Scope, Schedule, Estimate (SSE) Confirmation

Project Name	Kodiak Pasagshak Road Resurface/Reconstruct MPt 9.4 - 15.5		
DATE	12/14/2021	CATEGORY	State of Good Repair
NEED ID	33525	REASON	(●) New Project ( ) Update SSE

PLANNING SSE

PROPOSED SCOPE

Resurface Pasagshak Road from milepoint 10.3 to milepoint 15. Work to include shoulder reenforcements and culvert replacement.

PLANNING ESTIMATE	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	TOTAL
Design	500,000	300,000									**800,000**
Utilities			10,000								**10,000**
Right of Way			50,000								**50,000**
Construction			9,000,000								**9,000,000**
TOTAL	**500,000**	**300,000**	**9,060,000**	-							**9,860,000**

CONFIRMED SSE

CONFIRMED SCOPE

Resurface & reconstruct Pasagshak Road on Kodiak Island from MPt 9.4 - 15.5. Scope includes asphalt removal/pulverization/reincorporation in base course mixed with emulsified oil, 3-inches new pavement, raised embankment sections, geotextile repairs, shoulder re-enforcement, ditch reconditioning, culvert replacement, removal of cattle guards, and unknown utility impacts (power/data). This project does not modify the current road alignment.

ENGINEERS CONFIRMED	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	TOTAL
Design	900,000	320,000									**1,220,000**
Utilities			750,000								**750,000**
Right of Way		50,000									**50,000**
Construction			5,000,000	4,840,000							**9,840,000**
TOTAL	**900,000**	**370,000**	**5,750,000**	**4,840,000**							**11,860,000**

Scope, Schedule, Estimate (SSE) Confirmation

Project Name	Kodiak Pasagshak Road Resurface/Reconstruct MPt 9.4 - 15.5		
DATE	12/14/2021	CATEGORY	State of Good Repair
NEED ID	33525	REASON	(●) New Project ( ) Update SSE

CONSIDERATIONS

SSE	Value	Comments
Basis for Estimate	Itemized Approxir	Materials group did a field recon & produced Recon Report, along with Recommendations.
Field Review or Recon	Yes	October, 2021 field recon effort
List Assumptions & Unknowns	No itemized as-builts for previous projects, so culverts & exact grade raises are approximated.	

ENVIRONMENTAL	Value	Comments
Anticipated Environmental Doc	CE	
Environmental Doc Prep Time	12 months	
4(F) Involvement	No	State park near the BOP - may be 4f?
Permits Required	Yes	USACE, DEC, KIB
List Assumptions & Unknowns		

ROW	Value	Comments
Confidence in ROW Estimate	Moderate	We have a ROW plat to the Spaceport.
List Assumptions & Unknowns	Need research on the full project limits, to EOP @ MPt 15.5.	

UTILITY	Value	Comments
Confidence in Utility Estimate	Low	No as-builts of utilities
List Assumptions & Unknowns	M&O prefer some utility work for this corridor. See estimate, attached.	

OTHER	Value	Comments
Impacts to Annual M&O	Yes	Improvements to drainage & structural section.
Bridge Work Included	No	
Geotech Considerations	Full recon & pavement recommendations provided and incorporated.	
List Assumptions & Unknowns		

CERTIFICATION & APPROVAL

Please adjust comment boxes to fit all text before converting to PDF

Confirmed SSE Prepared By

Joel Osburn — *Name*

1/31/2022 — *Date*

Confirmed SSE Pre-Construction Approval

Digitally signed by Kirk Miller
Date: 2022.01.31 17:27:12 -09'00'

Signature, Pre-Construction Engineer

Kirk Miller — *Name*

Date

Confirmed SSE Planner Approval

Marie Heidemann
Digitally signed by Marie Heidemann
Date: 2022.02.01 07:59:08 -09'00'

Signature, Planning Chief

Marie Heidemann — *Name*

Date

SSE Estimate

State of Alaska - Department of Transportation and Public Facilities

Southcoast Region

Project Name: Kodiak Pasagshak Road Resurface/Reconstruct MPt 9.4 - 15.5 **Project Number:** Unassigned

