings of the existing condition and future design year condition of the traffic and safety operations at the Airport Way/Cushman Street intersection. This report also summarizes various planning documents for the area. The findings are summarized in the Traffic Analysis section of this DSR and the full TSAR can be found in APPENDIX C.
- *Preliminary Engineering Report (PER)*; KE; December 2016 – The PER analyzes the purpose and need of the project, the existing conditions, design alternatives, and environmental considerations. This DSR builds from the results of the PER.
- *Parking Utilization Study*; KE; February 2018 – The Parking Utilization Study presents the findings of existing business parking supply and demand and how improvements to the Airport Way/Cushman Street intersection impact the parking needs. A summary of the report can be found in the Traffic Analysis section of this DSR and the full report is located in APPENDIX D.

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<sup>1</sup> Throughout this design study report, Cushman Street may refer to South Cushman Street or Cushman Street. South Cushman Street is defined as the route south of the Airport Way/Cushman Street Intersection. Cushman Street is defined as the route north of the intersection.

<sup>2</sup> “Fairbanks Area Surface Transportation (FAST) planning” was formerly “Fairbanks Metropolitan Area Transportation Systems (FMATS)”.

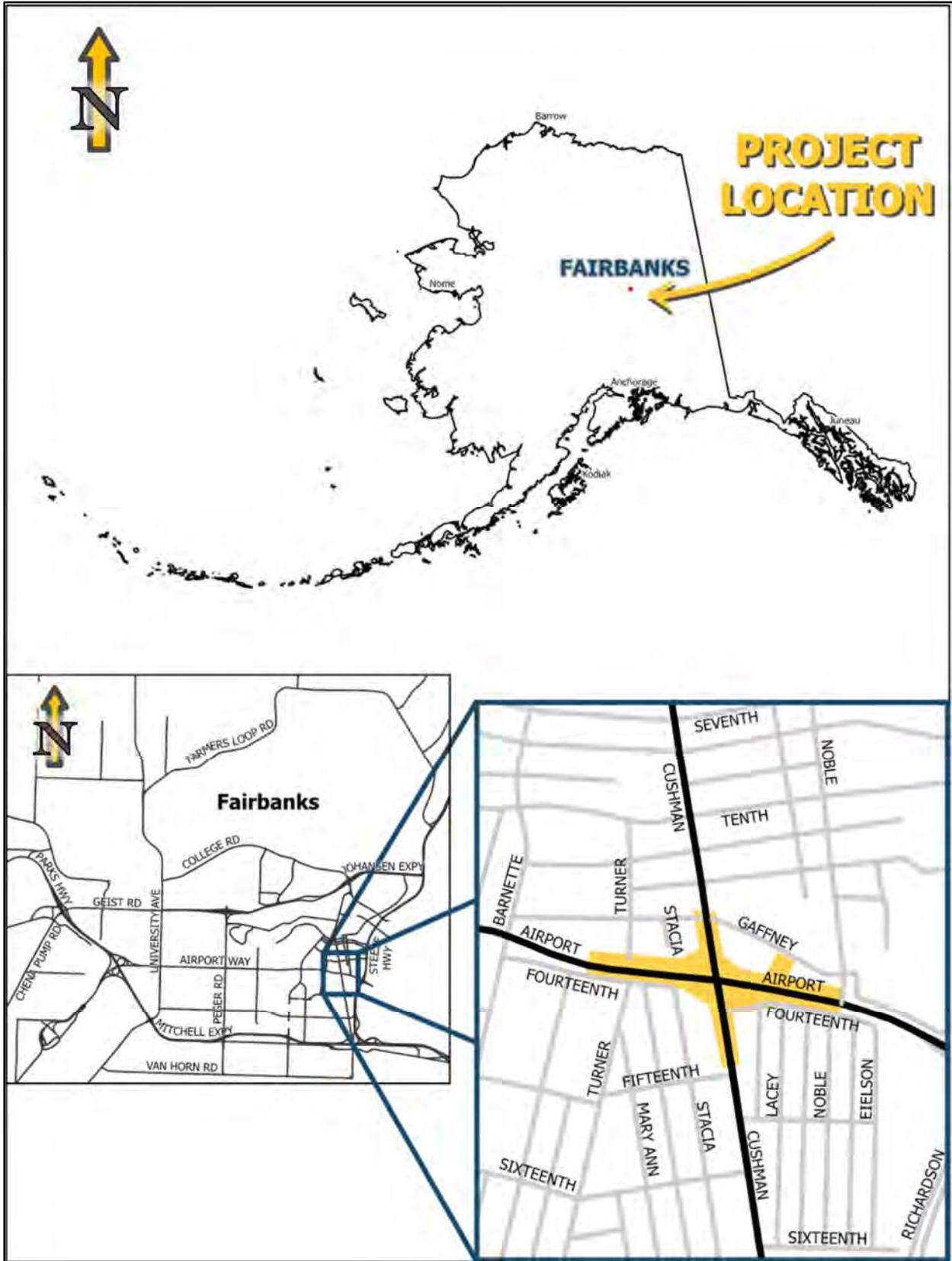


Figure 1: Location and Vicinity Map

## PROJECT DESCRIPTION

### *Location & Existing Conditions*

The project extends along Airport Way from just west of Turner Street to Noble Street, and along Cushman Street from just north of 15<sup>th</sup> Avenue to Gaffney Road. See Figure 2 for project limits.

Airport Way (CDS 175700) is classified by DOT&PF as a principal arterial owned and maintained by DOT&PF. Airport Way is a limited access expressway that extends east/west across Fairbanks between Fairbanks International Airport and Fort Wainwright. At the Cushman Street intersection, Airport Way consists of two through lanes, a dedicated left-turn lane, and a dedicated right-turn lane in both the westbound and eastbound approaches. Pedestrians are accommodated by a sidewalk separated from the road by a chain-link fence on both sides of the road. Light Emitting Diode (LED) lighting line both sides of the street near the intersection.

Cushman Street (CDS 176300) is classified as a minor arterial by DOT&PF and is maintained by the City of Fairbanks (COF). Cushman Street runs north/south between the Tanana River on the south side of Fairbanks and Illinois Street on the north side of Chena River. Airport Way divides Cushman Street into Cushman Street, north of the intersection, and South Cushman Street, south of the intersection. At the southbound approach of the intersection, Cushman Street contains one dedicated left-turn lane and a shared through and right-turn lane. The South Cushman northbound approach contains one shared through and right-turn lane and one shared through and left-turn lane. Sidewalks line both sides of the road for pedestrian use. High Pressure Sodium (HPS) lighting mounted on utility poles at variable spacing illuminate Cushman and South Cushman streets near the intersection.

The Airport Way/Cushman Street intersection is a fully actuated signalized intersection with signalized pedestrian crosswalks across each leg. The Cushman Street/Gaffney Street intersection to the north is signalized, as is the Airport Way/Noble Street intersection to the east. The Cushman Street/14<sup>th</sup> Avenue intersection is within the functional area of the project intersection and is stop controlled on 14<sup>th</sup> Avenue.

Adjacent land is primarily general commercial use. Land and businesses potentially affected by this project are discussed in the Right-of-Way (ROW) Requirements section of this report.



Figure 2: Project Limits

### ***Purpose & Need***

Safety and operational issues have been identified at the Airport Way/Cushman Street intersection. The density of vehicular and pedestrian traffic at the Airport Way/Cushman Street intersection has been identified as one of the top five highest-volume intersections within Fairbanks. This intersection experiences significant delays, especially for the southbound and northbound movements. In addition, the crash rate at this intersection is higher than the statewide average for similar intersection configuration, with the number of non-motorized crashes being the highest for any intersection within the FAST Planning<sup>3</sup> area.

The purpose of this project is to improve traffic operations, motorist and pedestrian safety, and air quality, and decrease delays at the Airport Way/Cushman Street intersection. This project will reconstruct Airport Way from just west of Turner Street to Noble Street, and along Cushman Street between just north of 15<sup>th</sup> Avenue and Gaffney Road. Reconstruction of the Airport Way/Noble Street and Cushman Street/Gaffney Road intersections will also be included in this project.

<sup>3</sup> “Fairbanks Area Surface Transportation (FAST) planning” was formerly “Fairbanks Metropolitan Area Transportation Systems (FMATS)”.

Proposed improvements include the following:

- Reconstruct intersection approaches and add auxiliary lanes to increase vehicular capacity and reduce delay
- Add positive offset left-turn lanes on Airport Way to improve sight distance and safety
- Resurface and stripe the roadway
- Install new signage
- Upgrade traffic signal controls
- Add raised corner/channelizing islands with curb ramps for improved pedestrian and bicyclist safety and ADA accessibility
- Replace and/or relocate lighting as needed for the improvements
- Relocate utilities as needed for the improvements
- Provide landscaping enhancements consistent with the COF Cushman Street Complete Streets Corridor

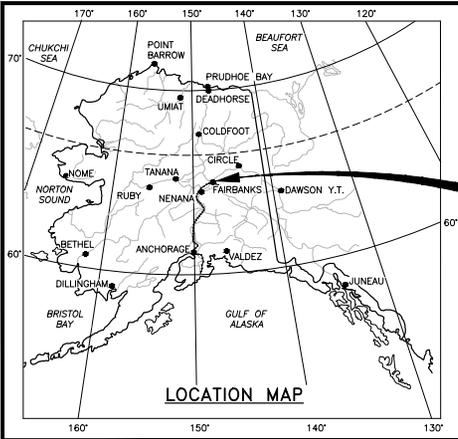
See APPENDIX F for preliminary plan and profile sheets.

## **DESIGN STANDARDS**

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

### Standards

- A Policy on Geometric Design of Highways and Streets (GB), 6<sup>th</sup> Edition, American Association of State Highway and Transportation Officials (AASHTO), 2011.
- Roadside Design Guide (RDG), 4<sup>th</sup> Edition, AASHTO, 2011.
- Alaska Flexible Pavement Design Manual (AKFPDM), DOT&PF, 2004
- Alaska Highway Preconstruction Manual (HPCM), State of Alaska, DOT&PF, as amended.
- Alaska Highway Drainage Manual (AHDM), State of Alaska, DOT&PF, 2006.
- The Alaska Traffic Manual (ATM), consisting of the Manual on Uniform Traffic Control Devices (MUTCD), 2009 as amended, U.S. DOT, Federal Highway Administration (FHWA) and the Alaska Traffic Manual Supplement (ATMS), State of Alaska, DOT&PF, 2016.
- Guide for the Development of Bicycle Facilities (GDBF), 4<sup>th</sup> Edition, AASHTO, 2012.
- Americans with Disabilities Act (ADA) Standards for Transportation Facilities, U.S. DOT, 2006.
- ADA Standards for Accessible Design, United States Department of Justice, 2010.
- Highway Capacity Manual (HCM), 5<sup>th</sup> Edition, Transportation Research Board, 2010.
- National Electrical Safety Code (NESC), IEEE Standards Association, 2017
- Recommended Practice for Roadway Lighting (RP-8-14), American National Standards Institute / Illuminating Engineering Society, 2014.



PROJECT LOCATION

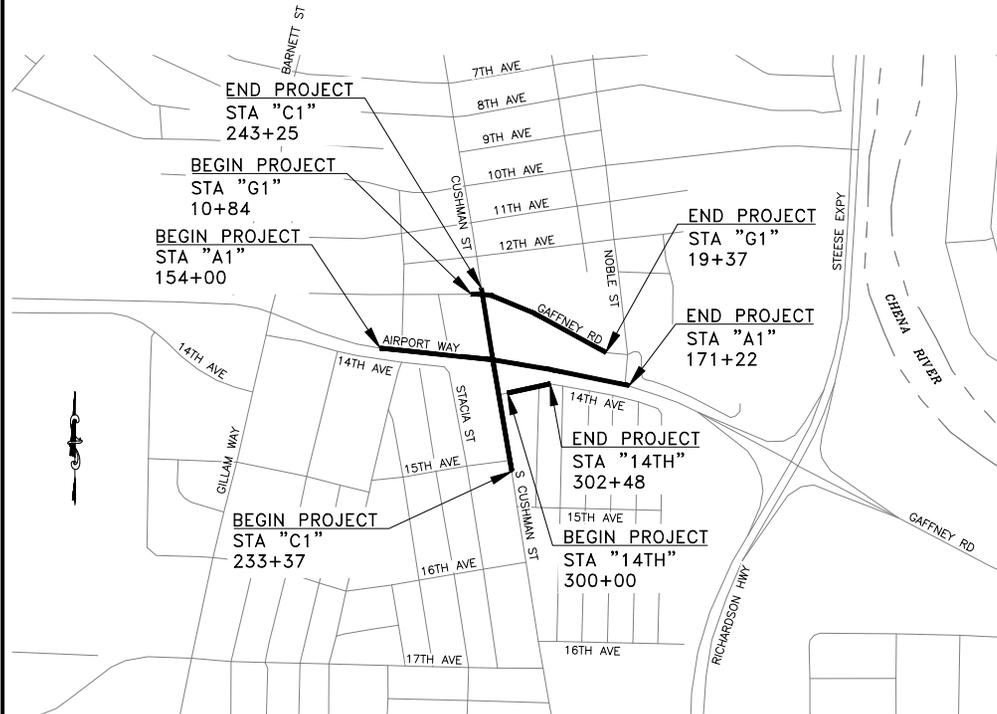
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
&  
PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT  
0002312/Z640780000

AIRPORT WAY/CUSHMAN STREET INTERSECTION RECONSTRUCTION  
GRADING, DRAINAGE, PAVING, SIGNING, STRIPING, ILLUMINATION & SIGNALIZATION

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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			CDS ROUTE: 176300	MILEPOINT: 2.626 TO 2.824			

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	LEGEND
A3	GENERAL NOTES AND ABBREVIATIONS
A4-A8	SURVEY CONTROL
B1-B4	TYPICAL SECTIONS
C1-C2	ESTIMATE OF QUANTITIES
D1-D4	SUMMARY TABLES
E1-E5	DEMOLITION PLAN
E6	CURB AND GUTTER DETAILS
E7-E9	MISC DETAILS
F1	PLAN & PROFILE SHEET LAYOUT
F2-F11	PLAN & PROFILE SHEETS
G1	GRADING PLAN SHEET LAYOUT
G2-G15	GRADING PLAN
H1	SIGNING & STRIPING SHEET LAYOUT
H2-H10	SIGNING & STRIPING PLANS
H11-H13	SIGNING SUMMARY
H14	SIGN SALVAGE SUMMARY
H15-H16	SIGN DETAILS
H17	STRIPING DETAIL
H18-H23	ILLUMINATION & INTERCONNECT PLAN
H24-H27	ILLUMINATION SUMMARY
H28	LOAD CENTER SUMMARY
H29-H37	SIGNAL PLAN, WIRING DIAGRAM, SUMMARY
H38-H41	SIGNAL DETAILS
H42-H53	ILLUMINATION & INTERCONNECT DETAILS
L1-L10	LANDSCAPE PLAN
L11-L20	LANDSCAPE DETAILS
Q1-Q2	EROSION SEDIMENT CONTROL PLANS
T1-T3	TRAFFIC CONTROL PLANS
U1	UTILITY SHEET LAYOUT
U2-U7	STORM DRAIN PLAN
U8-U15	STORM DRAIN DETAILS
U16-U18	STORM DRAIN SUMMARY TABLES
U19-U22	WATER LINE PLAN
U23-U24	DUCT BANK PLAN
U25	DUCT BANK DETAILS
V1-V11	STANDARD PLANS



DESIGN DESIGNATIONS		
	AIRPORT WAY	CUSHMAN STREET
ADT (2018)	17,000	8,500
ADT (2040)	20,700	10,360
DHV (%)	2,130 (10.30%)	1,070 (10.30%)
PERCENT TRUCKS (T)	4.8%	3.6%
DIRECTIONAL SPLIT (D)	40/60	40/60
DESIGN SPEED (V)	45 MPH	30 MPH*
DESIGN ESALS (2040)	1,050,000	825,000

\*25 MPH NORTH OF AIRPORT WAY

PROJECT SUMMARY			
	AIRPORT WAY	CUSHMAN STREET	14TH AVENUE
WIDTH OF PAVEMENT	VARIABLES	VARIABLES	VARIABLES
LENGTH OF PROJECT	1,722'	988'	248'

CARL HEIM, P.E., PROJECT MANAGER

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
&  
PUBLIC FACILITIES

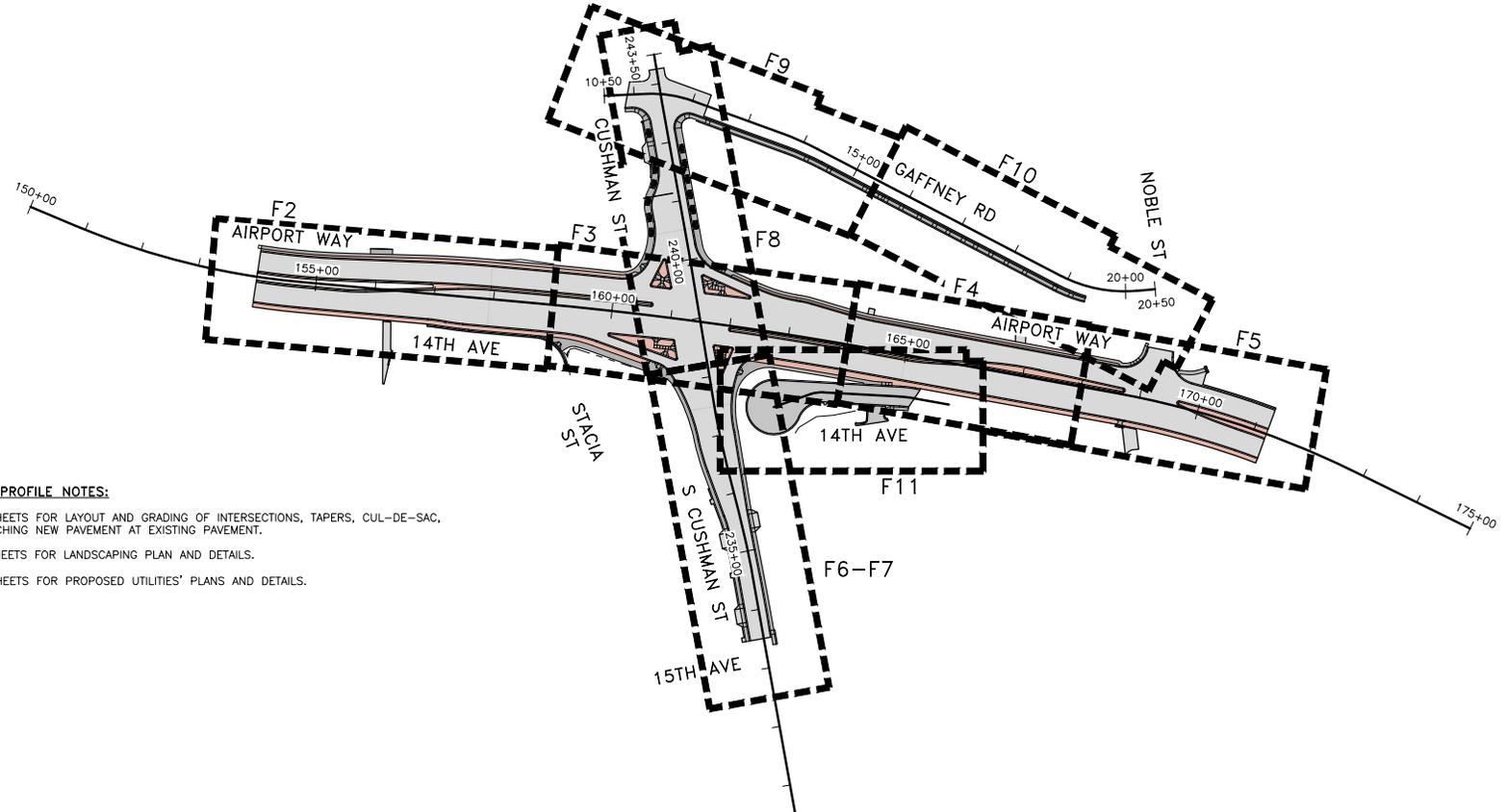
APPROVED BY: \_\_\_\_\_ DATE \_\_\_\_\_

Sarah E. Schacher, P.E.  
Preconstruction Engineer, Northern Region  
ACCEPTED FOR CONSTRUCTION:

\_\_\_\_\_ DATE \_\_\_\_\_

Joseph Kemp, P.E.  
Acting Northern Region Director

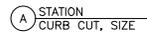
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			ALASKA	0002312/Z640780000	2024	F1	F11



**PLAN AND PROFILE NOTES:**

1. SEE G SHEETS FOR LAYOUT AND GRADING OF INTERSECTIONS, TAPERS, CUL-DE-SAC, AND MATCHING NEW PAVEMENT AT EXISTING PAVEMENT.
2. SEE L SHEETS FOR LANDSCAPING PLAN AND DETAILS.
3. SEE U SHEETS FOR PROPOSED UTILITIES' PLANS AND DETAILS.

