Ambler Mining District Access

Baseline Cost Memorandum

September 2011

AMBLER MINING DISTRICT ACCESS

BASELINE COST MEMORANDUM

AKSAS 63812

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1.0 INTRODUCTION

1.1 Project Overview and Purpose

The Ambler Mining District Access project proposes to identify, design, and construct a transportation corridor from the Ambler mineral belt to either a port location on the west coast of Alaska or the surface transportation system in the Alaska Interior. The corridor is intended to provide surface transportation access to state lands and facilitate exploration and development of mineral resources along the Ambler mineral belt.

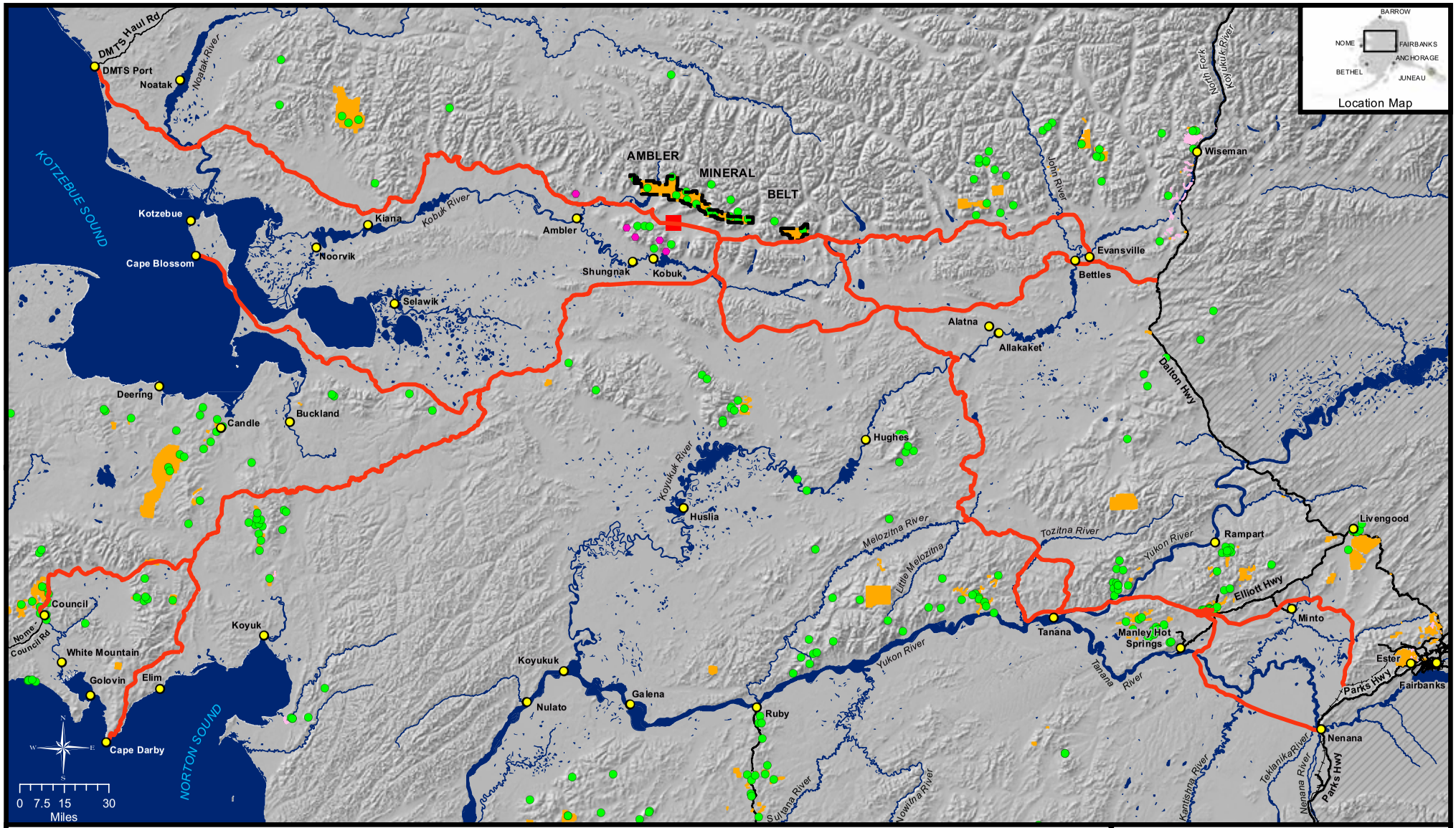
The South Flank of the Brooks Range contains extensive mineral resources. Limited exploration efforts since the 1950s have identified significant resources of copper and other base metals (Hawley and Vant, 2009) (Figure 1). Exploration and development of these deposits has been economically and logistically curtailed by the lack of transportation infrastructure.

1.2 Project Study Area

The project study area extends from Ambler mineral belt south to Nenana and from the Dalton Highway to the west coast (Figure 2). Four potential corridors have been identified from the Ambler mineral belt to the west coast of Alaska, and four potential corridors head east from the Ambler mineral belt to the Dalton Highway or the Alaska Railroad corridor (see Figure 3).

The potential corridors are described in more detail in the Corridor Development Memorandum (DOWL HKM, 2011a). One corridor in particular, the Parks Highway Railroad Corridor has multiple alignment options at the north and south ends of the corridor. Therefore, four Parks Highway Railroad Corridors as evaluated as listed below:

- Parks Highway Railroad Corridor A - Options B and D
- Parks Highway Railroad Corridor B - Options A and D
- Parks Highway Railroad Corridor C - Options B and C
- Parks Highway Railroad Corridor D - Options A and C



Sources:
Federal Mining Claims: BLM
State Mining Claims:DNR
Mineral Occurrence: Report on Minerals - C.C. Hawley & M.K. Vant, February 2009

Coordinate System: NAD 1983 Alaska Albers

STATE OF ALASKA
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AMBLER MINING DISTRICT ACCESS CORRIDOR REVIEW MEMORANDUM

MINING CLAIMS AND MINERAL OCCURRENCES

DATE: April 19, 2011 | **Figure 1**

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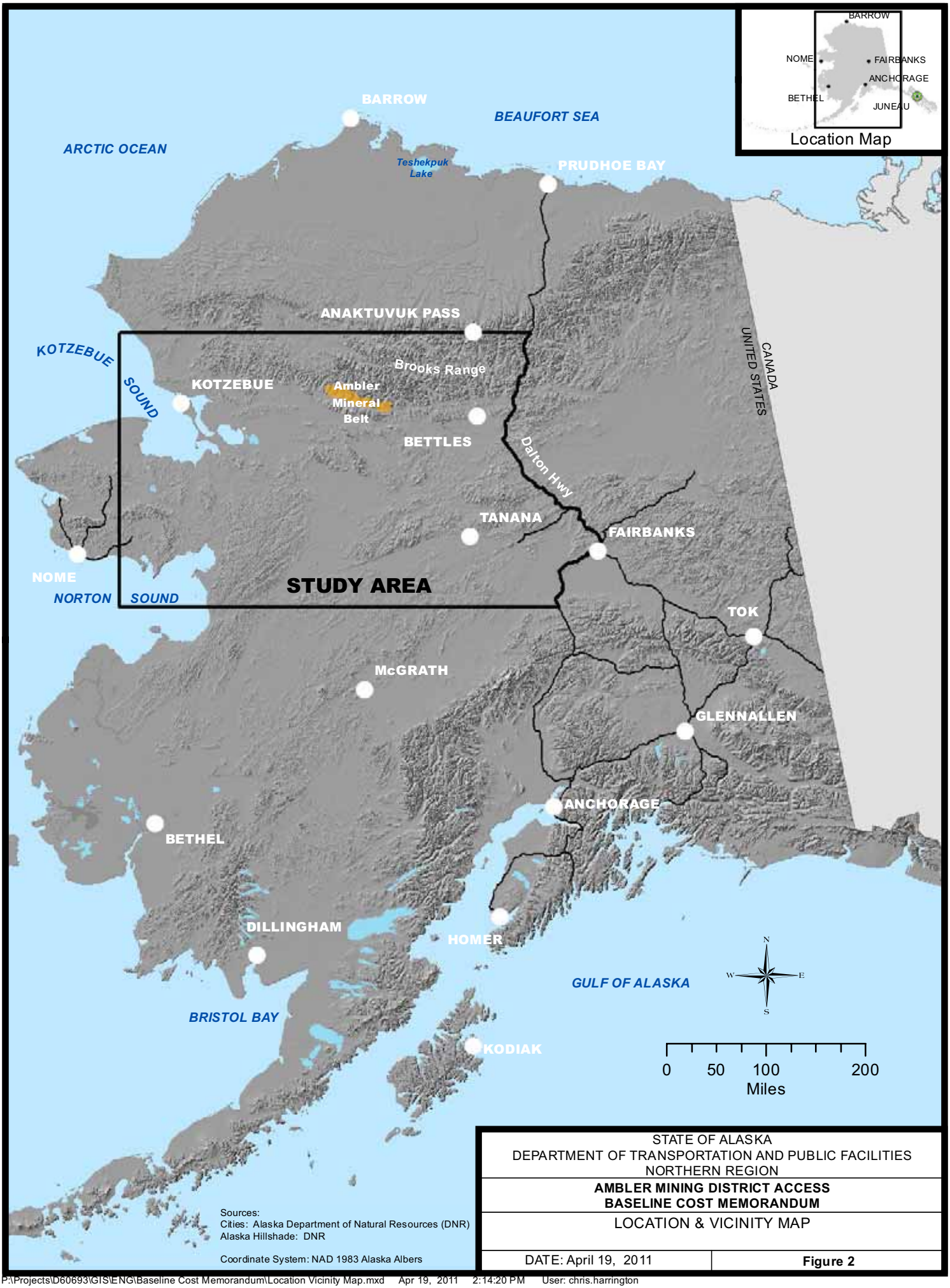

Sources:
Cities: Alaska Department of Natural Resources (DNR)
Alaska Hillshade: DNR

Coordinate System: NAD 1983 Alaska Albers

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AMBLER MINING DISTRICT ACCESS
BASELINE COST MEMORANDUM

LOCATION & VICINITY MAP

DATE: April 19, 2011

Figure 2

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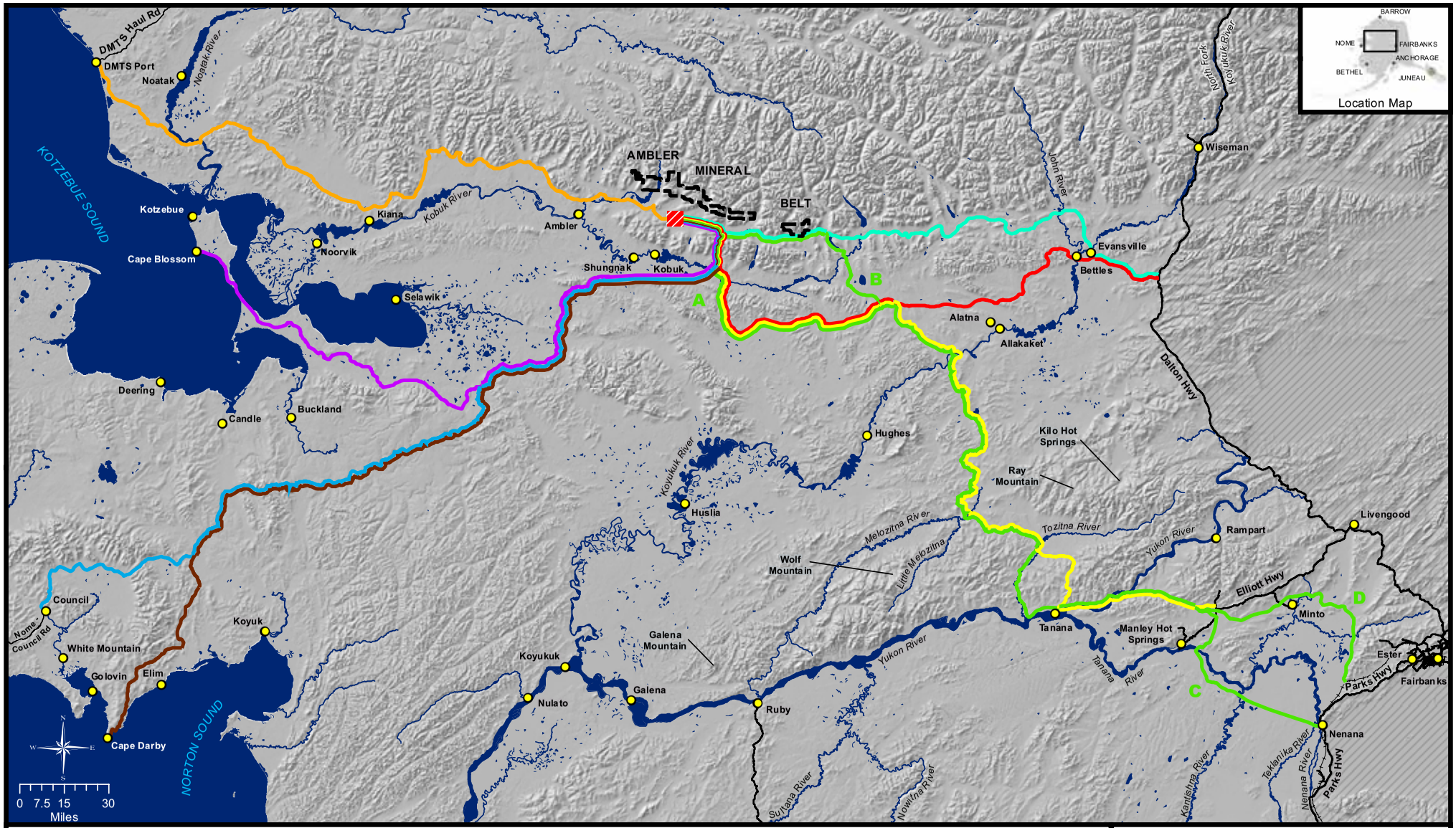

Communities and Place Names
Railroad
Existing Roads
Water
Outside of Project Study Area
Ambler Mineral Belt
Proposed Staging Area
1-Brooks East Corridor 216 Miles (Road Only)
2-Kanuti Flats Corridor 241 Miles (Road Only)
5-DMTS Port Corridor 257 Miles (Road & Rail)
3-Elliott Hwy Corridor 365 Miles (Road Only)
4-Parks Hwy RR Corridor 420-450 Miles (Rail Only)
6-Cape Blossom Corridor 245 Miles (Road & Rail)
7-Selawik Flats Corridor 331 Miles (Road & Rail)
8-Cape Darby Corridor 340 Miles (Road & Rail)

Sources:
Commmunities and Place Names: DNR, DOT&PF
Existing Roads: DOT&PF
DMTS Haul Road: NANA
Railroad: DNR

Coordinate System: NAD 1983 Alaska Albers

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NORTHERN REGION

AMBLER MINING DISTRICT ACCESS
BASELINE COST MEMORANDUM

PRELIMINARY CORRIDORS

DATE: May 23, 2011 | **Figure 3**

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1.3 Objectives

This Baseline Cost Memorandum documents conceptual cost estimates of each road and rail corridor that could potentially access the Ambler mineral belt. The objective of the baseline cost estimates is to enable construction cost to be reasonably considered in narrowing the range of corridors and selected mode (e.g. road or rail). This objective is accomplished by identifying costs that are unique to each corridor and by estimating overall corridor construction costs using the best available information.

2.0 BASELINE COST ASSUMPTIONS AND ESTIMATES

Using typical sections established in the Design Criteria Memorandum (DOWL HKM, 2011b), quantity estimates for the road and rail corridors were calculated. Unit costs were determined based on historical bid tabulations for similar projects on the Dalton Highway and other Northern Region projects. The quantity and unit prices were multiplied to calculate "per mile" cost estimates for the construction cost of each corridor. The results of the estimates are shown in Table 1. The assumptions used in determining the estimate are documented herein and the detailed typical sections, quantities, and cost estimates are included in Appendix A.

Table 1: Corridor Construction Cost Summary

Corridors	Length Miles	Roadway		Railway	
		Baseline Cost Per Mile (million/mile)	Total Corridor Cost (in millions)	Baseline Cost Per Mile (million/mile)	Total Corridor Cost (in millions)
1 - Brooks East Corridor	216	$2.0	$432	NA	NA
2 - Kanuti Flats Corridor	241	$2.1	$506	NA	NA
3 - Elliott Hwy Corridor	365	$2.7	$986	NA	NA
4A - Parks Hwy RR Corridor	430	NA	NA	$4.4	$1,883
4B - Parks Hwy RR Corridor	450	NA	NA	$4.4	$1,989
4C - Parks Hwy RR Corridor	420	NA	NA	$4.7	$1,987
4D - Parks Hwy RR Corridor	440	NA	NA	$4.6	$2,006
5 - DMTS Port Corridor	257	$2.8	$720	$4.9	$1,252
6 - Cape Blossom Corridor	245	$3.5	$857	$5.4	$1,332
7 - Selawik Flats Corridor	331	$2.9	$960	$4.7	$1,559
8 - Cape Darby Corridor	340	$2.8	$952	$4.6	$1,574

2.1 General Assumptions

- Quantity estimates are based on costs for clearing, surface and embankment material, bridges, culverts, ballast and rail.
- Pre-construction, construction engineering, and overhead costs are not included.
- Port development costs for western routes are not included.
- Maintenance station costs are not included.

2.2 Embankment

Structural sections were assumed to consist of varying heights of fill, ranging from 36 inches to 84 inches. The height of the structural section was based on an evaluation of wetlands, high potential for frost heave and thaw settlement, and/or snowdrift areas. An 84-inch embankment was assumed for areas with high potential for frost heave and thaw settlement, wetlands, or snowdrift areas exist. In areas of reduced risk for thaw settlement, no wetlands, and densely treed areas that protect the roadway from snow drifting, a 36-inch section was assumed. Thermal modeling was conducted to further verify the sections assumed and is summarized in Section 2.1.8 of the Design Criteria Memorandum. Geotechnical field data will be required to refine these sections to determine if shallower sections can be used more frequently.

A 20% contingency was applied to all embankment quantities.

2.3 Material Sites and Haul Costs

2.3.1 Material Sites

Material site locations and intervals for each corridor are based on the information documented provided in the Geotechnical Memorandum (DOWL HKM, May 2011c). Due to the uncertainties detailed in the Geotechnical Memorandum, this cost estimate does not reflect river mining as a material source and possible cost savings. Rivers are potential material sources in some locations along the proposed corridors, with active bed loads that could be harvested to replace mined upland material.

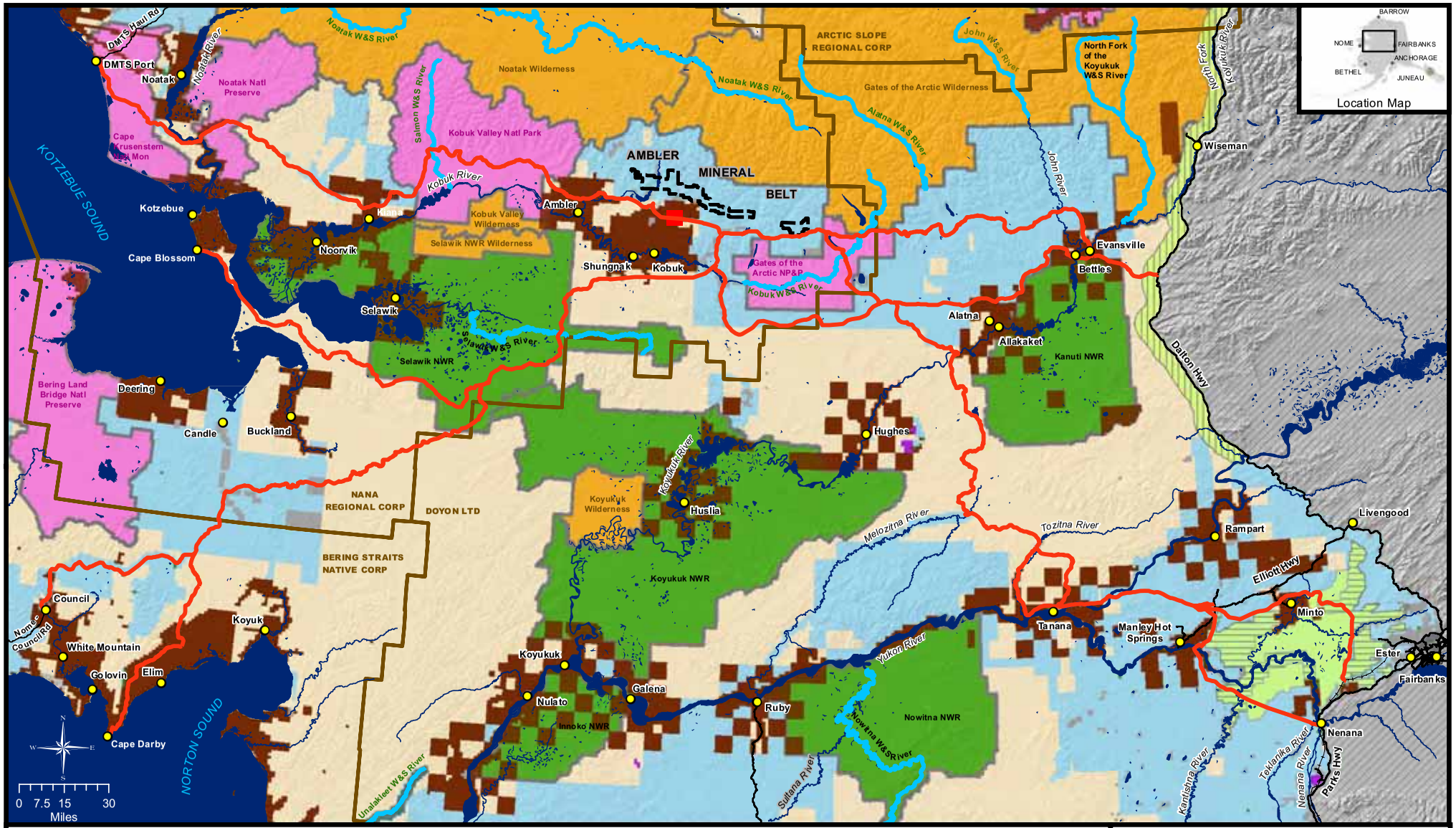
2.3.2 Haul Costs

Material Site Distance. The unit costs for embankment quantities were adjusted to account for varying material haul distances within each corridor. Preliminary material sites and haul distance intervals are summarized in the Geotechnical Memorandum and are accounted for in the estimated material costs found in Appendix A.

Royalties. A royalty of $5/cubic yard was added to material quantities that were assumed to come from non-state land (See Figure 4). No royalties were assumed for material mined from state lands. For each corridor, Table 2 summarizes corridor embankment unit prices that account for haul distance and royalty fees.

