

**APPENDIX E**  
Cost Estimates

DESCRIPTION	CAPITAL COST	SALVAGE VALUE	O&M COSTS		SHORT LIVED ASSETS		TOTAL LIFE-CYCLE COST
			ANNUAL	PRESENT WORTH	ANNUAL	PRESENT WORTH	
Site 1 - Defend in Place Alternative 1 - Sheetpile Wall Revetment	\$ 27,902,017	\$ 20,000	\$ 475,000	\$ 9,007,132	\$ 4,225	\$ 80,116	<b>36,969,265</b>
Site 1 - Defend in Place Alternative 2 - Armor Rock Revetment	\$ 33,440,552	\$ 20,000	\$ 495,000	\$ 9,386,379	\$ 4,225	\$ 80,116	<b>42,887,047</b>
Site 2 - City Shop Alternative 1 - Wastewater Lagoon	\$ 52,342,263	\$ 80,000	\$ 375,000	\$ 7,110,893	\$ 4,225	\$ 80,116	<b>59,453,273</b>
Site 2 - City Shop Alternative 2A - MBR Packaged Treatment Plant	\$ 19,860,418	\$ 250,000	\$ 866,900	\$ 16,438,490	\$ 20,000	\$ 379,248	<b>36,428,155</b>
Site 2 - City Shop Alternative 2B - MBBR Packaged Treatment Plant	\$ 24,548,648	\$ 200,000	\$ 600,575	\$ 11,388,333	\$ 4,800	\$ 91,019	<b>35,828,000</b>
Site 3 - Kananak Road Alternative 1 - Wastewater Lagoon	\$ 29,583,440	\$ 80,000	\$ 399,000	\$ 7,565,991	\$ 4,225	\$ 80,116	<b>37,149,547</b>
Site 3 - Kananak Road Alternative 2A - MBR Packaged Treatment Plant	\$ 25,414,528	\$ 250,000	\$ 890,900	\$ 16,893,587	\$ 20,000	\$ 379,248	<b>42,437,362</b>
Site 3 - Kananak Road Alternative 2B - MBBR Packaged Treatment Plant	\$ 29,868,847	\$ 200,000	\$ 624,575	\$ 11,843,430	\$ 4,800	\$ 91,019	<b>41,603,297</b>

**SITE 1 - DEFEND EXISTING LAGOON IN-PLACE  
ALTERNATIVE 1 - SHEETPILE WALL REVETMENT**

<b>CAPITAL COSTS</b>					
<b>DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT COST</b>	<b>TOTAL COST</b>	<b>NOTES</b>
Common Site Work	1	LS	\$1,275,196	\$ 1,275,196	HMS
Sheetpile Revetment	1	LS	\$26,626,821	\$ 26,626,821	HMS
<b>TOTAL CAPITAL</b>				<b>\$ 27,902,017</b>	

<b>O&amp;M COSTS</b>			
<b>DESCRIPTION</b>	<b>ANNUAL COST</b>	<b>NOTES</b>	
Administration	\$ 50,000	City of Dillingham Budget and Actuals (2017)	
Operator(s)/Local Labor Salaries and Benefits	\$ 160,000	2 EA Level 1 Operators (2 x \$80K/YR)	
Operator Training and Support	\$ 20,000	Assumed (Bristol and CRW)	
Sheetpile/Riprap Maintenance/Repair	\$ 100,000	Assumed (Bristol and CRW)	
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)	
Disinfection/Chemicals	\$ 21,000	City of Dillingham Budget and Actuals (2017) + EPA Fact Sheet (Chlorine Disinfection)	
Utilities (Fuel and Electric)	\$ 50,000	City of Dillingham Budget and Actuals (2017), Nexom Quote w/ DLG Elec. Rate	
Tools and Equipment	\$ 18,000	City of Dillingham Budget and Actuals (2017)	
Building and Equipment Repairs	\$ 14,000	City of Dillingham Budget and Actuals (2017)	
Wastewater Sampling and Testing	\$ 14,000	City of Dillingham Budget and Actuals (2017)	
Sludge Disposal	\$ 2,000	Estimated/Assumed	
Miscellaneous Supplies	\$ 6,000	City of Dillingham Budget and Actuals (2017)	
<b>TOTAL ANNUAL</b>		<b>\$ 475,000</b>	<b>\$ 9,007,132 PRESENT WORTH</b>

<b>SCHEDULE OF SHORT LIVED ASSETS</b>							
<b>DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT COST</b>	<b>TOTAL COST</b>	<b>SERVICE LIFE</b>	<b>ANNUAL COST</b>	<b>NOTES</b>
Motors/Blowers	2	EA	\$10,000	\$ 20,000	10	\$ 2,000	Nexom Quote
Floating Aeration Lateral Lines	7	EA	\$1,000	\$ 7,000	20	\$ 350	Nexom Quote
Diffusers and Feeder Lines	35	EA	\$500	\$ 17,500	20	\$ 875	Nexom Quote
Lagoon Baffles	2	EA	\$10,000	\$ 20,000	20	\$ 1,000	Nexom Quote
<b>TOTAL ANNUAL</b>						<b>\$ 4,225</b>	

<b>SUMMARY</b>		
<b>DESCRIPTION</b>	<b>PRESENT WORTH</b>	<b>NOTES</b>
Capital Costs	\$ 27,902,017	
Salvage Value	\$ 20,000	Assumed (Bristol and CRW)
O&M Costs	\$ 9,007,132	
Short Lived Assets	\$ 80,116	
<b>TOTAL LIFE-CYCLE COST</b>		<b>\$ 36,969,265</b>

<b>ASSUMPTIONS</b>			
<b>UTILITY</b>	<b>RATE</b>	<b>UNIT</b>	<b>NOTES</b>
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.64	/gal	Alaska Energy Wiki
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
	i= 2.25%		Federal Discount Rate (2019)
	n= 25	years	

**SITE 1 - DEFEND EXISTING LAGOON IN-PLACE**

**ALTERNATIVE 1 - ARMOR ROCK REVETMENT**

**CAPITAL COSTS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	NOTES
Common Site Work	1	LS	\$1,275,196	\$ 1,275,196	HMS
Armor Rock Revetment	1	LS	\$32,165,356	\$ 32,165,356	HMS

**TOTAL CAPITAL \$ 33,440,552**

**O&M COSTS**

DESCRIPTION	ANNUAL COST	NOTES
Administration	\$ 50,000	City of Dillingham Budget and Actuals (2017)
Operator(s)/Local Labor Salaries and Benefits	\$ 160,000	2 EA Level 1 Operators (2 x \$80K/YR)
Operator Training and Support	\$ 20,000	Assumed (Bristol and CRW)
Riprap Maintenance/Repair	\$ 120,000	Assumed (Bristol and CRW)
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)
Disinfection/Chemicals	\$ 21,000	City of Dillingham Budget and Actuals (2017) + EPA Fact Sheet (Chlorine Disinfection)
Utilities (Fuel and Electric)	\$ 50,000	City of Dillingham Budget and Actuals (2017), Nexom Quote w/ DLG Elec. Rate
Tools and Equipment	\$ 18,000	City of Dillingham Budget and Actuals (2017)
Building and Equipment Repairs	\$ 14,000	City of Dillingham Budget and Actuals (2017)
Wastewater Sampling and Testing	\$ 14,000	City of Dillingham Budget and Actuals (2017)
Sludge Disposal	\$ 2,000	Estimated/Assumed
Miscellaneous Supplies	\$ 6,000	City of Dillingham Budget and Actuals (2017)