**APPROACH KEY**



PLAN & PROFILE  
SHEET LAYOUT

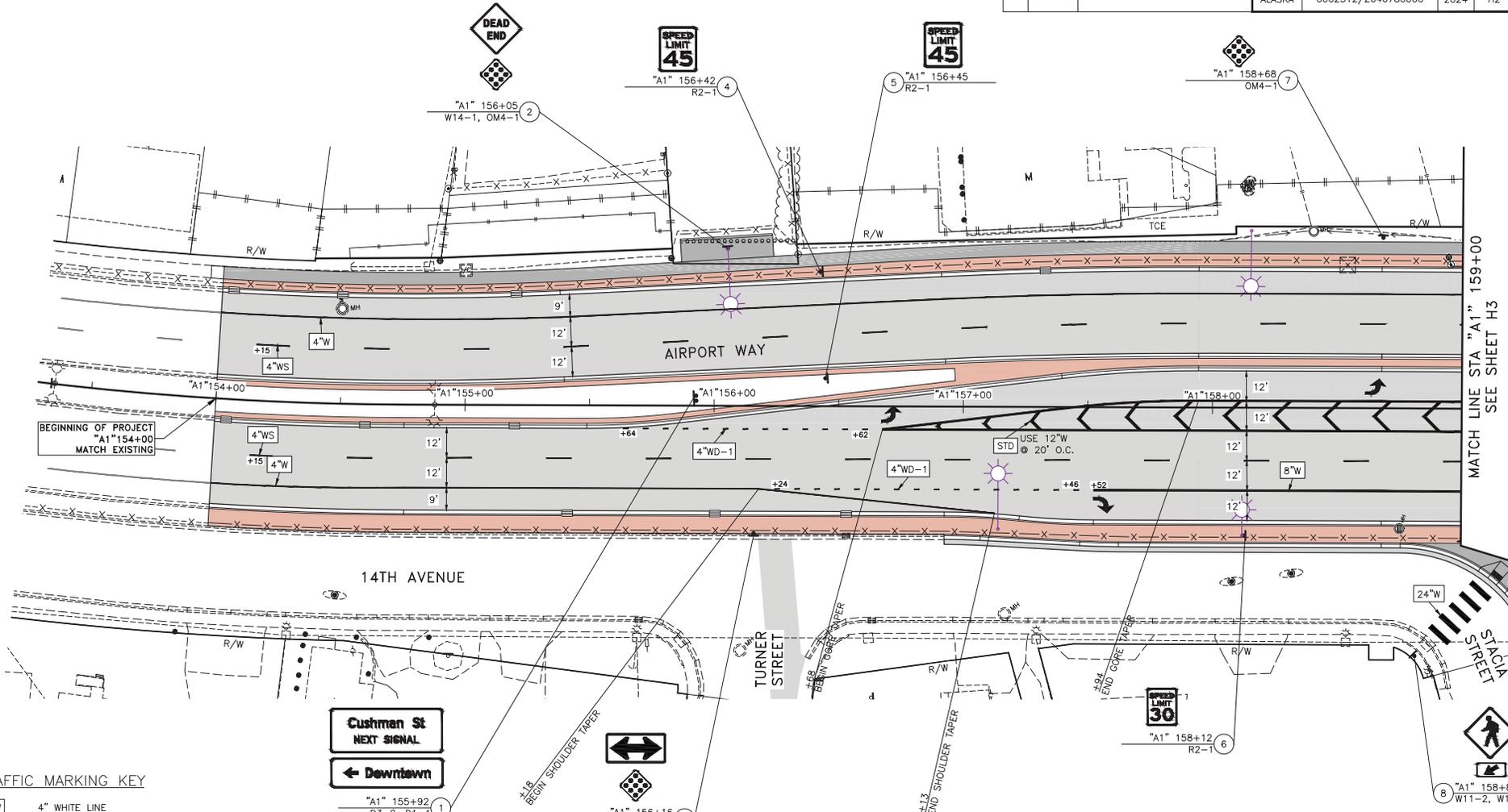
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KINNEY ENGINEERING, LLC

**12/22/2022**  
**REVIEW**  
**PS&E**

12/22/2022

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PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd., Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. AEL 1102  
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**TRAFFIC MARKING KEY**

4"W	4" WHITE LINE
4"WS	4" WHITE SKIP LINE (10' STRIPE/30' SKIP PATTERN)
4"WD-1	4" WHITE DOTTED LINE (2' STRIPE/6' SKIP PATTERN)
4"DY	4" DOUBLE YELLOW LINE
8"W	8" WHITE LINE
8"WD-1	8" WHITE DOTTED LINE (3' STRIPE/3' SKIP PATTERN)
STD	SEE STANDARD PLANS
DTL	SEE DETAILS ON H17 AND E-SHEETS

**SIGNING KEY**

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	SIGN CODE(S)
—	SIGN LOCATION #

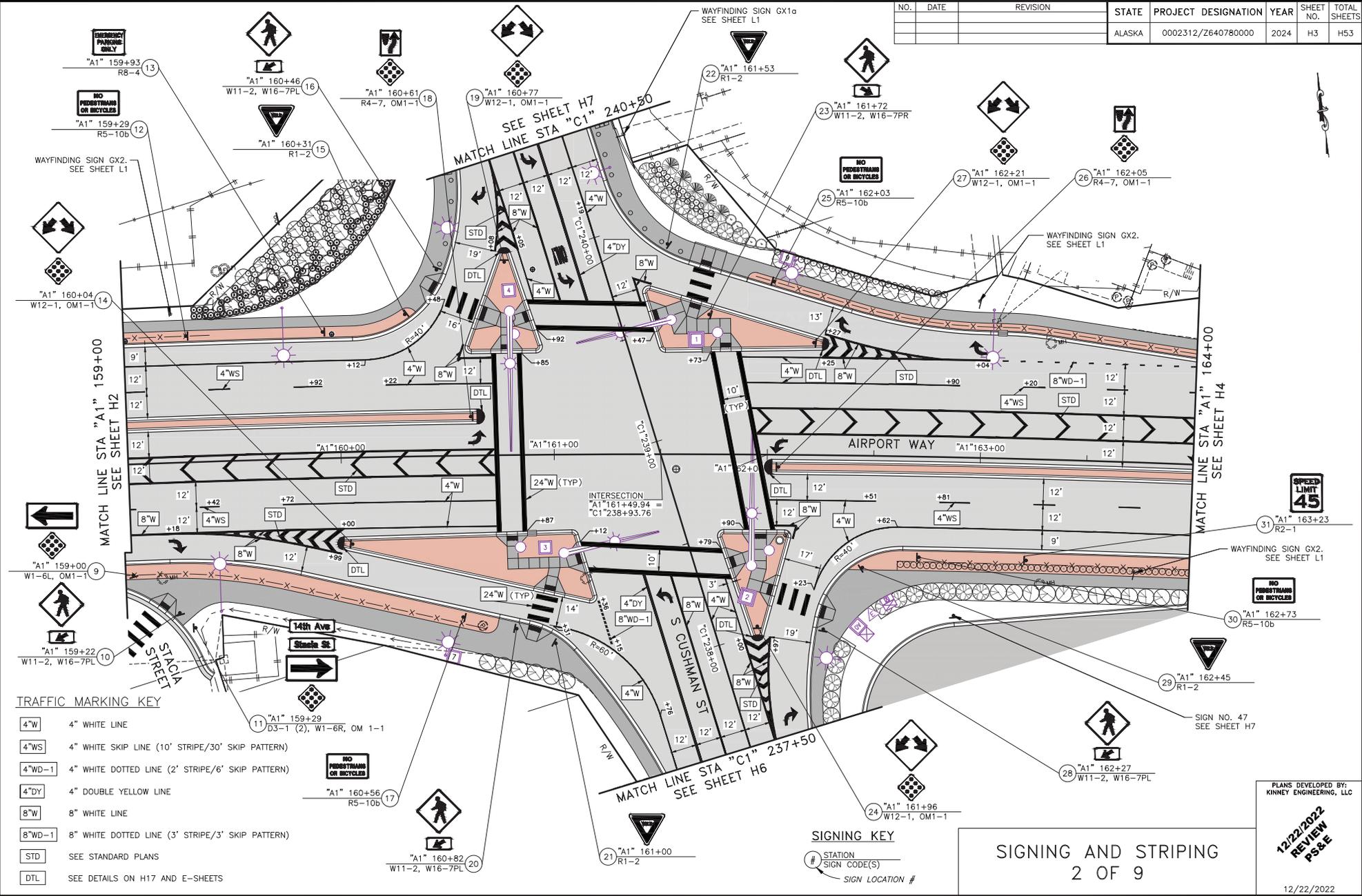
**SIGNING AND STRIPING**  
1 OF 9

PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

**12/22/2022**  
REVIEW  
PS&E

12/22/2022

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002312/Z640780000	2024	H3	H53



**TRAFFIC MARKING KEY**

4"W	4" WHITE LINE
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STD	SEE STANDARD PLANS
DTL	SEE DETAILS ON H17 AND E-SHEETS

**SIGNING KEY**

#	STATION SIGN CODE(S)
—	SIGN LOCATION #

**SIGNING AND STRIPING**  
2 OF 9

PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

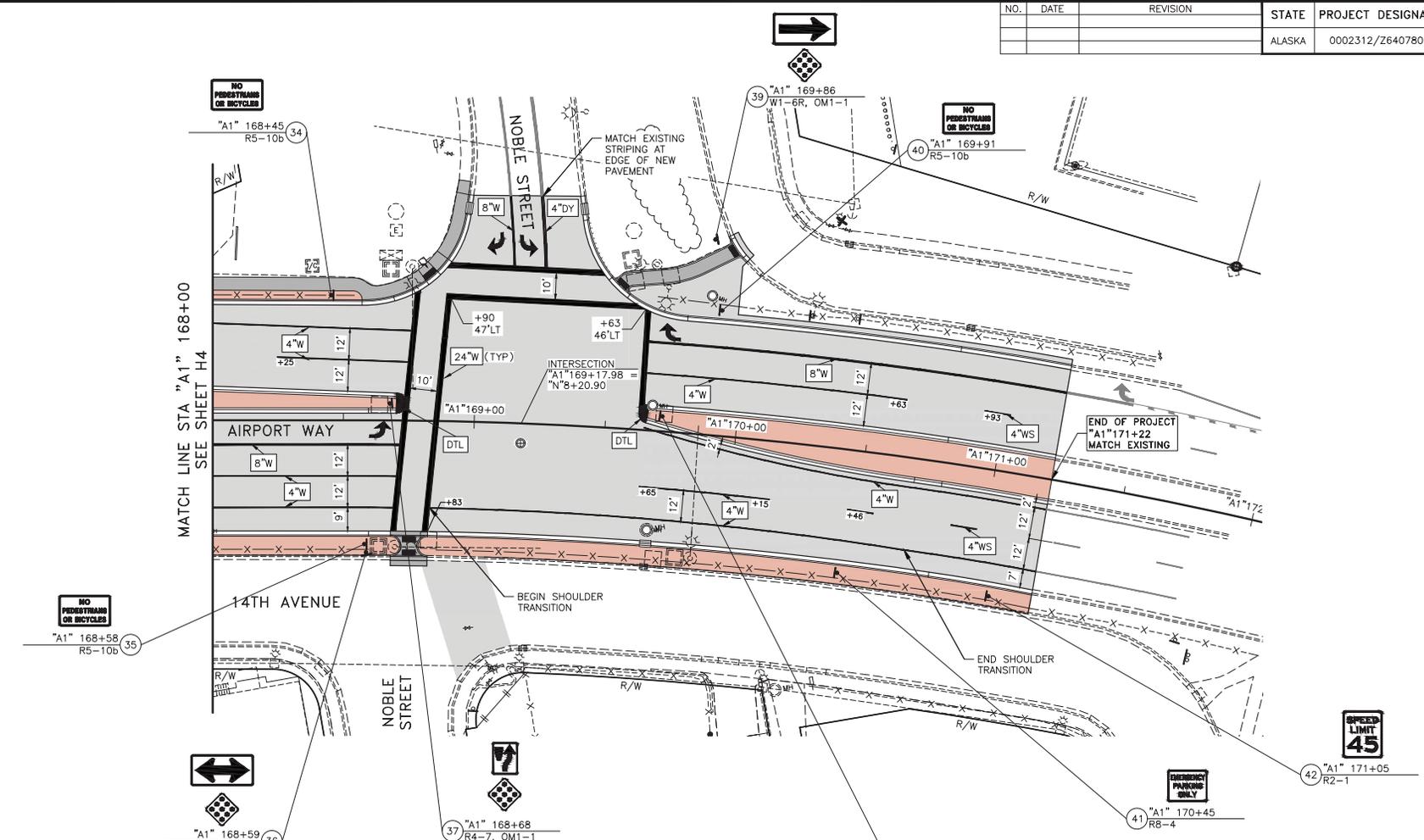
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REVIEW  
PS&E

12/22/2022

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**TRAFFIC MARKING KEY**

4"W	4" WHITE LINE
4"WS	4" WHITE SKIP LINE (10' STRIPE/30' SKIP PATTERN)
4"WD-1	4" WHITE DOTTED LINE (2' STRIPE/6' SKIP PATTERN)
4"DY	4" DOUBLE YELLOW LINE
8"W	8" WHITE LINE
8"WD-1	8" WHITE DOTTED LINE (3' STRIPE/3' SKIP PATTERN)
STD	SEE STANDARD PLANS
DTL	SEE DETAILS ON H17 AND E-SHEETS

**SIGNING KEY**

#	STATION	SIGN CODE(S)
		SIGN LOCATION #

**SIGNING AND STRIPING**  
4 OF 9

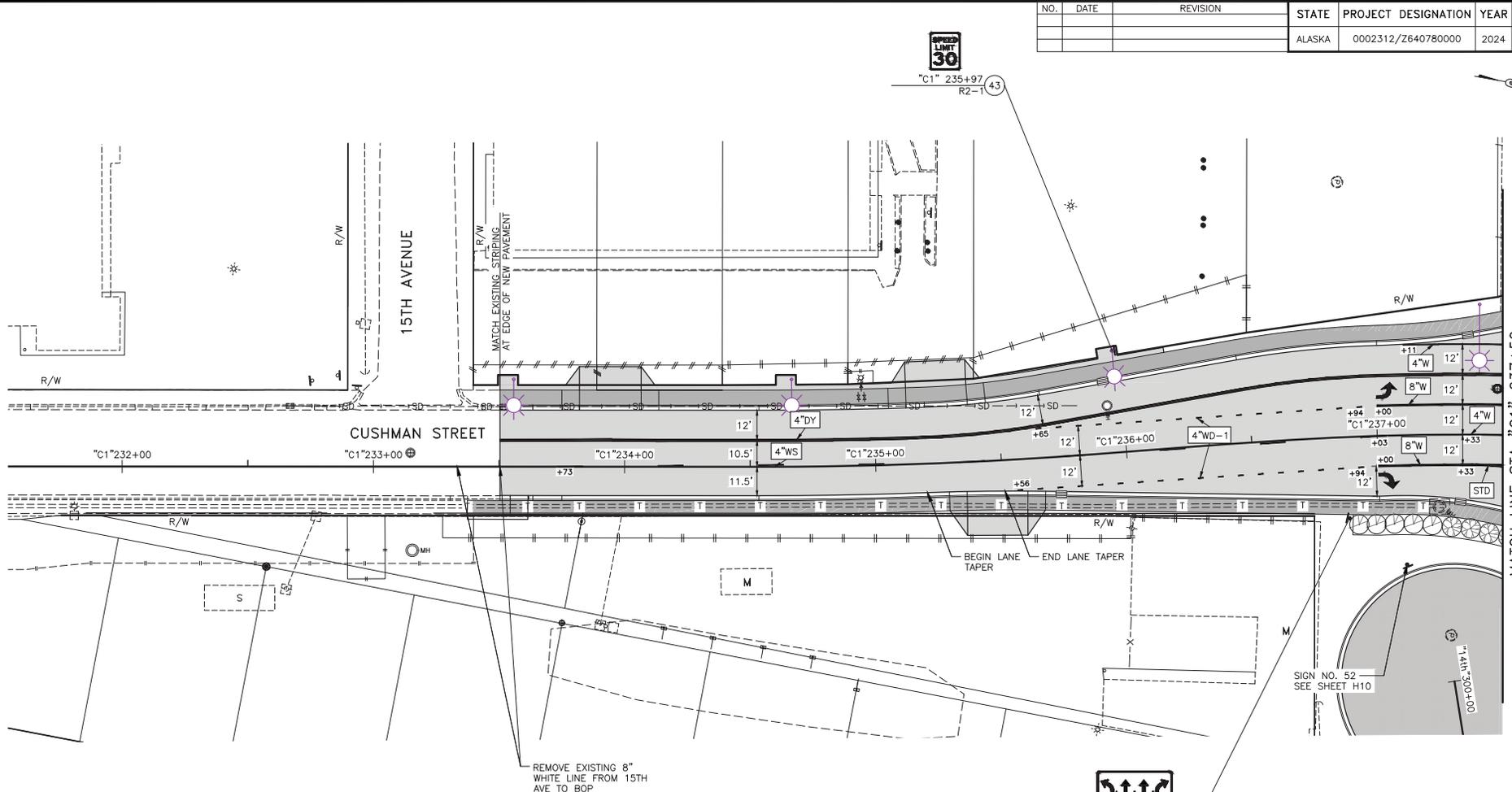
PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

**12/22/2022**  
**REVIEW**  
**PS&E**

12/22/2022

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd., Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. AEG1 1102  
Z:\PROJECTS\DOT\PS&E\_Airport & common reconstruction\DWG\Sheet\A1\A1-10\_SIGN-STRIPING-H5\_Thu, Dec/22/22 02:29pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002312/Z640780000	2024	H6	H53



**TRAFFIC MARKING KEY**

4"W	4" WHITE LINE
4"WS	4" WHITE SKIP LINE (10' STRIPE/30' SKIP PATTERN)
4"WD-1	4" WHITE DOTTED LINE (2' STRIPE/6' SKIP PATTERN)
4"DY	4" DOUBLE YELLOW LINE
8"W	8" WHITE LINE
8"WD-1	8" WHITE DOTTED LINE (3' STRIPE/3' SKIP PATTERN)
STD	SEE STANDARD PLANS
DTL	SEE DETAILS ON H17 AND E-SHEETS

**SIGNING KEY**

#	STATION
	SIGN CODE(S)
○	SIGN LOCATION #

**SIGNING AND STRIPING**  
5 OF 9

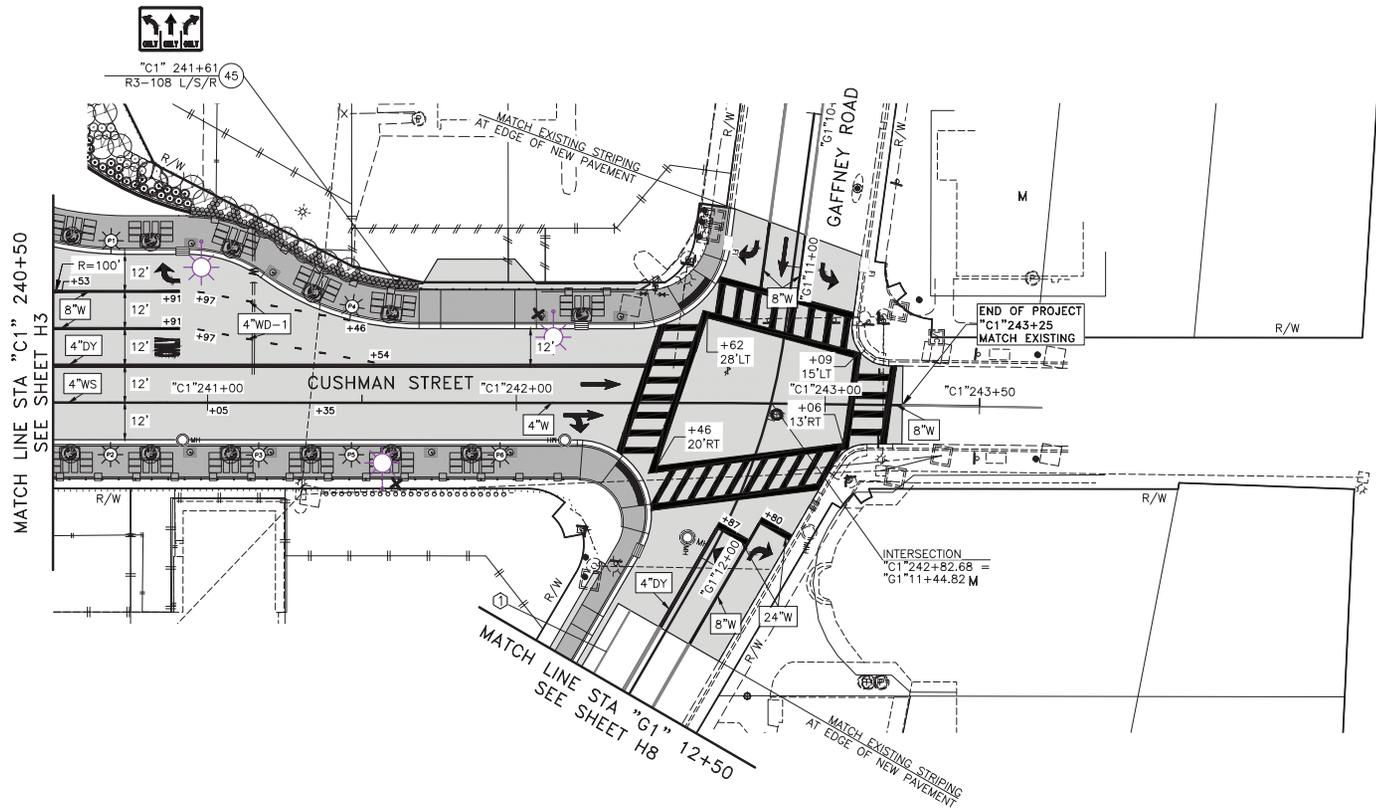
PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

**12/22/2022**  
**REVIEW**  
**PS&E**

12/22/2022

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd., Suite 400 Anchorage, Alaska 99503 (907) 346-2375 CERT. OF AUTH. NO. AEL 1102  
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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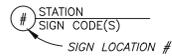
**TRAFFIC MARKING KEY**

