

Project Cost Estimates

# Appendix J

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

**ENGINEER'S ESTIMATE - DRAFT DSR**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
<b>Schedule A - Roadway Improvements</b>									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$88,000	\$88,000
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	11,796	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	57,063	1.20	-2	68,500	\$12	\$822,000
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	8	1.00	0	8	\$1,500	\$12,000
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	\$130,000	\$130,000
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) (90 Mil)	LF	10,863	1.00	0	10,863	\$3	\$32,589
A-34	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (90 Mil)	LF	21,454	1.00	0	21,454	\$3	\$64,362
A-35	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" Yellow) (90 Mil)	LF	1,525	1.00	0	1,525	\$30	\$45,750
A-36	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" White) (90 Mil)	LF	595	1.00	0	595	\$30	\$17,850
A-37	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	860	1.00	0	860	\$40	\$34,400
A-38	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Words and Symbols) (90 Mil)	EA	36	1.00	0	36	\$500	\$18,000
A-39	70.11	Standard Sign	SF	478	1.00	0	478	\$80	\$38,240
A-40	70.12	Traffic Maintenance	LS	1.0	1.00	0	1	\$800,000	\$800,000
A-41	70.12	Remove and Replace Wood Bollard	EA	52	1.00	0	52	\$350	\$18,200
A-42	75.02	Landscaping	LS	1	1.00	0	1	\$75,000	\$75,000
A-43	75.03	Topsoil (4" Depth)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-44	75.03	Topsoil (18-inch depth)	MSF	5.1	1.00	0	5	\$1,200	\$6,000
A-45	75.04	Seeding (Schedule A)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-46	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
<b>TOTAL</b>									<b>\$6,976,900</b>

**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
<b>TOTAL</b>									<b>\$1,106,663</b>

**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

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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
<b>TOTAL</b>									<b>\$274,695</b>

**Schedule D - Illumination Improvements**

D-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	4,700	1.10	-1	5,170	\$9	\$46,530
D-2	80.04	Driven Pole Luminaire Pole Foundations	EA	33	1.00	0	33	\$1,800	\$59,400
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	33	1.00	0	33	\$3,000	\$99,000
D-5	80.06	Luminaire Arm	EA	38	1.00	0	38	\$700	\$26,600
D-6	80.07	Steel Conduit (2 inch)	FT	5,255	1.10	-1	5,780	\$17	\$98,260
D-7	80.08	Junction Box (Type IA)	EA	33	1.00	0	33	\$750	\$24,750
D-8	80.08	Junction Box (Type II)	EA	12	1.00	0	12	\$1,600	\$19,200
D-9	80.10	3 Conductor 8 AWG Type XHHW-2 Cable	FT	4,900	1.10	-1	5,390	\$4	\$21,560
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	25	1.00	0	25	\$1,150	\$28,750
D-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	13	1.00	0	13	\$1,300	\$16,900
D-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	13	1.00	0	13	\$1,450	\$18,850
D-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	3	1.00	0	3	\$1,000	\$3,000
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
<b>TOTAL</b>									<b>\$504,450</b>

**SUMMARY**

Schedule A - Roadway Improvements	\$6,976,900
Schedule B - Drainage Improvements	\$1,106,663
Schedule C - Signalization Improvements	\$274,695
Schedule D - Illumination Improvements	\$504,450
<b>Subtotal</b>	<b>\$8,862,708</b>
15% Construction Contingency	\$1,330,000

**Total Estimated Construction Cost: \$10,192,708**

<b>Utility Relocation Summary</b>	
<b>32nd/33rd Avenues: Alt 1</b>	
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>
<b>Total Utility Relocation Cost:</b>	<b>\$2,278,625</b>

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	
									\$0	
									\$0	

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	\$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	\$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	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
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	
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	\$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	\$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	



Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-39	131+28	RT	telephone pedestal	within proposed improvements	relocate	1	EA	\$4,300	\$4,300	
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	
								\$0	\$0	
								\$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	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-35	146+19 - 147+75	RT	underground FO line	protect in place	protect in place	1	EA	\$1,200	\$1,200	
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	
									\$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 improvements	adjust/relocate	178	LF	\$135	\$24,030	
Enstar-3	102+15 - 119+63	RT	2-inch steel	within proposed improvements	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 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	
Enstar-11	120+39	CL	3-inch steel/3-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$135	\$10,800	
Enstar-12	120+39 - 123+13	LT	2-inch steel	within proposed improvements	adjust/relocate	274	LF	\$125	\$34,250	
Enstar-13	122+43	CL	3/4-inch service	within proposed improvements	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-16	129+50 - 136+27	RT	2-inch plastic	within proposed improvements	adjust/relocate	604	LF	\$75	\$45,300	
Enstar-17	136+19	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	53	LF	\$125	\$6,625	
Enstar-18	135+93 - 136+43	LT	2-inch plastic/1-inch plastic service	within proposed improvements	adjust/relocate	97	LF	\$125	\$12,125	
Enstar-19	139+36	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	80	LF	\$125	\$10,000	
Enstar-20	140+91 - 151+51	LT	2-inch plastic	within proposed improvements	adjust/relocate	1080	LF	\$75	\$81,000	
Enstar-21	143+28	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-22	145+22	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-23	147+52	CL	1-inch plastic service	within proposed improvements	adjust/relocate	1	EA	\$2,800	\$2,800	
Enstar-24	149+55	LT	7/8-inch plastic service	protect in place	none	1	EA	\$0	\$0	
Enstar-25	151+51	CL	2-inch plastic crossing	within proposed improvements	adjust/relocate	75	LF	\$125	\$9,375	
Enstar-26	151+94 - 153+62	LT	3/4-inch steel service	no conflicts anticipated	none	1	EA	\$0	\$0	
Enstar-27	153+62	CL	6-inch steel crossing	within proposed improvements	adjust/relocate	80	LF	\$150	\$12,000	
									\$0	

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

Alt 1

Prepared By: CRW

Ver. 5.1

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

<b>DESIGN</b>	Design Management	\$115,215	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$1,400,000	
	Contractual Dsgn Sers (Add'l)	\$200,000	
	Contractual Design Survey	\$150,000	
	Contractual Design Soils	\$75,000	
	Miscellaneous	\$0	
<b>Subtotal</b>			\$1,940,215

WEBPAGE DATA	
Environ	\$0
DS	\$485,054
Prelim Dsgn	\$970,108
Final Dsgn	\$485,054
ROW	\$1,074,317
Utilities	\$2,280,000
Const	\$13,780,042
<b>Total</b>	<b>\$19,074,575</b>

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

<b>ROW</b>	Real Estate Services	\$100,000	
	<i>Start 20??</i> Land Acquisition	\$974,317	
<b>Subtotal</b>			\$1,074,317

<b>CONSTRUCTION</b>	Construction Management	\$159,529	
	<i>Start 20??</i> Inspection	\$416,547	
	Materials Testing	\$88,627	
	Survey	\$62,039	
	Miscellaneous	\$0	
	Construction Contract	\$8,862,708	
<b>Subtotal</b>			\$9,589,450

<b>MISCELLANEOUS</b>	Bond Overhead (15.0%)	\$2,861,186	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$1,329,406	
<b>Subtotal</b>			\$4,190,592

<b>PROJECT TOTAL</b>			<b>\$19,074,575</b>
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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**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
<b>Schedule A - Roadway Improvements</b>									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$89,000	\$89,000
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	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	55,824	1.20	-2	67,000	\$12	\$804,000
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	8	1.00	0	8	\$1,500	\$12,000
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	\$131,000	\$131,000
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) (90 Mil)	LF	10,154	1.00	0	10,154	\$3	\$30,462
A-36	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (90 Mil)	LF	13,200	1.00	0	13,200	\$3	\$39,600
A-37	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" Yellow) (90 Mil)	LF	2,304	1.00	0	2,304	\$30	\$69,120
A-38	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" White) (90 Mil)	LF	788	1.00	0	788	\$30	\$23,640
A-39	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	1,679	1.00	0	1,679	\$40	\$67,160
A-40	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Words and Symbols) (90 Mil)	EA	43	1.00	0	43	\$500	\$21,500
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	\$800,000	\$800,000
A-43	70.12	Remove and Replace Wood Bollard	EA	26	1.00	0	26	\$350	\$9,100
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
<b>TOTAL</b>									<b>\$7,020,986</b>