**TOTAL ANNUAL \$ 495,000 \$ 9,386,379 PRESENT WORTH**

**SCHEDULE OF SHORT LIVED ASSETS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	SERVICE LIFE	ANNUAL COST	NOTES
Motors/Blowers	2	EA	\$10,000	\$ 20,000	10	\$ 2,000	Nexom Quote
Floating Aeration Lateral Lines	7	EA	\$1,000	\$ 7,000	20	\$ 350	Nexom Quote
Diffusers and Feeder Lines	35	EA	\$500	\$ 17,500	20	\$ 875	Nexom Quote
Lagoon Baffles	2	EA	\$10,000	\$ 20,000	20	\$ 1,000	Nexom Quote

**TOTAL ANNUAL \$ 4,225**

**SUMMARY**

DESCRIPTION	PRESENT WORTH	NOTES
Capital Costs	\$ 33,440,552	
Salvage Value	\$ 20,000	Assumed (Bristol and CRW)
O&M Costs	\$ 9,386,379	
Short Lived Assets	\$ 80,116	

**TOTAL LIFE-CYCLE COST \$ 42,887,047**

**ASSUMPTIONS**

UTILITY	RATE	UNIT	NOTES
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.31	/gal	Kanakanak Hospital Study
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
	i= 2.25%		Federal Discount Rate (2019)
	n= 25	years	

**SITE 2 - CITY SHOP**

**ALTERNATIVE 1 - WASTEWATER LAGOON**

**CAPITAL COSTS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	NOTES
Common Site Work	1	LS	\$10,246,081	\$ 10,246,081	HMS
New 2-Cell Lagoon	1	LS	\$42,096,182	\$ 42,096,182	HMS
<b>TOTAL CAPITAL</b>				<b>\$ 52,342,263</b>	

**O&M COSTS**

DESCRIPTION	ANNUAL COST	NOTES
Administration	\$ 50,000	City of Dillingham Budget and Actuals (2017)
Operator(s)/Local Labor Salaries and Benefits	\$ 160,000	2 EA Level 1 Operators (2 x \$80K/YR)
Operator Training and Support	\$ 20,000	Assumed (Bristol and CRW)
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)
Disinfection/Chemicals	\$ 21,000	Estimated/Assumed + EPA Fact Sheet (Chlorine Disinfection)
Utilities (Fuel and Electricity)	\$ 50,000	Estimated/Assumed, Nexom Quote w/ DLG Elec. Rate
Tools and Equipment	\$ 18,000	Estimated/Assumed
Building and Equipment Repairs	\$ 14,000	Estimated/Assumed
Wastewater Sampling and Testing	\$ 14,000	Estimated/Assumed
Sludge Disposal	\$ 2,000	Estimated/Assumed
Miscellaneous Supplies	\$ 6,000	Estimated/Assumed
<b>TOTAL ANNUAL</b>		<b>\$ 375,000</b>
		<b>\$ 7,110,893 PRESENT WORTH</b>

**SCHEDULE OF SHORT LIVED ASSETS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	SERVICE LIFE	ANNUAL COST	NOTES
Motors/Blowers	2	EA	\$10,000	\$ 20,000	10	\$ 2,000	Nexom Quote
Floating Aeration Lateral Lines	7	EA	\$1,000	\$ 7,000	20	\$ 350	Nexom Quote
Diffusers and Feeder Lines	35	EA	\$500	\$ 17,500	20	\$ 875	Nexom Quote
Lagoon Baffles	2	EA	\$10,000	\$ 20,000	20	\$ 1,000	Nexom Quote
<b>TOTAL ANNUAL</b>						<b>\$ 4,225</b>	

**SUMMARY**

DESCRIPTION	PRESENT WORTH	NOTES
Capital Costs	\$ 52,342,263	
Salvage Value	\$ 80,000	Assumed (Bristol and CRW)
O&M Costs	\$ 7,110,893	
Short Lived Assets	\$ 80,116	
<b>TOTAL LIFE-CYCLE COST</b>		<b>\$ 59,453,273</b>

**ASSUMPTIONS**

UTILITY	RATE	UNIT	NOTES
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.31	/gal	Kanakanak Hospital Study
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
	i= 2.25%		Federal Discount Rate (2019)
	n= 25	years	

**SITE 2 - CITY SHOP**

**ALTERNATIVE 2A - MBR PACKAGED TREATMENT PLANT**

**CAPITAL COSTS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	NOTES
Common Site Work	1	LS	\$10,246,081	\$ 10,246,081	
New MBR Packaged Treatment Plant	1	LS	\$9,614,337	\$ 9,614,337	
<b>TOTAL CAPITAL</b>				<b>\$ 19,860,418</b>	

**O&M COSTS**

DESCRIPTION	ANNUAL COST	NOTES
Administration	\$ 80,000	Assumed (Bristol and CRW)
Operator(s)/Local Labor	\$ 400,000	2 EA Level 3 and 2 EA Level 1 Operators (2 x \$120K/YR + 2 x \$80K/YR)
Operator Training and Off Site Support	\$ 150,000	Assumed (Bristol and CRW)
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)
Membrane Cleaning/Chemical Costs	\$ 8,800	Dynatec Quote
Treatment Equipment Electrical Costs	\$ 73,500	Dynatec Quote w/ PCE Rate
Treatment Equipment Maintenance Costs	\$ 8,100	Dynatec Quote
Disinfection/Chemicals	\$ 12,500	EPA Fact Sheet (Chlorine Disinfection)
Utilities (Fuel and Electric)	\$ 60,000	Estimated/Assumed
Tools and Equipment	\$ 18,000	Estimated/Assumed
Building and Equipment Repairs	\$ 14,000	Estimated/Assumed
Wastewater Sampling and Testing	\$ 14,000	Estimated/Assumed
Sludge Disposal	\$ 2,000	Estimated/Assumed
Miscellaneous Supplies	\$ 6,000	Estimated/Assumed
<b>TOTAL ANNUAL</b>		<b>\$ 866,900</b>
<b>TOTAL ANNUAL</b>		<b>\$ 16,438,490 PRESENT WORTH</b>

**SCHEDULE OF SHORT LIVED ASSETS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	SERVICE LIFE	ANNUAL COST	NOTES
UF Membranes	1	LOT	\$100,000	\$ 100,000	5	\$ 20,000	Dynatec Quote
<b>TOTAL ANNUAL</b>						<b>\$ 20,000</b>	

**SUMMARY**

DESCRIPTION	PRESENT WORTH	NOTES
Capital Costs	\$ 19,860,418	
Salvage Value	\$ 250,000	Assumed (Bristol and CRW)
O&M Costs	\$ 16,438,490	
Short Lived Assets	\$ 379,248	
<b>TOTAL LIFE-CYCLE COST</b>		<b>\$ 36,428,155</b>

**ASSUMPTIONS**

UTILITY	RATE	UNIT	NOTES
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.31	/gal	Kanakanak Hospital Study
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
	i= 2.25%		Federal Discou Rate (2019)
	n= 25	years	

**SITE 2 - CITY SHOP**

**ALTERNATIVE 2B - MBBR PACKAGED TREATMENT PLANT**

**CAPITAL COSTS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	NOTES
Common Site Work	1	LS	\$10,246,081	\$ 10,246,081	
New MBBR Packaged Treatment Plant	1	LS	\$14,302,567	\$ 14,302,567	
<b>TOTAL CAPITAL</b>				<b>\$ 24,548,648</b>	