Table 2: Corridor Embankment Unit Price Summary

Corridors	Miles	Road		Rail	
		State Land Material Cost (cy)	Non-State Land Material Cost (cy)	State Land Material Cost (cy)	Non-State Land Material Cost (cy)
1 - Brooks East Corridor	216	$6.95	$11.95	NA	NA
2 - Kanuti Flats Corridor	241	$6.95	$11.95	NA	NA
3 - Elliott Hwy Corridor	365	$8.77	$13.77	NA	NA
4A - Parks Hwy RR Corridor	430	NA	NA	$7.75	$10.25
4B - Parks Hwy RR Corridor	450	NA	NA	$7.65	$10.15
4C - Parks Hwy RR Corridor	420	NA	NA	$8.87	$11.37
4D - Parks Hwy RR Corridor	440	NA	NA	$7.67	$10.17
5 - DMTS Port Corridor	257	$7.37	$12.37	$7.37	$9.87
6 - Cape Blossom Corridor	245	$10.64	$15.64	$10.64	$13.14
7 - Selawik Flats Corridor	331	$8.86	$11.36	$8.86	$11.36
8 - Cape Darby Corridor	340	$8.81	$11.31	$8.81	$11.31



Communities and Place Names
Railroad
Existing Roads
Water
Proposed Staging Area

Outside of Project Study Area
Ambler Mineral Belt
Preliminary Corridors
Native Regional Corporation Boundary

Native
Bureau of Land Management
Military
National Park Service
U.S. Fish & Wildlife Service

National Wilderness Perservation System
Wild & Scenic Rivers
Private or Municipal
State

Other Controlled / Management Areas
Tanana Valley State Forest
Minto Flats State Game Preserve
James Dalton Highway Corridor

Sources:
Land Ownership: DNR
Native Corporation Boundary: DNR

Coordinate System: NAD 1983 Alaska Albers

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AMBLER MINING DISTRICT ACCESS BASELINE COST MEMORANDUM

LAND OWNERSHIP / MANAGEMENT

DATE: April 19, 2011 | **Figure 4**

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2.4 Hydrology Costs and Assumptions

Cost estimates for drainage structures along road and rail corridors were developed using the hydraulic design assumptions described in the Preliminary Hydrology Reconnaissance Memorandum (DOWL HKM, 2011d). Historical bid tabulations for Dalton Highway projects and other Northern Region projects were used to estimate unit costs. Proposed corridors' overall bridge costs were estimated using unit prices for the three categories of bridge sizes (small, medium, and large). Unit costs per linear foot were developed for several conceptual and proprietary bridge designs to obtain a range of individual bridge costs.

Understanding that bridge costs will vary at each crossing location based on site-specific constraints, a representative value was selected from within the range of derived bridge costs. The 65th percentile cost was selected for determining unit costs. After deriving unit costs per linear foot for the three bridge categories, these unit costs were applied to the span lengths of the small (50-foot) and medium (140-foot) bridge categories to arrive at "per crossing" bridge costs. Large bridges are evaluated on a lineal foot basis.

Culvert costs were considered for rolled and structural plate corrugated steel pipe (CSP) culverts ranging from 4 feet to 20 feet in diameter. Culverts with various wall thicknesses (gauges) were considered to account for varying cover requirements, with 8- to 16-gauge culverts evaluated for the small culverts (less than 10-foot diameter) and 5- to 12-gauge culverts evaluated for the large culverts (10-foot to 20-foot diameter). Material costs per crossing were derived assuming a 95-foot-long culvert. The culvert length of 95 feet was assumed after examining average culvert lengths for major drainage structures for a similar project on the Dalton Highway.

A 36-inch minimum culvert diameter was assumed for all minor drainage culverts to account for potential icing conditions. Minor drainage crossings are estimated assuming an 80-foot-long culvert based on average cross-culvert lengths on the Dalton Highway. Four minor drainage culverts are assumed per mile, based on the frequency of minor drainage crossings on the Dalton Highway.

Drainage cost estimates as documented in the hydrology analysis are summarized in Table 3.

Table 3: Summary of Baseline Drainage Structure Costs for Road Corridors

Corridor	Drainage Structure Category Costs							TOTAL Corridor Cost
	Minor Crossings	Culvert Small (<10')	Culvert Large (10' to 20')	Bridge Small (<50')	Bridge Medium (50' to 140')	Bridge Large (>140')	Fish Passage Culverts	
1-Brooks East Corridor	$18,144,000	$11,742,000	$3,680,000	$2,150,000	14,690,000	57,000,000	1,040,000	$108,446,000
2-Kanuti Flats Corridor	$20,244,000	$16,171,000	$2,990,000	$4,300,000	20,340,000	62,016,000	$2,340,000	$128,401,000
3-Elliott Hwy Corridor	$30,660,000	$18,128,000	$4,600,000	$8,170,000	27,120,000	$83,904,000	$2,600,000	$175,182,000
5-DMTS Port Corridor	$21,588,000	$11,948,000	$4,490,000	$1,290,000	13,560,000	$96,216,000	$6,240,000	$165,332,000
6-Cape Blossom Corridor	$20,580,000	$11,124,000	$6,790,000	$860,000	15,820,000	$105,450,000	$6,630,000	$177,254,000
7-Selawik Flats Corridor	$27,804,000	$9,682,000	$9,660,000	$3,010,000	23,730,000	$85,158,000	$4,160,000	$163,204,000
8-Cape Darby Corridor	$28,560,000	$8,652,000	$12,420,000	$3,440,000	24,860,000	$89,946,000	$4,550,000	$172,428,000

After compiling unit cost per stream crossing for various culvert options, the 65th percentile cost was selected as a representative material cost. Material costs were increased by 10% to account for recent increases in the price of steel. Construction costs for each culvert were assumed equal to the material costs. The resultant unit prices were consistent with recent culvert bid costs on a similar project along the Dalton Highway. After establishing estimates for unit culvert costs, additional costs were figured into the estimate to account for headwall, erosion protection riprap, culvert marker posts, thaw pipe, and rigid board insulation.

Corridor drainage costs are derived from unit costs for minor crossing structures and the five categories of major crossing structures. Unit costs are per crossing for the five smaller categories (minor drainage culvert, small culvert, large culvert, small bridge, medium bridge) and per linear foot of bridge for large bridges, due to the high variability in total bridge lengths and the substantial costs associated with these crossings.

Estimated unit prices for roadway crossing structures are:

- $21,000 per minor drainage culvert (36-inch diameter)
- $103,000 per small culvert (less than 10-foot diameter);
- $230,000 per large culvert (10- to 20-foot diameter);
- $430,000 per small bridge (less than 50-foot total length);
- $1,130,000 per medium bridge (50- to 140-foot total length); and
- $11,400 per linear foot for large bridges (greater than 140-foot total length).

2.5 Railway Bridge Cost Estimates

Unit costs for railway bridges are estimated to range from $8,000 per track foot for standardized short spans (roughly 28 feet long) to $25,000 per track foot for larger spans (150 feet). Multiple short spans were used to calculate unit costs per structure for small and medium bridges, with the $25,000 per track foot unit price being used to estimate the cost of large bridges.

Culvert costs for railway corridors were determined in the same manner as for roadway corridors, and unit costs are considered equivalent for road and rail corridors. Although increased rail loads may require using heavier gauge culverts, this will have to be addressed on a site-by-site basis and does not significantly affect conceptual cost comparisons.

Drainage cost estimates for the rail corridors are summarized in Table 4.

Table 4: Summary of Baseline Drainage Structure Costs for Rail Corridors

Corridor	Drainage Structure Category Costs							TOTAL Corridor Cost
	Minor Crossings	Culvert Small (<10')	Culvert Large (10' to 20')	Bridge Small (<50')	Bridge Medium (50' to 140')	Bridge Large (>140')	Fish Passage Culverts	
4-Parks Hwy Corridor A	$36,120,000	$13,081,000	$11,960,000	$18,900,000	$65,090,000	$186,750,000	$2,990,000	$334,891,000
4-Parks Hwy Corridor B	$37,800,000	$17,716,000	$11,040,000	$21,150,000	$82,070,000	$193,250,000	$3,640,000	$366,666,000
4-Parks Hwy Corridor C	$35,280,000	$13,493,000	$ 7,130,000	$12,600,000	$59,430,000	$260,250,000	$2,860,000	$391,043,000
4-Parks Hwy Corridor D	$36,960,000	$18,128,000	$ 6,210,000	$14,850,000	$76,410,000	$266,750,000	$3,510,000	$422,818,000
5-DMTS Port Corridor	$21,588,000	$11,948,000	$14,490,000	$1,350,000	$33,960,000	$211,000,000	$6,240,000	$300,576,000
6-Cape Blossom Corridor	$20,580,000	$11,124,000	$16,790,000	$900,000	$39,620,000	$231,250,000	$6,630,000	$326,894,000
7-Selawik Flats Corridor	$27,804,000	$9,682,000	$ 9,660,000	$3,150,000	$59,430,000	$186,750,000	$4,160,000	$300,636,000
8-Cape Darby Corridor	$28,560,000	$8,652,000	$12,420,000	$3,600,000	$62,260,000	$197,250,000	$4,550,000	$317,292,000

*Average values reported based on the four Parks Highway Railroad Corridor options.

Rail corridor drainage costs are estimated from unit costs for five categories of crossing structures. Unit costs are per crossing for the five smaller categories (minor drainage culvert, small culvert, large culvert, small bridge, medium bridge) and per linear foot of bridge for the large bridges due to high variability in total bridge lengths and the substantial costs associated with these crossings.

Estimated unit costs for railroad crossing structures are:

- $21,000 per minor drainage culvert (36-inch diameter)
- $103,000 per small culvert (less than 10-foot diameter);
- $230,000 per large culvert (10- to 20-foot diameter);
- $450,000 per small bridge (less than 50-foot total length);
- $2,830,000 per medium bridge (50- to 140-foot total length); and
- $25,000 per linear foot for large bridges (greater than 140-foot total length).

2.6 Fish Passage Culverts

The majority of Anadromous Water Catalog-listed anadromous streams in the study area are relatively large main-stem streams requiring bridge crossings. Bridge costs are not as affected by fish passage concerns as they typically provide adequate fish passage.

Corridor culvert crossings requiring fish passage will incur additional costs associated with the design of fish passage structures and increased construction costs resulting from channel bed materials, bank stabilization, and increased labor. Design and bid costs for several recent fish passage projects around the state were investigated to estimate the increase in construction cost compared to non-fish passage culverts. Items in the evaluated bid costs not specific to construction of the fish passage crossing that would be included in other items of the overall project cost (mobilization, embankment fill, etc.) were subtracted. The increase in construction costs for fish passage culverts ranges from approximately $40,000 to $150,000 for the projects examined, with an average increase of approximately $80,000.

Substantial cost is also associated with the design of fish passage culverts, including additional survey, geomorphic investigations, geotechnical investigations, agency coordination, permitting, and hydraulic analysis. Design costs are high, as each stream crossing requires a unique design

solution that takes into account the geomorphic conditions at the site. A single "cookie-cutter" design cannot be applied to several fish passage crossings in an effort to reduce design costs. The additional costs for fish passage design range from approximately $15,000 to $80,000 for the projects examined, with an average approximate cost of $50,000 per crossing.

To be conservative in estimating the impacts of fish passage crossings on corridor costs, a cost of $130,000 is added to culvert crossings that are assumed to require fish passage. Details for the development of these costs are provided in Appendix A of the Preliminary Hydrology Reconnaissance Memorandum.

2.7 Drainage Cost Assumptions

Other general assumptions for the unit cost estimates for major and minor drainage crossings include:

- Pre-construction, construction engineering, and overhead costs are not included.
- H&H preparation costs (or H&H Summary for culverts) are considered incidental to drainage structure costs.
- A minimum 35-foot-wide bridge deck was assumed, with two 12-foot travel lanes and two 5.5-foot-wide shoulders for road corridor bridges.
- Approaches are not included in the unit bridge costs.
- Removable bridge railing costs are not included.
- Bridge site accessibility factors are not incorporated in the cost estimates.
- Temporary bridges or cofferdams are not included in these estimates.
- Bridge unit prices assume there will be some economy of scale in this size project, and that individual bridge costs will decrease as the number of bridges fabricated increases. Alternatively, costs per bridge may increase if fabricated individually or in smaller numbers, which could occur if the project is constructed in multiple phases over several years.

- Conceptual bridge crossing locations do not consider geological conditions. Poor geologic or soil conditions may require additional pier and abutment costs or relocation of the crossing to a wider location requiring a longer structure.
- The hydrologic, geomorphic, and geotechnical data necessary to evaluate scour potential at crossing locations is not available. Bridges and culverts have not been evaluated with regard to potential scour. Streams with high potential for scour may require larger and/or deeper abutments or piers, resulting in increased costs.
- Detailed data for evaluating icing hazards on a regional or per-crossing basis is not available. Icing hazards have not been evaluated for individual stream crossings. Crossings in areas subject to icing hazards may require additional reinforcement of abutments and piers or increased structure spans, increasing costs.
- Areas prone to aufeis may require additional overflow culverts, increasing costs. Thaw pipes increase culvert costs 1 to 7 percent and are included in the corridor drainage cost estimates.
- Bridges across navigable waters will have increased costs resulting from higher bridge decks and increased span distances to accommodate barge traffic. Costs associated with navigable rivers cannot be estimated in a meaningful manner until detailed hydrologic data, site survey information, and more detailed river use information (including type of barges, boats, and public needs) are available.
- Culverts are corrugated steel pipe with galvanized finish. Corrugations vary from 3-inch by 1-inch to 6-inch by 2-inch, depending on culvert diameter. Both rolled pipe and structural plate pipe would be used as dictated by availability for various culvert sizes, knowing crossing requirements will vary based on cover/load depths and hydraulic requirements. Rolled pipe is typically only available for 12-foot and smaller diameters, but culvert availability varies by gauge thickness, manufacturer, and regional availability. Structural plate pipes typically require increased labor, but may have reduced freight costs.
- Erosion protection for minor drainage culverts is assumed to be incidental to culvert installation costs.

- Freight from Seattle, Washington to Fairbanks was estimated at $6,000 per 45,000-pound truckload for culvert and bridge alternatives fabricated outside of Alaska, including proprietary bridges and all culverts.
- Cost estimates do not include freight from Fairbanks or unloading at the project site.

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APPENDIX A

Baseline Cost Worksheets

Corridor Baseline Cost Estimate Summary

Corridors	Length	Roadway				Railway			
	Miles	Roadway Cost/mile (million/mile)	Water Crossing Cost/mile (million/mile)	*Baseline Cost Per Mile (million/mile)	*Total Corridor Cost (in millions)	Railway Cost/mile (million/mile)	Water Crossing Cost/mile (million/mile)	*Baseline Cost Per Mile (million/mile)	*Total Corridor Cost (in millions)
1 - Brooks East Corridor	**216**	$1.5	$0.502	**$2.0**	**$432**	NA	NA	**NA**	**NA**
2 - Kanuti Flats Corridor	**241**	$1.6	$0.533	**$2.1**	**$506**	NA	NA	**NA**	**NA**
3 - Elliott Hwy Corridor	**365**	$2.2	$0.480	**$2.7**	**$986**	NA	NA	**NA**	**NA**
4a - Parks Hwy RR Corridor	**430**	NA	NA	**NA**	**NA**	$3.6	$0.779	**$4.4**	**$1,883**
4b - Parks Hwy RR Corridor	**450**	NA	NA	**NA**	**NA**	$3.6	$0.815	**$4.4**	**$1,989**
4c - Parks Hwy RR Corridor	**420**	NA	NA	**NA**	**NA**	$3.8	$0.931	**$4.7**	**$1,987**
4d - Parks Hwy RR Corridor	**440**	NA	NA	**NA**	**NA**	$3.6	$0.961	**$4.6**	**$2,006**
5 - DMTS Port Corridor	**257**	$2.2	$0.643	**$2.8**	**$720**	$3.7	$1.170	**$4.9**	**$1,252**
6 - Cape Blossom Corridor	**245**	$2.8	$0.724	**$3.5**	**$857**	$4.1	$1.336	**$5.4**	**$1,332**
7 - Selawik Flats	**331**	$2.4	$0.493	**$2.9**	**$960**	$3.8	$0.908	**$4.7**	**$1,559**
8 - Cape Darby Corridor	**340**	$2.3	$0.507	**$2.8**	**$952**	$3.7	$0.932	**$4.6**	**$1,574**

Preliminary Baseline Cost Estimate Does NOT Include the Following:

1. Maintenance Station Costs.
2. Port costs for western corridors.
3. Railway loading and unloading facilities for both the eastern and western corridors.
4. The cost of separate maintenance facilities for both track and rolling stock for the western corridors.
5. The cost of separate operations facilities due to the separation from the existing ARRC railbelt.
6. The cost of separate fleet of rail cars and locomotives.

Note: Corridors 1, 2, and 3 do not have rail options. All 4 - Parks Hwy Corridors do not have a road option.

Four railroad corridors are possible given the options at the north and south end of the corridor:

- Parks Highway Railroad Corridor A – Options B and D
- Parks Highway Railroad Corridor B – Options A and D
- Parks Highway Railroad Corridor C – Options B and C
- Parks Highway Railroad Corridor D – Options A and C

Roadway Typical Section Quantity and Cost Assumptions

Typical A Areas with high potential for frost heave and thaw settlement.

Typical B Areas with potential for wind and snow drifting (low to no potential for frost heave and thaw settlement.

Typical C Areas with low to no potential for frost heave and thaw settlement and low potential for wind and snow drifting.

1. Areas determined using AutoCAD. Embankment quantities includes a 20% Contingency.

2. Aggregate Surface Course conversion factor assumed to be 1.998 Tons per CY.

3. Embankment conversion factor assumed to be 1.958 Tons per CY.

Royalties

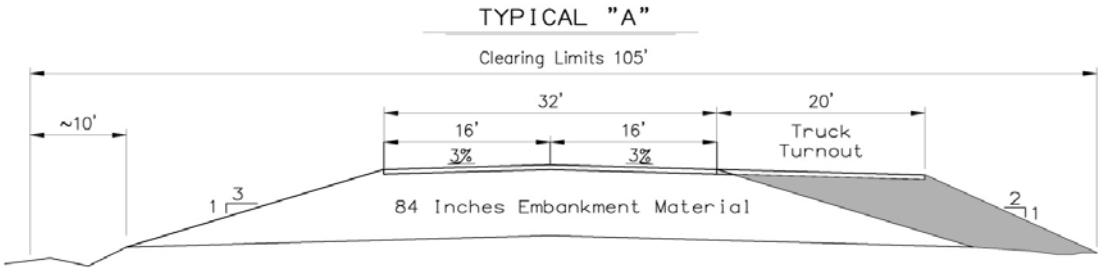
Item 203A	= Material from state owned land.	%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	%	

4. Initial research shows entire corridor has permafrost. Therefore no excavation is assumed at this time.

Corridor Haul Cost Summary					
Corridors	Miles	Road		Rail	
		State Land Haul Cost/CY	Royalty for BLM/Native Owned Land Haul Cost/CY	State Land Haul Cost/CY	Royalty for BLM/Native Owned Land Haul Cost/CY
1 - Brooks East Corridor	216	$6.95	$11.95	NA	NA
2 - Kanuti Flats Corridor	241	$6.95	$11.95	NA	NA
3 - Elliott Hwy Corridor	365	$8.77	$13.77	NA	NA
4a - Parks Hwy RR Corridor	430	NA	NA	$7.75	$10.25
4b - Parks Hwy RR Corridor	450	NA	NA	$7.65	$10.15
4c - Parks Hwy RR Corridor	420	NA	NA	$8.87	$11.37
4d - Parks Hwy RR Corridor	440	NA	NA	$7.67	$10.17
5 - DMTS Port Corridor	257	$7.37	$12.37	$7.37	$9.87
6 - Cape Blossom Corridor	245	$10.64	$15.64	$10.64	$13.14
7 - Selawik Flats Corridor	331	$8.86	$11.36	$8.86	$11.36
8 - Cape Darby Corridor	340	$8.81	$11.31	$8.81	$11.31

Truck Turnout Estimates

SUMMARY OF TURNOUT COST (EACH)		
A	B	C
$22,992	$19,101	$14,828



~ 200 Foot turnout

TURNOUT BASELINE PER- EACH COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	0.01	$9,500	$55
301	AGGREGATE SURFACE COURSE	TON	145	$35	$5,076
203	EMBANKMENT (+ 20 % Contingency)	TON	1,971	$8.00	$15,771
+ Mobilization				10%	$2,090
				TOTAL COST EACH TURNOUT	$22,992

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	5	FT
AGGREGATE SURFACE COURSE		10	SF
EMBANKMENT		111	SF

SUMMARY OF QUANTITIES PER TURNOUT					Reduced / less Vegetation
CLEARING	1,000	SF	0.02	ACRES	0.01
AGGREGATE SURFACE	74	CY	145	TONS	
EMBANKMENT	822	CY	1,643	TONS	

ASSUMPTIONS:

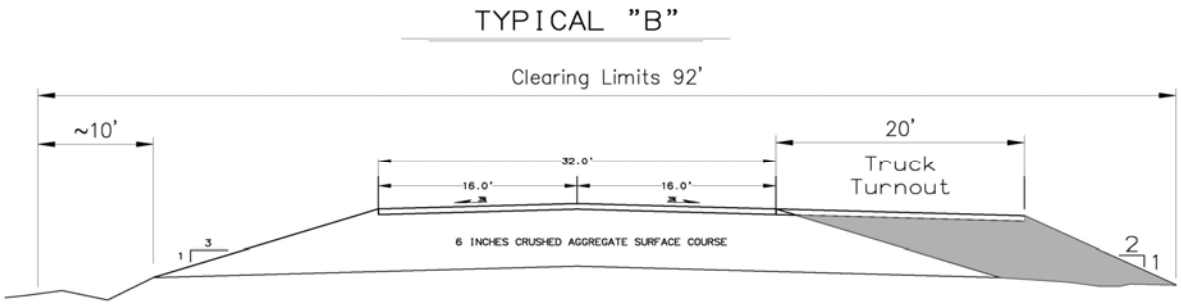
1. Areas determined using AutoCAD.
2. Aggregate Surface Course conversion factor assumed to be 1.998 Tons per CY.
3. Embankment conversion factor assumed to be 1.958 Tons per CY.
4. Embankment unit price assumes an average corridor haul cost of $8.00.

Turnout 200 ft
I ACRE = 43,560 SF

* Quantities must be input into cells with RED lettering.