<b>Schedule B - Drainage Improvements</b>									
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
<b>TOTAL</b>									<b>\$1,106,663</b>

<b>Schedule C - Signalization Improvements</b>									
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

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

**ENGINEER'S ESTIMATE - DRAFT DSR**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
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
<b>TOTAL</b>									<b>\$1,434,250</b>

**Schedule D - Illumination Improvements**

D-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	4,700	1.10	-1	5,170	\$9	\$46,530
D-2	80.04	Driven Pole Luminaire Pole Foundations	EA	33	1.00	0	33	\$1,800	\$59,400
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	33	1.00	0	33	\$3,000	\$99,000
D-5	80.06	Luminaire Arm	EA	38	1.00	0	38	\$700	\$26,600
D-6	80.07	Steel Conduit (2 inch)	FT	5,255	1.10	-1	5,780	\$17	\$98,260
D-7	80.08	Junction Box (Type IA)	EA	33	1.00	0	33	\$750	\$24,750
D-8	80.08	Junction Box (Type II)	EA	12	1.00	0	12	\$1,600	\$19,200
D-9	80.10	3 Conductor 8 AWG Type XHHW-2 Cable	FT	4,900	1.10	-1	5,390	\$4	\$21,560
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	25	1.00	0	25	\$1,150	\$28,750
D-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	13	1.00	0	13	\$1,300	\$16,900
D-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	13	1.00	0	13	\$1,450	\$18,850
D-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	3	1.00	0	3	\$1,000	\$3,000
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
<b>TOTAL</b>									<b>\$504,450</b>

**SUMMARY**

Schedule A - Roadway Improvements	\$7,020,986
Schedule B - Drainage Improvements	\$1,106,663
Schedule C - Signalization Improvements	\$1,434,250
Schedule D - Illumination Improvements	\$504,450
<b>Subtotal</b>	<b>\$10,066,349</b>
15% Construction Contingency	\$1,510,000

**Total Estimated Construction Cost: \$11,576,349**

<b>Utility Relocation Summary</b>	
<b>32nd/33rd Avenues: Alt 2</b>	
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>
<b>Total Utility Relocation Cost:</b>	<b>\$1,363,525</b>



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	
									\$0	
									\$0	

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	
									\$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	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-39	127+01 - 138+23	RT	underground T line	protect in place	none	1120	LF	\$0	\$0	
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	

Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
GCI-36	140+89 - 149+43	LT	underground C line	protect in place	none	858	LF	\$0	\$0	
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
<b>Total:</b>	<b>\$336,003</b>



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

Alt 2

Prepared By: CRW

Ver. 5.1

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

<b>DESIGN</b>	Design Management	\$127,440	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$1,500,000	
	Contractual Dsgn Sers (Add'l)	\$200,000	
	Contractual Design Survey	\$150,000	
	Contractual Design Soils	\$75,000	
	Miscellaneous	\$0	
<b>Subtotal</b>			\$2,052,440

WEBPAGE DATA	
Environ	\$0
DS	\$513,110
Prelim Dsgn	\$1,026,220
Final Dsgn	\$513,110
ROW	\$740,576
Utilities	\$1,360,000
Const	\$15,263,956
<b>Total</b>	<b>\$19,416,972</b>

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

<b>ROW</b>	Real Estate Services	\$100,000	
	<i>Start 20??</i> Land Acquisition	\$640,576	
<b>Subtotal</b>			\$740,576