SCOPE:	Asphalt removal/pulverization/reincorporation in base course mixed with emulsified oil, 3-inches new pavement, embankment, geotextile, shoulder re-enforcement, ditch reconditioning, culvert replacement, removal of cattle guards, and unknown utility impacts (power/data).				
ITEM No.	Pay Item	Pay Unit	Quantity	Unit Price	Amount
201.0001.0000	Clearing	Acre	7	$12,000	$88,800
201.0003.0000	Clearing & Grubbing	Acre	5	$20,000	$100,000
202.0001.0000	Removal of Structures and Obstructions (2 cattle guards)	LUMP SUM	1	$50,000	$50,000
202.0002.0000	Removal of Pavement	SQUARE YARD	71,573	$15	$1,073,600
202.0004.0000	Removal of Culvert Pipe	LINEAR FOOT	875	$40	$35,000
203.0005.000A	Borrow, Type A	CUBIC YARD	12,025	$50	$601,500
303.2000.0000	Linear Grading	STATION	81	$200	$16,500
303.2003.0000	Ditch Reconditioning	LINEAR FOOT	792	$10	$8,000
301.0001.00D1	Aggregate Base Course, Grading D-1	TON	3,047	$25	$76,500
308.0001.0000	Crushed Asphalt Base Course	SQUARE YARD	62,300	$3.50	$218,500
308.0002.0000	CSS-1 for Asphalt Base Course	TON	440	$1,100	$484,000
401.0001.002B	HMA, Type II; Class B	TON	8,356	$140	$1,169,784
401.0004.5828	Asphalt Binder, Grade PG 5828	TON	501	$1,300	$651,737
401.0008.002B	HMA Price Adjustment, Type II; Class B	CONTINGENT SUM	All Req	$100,000	$100,000
401.0009.0000	Longitudinal Joint Density Price Adjustment	CONTINGENT SUM	All Req	$100,000	$100,000
401.0010.0001	Pavement Smoothness Price Adjustment, Method 1	CONTINGENT SUM	All Req	$100,000	$100,000
603.0021.0024	Corrugated Polyethylene Pipe 24 Inch	LINEAR FOOT	1225	$135	$165,400
606.0001.0000	W-Beam Guardrail	LINEAR FOOT	1662	$40	$66,500
606.0006.0000	Removing and Disposing of Guardrail	LINEAR FOOT	1662	$10	$16,700
613.0002.0000	Culvert Marker Post	EACH	70	$100	$7,000
615.0001.0000	Standard Sign	SQUARE FEET	93	$155	$14,500
615.0007.0000	Salvage and Dispose Sign	EACH	16	$300	$4,800
615.0005.0000	Delineator, Flexible	EACH	129	$100	$12,900
618.0002.0000	Seeding	POUND	200	$60	$12,000
620.0001.0000	Topsoil	SQUARE YARD	20,000	$6	$110,000
630.0001.0003	Geotextile, Separation, Class 3	SQUARE YARD	6260	$3	$18,800
634.0002.0000	Geogrid, Reinforcement, Class 1	SQUARE YARD	12519	$20	$250,400
642.0004.0000	Set Existing Monument	EACH	43	$308	$13,152
642.0009.0000	Reference Existing Monument	EACH	10	$445	$4,450
643.0003.0000	Permanent Construction Signs	LUMP SUM	1	$50,000	$50,000
644.0001.0000	Field Office	LUMP SUM	1	$24,000	$24,000
644.0015.0000	Nuclear Testing Equipment Storage Shed	EACH	1	$13,000	$13,000
644.2004.0000	Engineering Communications	CONTINGENT SUM	1	$8,000	$8,000
670.0001.0000	Painted Traffic Markings	LUMP SUM	1	$97,000	$97,000
				Subtotal	$5,523,722.40

640.0001.0000	Mobilization & Demobilization	LS	All Req	10%	$552,372
641.0001.0000	Erosion, Sed & Poll. Control Admin	LS	All Req	$100,000	$100,000
641.0003.0000	Temp. Erosion, Sed & Poll. Control	LS	All Req	2.0%	$110,474
641.0005.0000	Temp. Erosion, Sed & Poll. Control by Directive	CS	All Req	10%	$11,047
642.0001.0000	Construction Surveying	LS	All Req	4%	$220,949

643.0002.0000	Traffic Maintenance	LS	All Req	3%	$165,712
643.0025.0000	Traffic Control	CONTINGENT SUM	1	3%	$165,712
643.0032.0000	Flagging	CONTINGENT SUM	1	2%	$110,474
				Subtotal	$6,960,462
			Contingency	20%	$1,392,092
			CE @	15%	$1,044,069
				Subtotal	$9,396,623
			ICAP @	4.64%	$436,003
				Phase 4 Total	$9,832,627
				Rounded Phase 4 Total	$9,840,000