**O&M COSTS**

DESCRIPTION	ANNUAL COST	NOTES
Administration	\$ 80,000	Assumed (Bristol and CRW)
Operator(s)/Local Labor	\$ 220,000	2 EA Level 1 Operators and 1 EA Assistant (2 x \$80K/YR + \$60K/YR)
Operator Training and Support	\$ 100,000	Assumed (Bristol and CRW)
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)
Treatment Chemical Costs	\$ 5,000	Nexom Quote
Treatment Equipment Electrical Costs	\$ 60,725	Nexom Quote w/ PCE Rate
Treatment Equipment Maintenance Costs	\$ 8,350	Nexom Quote
Disinfection/Chemicals	\$ 12,500	EPA Fact Sheet (Chlorine Disinfection)
Utilities (Fuel and Electric)	\$ 40,000	Estimated/Assumed
Tools and Equipment	\$ 18,000	Estimated/Assumed
Building and Equipment Repairs	\$ 14,000	Estimated/Assumed
Wastewater Sampling and Testing	\$ 14,000	Estimated/Assumed
Sludge Disposal	\$ 2,000	Estimated/Assumed
Miscellaneous Supplies	\$ 6,000	Estimated/Assumed
<b>TOTAL ANNUAL</b>		<b>\$ 600,575</b>
		<b>\$ 11,388,333 PRESENT WORTH</b>

**SCHEDULE OF SHORT LIVED ASSETS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	SERVICE LIFE	ANNUAL COST	NOTES
Head Pully Motors	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Auger Drive Motors	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Blowers	1	EA	\$2,000	\$ 2,000	5	\$ 400	Assumed
Rotating Top Skimmers	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Recycle Pumps	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Bottom Augers	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Air Compressors	1	EA	\$2,000	\$ 2,000	5	\$ 400	Assumed
<b>TOTAL ANNUAL</b>						<b>\$ 4,800</b>	

**SUMMARY**

DESCRIPTION	PRESENT WORTH	NOTES
Capital Costs	\$ 24,548,648	
Salvage Value	\$ 200,000	Assumed (Bristol and CRW)
O&M Costs	\$ 11,388,333	
Short Lived Assets	\$ 91,019	
<b>TOTAL LIFE-CYCLE COST</b>		<b>\$ 35,828,000</b>

**ASSUMPTIONS**

UTILITY	RATE	UNIT	NOTES
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.31	/gal	Kanakanak Hospital Study
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
i=		2.25%	Federal Discount Rate (2019)
n=		25	years

**SITE 3 - KANAKANAK ROAD**

**ALTERNATIVE 1 - WASTEWATER LAGOON**

**CAPITAL COSTS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	NOTES
Common Site Work	1	LS	\$18,415,801	\$ 18,415,801	HMS
New 2-Cell Lagoon	1	LS	\$11,167,639	\$ 11,167,639	HMS
<b>TOTAL CAPITAL</b>				<b>\$ 29,583,440</b>	

**O&M COSTS**

DESCRIPTION	ANNUAL COST	NOTES
Administration	\$ 50,000	City of Dillingham Budget and Actuals (2017)
Operator(s)/Local Labor Salaries and Benefits	\$ 160,000	2 EA Level 1 Operators (2 x \$80K/YR)
Operator Training and Support	\$ 20,000	Assumed (Bristol and CRW)
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)
Disinfection/Chemicals	\$ 21,000	Estimated/Assumed + EPA Fact Sheet (Chlorine Disinfection)
Utilities (Fuel and Electricity)	\$ 70,000	Estimated/Assumed, Nexom Quote w/ DLG Elec. Rate
Tools and Equipment	\$ 22,000	Estimated/Assumed + Extra Fuel
Building and Equipment Repairs	\$ 14,000	Estimated/Assumed
Wastewater Sampling and Testing	\$ 14,000	Estimated/Assumed
Sludge Disposal	\$ 2,000	Estimated/Assumed
Miscellaneous Supplies	\$ 6,000	Estimated/Assumed
<b>TOTAL ANNUAL</b>	<b>\$ 399,000</b>	<b>\$ 7,565,991 PRESENT WORTH</b>

**SCHEDULE OF SHORT LIVED ASSETS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	SERVICE LIFE	ANNUAL COST	NOTES
Motors/Blowers	2	EA	\$10,000	\$ 20,000	10	\$ 2,000	Nexom Quote
Floating Aeration Lateral Lines	7	EA	\$1,000	\$ 7,000	20	\$ 350	Nexom Quote
Diffusers and Feeder Lines	35	EA	\$500	\$ 17,500	20	\$ 875	Nexom Quote
Lagoon Baffles	2	EA	\$10,000	\$ 20,000	20	\$ 1,000	Nexom Quote
<b>TOTAL ANNUAL</b>						<b>\$ 4,225</b>	

**SUMMARY**

DESCRIPTION	PRESENT WORTH	NOTES
Capital Costs	\$ 29,583,440	
Salvage Value	\$ 80,000	Assumed (Bristol and CRW)
O&M Costs	\$ 7,565,991	
Short Lived Assets	\$ 80,116	
<b>TOTAL LIFE-CYCLE COST</b>	<b>\$ 37,149,547</b>	

**ASSUMPTIONS**

UTILITY	RATE	UNIT	NOTES
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.31	/gal	Kanakanak Hospital Study
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
	i= 2.25%		Federal Discount Rate (2019)
	n= 25	years	



**SITE 3 - KANAKANAK ROAD**

**ALTERNATIVE 2A - MBR PACKAGED TREATMENT PLANT**

**CAPITAL COSTS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	NOTES
Common Site Work	1	LS	\$18,415,801	\$ 18,415,801	
New MBR Packaged Treatment Plant	1	LS	\$6,998,727	\$ 6,998,727	
<b>TOTAL CAPITAL</b>				<b>\$ 25,414,528</b>	

**O&M COSTS**

DESCRIPTION	ANNUAL COST	NOTES
Administration	\$ 80,000	Assumed (Bristol and CRW)
Operator(s)/Local Labor	\$ 400,000	2 EA Level 3 and 2 EA Level 1 Operators (2 x \$120K/YR + 2 x \$80K/YR)
Operator Training and Off Site Support	\$ 150,000	Assumed (Bristol and CRW)
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)
Membrane Cleaning/Chemical Costs	\$ 8,800	Dynatec Quote
Treatment Equipment Electrical Costs	\$ 73,500	Dynatec Quote w/ PCE Rate
Treatment Equipment Maintenance Costs	\$ 8,100	Dynatec Quote
Disinfection/Chemicals	\$ 12,500	EPA Fact Sheet (Chlorine Disinfection)
Utilities (Fuel and Electric)	\$ 80,000	Estimated/Assumed
Tools and Equipment	\$ 22,000	Estimated/Assumed + Extra Fuel
Building and Equipment Repairs	\$ 14,000	Estimated/Assumed
Wastewater Sampling and Testing	\$ 14,000	Estimated/Assumed
Sludge Disposal	\$ 2,000	Estimated/Assumed
Miscellaneous Supplies	\$ 6,000	Estimated/Assumed
<b>TOTAL ANNUAL</b>		<b>\$ 890,900</b>
<b>PRESENT WORTH</b>		<b>\$ 16,893,587</b>

**SCHEDULE OF SHORT LIVED ASSETS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	SERVICE LIFE	ANNUAL COST	NOTES
UF Membranes	1	LOT	\$100,000	\$ 100,000	5	\$ 20,000	Dynatec Quote
<b>TOTAL ANNUAL</b>						<b>\$ 20,000</b>	

