


MEMORANDUM

State of Alaska
Department of Transportation & Public Facilities
Northern Region Preconstruction

TO: Longin Krol, P.E.
Preconstruction Engineer
Northern Region


DATE: February 6, 2013

FILE NO: V:\Hwy\60260\60260\6 Design\2 DSR\DSR
60260.doc

THRU: Timothy J. Woster, P.E. 
Group/Section Chief
Northern Region

TELEPHONE NO: 451-5059

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FROM: Russell Johnson, P.E. 
Engineering Manager
Northern Region

SUBJECT: Chena Small Tracts
Improvements
AKSAS # 60260
**Abbreviated Design Study
Report**

Introduction/History

In 2010 residents voiced concerns to elected officials about pedestrian safety, especially for children, who utilize the road for walking, riding bikes, and catching school buses. In 2011 the legislature appropriated state funds for the design of a pedestrian/bicycle path along Chena Small Tracts Road.

Project Description

The Chena Small Tracts Road is an urban collector with a speed limit of 40 mph. It has 11-foot lanes and shoulders that vary from 0 to 2-foot. The roadway was surfaced with an Asphalt surface treatment in 1981. The project is located in the Fairbanks North Star Borough (FNSB) in Alaska. See Attachment A, Figure 1 for the vicinity/project location map.

The purpose of this project is to improve safety by providing a facility for pedestrians that is separate from vehicle travel lanes. The project is needed because pedestrians are required to walk in vehicle travel lanes due to limited or no shoulder width.

The scope of the project is to construct a facility along Chena Small Tracts Road from the existing Chena Pump Road intersection to the FNSB Chena Kiwanis Park to accommodate bicycles and pedestrians. The proposed improvements add a 10-foot wide paved shoulder to the North Side of Chena Small Tracts Road.

Design Alternatives

None

Design Standards

The project will be designed according to the following standards:

- State of Alaska, DOT&PF, *Highway Preconstruction Manual*, 2005 Alaska Preconstruction Manual
- AASHTO, *A Policy on Geometric Design of Highways and Streets*, 2001

Typical Section

The typical section adds a 10-foot shoulder on the north side of Chena Small Tracts Road. See Appendix A, Figure 2.

Horizontal/Vertical Alignment

The horizontal and vertical alignment will match the existing roadway.

Drainage

The proposed drainage will match existing. The road is crowned and water drains off the road collecting in ditches. On the west end of the project water drains towards Cripple Creek Slough. In the middle of the project water drains to an old gravel pit (Lark Pond) located on the north side of the road and on the east end of the project water drains towards the Chena River.

A site inspection of the Cripple Creek Slough culvert revealed a bad joint located 20 feet from the north end of the culvert. The joint is separating. This 20-foot section of pipe will be replaced and the joint repaired as part of this project.

Soil Conditions

A geotechnical study was not performed for this project. The existing road embankment appears to be stable with no localized settlement or frost heaves.

Erosion and Sediment Control

All work will be on the north side of the roadway. The Contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction in accordance with NPDES General Permit for Alaska and the Storm Water Pollution Prevention Plan Guide.

An Erosion and Sediment Control Plan (ESCP) will be included in the PS&E assembly. The Contractor will be responsible for adapting the Department's ESCP to the Contractor's ways and means, and providing and maintaining controls of erosion and hazardous materials.

Safety Improvements

Safety will be improved by providing a 10-foot wide shoulder for pedestrian and bike traffic use adjacent to the vehicle travel way.

Pedestrian/Bicycle (ADA) Provisions

The added 10-foot shoulder will provide an area off the vehicle travel way that pedestrians and bicyclists can use for safer passage.

Right of Way Requirements

All proposed improvements will be within the existing Right-of-Way (ROW).

Utility Relocation Coordination

There are no utility impacts. Existing sewer, water, power, and telephone utilities are on the south side of the road.

Maintenance Considerations

Maintenance requirements will increase due to the addition of the 10-foot wide shoulder by approximately one lane mile.

Material Sources

All materials for this project will be contractor furnished from private material sources.