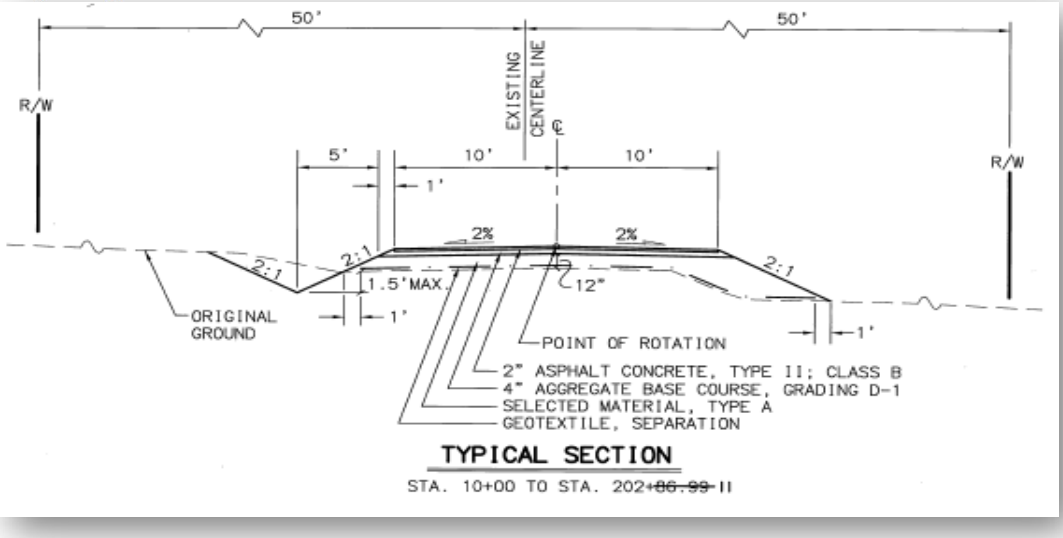
Kodiak Pasagshak Road Resurface/Reconstruct MPt 9.4 - 15.5

SCOPE: **Asphalt removal/pulverization/reincorporation in base course mixed with emulsified oil, 3-inches new pavement, embankment, geotextile, shoulder re-enforcement, ditch reconditioning, culvert replacement, removal of cattle guards, and unknown utility impacts (power/data).**

SUMMARY

Phase 2	**Design**	Start @ 10% of Ph4	$984,000.00	
		Geotech	$127,920	*(Bigger projects start with 13% of Phase 2)*
		Environmental	$98,400	*(Normally Environmental at 10% of Phase 2)*
		TOTAL =	**$1,220,000.00**	900k to CE, 320k to ATA
Phase 3	**ROW**	ROW	**$50,000.00**	For ROW research & easements
Phase 4	**Construction**	Rounded total	**$9,840,000.00**	
Phase 7	**Utilities**		**$750,000**	Move buried vaults out of roadway from MPt 13.85 to 15.5. Move 2 utility poles away from edge of roadway before BOP
		Phase 2, 3, 4, and 7 total cost	**$11,860,000.00**	

Original Typical - 2003



Preferred resurface alternative - Geotech Memo

The first alternative, shown in Figure 2, is to construct a four (4) inch thick crushed asphalt base course (CABC) per Section 308 then place 2 inches of Hot Mix Asphalt (HMA) Type II, Class B. Construction of the CABC would consists of pulverizing the existing asphalt, blending the pulverized material with the existing base course, mixing emulsified asphalt with the reclaimed material, then reshaping and compacting to the required grades.