**SUMMARY**

DESCRIPTION	PRESENT WORTH	NOTES
Capital Costs	\$ 25,414,528	
Salvage Value	\$ 250,000	Assumed (Bristol and CRW)
O&M Costs	\$ 16,893,587	
Short Lived Assets	\$ 379,248	
<b>TOTAL LIFE-CYCLE COST</b>		<b>\$ 42,437,362</b>

**ASSUMPTIONS**

UTILITY	RATE	UNIT	NOTES
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.31	/gal	Kanakanak Hospital Study
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
	i= 2.25%		Federal Discount Rate (2019)
	n= 25	years	

**SITE 3 - KANAKANAK ROAD**

**ALTERNATIVE 2B - MBBR PACKAGED TREATMENT PLANT**

**CAPITAL COSTS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	NOTES
Common Site Work	1	LS	\$18,415,801	\$ 18,415,801	
New MBBR Packaged Treatment Plant	1	LS	\$11,453,046	\$ 11,453,046	
<b>TOTAL CAPITAL</b>				<b>\$ 29,868,847</b>	

**O&M COSTS**

DESCRIPTION	ANNUAL COST	NOTES
Administration	\$ 80,000	Assumed (Bristol and CRW)
Operator(s)/Local Labor	\$ 220,000	2 EA Level 1 Operators and 1 EA Assistant (2 x \$80K/YR + \$60K/YR)
Operator Training and Support	\$ 100,000	Assumed (Bristol and CRW)
Sewer Outfall Protection/Repair	\$ 20,000	Assumed (Bristol and CRW)
Treatment Chemical Costs	\$ 5,000	Nexom Quote
Treatment Equipment Electrical Costs	\$ 60,725	Nexom Quote w/ PCE Rate
Treatment Equipment Maintenance Costs	\$ 8,350	Nexom Quote
Disinfection/Chemicals	\$ 12,500	EPA Fact Sheet (Chlorine Disinfection)
Utilities (Fuel and Electric)	\$ 60,000	Estimated/Assumed
Tools and Equipment	\$ 22,000	Estimated/Assumed + Extra Fuel
Building and Equipment Repairs	\$ 14,000	Estimated/Assumed
Wastewater Sampling and Testing	\$ 14,000	Estimated/Assumed
Sludge Disposal	\$ 2,000	Estimated/Assumed
Miscellaneous Supplies	\$ 6,000	Estimated/Assumed
<b>TOTAL ANNUAL</b>		<b>\$ 624,575</b>
		<b>\$ 11,843,430 PRESENT WORTH</b>

**SCHEDULE OF SHORT LIVED ASSETS**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	SERVICE LIFE	ANNUAL COST	NOTES
Head Pully Motors	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Auger Drive Motors	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Blowers	1	EA	\$2,000	\$ 2,000	5	\$ 400	Assumed
Rotating Top Skimmers	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Recycle Pumps	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Bottom Augers	2	EA	\$2,000	\$ 4,000	5	\$ 800	Assumed
Air Compressors	1	EA	\$2,000	\$ 2,000	5	\$ 400	Assumed
<b>TOTAL ANNUAL</b>						<b>\$ 4,800</b>	

**SUMMARY**

DESCRIPTION	PRESENT WORTH	NOTES
Capital Costs	\$ 29,868,847	
Salvage Value	\$ 200,000	Assumed (Bristol and CRW)
O&M Costs	\$ 11,843,430	
Short Lived Assets	\$ 91,019	
<b>TOTAL LIFE-CYCLE COST</b>		<b>\$ 41,603,297</b>

**ASSUMPTIONS**

UTILITY	RATE	UNIT	NOTES
Electricity	\$ 0.26	/kWh	Nushagak Coop.
Electricity	\$ 0.17	/kWh	Nushagak Coop. (PCE)
Gasoline		/gal	
Fuel Oil	\$ 3.31	/gal	Kanakanak Hospital Study
Water	\$ 2.97	/1000 gal	Kanakanak Hospital Study
i=		2.25%	Federal Discount Rate (2019)
n=		25	years

DRAFT SCHEMATIC DESIGN SUBMITTAL  
CONSTRUCTION COST ESTIMATE (REVISION 3)

WASTEWATER LAGOON RELOCATION STUDY  
DILLINGHAM, ALASKA

*PREPARED FOR:*

Bristol Engineering Services Co., LLC  
111 West 16th Avenue, Third Floor  
Anchorage, Alaska 99501

March 27, 2020



HMS Project No.: 19110

## **NOTES REGARDING THE PREPARATION OF THIS ESTIMATE**

### **DRAWINGS AND DOCUMENTS**

*Level of Documents:* (3) schematic drawings and system narratives  
*Date:* October 2019  
*Provided By:* Bristol Engineering Services Co., LLC of Anchorage, Alaska

### **RATES**

Pricing is based on current material, equipment and freight costs. Archaeological pricing per quote from Engineer. Gravel pricing per Chris Ming at JJC Enterprises, 907-842-1553.

*Labor Rates:* A.S. Title 36 working 60 hours per week  
*Premium Time:* 16.70%

### **BIDDING ASSUMPTIONS**

*Contract:* Standard construction contract without restrictive bidding clauses  
*Bidding Situation:* Competitive bids assumed  
*Bid Date:* Spring 2021  
*Start of Construction:* Summer 2021  
*Months to Complete:* Within (12) months completion

### **EXCLUDED COSTS**

1. Administrative and management costs
2. Remediation of contaminated soils and ground water contamination, if found during construction

HMS Project No.: 19110

### ***NOTES REGARDING THE PREPARATION OF THIS ESTIMATE (Continued)***

#### **GENERAL**

When included in HMS Inc.'s scope of services, opinions or estimates of probable construction costs are prepared on the basis of HMS Inc.'s experience and qualifications and represent HMS Inc.'s judgment as a professional generally familiar with the industry. However, since HMS Inc. has no control over the cost of labor, materials, equipment or services furnished by others, over contractor's methods of determining prices, or over competitive bidding or market conditions, HMS Inc. cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from HMS Inc.'s opinions or estimates of probable construction cost.

This estimate assumes normal escalation based on the current economic climate. HMS Inc. will continue to monitor this, as well as other international, domestic and local events, and the resulting construction climate, and will adjust costs and contingencies as deemed appropriate.

General requirements for this estimate are included as a mark-up of the overall cost for each option. Included are such things as freight, mobilization, demobilization, oversight and superintendent costs, temporary offices, portable outhouses, equipment and tools not directly costed with the work items, contract fees, and employment costs like per diem, air travel, etc.

The estimator's contingency is an allowance for architectural and engineering requirements that are not apparent at this early level of design documentation.