- 4\"/>

**NOTES:**

- ① OBLITERATE 4\"/>

**SIGNING KEY**



SIGNING AND STRIPING  
6 OF 9

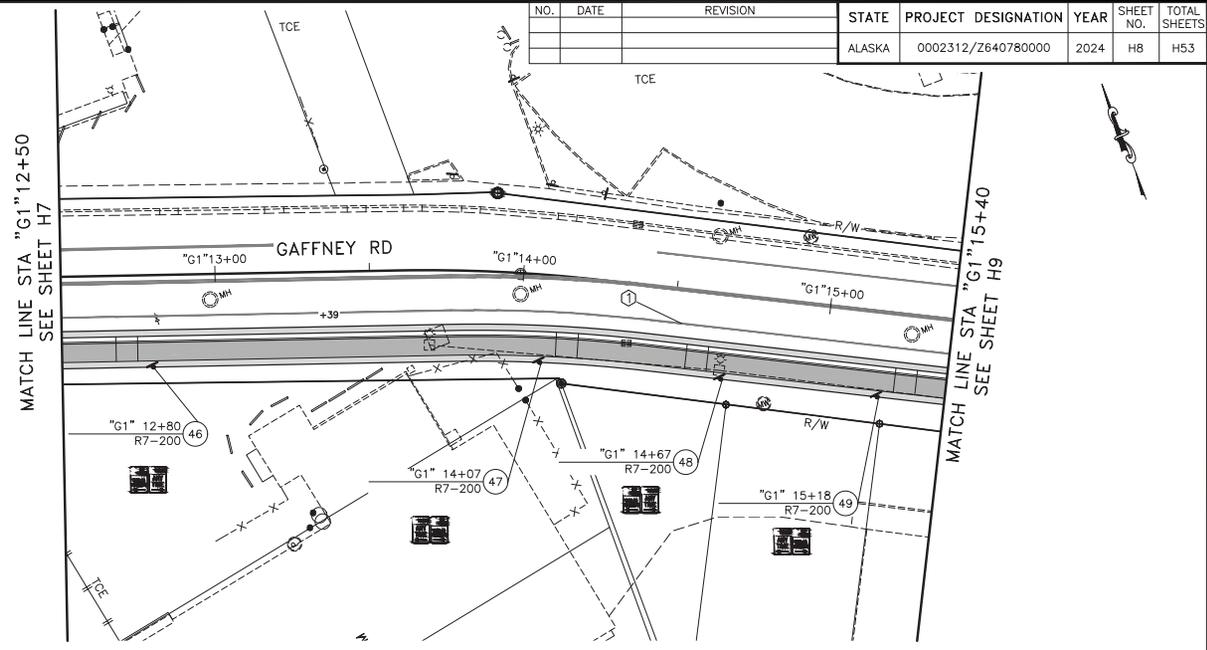
PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

12/22/2022  
REVIEW  
PS&E

12/22/2022

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd., Suite 400 Anchorage, Alaska 99503 (907) 346-2375 CERT. OF AUTH. NO. AEL 1102  
Z:\PROJECTS\DOT\PS&E\_report & cushman reconstruction\DWG\C Sheets\64078\_H7-H10\_SIGN-STRIPING-17 Thu, Dec/22/22 02:29pm

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd., Suite 400 Anchorage, Alaska 99503 (907) 346-2375 CERT. OF AUTH. NO. AEGL 1102  
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002312/Z640780000	2024	H8	H53

**NOTES:**  
 ① OBLITERATE 4" WHITE SHOULDER STRIPE

SIGNING AND STRIPING  
 7 OF 9

PLANS DEVELOPED BY:  
 KINNEY ENGINEERING, LLC

**12/22/2022**  
**REVIEW**  
**PS&E**

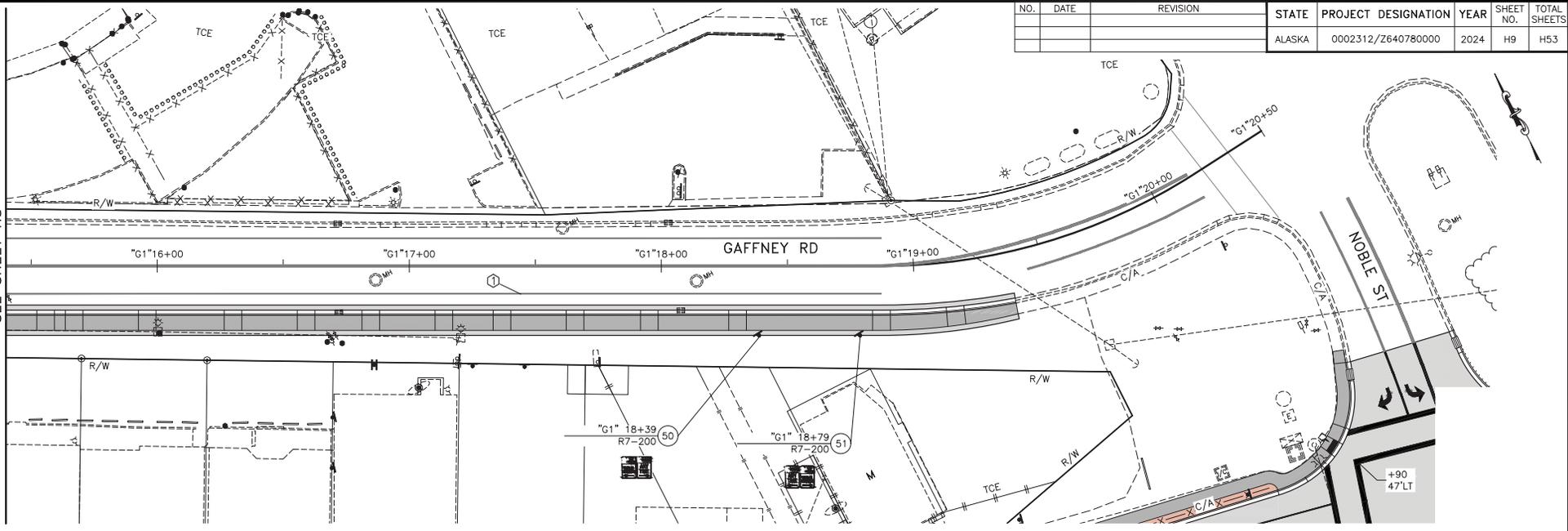
12/22/2022

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd., Suite 400 Anchorage, Alaska 99503 (907) 346-2375 CERT. OF AUTH. NO. AEL 1102  
 Z:\PROJECTS\DOT\PS&E\airport & common reconstruction\DWG\Sheet\4478\_H2-H10\_SIGN-STRIPES-19\_Thu, Dec/22/22 02:29pm

(SEE PLAN SHEET) REF: 00155

MATCH LINE STA "G1" 15+40  
 SEE SHEET H8

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002312/Z640780000	2024	H9	H53



**NOTES:**  
 ① OBLITERATE 4" WHITE SHOULDER STRIPE

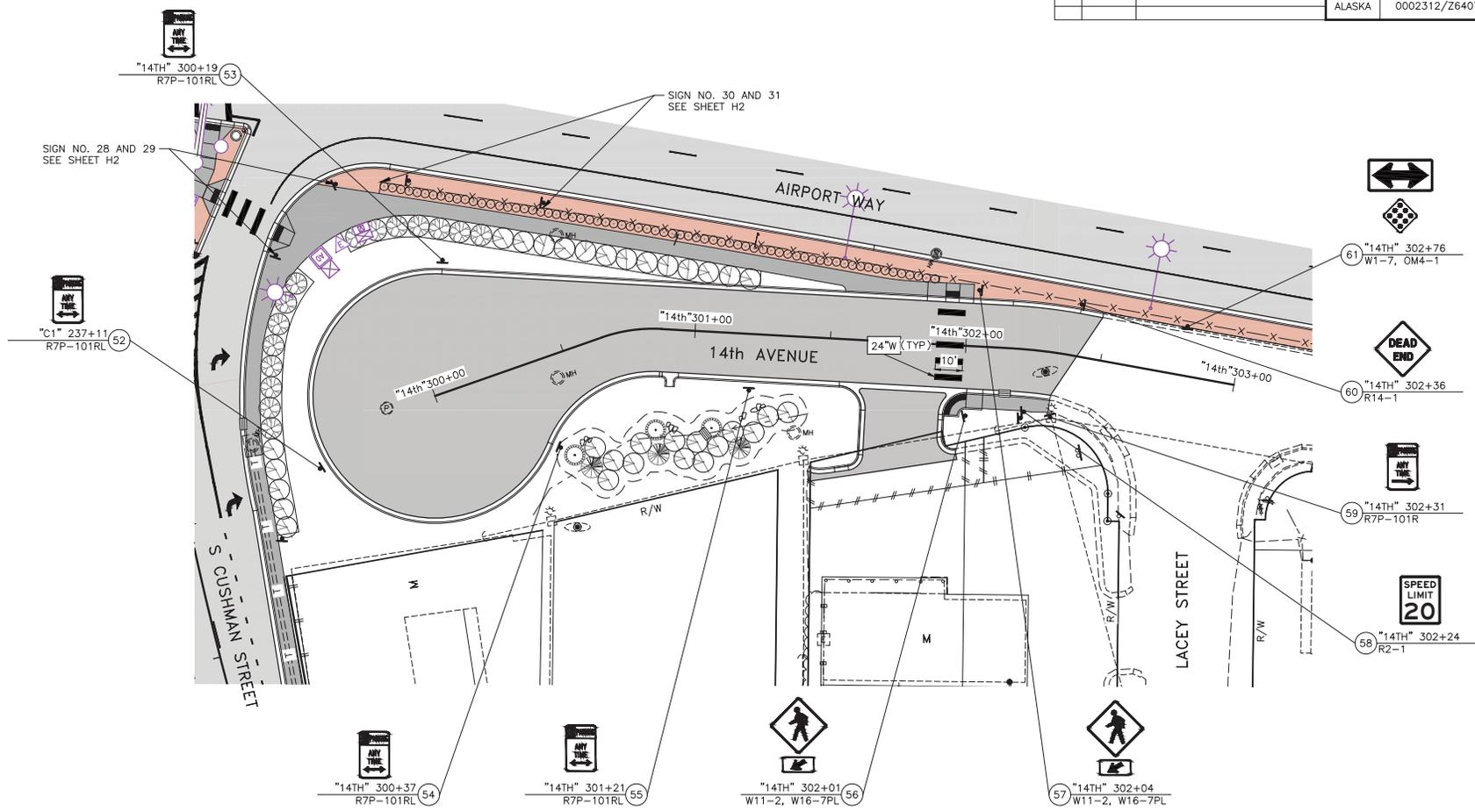
SIGNING AND STRIPING  
 8 OF 9

PLANS DEVELOPED BY:  
 KINNEY ENGINEERING, LLC

12/22/2022  
 REVIEW  
 PS&E

12/22/2022

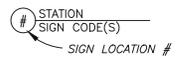
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002312/Z640780000	2024	H10	H53



**TRAFFIC MARKING KEY**

- 4"W 4" WHITE LINE
- 4"WS 4" WHITE SKIP LINE (10' STRIPE/30' SKIP PATTERN)
- 4"WD-1 4" WHITE DOTTED LINE (2' STRIPE/6' SKIP PATTERN)
- 4"DY 4" DOUBLE YELLOW LINE
- 8"W 8" WHITE LINE
- 8"WD-1 8" WHITE DOTTED LINE (3' STRIPE/3' SKIP PATTERN)
- STD SEE STANDARD PLANS
- DTL SEE DETAILS ON H17 AND E-SHEETS

**SIGNING KEY**



**SIGNING AND STRIPING**  
9 OF 9

PLANS DEVELOPED BY:  
KINNEY ENGINEERING, LLC

**12/22/2022**  
**REVIEW**  
**PS&E**

12/22/2022

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd., Suite 400 Anchorage, Alaska 99503 (907) 346-2375 CERT. OF AUTH. NO. AEL 1102  
Z:\PROJECTS\DOT\PS&E\_Airport & Cushman reconstruction\DWG\CS Sheets\64078\_H2-H10\_SIGN-STRIPING-H10\_Thu\_Dec/22/22 02:50pm

## **Airport/Cushman Intersection Improvements – Potential Exemptions**

### **§ 93.126 Exempt projects.**

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in table 2 of this section are exempt from the requirement to determine conformity. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in table 2 of this section is not exempt if the MPO in consultation with other agencies (see [§ 93.105\(c\)\(1\)\(iii\)](#)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potentially adverse emissions impacts for any reason. States and MPOs must ensure that exempt projects do not interfere with TCM implementation. Table 2 follows:

### **Table 2—Exempt Projects**

#### **Safety**

Railroad/highway crossing.

**Projects that correct, improve, or eliminate a hazardous location or feature.**

Safer non-Federal-aid system roads.

Shoulder improvements.

**Increasing sight distance.**

Highway Safety Improvement Program implementation.

Traffic control devices and operating assistance other than signalization projects.

Railroad/highway crossing warning devices.

Guardrails, median barriers, crash cushions.

**Pavement resurfacing and/or rehabilitation.**

**Pavement marking.**

Emergency relief ([23 U.S.C. 125](#)).

**Fencing.**

Skid treatments.

Safety roadside rest areas.

**Adding medians.**

Truck climbing lanes outside the urbanized area.

Lighting improvements.

Widening narrow pavements or reconstructing bridges (no additional travel lanes).

Emergency truck pullovers.

#### **Air Quality**

Continuation of ride-sharing and van-pooling promotion activities at current levels.

**Bicycle and pedestrian facilities.**

**§ 93.127 Projects exempt from regional emissions analyses.**

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in Table 3 of this section are exempt from regional emissions analysis requirements. The local effects of these projects with respect to CO concentrations must be considered to determine if a hot-spot analysis is required prior to making a project-level conformity determination. The local effects of projects with respect to PM<sub>10</sub> and PM<sub>2.5</sub> concentrations must be considered and a hot-spot analysis performed prior to making a project-level conformity determination, if a project in Table 3 also meets the criteria in [§ 93.123\(b\)\(1\)](#). These projects may then proceed to the project development process even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in Table 3 of this section is not exempt from regional emissions analysis if the MPO in consultation with other agencies (see [§ 93.105\(c\)\(1\)\(iii\)](#)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potential regional impacts for any reason. Table 3 follows:

**Table 3—Projects Exempt From Regional Emissions Analyses****Intersection channelization projects.**

Intersection signalization projects at individual intersections.

Interchange reconfiguration projects.

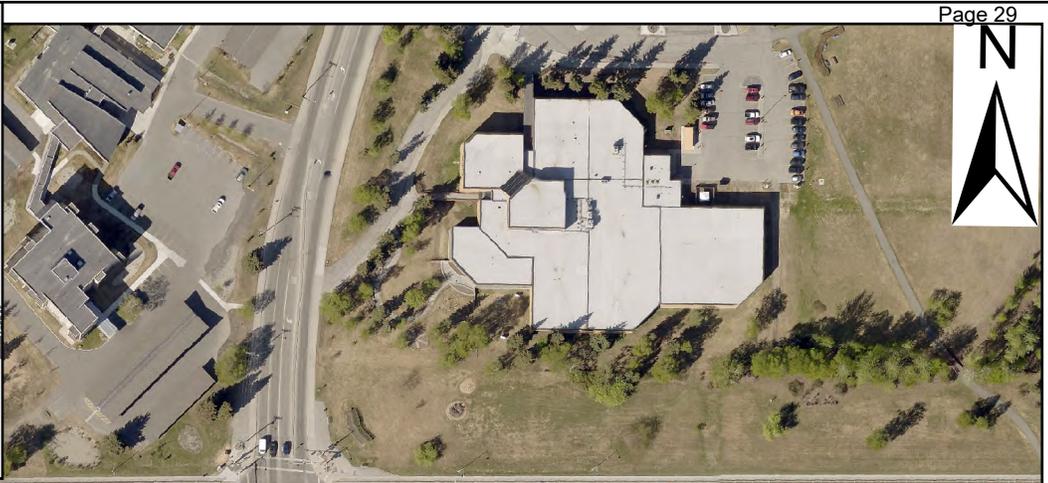
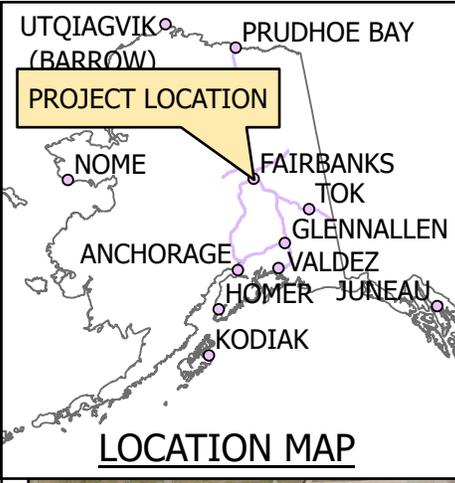
Changes in vertical and horizontal alignment.

Truck size and weight inspection stations.

Bus terminals and transfer points

# Project Review

## **Cowles Street Reconstruction**



**Legend**

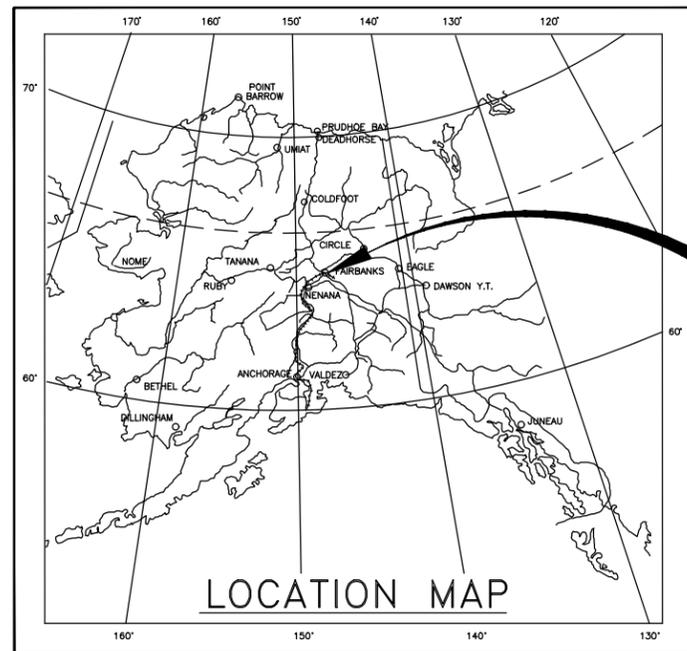
 PROJECT LIMITS



Document Path: C:\Users\bamiller\Documents\Workshop on local disk\Cowles NFWHY00883\COWLES NFWHY00883.aprx



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	PENDING/NFHWHY00883	2024	A1	94
			CDS ROUTE: 176200 MILEPOINT: 0.645 TO 1.1622				



PROJECT LOCATION

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
&  
PUBLIC FACILITIES

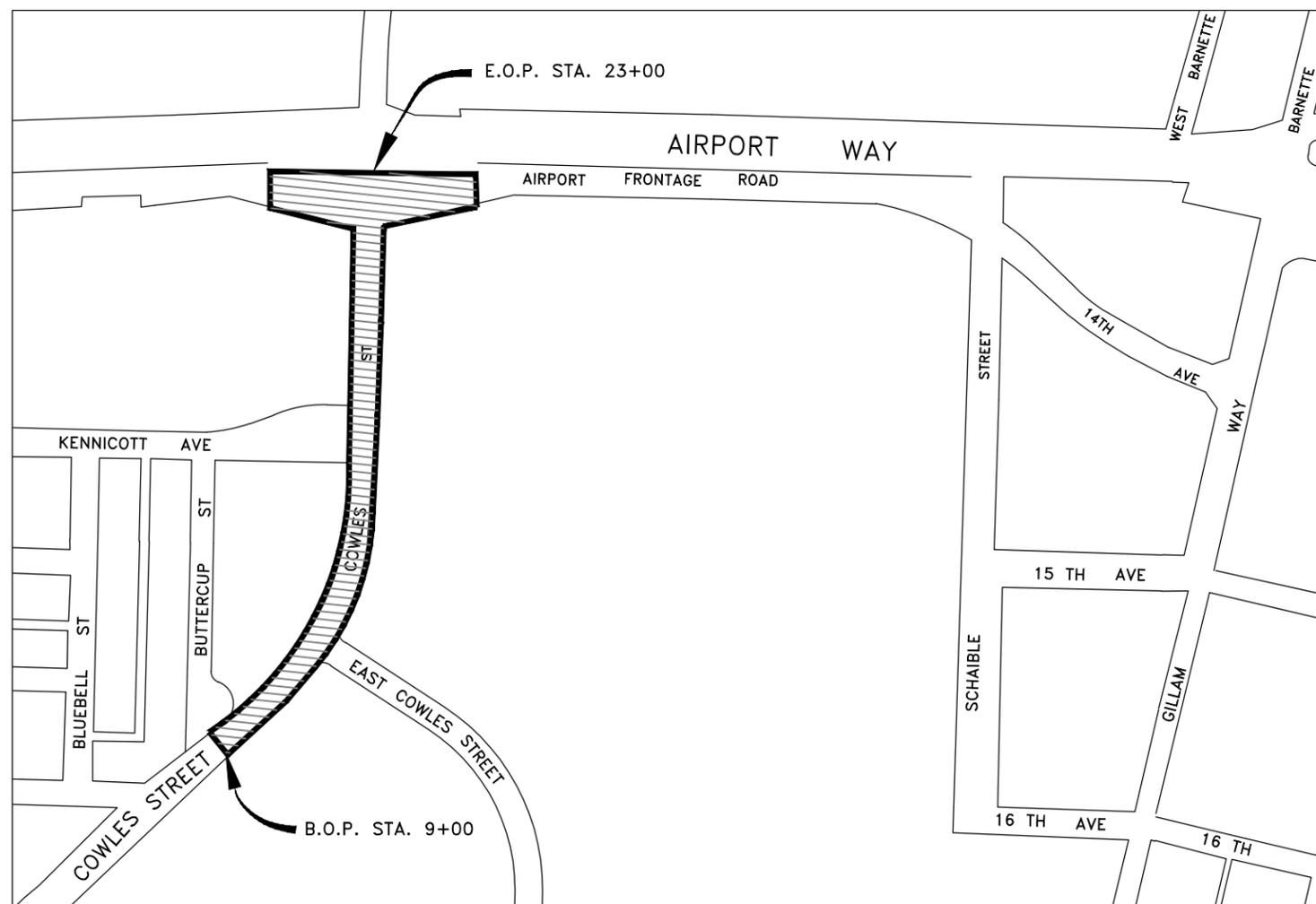
PROPOSED HIGHWAY PROJECT  
COWLES STREET RECONSTRUCTION  
AIRPORT WAY TO EAST COWLES  
PENDING/NFHWHY00883

