

Project Cost Estimates

Appendix J

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE A**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$23,000	\$23,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	16	\$800	\$12,800
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$30,000	\$30,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	41	1.00	0	41	\$14	\$574
A-5	20.08	Remove Curb and Gutter	LF	1,742	1.00	0	1,742	\$8	\$13,936
A-6	20.09	Remove Pavement	SY	6,896	1.00	0	6,896	\$3	\$20,688
A-7	20.10	Unusable Excavation	CY	14,020	1.20	-2	16,800	\$12	\$201,600
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	12,061	1.20	-2	14,500	\$15	\$217,500
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	11,952	1.20	-2	14,300	\$15	\$214,500
A-10	20.22	Leveling Course	Ton	795	1.08	-1	860	\$30	\$25,800
A-11	20.25	Geotextile (Type A)	SY	11,781	1.00	-1	11,780	\$1.50	\$17,670
A-12	20.26	Insulation Board (R-4.5)	SF	2,760	1.01	-1	2,790	\$1	\$2,790
A-13	20.26	Insulation Board (R-9)	SF	11,781	1.01	-1	11,900	\$1.50	\$17,850
A-14	20.28	Reconstruct Driveway	EA	23	1.00	0	23	\$2,000	\$46,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	3,585	1.00	0	3,585	\$25	\$89,625
A-16	30.02	Curb nose	EA	2	1.00	0	2	\$5,000	\$10,000
A-17	30.03	P.C.C. Sidewalk	SY	2,914	1.00	0	2,914	\$60	\$174,840
A-18	30.04	P.C.C. Curb Ramp	EA	11	1.00	0	11	\$2,000	\$22,000
A-19	30.10	Decorative Concrete (Red, Brick Pattern)	SY	7	1.00	0	7	\$100	\$700
A-20	40.06	A.C. Pavement (Class E)	Ton	538	1.06	0	570	\$105	\$59,850
A-21	40.06	A.C. Pavement (Class D)	Ton	806	1.06	-1	850	\$105	\$89,250
A-22	50.06	Remove and Replace Manhole Cover and Frame	EA	4	1.00	0	4	\$700	\$2,800
A-23	50.09	Adjust Cleanout to Finish Grade	EA	1	1.00	0	1	\$500	\$500
A-24	60.03	Remove and Replace Valve Box Top Section	EA	3	1.00	0	3	\$500	\$1,500
A-25	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	1	1.00	0	1	\$9,000	\$9,000
A-26	60.05	Adjust Key Box	EA	30	1.00	0	30	\$450	\$13,500
A-27	60.08	Decommission Fire Hydrant Assembly	EA	1	1.00	0	1	\$3,000	\$3,000
A-28	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$40,000	\$40,000
A-29	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-30	70.08	Remove and Reset Fence	LF	1,226	1.00	0	1,226	\$35	\$42,910
A-31	70.08	Remove Fence	LF	50	1.00	0	50	\$4	\$200
A-32	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	6,286	1.00	0	6,286	\$8	\$50,288
A-32	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	3,012	1.00	0	3,012	\$8	\$24,096
A-33	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	156	1.00	0	156	\$48	\$7,488
A-34	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	28	1.00	0	28	\$1,200	\$33,600
A-35	70.11	Standard Sign	SF	199	1.00	0	199	\$80	\$15,920
A-36	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$210,000	\$210,000
A-37	70.18	Chain Link Fence (6', 9 Gauge)	LF	432.0	1.00	0	432	\$150	\$64,800
A-38	70.22	Parking Lot Modifications	LS	1	1.00	0	1	\$15,000	\$15,000
A-39	75.02	Landscaping	LS	1	1.00	0	1	\$20,000	\$20,000
A-40	75.03	Topsoil (4" Depth)	MSF	23.0	1.00	0	23	\$500	\$11,500
A-41	75.03	Topsoil (18-inch depth)	MSF	1.9	1.00	0	2	\$1,200	\$2,400
A-42	75.04	Seeding (Schedule A)	MSF	23.0	1.00	0	23	\$500	\$11,500
								TOTAL	\$1,880,575

Schedule B - Drainage Improvements

B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$5,000	\$5,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	659	1.00	0	659	\$45	\$29,655
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	370	1.20	0	444	\$18	\$7,992
B-4	20.16	Bedding Material (Class D)	LF	659	1.00	0	659	\$18	\$11,862
B-5	20.27	Disposal of Unusable or Surplus Material	CY	390	1.20	0	468	\$20	\$9,360
B-6	55.02	Furnish, Install, and Televiser Pipe (12-Inch, Type S, CPEP)	LF	140	1.00	0	140	\$62	\$8,680
B-7	55.02	Furnish, Install, and Televiser Pipe (18-Inch, Type S, CPEP)	LF	518	1.00	0	518	\$65	\$33,670
B-8	55.04	Connect to Existing Storm Drain System	EA	1	1.00	0	1	\$2,500	\$2,500
B-9	55.05	Construct (Type I) Manhole	EA	1	1.00	0	1	\$5,000	\$5,000
B-10	55.05	Construct (Type II) Catch Basin Manhole	EA	1	1.00	0	1	\$8,000	\$8,000
B-11	55.05	Construct (Type II) Bypass Manhole	EA	1	1.00	0	1	\$15,000	\$15,000
B-12	55.09	Construct Catch Basin	EA	6	1.00	0	6	\$4,000	\$24,000
B-13	55.11	Remove Manhole	EA	3	1.00	0	3	\$1,300	\$3,900
B-14	55.11	Remove Catch Basin	EA	3	1.00	0	3	\$1,000	\$3,000
B-15	55.22	Oil and Grit Separator	EA	1	1.00	0	1	\$25,000	\$25,000
B-16	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$5,000	\$5,000
B-17	70.07	Remove Pipe	LF	564	1.00	0	564	\$20	\$11,280
								TOTAL	\$208,899

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE A**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Illumination Improvements									
C-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	2,442	1.10	-1	2,690	\$9	\$24,210
C-2	80.04	Driven Pole Luminaire Pole Foundations	EA	21	1.00	0	21	\$1,800	\$37,800
C-3	80.04	Load Center Foundation (Type 1A)	EA	1	1.00	0	1	\$4,000	\$4,000
C-4	80.05	Fixed Base Luminaire Pole	EA	13	1.00	0	13	\$3,000	\$39,000
C-5	80.06	Luminaire Arm	EA	25	1.00	0	25	\$700	\$17,500
C-6	80.07	Steel Conduit (2 inch)	FT	2,700	1.10	-1	2,970	\$17	\$50,490
C-7	80.08	Junction Box (Type IA)	EA	22	1.00	0	22	\$750	\$16,500
C-8	80.08	Junction Box (Type II)	EA	2	1.00	0	2	\$1,600	\$3,200
C-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	2,700	1.10	-1	2,970	\$4	\$11,880
C-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	1	1.00	0	1	\$7,000	\$7,000
C-11	80.23	Luminaire (40 LED, Medium, Type 2)	EA	6	1.00	0	6	\$1,150	\$6,900
C-12	80.23	Luminaire (60 LED, Medium, Type 2)	EA	8	1.00	0	8	\$1,300	\$10,400
C-13	80.23	Luminaire (80 LED, Medium, Type 3)	EA	3	1.00	0	3	\$1,450	\$4,350
C-14	80.23	Pathway Luminaire (70W, Medium, Type 2)	EA	8	1.00	0	8	\$2,000	\$16,000
C-15	80.23	Spare Luminaire (40 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,000	\$1,000
C-16	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,200	\$1,200
C-17	80.23	Spare Luminaire (80 LED, Medium, Type 3)	EA	1	1.00	0	1	\$1,450	\$1,450
C-18	80.23	Spare Pathway Luminaire (70W, Medium, Type 2)	EA	1	1.00	0	1	\$1,800	\$1,800
C-19	80.28	Remove Luminaire Pole	EA	8	1.00	0	8	\$750	\$6,000
TOTAL									\$260,680

SUMMARY

Schedule A - Roadway Improvements	\$1,880,575
Schedule B - Drainage Improvements	\$208,899
Schedule C - Illumination Improvements	\$260,680
Subtotal	\$2,350,154
15% Construction Contingency	\$350,000

Total Estimated Construction Cost: \$2,700,154

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative A	
Electric (CEA)	\$436,085
Telecommunications (ACS)	\$13,975
Cable Television (GCI)	\$164,275
Natural Gas (Enstar)	\$231,065
<i>Subtotal:</i>	<i>\$845,399</i>
<i>Construction Contingency (10%)</i>	<i>\$84,540</i>
Total Utility Relocation Cost:	\$929,939

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
CEA-1	10+37	LT	Utility pole	no conflict anticipated	none	0	EA	\$0	\$0	
CEA-2	10+37 - 11+56	LT	Overhead electric line	pole being removed	underground	127	LF	\$90	\$11,430	
CEA-3	11+56	LT	Utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-4	11+56	LT	Transformer	pole being removed	relocate	3	EA	\$14,100	\$42,300	
CEA-5	11+56	LT	overhead electric service	pole being removed	underground	70	LF	\$90	\$6,300	Service line to The Ammo Can
CEA-6	11+56 - 13+06	LT	overhead electric line	poles being removed	underground	150	LF	\$90	\$13,500	
CEA-7	13+06	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-8	13+35	CL	overhead electric line	poles being removed	underground	73	EA	\$90	\$6,570	
CEA-9	13+64	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-10	13+06 - 14+57	LT	Overhead electric line	poles being removed	underground	151	LF	\$90	\$13,590	
CEA-11	14+57	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-12	14+57	LT	Transformer	pole being removed	relocate	1	EA	\$14,100	\$14,100	
CEA-13	14+57	LT	overhead electric service	within improvements	underground	75	LF	\$75	\$5,625	Service line to apartment
CEA-14	14+57 - 16+06	LT	Overhead electric line	poles being removed	underground	149	LF	\$90	\$13,410	
CEA-15	16+06	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-16	16+06 - 17+55	LT	Overhead electric line	poles being removed	underground	299	LF	\$90	\$26,910	
CEA-17	17+55	LT	utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-18	17+55	LT	Transformer	pole being removed	relocate	1	EA	\$14,100	\$14,100	
CEA-19	17+55	LT	overhead electric service	pole being removed	underground	71	LF	\$75	\$5,325	Service line to apartment
CEA-20	17+55 - 19+07	LT	overhead electric line	poles being removed	underground	151	LF	\$90	\$13,590	
CEA-21	19+07	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-22	19+71	CL	overhead electric line	poles being removed	underground	294	LF	\$75	\$22,050	
CEA-23	20+41	RT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-24	19+07 - 20+56	LT	Overhead electric line	poles being removed	underground	150	LF	\$90	\$13,500	
CEA-25	22+85	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-26	35+25	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-27	34+17	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-28	34+16	CL	overhead electric line	pole being relocated	adjust	74	LF	\$75	\$5,550	
CEA-29	34+14	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-30	33+28	LT	overhead electric line	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
CEA-31	32+21	LT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-32	31+65	LT	overhead electric line	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
CEA-33	30+04	LT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-34	30+04	CL	Overhead electric line	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	

Construction Costs: \$335,450
 Engineering/Administration (30%): \$100,635
Total: \$436,085

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	33+28	LT	overhead T Line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-2	31+65	LT	overhead T Line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	

Construction Costs: \$10,750
 Engineering/Administration (30%): \$3,225
Total: \$13,975

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	10+20 - 22+78	CL	underground cable	protect in place	none	1258	LF	\$0	\$0	
GCI-2	10+37 - 11+56	LT	overhead C line	utility pole being removed	underground	127	LF	\$70	\$8,890	underground to next pole on Spenard
GCI-3	11+56 - 13+06	LT	overhead C line	utility poles being removed	underground	150	LF	\$70	\$10,500	
GCI-4	13+06 - 14+57	LT	overhead C line	utility poles being removed	underground	151	LF	\$70	\$10,570	
GCI-5	14+57	LT	overhead C service line	utility poles being removed	underground	98	LF	\$70	\$6,860	underground to apartment building
GCI-6	14+57 - 16+06	LT	overhead C line	utility poles being removed	underground	149	LF	\$70	\$10,430	
GCI-7	16+06 - 17+55	LT	overhead C line	utility poles being removed	underground	299	LF	\$70	\$20,930	
GCI-8	17+55	LT	overhead C service line	utility poles being removed	underground	58	LF	\$70	\$4,060	underground to apartment building
GCI-9	17+55 - 19+07	LT	overhead C line	utility poles being removed	underground	151	LF	\$70	\$10,570	
GCI-10	19+07 - 20+56	LT	overhead C line	utility poles being removed	underground	150	LF	\$70	\$10,500	
GCI-11	20+56 - 21+58	LT	overhead C line	utility poles being removed	underground	102	LF	\$70	\$7,140	
GCI-12	21+58	LT	utility pole	utility pole being removed	remove	1	EA	\$1,600	\$1,600	
GCI-13	21+58 - 23+50	LT	overhead C line	utility pole being removed	underground	194	LF	\$70	\$13,580	underground to next pole on Arctic
GCI-14	33+28	LT	overhead C line	utility pole being relocated	adjust on pole	1	EA	\$2,680	\$2,680	
GCI-15	31+65	LT	overhead C line	utility pole being relocated	adjust on pole	1	EA	\$2,680	\$2,680	
GCI-16	30+04	CL	overhead C line	utility pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	

Construction Costs: \$126,365
 Engineering/Administration (30%) \$37,910
Total: \$164,275

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	10+00 - 22+24	LT	1-1/4-inch steel	within proposed improvements	adjust/relocate	1224	LF	\$108	\$132,192	
Enstar-2	11+40	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-3	11+46	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-4	11+64	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-5	12+42	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-6	12+75	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-7	12+78	LT	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-8	13+15	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-9	13+72	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-10	14+01	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-11	14+13	LT	7/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-12	14+31	LT	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-13	14+99	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-14	14+99	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-15	15+52	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-15	16+35	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-16	17+20	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-17	19+50	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-18	21+79	CL	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-19	22+25	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-20	30+08	CL	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	

Construction Costs: \$177,742
 Engineering/Administration (30%) \$53,323
Total: \$231,065

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Alternative A

Prepared By: CRW

Ver. 5.1

[B]=local bond; [S]=state grant; [F]= federal grant

DESIGN	Design Management	\$35,252	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$460,000	
	Contractual Dsgn Sers (Add'l)	\$110,000	
	Contractual Design Survey	\$50,000	
	Contractual Design Soils	\$30,000	
	Miscellaneous	\$0	
	Subtotal		

WEBPAGE DATA	
Environ	\$0
DS	\$171,313
Prelim Dsgn	\$342,626
Final Dsgn	\$171,313
ROW	\$361,155
Utilities	\$930,000
Const	\$3,827,006
Total	\$5,803,413

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$250,000	
	CEA	\$480,000	
	ML&P	\$0	
	ACS	\$20,000	
	GCI	\$180,000	
Subtotal			\$930,000

ROW	Real Estate Services	\$140,000	
	<i>Start 20??</i> Land Acquisition	\$221,155	
Subtotal			\$361,155

CONSTRUCTION	Construction Management	\$56,404	
	<i>Start 20??</i> Inspection	\$150,410	
	Materials Testing	\$23,502	
	Survey	\$23,502	
	Miscellaneous	\$0	
	Construction Contract	\$2,350,154	
Subtotal			\$2,603,971

MISCELLANEOUS	Bond Overhead (15.0%)	\$870,512	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$352,523	
Subtotal			\$1,223,035

PROJECT TOTAL			\$5,803,413
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W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29

ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE B

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$20,000	\$20,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	16	\$800	\$12,800
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$27,000	\$27,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	41	1.00	0	41	\$14	\$574
A-5	20.08	Remove Curb and Gutter	LF	1,572	1.00	0	1,572	\$8	\$12,576
A-6	20.09	Remove Pavement	SY	6,818	1.00	0	6,818	\$3	\$20,454
A-7	20.10	Unusable Excavation	CY	12,971	1.20	-2	15,600	\$12	\$187,200
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	11,312	1.20	-2	13,600	\$15	\$204,000
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	10,694	1.20	-2	12,800	\$15	\$192,000
A-10	20.22	Leveling Course	Ton	750	1.08	-1	810	\$30	\$24,300
A-11	20.25	Geotextile (Type A)	SY	10,986	1.00	-1	10,990	\$1.50	\$16,485
A-12	20.26	Insulation Board (R-4.5)	SF	2,760	1.01	-1	2,790	\$1	\$2,790
A-13	20.26	Insulation Board (R-9)	SF	10,986	1.01	-1	11,100	\$1.50	\$16,650
A-14	20.28	Reconstruct Driveway	EA	23	1.00	0	23	\$2,000	\$46,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	3,487	1.00	0	3,487	\$25	\$87,175
A-16	30.02	Curb nose	EA	2	1.00	0	2	\$5,000	\$10,000
A-17	30.03	P.C.C. Sidewalk	SY	1,412	1.00	0	1,412	\$60	\$84,720
A-18	30.04	P.C.C. Curb Ramp	EA	10	1.00	0	10	\$2,000	\$20,000
A-19	30.10	Decorative Concrete (Red, Brick Pattern)	SY	7	1.00	0	7	\$100	\$700
A-20	40.06	A.C. Pavement (Class E)	Ton	630	1.06	0	667	\$105	\$70,035
A-21	40.06	A.C. Pavement (Class D)	Ton	760	1.06	-1	810	\$105	\$85,050
A-22	50.06	Remove and Replace Manhole Cover and Frame	EA	4	1.00	0	4	\$700	\$2,800
A-23	50.09	Adjust Cleanout to Finish Grade	EA	1	1.00	0	1	\$500	\$500
A-24	60.03	Remove and Replace Valve Box Top Section	EA	3	1.00	0	3	\$500	\$1,500
A-25	60.05	Adjust Key Box	EA	30	1.00	0	30	\$450	\$13,500
A-26	65.02	Construction Survey Measurement	LS	1	1.00	0	1	\$35,000	\$35,000
A-27	65.02	Two-Person Survey Crew	Hour	40	1.00	0	40	\$240	\$9,600
A-28	70.08	Remove and Reset Fence	LF	1,226	1.00	0	1,226	\$35	\$42,910
A-29	70.08	Remove Fence	LF	50	1.00	0	50	\$4	\$200
A-30	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	5,178	1.00	0	5,178	\$8	\$41,424
A-31	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	5,314	1.00	0	5,314	\$8	\$42,512
A-32	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	156	1.00	0	156	\$48	\$7,488
A-33	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	18	1.00	0	18	\$1,200	\$21,600
A-34	70.11	Standard Sign	SF	199	1.00	0	199	\$80	\$15,920
A-35	70.12	Traffic Maintenance	LS	1	1.00	0	1	\$180,000	\$180,000
A-36	70.18	Chain Link Fence (6', 9 Gauge)	LF	432	1.00	0	432	\$150	\$64,800
A-37	75.02	Landscaping	LS	1	1.00	0	1	\$20,000	\$20,000
A-38	75.03	Topsoil (4" Depth)	MSF	23	1.00	0	23	\$500	\$11,500
A-39	75.03	Topsoil (18-inch depth)	MSF	1.9	1.00	0	2	\$1,200	\$2,400
A-40	75.04	Seeding (Schedule A)	MSF	23	1.00	0	23	\$500	\$11,500
TOTAL									\$1,665,663

Schedule B - Drainage Improvements									
B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$5,000	\$5,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	659	1.00	0	659	\$45	\$29,655
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	370	1.20	0	444	\$18	\$7,992
B-4	20.16	Bedding Material (Class D)	LF	659	1.00	0	659	\$18	\$11,862
B-5	20.27	Disposal of Unusable or Surplus Material	CY	390	1.20	0	468	\$20	\$9,360
B-6	55.02	Furnish, Install, and Televis Pipe (12-Inch, Type S, CPEP)	LF	140	1.00	0	140	\$62	\$8,680
B-7	55.02	Furnish, Install, and Televis Pipe (18-Inch, Type S, CPEP)	LF	518	1.00	0	518	\$65	\$33,670
B-8	55.04	Connect to Existing Storm Drain System	EA	1	1.00	0	1	\$2,500	\$2,500
B-9	55.05	Construct (Type I) Manhole	EA	1	1.00	0	1	\$5,000	\$5,000
B-10	55.05	Construct (Type II) Catch Basin Manhole	EA	1	1.00	0	1	\$8,000	\$8,000
B-11	55.05	Construct (Type II) Bypass Manhole	EA	1	1.00	0	1	\$15,000	\$15,000
B-12	55.09	Construct Catch Basin	EA	6	1.00	0	6	\$4,000	\$24,000
B-13	55.11	Remove Manhole	EA	3	1.00	0	3	\$1,300	\$3,900
B-14	55.11	Remove Catch Basin	EA	3	1.00	0	3	\$1,000	\$3,000
B-15	55.22	Oil and Grit Separator	EA	1	1.00	0	1	\$25,000	\$25,000
B-16	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$5,000	\$5,000
B-17	70.07	Remove Pipe	LF	564	1.00	0	564	\$20	\$11,280
TOTAL									\$208,899

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE B**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Illumination Improvements									
C-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	2,442	1.10	-1	2,690	\$9	\$24,210
C-2	80.04	Driven Pole Luminaire Pole Foundations	EA	21	1.00	0	21	\$1,800	\$37,800
C-3	80.04	Load Center Foundation (Type 1A)	EA	1	1.00	0	1	\$4,000	\$4,000
C-4	80.05	Fixed Base Luminaire Pole	EA	13	1.00	0	13	\$3,000	\$39,000
C-5	80.06	Luminaire Arm	EA	25	1.00	0	25	\$700	\$17,500
C-6	80.07	Steel Conduit (2 inch)	FT	2,700	1.10	-1	2,970	\$17	\$50,490
C-7	80.08	Junction Box (Type IA)	EA	22	1.00	0	22	\$750	\$16,500
C-8	80.08	Junction Box (Type II)	EA	2	1.00	0	2	\$1,600	\$3,200
C-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	2,700	1.10	-1	2,970	\$4	\$11,880
C-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	1	1.00	0	1	\$7,000	\$7,000
C-11	80.23	Luminaire (40 LED, Medium, Type 2)	EA	6	1.00	0	6	\$1,150	\$6,900
C-12	80.23	Luminaire (60 LED, Medium, Type 2)	EA	8	1.00	0	8	\$1,300	\$10,400
C-13	80.23	Luminaire (80 LED, Medium, Type 3)	EA	3	1.00	0	3	\$1,450	\$4,350
C-14	80.23	Pathway Luminaire (70W, Medium, Type 2)	EA	8	1.00	0	8	\$2,000	\$16,000
C-15	80.23	Spare Luminaire (40 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,000	\$1,000
C-16	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,200	\$1,200
C-17	80.23	Spare Luminaire (80 LED, Medium, Type 3)	EA	1	1.00	0	1	\$1,450	\$1,450
C-18	80.23	Spare Pathway Luminaire (70W, Medium, Type 2)	EA	1	1.00	0	1	\$1,800	\$1,800
C-19	80.28	Remove Luminaire Pole	EA	8	1.00	0	8	\$750	\$6,000
TOTAL									\$260,680

SUMMARY

Schedule A - Roadway Improvements	\$1,665,663
Schedule B - Drainage Improvements	\$208,899
Schedule C - Illumination Improvements	\$260,680
Subtotal	\$2,135,242
15% Construction Contingency	\$320,000

Total Estimated Construction Cost: \$2,455,242

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative B	
Electric (CEA)	\$386,165
Telecommunications (ACS)	\$13,975
Cable Television (GCI)	\$164,275
Natural Gas (Enstar)	\$228,140
<i>Subtotal:</i>	<i>\$792,554</i>
<i>Construction Contingency (10%)</i>	<i>\$79,255</i>
Total Utility Relocation Cost:	\$871,810