HMS Project No.: 19110

**DRAFT SCHEMATIC DESIGN GENERAL COST SUMMARY**

	<i>Total</i>
<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b>	
SITE 1 WITH ALTERNATE 1 - SHEET PILE REVETMENT	\$ 27,902,017
SITE 1 WITH ALTERNATE 2 - ARMORED ROCK REVETMENT	33,440,552
<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b>	
SITE 2 WITH ALTERNATE 1 - WASTEWATER LAGOON	52,342,263
SITE 2 WITH ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT	19,860,418
SITE 2 WITH ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT	24,548,648
<b>SITE 3 - KANAKANAK ROAD</b>	
SITE 3 WITH ALTERNATE 1 - WASTEWATER LAGOON	29,583,440
SITE 3 WITH ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT	25,414,528
SITE 3 WITH ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT	29,868,847

HMS Project No.: 19110

**SITE 1 - DEFEND EXISTING LAGOON IN PLACE**  
**DRAFT SCHEMATIC DESIGN COST SUMMARY**

	<i>Material</i>	<i>Labor</i>	<i>Total</i>
01 - SITE WORK			
012 - Site Preparation	\$ 68,260	\$ 179,718	\$ 247,978
014 - Site Mechanical	155,270	137,099	292,369
02 - SUBSTRUCTURE	0	0	0
03 - SUPERSTRUCTURE	0	0	0
04 - EXTERIOR CLOSURE	0	0	0
05 - ROOF SYSTEMS	0	0	0
06 - INTERIOR CONSTRUCTION	0	0	0
07 - CONVEYING SYSTEMS	0	0	0
08 - MECHANICAL	0	0	0
09 - ELECTRICAL	0	0	0
10 - EQUIPMENT	0	0	0
11 - SPECIAL CONSTRUCTION	0	0	0
<b>SUBTOTAL:</b>	<b>\$ 223,530</b>	<b>\$ 316,817</b>	<b>\$ 540,347</b>
12 - GENERAL REQUIREMENTS			391,644
<b>SUBTOTAL:</b>			<b>\$ 931,991</b>
13 - CONTINGENCIES			343,205
<b>TOTAL ESTIMATED CONSTRUCTION COST:</b>			<b>\$ 1,275,196</b>

HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b> <b>01 - SITE WORK</b> <b>012 - Site Preparation</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
SWPPP fee and implementation	1	LOT	10000.00	10,000	7500.00	7,500	17500.00	17,500
SWPPP weekly check and maintenance	32	WKS	150.00	4,800	250.00	8,000	400.00	12,800
Storage containers	2	EA	8000.00	16,000			8000.00	16,000
Wildlife management plan	1	LOT	500.00	500	1500.00	1,500	2000.00	2,000
Survey	2.06	AC	1000.00	2,060	5000.00	10,300	6000.00	12,360
Archaeological survey and investigation	1	EA	2500.00	2,500	18700.00	18,700	21200.00	21,200
Archaeological monitoring	90	DAYS	360.00	32,400	1200.00	108,000	1560.00	140,400
<b>SUBTOTAL:</b>				<b>\$ 68,260</b>		<b>\$ 154,000</b>		<b>\$ 222,260</b>
Labor Premium Time	16.70%					25,718		25,718
<b>TOTAL ESTIMATED COST:</b>				<b>\$ 68,260</b>		<b>\$ 179,718</b>		<b>\$ 247,978</b>



HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b> <b>01 - SITE WORK</b> <b>014 - Site Mechanical</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

16'0"x24'0" DISCHARGE BUILDING

Excavation and backfill	124	CY	9.00	1,116	18.00	2,232	27.00	3,348
Foundation and slab on grade	23	CY	650.00	14,950	270.00	6,210	920.00	21,160
Building structure and finishes	384	SF	50.00	19,200	62.00	23,808	112.00	43,008
HVAC package	1	LOT	3500.00	3,500	4000.00	4,000	7500.00	7,500
Electrical package	1	LOT	2500.00	2,500	3200.00	3,200	5700.00	5,700
Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Piping connection to outfall	20	LF	14.00	280	12.50	250	26.50	530

16'0"x24'0" DISINFECTION BUILDING

Excavation and backfill	124	CY	9.00	1,116	18.00	2,232	27.00	3,348
8'0" diameter concrete manhole	1	EA	10000.00	10,000	6000.00	6,000	16000.00	16,000
Foundation and slab on grade	23	CY	650.00	14,950	270.00	6,210	920.00	21,160
Building structure and finishes	384	SF	50.00	19,200	62.00	23,808	112.00	43,008
HVAC package	1	LOT	3500.00	3,500	4000.00	4,000	7500.00	7,500

HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b> <b>01 - SITE WORK</b> <b>014 - Site Mechanical</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

16'0"x24'0" DISINFECTION BUILDING (Continued)

Electrical package	1	LOT	2500.00	2,500	3200.00	3,200	5700.00	5,700
Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Piping connection to outfall	20	LF	14.00	280	12.50	250	26.50	530
<b>SUBTOTAL:</b>				<b>\$ 129,392</b>		<b>\$ 97,900</b>		<b>\$ 227,292</b>
Labor Premium Time	16.70%					16,349		16,349
<b>SUBTOTAL:</b>				<b>\$ 129,392</b>		<b>\$ 114,249</b>		<b>\$ 243,641</b>
Subcontractor's Overhead and Profit on Material and Labor	20.00%			25,878		22,850		48,728

<b>TOTAL ESTIMATED COST:</b>				<b>\$ 155,270</b>		<b>\$ 137,099</b>		<b>\$ 292,369</b>
------------------------------	--	--	--	-------------------	--	-------------------	--	-------------------

HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>12 - GENERAL REQUIREMENTS</b>								

General requirements	40.00%							216,139
Contractor's overhead, profit, bonds, and insurances	10.00%							75,649
Design fee for architectural, civil, geotechnical, electrical, mechanical, and structural engineers	12.00%							99,856

<b>TOTAL ESTIMATED COST:</b>	<b>\$ 391,644</b>
------------------------------	-------------------

HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>13 - CONTINGENCIES</b>								

ESTIMATOR'S CONTINGENCY

The estimator's allowance for architectural and engineering requirements that are not apparent at this level of design documentation 30.00% \$ 279,597

ESCALATION CONTINGENCY

The allowance for escalation from the date of estimate to summer 2021 construction at the rate 3.50% per annum (18 months) 5.25% \$ 63,608

---

**TOTAL ESTIMATED COST:** **\$ 343,205**

---

HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
Site preparation/clearing and grubbing	16,000	SY			1.50	24,000	1.50	24,000
Geotextile fabric	32,000	SY	9.20	294,400	1.65	52,800	10.85	347,200
Pit run gravel compacted in 12" lifts	60,000	CY	12.00	720,000	16.00	960,000	28.00	1,680,000
6" layer of D1	1,470	CY	39.00	57,330	11.00	16,170	50.00	73,500
Rip rap at toe	5,580	CY	90.00	502,200	16.00	89,280	106.00	591,480
<b><u>SHEET PILING</u></b>								
Mobilize specialized sheet pile equipment and demobilize upon completion	1	LOT	15000.00	15,000	30000.00	30,000	45000.00	45,000
Pile materials barge freight	755	TONS	420.00	317,100	50.00	37,750	470.00	354,850
Procure epoxy coated HP14x73 piles (163 each)	120	TONS	4600.00	552,000	200.00	24,000	4800.00	576,000
Procure 25'0" long 'Z' sheet piles (1,420 each)	728	TONS	4600.00	3,348,800	200.00	145,600	4800.00	3,494,400
Drive 17'0" long HP14x73 piles into ground, 6'0" deep	900	VLF	25.00	22,500	115.00	103,500	140.00	126,000
Drive 'Z' sheet piles into ground, 12'0" deep (depth assumed)	15,720	VLF	25.00	393,000	130.00	2,043,600	155.00	2,436,600
1 7/8" anchor rods	3,586	LF	28.00	100,408	15.60	55,942	43.60	156,350
6" diameter perforated HDPE	950	LF	12.00	11,400	1.20	1,140	13.20	12,540



HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>ALTERNATE 1 - SHEET PILE REVETMENT</b>								

Design Fee for Architectural, Civil, Geotechnical, Electrical, Mechanical, and Structural Engineers	10.00%							1,769,136
Estimator's Contingency	30.00%							5,838,148
Escalation to Summer 2021	5.25%							1,328,179