GRADING, DRAINAGE, PAVING, ILLUMINATION & SIGNALIZATION

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2-A3	LEGEND, ABBREVIATIONS & GENERAL NOTES
A4-A5	SURVEY CONTROL
B1-B2	TYPICAL SECTIONS
C1	ESTIMATE OF QUANTITIES
E1-E2	DETAILS
F1-F5	ROADWAY GEOMETRY
G1-16	GRADING
H1-H7	SIGNING & STRIPING
H100-H103	ILLUMINATION
H201-H219	SIGNAL PLAN
Q1-Q2	EROSION SEDIMENT CONTROL PLANS
T1-T4	TRAFFIC CONTROL PLANS
U1-U3	STORM DRAIN PLAN/PROFILE
V1-V20	STANDARD PLANS
V21-V24	CITY OF FAIRBANKS STANDARD DETAILS

THE FOLLOWING STANDARD PLANS APPLY TO THIS PROJECT:  
I-20.20  
L-03.11, L-23.03, L-25.01, L-30.11  
S-00.12, S-01.02, S-05.02, S-20.11, S-30.05  
T-20.04, T-21.04, T-22.04, T-23.01, T-30.12, T-31.01, T-55.11

THE FOLLOWING CITY OF FAIRBANKS STANDARD PLANS  
APPLY TO THIS PROJECT:  
CD1, CD2, SD1, SD2



DESIGN DESIGNATIONS	
	EAST COWLES TO AIRPORT WAY
ADT (2017)	8,300
ADT (2035)	9,760
ADT (2045)	10,680
DHV (10%)	975
PERCENT TRUCKS (T)	4.4%
DIRECTIONAL SPLIT (D)	40/60
DESIGN SPEED (V)	25 MPH
DESIGN EAL'S (30 YEARS)	1,436,707

PROJECT SUMMARY	
WIDTH OF PAVEMENT	VARIES
LENGTH OF GRADING	1400'
LENGTH OF PAVING	1400'
LENGTH OF PROJECT	1400'

IVET HALL, P.E., PROJECT MANAGER  
ROBERT H. PRISTASH, P.E., DESIGN ENGINEER

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
&  
PUBLIC FACILITIES

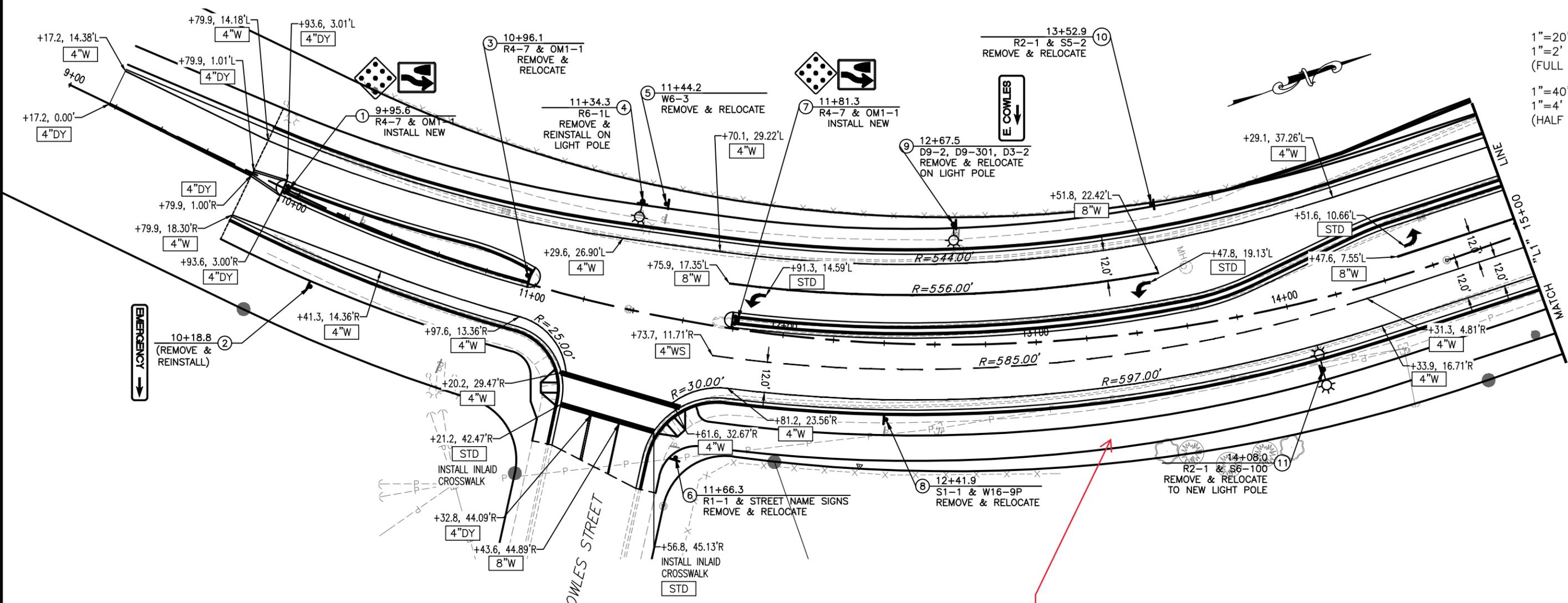
APPROVED BY: *Albert Beck* DATE 7/25/2024

Albert Beck, P.E.  
Acting Preconstruction Engineer, Northern Region

ACCEPTED FOR CONSTRUCTION: *Joseph P. Kemp* DATE 7/25/2024

Joseph P. Kemp, P.E.  
Regional Director, Northern Region

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	PENDING/NFHWY00883	2024	H2	H7



1"=20' HORIZ.,  
1"=2' VERT.  
(FULL SIZE)

1"=40' HORIZ.,  
1"=4' VERT.  
(HALF SIZE)

New separated path for non-motorized users

PLANS DEVELOPED BY: CITY OF FAIRBANKS, ENGINEERING DEPARTMENT, 800 CUSHMAN STREET, FAIRBANKS, AK 99701 (907)459-6740  
 P:\S1557 COWLES Reconstruct - South of Airport\City3D Drawing Files\3-Production\Sign-Striping-H2 Sign & Striping Trl, Feb/16/24 03:23pm

SIGN & STRIPING



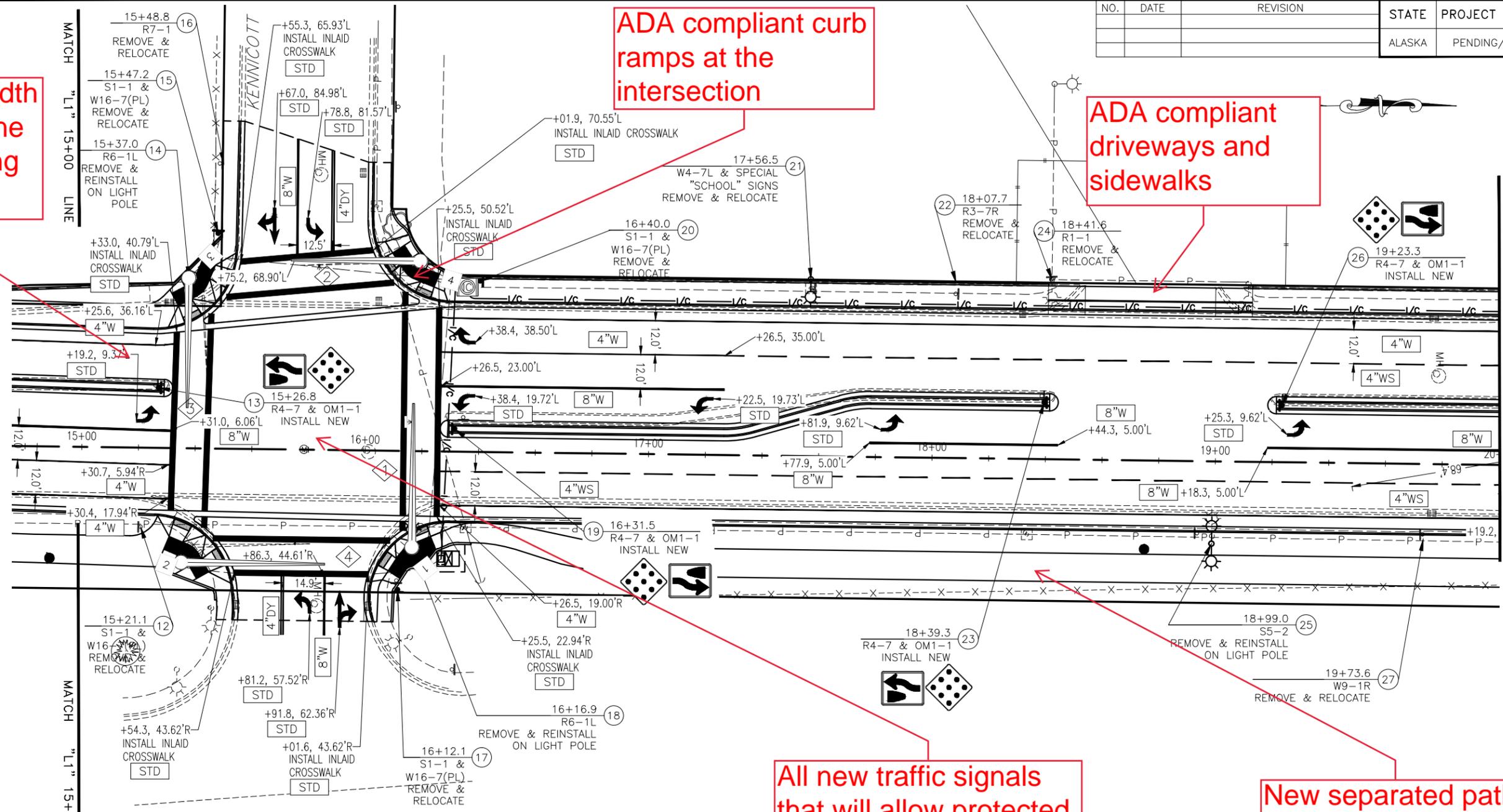
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	PENDING/NFHWY00883	2024	H3	H7

Standard width receiving lane (from existing 21 feet)

ADA compliant curb ramps at the intersection

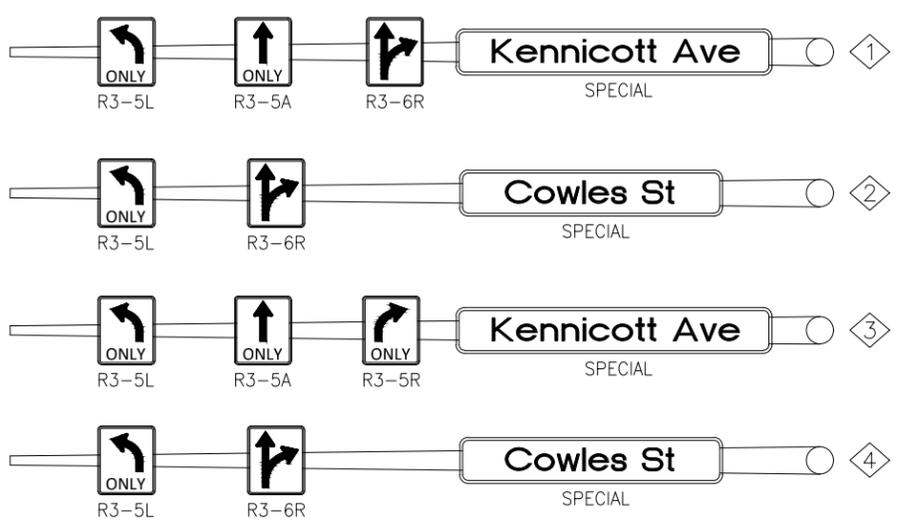
ADA compliant driveways and sidewalks

1"=20' HORIZ.,  
1"=2' VERT.  
(FULL SIZE)  
  
1"=40' HORIZ.,  
1"=4' VERT.  
(HALF SIZE)



All new traffic signals that will allow protected left turns during school peak times

New separated path for non-motorized users



PLANS DEVELOPED BY: CITY OF FAIRBANKS, ENGINEERING DEPARTMENT, 800 CUSHMAN STREET, FAIRBANKS, AK 99701 (907)459-6740  
P:\31557\COWLES Reconstruct - South of Airport\Cowles Drawing Files\3-Production\Sign-Striping\H3 & STRIPING Plan\_Jul18/24 01:58pm

SIGN & STRIPING



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	PENDING/NFHWHY00883	2024	H4	H7

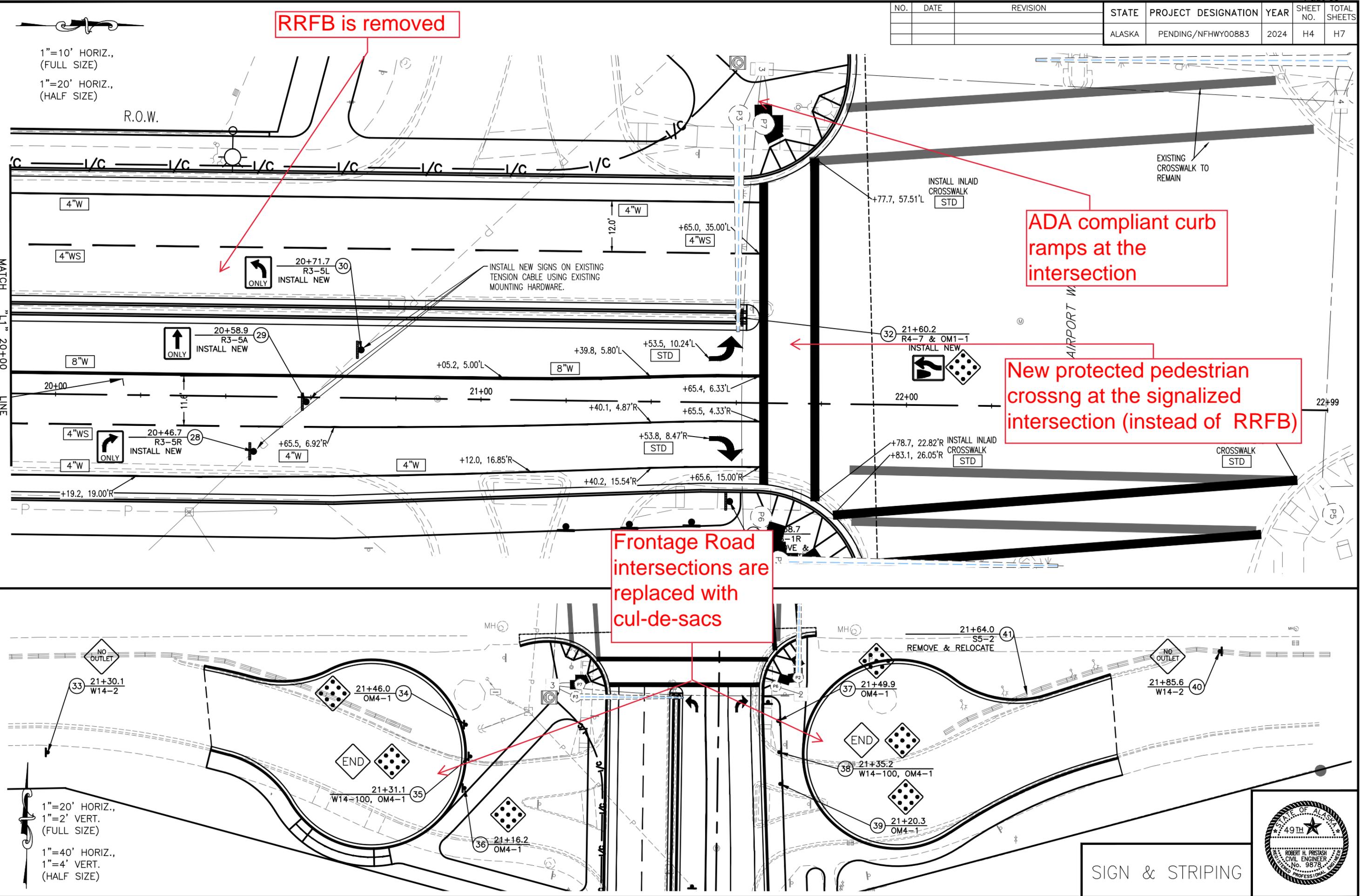
1"=10' HORIZ.,  
(FULL SIZE)  
1"=20' HORIZ.,  
(HALF SIZE)

RRFB is removed

ADA compliant curb ramps at the intersection

New protected pedestrian crossing at the signalized intersection (instead of RRFB)

Frontage Road intersections are replaced with cul-de-sacs



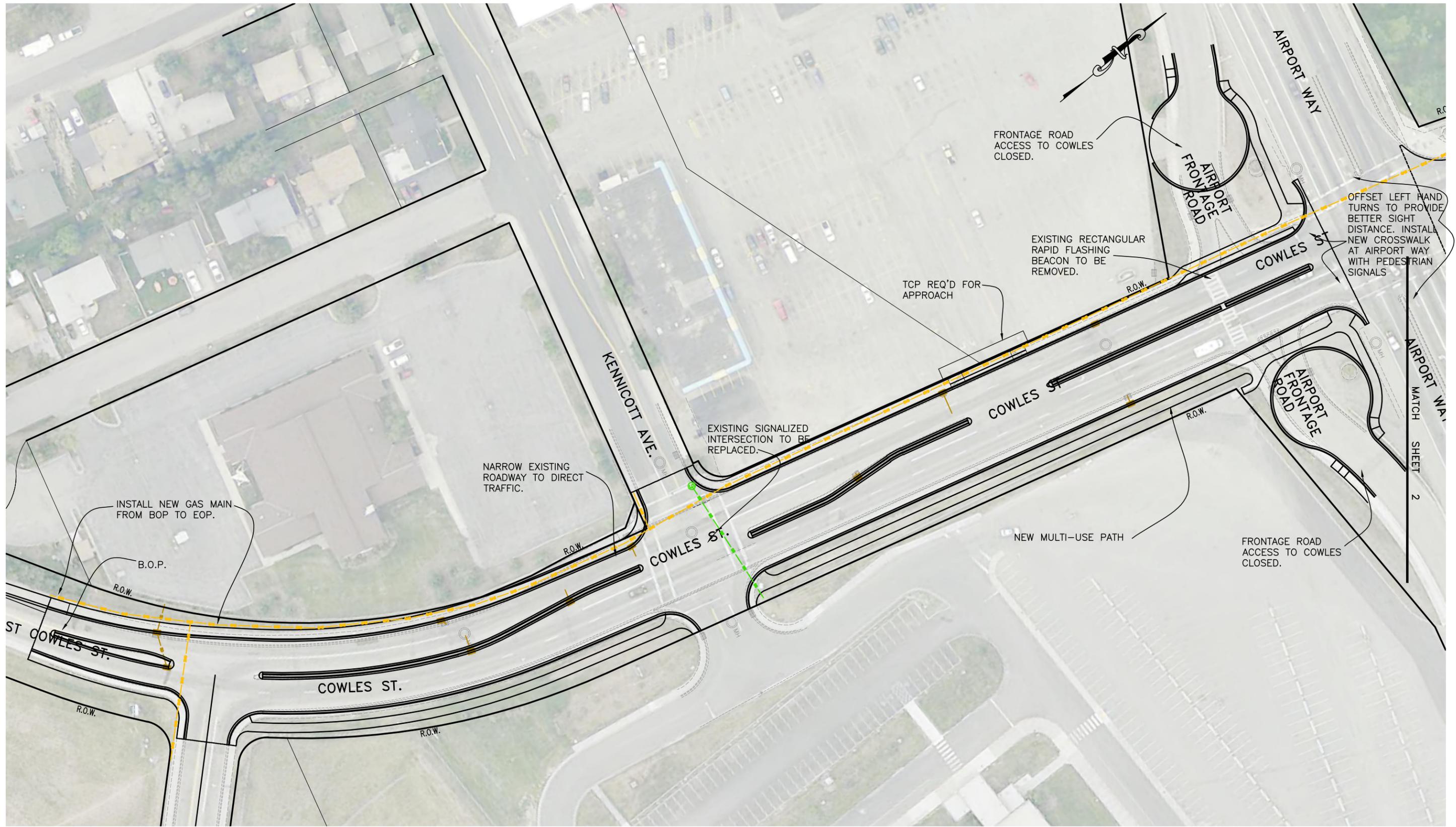
PLANS DEVELOPED BY: CITY OF FAIRBANKS, ENGINEERING DEPARTMENT, 800 CUSHMAN STREET, FAIRBANKS, AK 99701 (907)459-6740  
 P:\13157\COMLES Reconstruct - South of Airport\Civil3D Drawing Files\L3-Production\SIGN-STRIPING-H4 SIGN & STRIPING Thu, Jul/18/24 01:58pm

1"=20' HORIZ.,  
1"=2' VERT.  
(FULL SIZE)  
1"=40' HORIZ.,  
1"=4' VERT.  
(HALF SIZE)

SIGN & STRIPING



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0641003/NFHWHY00126	2020	1	4



MATCH SHEET 2

- UTILITY NOTE:**
- PROPOSED GAS IS YELLOW
  - PROPOSED STORM DRAIN IS BROWN
  - PROPOSED SANITARY SEWER IS GREEN
  - PROPOSED WATER IS BLUE

PLANS DEVELOPED BY: CITY OF FAIRBANKS, ENGINEERING DEPARTMENT, 800 CUSHMAN STREET, FAIRBANKS, AK 99701 (907)459-6740  
 P:\1357 COWLES Reconstruction\Environmental Figures\Figure for Environmental Document-Sheet 1.Fir\_Mar/20/20 03:45pm

## **PROJECT DESCRIPTION**

### **Location**

The project corridor is approximately 0.75 miles between East Cowles Street and 1<sup>st</sup> Avenue (Figure 1). Located within the City of Fairbanks (COF), Cowles Street functions as a north-south transportation corridor and is classified as an urban minor arterial between East Cowles and Airport Way and urban major collector between Airport Way and 1<sup>st</sup> Avenue. Cowles Street provides residential access to Weeks Field Subdivision and Townsite Subdivision. In addition to residential access, Cowles Street has the following traffic generators within and nearby the project vicinity:

- Public schools – Lathrop High School and Ryan Middle School
- Medical Facilities – Fairbanks Memorial Hospital- and Chief Andrew Isaac Health Center
- Recreational Centers – Hamme Pool, Mary Siah, Big Dipper Ice Rink, Arctic Bowl, and Planet Fitness
- Noel Wien Public Library
- Retail and restaurant establishments

### **Condition of Existing Facilities**

Cowles Street from East Cowles Street to 10<sup>th</sup> Avenue: the roadway consists of varying widths of pavement, raised medians with turning pockets, and sidewalk with curb and gutter on both sides of Cowles Street. Striping includes: double yellow centerline, single white turn lane, arrows, and crosswalk markings. There are also two mid-block pedestrian crossings with rapid rectangular flashing beacon (RRFB) signage and median refuge.