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
CEA-1	10+37	LT	Utility pole	protect in place	none	1	EA	\$0	\$0	
CEA-2	10+37 - 11+56	LT	Overhead electric line	pole being removed	underground	127	LF	\$90	\$11,430	
CEA-3	11+56	LT	Utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-4	11+56	LT	Transformer	pole being removed	relocate	3	EA	\$14,100	\$42,300	
CEA-5	11+56	LT	overhead electric service	pole being removed	underground	70	LF	\$90	\$6,300	Service line to The Ammo Can
CEA-6	11+56 - 13+06	LT	overhead electric line	poles being removed	underground	150	LF	\$90	\$13,500	
CEA-7	13+06	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-8	13+35	CL	overhead electric line	poles being removed	underground	73	EA	\$90	\$6,570	
CEA-9	13+64	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-10	13+06 - 14+57	LT	Overhead electric line	poles being removed	underground	151	LF	\$90	\$13,590	
CEA-11	14+57	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-12	14+57	LT	Transformer	pole being removed	relocate	1	EA	\$14,100	\$14,100	
CEA-13	14+57	LT	overhead electric service	within improvements	underground	75	LF	\$75	\$5,625	Service line to apartment
CEA-14	14+57 - 16+06	LT	Overhead electric line	poles being removed	underground	149	LF	\$90	\$13,410	
CEA-15	16+06	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-16	16+06 - 17+55	LT	Overhead electric line	poles being removed	underground	299	LF	\$90	\$26,910	
CEA-17	17+55	LT	utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-18	17+55	LT	Transformer	pole being removed	relocate	1	EA	\$14,100	\$14,100	
CEA-19	17+55	LT	overhead electric service	pole being removed	underground	71	LF	\$75	\$5,325	Service line to apartment
CEA-20	17+55 - 19+07	LT	overhead electric line	poles being removed	underground	151	LF	\$90	\$13,590	
CEA-21	19+07	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-22	19+71	CL	overhead electric line	poles being removed	underground	294	LF	\$75	\$22,050	
CEA-23	20+41	RT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-24	19+07 - 20+56	LT	Overhead electric line	poles being removed	underground	150	LF	\$90	\$13,500	
CEA-25	22+85	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-26	35+25	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-27	34+17	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-28	34+16	CL	overhead electric line	pole being relocated	adjust	74	LF	\$75	\$5,550	
CEA-29	34+14	RT	Utility pole	within improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-30	33+01	RT	Utility pole	protect in place	none	1	EA	\$0	\$0	

Construction Costs: \$297,050
 Engineering/Administration (30%): \$89,115
Total: \$386,165

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	33+28	LT	overhead T Line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-2	31+65	LT	overhead T Line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	

Construction Costs: \$10,750
 Engineering/Administration (30%): \$3,225
Total: \$13,975

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	10+20 - 22+78	CL	underground cable	protect in place	none	1258	LF	\$0	\$0	
GCI-2	10+37 - 11+56	LT	overhead C line	utility pole being removed	underground	127	LF	\$70	\$8,890	underground to next pole on Spenard
GCI-3	11+56 - 13+06	LT	overhead C line	utility poles being removed	underground	150	LF	\$70	\$10,500	
GCI-4	13+06 - 14+57	LT	overhead C line	utility poles being removed	underground	151	LF	\$70	\$10,570	
GCI-5	14+57	LT	overhead C service line	utility poles being removed	underground	98	LF	\$70	\$6,860	underground to apartment building
GCI-6	14+57 - 16+06	LT	overhead C line	utility poles being removed	underground	149	LF	\$70	\$10,430	
GCI-7	16+06 - 17+55	LT	overhead C line	utility poles being removed	underground	299	LF	\$70	\$20,930	
GCI-8	17+55	LT	overhead C service line	utility poles being removed	underground	58	LF	\$70	\$4,060	underground to apartment building
GCI-9	17+55 - 19+07	LT	overhead C line	utility poles being removed	underground	151	LF	\$70	\$10,570	
GCI-10	19+07 - 20+56	LT	overhead C line	utility poles being removed	underground	150	LF	\$70	\$10,500	
GCI-11	20+56 - 21+58	LT	overhead C line	utility poles being removed	underground	102	LF	\$70	\$7,140	
GCI-12	21+58	LT	utility pole	utility pole being removed	remove	1	EA	\$1,600	\$1,600	
GCI-13	21+58 - 23+50	LT	overhead C line	utility pole being removed	underground	194	LF	\$70	\$13,580	underground to next pole on Arctic
GCI-14	33+28	LT	overhead C line	utility pole being relocated	adjust on pole	1	EA	\$2,680	\$2,680	
GCI-15	31+65	LT	overhead C line	utility pole being relocated	adjust on pole	1	EA	\$2,680	\$2,680	
GCI-16	30+04	CL	overhead C line	utility pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	

Construction Costs: \$126,365
 Engineering/Administration (30%) \$37,910
Total: \$164,275

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	10+00 - 22+24	LT	1-1/4-inch steel	within proposed improvements	adjust/relocate	1224	LF	\$108	\$132,192	
Enstar-2	11+40	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-3	11+46	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-4	11+64	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-5	12+42	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-6	12+75	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-7	12+78	LT	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-8	13+15	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-9	13+72	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-10	14+01	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-11	14+13	LT	7/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-12	14+31	LT	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-13	14+99	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-14	14+99	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-15	15+52	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-15	16+35	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-16	17+20	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-17	19+50	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-18	21+79	CL	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-19	22+25	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	

Construction Costs: \$175,492
 Engineering/Administration (30%) \$52,648
Total: \$228,140

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Prepared By: CRW
 Alternative B

Ver. 5.1

[B]=local bond; [S]=state grant; [F]= federal grant

DESIGN	Design Management	\$32,029	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$460,000	
	Contractual Dsgn Sers (Add'l)	\$110,000	
	Contractual Design Survey	\$50,000	
	Contractual Design Soils	\$30,000	
	Miscellaneous	\$0	
Subtotal			\$682,029

WEBPAGE DATA	
Environ	\$0
DS	\$170,507
Prelim Dsgn	\$341,014
Final Dsgn	\$170,507
ROW	\$144,102
Utilities	\$870,000
Const	\$3,459,475
Total	\$5,155,606

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$250,000	
	CEA	\$420,000	
	ML&P	\$0	
	ACS	\$20,000	
	GCI	\$180,000	
Subtotal			\$870,000

ROW	Real Estate Services	\$60,000	
	<i>Start 20??</i> Land Acquisition	\$84,102	
Subtotal			\$144,102

CONSTRUCTION	Construction Management	\$51,246	
	<i>Start 20??</i> Inspection	\$136,655	
	Materials Testing	\$21,352	
	Survey	\$21,352	
	Miscellaneous	\$0	
	Construction Contract	\$2,135,242	
Subtotal			\$2,365,848

MISCELLANEOUS	Bond Overhead (15.0%)	\$773,341	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$320,286	
Subtotal			\$1,093,627

PROJECT TOTAL			<u><u>\$5,155,606</u></u>
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W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29

ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE C

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$16,000	\$16,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	16	\$800	\$12,800
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$32,000	\$32,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	41	1.00	0	41	\$14	\$574
A-5	20.08	Remove Curb and Gutter	LF	1,572	1.00	0	1,572	\$8	\$12,576
A-6	20.09	Remove Pavement	SY	5,716	1.00	0	5,716	\$3	\$17,148
A-7	20.10	Unusable Excavation	CY	10,324	1.20	-2	12,400	\$12	\$148,800
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	8,811	1.20	-2	10,600	\$15	\$159,000
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	8,296	1.20	-2	10,000	\$15	\$150,000
A-10	20.22	Leveling Course	Ton	565	1.08	-1	610	\$30	\$18,300
A-11	20.25	Geotextile (Type A)	SY	8,760	1.00	-1	8,760	\$1.50	\$13,140
A-12	20.26	Insulation Board (R-4.5)	SF	2,760	1.01	-1	2,790	\$1	\$2,790
A-13	20.26	Insulation Board (R-9)	SF	8,760	1.01	-1	8,850	\$1.50	\$13,275
A-14	20.28	Reconstruct Driveway	EA	23	1.00	0	23	\$2,000	\$46,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	2,557	1.00	0	2,557	\$25	\$63,925
A-16	30.02	Curb nose	EA	2	1.00	0	2	\$5,000	\$10,000
A-17	30.03	P.C.C. Sidewalk	SY	1,366	1.00	0	1,366	\$60	\$81,960
A-18	30.04	P.C.C. Curb Ramp	EA	10	1.00	0	10	\$2,000	\$20,000
A-19	30.10	Decorative Concrete (Red, Brick Pattern)	SY	7	1.00	0	7	\$100	\$700
A-20	40.06	A.C. Pavement (Class E)	Ton	503	1.06	0	533	\$105	\$55,965
A-21	40.06	A.C. Pavement (Class D)	Ton	568	1.06	-1	600	\$105	\$63,000
A-22	50.06	Remove and Replace Manhole Cover and Frame	EA	3	1.00	0	3	\$700	\$2,100
A-23	50.09	Adjust Cleanout to Finish Grade	EA	1	1.00	0	1	\$500	\$500
A-24	60.03	Remove and Replace Valve Box Top Section	EA	3	1.00	0	3	\$500	\$1,500
A-25	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	1	1.00	0	1	\$9,000	\$9,000
A-26	60.05	Adjust Key Box	EA	30	1.00	0	30	\$450	\$13,500
A-27	60.08	Decommission Fire Hydrant Assembly	EA	1	1.00	0	1	\$3,000	\$3,000
A-28	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$28,000	\$28,000
A-29	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-30	70.08	Remove and Reset Fence	LF	508	1.00	0	508	\$35	\$17,780
A-31	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	5,280	1.00	0	5,280	\$8	\$42,240
A-32	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	5,472	1.00	0	5,472	\$8	\$43,776
A-33	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	167	1.00	0	167	\$48	\$8,016
A-34	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	18	1.00	0	18	\$1,200	\$21,600
A-35	70.11	Standard Sign	SF	137	1.00	0	137	\$80	\$10,960
A-36	70.11	Remove and Reset Park Sign	EA	1	1.00	0	1	\$1,000	\$1,000
A-37	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$140,000	\$140,000
A-38	75.02	Landscaping	LS	1	1.00	0	1	\$20,000	\$20,000
A-39	75.03	Topsoil (4" Depth)	MSF	17.4	1.00	0	17	\$500	\$8,500
A-40	75.03	Topsoil (18-inch depth)	MSF	1.4	1.00	0	1	\$1,200	\$1,200
A-41	75.04	Seeding (Schedule A)	MSF	17.4	1.00	0	17	\$500	\$8,500
								TOTAL	\$1,328,725

Schedule B - Drainage Improvements									
B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$5,000	\$5,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	659	1.00	0	659	\$45	\$29,655
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	370	1.20	0	444	\$18	\$7,992
B-4	20.16	Bedding Material (Class D)	LF	659	1.00	0	659	\$18	\$11,862
B-5	20.27	Disposal of Unusable or Surplus Material	CY	390	1.20	0	468	\$20	\$9,360
B-6	55.02	Furnish, Install, and Televiser Pipe (12-Inch, Type S, CPEP)	LF	140	1.00	0	140	\$62	\$8,680
B-7	55.02	Furnish, Install, and Televiser Pipe (18-Inch, Type S, CPEP)	LF	518	1.00	0	518	\$65	\$33,670
B-8	55.04	Connect to Existing Storm Drain System	EA	1	1.00	0	1	\$2,500	\$2,500
B-9	55.05	Construct (Type I) Manhole	EA	1	1.00	0	1	\$5,000	\$5,000
B-10	55.05	Construct (Type II) Catch Basin Manhole	EA	1	1.00	0	1	\$8,000	\$8,000
B-11	55.05	Construct (Type II) Bypass Manhole	EA	1	1.00	0	1	\$15,000	\$15,000
B-12	55.09	Construct Catch Basin	EA	6	1.00	0	6	\$4,000	\$24,000
B-13	55.11	Remove Manhole	EA	3	1.00	0	3	\$1,300	\$3,900
B-14	55.11	Remove Catch Basin	EA	3	1.00	0	3	\$1,000	\$3,000
B-15	55.22	Oil and Grit Separator	EA	1	1.00	0	1	\$25,000	\$25,000
B-16	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$5,000	\$5,000
B-17	70.07	Remove Pipe	LF	564	1.00	0	564	\$20	\$11,280
								TOTAL	\$208,899

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE C**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Illumination Improvements									
C-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	1,843	1.10	-1	2,030	\$9	\$18,270
C-2	80.04	Driven Pole Luminaire Pole Foundations	EA	15	1.00	0	15	\$1,800	\$27,000
C-3	80.04	Load Center Foundation (Type 1A)	EA	1	1.00	0	1	\$4,000	\$4,000
C-4	80.05	Fixed Base Luminaire Pole	EA	15	1.00	0	15	\$3,000	\$45,000
C-5	80.06	Luminaire Arm	EA	16	1.00	0	16	\$700	\$11,200
C-6	80.07	Steel Conduit (2 inch)	FT	2,140	1.10	-1	2,350	\$17	\$39,950
C-7	80.08	Junction Box (Type IA)	EA	16	1.00	0	16	\$750	\$12,000
C-8	80.08	Junction Box (Type II)	EA	2	1.00	0	2	\$1,600	\$3,200
C-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	2,140	1.10	-1	2,350	\$4	\$9,400
C-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	1	1.00	0	1	\$7,000	\$7,000
C-11	80.23	Luminaire (40 LED, Medium, Type 2)	EA	2	1.00	0	2	\$1,150	\$2,300
C-12	80.23	Luminaire (60 LED, Medium, Type 2)	EA	8	1.00	0	8	\$1,300	\$10,400
C-13	80.23	Pathway Luminaire (70W, Medium, Type 2)	EA	6	1.00	0	6	\$1,450	\$8,700
C-14	80.23	Spare Luminaire (40 LED, Medium, Type 2)	EA	1	1.00	0	1	\$800	\$800
C-15	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,000	\$1,000
C-16	80.23	Spare Pathway Luminaire (70W, Medium, Type 2)	EA	1	1.00	0	1	\$1,800	\$1,800
C-17	80.28	Remove Luminaire Pole	EA	8	1.00	0	8	\$750	\$6,000
								TOTAL	\$208,020

SUMMARY	
Schedule A - Roadway Improvements	\$1,328,725
Schedule B - Drainage Improvements	\$208,899
Schedule C - Illumination Improvements	\$208,020
<u>Subtotal</u>	<u>\$1,745,644</u>
15% Construction Contingency	\$260,000

Total Estimated Construction Cost: \$2,005,644

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative C	
Electric (CEA)	\$377,975
Electric (ML&P)	\$65,000
Telecommunications (ACS)	\$0
Cable Television (GCI)	\$150,319
Natural Gas (Enstar)	\$228,140
<i>Subtotal:</i>	<i>\$821,434</i>
<i>Construction Contingency (10%)</i>	<i>\$82,143</i>
Total Utility Relocation Cost:	\$903,577

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
CEA-1	10+37	LT	Utility pole	no conflict anticipated	none	0	EA	\$0	\$0	
CEA-2	10+37 - 11+56	LT	Overhead electric line	pole being removed	underground	127	LF	\$90	\$11,430	
CEA-3	11+56	LT	Utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-4	11+56	LT	Transformer	pole being removed	relocate	3	EA	\$14,100	\$42,300	
CEA-5	11+56	LT	overhead electric service	pole being removed	underground	70	LF	\$90	\$6,300	Service line to The Ammo Can
CEA-6	11+56 - 13+06	LT	overhead electric line	poles being removed	underground	150	LF	\$90	\$13,500	
CEA-7	13+06	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-8	13+35	CL	overhead electric line	poles being removed	underground	73	EA	\$90	\$6,570	
CEA-9	13+64	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-10	13+06 - 14+57	LT	Overhead electric line	poles being removed	underground	151	LF	\$90	\$13,590	
CEA-11	14+57	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-12	14+57	LT	Transformer	pole being removed	relocate	1	EA	\$14,100	\$14,100	
CEA-13	14+57	LT	overhead electric service	within improvements	underground	75	LF	\$75	\$5,625	Service line to apartment
CEA-14	14+57 - 16+06	LT	Overhead electric line	poles being removed	underground	149	LF	\$90	\$13,410	
CEA-15	16+06	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-16	16+06 - 17+55	LT	Overhead electric line	poles being removed	underground	299	LF	\$90	\$26,910	
CEA-17	17+55	LT	utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-18	17+55	LT	Transformer	pole being removed	relocate	1	EA	\$14,100	\$14,100	
CEA-19	17+55	LT	overhead electric service	pole being removed	underground	71	LF	\$75	\$5,325	Service line to apartment
CEA-20	17+55 - 19+07	LT	overhead electric line	poles being removed	underground	151	LF	\$90	\$13,590	
CEA-21	19+07	LT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-22	19+71	CL	overhead electric line	poles being removed	underground	294	LF	\$75	\$22,050	
CEA-23	20+41	RT	Utility pole	pole being removed	remove	1	EA	\$1,600	\$1,600	
CEA-24	19+07 - 20+56	LT	Overhead electric line	poles being removed	underground	150	LF	\$90	\$13,500	
CEA-25	22+80	RT	LC-MC	within improvements	relocate	1	EA	\$5,650	\$5,650	
CEA-26	22+85	RT	Utility pole	within improvements	relocate	1	EA	\$50,000	\$50,000	

Construction Costs: \$290,750
 Engineering/Administration (30%): \$87,225
Total: \$377,975

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-1	In Parcel #196	RT	utility pole	within improvements	relocate	1	EA	\$50,000	\$50,000	

Construction Costs: \$50,000

Engineering/Administration (30%): \$15,000

Total: \$65,000

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	10+20 - 22+78	CL	underground cable	protect in place	none	1258	LF	\$0	\$0	
GCI-2	10+37 - 11+56	LT	overhead C line	utility pole being removed	underground	127	LF	\$70	\$8,890	underground to next pole on Spenard
GCI-3	11+56 - 13+06	LT	overhead C line	utility poles being removed	underground	150	LF	\$70	\$10,500	
GCI-4	13+06 - 14+57	LT	overhead C line	utility poles being removed	underground	151	LF	\$70	\$10,570	
GCI-5	14+57	LT	overhead C service line	utility poles being removed	underground	98	LF	\$70	\$6,860	underground to apartment building
GCI-6	14+57 - 16+06	LT	overhead C line	utility poles being removed	underground	149	LF	\$70	\$10,430	
GCI-7	16+06 - 17+55	LT	overhead C line	utility poles being removed	underground	299	LF	\$70	\$20,930	
GCI-8	17+55	LT	overhead C service line	utility poles being removed	underground	58	LF	\$70	\$4,060	underground to apartment building
GCI-9	17+55 - 19+07	LT	overhead C line	utility poles being removed	underground	151	LF	\$70	\$10,570	
GCI-10	19+07 - 20+56	LT	overhead C line	utility poles being removed	underground	150	LF	\$70	\$10,500	
GCI-11	20+56 - 21+58	LT	overhead C line	utility poles being removed	underground	102	LF	\$70	\$7,140	
GCI-12	21+58	LT	utility pole	utility pole being removed	remove	1	EA	\$1,600	\$1,600	
GCI-13	21+58 - 23+50	LT	overhead C line	utility pole being removed	underground	194	LF	\$70	\$13,580	underground to next pole on Arctic

Construction Costs: \$115,630
 Engineering/Administration (30%) \$34,689
Total: \$150,319

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	10+00 - 22+24	LT	1-1/4-inch steel	within proposed improvements	adjust/relocate	1224	LF	\$108	\$132,192	
Enstar-2	11+40	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-3	11+46	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-4	11+64	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-5	12+42	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-6	12+75	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-7	12+78	LT	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-8	13+15	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-9	13+72	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-10	14+01	LT	1/2-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-11	14+13	LT	7/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-12	14+31	LT	5/8-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-13	14+99	LT	5/8-inch copper service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-14	14+99	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-15	15+52	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-15	16+35	LT	3/4-inch steel service	within proposed improvemnts	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-16	17+20	LT	3/4-inch steel service	within proposed improvemnts	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-17	19+50	LT	3/4-inch steel service	within proposed improvemnts	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-18	21+79	CL	5/8-inch plastic service	within proposed improvemnts	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-19	22+25	LT	3/4-inch steel service	within proposed improvemnts	adjust/relocate	1	EA	\$2,250	\$2,250	

Construction Costs: \$175,492
 Engineering/Administration (30%) \$52,648
Total: \$228,140

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Alternative C

Prepared By: CRW

Ver. 5.1

[B]=local bond; [S]=state grant; [F]= federal grant

DESIGN	Design Management	\$26,185	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$460,000	
	Contractual Dsgn Sers (Add'l)	\$110,000	
	Contractual Design Survey	\$50,000	
	Contractual Design Soils	\$30,000	
	Miscellaneous	\$0	
Subtotal			\$676,185

WEBPAGE DATA	
Environ	\$0
DS	\$169,046
Prelim Dsgn	\$338,092
Final Dsgn	\$169,046
ROW	\$258,302
Utilities	\$910,000
Const	\$2,917,266
Total	\$4,761,752

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$250,000	
	CEA	\$420,000	
	ML&P	\$70,000	
	ACS	\$0	
	GCI	\$170,000	
Subtotal			\$910,000

ROW	Real Estate Services	\$140,000	
	<i>Start 20??</i> Land Acquisition	\$118,302	
Subtotal			\$258,302

CONSTRUCTION	Construction Management	\$43,641	
	<i>Start 20??</i> Inspection	\$116,958	
	Materials Testing	\$17,456	
	Survey	\$17,456	
	Miscellaneous	\$0	
	Construction Contract	\$1,745,644	
Subtotal			\$1,941,156

MISCELLANEOUS	Bond Overhead (15.0%)	\$714,263	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$261,847	
Subtotal			\$976,109

PROJECT TOTAL			\$4,761,752
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**W. 32nd Avenue / E. 33rd Avenue Upgrades - Arctic Boulevard. to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 1**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$94,000	\$94,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	16	\$800	\$12,800
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$60,000	\$60,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	3,971	1.00	0	3,971	\$14	\$55,594
A-5	20.08	Remove Curb and Gutter	LF	11,796	1.00	0	11,796	\$8	\$94,368
A-6	20.09	Remove Pavement	SY	25,114	1.00	0	25,114	\$3	\$75,342
A-7	20.10	Unusable Excavation	CY	59,257	1.20	-2	71,100	\$12	\$853,200
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	51,354	1.20	-2	61,600	\$15	\$924,000
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	45,856	1.20	-2	55,000	\$15	\$825,000
A-10	20.22	Leveling Course	Ton	3,636	1.08	-1	3,930	\$30	\$117,900
A-11	20.25	Geotextile (Type A)	SY	51,922	1.00	-1	51,920	\$1.50	\$77,880
A-12	20.26	Insulation Board (R-4.5)	SF	21,729	1.01	-1	21,950	\$1	\$21,950
A-13	20.26	Insulation Board (R-9)	SF	387,926	1.01	-1	391,810	\$1.50	\$587,715
A-14	20.28	Reconstruct Driveway	EA	47	1.00	0	47	\$2,000	\$94,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	12,389	1.00	0	12,389	\$25	\$309,725
A-16	30.02	Curb nose	EA	4	1.00	0	4	\$5,000	\$20,000
A-17	30.03	P.C.C. Sidewalk	SY	3,368	1.00	0	3,368	\$60	\$202,080
A-18	30.04	P.C.C. Curb Ramp	EA	92	1.00	0	92	\$2,000	\$184,000
A-19	30.05	P.C.C. Retaining Wall	CY	96	1.00	0	96	\$1,500	\$144,000
A-20	30.10	Decorative Concrete (Red, Brick Pattern)	SY	125	1.00	0	125	\$100	\$12,500
A-21	40.06	A.C. Pavement (Class E)	Ton	3,376	1.06	0	3,579	\$105	\$375,795
A-22	40.06	A.C. Pavement (Class D)	Ton	3,735	1.06	-1	3,960	\$105	\$415,800
A-23	50.06	Remove and Replace Manhole Cover and Frame	EA	11	1.00	0	11	\$700	\$7,700
A-24	50.09	Adjust Cleanout to Finish Grade	EA	1	1.00	0	1	\$500	\$500
A-25	55.08	Adjust Storm Drain Manhole Ring	EA	10	1.00	0	10	\$1,600	\$16,000
A-26	60.03	Remove and Replace Valve Box Top Section	EA	35	1.00	0	35	\$500	\$17,500
A-27	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	10	1.00	0	10	\$9,000	\$90,000
A-28	60.05	Adjust Key Box	EA	32	1.00	0	32	\$450	\$14,400
A-29	60.08	Decommission Fire Hydrant Assembly	EA	10	1.00	0	10	\$3,000	\$30,000
A-30	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$138,000	\$138,000
A-31	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-32	70.08	Remove and Reset Fence	LF	2,096	1.00	0	2,096	\$35	\$73,360
A-33	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	10,863	1.00	0	10,863	\$8	\$86,904
A-34	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	21,454	1.00	0	21,454	\$8	\$171,632
A-35	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" Yellow) (250 Mil)	LF	1,525	1.00	0	1,525	\$36	\$54,900
A-36	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" White) (250 Mil)	LF	595	1.00	0	595	\$36	\$21,420
A-37	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	860	1.00	0	860	\$48	\$41,280
A-38	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Words and Symbols) (250 Mil)	EA	10	1.00	0	10	\$850	\$8,500
A-39	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	26	1.00	0	26	\$1,200	\$31,200
A-40	70.11	Standard Sign	SF	478	1.00	0	478	\$80	\$38,240
A-41	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$850,000	\$850,000
A-42	70.12	Remove and Replace Wood Bollard	EA	52	1.00	0	52	\$350	\$18,200
A-43	70.22	Parking Lot Modifications	LS	1	1.00	0	1	\$30,000	\$30,000
A-44	75.02	Landscaping	LS	1	1.00	0	1	\$75,000	\$75,000
A-45	75.03	Topsoil (4" Depth)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-46	75.03	Topsoil (18-inch depth)	MSF	5.1	1.00	0	5	\$1,200	\$6,000
A-47	75.04	Seeding (Schedule A)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-48	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
TOTAL									\$7,451,985