Environmental Commitments

- 1) **Permits:** All state, federal and local permits shall be acquired as needed. Prior to the use of any area not previously permitted by the Contract, the Contractor shall provide a copy to the Engineer of all permits or clearances necessary to use the site for its intended purpose(s).
- 2) **Cultural Resources:** If archaeological or other cultural resources are unexpectedly discovered during construction, the contractor shall cease work immediately and notify the Project Engineer of the discovery. The Project Engineer shall contact the DOT&PF Regional Environmental Coordinator, who will in turn notify other appropriate parties.
- 3) **Water Quality:** The Contractor shall take care to minimize impacts to waters and shall avoid un-permitted impacts to waters by means of the following measures.
 - a) Erosion and Sediment Control Plan and a Storm Water Pollution Prevention Plan shall be in place prior to construction.
 - b) Project limits shall be clearly identified in the field prior to construction for the purpose of avoiding un-permitted impacts to waters of the U.S.
 - c) Unless authorized by all necessary permits, the Contractor shall locate stockpiles and staging areas outside of wetlands, above the ordinary high water mark of streams, outside other waters of the U.S, and outside annual flood areas.
- 4) **Hazardous Materials:**
 - a) Contractor use and storage of hazardous materials shall be in accordance with all State and Federal Regulations.
 - b) Equipment refueling and storage areas shall be located at least 100 feet from an active stream channel and have secondary containment.
 - c) Fuel and motor oil will be stored in double walled tanks or within a lined, bermed area.
 - d) The Contractor shall immediately notify the Project Engineer of any release, or discovery of petroleum products, hazardous materials, or wastes. Contactor cleanup, containment, and restoration activities associated with petroleum products, hazardous materials, or wastes shall be in accordance

with State and Federal regulations and the Contractor shall notify the Project Engineer of these activities.

- e) Adequate sorbent materials will be kept on site to be used to contain and cleanup any spill of petroleum.
- 5) **Vegetation Removal:** All construction activity shall comply with the Migratory Bird Treaty Act to prevent the killing or taking of migratory birds, or any part, nest, or egg of any such birds.

Design Exceptions

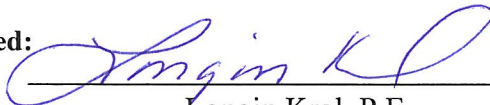
None

Cost Estimate

The estimated costs for this project are as follows:

Design	\$340,000
Utilities	\$0.00
Right of Way	\$0.00
Construction	\$800,000.00
(Includes 15% Engineering)	
Total Cost of Project	\$1,140,000

Approved:



Longin Krol, P.E.
Preconstruction Engineer

2/17/2013

Date

TJB/rmj/ss

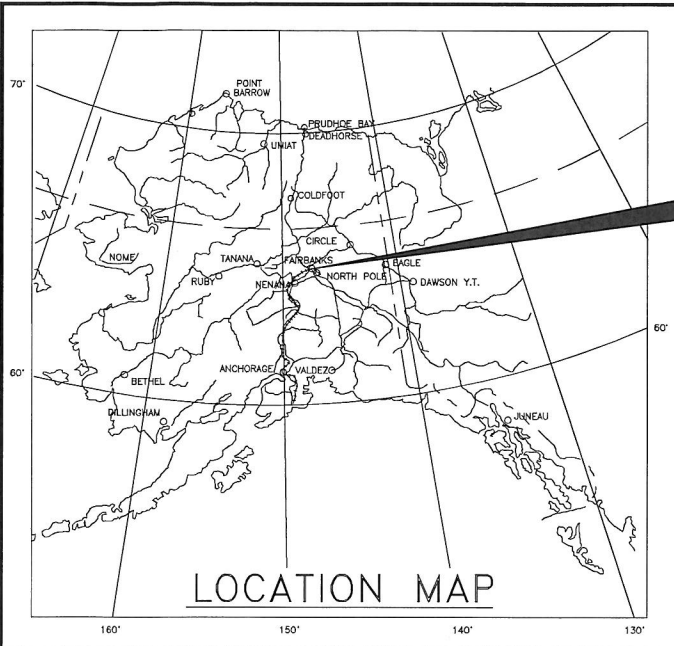
Attachments: Appendix A-Vicinity/Location Map, Typical Section drawings
Appendix B- Cost Estimate

Email Distribution: Jake Allen, P.E, QA Engineer
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Pamela Golden, P.E., Traffic & Safety Engineer
Roger Healy, P.E., Chief Engineer, Headquarters
Barry Hooper, P.E., PD&E Chief
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Brett Nelson, Environmental Coordinator
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Paper Copy Distribution: Shelley Dykema, Project Control Chief (*Approval Sheet only*)
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Steve Masterman, P.E., Regional Geologist
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Barbara L. Tanner, P.E., Contracts Engineer (*original*)