Truck Turnout Estimates

SUMMARY OF TURNOUT COST (EACH)		
A	B	C
$22,992	$19,101	$14,828



~ 200 Foot turnout

TURNOUT BASELINE PER- EACH COSTS - TYPICAL SECTION "B"					
PAY ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	0.0	$9,500	$70
301	AGGREGATE SURFACE COURSE	TON	145	$35	$5,076
203	EMBANKMENT (+ 20 % Contingency)	TON	1,527	$8.00	$12,219
+ Mobilization				10%	$1,736
				TOTAL COST EACH TURNOUT	$19,101

CROSS SECTIONAL AREA - TYPICAL "B"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	4	FT
AGGREGATE SURFACE COURSE		10	SF
EMBANKMENT		86	SF

SUMMARY OF QUANTITIES PER TURNOUT					Reduced / less
CLEARING	800	SF	0.02	ACRES	0.0
AGGREGATE SURFACE	74	CY	145	TONS	
EMBANKMENT	637	CY	1,273	TONS	

ASSUMPTIONS:

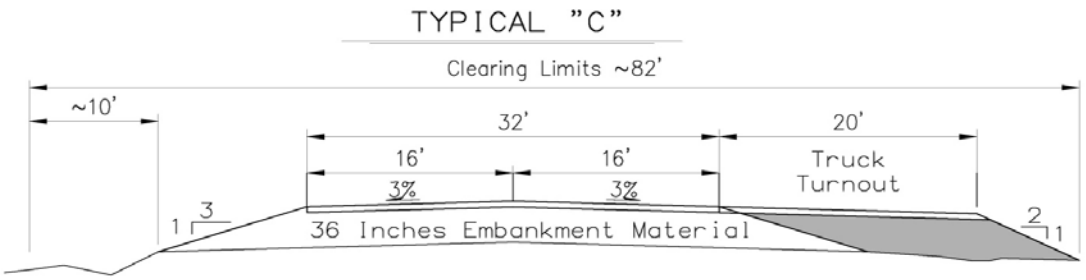
1. Areas determined using AutoCAD.
2. Aggregate Surface Course conversion factor assumed to be 1.998 Tons per CY.
3. Embankment conversion factor assumed to be 1.958 Tons per CY.
4. Embankment unit price assumes an average corridor haul cost of $8.00.

Turnout 200 ft
I ACRE = 43,560 SF

* Quantities must be input into cells with RED lettering.

Truck Turnout Estimates

SUMMARY OF TURNOUT COST (EACH)		
A	B	C
$22,992	$19,101	$14,828



~ 200 Foot turnout

TURNOUT BASELINE PER- EACH COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	0.03	$9,500	$305
301	AGGREGATE SURFACE COURSE	TON	145	$35	$5,076
203	EMBANKMENT (+ 20 % Contingency)	TON	1,012	$8.00	$8,099
+ Mobilization				10%	$1,348
				TOTAL COST EACH TURNOUT	**$14,828**

CROSS SECTIONAL AREA - TYPICAL "C"		**TOTAL QUANTITY**	
CLEARING	WIDTH (ft)	**7**	FT
AGGREGATE SURFACE COURSE		**10**	SF
EMBANKMENT		**57**	SF

SUMMARY OF QUANTITIES PER TURNOUT					Reduced / less Vegetation
CLEARING	1,400	SF	0.03	ACRES	**0.00**
AGGREGATE SURFACE	74	CY	145	TONS	
EMBANKMENT	422	CY	844	TONS	

ASSUMPTIONS:

1. Areas determined using AutoCAD.
2. Aggregate Surface Course conversion factor assumed to be 1.998 Tons per CY.
3. Embankment conversion factor assumed to be 1.958 Tons per CY.
4. Embankment unit price assumes an average corridor haul cost of $8.00.

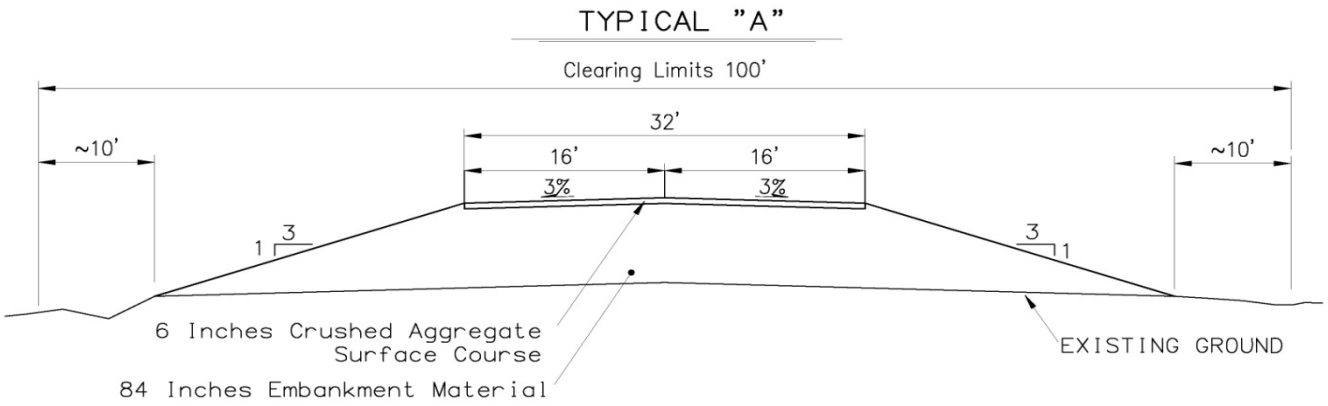
Turnout 200 ft

I ACRE = 43,560 SF

* Quantities must be input into cells with RED lettering.

1 - Brooks East Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$179,786,881	$118,245,918	$27,898,833	$1,508,943	$325,931,633



~ 95 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	287.9	$9,500	$2,734,848
301	AGGREGATE SURFACE COURSE	TON	582,005	$35	$20,370,162
203A	EMBANKMENT (+ 20 % Contingency)	TON	12,819,871	$6.95	$89,098,100
203B	EMBANKMENT (+ 20 % Contingency)	TON	5,397,840	$9.45	$51,009,590
	TURNOUTS	EACH	10	$22,992	$229,919
+ Mobilization				10%	$16,344,262
				TOTAL COST 95 MILES	**$179,786,881**

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	100	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		409	SF

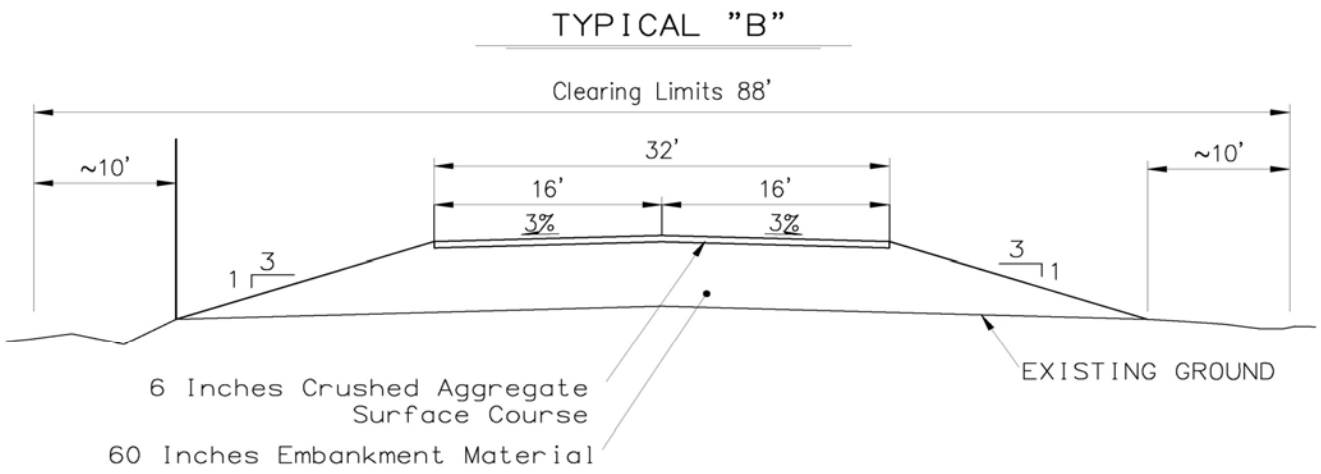
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	528,000	SF	12.12	ACRES	3.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	79,982	CY	159,804	TONS	**18,217,711**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	70%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	30%	

* Quantities must be input into cells with RED lettering.

1 - Brooks East Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$179,786,881	$118,245,918	$27,898,833	$1,508,943	$325,931,633



~ 90 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "B"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	384.0	$9,500	$3,648,000
301	AGGREGATE SURFACE COURSE	TON	551,373	$35	$19,298,048
203A	EMBANKMENT (+ 20 % Contingency)	TON	7,720,627	$6.95	$53,658,359
203B	EMBANKMENT (+ 20 % Contingency)	TON	3,250,790	$9.45	$30,719,969
	TURNOUTS	EACH	9	$19,101	$171,913
+ Mobilization				10%	$10,749,629
				TOTAL COST 90 MILES	**$118,245,918**

CROSS SECTIONAL AREA - TYPICAL "B"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	88	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		260	SF

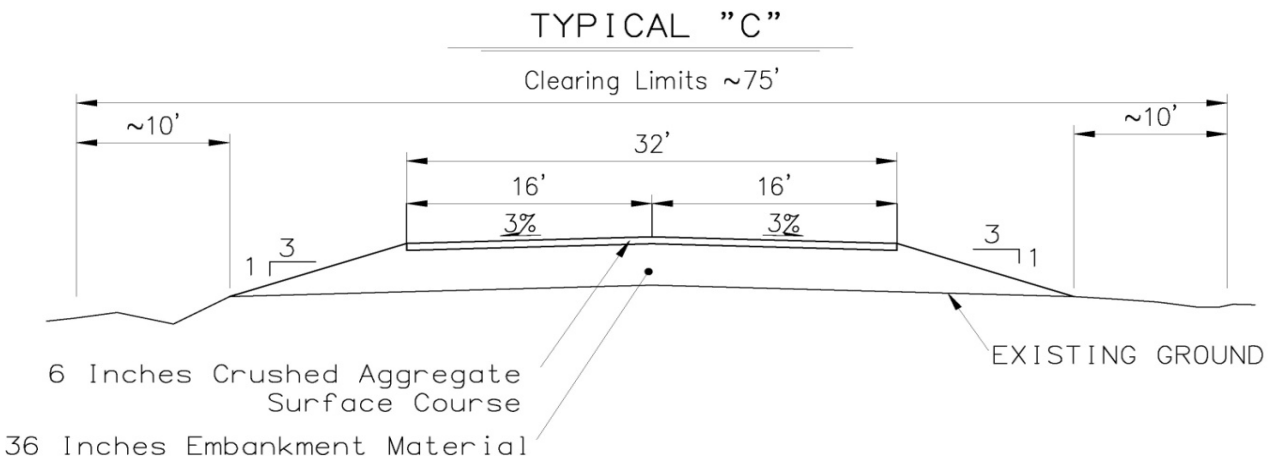
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less
CLEARING	464,640	SF	10.67	ACRES	4.3
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	50,844	CY	101,587	TONS	**10,971,418**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	70%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	30%	

* Quantities must be input into cells with RED lettering.

1 - Brooks East Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$179,786,881	$118,245,918	$27,898,833	$1,508,943	$325,931,633



~ 32 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	290.9	$9,500	$2,763,636
301	AGGREGATE SURFACE COURSE	TON	196,044	$35	$6,861,528
203A	EMBANKMENT (+ 20 % Contingency)	TON	1,435,905	$6.95	$9,979,538
203B	EMBANKMENT (+ 20 % Contingency)	TON	604,591	$9.45	$5,713,389
	TURNOUTS	EACH	3	$14,828	$44,485
+ Mobilization				10%	$2,536,258
				TOTAL COST 32 MILES	**$27,898,833**

CROSS SECTIONAL AREA - TYPICAL "C"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	75	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		136	SF

SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	396,000	SF	9.09	ACRES	0.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	26,596	CY	53,138	TONS	**2,040,496**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	70%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	30%	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)			1 - Brooks East Corridor
Miles			Occurrence
Dalton Hwy	to	Ambler Area	10.0 miles
	to		
0	to		
0	to		
0	to		
0	to		
0	to		

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In addition to operating Cost	$5.45
(*factored into Total Cost in Place)	

1 - Brooks East Corridor			Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	RT Operating Cost (CY)	Total RT Operating Cost	*Total Cost in Place
Miles					MILES				
Dalton Hwy	to	Ambler Area	21,976,402	10,988,201	5.00	10.0	$8.45	$92,850,300	$152,735,997

	State Land	BLM / Native Royalties
Base Cost/CY	$13.90	$13.90
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	13.90	18.90
Adjusted Cost/Ton	**$6.95**	**$9.45**

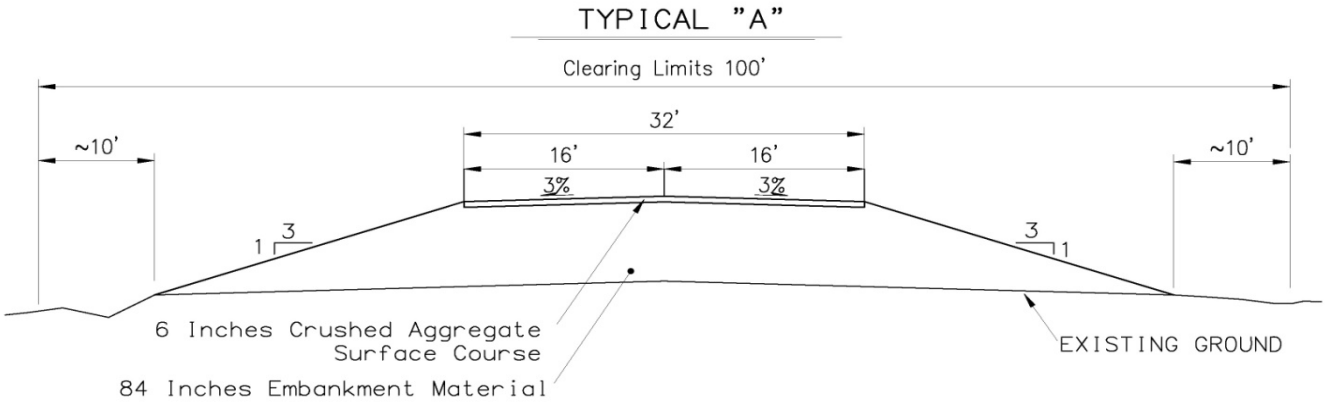
ARD/Asbestos may affect material; could be up to 50% to 60%.

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

2 - Kanuti Flats Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$292,487,295	$76,052,411	$21,191,185.2	$1,617,141	$389,730,892



~ 152 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	460.6	$9,500	$4,375,758
301	AGGREGATE SURFACE COURSE	TON	931,207	$35	$32,592,259
203A	EMBANKMENT (+ 20 % Contingency)	TON	18,746,856	$6.95	$130,290,648
203B	EMBANKMENT (+ 20 % Contingency)	TON	10,401,481	$9.45	$98,293,998
	TURNOUTS	EACH	15	$22,992	$344,878
+ Mobilization				10%	$26,589,754
				TOTAL COST 152 MILES	**$292,487,295**

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	100	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		409	SF

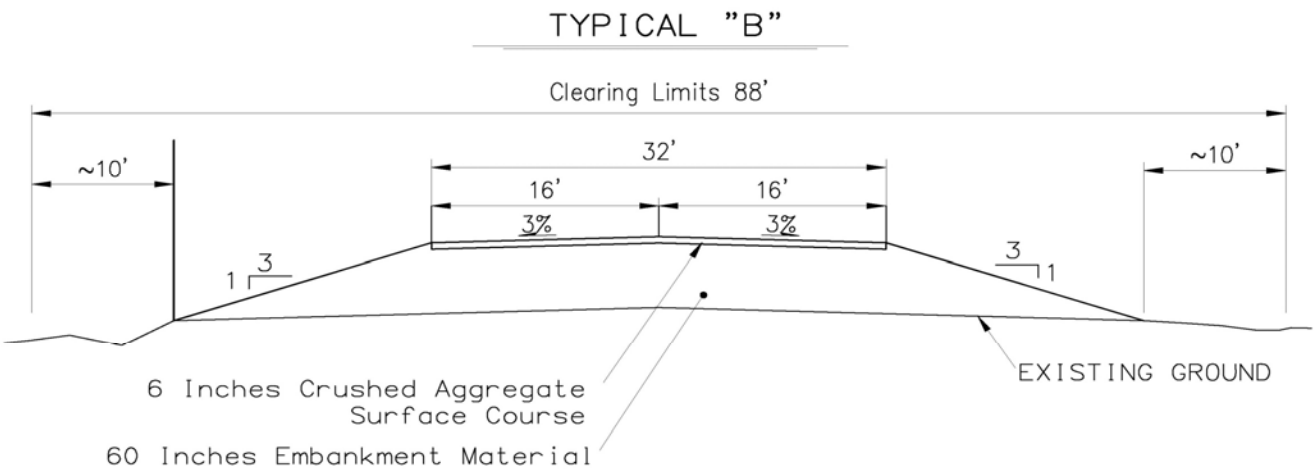
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	528,000	SF	12.12	ACRES	3.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	79,982	CY	159,804	TONS	**29,148,337**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	64%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	36%	

* Quantities must be input into cells with RED lettering.

2 - Kanuti Flats Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$292,487,295	$76,052,411	$21,191,185.2	$1,617,141	$389,730,892



~ 57 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "B"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	243.2	$9,500	$2,310,400
301	AGGREGATE SURFACE COURSE	TON	349,203	$35	$12,222,097
203A	EMBANKMENT (+ 20 % Contingency)	TON	4,468,994	$6.95	$31,059,507
203B	EMBANKMENT (+ 20 % Contingency)	TON	2,479,571	$9.45	$23,431,943
	TURNOUTS	EACH	6	$19,101	$114,609
+ Mobilization				10%	$6,913,856
				TOTAL COST 57 MILES	**$76,052,411**

CROSS SECTIONAL AREA - TYPICAL "B"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	88	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		260	SF

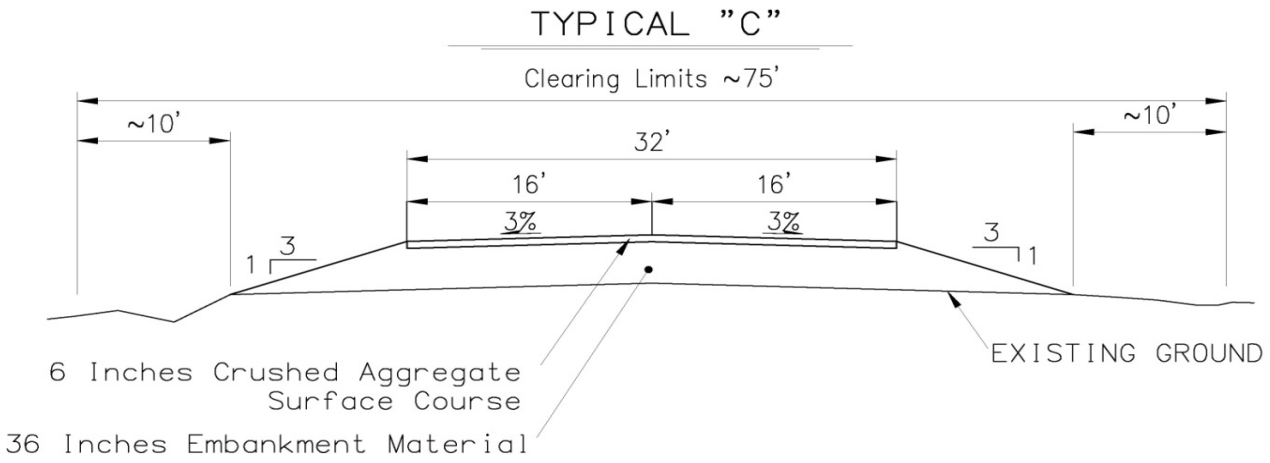
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less
CLEARING	464,640	SF	10.67	ACRES	4.3
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	50,844	CY	101,587	TONS	**6,948,564**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	64%	Percentage of ownership within
Item 203B	= Material from BLM/Native owned land.	36%	corridor.

* Quantities must be input into cells with RED lettering.