Schedule B - Drainage Improvements

B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$20,000	\$20,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	4,082	1.00	0	4,082	\$35	\$142,870
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	1,000	1.20	0	1,200	\$20	\$24,000
B-4	20.16	Bedding Material (Class D)	LF	4,082	1.00	0	4,082	\$34	\$138,788
B-5	20.27	Disposal of Unusable or Surplus Material	CY	1,796	1.20	0	2,155	\$18	\$38,790
B-6	55.02	Furnish, Install, and Televis Pipe (12-Inch, Type S, CPEP)	LF	1,013	1.00	0	1,013	\$62	\$62,806
B-7	55.02	Furnish, Install, and Televis Pipe (18-Inch, Type S, CPEP)	LF	2,541	1.00	0	2,541	\$65	\$165,165
B-8	55.02	Furnish, Install, and Televis Pipe (24-Inch, Type S, CPEP)	LF	529	1.00	0	529	\$70	\$37,030
B-9	55.04	Connect to Existing Storm Drain System	EA	7	1.00	0	7	\$3,000	\$21,000
B-10	55.05	Construct (Type I) Manhole	EA	9	1.00	0	9	\$6,000	\$54,000
B-11	55.05	Construct (Type II) Catch Basin Manhole	EA	11	1.00	0	11	\$9,000	\$99,000
B-12	55.05	Construct (Type II) Bypass Manhole	EA	2	1.00	0	2	\$15,000	\$30,000
B-13	55.09	Construct Catch Basin	EA	31	1.00	0	31	\$4,000	\$124,000
B-14	55.11	Remove Manhole	EA	6	1.00	0	6	\$1,300	\$7,800
B-15	55.11	Remove Catch Basin	EA	16	1.00	0	16	\$1,200	\$19,200
B-16	55.22	Oil and Grit Separator	EA	2	1.00	0	2	\$30,000	\$60,000
B-17	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$30,000	\$30,000
B-18	70.07	Remove Pipe	LF	1,534	1.00	0	1,534	\$21	\$32,214
TOTAL									\$1,106,663

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Arctic Boulevard. to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 1**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Signalization Improvements									
C-1	80.01	Temporary Signalization	L.S.	1	1.00	0	1	\$30,000	\$30,000
C-2	80.02	Trench and Backfill (2'W x 3.5'D)	L.F.	1,068	1.30	-1	1,390	\$15	\$20,850
C-3	80.04	Signal Mast Arm Pole Foundation	Each	1	1.00	0	1	\$6,000	\$6,000
C-4	80.05	Combination Signal/Luminaire Pole (40' Height)	Each	1	1.00	0	1	\$14,500	\$14,500
C-5	80.05	Signal Mast Arm	Each	1	1.00	0	1	\$5,000	\$5,000
C-6	80.06	Luminaire Arm 18 Ft. Length	Each	1	1.00	0	1	\$500	\$500
C-7	80.07	GRC Steel Conduit (2 inch)	L.F.	620	1.20	-1	740	\$16	\$11,840
C-8	80.08	Remove Junction Box	Each	14	1.00	0	14	\$400	\$5,600
C-9	80.08	Junction Box (Type IA)	Each	13	1.00	0	13	\$600	\$7,800
C-10	80.08	Junction Box (Type II)	Each	1	1.00	0	1	\$3,500	\$3,500
C-11	80.10	3 Conductor 14 AWG IMSA 20-1 Cable	L.F.	716	1.20	-1	860	\$4	\$3,440
C-12	80.10	5 Conductor 14 AWG IMSA 20-1 Cable	L.F.	716	1.20	-1	860	\$5	\$4,300
C-13	80.10	7 Conductor 14 AWG IMSA 20-1 Cable	L.F.	669	1.20	-1	800	\$5	\$4,000
C-14	80.10	3 Conductor 20 AWG IMSA 20-1 Cable	L.F.	223	1.20	-1	270	\$5	\$1,350
C-15	80.10	3 Conductor 8 AWG Type XHHW-2 Cable	L.F.	223	1.20	-1	270	\$4	\$945
C-16	80.10	25 Pair 19 AWG PE-39 Telemetry Cable	L.F.	1,185	1.20	-1	1,420	\$8	\$11,360
C-17	80.10	6 Conductor 20 /22 Radar Detection Cable	L.F.	907	1.20	-1	1,090	\$4	\$4,360
C-18	80.10	7 Pair 18 AWG Tray Cable	L.F.	1,556	1.20	-1	1,870	\$5	\$9,350
C-19	80.18	Install Loop Detector - New Work	Each	50	1.00	0	50	\$1,000	\$50,000
C-20	80.18	Install Optical Preemption Detector (721 Opticom with Single Confirmation)	Each	1	1.00	0	1	\$2,500	\$2,500
C-21	80.18	Radar Detection Unit	Each	6	1.00	0	6	\$7,500	\$45,000
C-22	80.18	12 Inch 3 Face LED Signal Head (Overhead Mount)	Each	1	1.00	0	1	\$5,000	\$5,000
C-23	80.18	12 Inch 3 Face LED Signal Head (Side Mount)	Each	1	1.00	0	1	\$5,000	\$5,000
C-24	80.18	12 Inch 5 Face LED Signal Head (Overhead Mount)	Each	1	1.00	0	1	\$6,000	\$6,000
C-25	80.18	12 Inch 5 Face LED Signal Head (Side Mount)	Each	1	1.00	0	1	\$6,000	\$6,000
C-26	80.20	Pedestrian LED Signal Head	Each	2	1.00	0	2	\$2,000	\$4,000
C-27	80.21	Pedestrian Pushbutton Assembly	Each	2	1.00	0	2	\$750	\$1,500
C-28	80.23	Luminaire (400 Watt HPS, Type III, Medium, Full Cut Off)	Each	1	1.00	0	1	\$2,000	\$2,000
C-29	80.28	Remove Signal Mast Arm or Combination Pole	Each	1	1.00	0	1	\$3,000	\$3,000
TOTAL									\$274,695

Schedule D - Illumination Improvements									
D-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	6,291	1.10	-1	6,920	\$9	\$62,280
D-2	80.04	Driven Pole Luminaire Pole Foundations	EA	58	1.00	0	58	\$1,800	\$104,400
D-3	80.04	Load Center Foundation (Type 1A)	EA	3	1.00	0	3	\$4,000	\$12,000
D-4	80.05	Fixed Base Luminaire Pole	EA	58	1.00	0	58	\$3,000	\$174,000
D-5	80.06	Luminaire Arm	EA	58	1.00	0	58	\$700	\$40,600
D-6	80.07	Steel Conduit (2 inch)	FT	7,340	1.10	-1	8,070	\$17	\$137,190
D-7	80.08	Junction Box (Type IA)	EA	58	1.00	0	58	\$750	\$43,500
D-8	80.08	Junction Box (Type II)	EA	6	1.00	0	6	\$1,600	\$9,600
D-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	7,340	1.10	-1	8,070	\$4	\$32,280
D-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	3	1.00	0	3	\$7,000	\$21,000
D-11	80.23	Luminaire (60 LED, Medium, Type 2)	EA	39	1.00	0	39	\$1,150	\$44,850
D-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	7	1.00	0	7	\$1,300	\$9,100
D-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	12	1.00	0	12	\$1,450	\$17,400
D-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	4	1.00	0	4	\$1,000	\$4,000
D-15	80.23	Spare Luminaire (80 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,200	\$1,200
D-16	80.23	Spare Luminaire (100 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,450	\$1,450
D-17	80.28	Remove Luminaire Pole	EA	24	1.00	0	24	\$750	\$18,000
TOTAL									\$732,850

SUMMARY	
Schedule A - Roadway Improvements	\$7,451,985
Schedule B - Drainage Improvements	\$1,106,663
Schedule C - Signalization Improvements	\$274,695
Schedule D - Illumination Improvements	\$732,850
Subtotal	\$9,566,193
15% Construction Contingency	\$1,430,000
Total Estimated Construction Cost:	\$10,996,193

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative 1	
Electric (CEA)	\$245,830
Electric (ML&P)	\$596,492
Telecommunications (ACS)	\$126,503
Cable Television (GCI)	\$546,488
Natural Gas (Enstar)	\$556,165
<i>Subtotal:</i>	<i>\$2,071,477</i>
<i>Construction Contingency (10%)</i>	<i>\$207,148</i>
Total Utility Relocation Cost:	\$2,278,625

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
CEA-1	99+67	RT	utility pole	no conflict anticipated	none	0	EA	\$0	\$0	
CEA-2	99+67	CL	overhead crossing	no conflict anticipated	none	50	LF	\$0	\$0	
CEA-3	99+67 - 100+44	RT	overhead crossing	pole being removed	underground	77	LF	\$90	\$6,930	
CEA-4	100+44	RT	utility pole	within improvements	remove	1	EA	\$1,600		
CEA-5	100+44	CL	overhead crossing	pole being removed	underground	142	LF	\$90	\$12,780	
CEA-6	100+44 - 114+37	RT	overhead electric line	poles being removed	underground	1591	LF	\$90	\$143,190	including crossing at Eureka; continue underground to next northern pole
CEA-7	101+89	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-8	101+89	RT	overhead electric service	pole being removed	underground	1	EA	\$5,000	\$5,000	
CEA-9	105+00	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-10	105+00	RT	overhead electric service	pole being removed	underground	1	EA	\$5,000	\$5,000	
CEA-11	106+89	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-12	106+89	RT	underground electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-13	108+25	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-14	108+99	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-15	108+99	RT	underground electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-16	110+99	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-17	110+99	RT	overhead electric service	pole being removed	underground	1	EA	\$5,000	\$5,000	
CEA-18	112+84	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
CEA-19	114+37	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	

Construction Costs: \$189,100
 Engineering/Administration (30%): \$56,730
Total: \$245,830

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-1	99+67	CL	overhead crossing	no conflict anticipated	none	50	LF	\$0	\$0	
MLP-2	99+67 - 100+44	RT	overhead crossing	pole being removed	underground	77	LF	\$90	\$6,930	
MLP-3	100+44	CL	overhead crossing	pole being removed	underground	142	LF	\$90	\$12,780	
MLP-4	100+44 - 114+37	RT	overhead electric line	poles being relocated	underground	1400	LF	\$90	\$126,000	
MLP-5	102+62	CL	overhead crossing	pole being removed	underground	147	LF	\$90	\$13,230	
MLP-6	103+21	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-7	103+67 - 106+48	LT/CL/RT	underground electric line	protect in place	none	376	LF	\$0		
MLP-8	106+89	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-9	106+89	CL	overhead crossing	pole being removed	underground	62	LF	\$90	\$5,580	
MLP-10	108+25	CL	overhead crossing	pole being removed	underground	113	LF	\$90	\$10,170	
MLP-11	108+99	RT	underground service	protect in place	none	30	LF	\$0		
MLP-12	110+99 - 112+84	RT	underground electric line	protect in place	none	185	LF	\$0	\$0	
MLP-13	111+25	CL	overhead crossing	poles being removed	underground	155	LF	\$90	\$13,950	continue underground to next pole
MLP-14	111+52	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-15	112+84	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-16	113+26	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-17	113+26 - 116+21	LT	overhead electric line	poles being relocated	underground	295	LF	\$90	\$26,550	
MLP-18	114+37	CL	overhead crossing	poles being relocated	underground	310	LF	\$90	\$27,900	continue underground to next poles
MLP-19	115+42	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-20	115+42 - 120+45	LT	underground electric line	protect in place	none	504	LF	\$0	\$0	multiple lines
MLP-21	115+64	LT	underground crossing	protect in place	none	30	LF	\$0	\$0	
MLP-22	116+21	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-23	117+52	LT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-24	118+20	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-25	119+55	LT	load center	protect in place	none	1	EA	\$0	\$0	
MLP-26	120+45	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-27	120+45 - 125+46	RT	underground electric line	protect in place	none	500	LF	\$0	\$0	
MLP-28	123+47	LT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-29	123+47	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	two lines
MLP-30	125+32	LT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-31	125+45	LT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-32	125+46	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-33	125+46 - 126+91	LT	underground electric line	protect in place	none	155	LF	\$0	\$0	
MLP-34	125+96	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-35	126+91	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-36	127+10	LT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-37	127+20	LT	load center	within improvements	relocate	1	EA	\$5,650	\$5,650	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-38	127+87 - 136+48	RT	underground electric line	protect in place	none	862	LF	\$0	\$0	
MLP-39	136+15	RT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-40	136+15	CL	underground electric line	protect in place	none	60	LF	\$0	\$0	
MLP-41	136+48	RT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-42	138+61	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-43	140+89	CL	overhead crossing	no conflict anticipated	none	133	LF	\$0	\$0	
MLP-44	140+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-45	140+89 - 151+87	RT	overhead electric line	protect in place	none	1098	LF		\$0	only 2 poles being impacted
MLP-46	141+10	RT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-47	141+21	RT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-48	144+04	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-49	144+04	RT	overhead utility service	pole being removed	adjust on pole	2	EA	\$3,400	\$6,800	utility line and service
MLP-50	144+04 - 148+75	RT	underground electric line	protect in place	none	170	LF	\$0	\$0	
MLP-51	145+44	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-52	145+75	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-53	147+17	RT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-54	147+17	RT	overhead electric line	poles being relocated	adjust on pole	1		\$3,400		
MLP-55	147+17	RT	underground electric service	protect in place	none	0	EA	\$0	\$0	
MLP-56	147+17 - 148+86	LT	underground electric line	protect in place	none	174	LF	\$0	\$0	
MLP-57	147+26	RT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-58	150+15	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-59	151+36	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-60	151+36	RT	overhead utility service	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-61	151+36 - 151+88	RT	underground electric line	protect in place	none	55	LF	\$0	\$0	
MLP-62	151+87	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-63	151+87	RT	overhead utility service	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-64	151+87	CL	overhead crossing	protect in place	none	185	LF	\$0	\$0	
MLP-65	151+94	RT	transformer	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-66	153+65	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-67	153+65	CL	overhead crossing	no conflict anticipated	none	60	LF	\$0	\$0	
MLP-68	402+15	LT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-69	402+15	RT	switch cabinet	protect in place	none	1	EA	\$0	\$0	

Construction Costs: \$458,840
 Engineering/Administration (30%): \$137,652
Total: \$596,492

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	99+74	CL	overhead FO crossing	no conflict anticipated	none	60	LF	\$0	\$0	
ACS-2	99+74	CL	overhead T crossing	no conflict anticipated	none	60	LF	\$0	\$0	
ACS-3	99+74	CL	underground T crossing	no conflict anticipated	none	60	LF	\$0	\$0	
ACS-4	99+75	LT	telephone vault	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-5	99+74 - 101+89	RT	overhead T line	pole being removed	underground	222	LF	\$80	\$17,760	
ACS-6	100+44	RT	overhead T service	pole being removed	underground	1	EA	\$5,000		
ACS-7	101+78	LT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-8	101+79	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-9	101+79 - 125+80	RT	underground T line	protect in place	none	2415	LF	\$0	\$0	
ACS-10	103+64	RT	underground T crossing	protect in place	none	33	LF	\$0	\$0	
ACS-11	105+04	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-12	105+04	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-13	107+06	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-14	108+19	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-15	111+06	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-16	112+72	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-17	113+21 - 114+47	RT	underground T line	protect in place	none	146	LF	\$0	\$0	
ACS-18	114+37	LT	overhead T crossing	pole being removed	underground	200	LF	\$80		underground to next northern pole
ACS-19	114+39	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-20	117+43	LT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-21	117+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-22	118+12	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-23	118+22	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-24	118+39	CL	underground FO crossing	protect in place	none	60	LF	\$0	\$0	
ACS-25	118+49	LT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-26	118+49 - 119+74	LT	underground FO line	protect in place	none	148	LF	\$0	\$0	
ACS-27	119+66	LT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-28	120+48	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-29	120+60 - 125+82	RT	underground FO line	protect in place	none	550	LF	\$0	\$0	
ACS-30	120+98	RT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-31	121+51	CL	underground FO crossing	protect in place	none	60	LF	\$0	\$0	
ACS-32	121+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-33	121+56 - 125+83	LT	underground T line	protect in place	none	427	LF	\$0	\$0	
ACS-34	125+83	CL	underground T crossing	protect in place	none	133	LF	\$0	\$0	
ACS-35	125+83	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300		
ACS-36	127+00	CL	underground T crossing	protect in place	none	125	LF	\$0	\$0	
ACS-37	127+01	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-38	127+01 - 138+23	RT	underground T line	protect in place	none	1120	LF	\$0	\$0	
ACS-39	131+28	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-40	135+80	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-41	136+16	CL	underground T crossing	protect in place	none	50	LF	\$0	\$0	
ACS-42	139+24	CL	underground FO crossing	protect in place	none	80	LF	\$0	\$0	
ACS-43	139+24 - 147+31	RT	underground FO line	protect in place	none	828	LF	\$0	\$0	
ACS-44	140+89 - 147+39	RT	underground T line	protect in place	none	673	LF	\$0	\$0	
ACS-45	141+38	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-46	144+04	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-47	144+04 - 151+87	RT	overhead T line	protect in place	none	783	LF	\$0	\$0	only 2 poles being impacted
ACS-48	144+04	RT	overhead T line	pole being relocated	adjust on pole	1	EA	\$5,375		
ACS-49	144+11	RT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-50	145+44	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-51	147+17	RT	overhead T line	pole being relocated	adjust on pole	1	EA	\$5,375		
ACS-52	151+44 - 151+87	RT	underground T line	protect in place	none	44	LF	\$0	\$0	
ACS-53	151+87	CL	overhead T crossing	no conflict anticipated	none	185	LF	\$0	\$0	underground to next northern pole
ACS-54	151+96	CL	overhead T crossing	no conflict anticipated	none	87	LF	\$0	\$0	
ACS-55	339+06 - 404+34	RT	underground T line	no conflict anticipated	none	548	LF	\$0	\$0	
ACS-56	402+05	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	

Construction Costs: \$97,310
 Engineering/Administration (30%): \$29,193
Total: \$126,503

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	99+66	CL	overhead C line	no conflict anticipated	none	80	LF	\$0	\$0	
GCI-2	99+66	CL	overhead FO crossing	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-3	99+66 - 100+44	RT	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	price for protect in place per each for FO line watch
GCI-4	99+66 - 110+99	RT	overhead C line	pole being removed	underground	1475	LF	\$70	\$103,250	
GCI-5	99+66 - 110+99	RT	overhead FO line	pole being removed	underground	1475	LF	\$120	\$177,000	
GCI-6	103+62 - 104+96	RT	underground C line	protect in place	none	151	LF	\$0	\$0	
GCI-7	103+67	RT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-8	104+96	CL	underground C crossing	protect in place	none	80	LF	\$0	\$0	
GCI-9	106+90 - 107+90	RT	underground C line	protect in place	none	100	LF	\$0	\$0	
GCI-10	108+25	CL	overhead C crossing	pole being removed	underground	113	LF	\$70	\$7,910	underground to next northern pole
GCI-11	110+99 - 112+78	RT	underground C line	protect in place	none	195	LF	\$0	\$0	
GCI-12	111+25	CL	overhead FO crossing	pole being removed	underground	278	LF	\$120	\$33,360	underground to next poles
GCI-13	114+37	CL	overhead C crossing	pole being removed	underground	317	LF	\$70	\$22,190	underground to next poles
GCI-14	114+37	CL	overhead FO crossing	pole being removed	underground	317	LF	\$120	\$38,040	underground to next poles
GCI-15	117+51	CL	underground C crossing	protect in place	none	70	LF	\$0	\$0	
GCI-16	117+48 - 118+12	CL/RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-17	117+54 - 118+15	RT	underground C line	protect in place	none	70	LF	\$0	\$0	
GCI-18	119+97	CL	underground C crossing	protect in place	none	80	LF	\$0	\$0	
GCI-19	120+31	CL	underground FO crossing	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-20	120+31	LT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-21	126+80	RT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-22	136+06	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-23	136+07	LT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-24	136+06	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-25	140+80	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-26	140+80	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-27	140+80	CL	underground C crossing	protect in place	none	66	LF	\$0	\$0	
GCI-28	140+89	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-29	140+93	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-30	140+89 - 149+43	LT	underground C line	protect in place	none	858	LF	\$0	\$0	
GCI-31	140+93 - 147+22	LT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-32	143+44	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-33	143+44	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-34	143+83	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-35	146+19 - 147+75	RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-36	147+22	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-37	147+28	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-38	147+32	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-39	153+65	CL	overhead FO crossing	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-40	399+06 - 402+04	RT	underground C line	protect in place	none	298	LF	\$0	\$0	
GCI-41	400+54 - 404+42	RT	underground FO line	no conflict anticipated	none	413	LF	\$0	\$0	
GCI-42	402+04	CL	underground C crossing	protect in place	none	62	LF	\$0	\$0	
GCI-43	402+04 - 404+64	LT	underground C line	protect in place	none	279	LF	\$0	\$0	

Construction Costs: \$420,375
Engineering/Administration (30%) \$126,113

Total: \$546,488

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	100+37	RT	2-inch steel	protect in place	none	25	LF	\$0	\$0	
Enstar-2	100+37 - 102+15	RT	3-inch steel	within proposed improvemnts	adjust/relocate	178	LF	\$135	\$24,030	
Enstar-3	102+15 - 119+63	RT	2-inch steel	within proposed improvemnts	adjust/relocate	1749	LF	\$75	\$131,175	
Enstar-4	103+66	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-5	106+94	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-6	109+55	CL	1.25-inch steel crossing	within proposed improvemnts	adjust/relocate	80	LF	\$108	\$8,640	
Enstar-7	112+70	RT	2-inch plastic crossing	within proposed improvemnts	adjust/relocate	30	LF	\$125	\$3,750	
Enstar-8	113+21	CL	3-inch plastic/1-1/4-inch steel crossing	within proposed improvemnts	adjust/relocate	125	LF	\$135	\$16,875	
Enstar-9	115+97	CL	1-1/4-inch steel crossing	within proposed improvemnts	adjust/relocate	78	LF	\$108	\$8,424	
Enstar-10	117+61	CL	1-inch plastic service	within proposed improvemnts	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-11	120+39	CL	3-inch steel/3-inch plastic crossing	within proposed improvemnts	adjust/relocate	80	LF	\$135	\$10,800	
Enstar-12	120+39 - 123+13	LT	2-inch steel	within proposed improvemnts	adjust/relocate	274	LF	\$125	\$34,250	
Enstar-13	122+43	CL	3/4-inch service	within proposed improvemnts	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-14	126+67	CL	4-inch plastic crossing	no conflicts anticipated	none	80	LF	\$0	\$0	
Enstar-15	126+67 - 129+50	RT	2-inch plastic	protect in place	none	348	LF	\$0	\$0	
Enstar-15	129+50 - 136+27	RT	2-inch plastic	within proposed improvemnts	adjust/relocate	604	LF	\$75	\$45,300	
Enstar-16	136+19	CL	2-inch plastic crossing	within proposed improvemnts	adjust/relocate	53	LF	\$125	\$6,625	
Enstar-17	135+93 - 136+43	LT	2-inch plastic/1-inch plastic service	within proposed improvemnts	adjust/relocate	97	LF	\$125	\$12,125	
Enstar-18	139+36	CL	2-inch plastic crossing	within proposed improvemnts	adjust/relocate	80	LF	\$125	\$10,000	
Enstar-19	140+91 - 151+51	LT	2-inch plastic	within proposed improvemnts	adjust/relocate	1080	LF	\$75	\$81,000	
Enstar-20	143+28	CL	1-inch plastic service	within proposed improvemnts	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-21	145+22	CL	1-inch plastic service	within proposed improvemnts	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-22	147+52	CL	1-inch plastic service	within proposed improvemnts	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-23	149+55	LT	7/8-inch plastic service	protect in place	none	1	EA	\$0	\$0	
Enstar-24	151+51	CL	2-inch plastic crossing	within proposed improvemnts	adjust/relocate	75	LF	\$125	\$9,375	
Enstar-25	151+94 - 153+62	LT	3/4-inch steel service	no conflicts anticipated	none	1	EA	\$0	\$0	
Enstar-26	153+62	CL	6-inch steel crossing	within proposed improvemnts	adjust/relocate	80	LF	\$150	\$12,000	