<b>CONSTRUCTION</b>	Construction Management	\$171,128	
	<i>Start 20??</i> Inspection	\$442,919	
	Materials Testing	\$100,663	
	Survey	\$60,398	
	Miscellaneous	\$0	
	Construction Contract	\$10,066,349	
<b>Subtotal</b>			\$10,841,458

<b>MISCELLANEOUS</b>	Bond Overhead (15.0%)	\$2,912,546	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$1,509,952	
<b>Subtotal</b>			\$4,422,498

<b>PROJECT TOTAL</b>			<u><u>\$19,416,972</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**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
<b>Schedule A - Roadway Improvements</b>									
A-1	20.02	Storm Water Pollution Prevention Plan (Type 3)	LS	1	1.00	0	1	\$76,000	\$76,000
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	8	1.00	0	8	\$1,500	\$12,000
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	\$111,000	\$111,000
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) (90 Mil)	LF	11,407	1.00	0	11,407	\$3	\$34,221
A-35	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (90 Mil)	LF	8,044	1.00	0	8,044	\$3	\$24,132
A-36	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" Yellow) (90 Mil)	LF	2,473	1.00	0	2,473	\$30	\$74,190
A-37	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (18" White) (90 Mil)	LF	851	1.00	0	851	\$30	\$25,530
A-38	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (250 Mil)	LF	1,169	1.00	0	1,169	\$40	\$46,760
A-39	70.10	Inlaid Traffic Markings (Methyl Methacrylate) (Words and Symbols) (90 Mil)	EA	72	1.00	0	72	\$500	\$36,000
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	\$680,000	\$680,000
A-42	70.12	Remove and Replace Wood Bollard	EA	26	1.00	0	26	\$350	\$9,100
A-43	75.02	Landscaping	LS	1	1.00	0	1	\$75,000	\$75,000
A-44	75.03	Topsoil (4" Depth)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-45	75.03	Topsoil (18-inch depth)	MSF	5.1	1.00	0	5	\$1,200	\$6,000
A-46	75.04	Seeding (Schedule A)	MSF	60.7	1.00	0	61	\$500	\$30,500
A-47	75.10	Remove and Reset Landscape Modular Blocks	LS	1.0	1.00	0	1	\$3,000	\$3,000
								<b>TOTAL</b>	<b>\$5,993,221</b>

<b>Schedule B - Drainage Improvements</b>									
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
								<b>TOTAL</b>	<b>\$1,106,663</b>

<b>Schedule C - Signalization Improvements</b>									
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

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

**ENGINEER'S ESTIMATE - DRAFT DSR**

ITEM No.	MASS No.	ITEM DESCRIPTION	UNIT	CALC. QUANT	CONT. FACTOR	ROUND FACTOR	EST QUANT	UNIT PRICE	TOTAL COST
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
								<b>TOTAL</b>	<b>\$274,695</b>

**Schedule D - Illumination Improvements**

D-1	80.02	Trench and Backfill (2'W x 3.5'D)	LF	4,700	1.10	-1	5,170	\$9	\$46,530
D-2	80.04	Driven Pile Luminaire Pole Foundations	EA	33	1.00	0	33	\$1,800	\$59,400
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	33	1.00	0	33	\$3,000	\$99,000
D-5	80.06	Luminaire Arm	EA	38	1.00	0	38	\$700	\$26,600
D-6	80.07	Steel Conduit (2 inch)	FT	5,255	1.10	-1	5,780	\$17	\$98,260
D-7	80.08	Junction Box (Type IA)	EA	33	1.00	0	33	\$750	\$24,750
D-8	80.08	Junction Box (Type II)	EA	12	1.00	0	12	\$1,600	\$19,200
D-9	80.10	3 Conductor 8 AWG Type XHHW-2 Cable	FT	4,900	1.10	-1	5,390	\$4	\$21,560
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	25	1.00	0	25	\$1,150	\$28,750
D-12	80.23	Luminaire (80 LED, Medium, Type 2)	EA	13	1.00	0	13	\$1,300	\$16,900
D-13	80.23	Luminaire (100 LED, Medium, Type 2)	EA	13	1.00	0	13	\$1,450	\$18,850
D-14	80.23	Spare Luminaire (60 LED, Medium, Type 2)	EA	3	1.00	0	3	\$1,000	\$3,000
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
								<b>TOTAL</b>	<b>\$504,450</b>