2 - Kanuti Flats Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$292,487,295	$76,052,411	$21,191,185.2	$1,617,141	$389,730,892



~ 24 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	218.2	$9,500	$2,072,727
301	AGGREGATE SURFACE COURSE	TON	147,033	$35	$5,146,146
203A	EMBANKMENT (+ 20 % Contingency)	TON	984,264	$6.95	$6,840,636
203B	EMBANKMENT (+ 20 % Contingency)	TON	546,108	$9.45	$5,160,720
	TURNOUTS	EACH	3	$14,828	$44,485
+ Mobilization				10%	$1,926,471
				TOTAL COST 24 MILES	**$21,191,185**

CROSS SECTIONAL AREA - TYPICAL "C"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	75	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		136	SF

SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	396,000	SF	9.09	ACRES	0.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	26,596	CY	53,138	TONS	**1,530,372**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	64%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	36%	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)			2 - Kanuti Flats Corridor
Miles			Occurrence
Dalton Hwy	to	Ambler Area	10.0 miles
	to		
0	to		
0	to		
0	to		
0	to		
0	to		

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

2 - Kanuti Flats Corridor			Borrow (TON)	Borrow (CY)	Length	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles					MILES	MILES				
Dalton Hwy	to	Ambler Area	24,200,114	12,100,057	241.00	5.00	10.0	$8.45	$102,245,481	$168,190,791

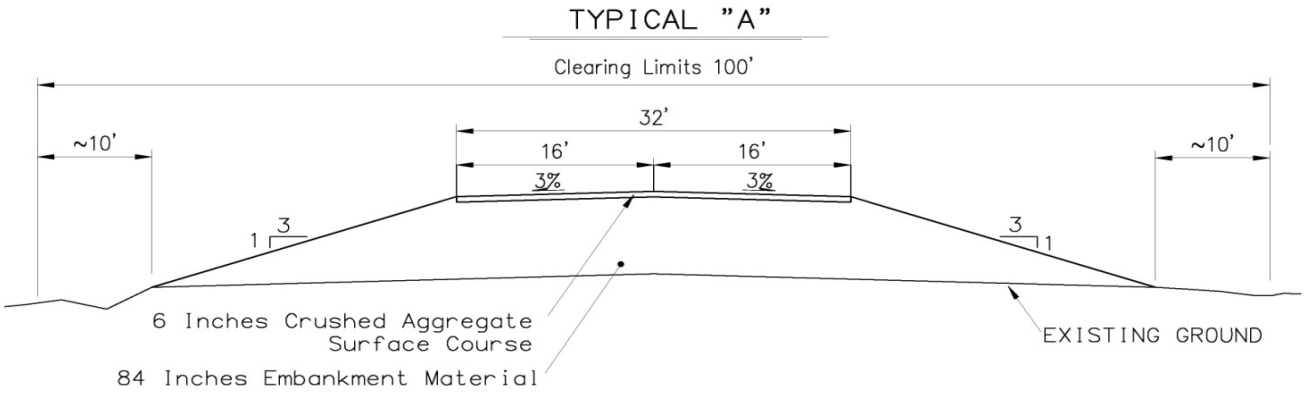
	State Land	BLM / Native Royalties
Base Cost/CY	13.90	$13.90
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	13.90	18.90
Adjusted Cost/Ton	**$6.95**	**$9.45**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

3 - Elliott Hwy Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$656,446,295	$106,575,937	$28,146,108.3	$2,165,708	$791,168,341



~ 273 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	827.3	$9,500	$7,859,091
301	AGGREGATE SURFACE COURSE	TON	1,672,497	$35	$58,537,412
203A	EMBANKMENT (+ 20 % Contingency)	TON	24,096,239	$8.77	$211,317,674
203B	EMBANKMENT (+ 20 % Contingency)	TON	28,255,709	$11.27	$318,434,402
	TURNOUTS	EACH	27	$22,992	$620,780
+ Mobilization				10%	$59,676,936
				TOTAL COST 273 MILES	**$656,446,295**

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	100	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		409	SF

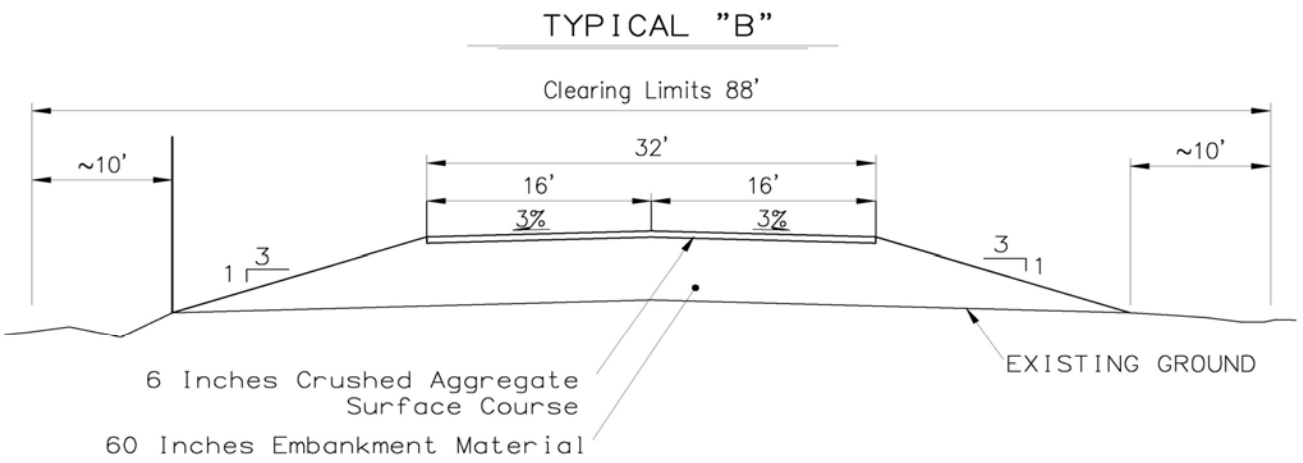
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	528,000	SF	12.12	ACRES	3.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	79,982	CY	159,804	TONS	**52,351,948**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	46%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	54%	

* Quantities must be input into cells with RED lettering.

3 - Elliott Hwy Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$656,446,295	$106,575,937	$28,146,108.3	$2,165,708	$791,168,341



~ 65 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "B"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	277.3	$9,500	$2,634,667
301	AGGREGATE SURFACE COURSE	TON	398,214	$35	$13,937,479
203A	EMBANKMENT (+ 20 % Contingency)	TON	3,647,120	$8.77	$31,984,279
203B	EMBANKMENT (+ 20 % Contingency)	TON	4,276,682	$11.27	$48,197,080
	TURNOUTS	EACH	7	$19,101	$133,710
+ Mobilization				10%	$9,688,722
				TOTAL COST 65 MILES	**$106,575,937**

CROSS SECTIONAL AREA - TYPICAL "B"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	88	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		260	SF

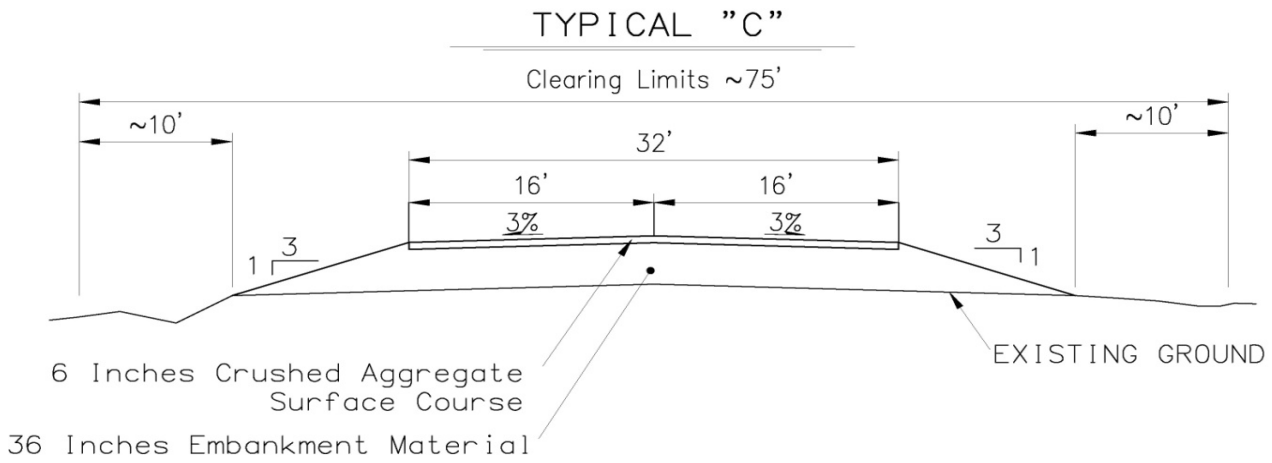
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less
CLEARING	464,640	SF	10.67	ACRES	4.3
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	50,844	CY	101,587	TONS	**7,923,802**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	46%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	54%	

* Quantities must be input into cells with RED lettering.

3 - Elliott Hwy Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$656,446,295	$106,575,937	$28,146,108.3	$2,165,708	$791,168,341



~ 27 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	245.5	$9,500	$2,331,818
301	AGGREGATE SURFACE COURSE	TON	165,412	$35	$5,789,414
203A	EMBANKMENT (+ 20 % Contingency)	TON	792,439	$8.77	$6,949,484
203B	EMBANKMENT (+ 20 % Contingency)	TON	929,229	$11.27	$10,472,170
	TURNOUTS	EACH	3	$14,828	$44,485
+ Mobilization				10%	$2,558,737
				TOTAL COST 27 MILES	**$28,146,108**

CROSS SECTIONAL AREA - TYPICAL "C"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	75	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		136	SF

SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	396,000	SF	9.09	ACRES	0.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	26,596	CY	53,138	TONS	**1,721,669**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	46%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	54%	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Elliott hwy	to	Tanana	55 miles	10.0 miles
Tanana	to	Tozitna River	35 miles	10.0 miles
Tozitna River	to	Sushgitit Hills	75 miles	10.0 miles
Sushgitit Hills	to	Hogatza River	90 miles	20.0 miles
Hogatza River	to	Pah River	60 miles	15.0 miles
Pah River	to	Ambler Area	50 miles	10.0 miles
		Total	365 miles	

3 - Elliott Hwy Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

Total Borrow (tons)	28,535,798	78,180	(~per average per mile)

3 - Elliott Hwy Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
40 miles	3,127,211	1,563,605	5.0 miles	10 miles	$8.45	$13,212,465	$21,734,114
60 miles	4,690,816	2,345,408	7.5 miles	15 miles	$11.35	$26,620,381	$39,402,855
90 miles	7,036,224	3,518,112	10.0 miles	20 miles	$14.20	$49,957,191	$69,130,902
Totals	14,854,251	7,427,125					$130,267,871

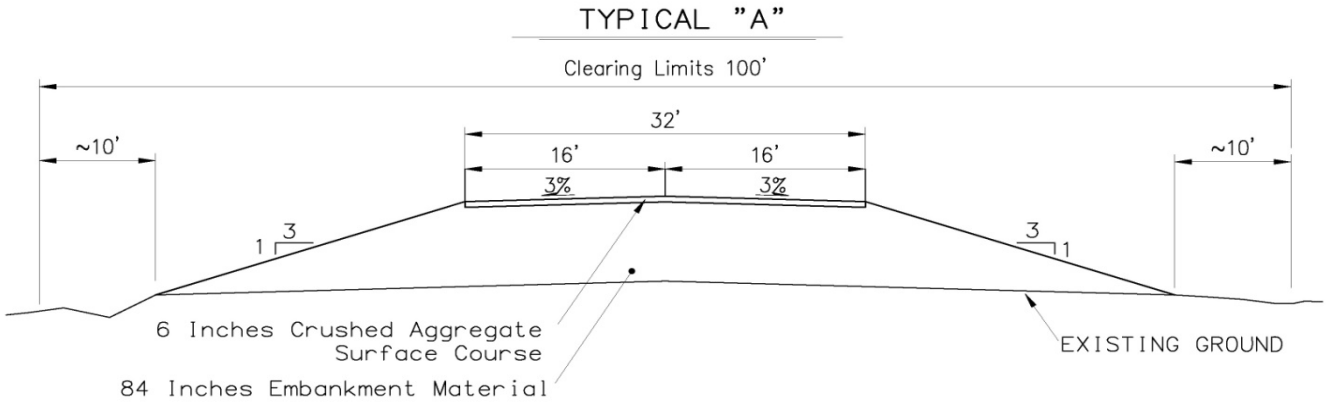
	State Land	BLM / Native Royalties
Base Cost/CY	17.54	$17.54
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	17.54	22.54
Adjusted Cost/Ton	**$8.77**	**$11.27**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

5 - DMTS Port Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$541,587,369	$10,700,260	$6,891,550.2	$2,175,794	$559,179,180



~ 243 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	736.4	$9,500	$6,995,455
301	AGGREGATE SURFACE COURSE	TON	1,488,707	$35	$52,104,730
203A	EMBANKMENT (+ 20 % Contingency)	TON	10,879,141	$7.37	$80,171,335
203B	EMBANKMENT (+ 20 % Contingency)	TON	35,719,846	$9.87	$352,528,830
	TURNOUTS	EACH	24	$22,992	$551,805
+ Mobilization				10%	$49,235,215
				TOTAL COST 243 MILES	**$541,587,369**

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	100	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		409	SF

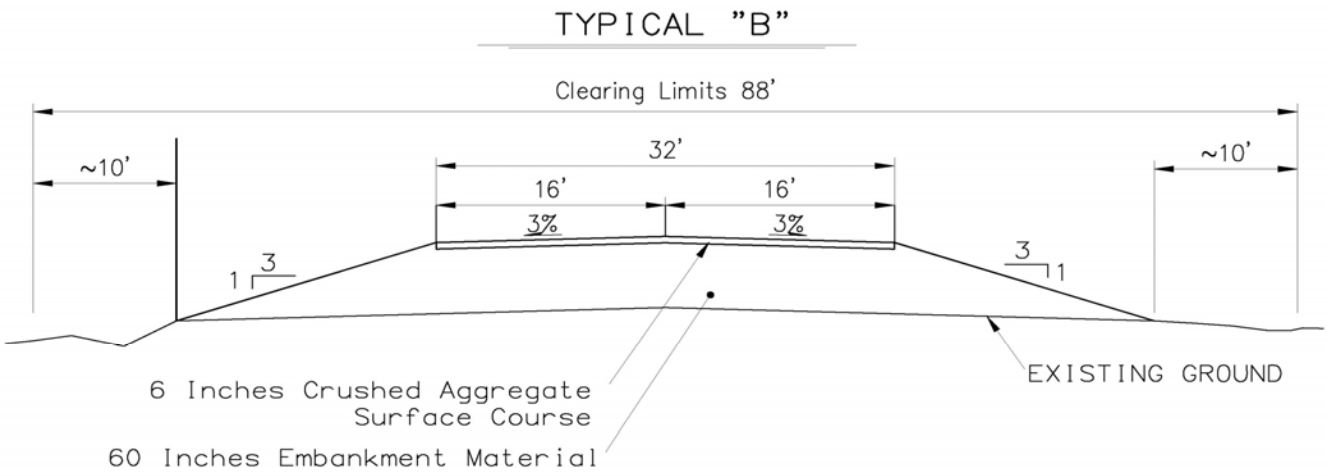
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	528,000	SF	12.12	ACRES	3.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	79,982	CY	159,804	TONS	**46,598,986**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	23%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	77%	

* Quantities must be input into cells with RED lettering.

5 - DMTS Port Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$541,587,369	$10,700,260	$6,891,550.2	$2,175,794	$559,179,180



~ 7 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "B"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	29.9	$9,500	$283,733
301	AGGREGATE SURFACE COURSE	TON	42,885	$35	$1,500,959
203A	EMBANKMENT (+ 20 % Contingency)	TON	199,222	$7.37	$1,468,118
203B	EMBANKMENT (+ 20 % Contingency)	TON	654,111	$9.87	$6,455,598
	TURNOUTS	EACH	1	$19,101	$19,101
+ Mobilization				10%	$972,751
				TOTAL COST 7 MILES	**$10,700,260**

CROSS SECTIONAL AREA - TYPICAL "B"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	**88**	FT
AGGREGATE SURFACE COURSE		**16**	SF
EMBANKMENT		**260**	SF

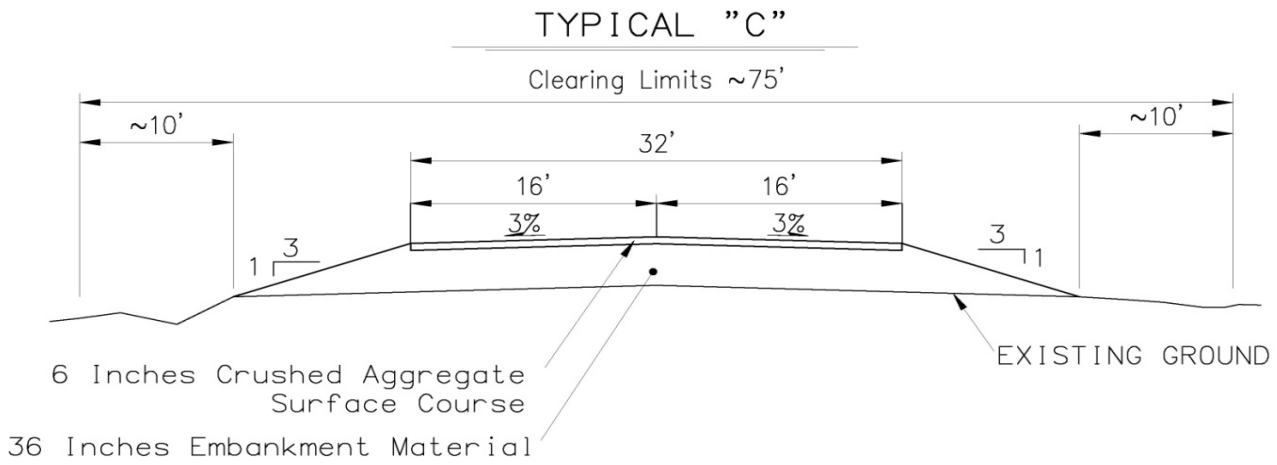
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less
CLEARING	464,640	SF	10.67	ACRES	**4.3**
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	50,844	CY	101,587	TONS	**853,332**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**23%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**77%**	

* Quantities must be input into cells with RED lettering.

5 - DMTS Port Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$541,587,369	$10,700,260	$6,891,550.2	$2,175,794	$559,179,180



~ 7 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	63.6	$9,500	$604,545
301	AGGREGATE SURFACE COURSE	TON	42,885	$35	$1,500,959
203A	EMBANKMENT (+ 20 % Contingency)	TON	104,208	$7.37	$767,939
203B	EMBANKMENT (+ 20 % Contingency)	TON	342,150	$9.87	$3,376,774
	TURNOUTS	EACH	1	$14,828	$14,828
+ Mobilization				10%	$626,505
				TOTAL COST 7 MILES	**$6,891,550**

CROSS SECTIONAL AREA - TYPICAL "C"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	**75**	FT
AGGREGATE SURFACE COURSE		**16**	SF
EMBANKMENT		**136**	SF

SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	396,000	SF	9.09	ACRES	**0.0**
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	26,596	CY	53,138	TONS	**446,359**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**23%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**77%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
DMTS Port	to	Noatak River	35 miles	20.0 miles
Noatak River	to	Squirrel River	30 miles	10.0 miles
Squirrel River	to	Kiana	45 miles	10.0 miles
Kiana	to	Ambler Area	130 miles	10.0 miles
		Total	240 miles	10.0 miles

5 - DMTS Port Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

Total Borrow (tons) 11,182,571 46,594 (~per average per mile)

5 - DMTS Port Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
205 miles	9,551,779	4,775,890	5 miles	10 miles	$8.45	$40,356,266	$66,384,864
35 miles	1,630,792	815,396	10 miles	20 miles	$14.20	$11,578,620	$16,022,527
miles	0	0	.0 miles	miles	$0.00	$0	$0
Totals	11,182,571	5,591,285					$82,407,391

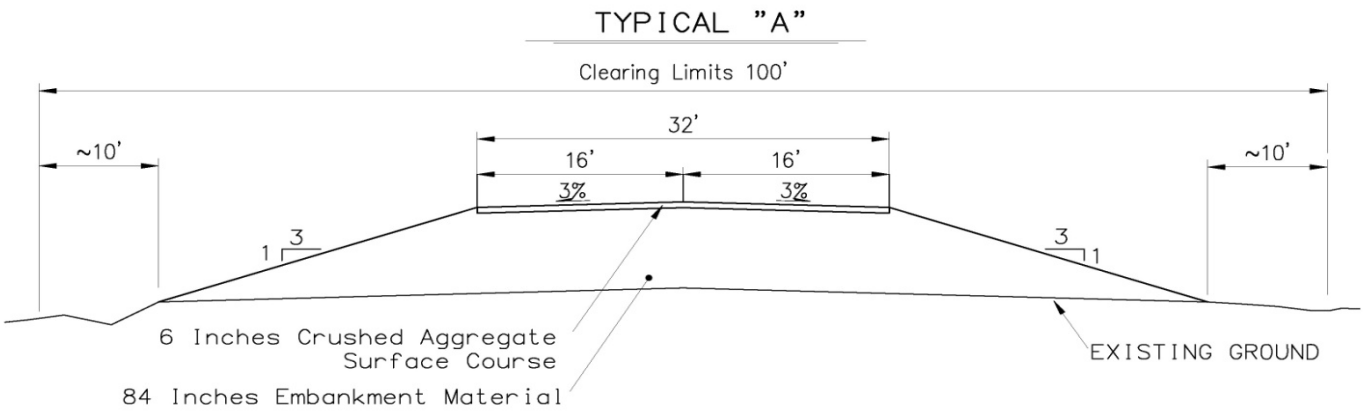
	State Land	BLM / Native Royalties
Base Cost/CY	$14.74	$14.74
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	14.74	19.74
Adjusted Cost/Ton	**$7.37**	**$9.87**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

6 - Cape Blossom Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$673,210,072	$5,741,718	$3,561,182.2	$2,788,458	$682,512,972



~ 238 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	721.2	$9,500	$6,851,515
301	AGGREGATE SURFACE COURSE	TON	1,458,075	$35	$51,032,616
203A	EMBANKMENT (+ 20 % Contingency)	TON	18,442,350	$10.64	$196,213,433
203B	EMBANKMENT (+ 20 % Contingency)	TON	27,197,809	$13.14	$357,359,788
	TURNOUTS	EACH	24	$22,992	$551,805
+ Mobilization				10%	$61,200,916
				TOTAL COST 238 MILES	$673,210,072

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	100	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		409	SF

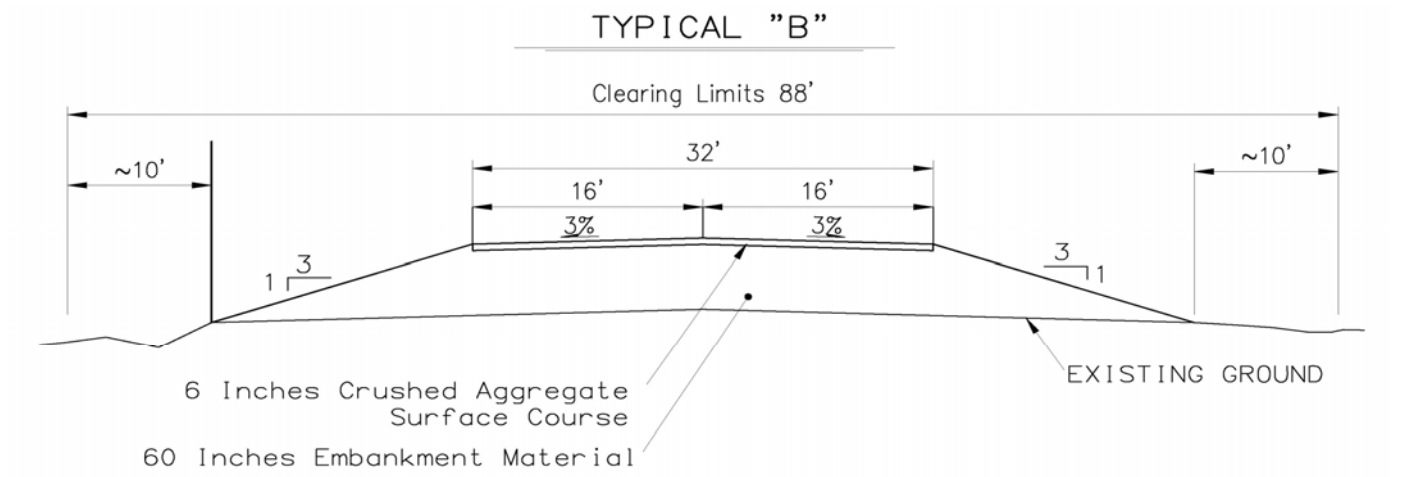
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	528,000	SF	12.12	ACRES	3.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	79,982	CY	159,804	TONS	**45,640,159**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	40%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	60%	

* Quantities must be input into cells with RED lettering.