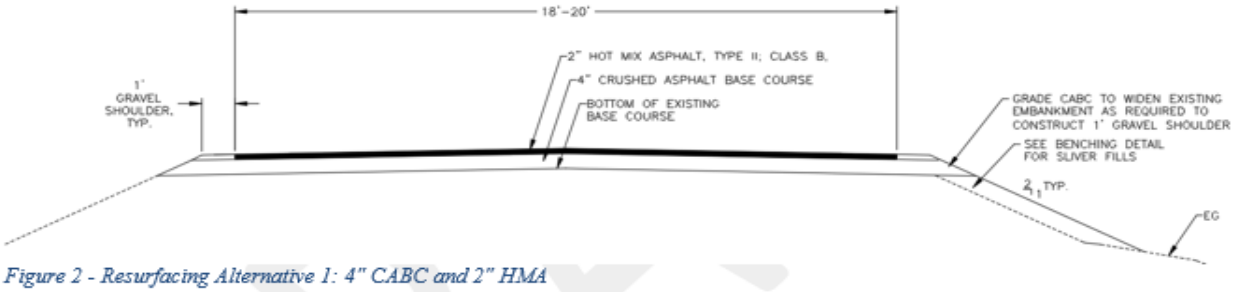


Figure 2 - Resurfacing Alternative 1: 4" CABC and 2" HMA

- Paved width is approximately 22 feet with little to no shoulder from the BOP at Mpt 9.5 to the Spaceport at Mpt13.6.
- Paved width is approximately 18 feet from the Spaceport at Mpt 13.6 to the EOP at Mpt 15.7.

CSS-1 for CABC

(minus the reconstruct sections)

559,838	s.f.
62,300	**S.Y.**
1.7	Gallons/S.Y. (Application Rate)
8.3	Pounds/Gallon (conversion factor)
440	**Tons**

Asphalt Pavement

2	inches thick
4126	C.Y.
8,356	**TONS**

Asphalt Oil (6%)

501	**TONS**

Reconstruct alternative - Geotech Memo

Reconstruction of the existing pavement structure is required in the areas identified in Table 1to restore the roadway to a state of good repair. Approximate beginning and ending Milepoints (MPt) are provided and may vary in the future SOGR project. The detail provided in Figure 4 should be used for all reconstruction areas.

Table 1- SOGR Reconstruction Areas

Begin MPt	End MPt	Width	Description
9.55	10.00	Full Width	Switchback Section
11.0	11.01	Half Width	Subgrade Failure
11.42	11.44	Half Width	Subgrade Failure
11.85	11.86	Half Width	Subgrade Failure
13.50	13.53	Half Width	Subgrade Failure

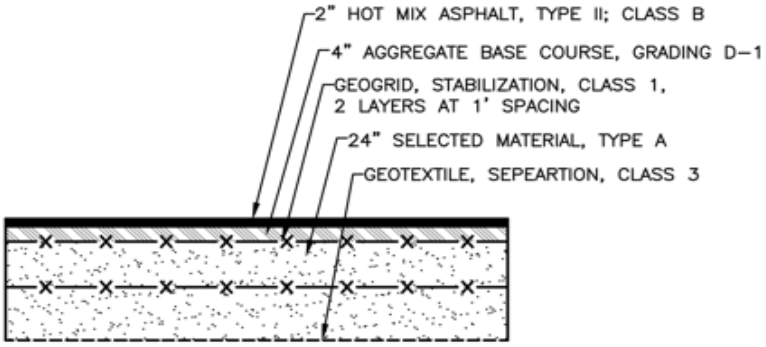


Figure 4- SOGR Reconstruction Areas Structural Section

Segment	Begin MPt	End MPt	Width	Length	Area	D-1 (Tons)	Select, Type A (C.Y.)	Geogrid (S.Y.)	Geotextile (S.Y.)
1	9.55	10	22	2376	52272	1291	3872	11616	5808
2	11	11.01	11	52.8	580.8	14	43	129	65
3	11.42	11.44	11	105.6	1161.6	29	86	258	129
4	11.85	11.86	11	52.8	580.8	14	43	129	65
5	13.5	13.53	11	158.4	1742.4	43	129	387	194
				TOTALS=	*56,337.60*	*1391*	*4173*	*12519*	*6260*

From Geotech Memo

The existing grade should be raised in the areas identified in Table 2 to restore the roadway to a state of good repair, address drainage issues, and facilitate culvert replacements. The detail provided in Figure 5 should be used to raise grades. The existing pavements should be removed or pulverized and the surface scarified before placing new fill.