<b>TOTAL ESTIMATED COST:</b>	<b>\$ 26,626,821</b>
------------------------------	----------------------





HMS Project No.: 19110

<b>SITE 1 - DEFEND EXISTING LAGOON IN PLACE</b> <b>ALTERNATE 2 - ARMORED ROCK</b> <b>REVTMENT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

Estimator's Contingency	30.00%							7,052,517
Escalation to Summer 2021	5.25%							1,604,448

---

**TOTAL ESTIMATED COST:** **\$ 32,165,356**

---

HMS Project No.: 19110

**SITE 2 - ADJACENT TO CITY SHOP PAD  
 DRAFT SCHEMATIC DESIGN COST SUMMARY**

	<i>Material</i>	<i>Labor</i>	<i>Total</i>
01 - SITE WORK	\$ 2,703,019	\$ 1,638,619	\$ 4,341,638
02 - SUBSTRUCTURE	0	0	0
03 - SUPERSTRUCTURE	0	0	0
04 - EXTERIOR CLOSURE	0	0	0
05 - ROOF SYSTEMS	0	0	0
06 - INTERIOR CONSTRUCTION	0	0	0
07 - CONVEYING SYSTEMS	0	0	0
08 - MECHANICAL	0	0	0
09 - ELECTRICAL	0	0	0
10 - EQUIPMENT	0	0	0
11 - SPECIAL CONSTRUCTION	0	0	0
<b>SUBTOTAL:</b>	<b>\$ 2,703,019</b>	<b>\$ 1,638,619</b>	<b>\$ 4,341,638</b>
12 - GENERAL REQUIREMENTS			3,146,819
<b>SUBTOTAL:</b>			<b>\$ 7,488,457</b>
13 - CONTINGENCIES			2,757,624
<b>TOTAL ESTIMATED CONSTRUCTION COST:</b>			<b>\$ 10,246,081</b>

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b> <b>01 - SITE WORK</b> <b>012 - Site Preparation</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
SWPPP fee and implementation	1	LOT	6500.00	6,500	2500.00	2,500	9000.00	9,000
SWPPP weekly check and maintenance	32	WKS	150.00	4,800	250.00	8,000	400.00	12,800
Existing lagoon decommissioning (per Engineer)	1	LS	1000000.00	1,000,000			1000000.00	1,000,000
Wildlife management plan	1	LOT	500.00	500	1500.00	1,500	2000.00	2,000
Site survey and staking	1	LOT	1500.00	1,500	6500.00	6,500	8000.00	8,000
Traffic control, flaggers, signs, etc.	3	MOS	1000.00	3,000	7000.00	21,000	8000.00	24,000
Soil transfer at new building pad (36" in site area for parking, etc.)	1,350	CY	22.50	30,375	17.00	22,950	39.50	53,325
Sheet pile around tank foundations and process area (100'0"x50'0")	300	LF	1565.00	469,500	1700.00	510,000	3265.00	979,500
Soil transfer inside sheet pile area	6,400	CY	9.00	57,600	18.00	115,200	27.00	172,800
Soil compaction tests (1 per 1,000 CY)	8	EA	225.00	1,800			225.00	1,800
<b>SUBTOTAL:</b>				<b>\$ 1,575,575</b>		<b>\$ 687,650</b>		<b>\$ 2,263,225</b>
Labor Premium Time	16.70%					114,838		114,838
<b>TOTAL ESTIMATED COST:</b>				<b>\$ 1,575,575</b>		<b>\$ 802,488</b>		<b>\$ 2,378,063</b>

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b> <b>01 - SITE WORK</b> <b>013 - Site Improvements</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
6" D1 surface course, compacted	29	CY	39.00	1,131	11.00	319	50.00	1,450
4" deep topsoil at affected areas	14	CY	23.00	322	7.50	105	30.50	427
Hydroseeding	1	MSF	107.00	107	295.00	295	402.00	402
Bollards	10	EA	350.00	3,500	480.00	4,800	830.00	8,300
<b>SUBTOTAL:</b>				<b>\$ 5,060</b>		<b>\$ 5,519</b>		<b>\$ 10,579</b>
Labor Premium Time	16.70%					922		922
<b>TOTAL ESTIMATED COST:</b>				<b>\$ 5,060</b>		<b>\$ 6,441</b>		<b>\$ 11,501</b>

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b> <b>01 - SITE WORK</b> <b>014 - Site Mechanical</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

PUMPER TRUCK DUMP STATION

10,000 gallon insulated tank	1	EA	12000.00	12,000	3600.00	3,600	15600.00	15,600
Septic transfer pump	1	EA	2700.00	2,700	786.00	786	3486.00	3,486
Piping to equalization tank	50	LF	19.50	975	18.75	938	38.25	1,913
Trenching for piping	50	LF	7.00	350	12.00	600	19.00	950
Ring wall foundation for tank	7	CY	650.00	4,550	270.00	1,890	920.00	6,440
Excavation and backfill	25	CY	9.00	225	18.00	450	27.00	675
Dump station structure and amenities	1	LOT	3000.00	3,000	5000.00	5,000	8000.00	8,000

16'0"x24'0" DISCHARGE BUILDING

Excavation and backfill	124	CY	9.00	1,116	18.00	2,232	27.00	3,348
8'0" diameter concrete manhole	1	EA	10000.00	10,000	6000.00	6,000	16000.00	16,000
Foundation and slab on grade	23	CY	650.00	14,950	270.00	6,210	920.00	21,160
Building structure and finishes	384	SF	50.00	19,200	62.00	23,808	112.00	43,008
HVAC package	1	LOT	3500.00	3,500	4000.00	4,000	7500.00	7,500
Electrical package	1	LOT	2500.00	2,500	3200.00	3,200	5700.00	5,700

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b> <b>01 - SITE WORK</b> <b>014 - Site Mechanical</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

16'0"x24'0" DISCHARGE BUILDING (Continued)

Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Piping connection to existing outfall	20	LF	14.00	280	12.50	250	26.50	530

WATER AND SEWER PIPING

6" diameter HDPE	350	LF	16.00	5,600	12.50	4,375	28.50	9,975
12" diameter HDPE	5,500	LF	42.50	233,750	29.00	159,500	71.50	393,250
Excavation and backfill under roads	12,833	CY	9.00	115,497	18.00	230,994	27.00	346,491
Type 2 fill	3,935	CY	31.00	121,985	10.00	39,350	41.00	161,335
4" leveling course	930	CY	70.00	65,100	8.50	7,905	78.50	73,005
AC pavement	14,440	SF	5.80	83,752	1.20	17,328	7.00	101,080
Test and disinfect piping (6")	1	LOT	500.00	500	1500.00	1,500	2000.00	2,000

LIFT STATIONS

Note: Excavation and backfill incidental to water and sewer piping.