6 - Cape Blossom Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$673,210,072	$5,741,718	$3,561,182.2	$2,788,458	$682,512,972



~ 3 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "B"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	12.8	$9,500	$121,600
301	AGGREGATE SURFACE COURSE	TON	18,379	$35	$643,268
203A	EMBANKMENT (+ 20 % Contingency)	TON	147,778	$10.64	$1,572,255
203B	EMBANKMENT (+ 20 % Contingency)	TON	217,936	$13.14	$2,863,519
	TURNOUTS	EACH	1	$19,101	$19,101
+ Mobilization				10%	$521,974
				TOTAL COST 3 MILES	**$5,741,718**

CROSS SECTIONAL AREA - TYPICAL "B"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	88	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		260	SF

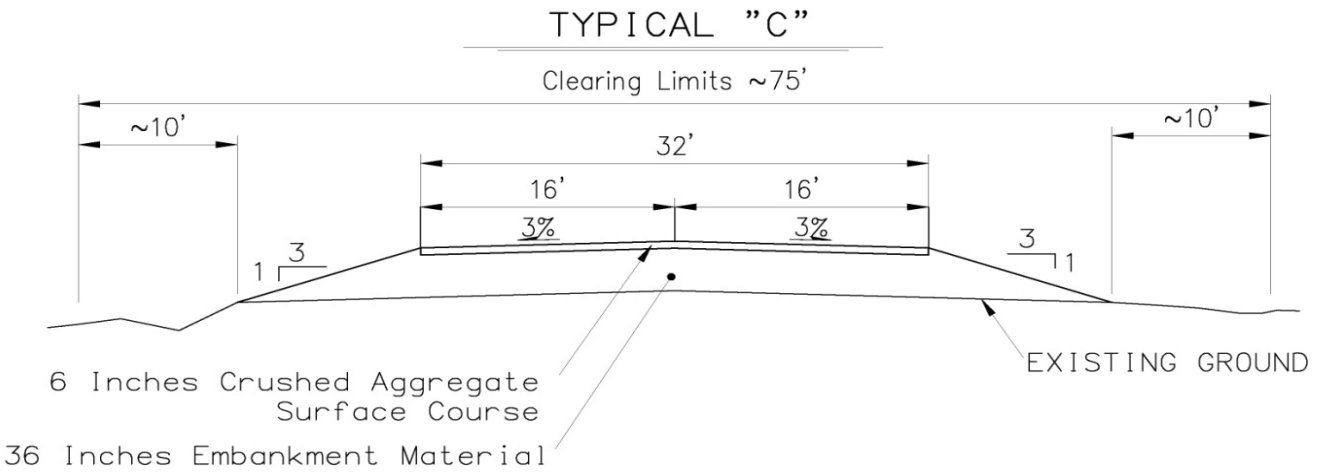
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less
CLEARING	464,640	SF	10.67	ACRES	4.3
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	50,844	CY	101,587	TONS	**365,714**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	40%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	60%	

* Quantities must be input into cells with RED lettering.

6 - Cape Blossom Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$673,210,072	$5,741,718	$3,561,182.2	$2,788,458	$682,512,972



~ 3 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	27.3	$9,500	$259,091
301	AGGREGATE SURFACE COURSE	TON	18,379	$35	$643,268
203A	EMBANKMENT (+ 20 % Contingency)	TON	77,299	$10.64	$822,410
203B	EMBANKMENT (+ 20 % Contingency)	TON	113,997	$13.14	$1,497,841
	TURNOUTS	EACH	1	$14,828	$14,828
+ Mobilization				10%	$323,744
				TOTAL COST 3 MILES	**$3,561,182**

CROSS SECTIONAL AREA - TYPICAL "C"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	75	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		136	SF

SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	396,000	SF	9.09	ACRES	0.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	26,596	CY	53,138	TONS	**191,297**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	40%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	60%	

* Quantities must be input into cells with RED lettering.

6 - Cape Blossom Corridor

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Along Baldwin Peninsula			55 miles	25.0 miles
Along the Selawik			35 miles	10.0 miles
Selawik Hills	to	Selawik Lowlands	25 miles	15.0 miles
Selawik Lowlands	to	Ambler Area	20 miles	10.0 miles
Selawik Lowlands	to	Ambler Area	110 miles	30.0 miles
		Total	245 miles	

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

Total Borrow (tons)	18,667,428	76,194	(~per average per mile)

6 - Cape Blossom Corridor		Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles				MILES				
55 miles		4,190,647	2,095,324	13 miles	25 miles	$17.00	$35,620,500	$47,040,013
55 miles		4,190,647	2,095,324	5 miles	10 miles	$8.45	$17,705,484	$29,124,997
25 miles		1,904,840	952,420	8 miles	15 miles	$11.35	$10,809,965	$16,000,652
110 miles		8,381,294	4,190,647	15 miles	30 miles	$19.95	$83,603,409	$106,442,436
245 miles	**Totals**	18,667,428	9,333,714					$198,608,098

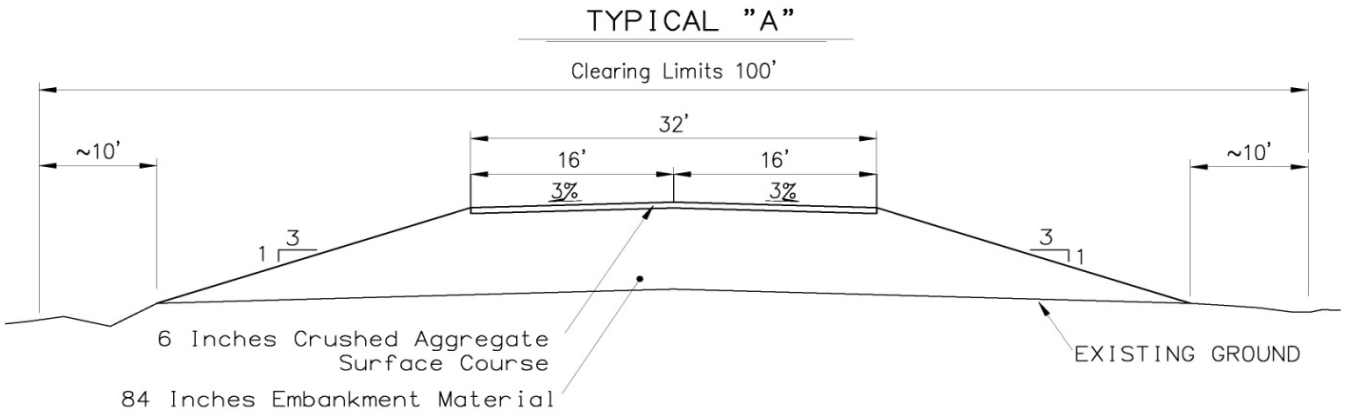
	State Land	BLM / Native Royalties
Base Cost/CY	$21.28	$21.28
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	21.28	26.28
Adjusted Cost/Ton	**$10.64**	**$13.14**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

7 - Selawik Flats

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$758,933,557	$18,281,799	$10,541,434.4	$2,379,930	$787,756,790



~ 311 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	942.4	$9,500	$8,953,030
301	AGGREGATE SURFACE COURSE	TON	1,905,299	$35	$66,685,477
203A	EMBANKMENT (+ 20 % Contingency)	TON	25,585,325	$8.86	$226,708,395
203B	EMBANKMENT (+ 20 % Contingency)	TON	34,053,707	$11.36	$386,879,948
	TURNOUTS	EACH	31	$22,992	$712,748
+ Mobilization				10%	$68,993,960
				TOTAL COST 311 MILES	**$758,933,557**

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	100	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		409	SF

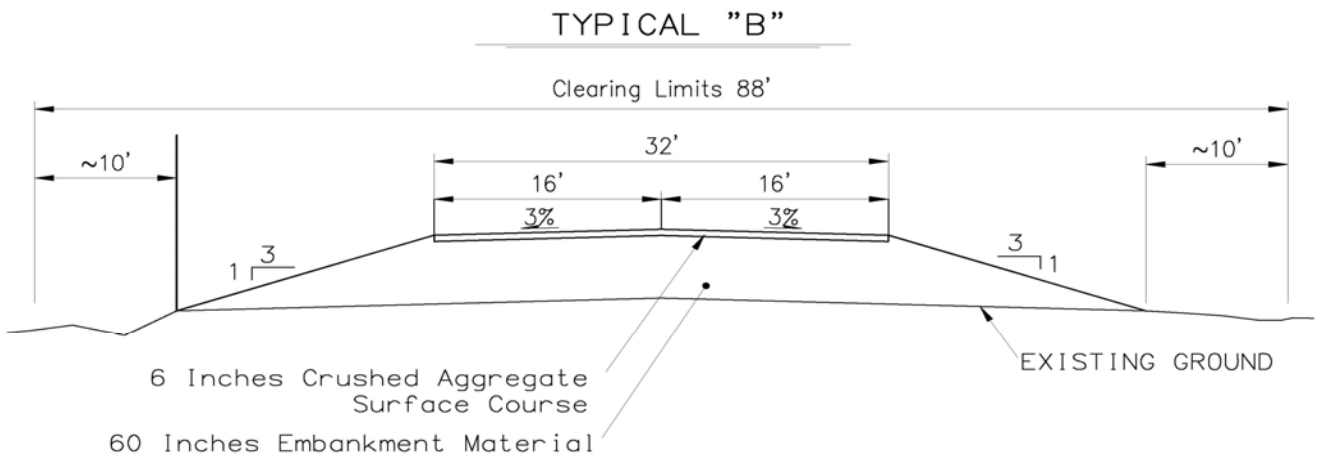
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	528,000	SF	12.12	ACRES	3.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	79,982	CY	159,804	TONS	**59,639,032**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	43%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	57%	

* Quantities must be input into cells with RED lettering.

7 - Selawik Flats

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$758,933,557	$18,281,799	$10,541,434.4	$2,379,930	$787,756,790



~ 11 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "B"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	46.9	$9,500	$445,867
301	AGGREGATE SURFACE COURSE	TON	67,390	$35	$2,358,650
203A	EMBANKMENT (+ 20 % Contingency)	TON	575,272	$8.86	$5,097,414
203B	EMBANKMENT (+ 20 % Contingency)	TON	765,679	$11.36	$8,698,784
	TURNOUTS	EACH	1	$19,101	$19,101
+ Mobilization				10%	$1,661,982
				TOTAL COST 11 MILES	**$18,281,799**

CROSS SECTIONAL AREA - TYPICAL "B"		**TOTAL QUANTITY**	
CLEARING	WIDTH (ft)	**88**	FT
AGGREGATE SURFACE COURSE		**16**	SF
EMBANKMENT		**260**	SF

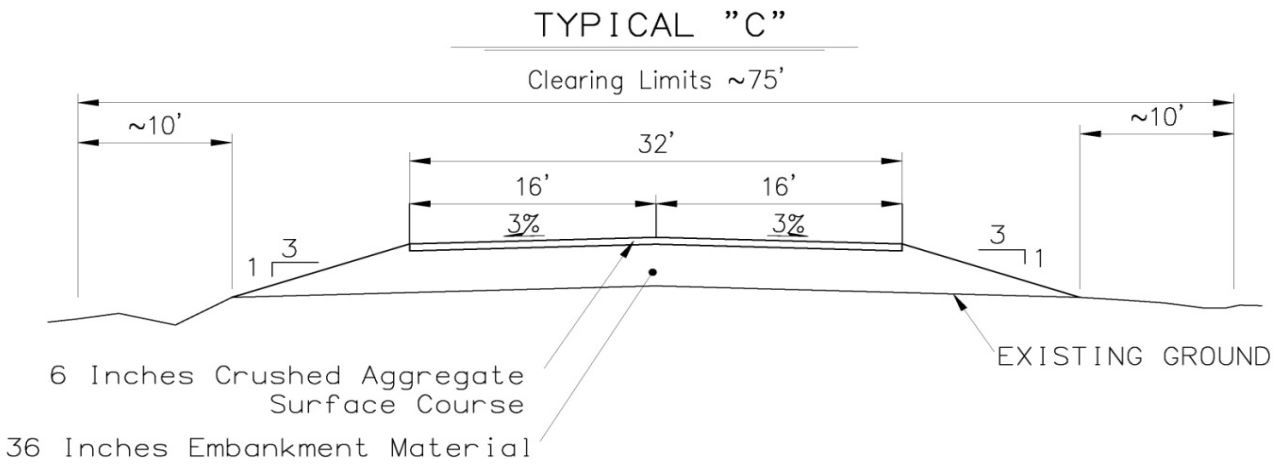
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	**464,640**	SF	**10.67**	ACRES	**4.3**
AGGREGATE SURFACE	**3,129**	CY	**6,126**	TONS	**Total of 203**
EMBANKMENT	**50,844**	CY	**101,587**	TONS	**1,340,951**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**43%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**57%**	

* Quantities must be input into cells with RED lettering.

7 - Selawik Flats

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$758,933,557	$18,281,799	$10,541,434.4	$2,379,930	$787,756,790



~ 10 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	90.9	$9,500	$863,636
301	AGGREGATE SURFACE COURSE	TON	61,264	$35	$2,144,228
203A	EMBANKMENT (+ 20 % Contingency)	TON	273,556	$8.86	$2,423,945
203B	EMBANKMENT (+ 20 % Contingency)	TON	364,099	$11.36	$4,136,485
	TURNOUTS	EACH	1	$14,828	$14,828
+ Mobilization				10%	$958,312
				TOTAL COST 10 MILES	**$10,541,434**

CROSS SECTIONAL AREA - TYPICAL "C"		**TOTAL QUANTITY**	
CLEARING	WIDTH (ft)	**75**	FT
AGGREGATE SURFACE COURSE		**16**	SF
EMBANKMENT		**136**	SF

SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	**396,000**	SF	**9.09**	ACRES	**0.0**
AGGREGATE SURFACE	**3,129**	CY	**6,126**	TONS	**Total of 203**
EMBANKMENT	**26,596**	CY	**53,138**	TONS	**637,655**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**43%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**57%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Council	to	Selawik Lowlands	221 miles	10.0 miles
0	to	Ambler Area	110 miles	30.0 miles
		Total	331 miles	

7 - Selawik Flats

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost (factored into Total Cost in Place)	$5.45

Total Borrow (tons) 26,434,153 79,861 (~per average per mile)

7 - Selawik Flats	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
221 miles	17,649,389	8,824,695	5 miles	10 miles	$8.45	$74,568,669	$122,663,254
110 miles	8,784,764	4,392,382	15 miles	30 miles	$19.95	$87,628,019	$111,566,500
Totals	26,434,153	13,217,076					$234,229,754

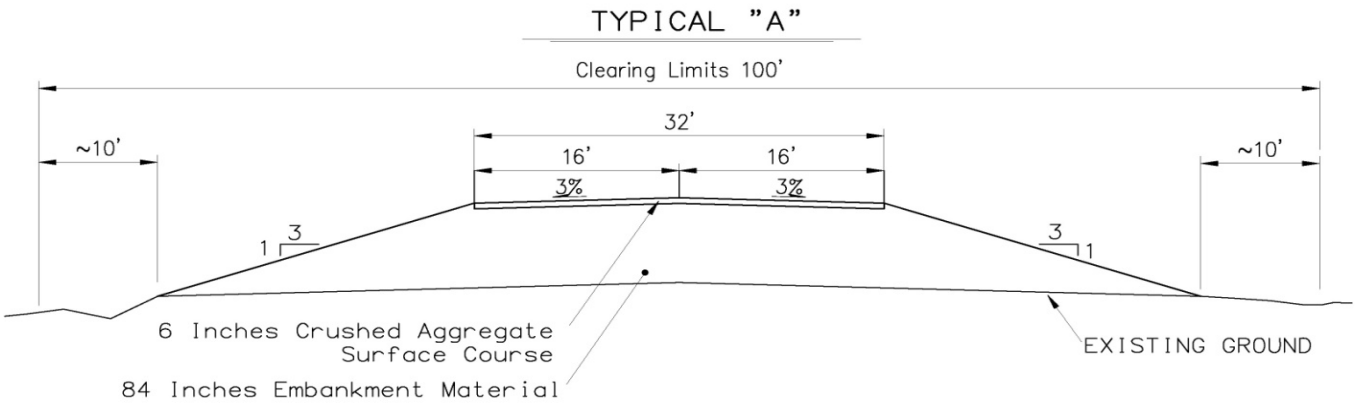
	State Land	BLM / Native Royalties
Base Cost/CY	$17.72	$17.72
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	17.72	22.72
Adjusted Cost/Ton	**$8.86**	**$11.36**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

8 - Cape Darby Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$769,220,145	$4,752,702	$3,043,850.9	$2,285,343	$777,016,699



~ 333 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "A"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	1,009.1	$9,500	$9,586,364
301	AGGREGATE SURFACE COURSE	TON	2,040,079	$35	$71,402,778
203A	EMBANKMENT (+ 20 % Contingency)	TON	41,883,250	$8.81	$369,003,753
203B	EMBANKMENT (+ 20 % Contingency)	TON	21,974,620	$11.31	$248,539,416
	TURNOUTS	EACH	33	$22,992	$758,732
+ Mobilization				10%	$69,929,104
				TOTAL COST 333 MILES	**$769,220,145**

CROSS SECTIONAL AREA - TYPICAL "A"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	100	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		409	SF

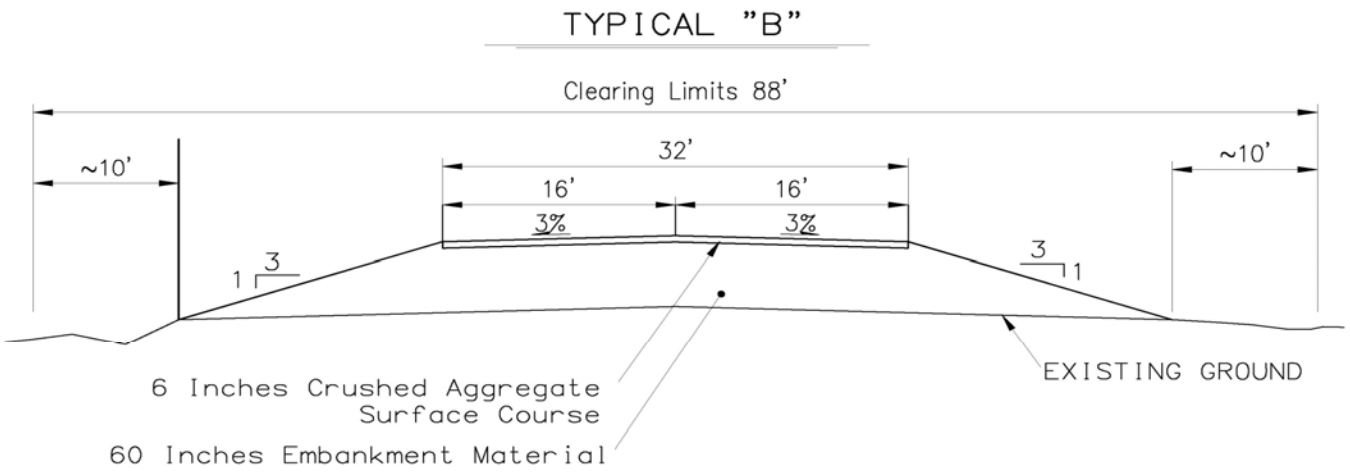
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	528,000	SF	12.12	ACRES	3.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	79,982	CY	159,804	TONS	**63,857,870**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	66%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	34%	

* Quantities must be input into cells with RED lettering.

8 - Cape Darby Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$769,220,145	$4,752,702	$3,043,850.9	$2,285,343	$777,016,699



~ 3 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "B"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	12.8	$9,500	$121,600
301	AGGREGATE SURFACE COURSE	TON	18,379	$35	$643,268
203A	EMBANKMENT (+ 20 % Contingency)	TON	239,865	$8.81	$2,113,284
203	EMBANKMENT (+ 20 % Contingency)	TON	125,849	$11.31	$1,423,385
	TURNOUTS	EACH	1	$19,101	$19,101
+ Mobilization				10%	$432,064
				TOTAL COST 3 MILES	**$4,752,702.3**

CROSS SECTIONAL AREA - TYPICAL "B"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	88	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		260	SF

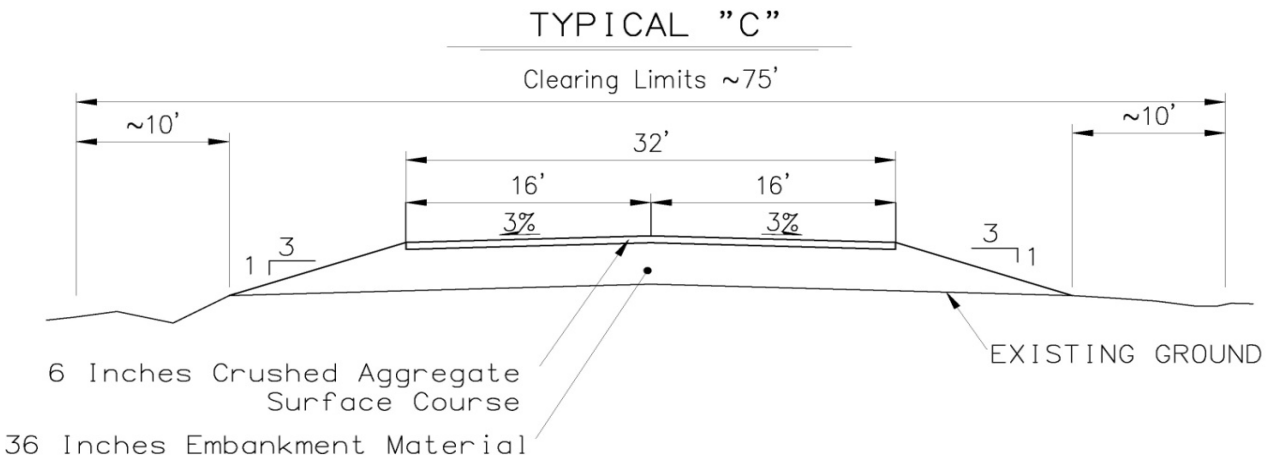
SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	464,640	SF	10.67	ACRES	4.3
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	50,844	CY	101,587	TONS	**365,714**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	66%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	34%	

* Quantities must be input into cells with RED lettering.