Cowles Street from 10<sup>th</sup> Avenue to 1<sup>st</sup> Avenue: the roadway consists of an approximate 27-foot wide paved asphalt roadway with a sidewalk and curb and gutter on both sides except between Smythe Street and 5<sup>th</sup> Avenue. This section of the roadway has curb and gutter on both sides and a sidewalk only on the east side of the street. Striping consists of a double yellow centerline. The existing sidewalk in the project limits does not meet current Americans with Disabilities Act (ADA) standards due to deteriorated, uneven and broken sidewalk surfaces. Many curb cuts (driveways) are non-ADA compliant due to geometries that exceed the 2% maximum sidewalk cross-slope, and/or transition sections that exceed a maximum slope of 8.33%.

There are 15 intersections located within the project corridor. The intersection of Cowles Street and Kennicott Avenue is a signalized intersection. All other intersections within the project limits are two-way stop controlled with stop control on the side streets intersecting Cowles Street.

There is piped storm drain system that runs parallel and perpendicular to Cowles Street between McGown Street and 5<sup>th</sup> Avenue. South of Airport Way, there is piped storm drain system that runs parallel and perpendicular to Cowles Street. There is no storm drain system between 5<sup>th</sup> Avenue and 1<sup>st</sup> Avenue.

Steel water lines run perpendicular and parallel to Cowles Street and were last upgraded in 1954. Other underground utilities exist in the project area: sanitary sewer, storm sewer, telecommunication ductbanks, fiber optic, and electrical facilities. Existing overhead electrical and telecommunication facilities run along the westside of Cowles Street. There are several locations where the poles for these existing overhead facilities are located within the sidewalk.

## **Proposed Improvements**

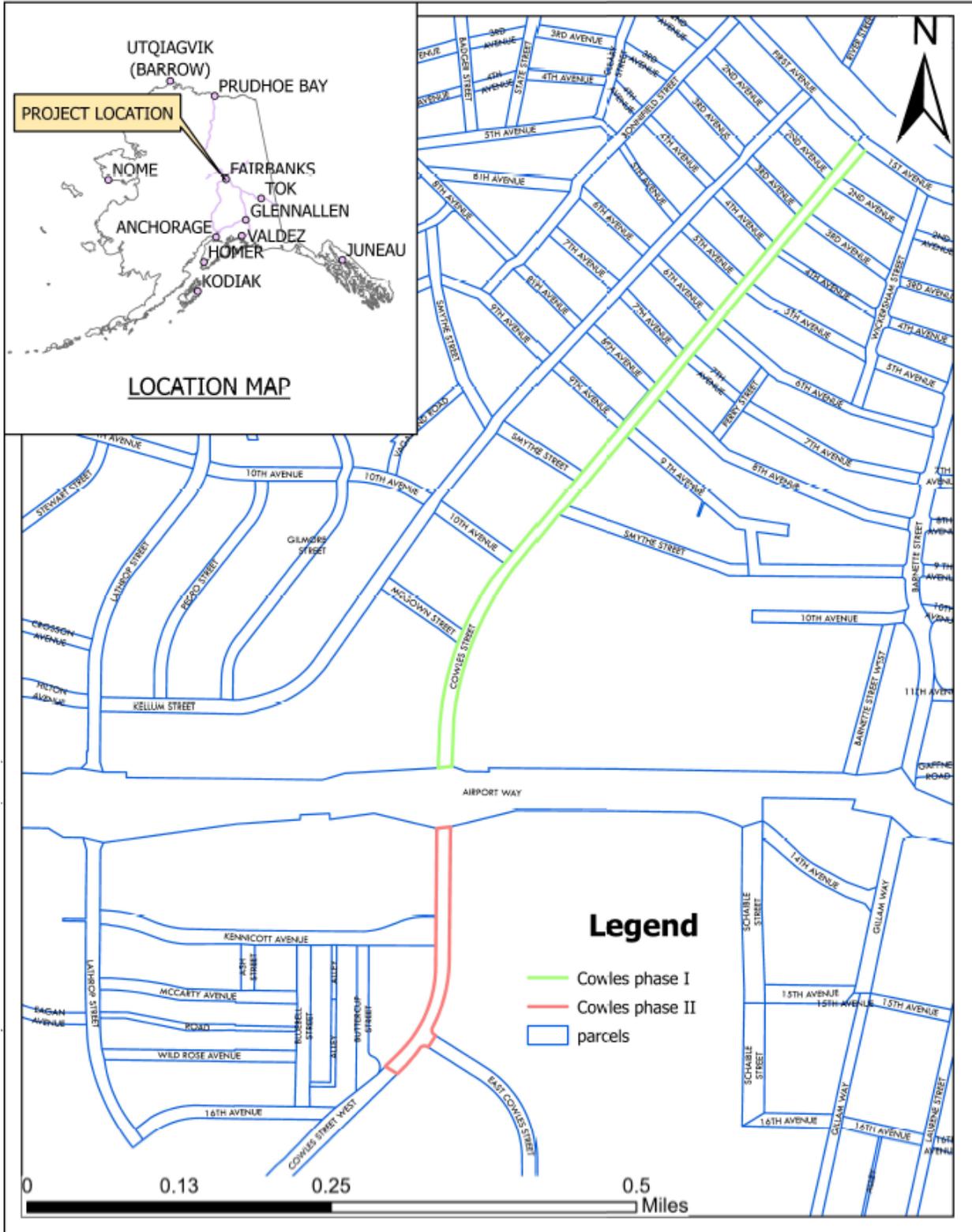
The following improvements will improve the function and safety of the roadway for motorists, public transit, and address pedestrian and bicycle path connectivity, access, and safety. Per the approved Transportation Improvement Program (TIP), the project will be constructed in two stages – Stage I between Airport Way and East Cowles, and Stage II between 1st Avenue and Airport Way. The construction of the Stage I is scheduled for summer 2025. Since both stages of the project are under the same Need ID, this documentation is for both Stages of this project.

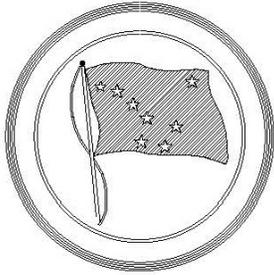
The improvements to both stages of the Cowles Street project include:

- 1) **Pavement Resurfacing/Pavement Marking:** Repaving the entire roadway. This includes the replacement of the top 1.5-foot of the embankment beneath the pavement which will significantly improve the quality and stability of the roadway pavement for the long term.
- 2) Storm drain, water, and sanitary sewer systems. Surface drainage and storm drain improvements are a necessary part of resurfacing projects. Utility improvements may be necessary due to the impact of the construction project to the existing utilities, and they are also often made by the utility owners at their own expense to take advantage of the construction before the roadway is paved. **Shoulder improvements, Pavement Marking, Bicycle Facilities:** Delineating shoulders for bicycles on both sides of Cowles Street. Currently there are no dedicated bicycle facilities along the project.
- 3) **Bicycle and Pedestrian Facilities:** Construction of multiple improvements for non-motorized users:
  - a) Constructing new ADA curb ramps on both sides of Cowles Street. This roadway has currently several intersections with no existing curb ramps.
  - b) Constructing sidewalks where there are none on the west side of Cowles Street between 5th Avenue and Smythe Street.
  - c) Widening the sidewalks on Cowles Street between 1st Avenue and Airport Way to provide a safe and more comfortable environment for pedestrians.
  - d) Widening the sidewalks between McGown Street and Airport Way to provide a new shared-use pathway instead of just a sidewalk.

- e) Construction of a new non-motorized pathway on the east side of Cowles Street between Airport Way and East Cowles Street, leading to a public middle school and high school.
- 4) **Bicycle and Pedestrian Facilities:** The closure of Airport Frontage Road access on both sides of Cowles Street will also allow moving the pedestrian crossing from the current mid-block crossing with a RRFB to the actual intersection with the Airport Way. Closure of the Frontage Roads enables realignment of non-motorized facilities to the Airport Way intersection with a minimal detour. The mid-block crossing that will be eliminated had an RRFB installed via the Highway Safety Improvement Program (HSIP) to increase safety. This project will remove the mid-block crossing and realign the crossing to the nearby signalized intersection with a dedicated signal for non-motorized transportation. This was not done under the HSIP project because without closure of the Frontage Roads, the pedestrians would have had to cross additional two roads of traffic.
- 5) **Traffic Control Devices and Operating Assistance Other Than Signalization Projects:** Closure of Airport Frontage Road access on both sides of Cowles Street will create improved intersection safety by eliminating the Frontage Road intersections that are currently in a very close proximity to the signalized Airport Way intersection. This very close proximity can cause traffic weaving and there is too much for the drivers to take in as they exit the Airport Way and immediately come upon the Frontage Road intersection which is then immediately followed by a mid-block pedestrian crossing accompanied with a RRFB. The project will eliminate these two (Frontage Road intersection and the mid-block pedestrian crossing) features which will then change the area into a standard traffic signal intersection. This Frontage Road has a very low traffic and the nearby business did not object this closure due to the other access points that are used more predominantly.
- 6) **Traffic Control Devices and Operating Assistance Other Than Signalization Projects:** Improvements to intersection safety and sight distance triangles. This includes:
- a) Increasing sight distance improvements at many minor street crossings north of Airport Way.
  - b) At the intersection of Cowles Street and Kennicott Avenue, the currently 21 feet wide receiving lane will be narrowed to eliminate any confusion to the oncoming traffic to whom it may currently seem to be 2 lanes wide (see more detail below).
- 7) **Traffic Control Devices and Operating Assistance Other Than Signalization Projects, Pavement Marking:** Updated signing and striping, including installation of shoulder stripe which will delineate the shoulders for bicycle traffic. The project will also correct the width of a southbound lane at the Kennicott Avenue and Cowles Street intersection – currently the lane is 21 feet wide and appears as a two-lane road. The portion leading up to this intersection has two lanes but the right lane is right-turn only lane. However when looking ahead, the width of

the road for this direction of travel is wide enough to appear to accommodate 2 lanes of traffic before it narrows. This can create driver confusion, especially in the winter when striping is covered by snow. The project will narrow the width of this receiving lane using curb and gutter on both sides. The project will also install new signing.

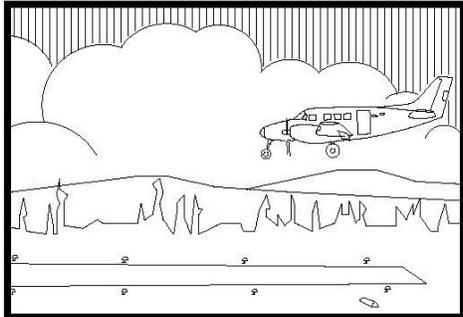




# DESIGN STUDY REPORT

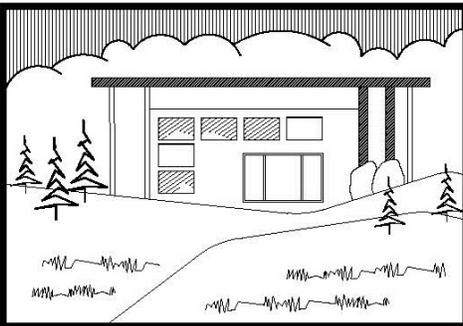
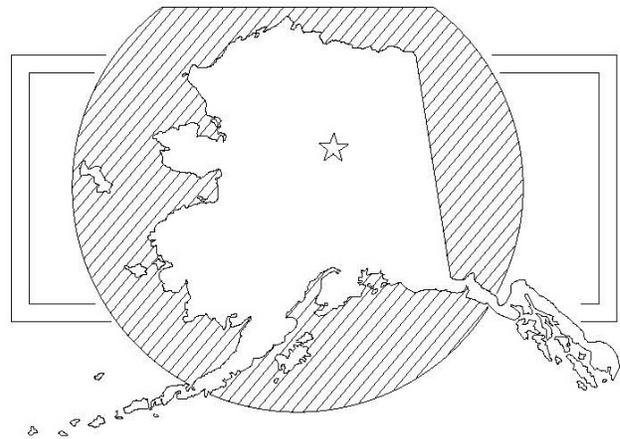
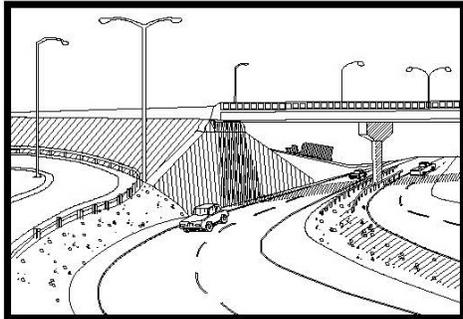
## COWLES STREET RECONSTRUCTION

PROJECT NO. 0641003/NFHWHY00126



# STATE OF ALASKA

Department of Transportation  
and Public Facilities



*NORTHERN REGION*

*February 2020*

## **INTRODUCTION/HISTORY**

The State of Alaska Department of Transportation & Public Facilities (DOT&PF) in cooperation with the City of Fairbanks (COF), Fairbanks Area Surface Transportation (FAST) and Alaska Division of the Federal Highway Administration (FHWA) propose to reconstruct approximately 4,000 feet of Cowles Street from East Cowles to 1<sup>st</sup> Avenue.

Cowles Street is classified as an urban minor arterial and urban major collector serving motorists, pedestrians, bicyclists, and public transit to public schools, the public library, recreational centers, residential housing, business establishments, and medical centers in the area. Cowles Street is managed and maintained by the COF. In 1977, Cowles Street was reconstructed from the Airport Way intersection to 5<sup>th</sup> Avenue. The most recent Cowles Street reconstruction was in 1987 from East Cowles to the Airport Way intersection. Both reconstruction projects included the following work: resurfacing, utility upgrades, drainage work, signing, striping, illumination upgrades, and sidewalk installation. Since these last reconstruction projects, very few improvements have been made to the Cowles Street corridor.

There is a history of crashes along this corridor. There were 16 crashes in 2008, 19 crashes in 2009, 19 crashes in 2010, 11 crashes in 2011, and 13 crashes in 2012, resulting in one fatality. Of the 78 total crashes, 6 were reported as having a bicyclist or pedestrian involved. As a result, this project was nominated in 2015 under the FMATS 2015-2018 Transportation Improvement Program to address the ADA non-compliance, deterioration of existing sidewalk and pavement, and the discontinuity in non-motorist facilities along Cowles Street and adjacent areas.

The Cowles Street Reconstruction project design considerations are documented in this Design Study Report (DSR).

## **PROJECT DESCRIPTION**

### **Location**

The project corridor is approximately 0.75 miles between East Cowles Street and 1<sup>st</sup> Avenue, refer to Figure 1, page 3. Located within the COF, Cowles Street functions as a north-south transportation corridor and is classified as an urban minor arterial between East Cowles and Airport Way and urban major collector between Airport Way and 1<sup>st</sup> Avenue. Cowles Street provides residential access to Weeks Field Subdivision and Townsite Subdivision. In addition to residential access, Cowles Street has the following traffic generators within and nearby the project vicinity:

- Public schools – Lathrop High School, Ryan Middle School
- Medical Facilities – Fairbanks Memorial Hospital, Chief Andrew Isaac Health Center
- Recreational Centers – Hamme Pool, Mary Siah, Big Dipper Ice Rink, Arctic Bowl, Planet Fitness
- Noel Wien Public Library
- Retail and restaurant establishments

### **Condition of Existing Facilities**

Cowles Street from East Cowles Street to 10<sup>th</sup> Avenue: the roadway consists of varying widths of pavement, raised medians with turning pockets, and sidewalk with curb and gutter on both sides of Cowles Street. Striping includes: double yellow centerline, single white turn lane, arrows, and crosswalk markings. There are also two mid-block pedestrian crossings with rapid rectangular flashing beacon signage and median refuge.

Cowles Street from 10<sup>th</sup> Avenue to 1<sup>st</sup> Avenue: the roadway consists of an approximate 27-foot wide paved asphalt roadway with a sidewalk and curb and gutter on both sides except between Smythe Street and 5<sup>th</sup> Avenue. This section of the roadway has curb and gutter on both sides and a sidewalk only on the east side of the street. Striping consists of a double yellow centerline. The existing sidewalk in the project limits does not meet current Americans with Disabilities Act (ADA) standards due to deteriorated, uneven and broken sidewalk surfaces. Many curb cuts (driveways) are non-ADA compliant due to geometries that exceed the 2% maximum sidewalk cross-slope, and/or transition sections that exceed a maximum slope of 8.33%.

There are 15 intersections located within the project corridor. The intersection of Cowles Street and Kennicott Avenue is a signalized intersection. All other intersections within the project limits are two-way stop controlled with stop control on the side streets intersecting Cowles Street.

There is piped storm drain system that runs parallel and perpendicular to Cowles Street between McGown Street and 5<sup>th</sup> Avenue. South of Airport Way, there is piped storm drain system that runs parallel and perpendicular to Cowles Street. There is no storm drain system between 5<sup>th</sup> Avenue and 1<sup>st</sup> Avenue.

Steel water lines run perpendicular and parallel to Cowles Street and were last upgraded in 1954. Other underground utilities exist in the project area: sanitary sewer, storm sewer, telecommunication ductbanks, fiber optic, and electrical facilities. Existing overhead electrical and telecommunication facilities run along the westside of Cowles Street. There are several locations where the poles for these existing overhead facilities are located within the sidewalk.