**SUMMARY**

Schedule A - Roadway Improvements	\$5,993,221
Schedule B - Drainage Improvements	\$1,106,663
Schedule C - Signalization Improvements	\$274,695
Schedule D - Illumination Improvements	\$504,450
<b>Subtotal</b>	<b>\$7,879,029</b>
15% Construction Contingency	\$1,180,000

**Total Estimated Construction Cost: \$9,059,029**

<b>Utility Relocation Summary</b>	
<b>32nd/33rd Avenues: Alt 3</b>	
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>
<b>Total Utility Relocation Cost:</b>	<b>\$921,348</b>

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	
									\$0	
									\$0	

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	\$0	
MLP-10	205+04	CL	underground crossing	protect in place	none	60	LF	\$0	\$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			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	
									\$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	



Id No.	APPROX. STATION	OFFSET	UTILITY CONFLICT	DESCRIPTION OF CONFLICT	RECOMMENDED ACTION	AMOUNT	UNIT	UNIT PRICE	COST	COMMENTS
ACS-39	231+28	RT	telephone vault	within proposed improvements	relocate	1	EA	\$10,750	\$10,750	
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	
									\$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	protect in place	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	
								\$0	\$0	
								\$0	\$0	
								\$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	
									\$0	
									\$0	

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

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

Alt 3

Prepared By: CRW

Ver. 5.1

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

<b>DESIGN</b>	Design Management	\$112,906	
	<i>Start 20??</i> PM&E Design Services	\$0	
	PM&E Design Survey	\$0	
	PM&E Design Soil	\$0	
	Contractual Dsgn Sers (Basic)	\$1,300,000	
	Contractual Dsgn Sers (Add'l)	\$200,000	
	Contractual Design Survey	\$150,000	
	Contractual Design Soils	\$75,000	
	Miscellaneous	\$0	
<b>Subtotal</b>			\$1,837,906

WEBPAGE DATA	
Environ	\$0
DS	\$459,477
Prelim Dsgn	\$918,953
Final Dsgn	\$459,477
ROW	\$718,884
Utilities	\$930,000
Const	\$12,063,082
<b>Total</b>	<b>\$15,549,872</b>

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

<b>ROW</b>	Real Estate Services	\$100,000	
	<i>Start 20??</i> Land Acquisition	\$618,884	
<b>Subtotal</b>			\$718,884

<b>CONSTRUCTION</b>	Construction Management	\$149,702	
	<i>Start 20??</i> Inspection	\$386,072	
	Materials Testing	\$78,790	
	Survey	\$55,153	
	Miscellaneous	\$0	
	Construction Contract	\$7,879,029	
<b>Subtotal</b>			\$8,548,746

<b>MISCELLANEOUS</b>	Bond Overhead (15.0%)	\$2,332,481	
	Grant Overhead (0.0%)	\$0	
	Contingency (15%)	\$1,181,854	
<b>Subtotal</b>			\$3,514,335

<b>PROJECT TOTAL</b>			<u><u>\$15,549,872</u></u>
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## Alternative Method of Calculating the Life Cycle Analysis (new RD Bulletin)

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

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

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 0.7%  
 USPW 26.97

	Alternative 1	Alternative 2	Alternative 3
Capital Costs	\$19,074,000	\$19,417,000	\$15,550,000
O&M Costs	\$110,140	\$139,135	\$160,421
<b>Life Cycle Costs</b>	<b>\$22,044,988</b>	<b>\$23,170,117</b>	<b>\$19,877,300</b>