8 - Cape Darby Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)				
A	B	C	per mile	TOTAL
$769,220,145	$4,752,702	$3,043,850.9	$2,285,343	$777,016,699



~ 3 Miles

ROADWAY BASELINE PER-MILE COSTS - TYPICAL SECTION "C"					
PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COSTS	COST
201	CLEARING	ACRE	27.3	$9,500	$259,091
301	AGGREGATE SURFACE COURSE	TON	18,379	$35	$643,268
203A	EMBANKMENT (+ 20 % Contingency)	TON	125,468	$8.81	$1,105,410
203B	EMBANKMENT (+ 20 % Contingency)	TON	65,829	$11.31	$744,540
	TURNOUTS	EACH	1	$14,828	$14,828
+ Mobilization				10%	$276,714
				TOTAL COST 3 MILES	**$3,043,851**

CROSS SECTIONAL AREA - TYPICAL "C"		TOTAL QUANTITY	
CLEARING	WIDTH (ft)	75	FT
AGGREGATE SURFACE COURSE		16	SF
EMBANKMENT		136	SF

SUMMARY OF QUANTITIES PER UNIT MILE					Reduced / less Vegetation
CLEARING	396,000	SF	9.09	ACRES	0.0
AGGREGATE SURFACE	3,129	CY	6,126	TONS	**Total of 203**
EMBANKMENT	26,596	CY	53,138	TONS	**191,297**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	66%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	34%	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Council	to	Selawik Lowlands	230 miles	10.0 miles
0	to	Ambler Area	110 miles	30.0 miles
		Total	340 miles	

8 - Cape Darby Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost (factored into Total Cost in Place)	$5.45

Total Borrow (tons)	42,248,583	124,261	(~per average per mile)

8 - Cape Darby Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
230 miles	28,579,924	14,289,962	5 miles	10 miles	$8.45	$120,750,179	$198,630,473
110 miles	13,668,659	6,834,330	15 miles	30 miles	$19.95	$136,344,877	$173,591,974
Totals	42,248,583	21,124,292					$372,222,447

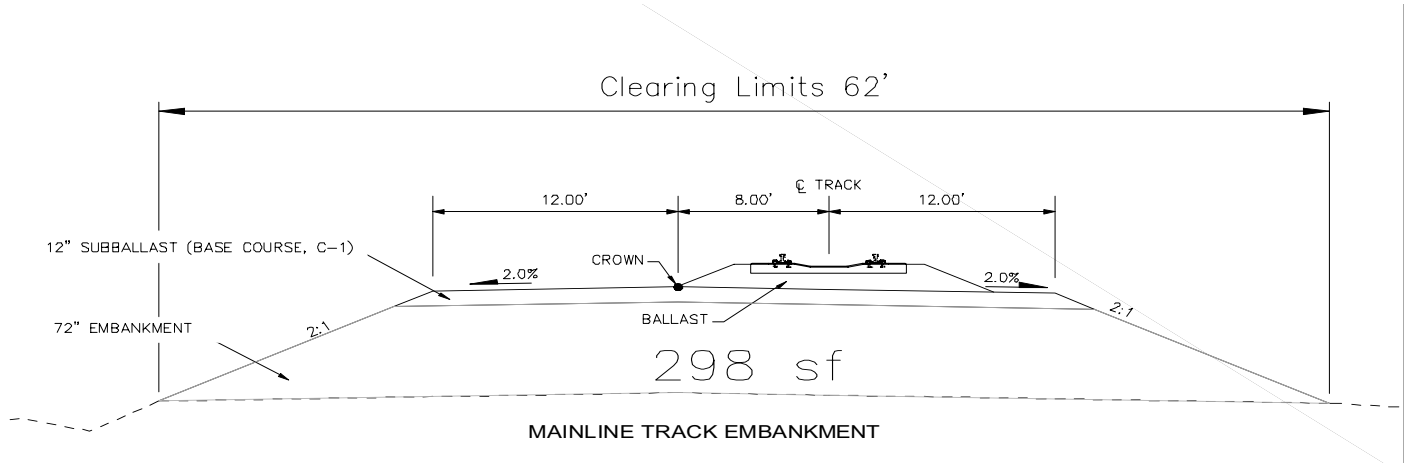
	State Land	BLM / Native Royalties
Base Cost/CY	$17.62	$17.62
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	17.62	22.62
Adjusted Cost/Ton	**$8.81**	**$11.31**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

4a - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,345,246,865	$202,917,583	$3,600,382	$1,548,164,449



~ 393 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	2,075,040	$236.20	$490.12
	SUBBALLAST	TON	5,266,759	$40	$210.67
203A	EMBANKMENT (+ 20 % Contingency)	TON	27,582,968	$7.75	$213.88
203B	EMBANKMENT (+ 20 % Contingency)	TON	27,327,570	$10.25	$280.22
201	CLEARING	ACRES	2,953.5	$9,500	$28.06
			+ Mobilization	10%	$122.30
				TOTAL COST 393 MILES	**$1,345,246,865**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**35**	SF
EMBANKMENT		**298**	SF
CLEARING	WIDTH (ft)	**62**	LF

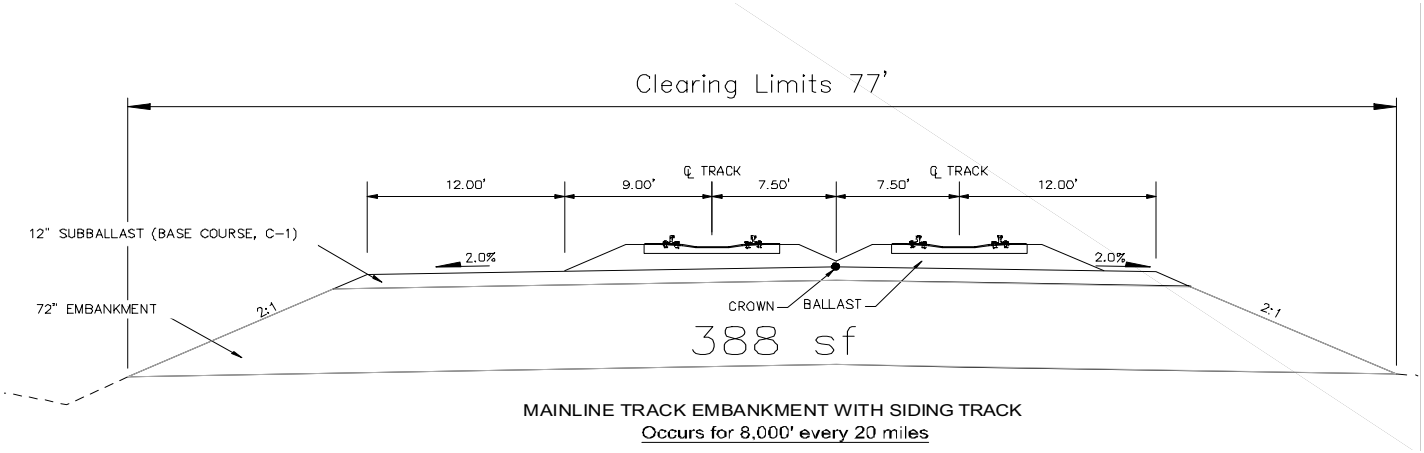
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**327,360**	SF	**7.52**	ACRES	
SUBBALLAST	**6,844**	CY	**13,401**	TONS	**Total of 203**
EMBANKMENT	**58,276**	CY	**116,435**	TONS	**54,910,538**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**50.2%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**49.8%**	

* Quantities must be input into cells with RED lettering.

4a - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,345,246,865	$202,917,583	$3,600,382	$1,548,164,449



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 37 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	390,720	$236.20	$92.29
	SUBBALLAST	TON	708,361	$40	$28.33
203A	EMBANKMENT (+ 20 % Contingency)	TON	3,381,159	$7.75	$26.22
203B	EMBANKMENT (+ 20 % Contingency)	TON	3,349,852	$10.25	$34.35
	CLEARING & GRUBBING	ACRES	345.3	$9,500	$3.28
			+ Mobilization	10%	$18.45
				TOTAL COST 37 MILES	**$202,917,583**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**6,731,012**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**50.2%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**49.8%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Nenana	to	Manly Hot Springs	44 miles	10.0 miles
Manly Hot Springs	to	Elliott Hwy	15 miles	10.0 miles
Elliott hwy	to	Tanana	55 miles	10.0 miles
Tanana	to	Tozitna River	36 miles	10.0 miles
Tozitna River	to	Sushgitit Hills	75 miles	10.0 miles
Sushgitit Hills	to	Hogatza River	90 miles	20.0 miles
Hogatza River	to	Pah River	60 miles	15.0 miles
Pah River	to	Ambler Area	55 miles	10.0 miles
		Total	430 miles	

4a - Parks Hwy RR Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

Total Borrow (tons)	30,964,127	72,010 (~per average per mile)

4a - Parks Hwy RR Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
280 miles	20,162,688	10,081,344	5 miles	10 miles	**$8.45**	$85,187,355	$140,130,679
60 miles	4,320,576	2,160,288	8 miles	15 miles	**$11.35**	$24,519,268	$36,292,838
90 miles	6,480,864	3,240,432	10 miles	20 miles	**$14.20**	$46,014,134	$63,674,488
430 miles **Totals**	**30,964,127**	**15,482,064**					$240,098,005

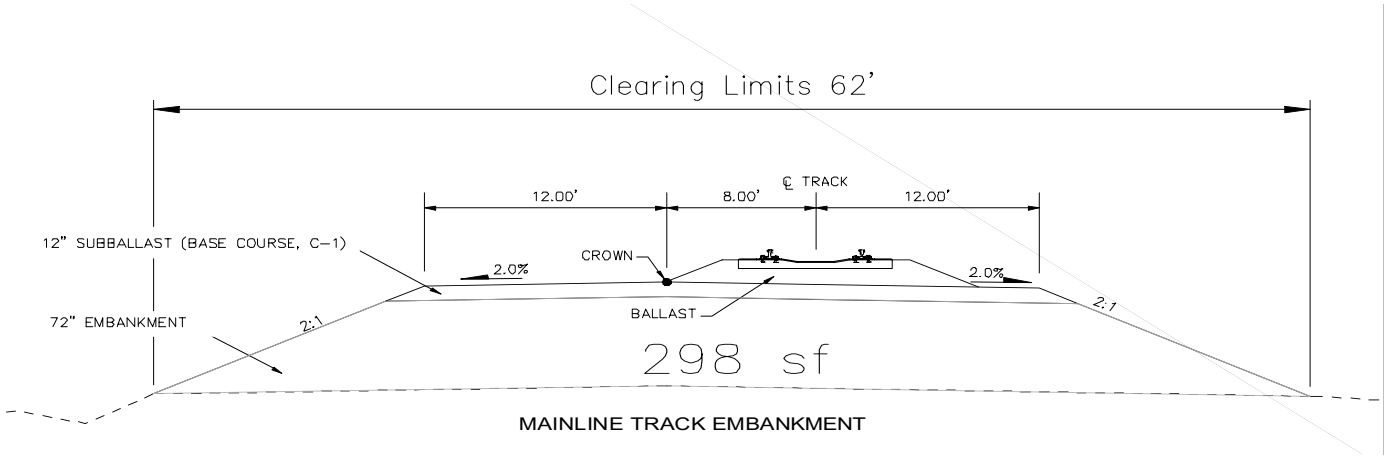
	State Land	BLM / Native Royalties
Base Cost/CY	$15.51	$15.51
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	15.51	20.51
Adjusted Cost/Ton	**$7.75**	**$10.25**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

4b - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,407,828,290	$190,490,741	$3,551,820	$1,598,319,031



~ 415 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	2,191,200	$235.77	$516.62
	SUBBALLAST	TON	5,561,590	$40	$222.46
203A	EMBANKMENT (+ 20 % Contingency)	TON	31,053,873	$7.65	$237.68
203B	EMBANKMENT (+ 20 % Contingency)	TON	26,930,537	$10.15	$273.45
201	CLEARING	ACRES	3,118.8	$9,500	$29.63
			+ Mobilization	10%	$127.98
				TOTAL COST 415 MILES	**$1,407,828,290**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**35**	SF
EMBANKMENT		**298**	SF
CLEARING	WIDTH (ft)	**62**	LF

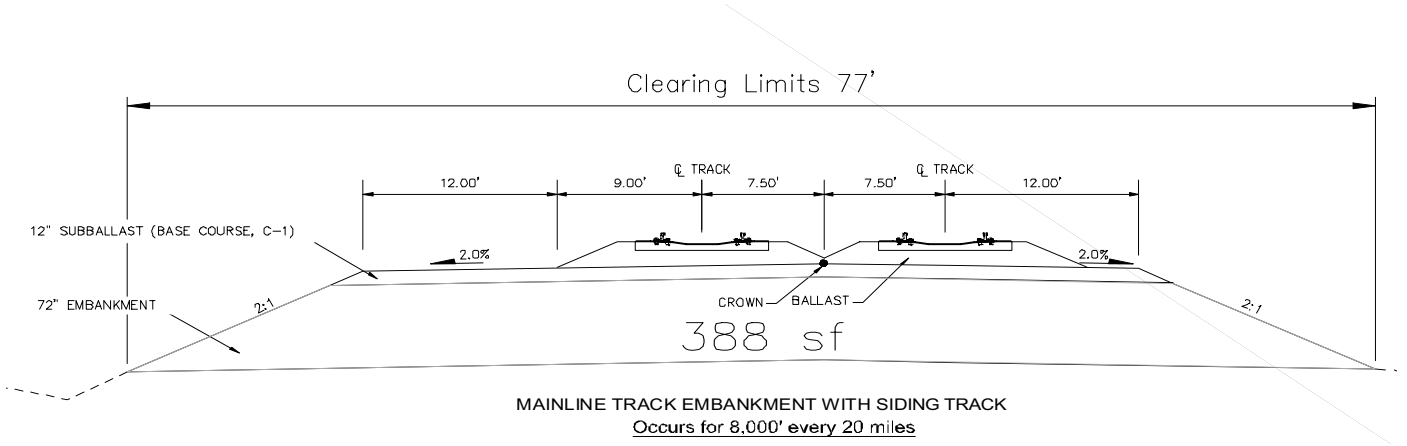
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**327,360**	SF	**7.52**	ACRES	
SUBBALLAST	**6,844**	CY	**13,401**	TONS	**Total of 203**
EMBANKMENT	**58,276**	CY	**116,435**	TONS	**57,984,411**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**53.6%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**46.4%**	

* Quantities must be input into cells with RED lettering.

4b - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,407,828,290	$190,490,741	$3,551,820	$1,598,319,031



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 35 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	369,600	$235.77	$87.14
	SUBBALLAST	TON	670,071	$40	$26.80
203A	EMBANKMENT (+ 20 % Contingency)	TON	3,409,975	$7.65	$26.10
203B	EMBANKMENT (+ 20 % Contingency)	TON	2,957,198	$10.15	$30.03
201	CLEARING & GRUBBING	ACRES	326.7	$9,500	$3.10
			+ Mobilization	10%	$17.32
				TOTAL COST 35 MILES	**$190,490,741**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**6,367,173**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**53.6%**	Percentage of ownership within
Item 203B	= Material from BLM/Native owned land.	**46.4%**	corridor.

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Nenana	to	Manly Hot Springs	70 miles	10.0 miles
Manly Hot Springs	to	Elliott Hwy	14 miles	10.0 miles
Elliott hwy	to	Tanana	55 miles	10.0 miles
Tanana	to	Tozitna River	36 miles	10.0 miles
Tozitna River	to	Sushgitit Hills	75 miles	10.0 miles
Sushgitit Hills	to	Hogatza River	90 miles	20.0 miles
Hogatza River	to	Nutuvuki Lake	40 miles	15.0 miles
Nutuvuki Lake	to	Ambler Area	70 miles	10.0 miles
		Total	450 miles	

4b - Parks Hwy RR Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

Total Borrow (tons)	30,964,127	68,809 (~per average per mile)

4b - Parks Hwy RR Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
320 miles	22,018,935	11,009,468	5 miles	10 miles	**$8.45**	$93,030,001	$153,031,599
40 miles	2,752,367	1,376,183	8 miles	15 miles	**$11.35**	$15,619,682	$23,119,882
90 miles	6,192,825	3,096,413	10 miles	20 miles	**$14.20**	$43,969,061	$60,844,511
450 miles **Totals**	**30,964,127**	**15,482,064**					$236,995,991

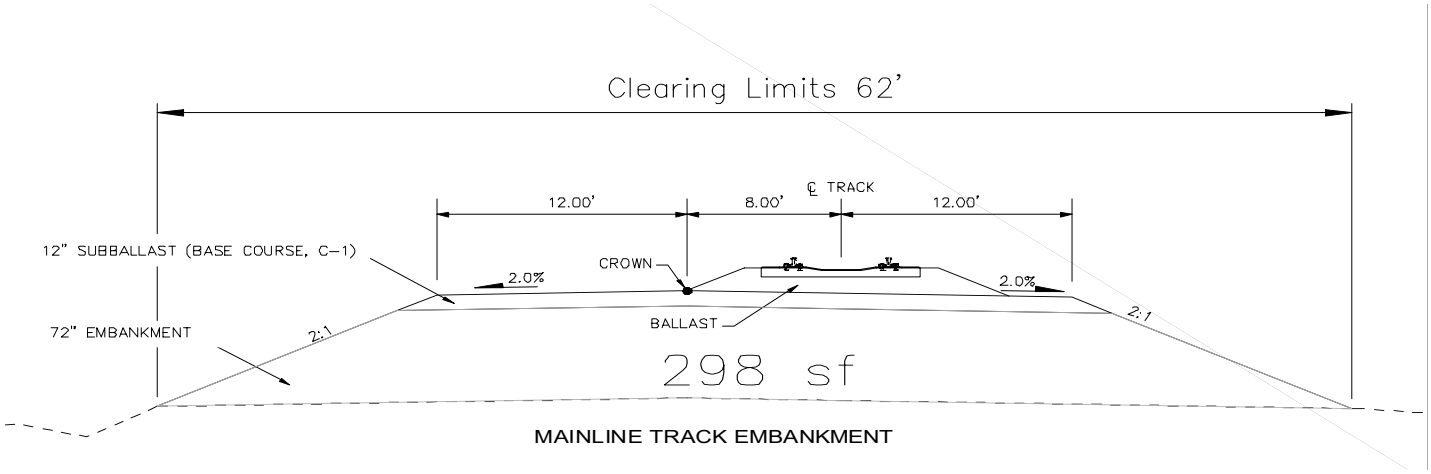
	State Land	BLM / Native Royalties
Base Cost/CY	$15.31	$15.31
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	15.31	20.31
Adjusted Cost/Ton	**$7.65**	**$10.15**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

4c - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,379,920,451	$199,294,521	$3,760,036	$1,579,214,972



~ 385 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	2,032,800	$236.20	$480.15
	SUBBALLAST	TON	5,159,548	$40	$206.38
203A	EMBANKMENT (+ 20 % Contingency)	TON	28,433,320	$8.87	$252.16
203B	EMBANKMENT (+ 20 % Contingency)	TON	25,359,447	$11.37	$288.30
201	CLEARING	ACRES	2,893.3	$9,500	$27.49
			+ Mobilization	10%	$125.45
				TOTAL COST 385 MILES	**$1,379,920,451**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**35**	SF
EMBANKMENT		**298**	SF
CLEARING	WIDTH (ft)	**62**	LF

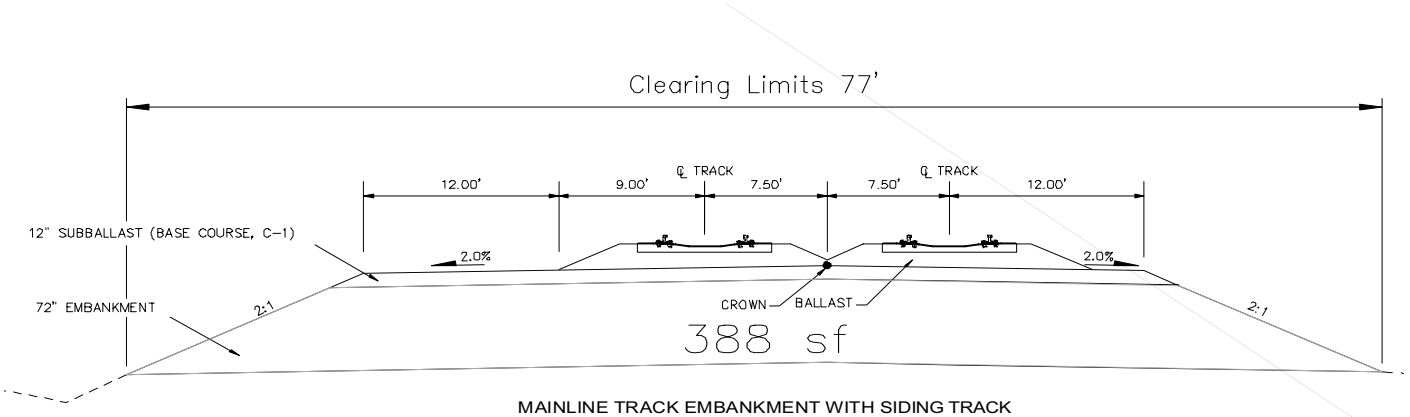
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**327,360**	SF	**7.52**	ACRES	
SUBBALLAST	**6,844**	CY	**13,401**	TONS	**Total of 203**
EMBANKMENT	**58,276**	CY	**116,435**	TONS	**53,792,767**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**52.9%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**47.1%**	

* Quantities must be input into cells with RED lettering.