Manhole and vault for lift station	3	EA	6500.00	19,500	4250.00	12,750	10750.00	32,250
------------------------------------	---	----	---------	--------	---------	--------	----------	--------

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b> <b>01 - SITE WORK</b> <b>014 - Site Mechanical</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

LIFT STATIONS (Continued)

Mechanical for lift stations	3	LOTS	18500.00	55,500	9750.00	29,250	28250.00	84,750
Pumps with grinders for lift stations	6	EA	22500.00	135,000	2550.00	15,300	25050.00	150,300
Electrical for lift stations	3	LOTS	1880.00	5,640	3000.00	9,000	4880.00	14,640
<b>SUBTOTAL:</b>				<b>\$ 935,320</b>		<b>\$ 592,466</b>		<b>\$ 1,527,786</b>
Labor Premium Time	16.70%					98,942		98,942
<b>SUBTOTAL:</b>				<b>\$ 935,320</b>		<b>\$ 691,408</b>		<b>\$ 1,626,728</b>
Subcontractor's Overhead and Profit on Material and Labor	20.00%			187,064		138,282		325,346

<b>TOTAL ESTIMATED COST:</b>				<b>\$ 1,122,384</b>		<b>\$ 829,690</b>		<b>\$ 1,952,074</b>
------------------------------	--	--	--	---------------------	--	-------------------	--	---------------------

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>

General requirements	40.00%							1,736,655
Contractor's overhead, profit, bonds, and insurances	10.00%							607,829
Design fee for architectural, civil, geotechnical, electrical, mechanical, and structural engineers	12.00%							802,335

<b>TOTAL ESTIMATED COST:</b>	<b>\$ 3,146,819</b>
------------------------------	---------------------



HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>13 - CONTINGENCIES</b>								

ESTIMATOR'S CONTINGENCY

The estimator's allowance for architectural and engineering requirements that are not apparent at this level of design documentation

30.00%

\$ 2,246,537

ESCALATION CONTINGENCY

The allowance for escalation from the date of estimate to summer 2021 construction at the rate 3.50% per annum (18 months)

5.25%

\$ 511,087

**TOTAL ESTIMATED COST:**

**\$ 2,757,624**

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>ALTERNATE 1 - WASTEWATER LAGOON</b>								

FOUNDATIONS

Sheet pile around foundation area (44'0"x52'0")	152	LF	1565.00	237,880	1700.00	258,400	3265.00	496,280
Excavation and backfill	780	CY	9.00	7,020	18.00	14,040	27.00	21,060
Footings and stem walls	9	CY	650.00	5,850	270.00	2,430	920.00	8,280
Insulation and waterproofing	240	SF	4.00	960	3.25	780	7.25	1,740

SLAB ON GRADE

Slab on grade	14	CY	650.00	9,100	270.00	3,780	920.00	12,880
Finish and cure slab	768	SF	0.30	230	1.30	998	1.60	1,228
Block outs for mechanical and electrical	6	SF	15.00	90	25.00	150	40.00	240
Trench drains	10	LF	180.00	1,800	65.00	650	245.00	2,450

ROOF CONSTRUCTION

Note: PEMB roof with exterior walls.

EXTERIOR WALLS

Pre-engineered metal building, including structure, 4" thick siding insulated panels, and 6" thick roof insulated panels	768	SF	56.00	43,008	28.00	21,504	84.00	64,512
--	-----	----	-------	--------	-------	--------	-------	--------

HMS Project No.: 19110

SITE 2 - ADJACENT TO CITY SHOP PAD  ALTERNATE 1 - WASTEWATER LAGOON	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

EXTERIOR DOORS

3'0"x7'0" hollow metal door assembly, complete	1	EA	2200.00	2,200	700.00	700	2900.00	2,900
6'0"x7'0" hollow metal door assembly, complete	1	EA	4400.00	4,400	1400.00	1,400	5800.00	5,800

INTERIOR PARTITIONS AND DOORS

3'0"x7'0" hollow metal door assembly, complete	1	EA	1800.00	1,800	650.00	650	2450.00	2,450
Metal stud partition walls	190	SF	9.00	1,710	13.00	2,470	22.00	4,180

<b>SUBTOTAL:</b>				<b>\$ 316,048</b>		<b>\$ 307,952</b>		<b>\$ 624,000</b>
Labor Premium Time	16.70%					51,428		51,428
<b>SUBTOTAL SUBSTRUCTURE, ROOF, ETC.:</b>				<b>\$ 316,048</b>		<b>\$ 359,380</b>		<b>\$ 675,428</b>

MECHANICAL

Plumbing

Water closet with flush valve	1	EA	1000.00	1,000	260.00	260	1260.00	1,260
Lavatory with faucet	1	EA	600.00	600	290.00	290	890.00	890
48" shower with faucet	1	EA	1750.00	1,750	650.00	650	2400.00	2,400
Utility sink with faucet and drain	1	EA	750.00	750	260.00	260	1010.00	1,010
4" floor drain	1	EA	220.00	220	210.00	210	430.00	430

HMS Project No.: 19110

SITE 2 - ADJACENT TO CITY SHOP PAD  ALTERNATE 1 - WASTEWATER LAGOON	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

MECHANICAL (Continued)

Plumbing (Continued)

Under floor waste and vent pipe	50	LF	35.00	1,750	32.00	1,600	67.00	3,350
Above floor waste and vent pipe	30	LF	29.00	870	27.00	810	56.00	1,680
Hot and cold water piping	80	LF	8.00	640	9.15	732	17.15	1,372

Heating

Fuel oil fired horizontal unit heater	1	EA	6500.00	6,500	1500.00	1,500	8000.00	8,000
---------------------------------------	---	----	---------	-------	---------	-------	---------	-------

Ventilation

Fans, louvers, dampers, and ductwork	768	SF	6.00	4,608	3.75	2,880	9.75	7,488
--------------------------------------	-----	----	------	-------	------	-------	------	-------

Fuel Oil System

1,000 gallon, skid mounted fuel tank	1	EA	20000.00	20,000	2500.00	2,500	22500.00	22,500
Day tank	1	EA	1000.00	1,000	250.00	250	1250.00	1,250
Fuel oil black steel pipe	75	LF	9.00	675	14.00	1,050	23.00	1,725

ELECTRICAL

Service and Distribution

Main distribution panel and equipment	1	EA	4500.00	4,500	1800.00	1,800	6300.00	6,300
---------------------------------------	---	----	---------	-------	---------	-------	---------	-------

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>ALTERNATE 1 - WASTEWATER LAGOON</b>								

ELECTRICAL (Continued)

Service and Distribution (Continued)

Subpanel	1	EA	2150.00	2,150	700.00	700	2850.00	2,850
Conduit and conductors	1	LOT	1500.00	1,500	1200.00	1,200	2700.00	2,700

Lighting and Power

Lighting fixtures	768	SF	8.50	6,528	3.00	2,304	11.50	8,832
Devices, conduit, and conductors	768	SF	6.25	4,800	11.50	8,832	17.75	13,632

SPECIAL CONSTRUCTION

Aeration, baffles, motors, and blowers	1	LOT	375000.00	375,000	40000.00	40,000	415000.00	415,000
Monitoring and controls for aeration equipment	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Piping for aeration process	100	LF	42.00	4,200	28.00	2,800	70.00	7,000
Fittings for aeration process piping	25	EA	525.00	13,125	312.00	7,800	837.00	20,925

2-Cell Lagoon

Sheet pile around lagoon area	2,750	LF	1565.00	4,303,750	1700.00	4,675,000	3265.00	8,978,750
Excavate for 2-cell lagoon 10'0" deep	122,500	BCY			17.00	2,082,500	17.00	2,082,500



HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD</b>	<i>QUANTITY</i>	<i>UNIT</i>	<i>MATERIAL</i>		<i>LABOR</i>		<i>TOTAL</i>	<i>TOTAL</i>
			<i>RATE</i>	<i>TOTAL</i>	<i>RATE</i>	<i>TOTAL</i>	<i>UNIT RATE</i>	<i>MATERIAL/LABOR</i>
			\$	\$	\$	\$	\$	\$
<b>ALTERNATE 1 - WASTEWATER LAGOON</b>								