### **Proposed Improvements**

The following improvements will improve the function and safety of the roadway for motorists, public transit, and address pedestrian and bicycle path connectivity, access, and safety. The following improvements to Cowles Street include:

- Repaving
- Shoulders for shared use bicycle facilities on both sides of Cowles Street
- Constructing new ADA sidewalks and curb ramps on both sides of Cowles Street
- Closure of Airport Frontage Roads and improvements to pedestrian crossing
- Improvements to intersection safety and sight distance triangles
- Updated signing and striping
- Improvements to the storm drain, water, and sanitary sewer systems
- Illumination improvements

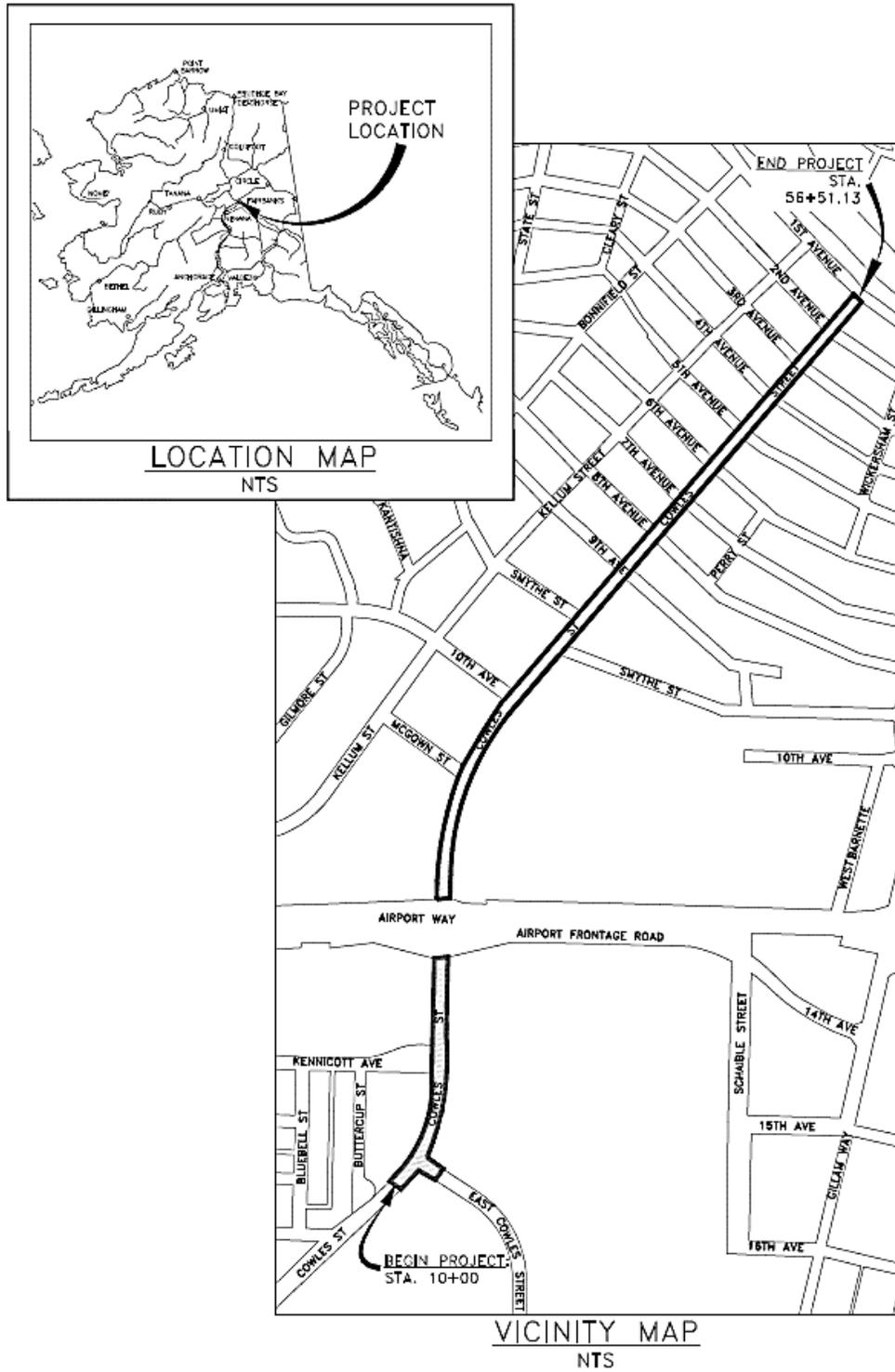


Figure 1: Project Location



The highlighted text and inserted comments contain identified concerns and proposed improvements

## MEMORANDUM

TO: Ivet Hall, PE  
 FROM: Gary Jenkins, PE / Steve Noble, PE, PTOE  
 DATE: October 16, 2019  
 SUBJECT: Cowles Street Reconstruction – Traffic Engineering Services

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### STUDY OBJECTIVES

This study summarizes the traffic analysis completed in support of the Alaska Department of Transportation and Public Facilities' (DOT&PF) larger effort to reconstruct 0.84 miles of Cowles Street from East Cowles Street to 1<sup>st</sup> Avenue. The City of Fairbanks is completing the roadway design for the reconstruction. This traffic report analyzes existing and future traffic operations at the Cowles Street and Kennicott Avenue intersection along with adjacent intersections on the Cowles Street corridor. This area has relatively high pedestrian traffic due to the nearby Ryan Middle School and Lathrop High School. The objective of this study is to support specific elements of the overall project including:

- Improving walking and biking connectivity
- Improving intersection and corridor operations and safety

To this end, this study analyzes alternative concepts to improve safety and operations on the corridor. The following scenarios were analyzed:

- 2019 Existing Conditions
- 2045 No Build Conditions
- 2045 Alternative Concepts

### STUDY AREA

The study area extends from Airport Way/Cowles Street to the intersection of E. Cowles Street/Cowles Street. Figure 1 shows the existing average daily traffic on study roadways, as well as the laneage and traffic control at the following study intersections.

1. Cowles St & Airport Way
2. Cowles St & Frontage Rd
3. Cowles St & Kennicott Ave
4. Cowles St & E. Cowles St
5. Cowles St & Mall Driveway
6. Frontage Rd & West Driveway (School Parking Lot Entry/Exit)
7. Frontage Rd & East Driveway (School Parking Lot Exit Only)
8. Kennicott Ave & School Entrance
9. Entrance to Hamme Pool

## MEMORANDUM

### EXISTING CONDITIONS

Traffic counts were taken on Wednesday, January 30, 2019. Due to a shift in the traffic camera, the Cowles/Airport Way intersection was re-counted on Thursday, February 14, 2019. Eight hours of turn movement count data were collected at each intersection (7am-10am, 11am-12pm, and 2-6pm). The additional traffic count hours were determined based on the schedule for the nearby schools (drop-off, lunch, and pick-up) and the peak hours of traffic. The AM and PM peak hours of traffic for the corridor were 7:30-8:30am and 4:30-5:30pm. Table 1 shows the start/end times for the schools.

**Table 1: School Start/Release Times and Lunch Period**

Event	Time
Lathrop High School Start time	7:45 am
Ryan Middle School Start time	9:30 am
Lathrop High School Lunch (Tue-Thur) *	11:00-11:30am
Lathrop High School Release time	2:15 PM
Ryan Middle School Release time	4:00 PM

\*Lunch occurs from 10:30-11:00am on Mondays and Fridays

### ROADWAY CLASSIFICATION, OWNERSHIP, AND CHARACTERISTICS

Table 2 shows the functional classification, ownership, and speed limits for the roads within the study area. Cowles Street is a city-owned road which is classified as a minor arterial.

**Table 2: Study Area Roadway Characteristics**

Roadway	Classification	Ownership	Speed Limit
<b>Airport Way</b>	Principal arterial	State of Alaska	45 mph
<b>Cowles Street</b>	Minor arterial	City of Fairbanks	25 mph
<b>Frontage Rd</b>	Minor collector	City of Fairbanks	25 mph
<b>E. Cowles Street</b>	Minor collector	City of Fairbanks	25 mph
<b>Kennicott Ave</b>	Local	City of Fairbanks	25 mph

### BICYCLE AND PEDESTRIAN FACILITIES

Within the study area, sidewalk facilities exist in the following locations:

- Sidewalks on both sides of Cowles Street, E. Cowles Street, and Kennicott Avenue
- Sidewalk on north side only of Airport Way
- Sidewalk on south side only of Airport Frontage Road

Pedestrian countdown timers exist at both signalized intersections (Cowles/Kennicott and Cowles/Airport). A Rectangular Rapid Flashing Beacon (RRFB) exists for pedestrians crossing Cowles Street at the frontage road intersection. Lastly, a mid-block pedestrian bridge exists over Airport Way, about 1,000 feet east of Cowles Street. The Ryan Middle School Safe Routes to School study (2012) was referenced regarding planned pedestrian improvements in the study area. The plan included recommendations to upgrade the sidewalk on the east side of Cowles Street (between the mall driveway and the frontage road) and to upgrade the sidewalk/path connecting Ryan Middle School and Hunter Elementary School.

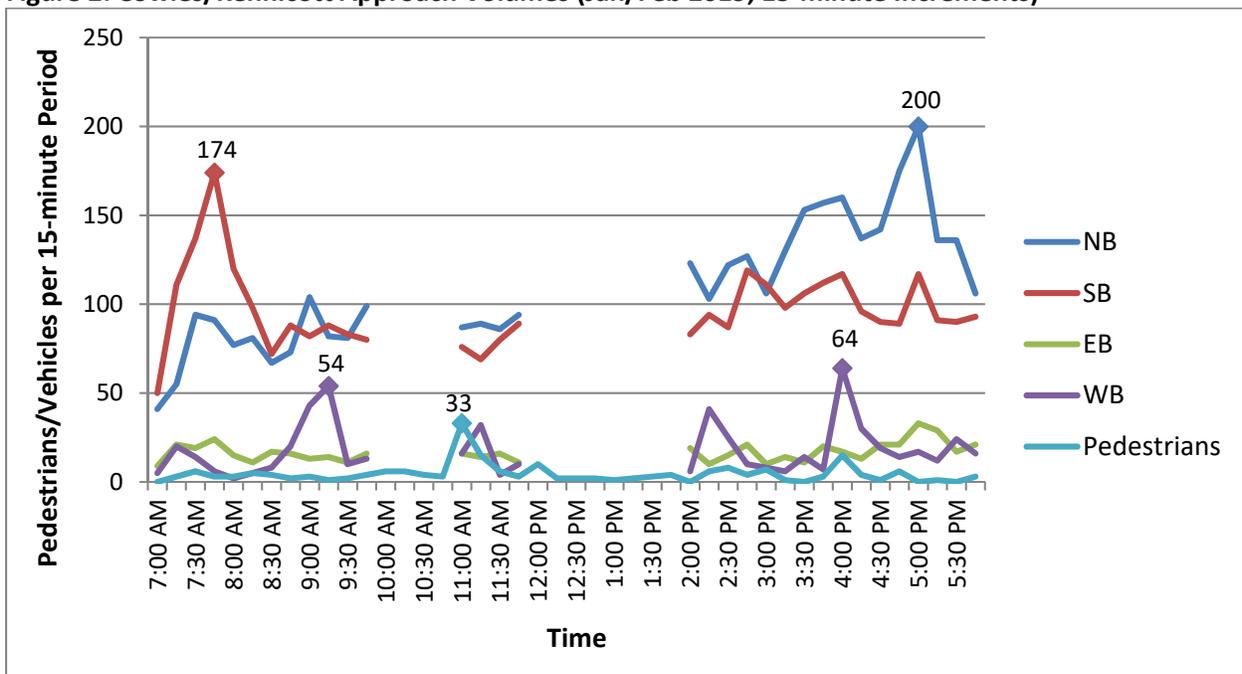
## MEMORANDUM

### PEAKING OF TRAFFIC VOLUMES AT COWLES/KENNICOTT

Figure 2 shows the variation in traffic and pedestrian volumes on the approaches at Cowles/Kennicott. As noted below the figure, the pedestrian counts are from April 2017 because of weather impacts on activity. The following section provides further discussion on pedestrian count volumes.

Traffic peaking on the WB approach (traffic leaving the school) aligns closely with Ryan Middle School start and end times. The traffic peaks from 9-9:30am and 4-4:30pm, just prior to the start (9:30am) and just after the release (4pm) of students. The NB approach on Cowles Street peaks from 5-5:15pm, while the SB approach peaks from 7:45-8am. Of interest for this study was the higher number of pedestrians crossing Cowles during the lunch hour. Figure 2 shows that the number of pedestrian crossings at the intersection peaks from 11-11:15am (33 pedestrians), when NB and SB vehicular volumes are fairly low.

**Figure 2: Cowles/Kennicott Approach Volumes (Jan/Feb 2019, 15-minute Increments)**



*\*Pedestrian count from April 2017, to show peak pedestrian volumes during warm weather*

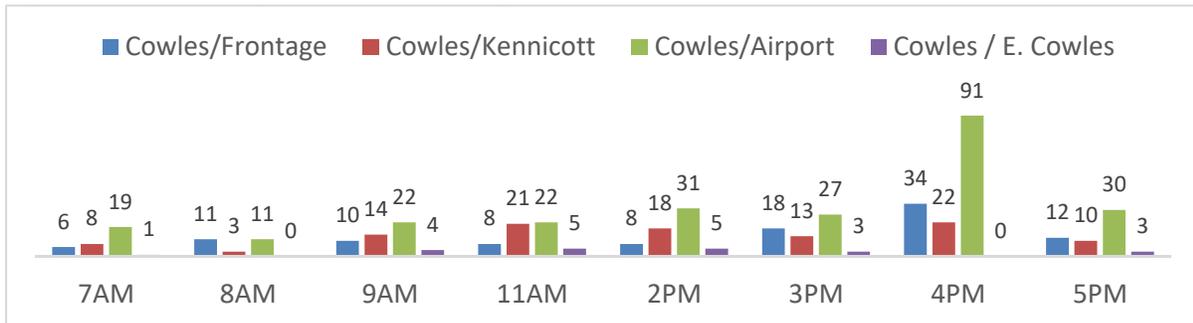
In summary, the total entering traffic peak hours of 7:30-8:30am and 4:30-5:30pm were analyzed in this study as they represent the most congested periods of travel on Cowles Street. School-related traffic at Cowles/Kennicott peaks at different times (9-9:30am and 4-4:30pm); however, these peak periods are short, and the delay is not reflected when intersection operations are analyzed for a complete hour.

## MEMORANDUM

### PEDESTRIAN & BICYCLE VOLUMES

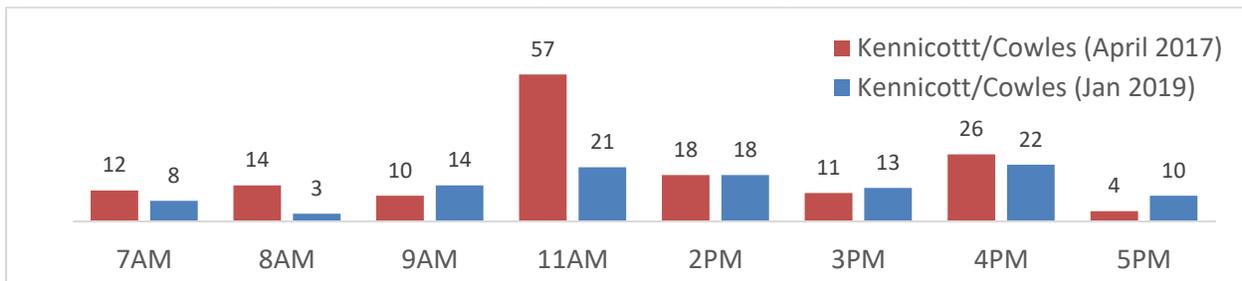
Figure 3 shows total hourly pedestrian counts at each intersection on Cowles Street in January/February 2019. The Cowles/Airport Way intersection has the highest pedestrian volumes, as much of the pedestrian traffic is traveling between the school and the neighborhood north of Airport Way. From 4:00-4:15pm (just after the Ryan Middle School release), 45 pedestrians crossed the east leg of the Cowles/Airport intersection and a total of 91 pedestrian crossings occurred overall from 4-5pm at the Cowles/Airport Way intersection.

**Figure 3: Total Hourly Pedestrian Crossings**



The cold weather during the January 2019 count appears to have impacted pedestrian volumes. Figure 4 compares April 2017 and January 2019 pedestrian counts at Cowles/Kennicott, showing that the number of pedestrians during the lunch hour is higher during warm weather. The higher pedestrian count during the lunch hour is consistent with observations and known lunch destinations. To confirm this, pedestrian crossings at Cowles/Kennicott were re-counted during the school lunch hour on April 30, 2019. There were 65 pedestrian crossings from 11am-12pm at Cowles/Kennicott in April 2019 (close to the April 2017 pedestrian count of 57 pedestrians). January 2019 count data were used in the traffic model for the AM and PM peak hours of analysis (7:30-8:30am and 4:30-5:30pm) as the pedestrian volumes are similar during those periods and the small differences did not impact operations.

**Figure 4: Historic Comparison of Total Hourly Pedestrian Crossings at Kennicott/Cowles**



## MEMORANDUM

### TRAFFIC VOLUMES

Figures 5 and 6 show the peak hour turn movement counts at study intersections. The directional distribution of traffic on Cowles Street is as follows:

- 64% of traffic is heading SB on Cowles Street in the AM peak
- 58% of traffic is heading NB on Cowles Street in the PM peak

### TRANSIT ROUTES

Four of the Metropolitan Area Commuter System transit routes pass through the study area; these include the Blue, Orange, Red, and Purple Lines. Both the Blue Line and the Red Line have a transit stop at Shoppers Forum Mall, located just north of the Cowles/Kennicott Ave intersection.

### INTERSECTION OPERATIONS

Cowles/Airport Way signal has since been upgraded to include protected/permissive left turns, same as proposed by this project

Cowles/Kennicott Ave has an actuated, uncoordinated signal with permitted-only lefts. Cowles/Airport Way has an actuated, uncoordinated signal with protected-permitted left-turn phasing on all approaches. All other intersections in the study area operate as stop-controlled intersections. The existing intersection delay was analyzed in Synchro using the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology. Table 3 shows the delay and Level of Service (LOS) for the intersections along Cowles Street. Cowles/Kennicott operates at LOS A in the AM and PM peak hours (7:30-8:30am and 4:30-5:30pm). During the PM peak hour, the SB left operates at LOS B (11 seconds of delay/vehicle). Of note, the arrival pattern of NB vehicles at Cowles/Kennicott is random (minimal platooning), which does not create gaps for SB left-turning vehicles. The traffic modeling settings reflect the random arrival type.

**Table 3: Existing LOS and Delay (sec/veh)**

Intersection	Control	AM Peak	PM Peak
Airport & Cowles	Signal	C/22	C/25
Frontage & Cowles	TWSC	B/11	B/12
Mall Driveway & Cowles	TWSC	C/18	D/30
Kennicott & Cowles	Signal	A/8	A/9
E. Cowles & Cowles	TWSC	D/28	D/25

*Note: Delay reported for overall intersection at signalized intersections; delay reported for worst movement at Two-Way Stop-Controlled Intersections (TWSC).*

### FIELD OBSERVATIONS

AM Peak Hour Observations: The AM peak hour was observed on two typical school days. During the first day of observations, the southbound queue extended from Cowles/Kennicott to the Cowles/Airport intersection for five minutes (7:45-7:50am). This was observed four times, preventing the Airport Way westbound left from entering the intersection on green. However, this queuing was not observed on the second day of AM peak hour observations. Queues were observed to back-up internally on school roads for vehicles entering and exiting the school via the Cowles/Kennicott intersection.

# MEMORANDUM

PM Peak Hour Observations: Just after the Ryan Middle School release (from 4:00-4:30pm), westbound approach vehicles had to wait through more than one cycle at the Cowles/Kennicott intersection. No queuing issues were observed during the PM peak hour of traffic on Cowles Street (4:30-5:30pm).

## ISSUES WITH EXISTING LANEAGE AND GEOMETRY

The bullets below summarize some of the existing geometric and operational issues at the intersections of Cowles/Kennicott and Cowles/Frontage Rd.

Lane Drop, Signal Head and SB Left-Turn issues will be corrected with the proposed project. The WB queue is result of the adjacent school traffic circulation.

Cowles/Kennicott Avenue:

- **Lane Drop:** A lane drop is signed to occur on southbound Cowles Street at its intersection with Kennicott Ave. However, the SB receiving lane is 25 feet in width for a single lane, which is confusing for drivers.
- **Signal Heads:** One signal head controls multiple lanes on all approaches at Kennicott Ave/Cowles Street. This may be confusing for permitted-only left-turn traffic in the left-turn lane. The DOT&PF Northern Region Design Directive 14-04 specifies one signal head is to be provided over each approach lane. In addition, for reconstructed (or new) signals the Alaska Traffic Manual (ATM) specifies a flashing yellow arrow signal head be centered over the left-turn lane.
- **SB Left-Turn:** School-related traffic has difficulty making the southbound left-turn movement into the school during school start/release times. The existing SB left-turn lane has a storage length of 80 feet. The northbound vehicle arrival pattern is random (minimal platooning), which does not create consistent gaps for SB left-turning vehicles.
- **WB Approach Storage:** The WB approach only has a storage length of 25 feet. Queues back-up to and through the adjacent three-leg intersection during school start/release times.

Cowles/Frontage Road:

- **RRFB:** During field observations, a near-miss collision was observed between a pedestrian and vehicle at the frontage road RRFB. The pedestrian activated the RRFB and entered the roadway without watching for an oncoming car, which saw the pedestrian late.
- **Queue Blocking:** Due to queue blocking, the WB right turn movement at Cowles/Frontage is unable to consistently access the NB left-turn and through lanes at Cowles/Airport Way.

## SAFETY ANALYSIS

Five most recent years of crash data were analyzed (2012-2016). Table 4 shows the crash severity for crashes occurring in the study area. The highest number of crashes occurred at Cowles/Airport Way, which reflects the higher traffic volumes at this intersection.

The proposed project will realign this RRFB crossing to the signalized intersection, allowing the crossing similar to all other intersections. The current RRFB is offset from the traffic signal and is near Frontage Road intersection, which additional items the drivers need to watch for. This additional Frontage Road intersections will also be changed into cul-de-sacs, eliminating traffic weaving and vehicles entering/existing the roadway so close to the signalized intersection.

## MEMORANDUM

### NO BUILD INTERSECTION OPERATIONS

Table 8 summarizes the expected delay and LOS in year 2045 with no improvements. Of note, the mall driveway on Cowles Street is expected to operate at LOS F in the PM peak in year 2045. (An analysis of interim year traffic volumes indicates that the mall driveway will begin to operate at LOS F in year 2040.) The side street at Cowles/E. Cowles is expected to operate at LOS E in the PM peak hour in year 2045 (note that E. Cowles Street is stop-controlled and is designated as the side street at this intersection). Cowles/Kennicott is forecasted to operate at LOS A in the AM and PM peak in 2045. The LOS E at Cowles/E. Cowles in year 2045 represents the delay experienced by the WB left turn movement. However, the WB left movement is forecasted to have only 15 vehicles/hour in the AM and PM peak hours. When delay is analyzed for the side-street approach as a whole, the WB approach operates at LOS C in the AM peak hour (17 seconds of delay/vehicle) and LOS D in the PM peak hour (28 seconds of delay/vehicle).