Table 2 - SOGR Grade Raise Areas

Begin MPt	End MPt
10.30	10.75

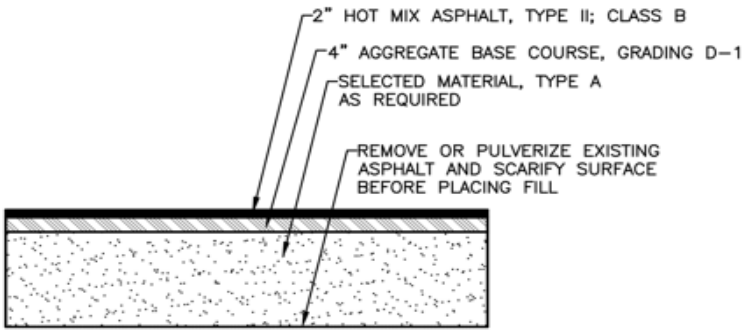


Figure 5 - SOGR Grade Raise Structural Section

Assume a 4-ft grade raise (to be conservative)

Segment	Begin MPt	End MPt	Width	Length	Area	D-1 (Tons)	Select, Type A (C.Y.)
1	10.3	10.75	22	2376	52272	1291	7744

From Geotech Memo

Embankment widening is required in the areas identified in Table 3 to facilitate resurfacing. Rough beginning and ending Milepoints (MPt) are provided and will vary in the future SOGR project. The existing embankment should be benched as shown in Figure 6 before new fill is placed.

Table 3 - SOGR Embankment Widening Areas

Begin MPt	End MPt
10.85	10.95
11.10	11.40
12.10	12.20
12.60	12.80

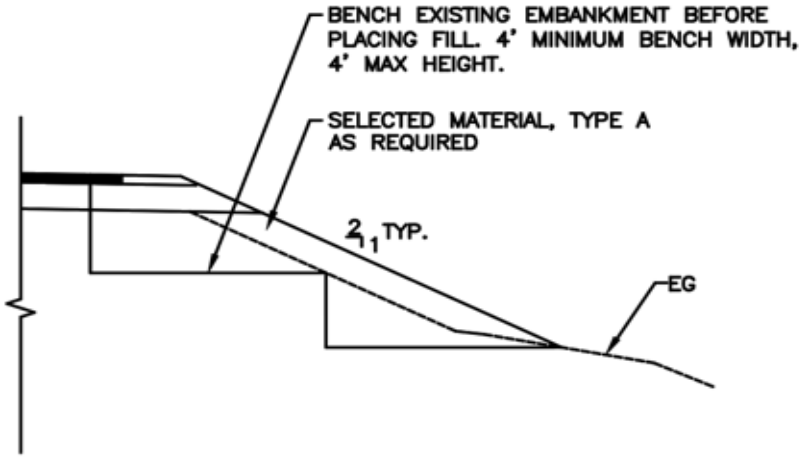


Figure 6 - Embankment Benching Detail

Segment	Begin MPt	End MPt	Width	Length	Area	D-1 (Tons)	Select, Type A (C.Y.)
1	10.85	10.95	4	528	2112	52	15
2	11.1	11.4	4	1584	6336	156	46
3	12.1	12.2	4	528	2112	52	15
4	12.6	12.8	4	1056	4224	104	31
					TOTALS =	*365*	*108*

Ditch recondition is required in the areas identified in Table 4 to address drainage issues affecting pavement performance.

Table 4 SOGR Ditch Reconditioning Limits

Begin MPt	End MPt
11.00	11.01
11.42	11.42
11.85	11.86

LENGTH 158.4

From Geotech Recon Report

M&O INTERVIEW- PHIL SMITH

An interview with Kodiak Station Formen, Phil Smith, was conducted during the field reconnaissance effort. His comments are summarized below:

- Ditching on the uphill side of the road is needed to improve drainage.
- There are not enough cross culverts to handle all the drainage needs (*locations and number of new pipes not known*).
- Some road widening is needed to address the severe edge raveling and provide a safety edge with linear grading. M&O currently adds material along the pavement edge to address this ongoing issue.
- Remove the two cattle guards
- From Mpt 13.85 to EOP the Spaceport has installed utility vaults that are in the DOT ROW. The vaults are close enough to the edge of pavement that snow plowing operations are impacted.
- Utility poles near BOP, and possibly out of the project limits, are too close to road and should be relocated. Recommend adding this to the project even if they are beyond the paving limits.
- Realign curve near Mpt 15.3-15.4, difficult and dangerous to plow
- Any realignment near the 9.5 Mile switchback should not impact the existing beach access. This access is critical for residents.
- Recommend exploring the option of transferring ownership of the road from Mpt 13.5 to 15.6 to the Spaceport.