Construction Costs: \$427,819
 Engineering/Administration (30%) \$128,346
Total: \$556,165

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Alternative 1

Prepared By: CRW

Ver. 5.1

[B]=local bond; [S]=state grant; [F]= federal grant

DESIGN	Design Management	\$121,108	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$1,250,000	
	Contractual Dsgn Sers (Add'l)	\$300,000	
	Contractual Design Survey	\$130,000	
	Contractual Design Soils	\$90,000	
	Miscellaneous	\$0	
Subtotal			\$1,891,108

WEBPAGE DATA	
Environ	\$0
DS	\$472,777
Prelim Dsgn	\$945,554
Final Dsgn	\$472,777
ROW	\$1,114,317
Utilities	\$2,280,000
Const	\$14,741,803
Total	\$20,027,228

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$610,000	
	CEA	\$270,000	
	ML&P	\$660,000	
	ACS	\$140,000	
	GCI	\$600,000	
Subtotal			\$2,280,000

ROW	Real Estate Services	\$140,000	
	<i>Start 20??</i> Land Acquisition	\$974,317	
Subtotal			\$1,114,317

CONSTRUCTION	Construction Management	\$162,625	
	<i>Start 20??</i> Inspection	\$420,912	
	Materials Testing	\$95,662	
	Survey	\$57,397	
	Miscellaneous	\$0	
	Construction Contract	\$9,566,193	
Subtotal			\$10,302,790

MISCELLANEOUS	Bond Overhead (15.0%)	\$3,004,084	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$1,434,929	
Subtotal			\$4,439,013

PROJECT TOTAL			<u><u>\$20,027,228</u></u>
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**W. 32nd Avenue / E. 33rd Avenue Upgrades - Arctic Boulevard. to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 2**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$94,000	\$94,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	16	\$800	\$12,800
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$60,000	\$60,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	4,423	1.00	0	4,423	\$14	\$61,922
A-5	20.08	Remove Curb and Gutter	LF	12,595	1.00	0	12,595	\$8	\$100,760
A-6	20.09	Remove Pavement	SY	26,524	1.00	0	26,524	\$3	\$79,572
A-7	20.10	Unusable Excavation	CY	57,974	1.20	-2	69,600	\$12	\$835,200
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	50,311	1.20	-2	60,400	\$15	\$906,000
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	44,791	1.20	-2	53,700	\$15	\$805,500
A-10	20.22	Leveling Course	Ton	3,572	1.08	-1	3,860	\$30	\$115,800
A-11	20.25	Geotextile (Type A)	SY	50,749	1.00	-1	50,750	\$1.50	\$76,125
A-12	20.26	Insulation Board (R-4.5)	SF	24,445	1.01	-1	24,690	\$1	\$24,690
A-13	20.26	Insulation Board (R-9)	SF	366,779	1.01	-1	370,450	\$1.50	\$555,675
A-14	20.28	Reconstruct Driveway	EA	47	1.00	0	47	\$2,000	\$94,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	13,464	1.00	0	13,464	\$25	\$336,600
A-16	30.02	Curb nose	EA	8	1.00	0	8	\$5,000	\$40,000
A-17	30.03	P.C.C. Sidewalk	SY	3,059	1.00	0	3,059	\$60	\$183,540
A-18	30.04	P.C.C. Curb Ramp	EA	86	1.00	0	86	\$2,000	\$172,000
A-19	30.05	P.C.C. Retaining Wall	CY	96	1.00	0	96	\$1,500	\$144,000
A-20	30.10	Decorative Concrete (Red, Brick Pattern)	SY	136	1.00	0	136	\$100	\$13,600
A-21	30.12	High-Performance Concrete (8" Thick, Natural, Broom Finish)	SY	71	1.00	0	71	\$400	\$28,400
A-22	30.12	High-Performance Concrete (8" Thick, Red, Broom Finish)	SY	245	1.00	0	245	\$450	\$110,250
A-23	40.06	A.C. Pavement (Class E)	Ton	3,262	1.06	0	3,458	\$105	\$363,090
A-24	40.06	A.C. Pavement (Class D)	Ton	3,695	1.06	-1	3,920	\$105	\$411,600
A-25	50.06	Remove and Replace Manhole Cover and Frame	EA	9	1.00	0	9	\$700	\$6,300
A-26	50.09	Adjust Cleanout to Finish Grade	EA	1	1.00	0	1	\$500	\$500
A-27	55.08	Adjust Storm Drain Manhole Ring	EA	13	1.00	0	13	\$1,600	\$20,800
A-28	60.03	Remove and Replace Valve Box Top Section	EA	39	1.00	0	39	\$500	\$19,500
A-29	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	10	1.00	0	10	\$9,000	\$90,000
A-30	60.05	Adjust Key Box	EA	29	1.00	0	29	\$450	\$13,050
A-31	60.08	Decommission Fire Hydrant Assembly	EA	10	1.00	0	10	\$3,000	\$30,000
A-32	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$139,000	\$139,000
A-33	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-34	70.08	Remove and Reset Fence	LF	414	1.00	0	414	\$35	\$14,490
A-35	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	10,154	1.00	0	10,154	\$8	\$81,232
A-36	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	13,200	1.00	0	13,200	\$8	\$105,600
A-37	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" Yellow) (250 Mil)	LF	2,304	1.00	0	2,304	\$36	\$82,944
A-38	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" White) (250 Mil)	LF	788	1.00	0	788	\$36	\$28,368
A-39	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	1,679	1.00	0	1,679	\$48	\$80,592
A-40	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Words and Symbols) (250 Mil)	EA	17	1.00	0	17	\$850	\$14,450
A-41	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	26	1.00	0	26	\$1,200	\$31,200
A-42	70.11	Standard Sign	SF	478	1.00	0	478	\$80	\$38,240
A-43	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$850,000	\$850,000
A-44	70.12	Remove and Replace Wood Bollard	EA	26	1.00	0	26	\$350	\$9,100
A-45	70.22	Parking Lot Modifications	LS	1	1.00	0	1	\$30,000	\$30,000
A-46	75.02	Landscaping	LS	1	1.00	0	1	\$75,000	\$75,000
A-47	75.03	Topsoil (4" Depth)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-48	75.03	Topsoil (18-inch depth)	MSF	5.1	1.00	0	5	\$1,200	\$6,000
A-49	75.04	Seeding (Schedule A)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-50	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
								TOTAL	\$7,465,090

Schedule B - Drainage Improvements									
B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$20,000	\$20,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	4,082	1.00	0	4,082	\$35	\$142,870
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	1,000	1.20	0	1,200	\$20	\$24,000
B-4	20.16	Bedding Material (Class D)	LF	4,082	1.00	0	4,082	\$34	\$138,788
B-5	20.27	Disposal of Unusable or Surplus Material	CY	1,796	1.20	0	2,155	\$18	\$38,790
B-6	55.02	Furnish, Install, and Televis Pipe (12-Inch, Type S, CPEP)	LF	1,013	1.00	0	1,013	\$62	\$62,806
B-7	55.02	Furnish, Install, and Televis Pipe (18-Inch, Type S, CPEP)	LF	2,541	1.00	0	2,541	\$65	\$165,165
B-8	55.02	Furnish, Install, and Televis Pipe (24-Inch, Type S, CPEP)	LF	529	1.00	0	529	\$70	\$37,030
B-9	55.04	Connect to Existing Storm Drain System	EA	7	1.00	0	7	\$3,000	\$21,000
B-10	55.05	Construct (Type I) Manhole	EA	9	1.00	0	9	\$6,000	\$54,000
B-11	55.05	Construct (Type II) Catch Basin Manhole	EA	11	1.00	0	11	\$9,000	\$99,000
B-12	55.05	Construct (Type II) Bypass Manhole	EA	2	1.00	0	2	\$15,000	\$30,000
B-13	55.09	Construct Catch Basin	EA	31	1.00	0	31	\$4,000	\$124,000
B-14	55.11	Remove Manhole	EA	6	1.00	0	6	\$1,300	\$7,800
B-15	55.11	Remove Catch Basin	EA	16	1.00	0	16	\$1,200	\$19,200
B-16	55.22	Oil and Grit Separator	EA	2	1.00	0	2	\$30,000	\$60,000
B-17	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$30,000	\$30,000
B-18	70.07	Remove Pipe	LF	1,534	1.00	0	1,534	\$21	\$32,214
								TOTAL	\$1,106,663

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Arctic Boulevard. to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 2**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Signalization Improvements									
C-1	80.01	Temporary Signalization	L.S.	3	1.00	0	3	\$75,000	\$225,000
C-2	80.02	Trench and Backfill (2'W x 3.5'D)	L.F.	1,645	1.30	-1	2,140	\$15	\$32,100
C-3	80.04	Signal Mast Arm Pole Foundation	Each	10	1.00	0	10	\$6,000	\$60,000
C-4	80.04	Load Center Foundation	Each	2	1.00	0	2	\$3,000	\$6,000
C-5	80.04	Controller Cabinet Foundation	Each	3	1.00	0	3	\$6,500	\$19,500
C-6	80.05	Combination Signal/Luminaire Pole (40' Height)	Each	10	1.00	0	10	\$14,500	\$145,000
C-7	80.05	Pedestrian Pole	Each	1	1.00	0	1	\$12,500	\$12,500
C-8	80.05	Signal Mast Arm	Each	9	1.00	0	9	\$5,000	\$45,000
C-9	80.06	Luminaire Arm 18 Ft. Length	Each	10	1.00	0	10	\$500	\$5,000
C-10	80.07	GRC Steel Conduit (3 inch)	L.F.	674	1.20	-1	810	\$20	\$16,200
C-11	80.07	GRC Steel Conduit (2 inch)	L.F.	1,524	1.20	-1	1,830	\$16	\$29,280
C-12	80.08	Remove Junction Box	Each	24	1.00	0	24	\$400	\$9,600
C-13	80.08	Junction Box (Type IA)	Each	13	1.00	0	13	\$600	\$7,800
C-14	80.08	Junction Box (Type II)	Each	9	1.00	0	9	\$3,500	\$31,500
C-15	80.08	Junction Box (Type III)	Each	2	1.00	0	2	\$5,000	\$10,000
C-16	80.10	3 Conductor 14 AWG IMSA 20-1 Cable	L.F.	4,112	1.20	-1	4,930	\$4	\$19,720
C-17	80.10	5 Conductor 14 AWG IMSA 20-1 Cable	L.F.	4,112	1.20	-1	4,930	\$5	\$24,650
C-18	80.10	7 Conductor 14 AWG IMSA 20-1 Cable	L.F.	4,555	1.20	-1	5,470	\$5	\$27,350
C-19	80.10	3 Conductor 20 AWG IMSA 20-1 Cable	L.F.	1,696	1.20	-1	2,040	\$5	\$10,200
C-20	80.10	3 Conductor 8 AWG Type XHHW-2 Cable	L.F.	3,483	1.20	-1	4,180	\$4	\$14,630
C-21	80.10	25 Pair 19 AWG PE-39 Telemetry Cable	L.F.	1,185	1.20	-1	1,420	\$8	\$11,360
C-22	80.10	6 Conductor 20 /22 Radar Detection Cable	L.F.	1,072	1.20	-1	1,290	\$4	\$5,160
C-23	80.10	7 Pair 18 AWG Tray Cable	L.F.	2,783	1.20	-1	3,340	\$5	\$16,700
C-24	80.14	Load Center	Each	2	1.00	0	2	\$12,000	\$24,000
C-25	80.17	TS-2-1 Controller Unit	Each	3	1.00	1	3	\$85,000	\$255,000
C-26	80.18	Install Loop Detector - New Work	Each	50	1.00	0	50	\$1,000	\$50,000
C-27	80.18	Install Optical Preemption Detector (721 Opticom with Single Confirmation)	Each	9	1.00	0	9	\$2,500	\$22,500
C-28	80.18	Radar Detection Unit	Each	6	1.00	0	6	\$7,500	\$45,000
C-29	80.18	12 Inch 3 Face LED Signal Head (Overhead Mount)	Each	11	1.00	0	11	\$5,000	\$55,000
C-30	80.18	12 Inch 3 Face LED Signal Head (Side Mount)	Each	9	1.00	0	9	\$5,000	\$45,000
C-31	80.18	12 Inch 5 Face LED Signal Head (Overhead Mount)	Each	3	1.00	0	3	\$6,000	\$18,000
C-32	80.18	12 Inch 5 Face LED Signal Head (Side Mount)	Each	2	1.00	0	2	\$6,000	\$12,000
C-33	80.20	Pedestrian LED Signal Head	Each	22	1.00	0	22	\$2,000	\$44,000
C-34	80.21	Pedestrian Pushbutton Assembly	Each	22	1.00	0	22	\$750	\$16,500
C-35	80.23	Luminaire (120 LED, Type III, Medium, Full Cut Off)	Each	11	1.00	0	11	\$2,000	\$22,000
C-36	80.28	Remove Load Center/Traffic Controller Cabinet	Each	5	1.00	0	5	\$1,600	\$8,000
C-37	80.28	Remove Signal Mast Arm or Combination Pole	Each	11	1.00	0	11	\$3,000	\$33,000
TOTAL									\$1,434,250

Schedule D - Illumination Improvements

D-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	6,291	1.10	-1	6,920	\$9	\$62,280
D-2	80.04	Driven Pole Luminaire Pole Foundations	EA	58	1.00	0	58	\$1,800	\$104,400
D-3	80.04	Load Center Foundation (Type 1A)	EA	3	1.00	0	3	\$4,000	\$12,000
D-4	80.05	Fixed Base Luminaire Pole	EA	58	1.00	0	58	\$3,000	\$174,000
D-5	80.06	Luminaire Arm	EA	58	1.00	0	58	\$700	\$40,600
D-6	80.07	Steel Conduit (2 inch)	FT	7,340	1.10	-1	8,070	\$17	\$137,190
D-7	80.08	Junction Box (Type IA)	EA	58	1.00	0	58	\$750	\$43,500
D-8	80.08	Junction Box (Type II)	EA	6	1.00	0	6	\$1,600	\$9,600
D-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	7,340	1.10	-1	8,070	\$4	\$32,280
D-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	3	1.00	0	3	\$7,000	\$21,000
D-11	80.23	Luminaire (60 LED, Medium, Type 2)	EA	39	1.00	0	39	\$1,150	\$44,850
D-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	7	1.00	0	7	\$1,300	\$9,100
D-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	12	1.00	0	12	\$1,450	\$17,400
D-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	4	1.00	0	4	\$1,000	\$4,000
D-15	80.23	Spare Luminaire (80 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,200	\$1,200
D-16	80.23	Spare Luminaire (100 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,450	\$1,450
D-17	80.28	Remove Luminaire Pole	EA	24	1.00	0	24	\$750	\$18,000
TOTAL									\$732,850

SUMMARY

Schedule A - Roadway Improvements	\$7,465,090
Schedule B - Drainage Improvements	\$1,106,663
Schedule C - Signalization Improvements	\$1,434,250
Schedule D - Illumination Improvements	\$732,850
Subtotal	\$10,738,853
15% Construction Contingency	\$1,610,000

Total Estimated Construction Cost: \$12,348,853

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative 2	
Electric (CEA)	\$22,750
Electric (ML&P)	\$699,985
Telecommunications (ACS)	\$113,198
Cable Television (GCI)	\$67,633
Natural Gas (Enstar)	\$336,003
<i>Subtotal:</i>	<i>\$1,239,568</i>
<i>Construction Contingency (10%):</i>	<i>\$123,957</i>
Total Utility Relocation Cost:	\$1,363,525

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
CEA-1	99+67	RT	utility pole	no conflict anticipated	none	0	EA	\$0	\$0	
CEA-2	99+67	CL	overhead crossing	no conflict anticipated	none	50	LF	\$0	\$0	
CEA-3	99+67 - 100+44	RT	overhead crossing	no conflict anticipated	none	77	LF	\$0	\$0	
CEA-4	100+44	CL	overhead crossing	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-5	100+44 - 114+37	RT	overhead electric line	no conflict anticipated	none	1400	LF	\$0	\$0	
CEA-6	101+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-7	101+89	RT	overhead electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-8	105+00	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-9	105+00	RT	overhead electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-10	106+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-11	106+89	RT	underground electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-12	108+25	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-13	108+99	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-14	108+99	RT	underground electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-15	110+99	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-16	110+99	RT	overhead electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-17	114+37	LT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-18	114+37	LT	overhead utility service	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	

Construction Costs: \$17,500
 Engineering/Administration (30%): \$5,250
Total: \$22,750

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-1	99+67	CL	overhead crossing	no conflict anticipated	none	50	LF	\$0	\$0	
MLP-2	100+44	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-3	99+67 - 100+44	RT	overhead crossing	no conflict anticipated	none	77	LF	\$0	\$0	
MLP-4	100+44	CL	overhead crossing	no conflict anticipated	none	80	LF	\$0	\$0	
MLP-5	100+44 - 114+37	RT	overhead electric line	no conflict anticipated	none	1400	LF	\$0	\$0	
MLP-6	102+62	CL	overhead crossing	no conflict anticipated	none	147	LF	\$0	\$0	
MLP-7	103+21	LT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-8	103+21	LT	overhead crossing	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
MLP-9	103+67 - 105+05	RT	underground electric line	no conflict anticipated	none	133	LF	\$0	\$0	
MLP-10	105+05	CL	underground crossing	protect in place	none	86	LF	\$0	\$0	
MLP-11	105+05 - 106+48	LT	underground electric line	no conflict anticipated	none	157	LF	\$0	\$0	
MLP-12	106+89	LT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-13	106+89	CL	overhead crossing	pole being relocated	adjust on pole	62	LF	\$3,400	\$210,800	
MLP-14	108+25	CL	overhead crossing	no conflict anticipated	none	113	LF	\$0	\$0	
MLP-15	110+99 - 112+84	RT	underground electric line	no conflict anticipated	none	185	LF	\$0	\$0	
MLP-16	111+25	CL	overhead crossing	no conflict anticipated	none	155	LF	\$0	\$0	
MLP-17	111+52	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-18	112+84	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-19	113+26	LT	utility pole	within proposed improvements	remove	1	EA	\$1,600	\$1,600	
MLP-20	113+26 - 116+21	LT	overhead electric line	poles being removed	underground	295	LF	\$90	\$26,550	
MLP-21	114+37	CL	overhead crossing	poles being removed	underground	310	LF	\$90	\$27,900	underground to next poles
MLP-22	115+42	LT	utility pole	within proposed improvements	remove	1	EA	\$1,600	\$1,600	
MLP-23	115+42 - 120+45	LT	underground electric line	protect in place	none	504	LF	\$0	\$0	multiple lines
MLP-24	115+64	LT	underground crossing	protect in place	none	30	LF	\$0	\$0	
MLP-25	116+21	LT	utility pole	within proposed improvements	remove	1	EA	\$1,600	\$1,600	
MLP-26	117+52	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-27	118+20	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-28	119+55	LT	load center	within proposed improvements	relocate	1	EA	\$5,650	\$5,650	
MLP-29	120+45	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-30	120+45 - 125+46	RT	underground electric line	protect in place	none	500	LF	\$0	\$0	
MLP-31	123+47	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-32	123+47	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	two lines
MLP-33	125+32	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-34	125+45	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-35	125+46	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-36	125+46 - 126+91	LT	underground electric line	protect in place	none	155	LF	\$0	\$0	
MLP-37	125+96	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-38	126+91	LT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-39	127+10	LT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-40	127+20	LT	load center	within proposed improvements	relocate	1	EA	\$5,650	\$5,650	
MLP-41	127+87 - 136+48	RT	underground electric line	protect in place	none	862	LF	\$0	\$0	
MLP-42	136+15	RT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-43	136+15	CL	underground electric line	protect in place	none	60	LF	\$0	\$0	
MLP-44	136+48	RT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-45	138+61	CL	underground crossing	no conflict anticipated	none	60	LF	\$0	\$0	
MLP-46	140+89	CL	overhead crossing	no conflict anticipated	none	133	LF	\$0	\$0	
MLP-47	140+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-48	140+89 - 151+87	RT	overhead electric line	protect in place	none	1098	LF	\$0	\$0	2 poles being relocated
MLP-49	141+10	RT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-50	141+21	RT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-51	144+04	RT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-52	144+04	RT	overhead utility service	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
MLP-53	144+04 - 148+75	RT	underground electric line	protect in place	none	170	LF	\$0	\$0	
MLP-54	145+44	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-55	145+75	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-56	147+17	RT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-57	147+17	RT	overhead electric line	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
MLP-58	147+17	RT	underground electric service	protect in place	none	1	EA	\$0	\$0	
MLP-59	147+17 - 148+86	LT	underground electric line	protect in place	none	174	LF	\$0	\$0	
MLP-60	147+26	RT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-61	150+15	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-62	151+36	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-63	151+36	RT	overhead utility service	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-64	151+36 - 151+88	RT	underground electric line	no conflict anticipated	none	55	LF	\$0	\$0	
MLP-65	151+87	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-66	151+87	RT	overhead utility service	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-67	151+87	CL	overhead crossing	no conflict anticipated	none	185	LF	\$0	\$0	
MLP-68	151+94	RT	transformer	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-69	153+65	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-70	153+65	CL	overhead crossing	no conflict anticipated	none	60	LF	\$0	\$0	
MLP-71	402+15	LT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-72	402+15	RT	switch cabinet	no conflict anticipated	none	1	EA	\$0	\$0	

Construction Costs: \$538,450
 Engineering/Administration (30%): \$161,535
Total: \$699,985

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	99+74	CL	overhead FO crossing	no conflicts anticipated	none	60	LF	\$0	\$0	
ACS-2	99+74	CL	overhead T crossing	no conflicts anticipated	none	60	LF	\$0	\$0	
ACS-3	99+74	CL	underground T crossing	no conflicts anticipated	none	60	LF	\$0	\$0	
ACS-4	99+75	LT	telephone vault	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-5	99+74 - 101+89	RT	overhead T line	no conflicts anticipated	none	222	LF	\$0	\$0	
ACS-6	100+44	RT	overhead T service	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-7	101+78	LT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-8	101+79	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-9	101+79 - 125+80	RT	underground T line	protect in place	none	2415	LF	\$0	\$0	
ACS-10	101+89	RT	underground T service	no conflicts anticipated	none	30	LF	\$0	\$0	
ACS-11	103+64	RT	underground T crossing	no conflicts anticipated	none	33	LF	\$0	\$0	
ACS-12	105+04	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-13	105+04	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-14	107+06	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-15	108+19	RT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-16	111+06	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-17	112+72	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-18	113+21 - 114+47	RT	underground T line	protect in place	none	146	LF	\$0	\$0	
ACS-19	114+37	LT	overhead T service	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-20	114+39	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-21	117+43	LT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-22	117+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-23	118+12	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-24	118+22	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-25	118+39	CL	underground FO crossing	protect in place	none	60	LF	\$0	\$0	
ACS-26	118+49	LT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-27	118+49 - 119+74	LT	underground FO line	protect in place	none	148	LF	\$0	\$0	
ACS-28	119+66	LT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-29	120+48	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-30	120+60 - 125+82	RT	underground FO line	protect in place	none	550	LF	\$0	\$0	
ACS-31	120+98	RT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-32	121+51	CL	underground FO crossing	protect in place	none	60	LF	\$0	\$0	
ACS-33	121+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-34	121+56 - 125+83	LT	underground T line	protect in place	none	427	LF	\$0	\$0	
ACS-35	125+83	CL	underground T crossing	protect in place	none	133	LF	\$0	\$0	
ACS-36	125+83	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-37	127+00	CL	underground T crossing	protect in place	none	125	LF	\$0	\$0	
ACS-38	127+01	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-39	127+01 - 138+23	RT	underground T line	protect in place	none	1120	LF	\$0	\$0	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-40	131+28	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-41	135+80	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-42	136+16	CL	underground T crossing	protect in place	none	50	LF	\$0	\$0	
ACS-43	139+24	CL	underground FO crossing	no conflicts anticipated	none	80	LF	\$0	\$0	
ACS-44	139+24 - 147+31	RT	underground FO line	protect in place	none	828	LF	\$0	\$0	
ACS-45	140+89 - 147+39	RT	underground T line	protect in place	none	673	LF	\$0	\$0	
ACS-46	141+38	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-47	144+04	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-48	144+04	RT	overhead T line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-49	144+11	RT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-50	144+04 - 151+87	RT	overhead T line	poles being relocated	protect in place	783	LF	\$0	\$0	2 poles being impacted
ACS-51	145+44	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-52	147+17	RT	overhead T line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-53	151+44 - 151+87	RT	underground T line	no conflicts anticipated	none	44	LF	\$0	\$0	
ACS-54	151+87	CL	overhead T crossing	no conflicts anticipated	none	185	LF	\$0	\$0	
ACS-55	151+96	CL	overhead T crossing	no conflicts anticipated	none	87	LF	\$0	\$0	
ACS-56	339+06 - 404+34	RT	underground T line	no conflict anticipated	none	548	LF	\$0	\$0	
ACS-57	402+05	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	
									\$0	
									\$0	