Appendix A

Vicinity/Location Map, Typical Section drawings



PROJECT
LOCATION



CHENA SMALL TRACTS ROAD
FAIRBANKS, ALASKA

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

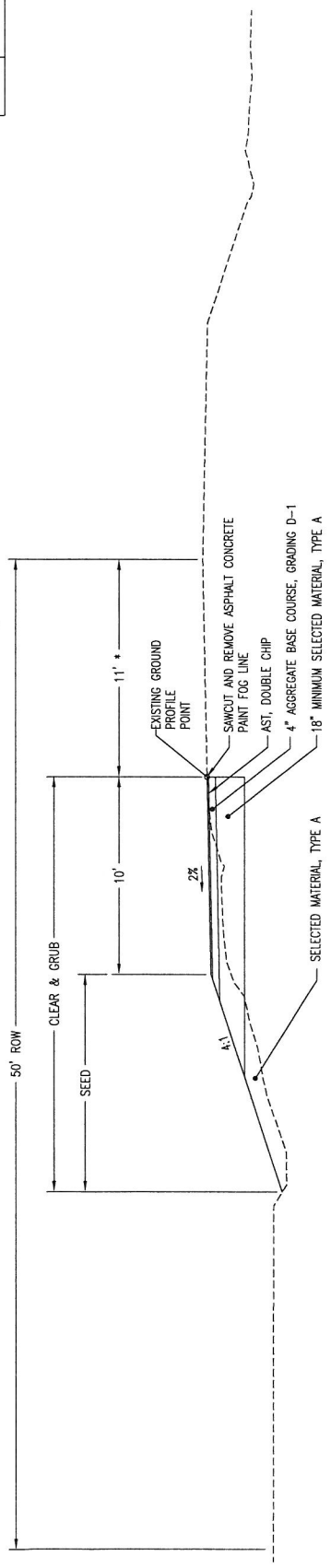
DATA: DATA	CHENA SMALL TRACTS VICINITY MAP
DRAWN: EJM	
APPROVED: APP	PROJECT NO. 60260
DATE: 02-06-13	FIGURE: 1