*Add 50% more cross-culverts
*Remove 2 cattle guards (designed & built by DOT in 2005)
*Utility estimate for moving vaults (leave underground, just move vaults)- use $500k as placeholder
*Utility estimate for moving poles - add $250k as placeholder

From '05 sign summary

SIGN SUMMARY (CONTINUED)

SHEET NO.	POST NO.	STATION	CL REF.	TYPE	LEGEND	SIZE (ft) WIDTH	SIZE (ft) HEIGHT	AREA SQ FT	SIGN FACES	POSTS NO., SIZE, & TYPE	THICKNESS (in) FRAMED YES	THICKNESS (in) FRAMED NO	REMARKS
	31	490+00	LT	W11-2		3.00	3.00	9.00		1-2.5"PT	0.125		
				W13-1A(1)	NEXT 1 MI	1.50	1.50	2.25				0.125	
	32	492+50	LT	D7-2	PASAGSHAK RIVER STATE RECREATION SITE					2-3"T		0.125	MOUNT ON BREAKAWAY BASES *
	33	494+00	RT	R2-1	SPEED LIMIT 45	2.50	3.00	7.50		1-2.5"PT		0.125	
	34	494+00	LT	R2-1	SPEED LIMIT 30	2.50	3.00	7.50		1-2.5"PT		0.125	
	35	497+00	LT	R2-5C	SPEED ZONE AHEAD	2.50	3.00	7.50		1-2.5"PT		0.125	
	36	507+50	LT	SPECIAL		1.50	2.00	3.00		1-2.5"PT		0.125	*
				D9-308	1500 FT							0.125	*
	37	525+00	LT	W1-100(L)		3.00	3.00	9.00		1-2.5"PT	0.125		
				W13-1(XX)	XX M.P.H.	2.00	2.00	4.00				0.125	
	38	562+70	RT	SPECIAL	CATTLE GUARD AHEAD	3.00	3.00	9.00		1-2.5"PT	0.125		**
				W13-1(35)	XX M.P.H.	2.00	2.00	4.00				0.125	**
	39	564+70	RT	OM-3R		1.00	3.00	3.0		1-2.5"PT		0.125	**
	40	564+70	LT	OM-3L		1.00	3.00	3.0		1-2.5"PT		0.125	**
	41	564+80	RT	OM-3R		1.00	3.00	3.0		1-2.5"PT		0.125	**
	42	564+80	LT	OM-3L		1.00	3.00	3.0		1-2.5"PT		0.125	**
	43	566+80	LT	SPECIAL	CATTLE GUARD AHEAD	3.00	3.00	9.00		1-2.5"PT	0.125		**
				W13-1(35)	XX M.P.H.	2.00	2.00	4.00				0.125	**
	44	643+60	RT	D10-102(12)	MILE 12	0.83	1.50	1.25		1-2.5"PT		0.125	MP12
	45	670+00	LT	R2-1	SPEED LIMIT 45	2.50	3.00	7.50		1-2.5"PT		0.125	

	46	720+00	LT	W11-4		3.00	3.00	9.00		1-2.5"PT	0.125		
				W7-3a	NEXT 13 MILES	2.00	1.50	3.00				0.125	

11 # of existing signs
74.75 square feet

GUARDRAIL INVENTORY

- 5 guardrail segments were identified during the pavement distress survey.
- Total length of guardrail is approximately 1662 linear feet (lf).
- Identified guardrail segments approximate locations and length:
  - Mpt 9.4- 192 lf
  - Mpt 9.8- 559 lf
  - Mpt 10.8- 240 lf
  - Mpt 11.6- 389 lf
  - Mpt 11.9- 282 lf

CULVERT INVENTORY

- Culvert inventory and condition assessment were not part of the reconnaissance effort. However, culvert locations were reviewed from the existing Statewide culvert inventory which is well documented to have numerous incorrect locations and omissions. It does give a general approximation good for planning level estimates.
- 17 culverts are located within the project limits. There may be more.
- It is assumed all culverts will be replaced as part of the project. This will address the presence of some wood stave pipes and eliminate the need to extend any existing culverts if the road is widened.
- Culverts identified from the limited asbuilts had lengths ranging from 16-32 feet.

*Guardrail estimate 1662

*Large culverts (3) were replaced in 2005 - no replacement
=> Assume 25 culverts along corridor & add 50% = 38
=> Assume 24" pipes & 35' long