Construction Costs: \$87,075
 Engineering/Administration (30%): \$26,123
Total: \$113,198

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	99+66	CL	overhead C line	no conflicts anticipated	none	80	LF	\$0	\$0	
GCI-2	99+66	CL	overhead FO crossing	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-3	99+66 - 110+99	RT	overhead C line	no conflicts anticipated	none	1134	LF	\$0	\$0	
GCI-4	99+66 - 100+44	RT	underground FO crossing	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-5	99+66 - 110+99	RT	overhead FO line	no conflicts anticipated	none	1134	LF	\$0	\$0	
GCI-6	103+62 - 104+96	RT	underground C line	no conflicts anticipated	none	151	LF	\$0	\$0	
GCI-7	103+67	RT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-8	104+96	CL	underground C crossing	protect in place	none	80	LF	\$0	\$0	
GCI-9	106+90 - 107+90	RT	underground C line	no conflicts anticipated	none	100	LF	\$0	\$0	
GCI-10	108+25	CL	overhead C crossing	no conflicts anticipated	none	113	LF	\$0	\$0	
GCI-11	110+99 - 112+78	RT	underground C line	no conflicts anticipated	none	195	LF	\$0	\$0	
GCI-12	111+25	CL	overhead FO crossing	protect in place	none	87	LF	\$0	\$0	
GCI-13	111+52	LT	overhead FO connection	pole being relocated	adjust on pole	1	EA	\$2,680	\$2,680	
GCI-14	112+87	CL	overhead FO crossing	protect in place	none	189	LF	\$0	\$0	
GCI-15	112+87	CL	overhead C crossing	protect in place	none	189	LF	\$0	\$0	
GCI-16	114+37	CL	overhead C crossing	protect in place	none	150	LF	\$0	\$0	
GCI-17	114+37	CL	overhead FO crossing	protect in place	none	150	LF	\$0	\$0	
GCI-18	114+37	LT	overhead FO connection	pole being relocated	adjust on pole	2	EA	\$2,680	\$5,360	
GCI-19	114+37	LT	overhead C connection	pole being relocated	adjust on pole	2	EA	\$2,680	\$5,360	
GCI-20	117+49	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	price for protect in place per each for FO line watch
GCI-21	117+51	CL	underground C crossing	protect in place	none	70	LF	\$0	\$0	
GCI-22	117+48 - 118+12	RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-23	117+54 - 118+15	RT	underground C line	protect in place	none	70	LF	\$0	\$0	
GCI-24	119+97	CL	underground C crossing	no conflict anticipated	none	80	LF	\$0	\$0	
GCI-25	120+31	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-26	120+31	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-27	126+80	RT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-28	136+06	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-29	136+07	LT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-30	136+06	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-31	140+80	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-32	140+80	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-33	140+80	CL	underground C crossing	protect in place	none	66	LF	\$0	\$0	
GCI-34	140+89	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-35	140+93	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-36	140+89 - 149+43	LT	underground C line	protect in place	none	858	LF	\$0	\$0	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-37	140+93 - 147+22	LT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-38	143+44	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-39	143+44	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-40	143+83	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-41	146+19 - 147+75	RT	underground FO line	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-42	147+22	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-43	147+28	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-44	147+32	RT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-45	153+65	CL	overhead FO crossing	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-46	399+06 - 402+04	RT	underground C line	protect in place	none	298	LF	\$0	\$0	
GCI-47	400+54 - 404+42	RT	underground FO line	no conflict anticipated	none	413	LF	\$0	\$0	
GCI-48	402+04	CL	underground C crossing	protect in place	none	62	LF	\$0	\$0	
GCI-49	402+04 - 404+64	LT	underground C line	protect in place	none	279	LF	\$0	\$0	
									\$0	
									\$0	

Construction Costs: \$52,025
 Engineering/Administration (30%) \$15,608
Total: \$67,633

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	100+37	RT	2-inch steel	no conflicts anticipated	none	25	LF	\$0	\$0	
Enstar-2	100+37 - 102+15	RT	3-inch steel	no conflicts anticipated	none	178	LF	\$0	\$0	
Enstar-3	102+15 - 119+63	RT	3-inch steel crossing	within proposed improvements	adjust/relocate	120	LT	\$135	\$16,200	crossings at Bering and Eureka Streets
Enstar-4	102+15 - 118+00	RT	2-inch steel	protect in place	none	1586	LF	\$0	\$0	
Enstar-5	118+00 - 119+63	RT	2-inch steel	within proposed improvements	adjust/relocate	163		\$125	\$20,375	
Enstar-6	103+66	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-7	106+94	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-8	109+55	CL	1.25-inch steel crossing	within proposed improvements	adjust/relocate	80	LF	\$108	\$8,640	
Enstar-9	112+70	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-10	113+21	CL	3-inch plastic/1-1/4-inch steel crossing	within proposed improvements	adjust/relocate	125	LF	\$135	\$16,875	
Enstar-11	115+97	CL	1-1/4-inch steel crossing	within proposed improvements	adjust/relocate	78	LF	\$108	\$8,424	
Enstar-12	117+61	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-13	120+39	CL	3-inch steel/3-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$135	\$10,800	
Enstar-14	120+39 - 123+13	LT	2-inch steel	within proposed improvements	adjust/relocate	274	LF	\$125	\$34,250	
Enstar-15	122+43	CL	3/4-inch service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-16	126+67	CL	4-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$140	\$11,200	
Enstar-17	126+67 - 131+00	RT	2-inch plastic	protect in place	none	408	LF	\$0	\$0	
Enstar-18	131+00 - 136+27	RT	2-inch plastic	within proposed improvements	adjust/relocate	545	LF	\$125	\$68,125	
Enstar-19	136+19	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	53	LF	\$125	\$6,625	
Enstar-20	135+93 - 136+43	LT	2-inch plastic/1-inch plastic service	within proposed improvements	adjust/relocate	97	LF	\$125	\$12,125	
Enstar-21	139+36	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$125	\$10,000	
Enstar-22	140+91 - 151+51	LT	2-inch plastic	protect in place	none	1080	LF	\$0	\$0	
Enstar-23	143+28	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-24	145+22	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-25	147+52	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-26	149+55	LT	7/8-inch plastic service	protect in place	none	1	EA	\$0	\$0	
Enstar-27	151+51	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	75	LF	\$125	\$9,375	
Enstar-28	151+94 - 153+62	LT	3/4-inch steel service	protect in place	none	1	EA	\$0	\$0	
Enstar-29	153+62	CL	6-inch steel crossing	within proposed improvements	adjust/relocate	80	LF	\$150	\$12,000	
									\$0	

Construction Costs: \$258,464
 Engineering/Administration (30%) \$77,539
Total: \$336,003

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Alternative 2

Prepared By: CRW

Ver. 5.1

[B]=local bond; [S]=state grant; [F]= federal grant

DESIGN	Design Management	\$135,954	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$1,250,000	
	Contractual Dsgn Sers (Add'l)	\$300,000	
	Contractual Design Survey	\$130,000	
	Contractual Design Soils	\$90,000	
	Miscellaneous	\$0	
Subtotal			\$1,905,954

WEBPAGE DATA	
Environ	\$0
DS	\$476,488
Prelim Dsgn	\$952,977
Final Dsgn	\$476,488
ROW	\$780,576
Utilities	\$1,360,000
Const	\$16,215,944
Total	\$20,262,473

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$370,000	
	CEA	\$30,000	
	ML&P	\$770,000	
	ACS	\$120,000	
	GCI	\$70,000	
Subtotal			\$1,360,000

ROW	Real Estate Services	\$140,000	
	<i>Start 20??</i> Land Acquisition	\$640,576	
Subtotal			\$780,576

CONSTRUCTION	Construction Management	\$182,561	
	<i>Start 20??</i> Inspection	\$472,510	
	Materials Testing	\$107,389	
	Survey	\$64,433	
	Miscellaneous	\$0	
	Construction Contract	\$10,738,853	
Subtotal			\$11,565,745

MISCELLANEOUS	Bond Overhead (15.0%)	\$3,039,371	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$1,610,828	
Subtotal			\$4,650,199

PROJECT TOTAL			<u><u>\$20,262,473</u></u>
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**W. 32nd Avenue / E. 33rd Avenue Upgrades - Arctic Boulevard. to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 3**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$81,000	\$81,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	16	\$800	\$12,800
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$45,000	\$45,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	3,971	1.00	0	3,971	\$14	\$55,594
A-5	20.08	Remove Curb and Gutter	LF	11,896	1.00	0	11,896	\$8	\$95,168
A-6	20.09	Remove Pavement	SY	25,022	1.00	0	25,022	\$3	\$75,066
A-7	20.10	Unusable Excavation	CY	51,303	1.20	-2	61,600	\$12	\$739,200
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	48,027	1.20	-2	57,600	\$15	\$864,000
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	39,437	1.20	-2	47,300	\$15	\$709,500
A-10	20.22	Leveling Course	Ton	656	1.08	-1	710	\$30	\$21,300
A-11	20.25	Geotextile (Type A)	SY	45,508	1.00	-1	45,510	\$1.50	\$68,265
A-12	20.26	Insulation Board (R-4.5)	SF	20,404	1.01	-1	20,610	\$1	\$20,610
A-13	20.26	Insulation Board (R-9)	SF	341,920	1.01	-1	345,340	\$1.50	\$518,010
A-14	20.28	Reconstruct Driveway	EA	47	1.00	0	47	\$2,000	\$94,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	12,309	1.00	0	12,309	\$25	\$307,725
A-16	30.02	Curb nose	EA	4	1.00	0	4	\$5,000	\$20,000
A-17	30.03	P.C.C. Sidewalk	SY	3,829	1.00	0	3,829	\$60	\$229,740
A-18	30.03	P.C.C. Truck Apron	SY	193	1.00	0	193	\$100	\$19,300
A-19	30.04	P.C.C. Curb Ramp	EA	71	1.00	0	71	\$2,000	\$142,000
A-20	30.05	P.C.C. Retaining Wall	CY	96	1.00	0	96	\$1,500	\$144,000
A-21	30.10	Decorative Concrete (Red, Brick Pattern)	SY	273	1.00	0	273	\$100	\$27,300
A-22	40.06	A.C. Pavement (Class E)	Ton	262	1.06	0	278	\$105	\$29,190
A-23	40.06	A.C. Pavement (Class D)	Ton	3,695	1.06	-1	3,920	\$105	\$411,600
A-24	50.06	Remove and Replace Manhole Cover and Frame	EA	10	1.00	0	10	\$700	\$7,000
A-25	50.09	Adjust Cleanout to Finish Grade	EA	1	1.00	0	1	\$500	\$500
A-26	55.08	Adjust Storm Drain Manhole Ring	EA	11	1.00	0	11	\$1,600	\$17,600
A-27	60.03	Remove and Replace Valve Box Top Section	EA	33	1.00	0	33	\$500	\$16,500
A-28	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	8	1.00	0	8	\$9,000	\$72,000
A-29	60.05	Adjust Key Box	EA	30	1.00	0	30	\$450	\$13,500
A-30	60.08	Decommission Fire Hydrant Assembly	EA	8	1.00	0	8	\$3,000	\$24,000
A-31	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$119,000	\$119,000
A-32	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-33	70.08	Remove and Reset Fence	LF	428	1.00	0	428	\$35	\$14,980
A-34	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	11,407	1.00	0	11,407	\$8	\$91,256
A-35	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	8,044	1.00	0	8,044	\$8	\$64,352
A-36	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" Yellow) (250 Mil)	LF	2,473	1.00	0	2,473	\$36	\$89,028
A-37	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" White) (250 Mil)	LF	851	1.00	0	851	\$36	\$30,636
A-38	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	1,169	1.00	0	1,169	\$48	\$56,112
A-39	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Words and Symbols) (250 Mil)	EA	22	1.00	0	22	\$850	\$18,700
A-40	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Sharrow/Bike Symbols) (250 Mil)	EA	50	1.00	0	50	\$1,200	\$60,000
A-41	70.11	Standard Sign	SF	478	1.00	0	478	\$80	\$38,240
A-42	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$730,000	\$730,000
A-43	70.12	Remove and Replace Wood Bollard	EA	26	1.00	0	26	\$350	\$9,100
A-44	70.22	Parking Lot Modifications	LS	1	1.00	0	1	\$30,000	\$30,000
A-45	75.02	Landscaping	LS	1	1.00	0	1	\$75,000	\$75,000
A-46	75.03	Topsoil (4" Depth)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-47	75.03	Topsoil (18-inch depth)	MSF	5.1	1.00	0	5	\$1,200	\$6,000
A-48	75.04	Seeding (Schedule A)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-49	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
TOTAL									\$6,387,472

Schedule B - Drainage Improvements									
B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$20,000	\$20,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	4,082	1.00	0	4,082	\$35	\$142,870
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	1,000	1.20	0	1,200	\$20	\$24,000
B-4	20.16	Bedding Material (Class D)	LF	4,082	1.00	0	4,082	\$34	\$138,788
B-5	20.27	Disposal of Unusable or Surplus Material	CY	1,796	1.20	0	2,155	\$18	\$38,790
B-6	55.02	Furnish, Install, and Televiser Pipe (12-Inch, Type S, CPEP)	LF	1,013	1.00	0	1,013	\$62	\$62,806
B-7	55.02	Furnish, Install, and Televiser Pipe (18-Inch, Type S, CPEP)	LF	2,541	1.00	0	2,541	\$65	\$165,165
B-8	55.02	Furnish, Install, and Televiser Pipe (24-Inch, Type S, CPEP)	LF	529	1.00	0	529	\$70	\$37,030
B-9	55.04	Connect to Existing Storm Drain System	EA	7	1.00	0	7	\$3,000	\$21,000
B-10	55.05	Construct (Type I) Manhole	EA	9	1.00	0	9	\$6,000	\$54,000
B-11	55.05	Construct (Type II) Catch Basin Manhole	EA	11	1.00	0	11	\$9,000	\$99,000
B-12	55.05	Construct (Type II) Bypass Manhole	EA	2	1.00	0	2	\$15,000	\$30,000
B-13	55.09	Construct Catch Basin	EA	31	1.00	0	31	\$4,000	\$124,000
B-14	55.11	Remove Manhole	EA	6	1.00	0	6	\$1,300	\$7,800
B-15	55.11	Remove Catch Basin	EA	16	1.00	0	16	\$1,200	\$19,200
B-16	55.22	Oil and Grit Separator	EA	2	1.00	0	2	\$30,000	\$60,000
B-17	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$30,000	\$30,000
B-18	70.07	Remove Pipe	LF	1,534	1.00	0	1,534	\$21	\$32,214
TOTAL									\$1,106,663

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Arctic Boulevard. to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 3**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Signalization Improvements									
C-1	80.01	Temporary Signalization	L.S.	1	1.00	0	1	\$30,000	\$30,000
C-2	80.02	Trench and Backfill (2'W x 3.5'D)	L.F.	1,068	1.30	-1	1,390	\$15	\$20,850
C-3	80.04	Signal Mast Arm Pole Foundation	Each	1	1.00	0	1	\$6,000	\$6,000
C-4	80.05	Combination Signal/Luminaire Pole (40' Height)	Each	1	1.00	0	1	\$14,500	\$14,500
C-5	80.05	Signal Mast Arm	Each	1	1.00	0	1	\$5,000	\$5,000
C-6	80.06	Luminaire Arm 18 Ft. Length	Each	1	1.00	0	1	\$500	\$500
C-7	80.07	GRC Steel Conduit (2 inch)	L.F.	620	1.20	-1	740	\$16	\$11,840
C-8	80.08	Remove Junction Box	Each	14	1.00	0	14	\$400	\$5,600
C-9	80.08	Junction Box (Type IA)	Each	13	1.00	0	13	\$600	\$7,800
C-10	80.08	Junction Box (Type II)	Each	1	1.00	0	1	\$3,500	\$3,500
C-11	80.10	3 Conductor 14 AWG IMSA 20-1 Cable	L.F.	716	1.20	-1	860	\$4	\$3,440
C-12	80.10	5 Conductor 14 AWG IMSA 20-1 Cable	L.F.	716	1.20	-1	860	\$5	\$4,300
C-13	80.10	7 Conductor 14 AWG IMSA 20-1 Cable	L.F.	669	1.20	-1	800	\$5	\$4,000
C-14	80.10	3 Conductor 20 AWG IMSA 20-1 Cable	L.F.	223	1.20	-1	270	\$5	\$1,350
C-15	80.10	3 Conductor 8 AWG Type XHHW-2 Cable	L.F.	223	1.20	-1	270	\$4	\$945
C-16	80.10	25 Pair 19 AWG PE-39 Telemetry Cable	L.F.	1,185	1.20	-1	1,420	\$8	\$11,360
C-17	80.10	6 Conductor 20 /22 Radar Detection Cable	L.F.	907	1.20	-1	1,090	\$4	\$4,360
C-18	80.10	7 Pair 18 AWG Tray Cable	L.F.	1,556	1.20	-1	1,870	\$5	\$9,350
C-19	80.18	Install Loop Detector - New Work	Each	50	1.00	0	50	\$1,000	\$50,000
C-20	80.18	Install Optical Preemption Detector (721 Opticom with Single Confirmation)	Each	1	1.00	0	1	\$2,500	\$2,500
C-21	80.18	Radar Detection Unit	Each	6	1.00	0	6	\$7,500	\$45,000
C-22	80.18	12 Inch 3 Face LED Signal Head (Overhead Mount)	Each	1	1.00	0	1	\$5,000	\$5,000
C-23	80.18	12 Inch 3 Face LED Signal Head (Side Mount)	Each	1	1.00	0	1	\$5,000	\$5,000
C-24	80.18	12 Inch 5 Face LED Signal Head (Overhead Mount)	Each	1	1.00	0	1	\$6,000	\$6,000
C-25	80.18	12 Inch 5 Face LED Signal Head (Side Mount)	Each	1	1.00	0	1	\$6,000	\$6,000
C-26	80.20	Pedestrian LED Signal Head	Each	2	1.00	0	2	\$2,000	\$4,000
C-27	80.21	Pedestrian Pushbutton Assembly	Each	2	1.00	0	2	\$750	\$1,500
C-28	80.23	Luminaire (400 Watt HPS, Type III, Medium, Full Cut Off)	Each	1	1.00	0	1	\$2,000	\$2,000
C-29	80.28	Remove Signal Mast Arm or Combination Pole	Each	1	1.00	0	1	\$3,000	\$3,000
TOTAL									\$274,695

Schedule D - Illumination Improvements									
D-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	6,291	1.10	-1	6,920	\$9	\$62,280
D-2	80.04	Driven Pole Luminaire Pole Foundations	EA	58	1.00	0	58	\$1,800	\$104,400
D-3	80.04	Load Center Foundation (Type 1A)	EA	3	1.00	0	3	\$4,000	\$12,000
D-4	80.05	Fixed Base Luminaire Pole	EA	58	1.00	0	58	\$3,000	\$174,000
D-5	80.06	Luminaire Arm	EA	58	1.00	0	58	\$700	\$40,600
D-6	80.07	Steel Conduit (2 inch)	FT	7,340	1.10	-1	8,070	\$17	\$137,190
D-7	80.08	Junction Box (Type IA)	EA	58	1.00	0	58	\$750	\$43,500
D-8	80.08	Junction Box (Type II)	EA	6	1.00	0	6	\$1,600	\$9,600
D-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	7,340	1.10	-1	8,070	\$4	\$32,280
D-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	3	1.00	0	3	\$7,000	\$21,000
D-11	80.23	Luminaire (60 LED, Medium, Type 2)	EA	39	1.00	0	39	\$1,150	\$44,850
D-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	7	1.00	0	7	\$1,300	\$9,100
D-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	12	1.00	0	12	\$1,450	\$17,400
D-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	4	1.00	0	4	\$1,000	\$4,000
D-15	80.23	Spare Luminaire (80 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,200	\$1,200
D-16	80.23	Spare Luminaire (100 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,450	\$1,450
D-17	80.28	Remove Luminaire Pole	EA	24	1.00	0	24	\$750	\$18,000
TOTAL									\$732,850

SUMMARY	
Schedule A - Roadway Improvements	\$6,387,472
Schedule B - Drainage Improvements	\$1,106,663
Schedule C - Signalization Improvements	\$274,695
Schedule D - Illumination Improvements	\$732,850
Subtotal	\$8,501,680
15% Construction Contingency	\$1,280,000
Total Estimated Construction Cost:	\$9,781,680

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative 3	
Electric (CEA)	\$27,170
Electric (ML&P)	\$431,860
Telecommunications (ACS)	\$104,813
Cable Television (GCI)	\$58,741
Natural Gas (Enstar)	\$215,006
<i>Subtotal:</i>	<i>\$837,589</i>
<i>Construction Contingency (10%):</i>	<i>\$83,759</i>
Total Utility Relocation Cost:	\$921,348

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
CEA-1	199+67	RT	utility pole	no conflict anticipated	none	0	EA	\$0	\$0	
CEA-2	199+67	CL	overhead crossing	no conflict anticipated	none	50	LF	\$0	\$0	
CEA-3	199+67 - 200+44	RT	overhead crossing	no conflict anticipated	none	77	LF	\$0	\$0	
CEA-4	200+44	CL	overhead crossing	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-5	200+44	RT	utility pole	no conflict anticipated	none	0	EA	\$0	\$0	
CEA-6	200+44 - 214+37	RT	overhead electric line	protect in place	none	1399	LF	\$0	\$0	
CEA-7	201+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-8	201+89	RT	overhead electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-9	205+00	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
CEA-10	205+00	RT	overhead electric service	protect in place	none	1	EA	\$0	\$0	
CEA-11	206+89	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
CEA-12	206+89	RT	underground electric service	protect in place	none	1	EA	\$0	\$0	
CEA-13	208+25	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
CEA-14	208+99	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
CEA-15	208+99	RT	underground electric service	protect in place	none	1	EA	\$0	\$0	
CEA-16	210+99	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
CEA-17	210+99	RT	overhead electric service	protect in place	none	1	EA	\$0	\$0	
CEA-18	212+84	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
CEA-19	214+37	LT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
CEA-20	214+37	LT	overhead utility service	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
CEA-21	214+37	LT	overhead utility line	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	