FIGURE 2

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	60260	2013	1	1

☉ CHEW SMALL TRACKS ROAD

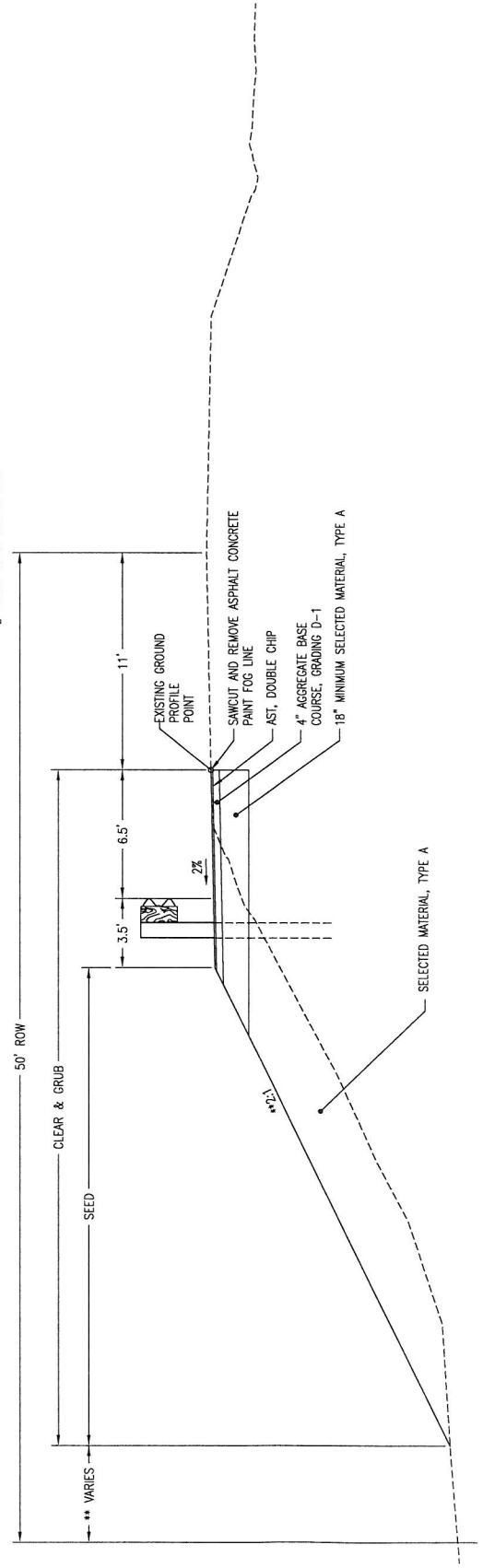


TYPICAL SECTION

STATION 10+43 TO STATION 13+82.5
 STATION 15+57.5 TO STATION 39+80
 STATION 41+17.5 TO STATION 56+27.9

* VARIES FROM STATION XX+XXX TO STATION XX+XXX
 ** WARP SLOPE TO STAY A MINIMUM OF 2' INSIDE ROW

☉ CHEW SMALL TRACKS ROAD



TYPICAL SECTION

STATION 13+82.5 TO STATION 15+57.5
 STATION 39+80 TO STATION 41+17.5

Appendix B

Cost Estimate

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Northern Region	Chena Small Tracts Road Improvements For DSR AKSAS No.: 60260 Federal No.: Version ID: 39671 Printed: 2/6/2013 3:42:48 PM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
201(3b)	Clearing And Grubbing	All required	Lump Sum	15,000.00	15,000.00
202(4)	Removal Of Culvert Pipe	120	Linear Foot	100.00	12,000.00
203(3)	Unclassified Excavation	3,170	Cubic Yard	16.50	52,305.00
203(6)	Borrow	10,275	Ton	17.00	174,675.00
301(1)	Aggregate Base Course, Grading D-1	1,300	Ton	40.00	52,000.00
401(10)	Asphalt Material Price Adjustment	All required	Contingent Sum	4,800.00	4,800.00
405(1)	CRS-2P Asphalt for Surface Treatment	20.7	Ton	1,000.00	20,700.00
405(2)-B	Aggregate for Surface Treatment, Grading B	120	Ton	80.00	9,600.00
405(2)-E	Aggregate for Surface Treatment, Grading E	65	Ton	100.00	6,500.00
603(1))-24	24 Inch CSP	110	Linear Foot	200.00	22,000.00
603(1)-48	48 Inch CSP	38	Linear Foot	350.00	13,300.00
606(1)	W-beam Guardrail	287.5	Linear Foot	45.00	12,937.50
606(13)	Parallel Guardrail Terminal	4	Each	4,500.00	18,000.00
611(1)	Riprap, Class I	20	Cubic Yard	140.00	2,800.00
613(2)	Culvert Marker Post	4	Each	120.00	480.00
615(2)	Remove and Relocate Existing Sign	3	Each	340.00	1,020.00
616(2)	1/2 Inch Diameter Thaw Pipe	1	Each	2,000.00	2,000.00
618(2)	Seeding	50	Pound	80.00	4,000.00
621(2)	Shrub, Willow Sprigs	120	Each	12.50	1,500.00
639(2)	Commercial Driveway	2	Each	2,000.00	4,000.00
640(1)	Mobilization And Demobilization	All required	Lump Sum	50,000.00	50,000.00
641(1)	Erosion, Sediment And Pollution Control Administration	All required	Lump Sum	5,000.00	5,000.00

ENGINEER'S ESTIMATE State of Alaska Department of Transportation & Public Facilities Northern Region	Chena Small Tracts Road Improvements For DSR AKSAS No.: 60260 Federal No.: Version ID: 39671 Printed: 2/6/2013 3:42:48 PM
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Basic Bid

<i>Item Number</i>	<i>Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Amount</i>
641(3)	Temporary Erosion, Sediment And Pollution Control	All required	Lump Sum	10,000.00	10,000.00
641(4)	Temporary Erosion, Sediment And Pollution Control Additives	All required	Contingent Sum	10,000.00	10,000.00
641(6)	Withholding	All required	Contingent Sum	0.00	0.00
642(1)	Construction Surveying	All required	Lump Sum	30,000.00	30,000.00
642(3)	Three Person Survey Party	30	Hour	150.00	4,500.00
643(2)	Traffic Maintenance	All required	Lump Sum	30,000.00	30,000.00
643(23)	Traffic Price Adjustment	All required	Contingent Sum	0.00	0.00
643(25)	Traffic Control	All required	Contingent Sum	75,000.00	75,000.00
644(1)	Field Office	All required	Lump Sum	10,000.00	10,000.00 (CF-CENG)
670(1)	Painted Traffic Markings	All required	Lump Sum	2,300.00	2,300.00
PROJECT Summary	Pay Items:	32 Items		Subtotal:	656,417.50
	Minus Contractor Furnished CENG Items			Exc Subtotal	-10,000.00 646,417.50
	Construction Engineering (Percentage)	15%		CENG Subtotal	96,962.63 743,380.13
	Indirect Cost Allocation Plan (ICAP)	4.79%			35,607.91
	TOTAL PARTICIPATING				778,988.04
	ADDED COSTS (Not part of the Contract)				
	PROJECT TOTAL				778,988.04