4c - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,379,920,451	$199,294,521	$3,760,036	$1,579,214,972



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 35 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	369,600	$236.20	$87.30
	SUBBALLAST	TON	670,071	$40	$26.80
203A	EMBANKMENT (+ 20 % Contingency)	TON	3,365,506	$8.87	$29.85
203B	EMBANKMENT (+ 20 % Contingency)	TON	3,001,667	$11.37	$34.12
201	CLEARING & GRUBBING	ACRES	326.7	$9,500	$3.10
			+ Mobilization	10%	$18.12
				TOTAL COST 35 MILES	**$199,294,521**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**6,367,173**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**52.9%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**47.1%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Nenana	to	Manly Hot Springs	50 miles	30.0 miles
Manly Hot Springs	to	Elliott Hwy	30 miles	30.0 miles
Elliott hwy	to	Tanana	40 miles	10.0 miles
Tanana	to	Tozitna River	30 miles	10.0 miles
Tozitna River	to	Sushgitit Hills	65 miles	10.0 miles
Sushgitit Hills	to	Hogatza River	90 miles	20.0 miles
Hogatza River	to	Pah River	60 miles	15.0 miles
Pah River	to	Ambler Area	55 miles	10.0 miles
		Total	420 miles	
Total Borrow (tons)			30,964,127	73,724 (~per average per mile)

4c - Parks Hwy RR Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

4c - Parks Hwy RR Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
190 miles	14,007,581	7,003,791	5 miles	10 miles	**$8.45**	$59,182,032	$97,352,691
80 miles	5,897,929	2,948,965	15 miles	30 miles	**$19.95**	$58,831,842	$74,903,699
60 miles	4,423,447	2,211,723	8 miles	15 miles	**$11.35**	$25,103,060	$37,156,953
90 miles	6,635,170	3,317,585	10 miles	20 miles	**$14.20**	$47,109,708	$65,190,547
420 miles **Totals**	**30,964,127**	**15,482,064**					$274,603,890

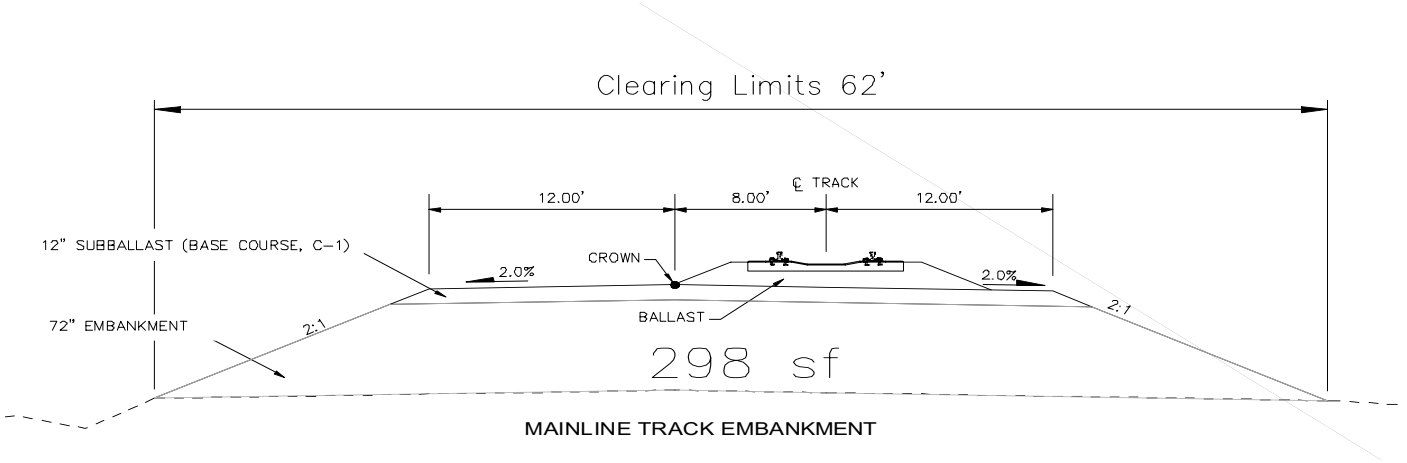
	State Land	BLM / Native Royalties
Base Cost/CY	$17.74	$17.74
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	17.74	22.74
Adjusted Cost/Ton	**$8.87**	**$11.37**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

4d - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,377,814,707	$185,677,354	$3,553,391	$1,563,492,061



~ 406 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	2,143,680	$235.77	$505.42
	SUBBALLAST	TON	5,440,977	$40	$217.64
203A	EMBANKMENT (+ 20 % Contingency)	TON	30,555,181	$7.67	$234.35
203B	EMBANKMENT (+ 20 % Contingency)	TON	26,171,737	$10.17	$266.16
201	CLEARING	ACRES	3,051.2	$9,500	$28.99
			+ Mobilization	10%	$125.26
				TOTAL COST 406 MILES	**$1,377,814,707**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**35**	SF
EMBANKMENT		**298**	SF
CLEARING	WIDTH (ft)	**62**	LF

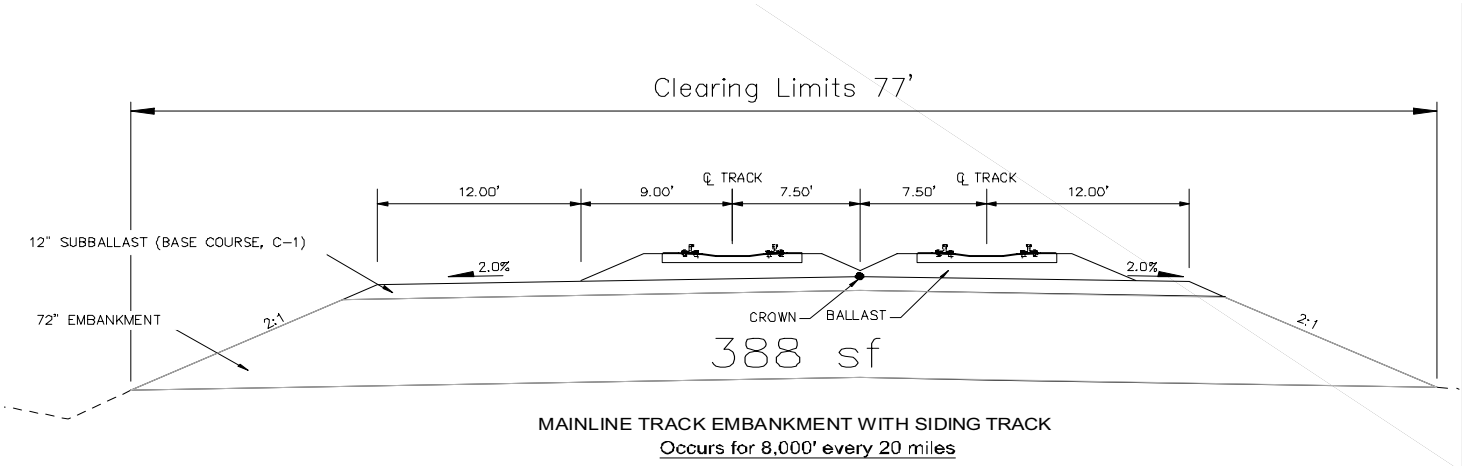
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**327,360**	SF	**7.52**	ACRES	
SUBBALLAST	**6,844**	CY	**13,401**	TONS	**Total of 203**
EMBANKMENT	**58,276**	CY	**116,435**	TONS	**56,726,918**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**53.9%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**46.1%**	

* Quantities must be input into cells with RED lettering.

4d - Parks Hwy RR Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,377,814,707	$185,677,354	$3,553,391	$1,563,492,061



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 34 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	359,040	$235.77	$84.65
	SUBBALLAST	TON	650,926	$40	$26.04
203A	EMBANKMENT (+ 20 % Contingency)	TON	3,331,603	$7.75	$25.83
203B	EMBANKMENT (+ 20 % Contingency)	TON	2,853,651	$10.25	$29.26
201	CLEARING & GRUBBING	ACRES	317.3	$9,500	$3.01
			+ Mobilization	10%	$16.88
				TOTAL COST 34 MILES	**$185,677,354**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**6,185,254**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**53.9%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**46.1%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Dunbar	to	Manly Hot Springs	60 miles	10.0 miles
Manly Hot Springs	to	Elliott Hwy	14 miles	10.0 miles
Elliott hwy	to	Tanana	55 miles	10.0 miles
Tanana	to	Tozitna River	36 miles	10.0 miles
Tozitna River	to	Sushgitit Hills	75 miles	10.0 miles
Sushgitit Hills	to	Hogatza River	90 miles	20.0 miles
Hogatza River	to	Nutuvuki Lake	40 miles	15.0 miles
Nutuvuki Lake	to	Ambler Area	70 miles	10.0 miles
		Total	440 miles	

4d - Parks Hwy RR Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

Total Borrow (tons)	30,964,127	70,373 (~per average per mile)

4d - Parks Hwy RR Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
310 miles	21,815,635	10,907,818	5 miles	10 miles	**$8.45**	$92,171,059	$151,618,665
40 miles	2,814,921	1,407,460	8 miles	15 miles	**$11.35**	$15,974,675	$23,645,334
90 miles	6,333,572	3,166,786	10 miles	20 miles	**$14.20**	$44,968,358	$62,227,340
440 miles **Totals**	**30,964,127**	**15,482,064**					$237,491,339

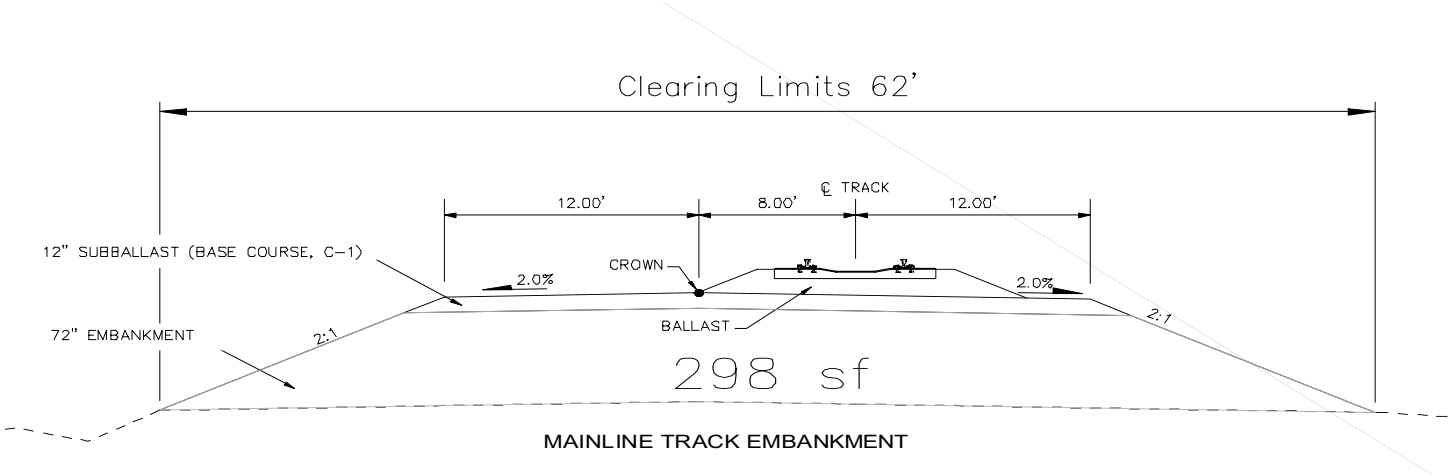
	State Land	BLM / Native Royalties
Base Cost/CY	$15.34	$15.34
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	15.34	20.34
Adjusted Cost/Ton	**$7.67**	**$10.17**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

5 - DMTS Port Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$796,265,316	$162,173,100	$3,729,332	$958,438,417



~ 228 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	1,203,840	$240.54	$289.57
	SUBBALLAST	TON	3,055,524	$40	$122.22
203A	EMBANKMENT (+ 20 % Contingency)	TON	7,437,314	$7.37	$54.81
203B	EMBANKMENT (+ 20 % Contingency)	TON	24,419,181	$9.87	$241.00
201	CLEARING	ACRES	1,713.5	$9,500	$16.28
			+ Mobilization	10%	$72.39
				TOTAL COST 228 MILES	**$796,265,316**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**35**	SF
EMBANKMENT		**298**	SF
CLEARING	WIDTH (ft)	**62**	LF

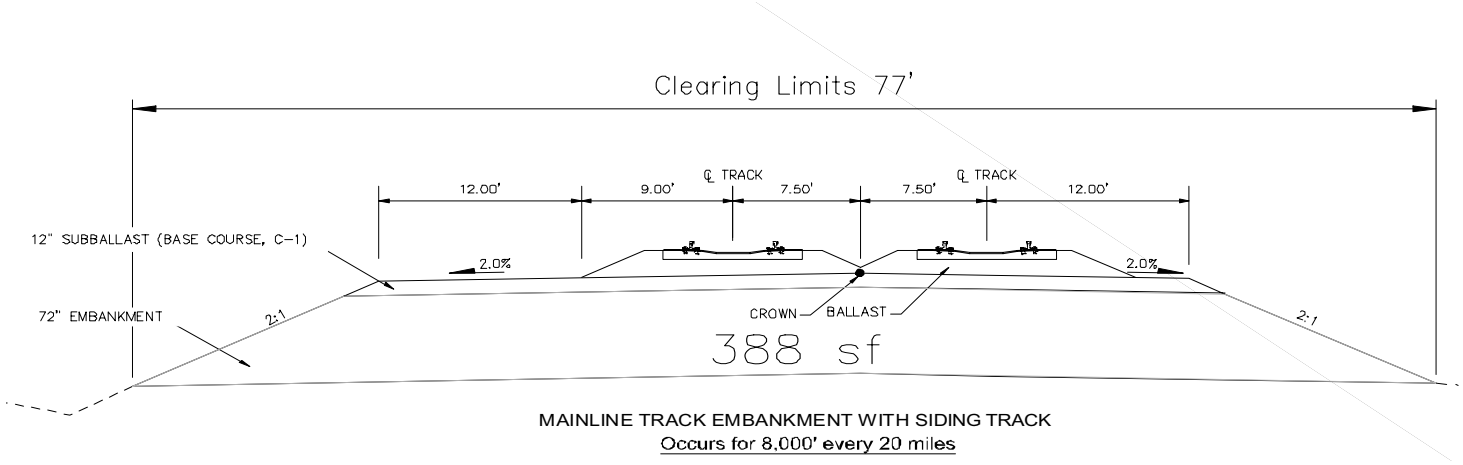
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**327,360**	SF	**7.52**	ACRES	
SUBBALLAST	**6,844**	CY	**13,401**	TONS	**Total of 203**
EMBANKMENT	**58,276**	CY	**116,435**	TONS	**31,856,496**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**23.3%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**76.7%**	

* Quantities must be input into cells with RED lettering.

5 - DMTS Port Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$796,265,316	$162,173,100	$3,729,332	$958,438,417



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 29 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	306,240	$240.54	$73.66
	SUBBALLAST	TON	555,202	$40	$22.21
203A	EMBANKMENT (+ 20 % Contingency)	TON	1,231,671	$7.37	$9.08
203B	EMBANKMENT (+ 20 % Contingency)	TON	4,043,987	$9.87	$39.91
201	CLEARING & GRUBBING	ACRES	270.7	$9,500	$2.57
			+ Mobilization	10%	$14.74
				TOTAL COST 29 MILES	**$162,173,100**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**5,275,658**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**23.3%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**76.7%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
DMTS Port	to	Noatak River	35 miles	20.0 miles
Noatak River	to	Squirrel River	30 miles	10.0 miles
Squirrel River	to	Kiana	45 miles	10.0 miles
Kiana	to	Ambler Area	130 miles	10.0 miles
		Total	240 miles	10.0 miles
Total Borrow (tons)			8,668,985	36,121 (~per average per mile)

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

5 - DMTS Port Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
205 miles	7,404,758	3,702,379	5 miles	10 miles	$8.45	$31,285,103	$51,463,070
35 miles	1,264,227	632,114	10 miles	20 miles	$14.20	$8,976,012	$12,421,030
Totals	8,668,985	4,334,493					$63,884,100

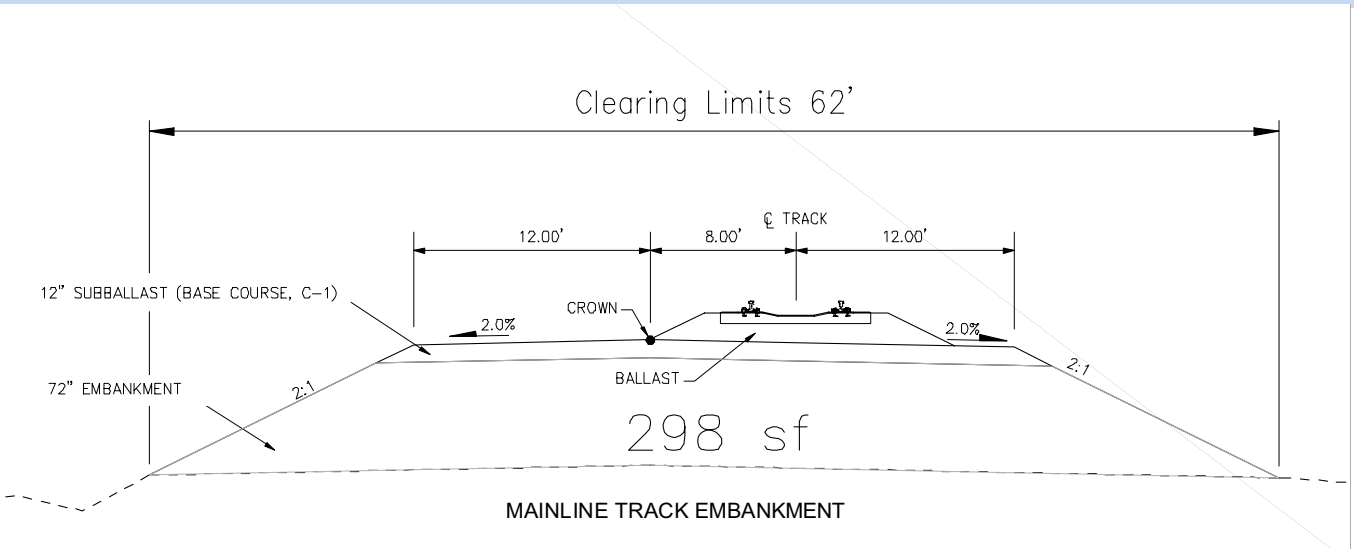
	State Land	BLM / Native Royalties
Base Cost/CY	$14.74	$14.74
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	14.74	19.74
Adjusted Cost/Ton	**$7.37**	**$9.87**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

6 - Cape Blossom Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$888,809,031	$117,190,535	$4,110,087	$1,005,999,567



~ 226 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	1,193,280	$241.12	$287.72
	SUBBALLAST	TON	3,028,721	$40	$121.15
203A	EMBANKMENT (+ 20 % Contingency)	TON	12,759,707	$10.64	$135.75
203B	EMBANKMENT (+ 20 % Contingency)	TON	18,817,346	$13.14	$247.25
201	CLEARING	ACRES	1,698.4	$9,500	$16.14
			+ Mobilization	10%	$80.80
				TOTAL COST 226 MILES	**$888,809,031**

CROSS SECTIONAL AREA		**TOTAL QUANTITY**	
SUBBALLAST		**35**	SF
EMBANKMENT		**298**	SF
CLEARING	WIDTH (ft)	**62**	LF

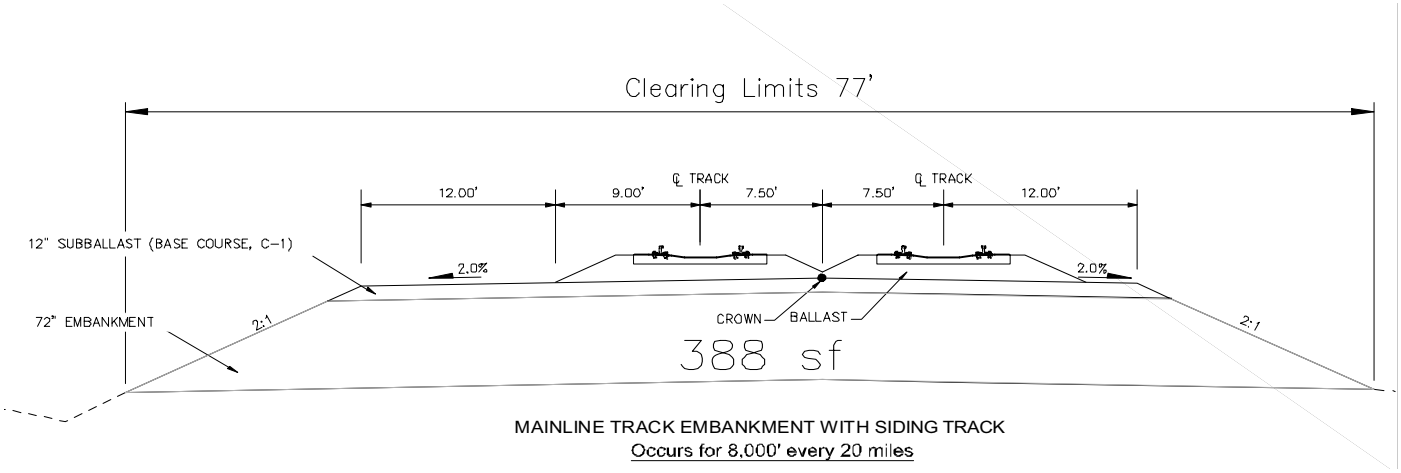
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**327,360**	SF	**7.52**	ACRES	
SUBBALLAST	**6,844**	CY	**13,401**	TONS	**Total of 203**
EMBANKMENT	**58,276**	CY	**116,435**	TONS	**31,577,053**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**40.4%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**59.6%**	

* Quantities must be input into cells with RED lettering.

6 - Cape Blossom Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$888,809,031	$117,190,535	$4,110,087	$1,005,999,567



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 19 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	200,640	$241.12	$48.38
	SUBBALLAST	TON	363,753	$40	$14.55
203A	EMBANKMENT (+ 20 % Contingency)	TON	1,396,694	$10.64	$14.86
203B	EMBANKMENT (+ 20 % Contingency)	TON	2,059,771	$13.14	$27.06
201	CLEARING & GRUBBING	ACRES	177.3	$9,500	$1.68
			+ Mobilization	10%	$10.65
				TOTAL COST 19 MILES	**$117,190,535**

CROSS SECTIONAL AREA		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**3,456,465**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**40.4%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**59.6%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Along Baldwin Peninsula			55 miles	25.0 miles
Along the Selawik			35 miles	10.0 miles
Selawik Hills	to	Selawik Lowlands	25 miles	15.0 miles
Selawik Lowlands	to	Ambler Area	20 miles	10.0 miles
Selawik Lowlands	to	Ambler Area	110 miles	30.0 miles
		Total	245 miles	10.0 miles

6 - Cape Blossom Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost	$5.45
(factored into Total Cost in Place)	

Total Borrow (tons)	14,156,401	57,781	(~per average per mile)

6 - Cape Blossom Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
55 miles	3,177,968	1,588,984	13 miles	25 miles	$17.00	$27,012,725	$35,672,686
55 miles	3,177,968	1,588,984	5 miles	10 miles	$8.45	$13,426,913	$22,086,875
25 miles	1,444,531	722,265	8 miles	15 miles	$11.35	$8,197,712	$12,134,058
110 miles	6,355,935	3,177,968	15 miles	30 miles	$19.95	$63,400,454	$80,720,377
Totals	14,156,401	7,078,201					$150,613,997

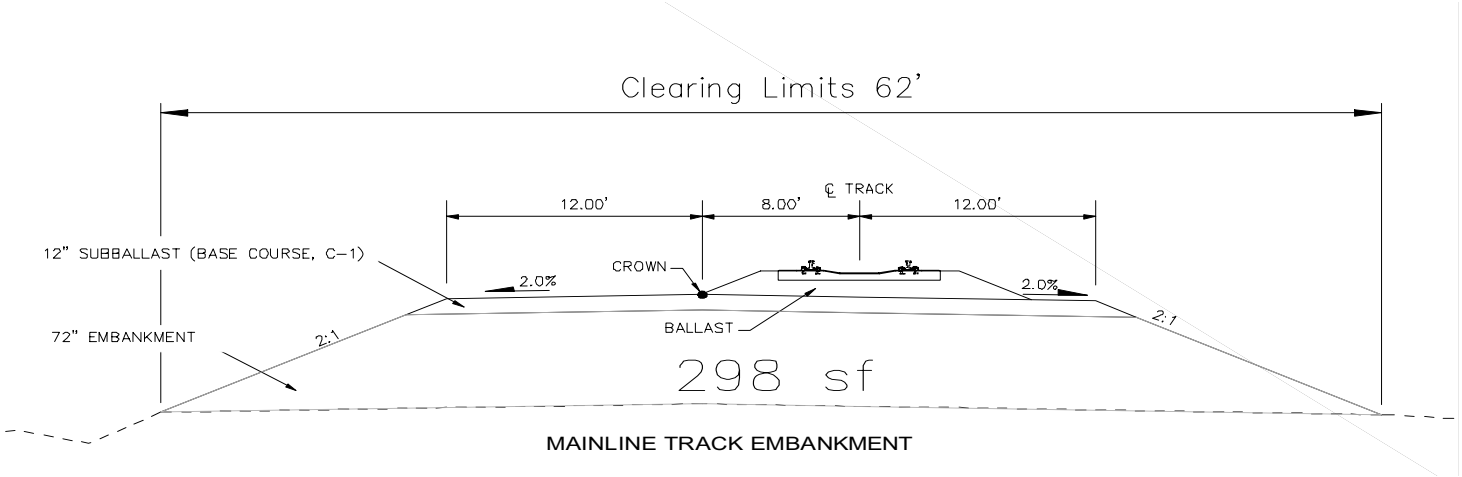
	State Land	BLM / Native Royalties
Base Cost/CY	$21.28	$21.28
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	21.28	26.28
Adjusted Cost/Ton	**$10.64**	**$13.14**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