Construction Costs: \$20,900

Engineering/Administration (30%): \$6,270

Total: \$27,170

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-1	199+67	CL	overhead crossing	no conflicts anticipated	none	50	LF	\$0	\$0	
MLP-2	200+44	RT	large utility pole	no conflicts anticipated	none	1	EA	\$0	\$0	
MLP-3	199+67 - 200+44	RT	overhead crossing	no conflicts anticipated	none	77	LF	\$0	\$0	
MLP-4	200+44	CL	overhead crossing	no conflicts anticipated	none	80	LF	\$0	\$0	
MLP-5	200+44 - 214+37	RT	overhead electric line	protect in place	none	1400	LF	\$0	\$0	
MLP-6	201+89	CL	overhead crossing	undergrounded by ML&P	none	1	EA	\$0	\$0	
MLP-7	203+21	LT	overhead crossing	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
MLP-8	203+21	LT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-9	203+67 - 206+48	RT/LT	underground electric line	protect in place	none	310	LT	\$0		
MLP-10	205+04	CL	underground crossing	protect in place	none	60	LF	\$0		
MLP-11	206+89	LT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-12	206+89	CL	overhead crossing	pole being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
MLP-13	208+25	CL	overhead crossing	protect in place	none	113	LF	\$0	\$0	
MLP-14	210+99 - 212+84	RT	underground electric line	protect in place	none	185	LF	\$0	\$0	
MLP-15	211+25	CL	overhead crossing	protect in place	none	155	LF	\$0	\$0	
MLP-16	211+52	LT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-17	212+84	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-18	213+26	LT	utility pole	within proposed improvements	remove	1	EA	\$1,600	\$1,600	
MLP-19	213+26 - 216+21	LT	overhead electric line	poles being removed	underground	295	LF	\$90	\$26,550	
MLP-20	214+37	CL	overhead crossing	poles being removed	underground	310	LF	\$90	\$27,900	underground to next poles
MLP-21	214+37	RT	overhead service	poles being removed	underground	97	LF	\$75		
MLP-22	215+42	LT	utility pole	within proposed improvements	remove	1	EA	\$1,600	\$1,600	
MLP-23	215+42 - 220+45	LT	underground electric line	protect in place	none	504	LF	\$0	\$0	multiple lines
MLP-24	215+64	LT	underground crossing	protect in place	none	30	LF	\$0	\$0	
MLP-25	216+21	LT	utility pole	within proposed improvements	remove	1	EA	\$1,600	\$1,600	
MLP-26	217+52	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-27	218+20	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-28	219+55	LT	load center	protect in place	none	1	EA	\$0	\$0	
MLP-29	220+45	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-30	220+45 - 225+46	RT	underground electric line	protect in place	none	500	LF	\$0	\$0	
MLP-31	223+47	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-32	223+47	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	two lines
MLP-33	225+32	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-34	225+45	LT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-35	225+46	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-36	225+46 - 226+91	LT	underground electric line	protect in place	none	155	LF	\$0	\$0	
MLP-37	225+96	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-38	226+91	LT	utility pole	protect in place	none	1	EA	\$0	\$0	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-39	227+10	LT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-40	227+20	LT	load center	within proposed improvements	relocate	1	EA	\$5,650	\$5,650	
MLP-41	227+87 - 236+48	RT	underground electric line	protect in place	none	862	LF	\$0	\$0	
MLP-42	236+15	RT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-43	236+15	CL	underground electric line	protect in place	none	60	LF	\$0	\$0	
MLP-44	236+48	RT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-45	238+61	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-46	240+89	CL	overhead crossing	protect in place	none	133	LF	\$0	\$0	
MLP-47	240+89	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-48	240+89 - 251+87	RT	overhead electric line	protect in place	none	1098	LF	\$0	\$0	2 poles being relocated
MLP-49	241+10	RT	switch cabinet	within proposed improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-50	241+21	RT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-51	244+04	RT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-52	244+04	RT	overhead utility service	pole being relocated	adjust on pole	2	EA	\$3,400	\$6,800	
MLP-53	244+04 - 248+75	RT	underground electric line	protect in place	none	170	LF	\$0	\$0	
MLP-54	245+44	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-55	245+75	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-56	247+17	RT	utility pole	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-57	247+17	RT	underground electric service	pole being relocated	adjust on pole	2	EA	\$3,400	\$6,800	
MLP-58	247+17 - 248+86	LT	underground electric line	protect in place	none	174	LF	\$0	\$0	
MLP-59	247+26	RT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-60	250+15	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-61	251+36	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-62	251+36	RT	overhead utility service	no conflicts anticipated	none	1	EA	\$0	\$0	
MLP-63	251+36 - 251+88	RT	underground electric line	protect in place	none	55	LF	\$0	\$0	
MLP-64	251+87	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-65	251+87	RT	overhead utility service	no conflicts anticipated	none	1	EA	\$0	\$0	
MLP-66	251+87	CL	overhead crossing	no conflicts anticipated	none	185	LF	\$0	\$0	
MLP-67	251+94	RT	transformer	no conflicts anticipated	none	1	EA	\$0	\$0	
MLP-68	253+65	LT	utility pole	no conflicts anticipated	none	1	EA	\$0	\$0	
MLP-69	253+65	CL	overhead crossing	no conflicts anticipated	none	60	LF	\$0	\$0	
MLP-70	402+15	LT	transformer	within proposed improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-71	402+15	RT	switch cabinet	protect in place	none	1	EA	\$0	\$0	

Construction Costs: \$332,200

Engineering/Administration (30%): \$99,660

Total: \$431,860

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	199+74	CL	overhead FO crossing	no conflicts anticipated	none	60	LF	\$0	\$0	
ACS-2	199+74	CL	overhead T crossing	no conflicts anticipated	none	60	LF	\$0	\$0	
ACS-3	199+74	CL	underground T crossing	no conflicts anticipated	none	60	LF	\$0	\$0	
ACS-4	199+75	LT	telephone vault	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-5	199+74 - 201+89	RT	overhead T line	no conflicts anticipated	none	222	LF	\$0	\$0	
ACS-6	200+44	RT	overhead T service	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-7	201+78	LT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-8	201+79	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-9	201+79 - 225+80	RT	underground T line	protect in place	none	2415	LF	\$0	\$0	
ACS-10	203+64	RT	underground T crossing	protect in place	none	33	LF	\$0	\$0	
ACS-11	205+04	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-12	205+04	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-13	207+06	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-14	208+19	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-15	211+06	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-16	212+72	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-17	213+21 - 214+47	RT	underground T line	protect in place	none	146	LF	\$0	\$0	
ACS-18	214+39	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-19	214+39	LT	overhead T crossing	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-20	217+43	LT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-21	217+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-22	218+12	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-23	218+22	RT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-24	218+39	CL	underground FO crossing	protect in place	none	60	LF	\$0	\$0	
ACS-25	218+49	LT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-26	218+49 - 219+74	LT	underground FO line	protect in place	none	148	LF	\$0	\$0	
ACS-27	219+66	LT	FO vault	protect in place	none	1	EA	\$0	\$0	
ACS-28	220+48	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-29	220+60 - 225+82	RT	underground FO line	protect in place	none	550	LF	\$0	\$0	
ACS-30	220+98	RT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-31	221+51	CL	underground FO crossing	protect in place	none	60	LF	\$0	\$0	
ACS-32	221+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-33	221+56 - 225+83	LT	underground T line	protect in place	none	427	LF	\$0	\$0	
ACS-34	225+83	CL	underground T crossing	protect in place	none	133	LF	\$0	\$0	
ACS-35	225+83	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-36	227+00	CL	underground T crossing	protect in place	none	125	LF	\$0	\$0	
ACS-37	227+01	RT	telephone pedestal	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-38	227+01 - 238+23	RT	underground T line	protect in place	none	1120	LF	\$0	\$0	
ACS-39	231+28	RT	telephone vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-40	235+80	RT	telephone vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-41	236+16	CL	underground T crossing	protect in place	none	50	LF	\$0	\$0	
ACS-42	239+24	CL	underground FO crossing	protect in place	none	80	LF	\$0	\$0	
ACS-43	239+24 - 247+31	RT	underground FO line	protect in place	none	828	LF	\$0	\$0	
ACS-44	240+89 - 247+39	RT	underground T line	protect in place	none	673	LF	\$0	\$0	
ACS-45	241+38	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-46	244+04	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-47	244+11	RT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
ACS-48	245+44	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-49	244+04 - 251+87	RT	overhead T line	protect in place	none	783	LF	\$0	\$0	2 poles being impacted
ACS-50	244+04 - 251+87	RT	overhead T line	poles being relocated	adjust on pole	2	EA	\$5,375	\$10,750	
ACS-51	251+44 - 251+87	RT	underground T line	no conflicts anticipated	none	44	LF	\$0	\$0	
ACS-52	251+87	CL	overhead T crossing	no conflicts anticipated	none	185	LF	\$0	\$0	
ACS-53	251+96	CL	overhead T crossing	no conflicts anticipated	none	87	LF	\$0	\$0	

Construction Costs: \$80,625
 Engineering/Administration (30%): \$24,188
Total: \$104,813

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	199+66	CL	overhead C line	no conflicts anticipated	none	80	LF	\$0	\$0	
GCI-2	199+66	CL	overhead FO crossing	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-3	199+66 - 210+99	RT	overhead C line	no conflicts anticipated	none	1134	LF	\$0	\$0	
GCI-4	199+66 - 200+44	RT	underground FO crossing	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-5	199+66 - 210+99	RT	overhead FO line	no conflicts anticipated	none	1134	LF	\$0	\$0	
GCI-6	203+62 - 204+96	RT	underground C line	protect in place	none	151	LF	\$0	\$0	
GCI-7	203+67	RT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-8	204+96	CL	underground C crossing	protect in place	none	80	LF	\$0	\$0	
GCI-9	206+90 - 207+90	RT	underground C line	protect in place	none	100	LF	\$0	\$0	
GCI-10	208+25	CL	overhead C crossing	protect in place	none	113	LF	\$0	\$0	
GCI-11	210+99 - 212+78	RT	underground C line	no conflicts anticipated	none	195	LF	\$0	\$0	
GCI-12	211+25	CL	overhead FO crossing	no conflicts anticipated	none	87	LF	\$0	\$0	
GCI-13	212+87	CL	overhead FO crossing	no conflicts anticipated	none	189	LF	\$0	\$0	
GCI-14	212+87	CL	overhead C crossing	no conflicts anticipated	none	189	LF	\$0	\$0	
GCI-15	214+37	CL	overhead C crossing	no conflicts anticipated	none	150	LF	\$0	\$0	
GCI-16	214+37	CL	overhead FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-17	214+37	LT	overhead FO connection	pole being relocated	adjust on pole	1	EA	\$2,680	\$2,680	
GCI-18	214+37	LT	overhead C connection	pole being relocated	adjust on pole	1	EA	\$2,680	\$2,680	
GCI-19	217+49	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	price for protect in place per each for FO line watch
GCI-20	217+51	CL	underground C crossing	protect in place	none	70	LF	\$0	\$0	
GCI-21	217+48 - 218+12	RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-22	217+54 - 218+15	RT	underground C line	protect in place	none	70	LF	\$0	\$0	
GCI-23	219+97	CL	underground C crossing	no conflicts anticipated	none	80	LF	\$0	\$0	
GCI-24	220+31	CL	underground FO crossing	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-25	220+31	LT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-26	226+80	RT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-27	236+06	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-28	236+07	LT	FO vault	no conflicts anticipated	none	1	EA	\$0	\$0	
GCI-29	236+06	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-30	240+80	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-31	240+80	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-32	240+80	CL	underground C crossing	protect in place	none	66	LF	\$0	\$0	
GCI-33	240+89	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-34	240+93	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-35	240+89 - 249+43	LT	underground C line	protect in place	none	858	LF	\$0	\$0	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-36	240+93 - 247+22	LT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-37	243+44	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-38	243+44	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-39	243+83	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-40	246+19 - 247+75	RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-41	247+22	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-42	247+28	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-43	247+32	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	1.0' behind sidewalk; with section
GCI-44	253+65	CL	overhead FO crossing	no conflicts anticipated	none	1	EA	\$0	\$0	

Construction Costs: \$45,185
Engineering/Administration (30%) \$13,556

Total: \$58,741

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	200+37	RT	2-inch steel	no conflicts anticipated	none	25	LF	\$0	\$0	
Enstar-2	200+37 - 202+15	RT	3-inch steel	no conflicts anticipated	none	178	LF	\$0	\$0	
Enstar-3	202+15 - 219+63	RT	2-inch steel	within proposed improvements	adjust/relocate	120	LF	\$125	\$15,000	1479 lf of main, but only relocate crossings at Bering and Eureka St.
Enstar-4	203+66	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-5	206+94	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-6	209+55	CL	1.25-inch steel crossing	within proposed improvements	adjust/relocate	80	LF	\$108	\$8,640	
Enstar-7	212+70	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-8	213+21	CL	3-inch plastic/1-1/4-inch steel crossing	within proposed improvements	adjust/relocate	125	LF	\$135	\$16,875	
Enstar-9	215+97	CL	1-1/4-inch steel crossing	within proposed improvements	adjust/relocate	78	LF	\$108	\$8,424	
Enstar-10	217+61	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-11	220+39	CL	3-inch steel/3-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$135	\$10,800	
Enstar-12	220+39 - 223+13	LT	2-inch steel	protect in place	none	274	LF	\$0	\$0	
Enstar-13	222+43	CL	3/4-inch service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-14	226+67	CL	4-inch plastic crossing	no conflicts anticipated	none	80	LF	\$0	\$0	
Enstar-15	226+67 - 236+27	RT	2-inch plastic	within proposed improvements	adjust/relocate	561	LF	\$75	\$42,075	953 lf of main, but only 561 lf in structural section
Enstar-16	236+19	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	53	LF	\$125	\$6,625	
Enstar-17	235+93 - 236+43	LT	2-inch plastic/1-inch plastic service	within proposed improvements	adjust/relocate	97	LF	\$125	\$12,125	
Enstar-18	239+36	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$125	\$10,000	
Enstar-19	240+91 - 251+51	LT	2-inch plastic	protect in place	none	1080	LF	\$0	\$0	
Enstar-20	243+28	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-21	245+22	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-22	247+52	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-23	249+55	LT	7/8-inch plastic service	no conflicts anticipated	none	1	EA	\$0	\$0	
Enstar-24	251+51	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	75	LF	\$125	\$9,375	
Enstar-25	251+94 - 253+62	LT	3/4-inch steel service	no conflicts anticipated	none	1	EA	\$0	\$0	
Enstar-26	253+62	CL	6-inch steel crossing	within proposed improvements	adjust/relocate	80	LF	\$150	\$12,000	

Construction Costs: \$165,389
 Engineering/Administration (30%) \$49,617
Total: \$215,006

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Alternative 3

Prepared By: CRW

Ver. 5.1

[B]=local bond; [S]=state grant; [F]= federal grant

DESIGN	Design Management	\$110,522	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$1,250,000	
	Contractual Dsgn Sers (Add'l)	\$300,000	
	Contractual Design Survey	\$130,000	
	Contractual Design Soils	\$90,000	
	Miscellaneous	\$0	
Subtotal			\$1,880,522

WEBPAGE DATA	
Environ	\$0
DS	\$470,130
Prelim Dsgn	\$940,261
Final Dsgn	\$470,130
ROW	\$758,884
Utilities	\$930,000
Const	\$12,952,330
Total	\$16,521,736

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$240,000	
	CEA	\$30,000	
	ML&P	\$480,000	
	ACS	\$120,000	
	GCI	\$60,000	
Subtotal			\$930,000

ROW	Real Estate Services	\$140,000	
	<i>Start 20??</i> Land Acquisition	\$618,884	
Subtotal			\$758,884

CONSTRUCTION	Construction Management	\$153,030	
	<i>Start 20??</i> Inspection	\$399,579	
	Materials Testing	\$85,017	
	Survey	\$59,512	
	Miscellaneous	\$0	
	Construction Contract	\$8,501,680	
Subtotal			\$9,198,818

MISCELLANEOUS	Bond Overhead (15.0%)	\$2,478,260	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$1,275,252	
Subtotal			\$3,753,512

PROJECT TOTAL			\$16,521,736
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**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 4 - PHASE 2**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$41,000	\$41,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	8	\$800	\$6,400
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$28,000	\$28,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	1,880	1.00	0	1,880	\$14	\$26,320
A-5	20.08	Remove Curb and Gutter	LF	4,060	1.00	0	4,060	\$8	\$32,480
A-6	20.09	Remove Pavement	SY	10,704	1.00	0	10,704	\$3	\$32,112
A-7	20.10	Unusable Excavation	CY	25,555	1.20	-2	30,700	\$12	\$368,400
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	23,044	1.20	-2	27,700	\$15	\$415,500
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	19,716	1.20	-2	23,700	\$15	\$355,500
A-10	20.22	Leveling Course	Ton	1,509	1.08	-1	1,630	\$30	\$48,900
A-11	20.25	Geotextile (Type A)	SY	20,355	1.00	-1	20,350	\$1.50	\$30,525
A-12	20.26	Insulation Board (R-4.5)	SF	11,162	1.01	-1	11,270	\$1	\$11,270
A-13	20.26	Insulation Board (R-9)	SF	150,055	1.01	-1	151,560	\$1.50	\$227,340
A-14	20.28	Reconstruct Driveway	EA	16	1.00	0	16	\$3,000	\$48,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	5,064	1.00	0	5,064	\$25	\$126,600
A-16	30.02	Curb nose	EA	8	1.00	0	8	\$5,000	\$40,000
A-17	30.03	P.C.C. Sidewalk	SY	2,394	1.00	0	2,394	\$60	\$143,640
A-18	30.04	P.C.C. Curb Ramp	EA	20	1.00	0	20	\$2,000	\$40,000
A-19	30.05	P.C.C. Retaining Wall	CY	96	1.00	0	96	\$1,500	\$144,000
A-20	30.10	Decorative Concrete (Red, Brick Pattern)	SY	202	1.00	0	202	\$100	\$20,200
A-21	40.06	A.C. Pavement (Class E)	Ton	1,228	1.06	0	1,302	\$105	\$136,710
A-22	40.06	A.C. Pavement (Class D)	Ton	1,523	1.06	-1	1,610	\$105	\$169,050
A-23	50.06	Remove and Replace Manhole Cover and Frame	EA	2	1.00	0	2	\$700	\$1,400
A-24	55.08	Adjust Storm Drain Manhole Ring	EA	7	1.00	0	7	\$1,600	\$11,200
A-25	60.03	Remove and Replace Valve Box Top Section	EA	18	1.00	0	18	\$500	\$9,000
A-26	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	3	1.00	0	3	\$9,000	\$27,000
A-27	60.05	Adjust Key Box	EA	5	1.00	0	5	\$450	\$2,250
A-28	60.08	Decommission Fire Hydrant Assembly	EA	3	1.00	0	3	\$3,000	\$9,000
A-29	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$61,000	\$61,000
A-30	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-31	70.08	Remove and Reset Fence	LF	50	1.00	0	50	\$35	\$1,750
A-32	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	5,198	1.00	0	5,198	\$8	\$41,584
A-33	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	376	1.00	0	376	\$8	\$3,008
A-34	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" Yellow) (250 Mil)	LF	1,956	1.00	0	1,956	\$36	\$70,416
A-35	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" White) (250 Mil)	LF	650	1.00	0	650	\$36	\$23,400
A-36	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	1,410	1.00	0	1,410	\$48	\$67,680
A-37	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Turn Symbols) (250 Mil)	EA	12	1.00	0	12	\$850	\$10,200
A-38	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	23	1.00	0	23	\$1,200	\$27,600
A-39	70.11	Standard Sign	SF	183	1.00	0	183	\$80	\$14,640
A-40	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$370,000	\$370,000
A-41	70.22	Parking Lot Modifications	LS	1	1.00	0	1	\$28,000	\$28,000
A-42	75.02	Landscaping	LS	1	1.00	0	1	\$25,000	\$25,000
A-43	75.03	Topsoil (4" Depth)	MSF	22.2	1.00	0	22	\$500	\$11,000
A-44	75.03	Topsoil (18-inch depth)	MSF	1.8	1.00	0	2	\$1,200	\$2,400
A-45	75.04	Seeding (Schedule A)	MSF	22.2	1.00	0	22	\$500	\$11,000
A-46	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
TOTAL									\$3,333,075

Schedule B - Drainage Improvements

B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$5,000	\$5,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	965	1.00	0	965	\$45	\$43,425
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	540	1.20	0	648	\$18	\$11,664
B-4	20.16	Bedding Material (Class D)	LF	965	1.00	0	965	\$18	\$17,370
B-5	20.27	Disposal of Unusable or Surplus Material	CY	570	1.20	0	684	\$20	\$13,680
B-6	55.02	Furnish, Install, and Televiser Pipe (12-Inch, Type S, CPEP)	LF	449	1.00	0	449	\$62	\$27,838
B-7	55.02	Furnish, Install, and Televiser Pipe (18-Inch, Type S, CPEP)	LF	285	1.00	0	285	\$65	\$18,525
B-8	55.02	Furnish, Install, and Televiser Pipe (24-Inch, Type S, CPEP)	LF	230	1.00	0	230	\$70	\$16,100
B-9	55.04	Connect to Existing Storm Drain System	EA	6	1.00	0	6	\$2,500	\$15,000
B-10	55.05	Construct (Type I) Manhole	EA	4	1.00	0	4	\$5,000	\$20,000
B-11	55.05	Construct (Type II) Catch Basin Manhole	EA	3	1.00	0	3	\$8,000	\$24,000
B-12	55.05	Construct (Type II) Bypass Manhole	EA	1	1.00	0	1	\$15,000	\$15,000
B-13	55.09	Construct Catch Basin	EA	11	1.00	0	11	\$4,000	\$44,000
B-14	55.11	Remove Manhole	EA	1	1.00	0	1	\$1,300	\$1,300
B-15	55.11	Remove Catch Basin	EA	5	1.00	0	5	\$1,000	\$5,000
B-16	55.22	Oil and Grit Separator	EA	1	1.00	0	1	\$25,000	\$25,000
B-17	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$5,000	\$5,000
B-18	70.07	Remove Pipe	LF	179	1.00	0	179	\$20	\$3,580
TOTAL									\$311,482

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 4 - PHASE 2**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Signalization Improvements									
C-1	80.01	Temporary Signalization	LS	1	1.00	0	1	\$150,000	\$150,000
C-2	80.02	Trench and Backfill (2'W x 3.5'D)	LF	1,410	1.30	-1	1,830	\$15	\$27,450
C-3	80.04	Signal Mast Arm Pole Foundation	EA	2	1.00	0	2	\$10,000	\$20,000
C-4	80.05	Combination Signal/Luminaire Pole (40' Height)	EA	2	1.00	0	2	\$20,000	\$40,000
C-5	80.05	Signal Mast Arm	EA	2	1.00	0	2	\$12,500	\$25,000
C-6	80.06	Luminaire Arm 18 Ft. Length	EA	2	1.00	0	2	\$1,000	\$2,000
C-7	80.07	GRC Steel Conduit (3 inch)	L.F.	146	1.20	-1	180	\$30	\$5,400
C-8	80.07	GRC Steel Conduit (2 inch)	LF	1,264	1.20	-1	1,520	\$20	\$30,400
C-9	80.08	Remove Junction Box	EA	9	1.00	0	9	\$750	\$6,750
C-10	80.08	Junction Box (Type IA)	EA	7	1.00	0	7	\$1,000	\$7,000
C-11	80.08	Junction Box (Type II)	EA	2	1.00	0	2	\$3,500	\$7,000
C-12	80.10	3 Conductor 14 AWG IMSA 20-1 Cable	LF	2,834	1.20	-1	3,400	\$4	\$13,600
C-13	80.10	5 Conductor 14 AWG IMSA 20-1 Cable	LF	2,834	1.20	-1	3,400	\$5	\$17,000
C-14	80.10	7 Conductor 14 AWG IMSA 20-1 Cable	LF	1,842	1.20	-1	2,210	\$5	\$11,050
C-15	80.10	3 Conductor 20 AWG IMSA 20-1 Cable	LF	1,057	1.20	-1	1,270	\$5	\$6,350
C-16	80.10	3 Conductor 8 AWG Type XHHW-2 Cable	LF	1,653	1.20	-1	1,980	\$4	\$6,930
C-17	80.10	3 Conductor 6 AWG Power	L.F.	62	1.20	-1	70	\$10	\$700
C-18	80.10	25 Pair 19 AWG PE-39 Telemetry Cable	LF	1,185	1.20	-1	1,420	\$8	\$11,360
C-19	80.10	6 Conductor 20 /22 Radar Detection Cable	LF	1,017	1.20	-1	1,220	\$10	\$12,200
C-20	80.10	7 Pair 18 AWG Tray Cable	LF	1,332	1.20	-1	1,600	\$5	\$8,000
C-21	80.17	TS-2-1 Controller Unit	Each	2	1.00	1	2	\$85,000	\$170,000
C-22	80.14	Load Center	Each	2	1.00	1	2	\$12,000	\$24,000
C-23	80.18	Install Loop Detector - New Work	EA	55	1.00	0	55	\$2,000	\$110,000
C-24	80.18	Install Optical Preemption Detector (721 Opticom with Single Confirmation)	EA	2	1.00	0	2	\$2,500	\$5,000
C-25	80.18	Radar Detection Unit	EA	6	1.00	0	6	\$7,500	\$45,000
C-26	80.18	12 Inch 3 Face LED Signal Head (Overhead Mount)	EA	2	1.00	0	2	\$5,000	\$10,000
C-27	80.18	12 Inch 3 Face LED Signal Head (Side Mount)	EA	2	1.00	0	2	\$5,000	\$10,000
C-28	80.18	12 Inch 5 Face LED Signal Head (Overhead Mount)	EA	1	1.00	0	1	\$6,000	\$6,000
C-29	80.18	12 Inch 5 Face LED Signal Head (Side Mount)	EA	1	1.00	0	1	\$6,000	\$6,000
C-30	80.20	Pedestrian LED Signal Head	EA	4	1.00	0	4	\$2,000	\$8,000
C-31	80.21	Pedestrian Pushbutton Assembly	EA	4	1.00	0	4	\$1,000	\$4,000
C-32	80.23	Luminaire (400 Watt HPS, Type III, Medium, Full Cut Off)	EA	2	1.00	0	2	\$2,000	\$4,000
C-33	80.23	Luminaire (400 Watt HPS, Type III, Medium, Full Cut Off)	Each	2	1.00	0	2	\$2,000	\$4,000
C-34	80.28	Remove Signal Mast Arm or Combination Pole	EA	2	1.00	0	2	\$7,500	\$15,000
TOTAL									\$829,190