**Table 8: 2045 Forecasted No-Build LOS and Delay (sec/veh)**

Intersection	Control	Existing 2019		Forecasted 2045	
		AM Peak	PM Peak	AM Peak	PM Peak
<b>Airport &amp; Cowles</b>	Signal	C/22	C/25	C/24	C/30
<b>Frontage &amp; Cowles</b>	TWSC	B/11	B/12	B/12	B/14
<b>Mall Driveway &amp; Cowles</b>	TWSC	C/18	D/30	C/24	F/73*
<b>Kennicott &amp; Cowles</b>	Signal	A/8	A/9	A/9	A/10
<b>E. Cowles &amp; Cowles</b>	TWSC	D/28	D/25	E/49	E/42

*Note: Delay reported for overall intersection at signalized intersections; delay reported for worst movement at TWSC intersections.*

*\*Deteriorates to LOS F in 2040 and beyond.*

### LEFT TURN PHASING ANALYSIS

Complaints have been received regarding school buses and parents having difficulty making the SB left-turn movement at Kennicott/Cowles during school start/release times. The SB left-turn delay results in queue spillback into the SB through lane. In addition, the arrival pattern of NB vehicles is random (minimal platooning), which does not create gaps for SB left-turning vehicles. The traffic modeling settings reflect this arrival type. The need for left-turn phasing at Cowles/Kennicott was analyzed with year 2045 forecasted traffic volumes. The HCM recommends left turn phasing when the left turn volume is greater than 240 vehicles per hour or when the cross product exceeds 50,000 for a left turn movement with one opposing through lane or 100,000 for two opposing through lanes.<sup>1</sup> The cross-product is defined as the left-turn volume multiplied by the sum of the opposing through and right-turn volumes. The table below shows the year 2045 cross-product calculations at Cowles/Kennicott.

The Signal we are putting in with this project can be programmed to let the left turning traffic through during school peak traffic time.

<sup>1</sup> HCM, pp. 31-81.

# MEMORANDUM

**Table 9: Cowles/Kennicott Year 2045 Left-turn Cross-Products**

Movement	AM Peak (7:30-8:30am)			PM Peak (4:30-5:30pm)		
	Left-Turn Volume	Opposing Thru-Right	Cross Product	Left-Turn Volume	Opposing Thru-Right	Cross Product
Southbound Left	45	395	17,775	50	740	37,000
Northbound Left	40	630	25,200	85	445	37,825

Note: Threshold of 50,000 for one opposing through lane; threshold of 100,000 for two opposing through lanes.

The left-turn cross product is highest during the PM peak hour (about 37,000 for both the NB and SB left-turn, see Table 9), however it remains below the 50,000 threshold for NB left and 100,000 threshold for the SB left. Of note, the cross-products during school peaks (with higher SB left-turn traffic) also do not exceed 50,000. The intersection does not meet crash thresholds for adding a left-turn phase (Federal Highway Administration’s crash threshold is five left-turn-related crashes in 1.5 years). One left-turn crash occurred in five years at Cowles/Kennicott, involving a NB left turning vehicle colliding with a SB through vehicle on the red clearance interval.

Although the SB left-turn movement does not meet volume and crash thresholds, a SB left-turn phase may be warranted as a safety measure. A SB left-turn phase would improve pedestrian safety because it reduces the number of conflicts between SB left-turning vehicles and pedestrians crossing the east leg. However, it’s important to note that adding a SB left-turn phase will increase intersection delay, particularly for the NB through movement. To reduce the impact to NB traffic, it is recommended that the SB left-turn phase only operate protected-permitted during school start/release times.

The proposed project can accommodate this.

**YEAR 2045 ANALYSIS SCENARIOS**

Two primary scenarios were analyzed with year 2045 traffic volumes:

1. Upgrade signal at Cowles/Kennicott and modify laneage on Cowles Street
2. Remove the signal and add a roundabout at Cowles/Kennicott.

In addition, three secondary improvements were analyzed to determine worst-case impacts on the primary scenarios. They included (1) closure of the Airport Frontage Road approaches, (2) modifying the mall driveway to right-in-right-out, and (3) reconfiguring the school entrance at Cowles/Kennicott.

Each scenario was evaluated regarding its impact to traffic operations, safety, and right-of-way. The two

**CLOSURE OF FRONTAGE ROAD APPROACHES ON COWLES STREET**

The existing frontage road approaches only allow for right-in-right-out movements. Closure of the frontage road approaches was considered due to existing safety and operational issues.

Some of the key benefits of a full or partial closure of the frontage road approaches include:

- Reduces the number of vehicle and pedestrian conflict points on Cowles Street.
- Providing a crosswalk with a pedestrian countdown timer on the south leg of Airport/Cowles would provide a more protected and typical crossing for pedestrians than the existing RRFB. This crosswalk would allow the removal of the RRFB.

## MEMORANDUM

- Close intersection spacing between Airport Way and the frontage road results in weaving maneuvers for Airport Way WBL drivers to get into the outside lane to take SBR onto the west leg of the frontage road.
- Intersection spacing distance is not sufficient to allow frontage road WBR to exit the east leg of the frontage road and get to their desired NB left turn or through lane on Cowles Street.

Some of the tradeoffs associated with closing the east leg of the frontage road include:

- Closure could result in up to 40 cut-through vehicles/hour through the school parking lot during school start/end times (7-8am and 2-3pm). Most of these cut-through vehicles will consist of school-related traffic, which is re-directed to Cowles/Kennicott, but some may be non-school related.
- Cut-through traffic may exacerbate queuing/delay on school roads at school start/end times.
- Closure may result in non-school related public traffic passing through the school parking lot.

A variety of possible frontage road closure combinations could be considered (including combinations of those described below), including:

Closure	Comment
Full closure of the east leg	<ul style="list-style-type: none"> <li>• Forces Cowles NB parking lot traffic to use the Kennicott intersection.</li> <li>• Eliminates frontage road WB traffic from crossing lanes on Cowles.</li> </ul>
Partial closure of the east leg <ul style="list-style-type: none"> <li>▪ Allow only NB right-in</li> <li>▪ Allow only WB right-out</li> </ul>	<ul style="list-style-type: none"> <li>• Maintains access to parking lot for NB Cowles traffic without using Kennicott. WB right-out needs to be evaluated further.</li> </ul>
Full closure of the west leg	<ul style="list-style-type: none"> <li>• Prevents Airport Way SB traffic from entering the Mall parking lot from the frontage road.</li> <li>• Eliminates the weave for Airport Way WBL traffic seeking to travel west on frontage road.</li> </ul>
Partial closure of the west leg <ul style="list-style-type: none"> <li>▪ Allow only SB right-in</li> <li>▪ Allow only EB right-out</li> </ul>	<ul style="list-style-type: none"> <li>• Does not prevent the weave for SBR movement.</li> <li>• Maintains access to the mall from Airport Way via the frontage road.</li> </ul>

The traffic analysis focuses on the full closure of both approaches, in order to model the worst-case impact to intersection operations at Cowles/Kennicott. To be conservative, it was assumed that all frontage road traffic would shift to the Cowles/Kennicott intersection. However, some traffic may also be shifted to the adjacent intersections on the frontage road (Lathrop St/Frontage Road to the west and 14<sup>th</sup> Avenue/Gillam Way to the east). Table 10 summarizes turn movements added to Cowles/Kennicott with the full frontage road closure.

## MEMORANDUM

Table 14 summarizes the expected delay and LOS in year 2045 for the reduced access conditions. Prohibiting the EB left at the mall driveway is expected to reduce the mall driveway delay from LOS F to LOS B, while having minimal impact at the Cowles/Kennicott intersection.

**Table 14: 2045 LOS and Delay (sec/veh) with Restricted Access on Cowles Street**

Intersection	Control	Restricted Access 2045	
		AM Peak	PM Peak
Airport & Cowles	Signal	C/24	C/30
Frontage & Cowles	TWSC	-	-
Mall Driveway & Cowles	TWSC	B/12	B/11
Kennicott & Cowles	Signal	A/10	B/11
E. Cowles & Cowles	TWSC	E/49	E/42

*Note: Delay reported for overall intersection at signalized intersections; delay reported for worst movement at TWSC intersections.*

### SCENARIO 1: UPGRADE EXISTING SIGNALIZED INTERSECTION AT COWLES/KENNICOTT AVE

This scenario upgrades the existing signal at Cowles/Kennicott. This involves various modifications to improve intersection safety and operations. Potential improvements may include:

Upgrade Signal Heads: The Alaska DOT&PF Northern Region Design Directive 14-04 specifies that one signal head be provided over each approach lane. In addition, the ATM specifies that, if a signal is reconstructed, a flashing yellow arrow signal head be centered over the left-turn lane.

Optimize Signal timings: The existing signal operates actuated-uncoordinated with a minimum recall on Cowles Street. Should queuing and delay on Cowles Street become an issue in the future, coordination of the Kennicott Ave and Airport Way signals could improve traffic flow on Cowles Street. However, it is recommended that the signal remain uncoordinated in the short term, as coordinated signal operations typically cause a longer wait-time for the side-street and for pedestrians crossing the mainline.

Modify NB/SB Laneage with Increased SB Left-turn storage: Increasing the SB left-turn storage bay at Cowles/Kennicott would provide additional storage for buses and parents waiting to turn into the school. The existing SBL left turn storage is limited to 80 feet because it shares a lane with the NBL storage bay provided at the mall driveway. Figure 13 shows alternate configurations which maintain or extend the SBL storage at Cowles/Kennicott, while maintaining NBL access at the mall driveway.

The signalized scenarios were analyzed under the following assumptions:

- NBL access at the mall driveway is maintained. This assumption requires that the NBL turn bay on Cowles Street be maintained, which constrains the cross-section on Cowles Street.
- EBL vehicles at the mall driveway are re-routed to use the EBL at Cowles/Kennicott. This re-routing is likely to occur, even if the EBL movement is allowed at the mall driveway, as these

## MEMORANDUM

vehicles will have difficulty finding a left-turn gap during peak hours of traffic. Re-routing of this traffic represents a worst-case scenario as it increases side-street traffic at Cowles/Kennicott.

- Frontage road approaches on Cowles Street are closed. Closure of the frontage road increases the amount of side-street traffic at Cowles Street/Kennicott Avenue. This assumption allows for modeling the highest likely vehicle demand and delay at Cowles Street/Kennicott Avenue.
- SBL at Cowles/Kennicott is made protected-permitted. Adding this SBL turn phase increases overall intersection delay, therefore representing a worst-case delay scenario for the peak-hour analysis. This phase could be implemented only during the school start and end periods.

Table 15 shows the delay and LOS at Cowles/Kennicott in year 2045 with the signalized scenarios. Four alternatives were considered (see Figure 13):

- 1A: No-Build
- 1B: One SB Lane, Two NB Lanes (80 ft SBL Storage)
- 1C: One SB Lane, Two NB Lanes (200 ft SBL Storage)
- 1D: One SB Lane, One NB Lane (200 ft SBL Storage)

**Table 15: Year 2045 Signalized Approach Delay (sec/veh) and LOS at Cowles/Kennicott**

Signalized Scenario		AM Peak Hour					PM Peak Hour				
		EB	WB	NB	SB	Intx	EB	WB	NB	SB	Intx
<b>1A</b>	No-Build	14/B	14/B	7/A	10/A	<b>9/A</b>	14/B	13/B	9/A	9/A	<b>10/A</b>
<b>1B</b>	One SB Lane, Two NB Lanes (80 ft SBL Storage)	14/B	14/B	12/B	10/A	<b>11/B</b>	17/B	15/B	16/B	9/A	<b>14/B</b>
<b>1C</b>	One SB Lane, Two NB Lanes (200 ft SBL Storage)	15/B	14/B	12/B	11/B	<b>12/B</b>	17/B	15/B	16/B	10/A	<b>14/B</b>
<b>1D</b>	One SB Lane, One NB Lane (200 ft SBL Storage)	14/B	14/B	14/B	10/A	<b>12/B</b>	31/C	27/C	33/C	9/A	<b>25/C</b>

Reducing to a single NB lane on Cowles Street substantially increases NB delay at Cowles/Kennicott, increasing the overall intersection delay to LOS C in the PM peak hour.

As shown in Table 15, reducing to a single SB lane on Cowles Street does not have a significant impact on vehicle delay. The SB lane reduction was proposed as it allows for extension of the SBL turn lane at Cowles/Kennicott, while still providing a NB left-turn lane at the mall driveway (see Scenarios 1C and 1D in Figure 13).

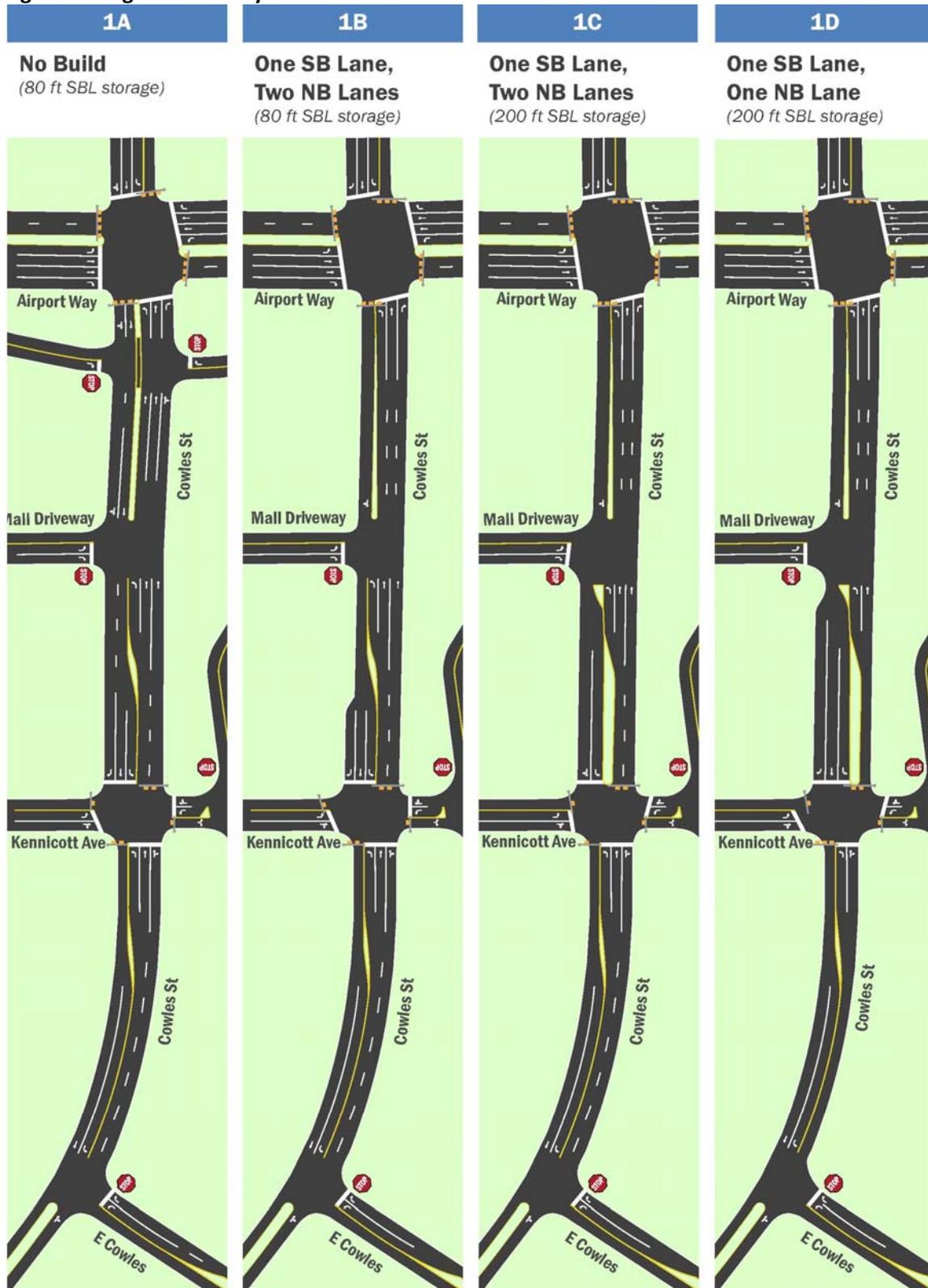
At Cowles/Kennicott, the forecasted SB right turn volume is 25 to 30 vehicles/hour during the AM and PM peak hours. Given these low right-turn volumes, an exclusive SB right turn lane is not needed at this intersection.

However, at the mall driveway, the forecasted SB right turn volume is 25 vehicles/hour during the AM peak hour and 150 vehicles/hour during the PM peak hour. In the PM peak hour, SB right-turning vehicles at the mall driveway make up about 25% of vehicles in the SB direction. From a volume perspective, an exclusive SB right turn lane can be considered when the right-turn volume is greater

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Scenario 1B is the preferred option

Figure 13: Signalized Analysis Scenarios



Note: Option 1D is not recommended due to northbound queuing issues on Cowles Street

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than 140 vehicles/hour (volume criteria used by the Oregon and Montana Departments of Transportation, and supported by NCHRP 457). However, there are several other factors that must be considered, including through volumes, posted speed, crash history, and sight distance.

The purpose of adding a right turn lane is to improve the safety and capacity of the roadway by reducing the speed differential between through traffic and turning vehicles. Cowles Street has a posted speed limit of 25 mph, whereas the typical right-turn speed is about 9 mph. From a capacity perspective, right-turning vehicles do not appreciably impact SB travel delay at the mall driveway. However, right-turning vehicles may impact safety by increasing rear-end collisions. It's worth noting that one of the trade-offs of adding the exclusive right turn lane is that it would reduce sight distance for vehicles exiting the mall driveway. It may also impact the geometric viability of extending the SB left lane at Cowles/Kennicott.

Table 16 shows queue lengths at Cowles/Kennicott in year 2045 for the signalized scenarios with modified laneage on Cowles Street.

**Table 16: Year 2045 Signalized 95<sup>th</sup> Percentile Queue Lengths (feet) at Cowles/Kennicott**

Signalized Scenario		AM Peak Hour					PM Peak Hour				
		NBL	NBT-R	SBL	SBT	SBR	NBL	NBT-R*	SBL	SBT	SBR
<b>1A</b>	No-Build	50	150	75	250	25	75	275	100	200	25
<b>1B</b>	One SB Lane, Two NB Lanes (80 ft SBL Storage)	75	125	75	250	75	100	325	75	225	100
<b>1C</b>	One SB Lane, Two NB Lanes (200 ft SBL Storage)	75	150	50	225	-	125	300	75	225	-
<b>1D</b>	One SB Lane, One NB Lane (200 ft SBL Storage)	100	200	75	250	75	150	425**	75	225	75

Note: 95<sup>th</sup> percentile queues based on the average of 10 SimTraffic simulation runs, rounded to the nearest 25 feet.

\* 375 feet of NB storage available between Cowles/Kennicott and Cowles/E. Cowles.

\*\*Scenario 1D also increases the WB queue length at E. Cowles/Cowles as compared to a two NB lane configuration.

The following bullets summarize the key results of the queue length analysis for the signalized scenarios:

- The SB lane reduction does not have a significant impact on SB delay or queue lengths.
- Reducing to a single NB lane on Cowles Street is not recommended as it results in the NB approach queues extending 425 feet in the PM peak hour (through the E. Cowles Street intersection) and nearly doubles the queue on E. Cowles for WB traffic.
- The WB right-turn queue at Cowles Street/E. Cowles Street also increases when only a single NB through lane is provided. The 95<sup>th</sup> percentile WB queue on E. Cowles Street in the PM peak extends 450 feet with a single NB lane on Cowles Street; in contrast, the WB queue on E. Cowles Street extends 200 feet when two NB through lanes are provided on Cowles Street.
- Adding a NB right-turn lane at Kennicott Avenue/Cowles Street does not reduce NB queuing.

Of note, the NB left turn queue at Cowles/Kennicott exceeds the 95-foot storage bay in the PM peak hour, which impacts NB queuing. Increasing the NB left turn storage at Cowles/Kennicott (while reducing the SBL turn storage at Cowles/E. Cowles) could alleviate NB left turn queue spillback at

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Cowles/Kennicott and reduce NB through queue lengths. The SB left turn storage bay at Cowles/E. Cowles can be slightly reduced and still accommodate 95<sup>th</sup> percentile queues.

In addition, shortening the east-west crossing distance at Cowles/Kennicott could allow for reduced pedestrian crossing time for the east-west phase, allowing for additional NB green time and reduced NB queueing at the signal.

### SCENARIO 2: ROUNDABOUT AT COWLES/KENNICOTT AVE

This scenario removes the signal and adds a roundabout at Cowles/Kennicott. The geometry of a roundabout forces drivers to reduce their speed as they proceed through the intersection. This helps reduce the severity of crashes when they do occur.

The performance of a single lane roundabout and a hybrid roundabout (with two NB entry/exit lanes) was modeled at Cowles/Kennicott. The roundabout scenario alternatives analyzed are shown in Figure 14. For the roundabout analysis, the frontage road approaches are assumed to be closed. The mall driveway was analyzed as both full-access and RIRO. In this case, converting the mall entry to RIRO represents the worst-case scenario in the PM peak hour as it introduces more conflicting circulating traffic.

Synchro is limited in its ability to analyze operations at roundabouts; therefore, the roundabout scenarios were also analyzed in SIDRA to verify and supplement the Synchro results. Synchro was found to report slightly higher delay than SIDRA, particularly when a movement is operating near capacity. The results from SIDRA are considered more reliable when the results differ between the two programs. Table 17 shows the approach delay at Cowles/Kennicott with a single lane roundabout. Results are reported with the mall entrance as both RIRO and full-access. Converting the mall driveway to RIRO was found to significantly increase NB roundabout approach delay in the PM peak hour as it introduces more conflicting circulating traffic.