7 - Selawik Flats

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,104,212,887	$155,638,239	$3,806,197	$1,259,851,126



~ 304 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	1,605,120	$238.09	$382.16
	SUBBALLAST	TON	4,074,032	$40	$162.96
203A	EMBANKMENT (+ 20 % Contingency)	TON	18,222,044	$8.86	$161.46
203B	EMBANKMENT (+ 20 % Contingency)	TON	24,253,284	$11.36	$275.54
201	CLEARING	ACRES	2,284.6	$9,500	$21.70
			+ Mobilization	10%	$100.38
				TOTAL COST 304 MILES	**$1,104,212,887**

CROSS SECTIONAL AREA - (0 % slope)		TOTAL QUANTITY	
SUBBALLAST		35	SF
EMBANKMENT		298	SF
CLEARING	WIDTH (ft)	62	LF

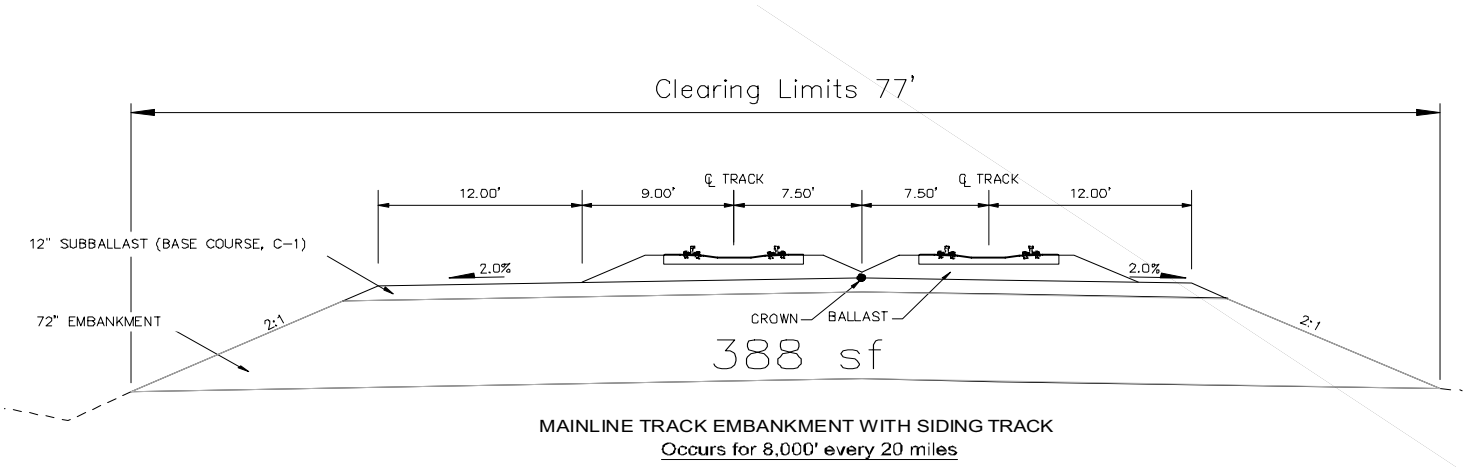
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	327,360	SF	7.52	ACRES	
SUBBALLAST	6,844	CY	13,401	TONS	**Total of 203**
EMBANKMENT	58,276	CY	116,435	TONS	**42,475,327**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	42.9%	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	57.1%	

7 - Selawik Flats

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,104,212,887	$155,638,239	$3,806,197	$1,259,851,126

* Quantities must be input into cells with RED lettering.



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 27 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	285,120	$238.09	$67.88
	SUBBALLAST	TON	516,912	$40	$20.68
203A	EMBANKMENT (+ 20 % Contingency)	TON	2,107,185	$8.86	$18.67
203B	EMBANKMENT (+ 20 % Contingency)	TON	2,804,634	$11.36	$31.86
201	CLEARING & GRUBBING	ACRES	252.0	$9,500	$2.39
			+ Mobilization	10%	$14.15
				TOTAL COST 27 MILES	**$155,638,239**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**4,911,819**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**42.9%**	Percentage of ownership within corridor.
Item 203B	= Material from BLM/Native owned land.	**57.1%**	

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Council	to	Selawik Lowlands	221 miles	10.0 miles
0	to	Ambler Area	110 miles	30.0 miles
		Total	331 miles	

7 - Selawik Flats

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost (factored into Total Cost in Place)	$5.45

Total Borrow (tons) 20,329,229 61,418 (~per average per mile)

7 - Selawik Flats	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
221 miles	13,573,292	6,786,646	5 miles	10 miles	$8.45	$57,347,158	$94,334,379
110 miles	6,755,937	3,377,969	15 miles	30 miles	$19.95	$67,390,473	$85,800,402
Totals	20,329,229	10,164,615					$180,134,781

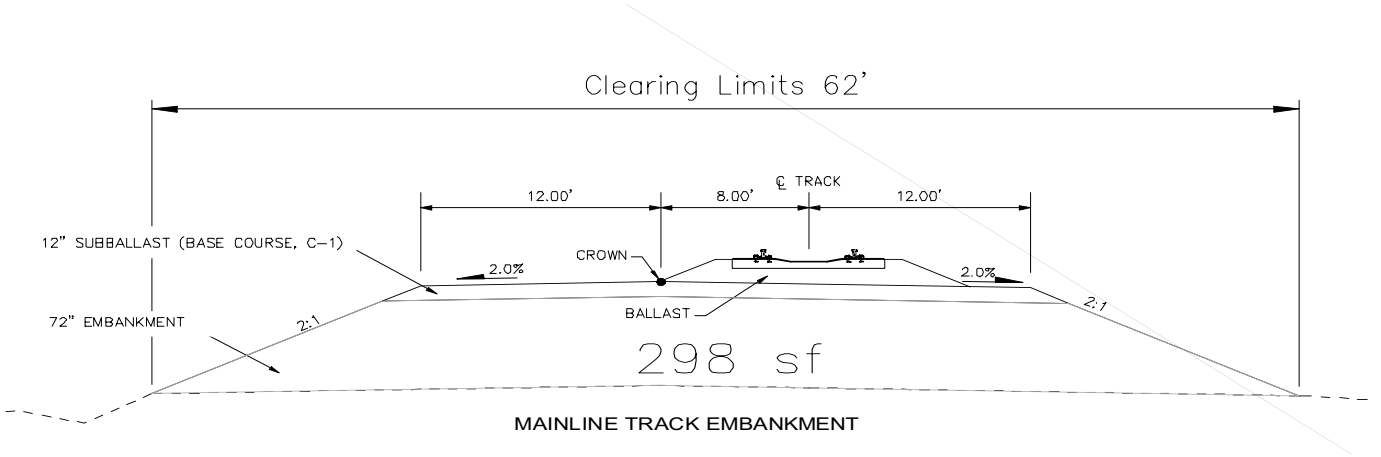
	State Land	BLM / Native Royalties
Base Cost/CY	$17.72	$17.72
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	17.72	22.72
Adjusted Cost/Ton	**$8.86**	**$11.36**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

8 - Cape Darby Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,106,693,561	$152,215,690	$3,702,674	$1,258,909,251



~ 313 Miles

RAILWAY BASELINE PER MILE COST-MAINLINE TRACK					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	1,652,640	$237.82	$393.03
	SUBBALLAST	TON	4,194,645	$40	$167.79
203A	EMBANKMENT (+ 20 % Contingency)	TON	28,683,585	$8.81	$252.71
203B	EMBANKMENT (+ 20 % Contingency)	TON	15,049,235	$11.31	$170.21
201	CLEARING	ACRES	2,352.2	$9,500	$22.35
			+ Mobilization	10%	$100.61
				TOTAL COST 313 MILES	**$1,106,693,561**

CROSS SECTIONAL AREA		**TOTAL QUANTITY**	
SUBBALLAST		**35**	SF
EMBANKMENT		**298**	SF
CLEARING	WIDTH (ft)	**62**	LF

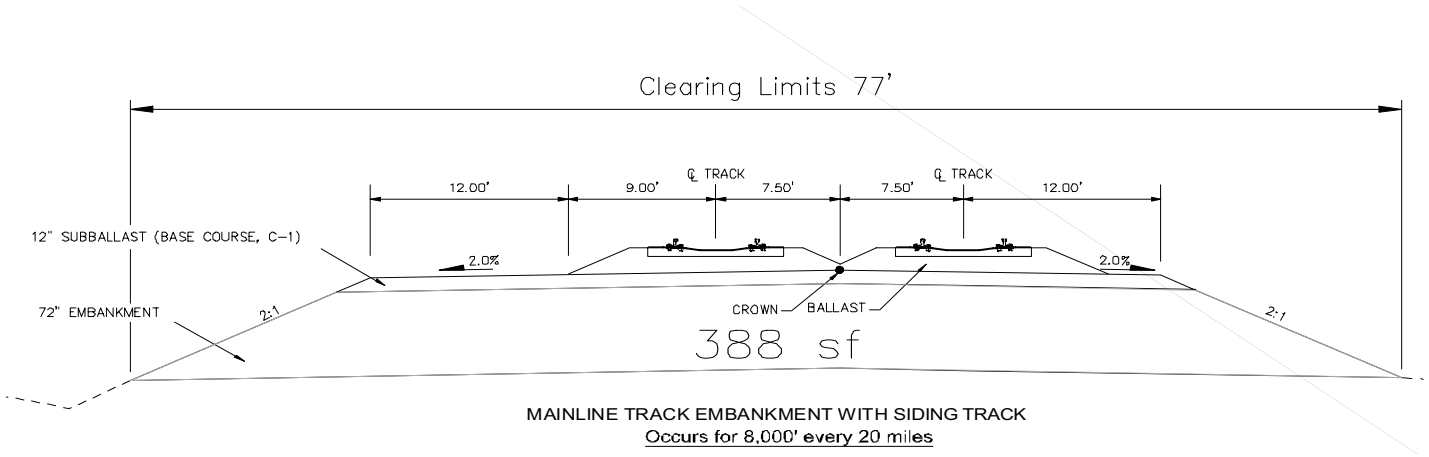
SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**327,360**	SF	**7.52**	ACRES	
SUBBALLAST	**6,844**	CY	**13,401**	TONS	**Total of 203**
EMBANKMENT	**58,276**	CY	**116,435**	TONS	**43,732,821**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**65.6%**	Percentage of ownership within
Item 203B	= Material from BLM/Native owned land.	**34.4%**	corridor.

* Quantities must be input into cells with RED lettering.

8 - Cape Darby Corridor

SUMMARY OF UNIT COSTS (MILLION $/MILE)			
Mainline	**Mainline w/Sidetrack**	**per mile**	**TOTAL**
$1,106,693,561	$152,215,690	$3,702,674	$1,258,909,251



MAINLINE TRACK EMBANKMENT WITH SIDING TRACK
Occurs for 8,000' every 20 miles

~ 27 Miles

BASE COST PER MILE-MAINLINE TRACK WITH SIDING TRACK RAILWAY					
PAY ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**QUANTITY**	**UNIT COSTS**	**COST (in millions)**
	RAIL	TF	285,120	$237.82	$67.81
	SUBBALLAST	TON	516,912	$40	$20.68
203A	EMBANKMENT (+ 20 % Contingency)	TON	3,221,576	$8.81	$28.38
203B	EMBANKMENT (+ 20 % Contingency)	TON	1,690,244	$11.31	$19.12
201	CLEARING & GRUBBING	ACRES	252.0	$9,500	$2.39
			+ Mobilization	10%	$13.84
				TOTAL COST 27 MILES	**$152,215,690**

CROSS SECTIONAL AREA - (0 % slope)		**TOTAL QUANTITY**	
SUBBALLAST		**50**	SF
EMBANKMENT		**388**	SF
CLEARING & GRUBBING	WIDTH (ft)	**77**	LF

SUMMARY OF QUANTITIES PER UNIT MILE					
CLEARING	**406,560**	SF	**9.33**	ACRES	
SUBBALLAST	**9,778**	CY	**19,145**	TONS	**Total of 203**
EMBANKMENT	**75,876**	CY	**151,599**	TONS	**4,911,819**

ROYALTIES APPLIED TO MATERIAL COSTS			
Item 203A	= Material from state owned land.	**65.6%**	Percentage of ownership within
Item 203B	= Material from BLM/Native owned land.	**34.4%**	corridor.

* Quantities must be input into cells with RED lettering.

Borrow Site Summary (as referenced in Draft Geotechnical Report)				
Miles			Miles	Occurrence
Council	to	Selawik Lowlands	230 miles	10.0 miles
0	to	Ambler Area	110 miles	30.0 miles
		Total	340 miles	

8 - Cape Darby Corridor

RT Operating Cost per CY	
1 mile	**$3.00**
2 mile	**$3.65**
3 mile	**$4.25**
4 mile	**$4.80**
5 mile	**$5.30**
10 mile	**$8.45**
20 mile	**$14.20**

RT Prep Cost per CY	
	Per CY
Excavating and Loading =	$3.00
Placement & Grading =	$0.45
Compaction =	$0.35
Watering =	$1.65
In Addition to operating Cost (factored into Total Cost in Place)	$5.45

Total Borrow (tons) 31,905,161 93,839 (~per average per mile)

8 - Cape Darby Corridor	Borrow (TON)	Borrow (CY)	Distance from Borrow Source (One Way)	Distance from Borrow Source (Round trip)	Haul Cost (CY)	Haul Cost	Total Cost in Place
Miles			MILES				
230 miles	21,582,903	10,791,451	5 miles	10 miles	$8.45	$91,187,765	$150,001,176
110 miles	10,322,258	5,161,129	15 miles	30 miles	$19.95	$102,964,523	$131,092,676
Totals	31,905,161	15,952,580					$281,093,852

	State Land	BLM / Native Royalties
Base Cost/CY	$17.62	$17.62
+ BLM/Native Royalties	$0.00	5.00
Adjusted Base Cost/CY	17.62	22.62
Adjusted Cost/Ton	**$8.81**	**$11.31**

ASSUMPTIONS:

1) Assumes additional $5/CY for material used from BLM or Native owned land.
2) Includes operations, haul, and placement.
3) Assumes 20 ton haul.
4) 2 tons/CY

Water Crossing Summary Per Corridor					
Corridors	Length	Roadway		Railway	
	Miles	TOTAL COST (in millions)	Per Mile Cost (in millions)	TOTAL COST (in millions)	Per Mile Cost (in millions)
1 - Brooks East Corridor	216	$108	$0.502	NA	NA
2 - Kanuti Flats Corridor	241	$128	$0.533	NA	NA
3 - Elliott Hwy Corridor	365	$175	$0.480	NA	NA
4a - Parks Hwy RR Corridor	430	NA	NA	$335	$0.8
4b - Parks Hwy RR Corridor	450	NA	NA	$367	$0.8
4c - Parks Hwy RR Corridor	420	NA	NA	$391	$0.9
4d - Parks Hwy RR Corridor	440	NA	NA	$423	$1.0
5 - DMTS Port Corridor	257	$165	$0.643	$301	$1.2
6 - Cape Blossom Corridor	245	$177	$0.724	$327	$1.3
7 - Selawik Flats	331	$163	$0.493	$301	$0.9
8 - Cape Darby Corridor	340	$172	$0.507	$317	$0.9

Roadway Water Crossing Summary

Corridors	CULVERTS						FISH PASSAGES		BRIDGES						TOTAL COST (in millions)
	Minor Crossings		Culvert Small (<10')		Culvert Large (10' to 20')				Bridge Small (<50')		Bridge Medium (50' to 140')		Bridge Large (>140')		
	QUANTITY (EA)	UNIT COST (EA)	QUANTITY (EA)	UNIT COST (EA)	QUANTITY (EA)	UNIT COST	QUANTITY (EA)	UNIT COST	QUANTITY (EA)	UNIT COST	QUANTITY (EA)	UNIT COST	QUANTITY (LF)	UNIT COST	
1 - Brooks East Corridor	864	$21,000	114	$103,000	16	$230,000	8	$130,000	5	$430,000	13	$1,130,000	5,000	$11,400	**$108**
2 - Kanuti Flats Corridor	964	$21,000	157	$103,000	13	$230,000	18	$130,000	10	$430,000	18	$1,130,000	5,440	$11,400	**$128**
3 - Elliott Hwy Corridor	1460	$21,000	176	$103,000	20	$230,000	20	$130,000	19	$430,000	24	$1,130,000	7,360	$11,400	**$175**
5 - DMTS Port Corridor	1028	$21,000	116	$103,000	63	$230,000	48	$130,000	3	$430,000	12	$1,130,000	8,440	$11,400	**$165**
6 - Cape Blossom Corridor	980	$21,000	108	$103,000	73	$230,000	51	$130,000	2	$430,000	14	$1,130,000	9,250	$11,400	**$177**
7 - Selawik Flats	1324	$21,000	94	$103,000	42	$230,000	32	$130,000	7	$430,000	21	$1,130,000	7,470	$11,400	**$163**
8 - Cape Darby Corridor	1360	$21,000	84	$103,000	54	$230,000	35	$130,000	8	$430,000	22	$1,130,000	7,890	$11,400	**$172**

Railway Water Crossing Summary

Corridors	CULVERTS						FISH PASSAGES		BRIDGES						TOTAL COST (in millions)
	Minor Crossings		Culvert Small (<10')		Culvert Large (10' to 20')				Bridge Small (<50')		Bridge Medium (50' to 140')		Bridge Large (>140')		
	QUANTITY (EA)	UNIT COST (EA)	QUANTITY (EA)	UNIT COST (EA)	QUANTITY (EA)	UNIT COST	QUANTITY (EA)	UNIT COST	QUANTITY (EA)	UNIT COST	QUANTITY (EA)	UNIT COST	QUANTITY (LF)	UNIT COST	
4a - Parks Hwy RR Corridor	1720	$ 21,000	127	$ 103,000	52	$ 230,000	23	$ 130,000	42	$ 450,000	23	$ 2,830,000	7,470	$ 25,000	**$ 335**
4b - Parks Hwy RR Corridor	1800	$ 21,000	172	$ 103,000	48	$ 230,000	28	$ 130,000	47	$ 450,000	29	$ 2,830,000	7,730	$ 25,000	**$ 367**
4c - Parks Hwy RR Corridor	1680	$ 21,000	131	$ 103,000	31	$ 230,000	22	$ 130,000	28	$ 450,000	21	$ 2,830,000	10,410	$ 25,000	**$ 391**
4d - Parks Hwy RR Corridor	1760	$ 21,000	176	$ 103,000	27	$ 230,000	27	$ 130,000	33	$ 450,000	27	$ 2,830,000	10,670	$ 25,000	**$ 423**
5 - DMTS Port Corridor	1028	$ 21,000	116	$ 103,000	63	$ 230,000	48	$ 130,000	3	$ 450,000	12	$ 2,830,000	8,440	$ 25,000	**$ 301**
6 - Cape Blossom Corridor	980	$ 21,000	108	$ 103,000	73	$ 230,000	51	$ 130,000	2	$ 450,000	14	$ 2,830,000	9,250	$ 25,000	**$ 327**
7 - Selawik Flats	1324	$ 21,000	94	$ 103,000	42	$ 230,000	32	$ 130,000	7	$ 450,000	21	$ 2,830,000	7,470	$ 25,000	**$ 301**
8 - Cape Darby Corridor	1360	$ 21,000	84	$ 103,000	54	$ 230,000	35	$ 130,000	8	$ 450,000	22	$ 2,830,000	7,890	$ 25,000	**$ 317**

Note: Corridors 1, 2 and 3 do not have rail options.

Pay Item Research					
Clearing					
DATE	**PROJECT**	**Project length**	**UNIT**	**QUANTITY**	**BID**
Jan-11	Nome-Council 62-73.6 (Clearing Only-regrade/resurface)	11.6 miles	LS		$28,000
Apr-10	Nome Roads		Acre		$8,900
Feb-09	Alaska Highway: Tanana River Bridge #505	1 mile new roadway	LS		$50,000
Jan-10	Western Alaska Access Planning Study	505 miles (avg)	Acre		$10,000
2011-02	**Ambler Mining District Acces**	340 miles (avg)	**Acre**		**$9,500**
Embankment					
DATE	**PROJECT**	**Project length**	**UNIT**	**QUANTITY**	**BID**
Feb-09	Alaska Highway: Tanana River Bridge #505 (new roadway)	1 mile	TON	43,473	$ 10.00
Oct-09	Dalton Highway MP 175 to 197		TON	748,000	$ 7.00
Oct-09	Dalton Highway MP 175 to 197 (Access Road)		TON	7,000	$ 9.00
Dec-09	Alaska Highway MP 1222-1235 Rehabilitation	13 miles	TON	21,000	$ 10.00
Nov-11	Steese Highway MP 62-81		TON	104,500	$ 7.50
Jun-10	Foothills West Transportation Access		CY		$ 15.00
Jan-10	Western Alaska Access Planning Study	505 miles (avg)	TON		$ 25.00
2011-02	**Ambler Mining District Acces**		**Varies see Haul Cost Workshseets**		
Aggregate Surface Course					
DATE	PROJECT	Project length	UNIT	QUANTITY	AVERAGE
Jun-06	Richardson Highway Egan/Hazelet	6.9 miles	CY		$ 20.00
Dec-07	Kotzebue Roads - Shore Avenue	4400 ft	TON	4,100	$ 175.00
Feb-09	Alaska Highway: Tanana River Bridge #505 (new roadway)	1 mile	CY	6,944	$ 20.00
Jun-09	Alakaket Airport	NA	CY		$ 30.00
Jan-11	Nome-Council 62-73.6 (Clearing Only-regrade/resurface)	11.6 miles	CY	43,450	$ 46.00
Jun-10	Foothills West Transportation Access		CY		$ 30.00
Jan-10	Western Alaska Access Planning Study	505 miles (avg)	CY		$ 40.00
2011-02	**Ambler Mining District Acces**		**CY**		**$35**

Subballast (Grading C-1)					
DATE	PROJECT	Project length	UNIT	QUANTITY	AVERAGE
Jun-06	Richardson Highway Egan/Hazelet	6.9 miles	CY		$ 20.00
	Northern Rail		CY		$ 40.00
2011-02	**Ambler Mining District Acces**		**CY**		**$40**

[1] Estimate prediction is based on FY2010 dollars, historic bid price research, and a given magnitude of quantities.

Ambler Mining District Access