Schedule D - Illumination Improvements									
D-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	2,340	1.10	-1	2,570	\$9	\$23,130
D-2	80.04	Driven Pole Luminaire Pole Foundations	EA	24	1.00	0	24	\$1,800	\$43,200
D-3	80.04	Load Center Foundation (Type 1A)	EA	1	1.00	0	1	\$4,000	\$4,000
D-4	80.05	Fixed Base Luminaire Pole	EA	24	1.00	0	24	\$3,000	\$72,000
D-5	80.06	Luminaire Arm	EA	24	1.00	0	24	\$700	\$16,800
D-6	80.07	Steel Conduit (2 inch)	FT	2,990	1.10	-1	3,290	\$17	\$55,930
D-7	80.08	Junction Box (Type IA)	EA	24	1.00	0	24	\$750	\$18,000
D-8	80.08	Junction Box (Type II)	EA	2	1.00	0	2	\$1,600	\$3,200
D-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	2,990	1.10	-1	3,290	\$4	\$13,160
D-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	1	1.00	0	1	\$7,000	\$7,000
D-11	80.23	Luminaire (60 LED, Medium, Type 2)	EA	13	1.00	0	13	\$1,150	\$14,950
D-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,300	\$1,300
D-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	10	1.00	0	10	\$1,450	\$14,500
D-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,000	\$1,000
D-15	80.23	Spare Luminaire (80 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,200	\$1,200
D-16	80.23	Spare Luminaire (100 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,450	\$1,450
D-17	80.28	Remove Luminaire Pole	EA	8	1.00	0	8	\$750	\$6,000
TOTAL									\$296,820

SUMMARY	
Schedule A - Roadway Improvements	\$3,333,075
Schedule B - Drainage Improvements	\$311,482
Schedule C - Signalization Improvements	\$829,190
Schedule D - Illumination Improvements	\$296,820
Subtotal	\$4,770,567
15% Construction Contingency	\$720,000
Total Estimated Construction Cost:	\$5,490,567

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative 4 - Phase 2	
Electric (CEA)	\$0
Electric (ML&P)	\$158,990
Telecommunications (ACS)	\$54,665
Cable Television (GCI)	\$21,288
Natural Gas (Enstar)	\$157,755
<i>Subtotal:</i>	<i>\$392,698</i>
<i>Construction Contingency (10%)</i>	<i>\$39,270</i>
Total Utility Relocation Cost:	\$431,967

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-1	119+55	LT	load center	protect in place	none	1	EA	\$0	\$0	
MLP-2	120+45	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-3	120+45 - 125+46	RT	underground electric line	protect in place	none	500	LF	\$0	\$0	
MLP-4	123+47	LT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-5	123+47	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	two lines
MLP-6	125+32	LT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-7	125+45	LT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-8	125+46	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-9	125+46 - 126+91	LT	underground electric line	protect in place	none	155	LF	\$0	\$0	
MLP-10	125+96	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-11	126+91	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-12	127+10	LT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-13	127+20	LT	load center	within improvements	relocate	0	EA	\$5,650	\$0	Included in Signal Estimate
MLP-14	127+87 - 136+48	RT	underground electric line	protect in place	none	862	LF	\$0	\$0	
MLP-15	136+15	RT	switch cabinet	within improvements	relocate	1	EA	\$20,000	\$20,000	
MLP-16	136+15	CL	underground electric line	protect in place	none	60	LF	\$0	\$0	
MLP-17	136+48	RT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	
MLP-18	138+61	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-19	140+89	CL	overhead crossing	no conflict anticipated	none	133	LF	\$0	\$0	
MLP-20	140+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-21	140+89 - 141+35	RT	overhead electric line	protect in place	none	46	LF	\$0	\$0	
MLP-22	141+10	RT	switch cabinet	protect in place	none	1	EA	\$0	\$0	
MLP-23	141+21	RT	transformer	within improvements	relocate	1	EA	\$14,100	\$14,100	

Construction Costs: \$122,300
 Engineering/Administration (30%): \$36,690
Total: \$158,990

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	118+49	LT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-2	118+49 - 119+74	LT	underground FO line	protect in place	none	148	LF	\$0	\$0	
ACS-3	119+66	LT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-4	120+48	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-5	120+60 - 125+82	RT	underground FO line	protect in place	none	550	LF	\$0	\$0	
ACS-6	120+98	RT	FO vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
ACS-7	121+51	CL	underground FO crossing	protect in place	none	60	LF	\$0	\$0	
ACS-8	121+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-9	121+56 - 125+83	LT	underground T line	protect in place	none	427	LF	\$0	\$0	
ACS-10	125+83	CL	underground T crossing	protect in place	none	133	LF	\$0	\$0	
ACS-11	125+83	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300		
ACS-12	127+00	CL	underground T crossing	protect in place	none	125	LF	\$0	\$0	
ACS-13	127+01	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-14	127+01 - 138+23	RT	underground T line	protect in place	none	1120	LF	\$0	\$0	
ACS-15	131+28	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-16	135+80	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-17	136+16	CL	underground T crossing	protect in place	none	50	LF	\$0	\$0	
ACS-18	139+24	CL	underground FO crossing	protect in place	none	1	EA	\$1,200	\$1,200	
ACS-19	139+24 - 141+35	RT	underground FO line	protect in place	none	211	LF	\$0	\$0	
ACS-20	140+89 - 141+35	RT	underground T line	protect in place	none	46	LF	\$0	\$0	

Construction Costs: \$42,050
 Engineering/Administration (30%): \$12,615
Total: \$54,665

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	119+97	CL	underground C crossing	protect in place	none	80	LF	\$0	\$0	
GCI-2	120+31	CL	underground FO crossing	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-3	120+31	LT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-4	126+80	RT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-5	136+06	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-6	136+07	LT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-7	136+06	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-8	140+80	RT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-9	140+80	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-10	140+80	CL	underground C crossing	protect in place	none	66	LF	\$0	\$0	
GCI-11	140+89	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-12	140+93	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-13	140+89 - 141+35	LT	underground C line	protect in place	none	46	LF	\$0	\$0	

Construction Costs: \$16,375
Engineering/Administration (30%) \$4,913
Total: \$21,288

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	120+39	CL	3-inch steel/3-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$135	\$10,800	
Enstar-2	120+39 - 123+13	LT	2-inch steel	within proposed improvements	adjust/relocate	274	LF	\$125	\$34,250	
Enstar-3	122+43	CL	3/4-inch service	within proposed improvements	adjust/relocate	1	EA	\$2,250	\$2,250	
Enstar-4	126+67	CL	4-inch plastic crossing	no conflicts anticipated	none	80	LF	\$0	\$0	
Enstar-5	126+67 - 129+50	RT	2-inch plastic	protect in place	none	348	LF	\$0	\$0	
Enstar-6	129+50 - 136+27	RT	2-inch plastic	within proposed improvements	adjust/relocate	604	LF	\$75	\$45,300	
Enstar-7	136+19	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	53	LF	\$125	\$6,625	
Enstar-8	135+93 - 136+43	LT	2-inch plastic/1-inch plastic service	within proposed improvements	adjust/relocate	97	LF	\$125	\$12,125	
Enstar-9	139+36	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$125	\$10,000	

Construction Costs: \$121,350
 Engineering/Administration (30%) \$36,405
Total: \$157,755

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Prepared By: CRW
 Alternative 4 - Phase 2
 [B]=local bond; [S]=state grant; [F]= federal grant

Ver. 5.1

DESIGN	Design Management	\$68,362	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$370,000	
	Contractual Dsgn Sers (Add'l)	\$90,000	
	Contractual Design Survey	\$40,000	
	Contractual Design Soils	\$30,000	
	Miscellaneous	\$0	
Subtotal			\$598,362

WEBPAGE DATA	
Environ	\$0
DS	\$149,591
Prelim Dsgn	\$299,181
Final Dsgn	\$149,591
ROW	\$516,712
Utilities	\$420,000
Const	\$7,280,823
Total	\$8,815,897

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$170,000	
	CEA	\$0	
	ML&P	\$170,000	
	ACS	\$60,000	
	GCI	\$20,000	
Subtotal			\$420,000

ROW	Real Estate Services	\$50,000	
	<i>Start 20??</i> Land Acquisition	\$466,712	
Subtotal			\$516,712

CONSTRUCTION	Construction Management	\$104,952	
	<i>Start 20??</i> Inspection	\$276,693	
	Materials Testing	\$47,706	
	Survey	\$42,935	
	Miscellaneous	\$0	
	Construction Contract	\$4,770,567	
Subtotal			\$5,242,853

MISCELLANEOUS	Bond Overhead (15.0%)	\$1,322,384	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$715,585	
Subtotal			\$2,037,970

PROJECT TOTAL			\$8,815,897
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**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 4 - PHASE 3**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$27,000	\$27,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	8	\$800	\$6,400
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$18,000	\$18,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	648	1.00	0	648	\$14	\$9,072
A-5	20.08	Remove Curb and Gutter	LF	3,952	1.00	0	3,952	\$8	\$31,616
A-6	20.09	Remove Pavement	SY	8,398	1.00	0	8,398	\$3	\$25,194
A-7	20.10	Unusable Excavation	CY	19,050	1.20	-2	22,900	\$12	\$274,800
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	17,049	1.20	-2	20,500	\$15	\$307,500
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	14,958	1.20	-2	18,000	\$15	\$270,000
A-10	20.22	Leveling Course	Ton	1,042	1.08	-1	1,130	\$30	\$33,900
A-11	20.25	Geotextile (Type A)	SY	15,013	1.00	-1	15,010	\$1.50	\$22,515
A-12	20.26	Insulation Board (R-4.5)	SF	3,978	1.01	-1	4,020	\$1	\$4,020
A-13	20.26	Insulation Board (R-9)	SF	115,557	1.01	-1	116,710	\$1.50	\$175,065
A-14	20.28	Reconstruct Driveway	EA	17	1.00	0	17	\$3,000	\$51,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	4,186	1.00	0	4,186	\$25	\$104,650
A-16	30.03	P.C.C. Sidewalk	SY	2,162	1.00	0	2,162	\$60	\$129,720
A-17	30.04	P.C.C. Curb Ramp	EA	19	1.00	0	19	\$2,000	\$38,000
A-18	40.06	A.C. Pavement (Class E)	Ton	818	1.06	0	867	\$105	\$91,035
A-19	40.06	A.C. Pavement (Class D)	Ton	1,079	1.06	-1	1,140	\$105	\$119,700
A-20	50.06	Remove and Replace Manhole Cover and Frame	EA	7	1.00	0	7	\$700	\$4,900
A-21	50.09	Adjust Cleanout to Finish Grade	EA	1	1.00	0	1	\$500	\$500
A-22	60.03	Remove and Replace Valve Box Top Section	EA	12	1.00	0	12	\$500	\$6,000
A-23	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	4	1.00	0	4	\$9,000	\$36,000
A-24	60.05	Adjust Key Box	EA	16	1.00	0	16	\$450	\$7,200
A-25	60.08	Decommission Fire Hydrant Assembly	EA	4	1.00	0	4	\$3,000	\$12,000
A-26	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$48,000	\$48,000
A-27	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-28	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	1,957	1.00	0	1,957	\$8	\$15,656
A-29	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	76	1.00	0	76	\$48	\$3,648
A-30	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	16	1.00	0	16	\$1,200	\$19,200
A-31	70.11	Standard Sign	SF	174	1.00	0	174	\$80	\$13,920
A-32	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$250,000	\$250,000
A-33	70.22	Parking Lot Modifications	LS	1	1.00	0	1	\$14,000	\$14,000
A-34	75.02	Landscaping	LS	1	1.00	0	1	\$25,000	\$25,000
A-35	75.03	Topsoil (4" Depth)	MSF	21.1	1.00	0	21	\$500	\$10,500
A-36	75.03	Topsoil (18-inch depth)	MSF	1.8	1.00	0	2	\$1,200	\$2,400
A-37	75.04	Seeding (Schedule A)	MSF	21.1	1.00	0	21	\$500	\$10,500
A-38	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
								TOTAL	\$2,231,211

Schedule B - Drainage Improvements									
B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$5,000	\$5,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	1,861	1.00	0	1,861	\$45	\$83,745
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	1,030	1.20	0	1,236	\$18	\$22,248
B-4	20.16	Bedding Material (Class D)	LF	1,861	1.00	0	1,861	\$18	\$33,498
B-5	20.27	Disposal of Unusable or Surplus Material	CY	1,140	1.20	0	1,368	\$20	\$27,360
B-6	55.02	Furnish, Install, and Televiser Pipe (12-Inch, Type S, CPEP)	LF	311	1.00	0	311	\$62	\$19,282
B-7	55.02	Furnish, Install, and Televiser Pipe (18-Inch, Type S, CPEP)	LF	1,218	1.00	0	1,218	\$65	\$79,170
B-8	55.02	Furnish, Install, and Televiser Pipe (24-Inch, Type S, CPEP)	LF	332	1.00	0	332	\$70	\$23,240
B-9	55.05	Construct (Type I) Manhole	EA	7	1.00	0	7	\$5,000	\$35,000
B-10	55.05	Construct (Type II) Catch Basin Manhole	EA	3	1.00	0	3	\$8,000	\$24,000
B-11	55.09	Construct Catch Basin	EA	11	1.00	0	11	\$4,000	\$44,000
								TOTAL	\$396,543

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 4 - PHASE 3**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Illumination Improvements									
C-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	2,140	1.10	-1	2,350	\$9	\$21,150
C-2	80.04	Driven Pile Luminaire Pole Foundations	EA	15	1.00	0	15	\$1,800	\$27,000
C-3	80.04	Load Center Foundation (Type 1A)	EA	1	1.00	0	1	\$4,000	\$4,000
C-4	80.05	Fixed Base Luminaire Pole	EA	15	1.00	0	15	\$3,000	\$45,000
C-5	80.06	Luminaire Arm	EA	15	1.00	0	15	\$700	\$10,500
C-6	80.07	Steel Conduit (2 inch)	FT	2,300	1.10	-1	2,530	\$17	\$43,010
C-7	80.08	Junction Box (Type IA)	EA	15	1.00	0	15	\$750	\$11,250
C-8	80.08	Junction Box (Type II)	EA	2	1.00	0	2	\$1,600	\$3,200
C-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	2,300	1.10	-1	2,530	\$4	\$10,120
C-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	1	1.00	0	1	\$7,000	\$7,000
C-11	80.23	Luminaire (60 LED, Medium, Type 2)	EA	8	1.00	0	8	\$1,150	\$9,200
C-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	5	1.00	0	5	\$1,300	\$6,500
C-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	2	1.00	0	2	\$1,450	\$2,900
C-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,000	\$1,000
C-15	80.23	Spare Luminaire (80 LED, Medium, Type 2)	EA	0	1.00	0	0	\$1,200	\$0
C-16	80.23	Spare Luminaire (100 LED, Medium, Type 2)	EA	0	1.00	0	0	\$1,450	\$0
C-17	80.28	Remove Luminaire Pole	EA	8	1.00	0	8	\$750	\$6,000
								TOTAL	\$207,830

SUMMARY	
Schedule A - Roadway Improvements	\$2,231,211
Schedule B - Drainage Improvements	\$396,543
Schedule C - Illumination Improvements	\$207,830
<u>Subtotal</u>	<u>\$2,835,584</u>
15% Construction Contingency	\$430,000

Total Estimated Construction Cost: \$3,265,584

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative 4 - Phase 3	
Electric (CEA)	\$0
Electric (ML&P)	\$45,760
Telecommunications (ACS)	\$19,565
Cable Television (GCI)	\$18,818
Natural Gas (Enstar)	\$151,288
<i>Subtotal:</i>	<i>\$235,430</i>
<i>Construction Contingency (10%)</i>	<i>\$23,543</i>
Total Utility Relocation Cost:	\$258,973

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-1	141+35 - 151+87	RT	overhead electric line	protect in place	none	1052	LF	\$0	\$0	
MLP-2	144+04	RT	utility pole	within improvements	remove and relocate	1	EA	\$12,500	\$12,500	
MLP-3	144+04	RT	overhead utility service	pole being relocated	adjust on pole	2	EA	\$3,400	\$6,800	utility line and service
MLP-4	144+04 - 148+75	RT	underground electric line	protect in place	none	170	LF	\$0	\$0	
MLP-5	145+44	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-6	145+75	CL	underground crossing	protect in place	none	60	LF	\$0	\$0	
MLP-7	147+17	RT	utility pole	within improvements	remove and relocate	1	EA	\$12,500	\$12,500	
MLP-8	147+17	RT	overhead electric line	poles being relocated	adjust on pole	1	EA	\$3,400	\$3,400	
MLP-9	147+17	RT	underground electric service	protect in place	none	0	EA	\$0	\$0	
MLP-10	147+17 - 148+86	LT	underground electric line	protect in place	none	174	LF	\$0	\$0	
MLP-11	147+26	RT	transformer	protect in place	none	1	EA	\$0	\$0	
MLP-12	150+15	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-13	151+36	RT	utility pole	protect in place	none	1	EA	\$0	\$0	
MLP-14	151+36	RT	overhead utility service	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-15	151+36 - 151+88	RT	underground electric line	protect in place	none	55	LF	\$0	\$0	
MLP-16	151+87	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-17	151+87	RT	overhead utility service	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-18	151+87	CL	overhead crossing	protect in place	none	185	LF	\$0	\$0	
MLP-19	151+94	RT	transformer	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-20	153+65	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-21	153+65	CL	overhead crossing	no conflict anticipated	none	60	LF	\$0	\$0	
MLP-22	402+15	LT	transformer	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-23	402+15	RT	switch cabinet	protect in place	none	1	EA	\$0	\$0	

Construction Costs:	\$35,200
Engineering/Administration (30%):	\$10,560
Total:	\$45,760

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	141+35 - 147+31	RT	underground FO line	protect in place	none	617	LF	\$0	\$0	
ACS-2	141+35 - 147+39	RT	underground T line	protect in place	none	627	LF	\$0	\$0	
ACS-3	141+38	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-4	144+04	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-5	144+04 - 151+87	RT	overhead T line	protect in place	none	783	LF	\$0	\$0	
ACS-6	144+04	RT	overhead T line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-7	144+11	RT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-8	145+44	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-9	147+17	RT	overhead T line	pole being relocated	adjust on pole	1	EA	\$5,375	\$5,375	
ACS-10	151+44 - 151+87	RT	underground T line	protect in place	none	44	LF	\$0	\$0	
ACS-11	151+87	CL	overhead T crossing	no conflict anticipated	none	185	LF	\$0	\$0	
ACS-12	151+96	CL	overhead T crossing	no conflict anticipated	none	87	LF	\$0	\$0	
ACS-13	339+06 - 404+34	RT	underground T line	no conflict anticipated	none	548	LF	\$0	\$0	
ACS-14	402+05	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	

Construction Costs: \$15,050
 Engineering/Administration (30%): \$4,515
Total: \$19,565

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	141+35 - 149+43	LT	underground C line	protect in place	none	812	LF	\$0	\$0	
GCI-2	141+35 - 147+22	LT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-3	143+44	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-4	143+44	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-5	143+83	LT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-6	146+19 - 147+75	RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-7	147+22	LT	FO vault	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
GCI-8	147+28	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-9	147+32	RT	FO vault	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-10	153+65	CL	overhead FO crossing	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-11	399+06 - 402+04	RT	underground C line	protect in place	none	298	LF	\$0	\$0	
GCI-12	400+54 - 404+42	RT	underground FO line	no conflict anticipated	none	413	LF	\$0	\$0	
GCI-13	402+04	CL	underground C crossing	protect in place	none	62	LF	\$0	\$0	
GCI-14	402+04 - 404+64	LT	underground C line	protect in place	none	279	LF	\$0	\$0	

Construction Costs: \$14,475
 Engineering/Administration (30%) \$4,343
Total: \$18,818

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	140+91 - 151+51	LT	2-inch plastic	within proposed improvements	adjust/relocate	1080	LF	\$75	\$81,000	
Enstar-2	143+28	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-3	145+22	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-4	147+52	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-5	149+55	LT	7/8-inch plastic service	protect in place	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-6	151+51	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	75	LF	\$125	\$9,375	
Enstar-7	151+94 - 153+62	LT	3/4-inch steel service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-8	153+62	CL	6-inch steel crossing	within proposed improvements	adjust/relocate	80	LF	\$150	\$12,000	

Construction Costs:	\$116,375
Engineering/Administration (30%)	\$34,913
Total:	\$151,288

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Prepared By: CRW
 Alternative 4 - Phase 3

Ver. 5.1

[B]=local bond; [S]=state grant; [F]= federal grant

DESIGN	Design Management	\$42,534	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$460,000	
	Contractual Dsgn Sers (Add'l)	\$110,000	
	Contractual Design Survey	\$50,000	
	Contractual Design Soils	\$30,000	
	Miscellaneous	\$0	
Subtotal			\$692,534

WEBPAGE DATA	
Environ	\$0
DS	\$173,133
Prelim Dsgn	\$346,267
Final Dsgn	\$173,133
ROW	\$53,720
Utilities	\$260,000
Const	\$4,374,239
Total	\$5,380,492

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$170,000	
	CEA	\$0	
	ML&P	\$50,000	
	ACS	\$20,000	
	GCI	\$20,000	
Subtotal			\$260,000

ROW	Real Estate Services	\$35,000	
	<i>Start 20??</i> Land Acquisition	\$18,720	
Subtotal			\$53,720

CONSTRUCTION	Construction Management	\$68,054	
	<i>Start 20??</i> Inspection	\$181,477	
	Materials Testing	\$28,356	
	Survey	\$28,356	
	Miscellaneous	\$0	
	Construction Contract	\$2,835,584	
Subtotal			\$3,141,827

MISCELLANEOUS	Bond Overhead (15.0%)	\$807,074	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$425,338	
Subtotal			\$1,232,411