**Table 17: Year 2045 Single Lane Roundabout Approach Delay (sec/veh) and LOS at Cowles/Kennicott**

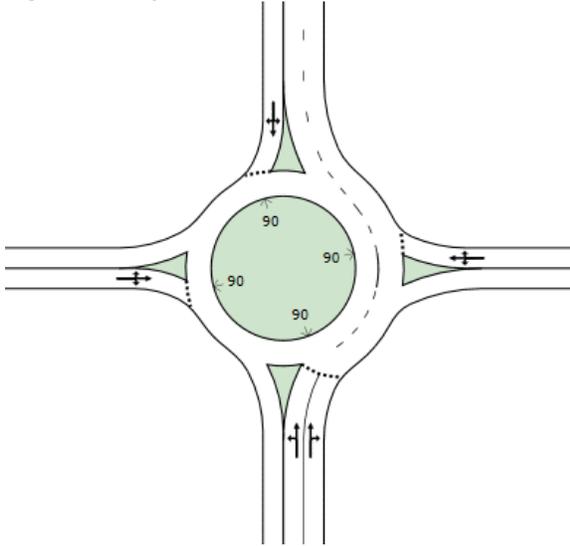
Analysis Tool / Scenario	AM Peak Hour					PM Peak Hour				
	EB	WB	NB	SB	Intx	EB	WB	NB	SB	Intx
<b>Synchro – Mall Full Access</b>	8/A	5/A	8/A	11/B	9/A	8/A	12/B	25/D	9/A	18/C
<b>SIDRA – Mall Full Access</b>	8/A	5/A	7/A	10/A	8/A	7/A	10/A	17/C	8/A	12/B
<b>Synchro – Mall RIRO</b>	9/A	5/A	8/A	11/B	10/A	10/B	13/B	44/E	10/A	27/D
<b>SIDRA – Mall RIRO</b>	8/A	5/A	7/A	10/A	9/A	9/A	11/B	23/C	9/A	16/C

*Note: SIDRA roundabout modeling results are considered more reliable than Synchro*

The 95<sup>th</sup> percentile roundabout queue lengths at the single lane roundabout are shown in Table 18. Similar to the signalized scenario, the NB approach at Kennicott/Cowles is expected to back up through the E. Cowles intersection when only a single NB lane is provided on Cowles Street. Both SimTraffic and SIDRA show that NB queues will extend at least 675 feet in the PM peak hour, with the mall driveway converted to RIRO.

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Figure 15: Hybrid 2-Lane Roundabout at Cowles/Kennicott

**RECONFIGURE SCHOOL ACCESS AT COWLES/KENNICOTT**

The close intersection spacing on the east leg of the Cowles/Kennicott Avenue intersection does not allow for adequate storage of vehicle queues. In addition, the size of the hybrid roundabout will further reduce the east leg storage space, increasing the need for reconfiguration. Reconfiguring internal school roadways to allow for additional queue storage would improve operations during school start/end times at the Cowles/Kennicott Ave intersection. Although reconfiguration may reduce delay and queuing on the WB approach at Cowles/Kennicott, this delay reduction cannot be quantified in Synchro.

**SUMMARY AND RECOMMENDATIONS****ROADWAY / LANE CHANGES**

**Laneage on Cowles Street:** It is recommended that one SB through lane and two NB through lanes be provided on Cowles Street between Airport Way and E. Cowles Street. Adequate shoulder width be provided to allow for snow storage and bicycle use. This is consistent with the proposed project.

**Frontage Road(s):** Full closure of the frontage road(s) does not impact operations at the Cowles Street/Kennicott Avenue intersection. However, the school may feel the impacts of completely closing the east leg due to vehicle cut-through of the school property (up to 40 cut-through vehicles could be expected from 7-8am). With a full closure, most of these cut-through vehicles will consist of school-related traffic which is re-directed to use the Cowles/Kennicott entrance, but some traffic may be non-school related.

Besides eliminating difficult turn movements, a primary benefit of closing the frontage roads is improved pedestrian and bicycle safety by removal of the RRFB and routing them to the signal at Cowles/Airport. This study notes that the existing RRFB at the frontage road approach does not provide a fully protected crossing for pedestrians. Closing the frontage road allows the sidewalk to be re-routed to the Airport Way intersection where a crosswalk with a pedestrian countdown timer can be provided

## MEMORANDUM

on the south leg of Airport/Cowles. This provides a more protected crossing route for pedestrians and eliminates an unconventional crosswalk location for drivers. For improved pedestrian and vehicle safety, at least a partial closure of the frontage roads is recommended. **This is consistent with the proposed project.**

If the frontage road RRFB were to remain open, pedestrian safety could be slightly improved by reducing to a single SB lane on Cowles Street which will reduce the crossing distance.

**Mall Driveway:** The mall driveway could be changed to only allow RIRO or to allow RIRO plus NB left-turn entry. This would address the high EB left-turn delay anticipated during the PM peak hour in year 2045 (LOS F beginning in 2040). At a minimum, during the PM peak hour, it is recommended that EB left-turn vehicles at the mall driveway use the Kennicott Avenue signal; during non-peak hours, sufficient gaps should exist to allow for safe and efficient EB left-turn movements.

The project does not include this change because the project is already eliminating one approach to the mall from the Frontage Road. This change can be done at a later date when warranted by the traffic during that time.

### COWLES / KENNICOTT INTERSECTION OPTIONS

Both a hybrid two-lane roundabout or a signal would operate well at the Cowles Street/Kennicott Avenue intersection. In either case, two NB approach lanes are recommended.

**Pedestrian Considerations:** A roundabout has slower approach speeds, which significantly improves pedestrian safety. However, two-lane roundabouts tend to have more pedestrian safety issues than single lane roundabouts, particularly due to vehicles failing to yield as they are exiting the roundabout. A traffic signal with permitted left-turn phasing presents a safety issue for pedestrians as vehicles looking for a gap in traffic fail to yield to pedestrians in the crosswalk. Implementing a limited protected left turn phase during peak traffic times would help improve pedestrian safety.

**Roundabout:** A roundabout can provide enhanced safety and better operational performance as it allows continuous movement (shorter queues and reduced delay). A hybrid roundabout will require modest ROW acquisition as well as off-site modifications to the school entrance on the east leg of Cowles/Kennicott.

**Signal:** A signal provides operational benefits to the mainline as it enables the mainline to rest in green and allows coordination with the Cowles Street/Airport Way signal, which can minimize stops and delay between the two signals. For this project, the traffic signal solution is not expected to have ROW impacts.

For the signalized intersection option, four scenarios were analyzed (see Figure 13). All signalized scenarios included the addition of a limited SB protected left-turn phase at Cowles/Kennicott to mitigate delay experienced during school start/release times. Overall, scenario 1C is the preferred signalized option if the lane offset associated with this scenario can be mitigated by geometry modifications or if the mall driveway is converted to RIRO. If not, scenario 1B is preferred. With either scenario 1B or 1C, a limited protected left-turn phase could be implemented.

Refer to page marked number 25 for the graphic

**From:** [Golden, Pamela K \(DOT\)](#)  
**To:** [Hall, Ivet \(DOT\)](#)  
**Subject:** RE: RRFB on Cowles - the most...?  
**Date:** Tuesday, May 28, 2019 12:57:10 PM

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Locally, it was our highest bike and ped crash location back in 2012 when the project to put in the RRFB was nominated (there were 4 reported crashes between 2005-2009). The RRFB I think was installed in 2016, so we don't have after data to compare yet. And the crash data website is down, so I can't see what went on in between....

Nothing in northern region is in the top 25% of ped/bike crashes statewide.

---

**From:** Hall, Ivet (DOT) <ivet.hall@alaska.gov>  
**Sent:** Tuesday, May 28, 2019 11:39 AM  
**To:** Golden, Pamela K (DOT) <pamela.golden@alaska.gov>  
**Subject:** RRFB on Cowles - the most...?

Hi Pam,

You mentioned a statistic regarding crashed at the RRFB on Cowles at the frontage road south of Airport Way. Does it have the most pedestrian crashed or the most pedestrian related crashed or...?

Thank you, ☺

*Ivet Hall, P.E.*

NR Contracts  
 Alaska DOT&PF  
 (907) 451-5386

RRFB observation in 2019, from Page 9 of the Cowles Traffic Report  
 Memorandum:

"During field observations, a near-miss collision was observed between a pedestrian and vehicle at the frontage road RRFB. The pedestrian activated the RRFB and entered the roadway without watching for an oncoming car, which saw the pedestrian late."

The proposed project will realign this pedestrian crossing from the RRFB location to the signalized intersection, making it a standard intersection pedestrian crossing. The current RRFB is offset from the traffic signal and is south of the Frontage Road intersection.

## **Cowles Street Reconstruction – Potential Exemptions**

### **§ 93.126 Exempt projects.**

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in table 2 of this section are exempt from the requirement to determine conformity. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in table 2 of this section is not exempt if the MPO in consultation with other agencies (see [§ 93.105\(c\)\(1\)\(iii\)](#)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potentially adverse emissions impacts for any reason. States and MPOs must ensure that exempt projects do not interfere with TCM implementation. Table 2 follows:

#### **Table 2—Exempt Projects**

##### **Safety**

Railroad/highway crossing.

Projects that correct, improve, or eliminate a hazardous location or feature.

Safer non-Federal-aid system roads.

Shoulder improvements.

Increasing sight distance.

Highway Safety Improvement Program implementation.

Traffic control devices and operating assistance other than signalization projects.

Railroad/highway crossing warning devices.

Guardrails, median barriers, crash cushions.

Pavement resurfacing and/or rehabilitation.

Pavement marking.

Emergency relief ([23 U.S.C. 125](#)).

Fencing.

Skid treatments.

Safety roadside rest areas.

Adding medians.

Truck climbing lanes outside the urbanized area.

Lighting improvements.

Widening narrow pavements or reconstructing bridges (no additional travel lanes).

Emergency truck pullovers.

##### **Air Quality**

Continuation of ride-sharing and van-pooling promotion activities at current levels.

Bicycle and pedestrian facilities.

### **§ 93.127 Projects exempt from regional emissions analyses.**

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in Table 3 of this section are exempt from regional emissions analysis requirements. The local effects of these projects with respect to CO concentrations must be considered to determine if a hot-spot analysis is required prior to making a project-level conformity determination. The local effects of projects with respect to PM<sub>10</sub> and PM<sub>2.5</sub> concentrations must be considered and a hot-spot analysis performed prior to making a project-level conformity determination, if a project in Table 3 also meets the criteria in [§ 93.123\(b\)\(1\)](#). These projects may then proceed to the project development process even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in Table 3 of this section is not exempt from regional emissions analysis if the MPO in consultation with other agencies (see [§ 93.105\(c\)\(1\)\(iii\)](#)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potential regional impacts for any reason. Table 3 follows:

**Table 3—Projects Exempt From Regional Emissions Analyses**

**Intersection channelization projects.**

Intersection signalization projects at individual intersections.

Interchange reconfiguration projects.

Changes in vertical and horizontal alignment.

Truck size and weight inspection stations.

Bus terminals and transfer points

**Highway Safety Improvement Program (HSIP)  
& Preventative Maintenance (PM) Program**

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Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a federally mandated annual process to evaluate, design, and construct projects that have the greatest potential to reduce the State's roadway fatalities and serious injuries. HSIP aligns with the emphasis areas within the department's Strategic Highway Safety Plan (SHSP). This may also include managing, studying, responding to, and making policies on safety-related issues to improve overall transportation safety.

<b>Place Name</b>	<b>Work Type</b>	<b>Advance Construction Balance</b>	<b>Post 2027 AC Conversions</b>
Alaska-wide: Safety	Safety Improvements	\$3,157,535	\$0

2024-2027 STIP Funding by Phase									
FY24 P0	FY24 P2	FY24 P3	FY24 P4	FY24 P7	FY24 P8	FY24 P9	FY24 ACC	FY24 Planned Project Obligations	FY24 STIP ID Fund Total
\$14,552,233	\$10,296,925	\$276,000	\$41,200,150	\$2,827,508	\$0	\$4,900,000	\$3,157,535	\$77,271,564	\$77,271,564
FY25 P0	FY25 P2	FY25 P3	FY25 P4	FY25 P7	FY25 P8	FY25 P9	FY25 ACC	FY25 Planned Project Obligations	FY25 STIP ID Fund Total
\$3,567,315	\$1,422,800	\$2,554,000	\$33,381,687	\$1,571,423	\$0	\$550,000	\$0	\$43,047,225	\$43,047,225
FY26 P0	FY26 P2	FY26 P3	FY26 P4	FY26 P7	FY26 P8	FY26 P9	FY26 ACC	FY26 Planned Project Obligations	FY26 STIP ID Fund Total
\$2,099,538	\$1,899,200	\$100,000	\$60,553,000	\$4,491,000	\$0	\$2,800,000	\$0	\$71,942,738	\$71,942,738
FY27 P0	FY27 P2	FY27 P3	FY27 P4	FY27 P7	FY27 P8	FY27 P9	FY27 ACC	FY27 Planned Project Obligations	FY27 STIP ID Fund Total
\$69,710,531	\$0	\$0	\$7,709,000	\$1,800,000	\$0	\$2,800,000	\$0	\$82,019,531	\$82,019,531

2024-2027 STIP Funding by Source					
FY	Fund Source	STIP ID Funds Programmed	FY	Fund Source	STIP ID Funds Programmed
FY24	Highway Safety Improvement Program (SA Takedown)	\$44,638	FY26	Highway Safety Improvement Program (SA Takedown)	\$47,356
FY24	Highway Safety Improvement Program: (SA)	\$34,193,913	FY26	Highway Safety Improvement Program: (SA)	\$27,450,577
FY24	Railway-Highway Crossings Program	\$3,206,619	FY26	Railway-Highway Crossings Program	\$1,299,603
FY24	Safe And Accessible Trans Options - Statewide Planning and Research	\$325,898	FY26	Safe And Accessible Trans Options - Statewide Planning and Research	\$335,748
FY24	Safe And Accessible Trans Options - Metro Planning	\$77,802	FY26	Safe And Accessible Trans Options - Metro Planning	\$82,540
FY24	Section 154 Penalties (NHPP)	\$9,434,018	FY26	Section 154 Penalties (NHPP)	\$10,008,550
FY24	Section 154 Penalties (STBG)	\$4,589,522	FY26	Section 154 Penalties (STBG)	\$4,869,024
FY24	Section 164 Penalties (NHPP)	\$9,434,018	FY26	Section 164 Penalties (NHPP)	\$10,008,550
FY24	Section 164 Penalties (STBG)	\$4,589,522	FY26	Section 164 Penalties (STBG)	\$4,869,024
FY24	State Match	\$5,271,988	FY26	State Match	\$6,496,429
FY24	Vulnerable Road User Safety Special Rule	\$6,103,626	FY26	Vulnerable Road User Safety Special Rule	\$6,475,337

FY	Fund Source	STIP ID Funds Programmed	FY	Fund Source	STIP ID Funds Programmed
FY25	Highway Safety Improvement Program (HSIP) Advance Construction	\$2,266,183	FY27	Highway Safety Improvement Program (SA Takedown)	\$48,777
FY25	Highway Safety Improvement Program (SA Takedown)	\$45,977	FY27	Highway Safety Improvement Program: (SA)	\$34,149,384
FY25	Highway Safety Improvement Program: (SA)	\$0	FY27	Railway-Highway Crossings Program	\$1,338,591
FY25	Railway-Highway Crossings Program	\$1,261,750	FY27	Safe And Accessible Trans Options - Statewide Planning and Research	\$340,784
FY25	Safe And Accessible Trans Options - Statewide Planning and Research	\$330,786	FY27	Safe And Accessible Trans Options - Metro Planning	\$85,016
FY25	Safe And Accessible Trans Options - Metro Planning	\$80,136	FY27	Section 154 Penalties (NHPP)	\$10,308,806
FY25	Section 154 Penalties (NHPP)	\$9,717,039	FY27	Section 154 Penalties (STBG)	\$5,015,095
FY25	Section 154 Penalties (STBG)	\$4,727,208	FY27	Section 164 Penalties (NHPP)	\$10,308,806
FY25	Section 164 Penalties (NHPP)	\$9,717,039	FY27	Section 164 Penalties (STBG)	\$5,015,095
FY25	Section 164 Penalties (STBG)	\$4,727,208	FY27	State Match	\$7,406,364
FY25	State Match	\$3,887,164	FY27	Statewide Planning and Research (NHPP)	\$1,333,216
FY25	Vulnerable Road User Safety Special Rule	\$6,286,735	FY27	Vulnerable Road User Safety Special Rule	\$6,669,597

Complete pavement and bridge preservation activities to prolong the life of the road pavement, bridges, and safety related structures. The program includes National Highway System lane delineators, destination and distance signing, pavement marking, signalization, crack sealing, surface treatment drainage, guardrail, illumination, abandoned vehicle program, road surfacing and transfer, road surface treatments, ADA ramp improvements, preservation planning and reconnaissance activities and other refurbishments. Per 23 CFR 450.218(j) this STIP program groups together categorically excluded projects (23 CFR 771.117).

<b>Place Name</b>	<b>DOT Region</b>	<b>Strategic Investment Area</b>	<b>Work Type</b>
Alaska-wide: Preservation & Maintenance	Alaska-wide	State of Good Repair	Bridge Preservation, Pavement Preservation
		<b>Landscape</b>	
		Alaska-wide	
		<b>Advance Construction Balance</b>	\$0
		<b>Post 2027 AC Conversions</b>	\$0

2024-2027 STIP Funding by Phase

FY24 P0	FY24 P2	FY24 P3	FY24 P4	FY24 P7	FY24 P8	FY24 P9	FY24 ACC	FY24 Planned Project Obligations	FY24 STIP ID Fund Total
\$10,914,148	\$6,399,518	\$428,000	\$125,976,125	\$540,000	\$0	\$0	\$0	\$144,257,790	\$144,257,790

FY25 P0	FY25 P2	FY25 P3	FY25 P4	FY25 P7	FY25 P8	FY25 P9	FY25 ACC	FY25 Planned Project Obligations	FY25 STIP ID Fund Total
\$25,500,000	\$3,435,000	\$1,035,500	\$148,275,028	\$552,000	\$0	\$0	\$0	\$178,097,528	\$178,097,528

FY26 P0	FY26 P2	FY26 P3	FY26 P4	FY26 P7	FY26 P8	FY26 P9	FY26 ACC	FY26 Planned Project Obligations	FY26 STIP ID Fund Total
\$49,666,841	\$1,020,000	\$400,000	\$65,800,000	\$705,000	\$0	\$0	\$0	\$117,191,841	\$117,191,841

FY27 P0	FY27 P2	FY27 P3	FY27 P4	FY27 P7	FY27 P8	FY27 P9	FY27 ACC	FY27 Planned Project Obligations	FY27 STIP ID Fund Total
\$117,907,614	\$0	\$0	\$31,000,000	\$1,100,000	\$0	\$0	\$0	\$131,907,614	\$131,907,614

2024-2027 STIP Funding by Source

FY	Fund Source	STIP ID Funds Programmed
FY24	Highway Infrastructure Bridge Replacement	\$23,188,253
FY24	National Highway Performance Program	\$41,451,087
FY24	National Highway Performance Program - Exempt	\$1,482,975
FY24	State Match	\$12,063,617
FY24	Surface Transportation Block Grant FLEX	\$59,923,347
FY24	Surface Transportation Block Grant: Off System Bridge	\$1,140,000
FY24	Surface Transportation Block Grant: Population 5-49,999K	\$5,008,511
FY25	Highway Infrastructure Bridge Replacement	\$1,722,062
FY25	National Highway Performance Program	\$18,253,131
FY25	State Match	\$16,260,088
FY25	Surface Transportation Block Grant FLEX	\$38,763,549
FY25	Surface Transportation Block Grant FLEX Advance Construction	\$98,362,872
FY25	Surface Transportation Block Grant: Population 5-49,999K	\$4,735,826
FY26	National Highway Performance Program	\$54,000,000
FY26	State Match	\$11,020,364
FY26	Surface Transportation Block Grant FLEX	\$22,171,477
FY27	National Highway Performance Program	\$67,265,422
FY27	State Match	\$11,911,741
FY27	Surface Transportation Block Grant FLEX	\$52,730,451

Change Log from Approved STIP 24-27

Overall: Funding Decreased	By Year: FY24 Decrease; FY25 Increase; FY26 Decrease; FY27 Decrease
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**Title 23 § 450.218 Development and content of the statewide transportation improvement program (STIP).**

(j) Projects that are not considered to be of appropriate scale for individual identification in a given program year may be grouped by function, work type, and/or geographic area using the applicable classifications under [23 CFR 771.117\(c\)](#) and (d) and/or [40 CFR part 93](#). **In nonattainment and maintenance areas, project classifications must be consistent with the “exempt project” classifications contained in the EPA's transportation [conformity](#) regulations ([40 CFR part 93, subpart A](#)).** In addition, projects proposed for funding under title [23 U.S.C. Chapter 2](#) that are not regionally significant may be grouped in one line item or identified individually in the STIP.

### § 93.126 Exempt projects.

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in table 2 of this section are exempt from the requirement to determine conformity. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in table 2 of this section is not exempt if the MPO in consultation with other agencies (see § 93.105(c)(1)(iii)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potentially adverse emissions impacts for any reason. States and MPOs must ensure that exempt projects do not interfere with TCM implementation. Table 2 follows:

#### Table 2—Exempt Projects

##### Safety

Railroad/highway crossing.

Projects that correct, improve, or eliminate a hazardous location or feature.

Safer non-Federal-aid system roads.

**Shoulder improvements.**

Increasing sight distance.

**Highway Safety Improvement Program implementation.**

Traffic control devices and operating assistance other than signalization projects.

Railroad/highway crossing warning devices.

**Guardrails, median barriers, crash cushions.**

**Pavement resurfacing and/or rehabilitation.**

**Pavement marking.**

Emergency relief ([23 U.S.C. 125](#)).

**Fencing.**

**Skid treatments.**

Safety roadside rest areas.

Adding medians.

Truck climbing lanes outside the urbanized area.

**Lighting improvements.**

**Widening narrow pavements or reconstructing bridges** (no additional travel lanes).

Emergency truck pullovers.