PROJECT TOTAL			<u><u>\$5,380,492</u></u>
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**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 4 - PHASE 4**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$24,000	\$24,000
A-2	20.03	Test Pit for Utility Locate	Hour	16	1.00	0	8	\$800	\$6,400
A-3	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$16,000	\$16,000
A-4	20.07	Remove Sidewalk or Concrete Apron	SY	1,408	1.00	0	1,408	\$14	\$19,712
A-5	20.08	Remove Curb and Gutter	LF	3,624	1.00	0	3,624	\$8	\$28,992
A-6	20.09	Remove Pavement	SY	7,315	1.00	0	7,315	\$3	\$21,945
A-7	20.10	Unusable Excavation	CY	16,915	1.20	-2	20,300	\$12	\$243,600
A-8	20.21	Classified Fill and Backfill (Type II)	Ton	14,894	1.20	-2	17,900	\$15	\$268,500
A-9	20.21	Classified Fill and Backfill (Type II-A)	Ton	13,595	1.20	-2	16,300	\$15	\$244,500
A-10	20.22	Leveling Course	Ton	930	1.08	-1	1,000	\$30	\$30,000
A-11	20.25	Geotextile (Type A)	SY	13,482	1.00	-1	13,480	\$1.50	\$20,220
A-12	20.26	Insulation Board (R-4.5)	SF	5,587	1.01	-1	5,640	\$1	\$5,640
A-13	20.26	Insulation Board (R-9)	SF	101,484	1.01	-1	102,500	\$1.50	\$153,750
A-14	20.28	Reconstruct Driveway	EA	13	1.00	0	13	\$3,000	\$39,000
A-15	30.02	P.C.C. Curb and Gutter (All Types)	LF	3,682	1.00	0	3,682	\$25	\$92,050
A-16	30.03	P.C.C. Sidewalk	SY	1,943	1.00	0	1,943	\$60	\$116,580
A-17	30.04	P.C.C. Curb Ramp	EA	20	1.00	0	20	\$2,000	\$40,000
A-18	40.06	A.C. Pavement (Class E)	Ton	665	1.06	0	705	\$105	\$74,025
A-19	40.06	A.C. Pavement (Class D)	Ton	963	1.06	-1	1,020	\$105	\$107,100
A-20	50.06	Remove and Replace Manhole Cover and Frame	EA	1	1.00	0	1	\$700	\$700
A-21	55.08	Adjust Storm Drain Manhole Ring	EA	2	1.00	0	2	\$1,600	\$3,200
A-22	60.03	Remove and Replace Valve Box Top Section	EA	15	1.00	0	15	\$500	\$7,500
A-23	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper	EA	2	1.00	0	2	\$9,000	\$18,000
A-24	60.05	Adjust Key Box	EA	5	1.00	0	5	\$450	\$2,250
A-25	60.08	Decommission Fire Hydrant Assembly	EA	2	1.00	0	2	\$3,000	\$6,000
A-26	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$36,000	\$36,000
A-27	65.02	Two-Person Survey Crew	Hour	40.0	1.00	0	40	\$240	\$9,600
A-28	70.08	Remove and Reset Fence	LF	175	1.00	0	175	\$35	\$6,125
A-29	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (250 Mil)	LF	2,848	1.00	0	2,848	\$8	\$22,784
A-30	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (250 Mil)	LF	220	1.00	0	220	\$8	\$1,760
A-31	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	125	1.00	0	125	\$48	\$6,000
A-32	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (250 Mil)	EA	12	1.00	0	12	\$1,200	\$14,400
A-33	70.11	Standard Sign	SF	145	1.00	0	145	\$80	\$11,600
A-34	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$220,000	\$220,000
A-35	70.12	Remove and Replace Wood Bollard	EA	27	1.00	0	27	\$350	\$9,450
A-36	75.02	Landscaping	LS	1	1.00	0	1	\$25,000	\$25,000
A-37	75.03	Topsoil (4" Depth)	MSF	17.6	1.00	0	18	\$500	\$9,000
A-38	75.03	Topsoil (18-inch depth)	MSF	1.5	1.00	0	1	\$1,200	\$1,200
A-39	75.04	Seeding (Schedule A)	MSF	17.6	1.00	0	18	\$500	\$9,000
A-40	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
TOTAL									\$1,974,583

Schedule B - Drainage Improvements									
B-1	20.13	Trench Dewatering	LS	1	1.00	0	1	\$5,000	\$5,000
B-2	20.13	Trench Excavation and Backfill (Various Depths)	LF	1,616	1.00	0	1,616	\$45	\$72,720
B-3	20.15	Furnish Trench Backfill (Type II)	Ton	900	1.20	0	1,080	\$18	\$19,440
B-4	20.16	Bedding Material (Class D)	LF	1,616	1.00	0	1,616	\$18	\$29,088
B-5	20.27	Disposal of Unusable or Surplus Material	CY	940	1.20	0	1,128	\$20	\$22,560
B-6	55.02	Furnish, Install, and Televiser Pipe (12-Inch, Type S, CPEP)	LF	472	1.00	0	472	\$62	\$29,264
B-7	55.02	Furnish, Install, and Televiser Pipe (18-Inch, Type S, CPEP)	LF	1,144	1.00	0	1,144	\$65	\$74,360
B-8	55.04	Connect to Existing Storm Drain System	EA	3	1.00	0	3	\$2,500	\$7,500
B-9	55.05	Construct (Type I) Manhole	EA	2	1.00	0	2	\$5,000	\$10,000
B-10	55.05	Construct (Type II) Catch Basin Manhole	EA	5	1.00	0	5	\$8,000	\$40,000
B-11	55.05	Construct (Type II) Bypass Manhole	EA	1	1.00	0	1	\$15,000	\$15,000
B-12	55.09	Construct Catch Basin	EA	15	1.00	0	15	\$4,000	\$60,000
B-13	55.11	Remove Manhole	EA	5	1.00	0	5	\$1,300	\$6,500
B-14	55.11	Remove Catch Basin	EA	15	1.00	0	15	\$1,000	\$15,000
B-15	55.22	Oil and Grit Separator	EA	1	1.00	0	1	\$25,000	\$25,000
B-16	55.27	Storm Drain Bypass System	LS	1	1.00	0	1	\$5,000	\$5,000
B-17	70.07	Remove Pipe	LF	1,463	1.00	0	1,463	\$20	\$29,260
TOTAL									\$465,692

**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE 4 - PHASE 4**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule C - Illumination Improvements									
C-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	1,811	1.10	-1	1,990	\$9	\$17,910
C-2	80.04	Driven Pole Luminaire Pole Foundations	EA	19	1.00	0	19	\$1,800	\$34,200
C-3	80.04	Load Center Foundation (Type 1A)	EA	1	1.00	0	1	\$4,000	\$4,000
C-4	80.05	Fixed Base Luminaire Pole	EA	19	1.00	0	19	\$3,000	\$57,000
C-5	80.06	Luminaire Arm	EA	19	1.00	0	19	\$700	\$13,300
C-6	80.07	Steel Conduit (2 inch)	FT	2,050	1.10	-1	2,260	\$17	\$38,420
C-7	80.08	Junction Box (Type IA)	EA	19	1.00	0	19	\$750	\$14,250
C-8	80.08	Junction Box (Type II)	EA	2	1.00	0	2	\$1,600	\$3,200
C-9	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	2,050	1.10	-1	2,260	\$4	\$9,040
C-10	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	1	1.00	0	1	\$7,000	\$7,000
C-11	80.23	Luminaire (60 LED, Medium, Type 2)	EA	18	1.00	0	18	\$1,150	\$20,700
C-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	1	1.00	0	1	\$1,300	\$1,300
C-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	0	1.00	0	0	\$1,450	\$0
C-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	2	1.00	0	2	\$1,000	\$2,000
C-15	80.23	Spare Luminaire (80 LED, Medium, Type 2)	EA	0	1.00	0	0	\$1,200	\$0
C-16	80.23	Spare Luminaire (100 LED, Medium, Type 2)	EA	0	1.00	0	0	\$1,450	\$0
C-17	80.28	Remove Luminaire Pole	EA	8	1.00	0	8	\$750	\$6,000
								TOTAL	\$228,320

SUMMARY	
Schedule A - Roadway Improvements	\$1,974,583
Schedule B - Drainage Improvements	\$465,692
Schedule C - Illumination Improvements	\$228,320
<u>Subtotal</u>	<u>\$2,668,595</u>
15% Construction Contingency	\$400,000

Total Estimated Construction Cost: \$3,068,595

Utility Relocation Summary	
32nd/33rd Avenue Upgrades: Alternative 4 - Phase 4	
Electric (CEA)	\$77,428
Electric (ML&P)	\$142,571
Telecommunications (ACS)	\$7,150
Cable Television (GCI)	\$192,732
Natural Gas (Enstar)	\$218,971
<i>Subtotal:</i>	<i>\$638,851</i>
<i>Construction Contingency (10%)</i>	<i>\$63,885</i>
Total Utility Relocation Cost:	\$702,736

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
CEA-1	99+67	RT	utility pole	no conflict anticipated	none	0	EA	\$0	\$0	
CEA-2	99+67	CL	overhead crossing	no conflict anticipated	none	50	LF	\$0	\$0	
CEA-3	99+67 - 100+44	RT	overhead crossing	no conflict anticipated	none	77	LF	\$0	\$0	
CEA-4	100+44	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-5	100+44	CL	overhead crossing	no conflict anticipated	none	142	LF	\$0	\$0	
CEA-6	100+44 - 110+99	RT	overhead electric line	no conflict anticipated	none	1056	LF	\$0	\$0	including crossing at Eureka; continue underground to next northern pole
CEA-7	101+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-8	101+89	RT	overhead electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-9	105+00	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-10	105+00	RT	overhead electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-11	106+89	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-12	106+89	RT	underground electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-13	108+25	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-14	108+99	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-15	108+99	RT	underground electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-16	110+99	RT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-17	110+99	RT	overhead electric service	no conflict anticipated	none	1	EA	\$0	\$0	
CEA-18	112+84	CL	overhead crossing	pole being removed	underground	344	LF	\$90	\$30,960	
CEA-19	114+37	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
CEA-20	114+37	LT	overhead electric line	pole being removed	underground	300	LF	\$90	\$27,000	underground to next northern pole

Construction Costs: \$59,560
 Engineering/Administration (30%): \$17,868
Total: \$77,428

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
MLP-1	99+67	CL	overhead crossing	no conflict anticipated	none	50	LF	\$0	\$0	
MLP-2	99+67 - 100+44	RT	overhead crossing	no conflict anticipated	none	77	LF	\$0	\$0	
MLP-3	100+44	CL	overhead crossing	no conflict anticipated	none	142	LF	\$0	\$0	
MLP-4	100+44 - 110+99	RT	overhead electric line	no conflict anticipated	none	1056	LF	\$0	\$0	
MLP-5	101+90	CL	overhead crossing	no conflict anticipated	none	250	LF	\$0	\$0	
MLP-6	102+62	CL	overhead crossing	pole being removed	underground	147	LF	\$90	\$13,230	
MLP-7	103+21	LT	utility pole	within improvements	remove	1	EA	\$1,600	\$1,600	
MLP-8	103+67 - 106+48	LT/CL/RT	underground electric line	protect in place	none	376	LF	\$0		
MLP-9	106+89	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-10	106+89	CL	overhead crossing	no conflict anticipated	none	62	LF	\$0	\$0	
MLP-11	108+25	CL	overhead crossing	no conflict anticipated	none	113	LF	\$0	\$0	
MLP-12	108+99	RT	underground service	protect in place	none	30	LF	\$0		
MLP-13	110+99 - 112+84	RT	underground electric line	protect in place	none	185	LF	\$0	\$0	
MLP-14	111+25	CL	overhead crossing	no conflict anticipated	none	155	LF	\$0	\$0	
MLP-15	111+52	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-16	112+84	CL	underground crossing	protect in place	none	87	LF	\$0	\$0	
MLP-17	113+26	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-18	113+26 - 115+42	LT	overhead electric line	pole at 114+37 being relocated	underground	216	LF	\$90	\$19,440	
MLP-19	115+42 - 116+21	LT	overhead electric line	no conflict anticipated	none	80	LF	\$0	\$0	
MLP-20	114+37	CL	overhead crossing	poles being relocated	underground	118	LF	\$565	\$66,670	continue underground to next pole south; north is covered by CEA
MLP-21	114+37	CL	overhead electric services	poles being relocated	underground	97	LF	\$90	\$8,730	
MLP-22	115+42	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-23	115+42 - 120+45	LT	underground electric line	protect in place	none	504	LF	\$0	\$0	multiple lines
MLP-24	115+64	LT	underground crossing	protect in place	none	30	LF	\$0	\$0	
MLP-25	116+21	LT	utility pole	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-26	117+52	LT	switch cabinet	no conflict anticipated	none	1	EA	\$0	\$0	
MLP-27	118+20	CL	underground crossing	protect in place	none	120	LF	\$0	\$0	

Construction Costs: \$109,670
 Engineering/Administration (30%): \$32,901
Total: \$142,571

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-1	99+74	CL	overhead FO crossing	no conflict anticipated	none	60	LF	\$0	\$0	
ACS-2	99+74	CL	overhead T crossing	no conflict anticipated	none	60	LF	\$0	\$0	
ACS-3	99+74	CL	underground T crossing	no conflict anticipated	none	60	LF	\$0	\$0	
ACS-4	99+75	LT	telephone vault	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-5	99+74 - 101+89	RT	overhead T line	no conflict anticipated	none	222	LF	\$0	\$0	
ACS-6	100+44	RT	overhead T service	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-7	101+78	LT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
ACS-8	101+79	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-9	101+79 - 125+80	RT	underground T line	protect in place	none	2415	LF	\$0	\$0	
ACS-10	103+64	RT	underground T crossing	protect in place	none	33	LF	\$0	\$0	
ACS-11	105+04	RT	telephone pedestal	no conflict anticipated	none	1	EA	\$0	\$0	
ACS-12	105+04	CL	underground T crossing	protect in place	none	80	LF	\$0	\$0	
ACS-13	107+06	RT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-14	108+19	RT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-15	111+06	RT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-16	112+72	RT	underground T crossing	protect in place	none	30	LF	\$0	\$0	
ACS-17	113+21 - 114+47	RT	underground T line	protect in place	none	146	LF	\$0	\$0	
ACS-18	114+37	LT	overhead T crossing	pole being removed	underground	300	LF	\$80		underground to next northern pole
ACS-19	114+39	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-20	117+43	LT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-21	117+56	CL	underground T crossing	protect in place	none	60	LF	\$0	\$0	
ACS-22	118+12	RT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-23	118+22	RT	telephone pedestal	protect in place	none	1	EA	\$0	\$0	
ACS-24	118+39	CL	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	price for protect in place per each for FO line watch

Construction Costs: \$5,500
 Engineering/Administration (30%): \$1,650
Total: \$7,150

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-1	99+66	CL	overhead C line	no conflict anticipated	none	80	LF	\$0	\$0	
GCI-2	99+66	CL	overhead FO crossing	no conflict anticipated	none	1	EA	\$0	\$0	
GCI-3	99+66 - 100+44	RT	underground FO crossing	protect in place	protect in place	1	EA	\$1,200	\$1,200	price for protect in place per each for FO line watch
GCI-4	99+66 - 110+99	RT	overhead C line	no conflict anticipated	none	1133	LF	\$0	\$0	
GCI-5	99+66 - 110+99	RT	overhead FO line	no conflict anticipated	none	1133	LF	\$0	\$0	
GCI-6	103+62 - 104+96	RT	underground C line	protect in place	none	151	LF	\$0	\$0	
GCI-7	103+67	RT	cable pedestal	within proposed improvements	relocate	1	EA	\$1,075	\$1,075	
GCI-8	104+96	CL	underground C crossing	protect in place	none	80	LF	\$0	\$0	
GCI-9	106+90 - 107+90	RT	underground C line	protect in place	none	100	LF	\$0	\$0	
GCI-10	108+25	CL	overhead C crossing	no conflict anticipated	none	113	LF	\$0	\$0	
GCI-11	110+99 - 112+78	RT	underground C line	protect in place	none	195	LF	\$0	\$0	
GCI-12	111+25	CL	overhead FO crossing	no conflict anticipated	none	278	LF	\$0	\$0	
GCI-13	112+84	CL	overhead C crossing	pole being removed	underground	344	LF	\$70	\$24,080	
GCI-14	112+84	CL	overhead FO crossing	pole being removed	underground	344	LF	\$120	\$41,280	
GCI-15	114+37	CL	overhead C crossing	pole being removed	underground	418	LF	\$70	\$29,260	underground to next poles
GCI-16	114+37	CL	overhead FO crossing	pole being removed	underground	418	LF	\$120	\$50,160	underground to next poles
GCI-17	117+48 - 118+12	CL/RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
GCI-18	117+54 - 118+15	RT	underground C line	protect in place	none	70	LF	\$0	\$0	

Construction Costs: \$148,255
Engineering/Administration (30%) \$44,477

Total: \$192,732

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
Enstar-1	100+37	RT	2-inch steel	protect in place	none	25	LF	\$0	\$0	
Enstar-2	100+37 - 102+15	RT	3-inch steel	protect in place	none	178	LF	\$0	\$0	
Enstar-3	102+56 - 119+63	RT	2-inch steel	within proposed improvements	adjust/relocate	1706	LF	\$75	\$127,950	
Enstar-4	103+66	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-5	106+94	RT	2-inch plastic crossing	protect in place	none	30	LF	\$0	\$0	
Enstar-6	109+55	CL	1.25-inch steel crossing	within proposed improvements	adjust/relocate	80	LF	\$108	\$8,640	
Enstar-7	112+70	RT	2-inch plastic crossing	within proposed improvements	adjust/relocate	30	LF	\$125	\$3,750	
Enstar-8	113+21	CL	3-inch plastic/1-1/4-inch steel crossing	within proposed improvements	adjust/relocate	125	LF	\$135	\$16,875	
Enstar-9	115+97	CL	1-1/4-inch steel crossing	within proposed improvements	adjust/relocate	78	LF	\$108	\$8,424	
Enstar-10	117+61	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	

Construction Costs: \$168,439
 Engineering/Administration (30%) \$50,532
Total: \$218,971

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Prepared By: CRW
 Alternative 4 - Phase 4
 [B]=local bond; [S]=state grant; [F]= federal grant

Ver. 5.1

DESIGN	Design Management	\$40,029	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$420,000	
	Contractual Dsgn Sers (Add'l)	\$100,000	
	Contractual Design Survey	\$40,000	
	Contractual Design Soils	\$30,000	
	Miscellaneous	\$0	
Subtotal			\$630,029

WEBPAGE DATA	
Environ	\$0
DS	\$157,507
Prelim Dsgn	\$315,014
Final Dsgn	\$157,507
ROW	\$38,326
Utilities	\$710,000
Const	\$4,192,760
Total	\$5,571,115

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$240,000	
	CEA	\$90,000	
	ML&P	\$160,000	
	ACS	\$10,000	
	GCI	\$210,000	
Subtotal			\$710,000

ROW	Real Estate Services	\$35,000	
	<i>Start 20??</i> Land Acquisition	\$3,326	
Subtotal			\$38,326

CONSTRUCTION	Construction Management	\$64,046	
	<i>Start 20??</i> Inspection	\$170,790	
	Materials Testing	\$26,686	
	Survey	\$26,686	
	Miscellaneous	\$0	
	Construction Contract	\$2,668,595	
Subtotal			\$2,956,803

MISCELLANEOUS	Bond Overhead (15.0%)	\$835,667	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$400,289	
Subtotal			\$1,235,956

PROJECT TOTAL			<u><u>\$5,571,115</u></u>
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**W. 32nd Avenue / E. 33rd Avenue Upgrades - Spenard Road to Old Seward Highway
MOA Project No. 16-29**

**ENGINEER'S ESTIMATE - DRAFT DSR
ALTERNATIVE A: E. 34TH AVE TO E. 36TH AVE PATHWAY**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
Schedule A - Roadway Improvements									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 2)	LS	1	1.00	0	1	\$4,000	\$4,000
A-2	20.04	Clearing and Grubbing	LS	1	1.00	1	1	\$8,000	\$8,000
A-3	20.10	Unusable Excavation	CY	263	1.20	-2	300	\$12	\$3,600
A-4	20.21	Classified Fill and Backfill (Type II-A)	Ton	1,128	1.20	-2	1,400	\$15	\$21,000
A-5	20.22	Leveling Course	Ton	57	1.08	-1	60	\$30	\$1,800
A-6	20.25	Geotextile (Type A)	SY	1,191	1.00	-1	1,190	\$1.50	\$1,785
A-7	40.06	A.C. Pavement (Class D)	Ton	60	1.06	-1	60	\$105	\$6,300
A-8	65.02	Construction Survey Measurement	LS	1.0	1.00	0	1	\$5,000	\$5,000
A-9	65.02	Two-Person Survey Crew	Hour	10.0	1.00	0	10	\$240	\$2,400
A-10	70.11	Standard Sign	SF	36	1.00	0	36	\$80	\$2,880
A-11	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$8,000	\$8,000
A-12	75.02	Landscaping	LS	1	1.00	0	1	\$5,000	\$5,000
A-13	75.03	Topsoil (4" Depth)	MSF	4.6	1.00	0	5	\$500	\$2,500
A-14	75.04	Seeding (Schedule A)	MSF	4.6	1.00	0	5	\$500	\$2,500
								TOTAL	\$74,765

Schedule B - Illumination Improvements									
B-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	476	1.10	-1	520	\$9	\$4,680
B-2	80.04	Driven Pole Luminaire Pole Foundations	EA	7	1.00	0	7	\$1,800	\$12,600
B-3	80.04	Load Center Foundation (Type 1A)	EA	1	1.00	0	1	\$4,000	\$4,000
B-4	80.06	Luminaire Arm	EA	7	1.00	0	7	\$700	\$4,900
B-5	80.07	Steel Conduit (2 inch)	FT	550	1.10	-1	610	\$17	\$10,370
B-6	80.08	Junction Box (Type IA)	EA	8	1.00	0	8	\$750	\$6,000
B-7	80.08	Junction Box (Type II)	EA	1	1.00	0	1	\$1,600	\$1,600
B-8	80.10	3 Conductor 6 AWG Type XHHW-2 Cable	FT	550	1.10	-1	610	\$4	\$2,440
B-9	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control	EA	1	1.00	0	1	\$7,000	\$7,000
B-10	80.23	Pathway Luminaire (70W, Medium, Type 2)	EA	7	1.00	0	7	\$2,000	\$14,000
B-11	80.23	Spare Pathway Luminaire (70W, Medium, Type 2)	EA	1	1.00	0	1	\$1,800	\$1,800
								TOTAL	\$69,390

SUMMARY	
Schedule A - Roadway Improvements	\$74,765
Schedule B - Illumination Improvements	\$69,390
Subtotal	\$144,155
15% Construction Contingency	\$20,000
Total Estimated Construction Cost:	\$164,155

Date: 12/21/17 Basis:
 Project: W. 32nd Ave & E. 33rd Ave Upgrades
 Project Number: 16-29

Prepared By: CRW
 Alternative A - E 34th to E 36th Pathway
 [B]=local bond; [S]=state grant; [F]= federal grant

Ver. 5.1

DESIGN	Design Management	\$5,766	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$65,000	
	Contractual Dsgn Sers (Add'l)	\$15,000	
	Contractual Design Survey	\$5,000	
	Contractual Design Soils	\$5,000	
	Miscellaneous	\$0	
Subtotal			\$95,766

WEBPAGE DATA	
Environ	\$0
DS	\$23,942
Prelim Dsgn	\$47,883
Final Dsgn	\$23,942
ROW	\$268,098
Utilities	\$0
Const	\$294,011
Total	\$657,876

UTILITIES	AWWU	\$0	
	<i>Start 20??</i> Enstar	\$0	
	CEA	\$0	
	ML&P	\$0	
	ACS	\$0	
	GCI	\$0	
Subtotal			\$0

ROW	Real Estate Services	\$10,000	
	<i>Start 20??</i> Land Acquisition	\$258,098	
Subtotal			\$268,098

CONSTRUCTION	Construction Management	\$5,766	
	<i>Start 20??</i> Inspection	\$17,299	
	Materials Testing	\$2,883	
	Survey	\$3,604	
	Miscellaneous	\$0	
	Construction Contract	\$144,155	
Subtotal			\$173,707

MISCELLANEOUS	Bond Overhead (15.0%)	\$98,681	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$21,623	
Subtotal			\$120,305

PROJECT TOTAL			<u><u>\$657,876</u></u>
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Alternative Method of Calculating the Life Cycle Analysis (new RD Bulletin)

$$NPV = C + USPW(O\&M) - SPPW(S)$$

$$\text{Uniform Series Present Worth for O\&M} = \frac{(1+i)^n - 1}{i(1+i)^n}$$

NPV Net Present Value
 C Capital Cost
 USPW Uniform series present worth
 O&M Annual O&M Costs
 SPPW Single payment present worth of the salvage value

Design Life of System 30
 Discount Rate 0.6%
 USPW 27.38

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
<u>Capital Costs</u>				
Spenard Road to Arctic Boulevard (Preferred Alternative)	\$5,156,000	\$5,156,000	\$5,156,000	\$5,156,000
Arctic Boulevard to Old Seward Highway	\$20,027,000	\$20,263,000	\$16,522,000	\$19,767,000
Pathway (34th Avenue to 36th Avenue)	\$706,000	\$706,000	\$706,000	\$706,000
Total Capital Cost	\$25,889,000	\$26,125,000	\$22,384,000	\$25,629,000
<u>O&M Costs</u>				
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Annual O&M Costs Typical	\$40,000	\$40,000	\$40,000	\$40,000
Annual O&M Costs Snow Hauling	\$67,990	\$96,984	\$118,271	\$84,645
Annualized O&M Costs Striping Replacement	\$35,763	\$36,342	\$33,589	\$26,614
Annualized O&M Costs Total	\$143,753	\$173,325	\$191,860	\$151,259
Life Cycle Costs	\$29,824,967	\$30,870,663	\$27,637,142	\$29,770,480