Design Fee for Architectural, Civil, Geotechnical, Electrical, Mechanical, and Structural Engineers	10.00%							2,796,949
Estimator's Contingency	30.00%							9,229,932
Escalation to Summer 2021	5.25%							2,099,810

---

**TOTAL ESTIMATED COST:** **\$ 42,096,182**

---

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

FOUNDATIONS

Sheet pile around foundation area (70'0"x80'0")	300	LF	1565.00	469,500	1700.00	510,000	3265.00	979,500
Excavation and backfill	1,900	CY	9.00	17,100	18.00	34,200	27.00	51,300
Footings and stem walls	33	CY	650.00	21,450	270.00	8,910	920.00	30,360
Insulation and waterproofing	960	SF	4.00	3,840	3.25	3,120	7.25	6,960

SLAB ON GRADE

Slab on grade	56	CY	650.00	36,400	270.00	15,120	920.00	51,520
Finish and cure slab	3,000	SF	0.30	900	1.30	3,900	1.60	4,800
Block outs for mechanical and electrical	6	SF	15.00	90	25.00	150	40.00	240
Trench drains	20	LF	180.00	3,600	65.00	1,300	245.00	4,900

ROOF CONSTRUCTION

Note: PEMB roof with exterior walls.

EXTERIOR WALLS

Pre-engineered metal building, including structure, 4" thick siding insulated panels, and 6" thick roof insulated panels	3,000	SF	56.00	168,000	28.00	84,000	84.00	252,000
--	-------	----	-------	---------	-------	--------	-------	---------



HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

EXTERIOR DOORS

3'0"x7'0" hollow metal door assembly, complete	3	EA	2200.00	6,600	700.00	2,100	2900.00	8,700
16'0"x16'0" overhead door assembly, complete	2	EA	10000.00	20,000	4200.00	8,400	14200.00	28,400

INTERIOR PARTITIONS AND DOORS

3'0"x7'0" hollow metal door assembly, complete	4	EA	1800.00	7,200	650.00	2,600	2450.00	9,800
Metal stud partition walls	1,600	SF	9.00	14,400	13.00	20,800	22.00	35,200

<b>SUBTOTAL:</b>				<b>\$ 769,080</b>		<b>\$ 694,600</b>		<b>\$ 1,463,680</b>
------------------	--	--	--	-------------------	--	-------------------	--	---------------------

Labor Premium Time	16.70%					115,998		115,998
--------------------	--------	--	--	--	--	---------	--	---------

<b>SUBTOTAL SUBSTRUCTURE, ROOF, ETC.:</b>				<b>\$ 769,080</b>		<b>\$ 810,598</b>		<b>\$ 1,579,678</b>
---	--	--	--	-------------------	--	-------------------	--	---------------------

MECHANICAL

Plumbing

Water closet with flush valve	1	EA	1000.00	1,000	260.00	260	1260.00	1,260
Lavatories with faucet	2	EA	600.00	1,200	290.00	580	890.00	1,780
48" shower with faucet	1	EA	1750.00	1,750	650.00	650	2400.00	2,400
Utility sink with faucet and drain	1	EA	750.00	750	260.00	260	1010.00	1,010

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

MECHANICAL (Continued)

Plumbing (Continued)

4" floor drain	2	EA	220.00	440	210.00	420	430.00	860
Under floor waste and vent pipe	150	LF	35.00	5,250	32.00	4,800	67.00	10,050
Above floor waste and vent pipe	100	LF	29.00	2,900	27.00	2,700	56.00	5,600
Hot and cold water piping	250	LF	8.00	2,000	9.15	2,288	17.15	4,288

Heating

Fuel oil fired boilers with controls	2	EA	22500.00	45,000	8750.00	17,500	31250.00	62,500
Hydronic piping	3,000	SF	6.50	19,500	5.00	15,000	11.50	34,500

Ventilation

Fans, louvers, dampers, and ductwork	3,000	SF	3.00	9,000	2.75	8,250	5.75	17,250
--------------------------------------	-------	----	------	-------	------	-------	------	--------

Fuel Oil System

5,000 gallon, skid mounted fuel tank	1	EA	36000.00	36,000	10000.00	10,000	46000.00	46,000
Day tank	1	EA	5000.00	5,000	1000.00	1,000	6000.00	6,000
Fuel oil black steel pipe	300	LF	9.00	2,700	14.00	4,200	23.00	6,900

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

ELECTRICAL

Service and Distribution

Main distribution panel and equipment	1	EA	24500.00	24,500	6500.00	6,500	31000.00	31,000
Subpanels	3	EA	2150.00	6,450	700.00	2,100	2850.00	8,550
Conduit and conductors	1	LOT	2000.00	2,000	1700.00	1,700	3700.00	3,700

Lighting and Power

Lighting fixtures	3,000	SF	8.50	25,500	3.00	9,000	11.50	34,500
Devices, conduit, and conductors	3,000	SF	6.25	18,750	11.50	34,500	17.75	53,250

SPECIAL CONSTRUCTION

Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls for dosing equipment	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Membrane bio-reactor units by Dynatec (per engineer)	1	LOT	820000.00	820,000	123000.00	123,000	943000.00	943,000
MBR system controls and interfacing	1	LOT	35000.00	35,000	12000.00	12,000	47000.00	47,000
Dynatec on site engineering support	7	DAYS	350.00	2,450	1250.00	8,750	1600.00	11,200
Miscellaneous process piping and valves	3,000	SF	30.00	90,000	12.00	36,000	42.00	126,000



HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
General Requirements	40.00%							1,629,578
Contractor's Overhead, Profit, Bonds, and Insurances	10.00%							570,352
Design Fee for Architectural, Civil, Geotechnical, Electrical, Mechanical, and Structural Engineers	12.00%							752,865
Estimator's Contingency	30.00%							2,108,022
Escalation to Summer 2021	5.25%							479,575
<b>TOTAL ESTIMATED COST:</b>								<b>\$ 9,614,337</b>

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

FOUNDATIONS

Sheet pile around foundation area (60'0"x70'0")	260	LF	1565.00	406,900	1700.00	442,000	3265.00	848,900
Soil transfer inside sheet pile area	5,375	CY	22.50	120,938	17.00	91,375	39.50	212,313
Soil transfer at new building pad (36" inside area for parking, etc.)	1,350	CY	22.50	30,375	17.00	22,950	39.50	53,325
Excavation and backfill	296	CY	9.00	2,664	18.00	5,328	27.00	7,992
Footings and stem walls	22	CY	650.00	14,300	270.00	5,940	920.00	20,240
Insulation and waterproofing	640	SF	4.00	2,560	3.25	2,080	7.25	4,640

SLAB ON GRADE

Slab on grade	37	CY	650.00	24,050	270.00	9,990	920.00	34,040
Finish and cure slab	2,000	SF	0.30	600	1.30	2,600	1.60	3,200
Block outs for mechanical and electrical	6	SF	15.00	90	25.00	150	40.00	240
Trench drains	20	LF	180.00	3,600	65.00	1,300	245.00	4,900

ROOF CONSTRUCTION

Note: PEMB roof with exterior walls.

HMS Project No.: 19110

SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

EXTERIOR WALLS

Pre-engineered metal building, including structure,  
 4" thick siding insulated panels, and 6" thick roof  
 insulated panels

2,000	SF	56.00	112,000	28.00	56,000	84.00	168,000
-------	----	-------	---------	-------	--------	-------	---------

EXTERIOR DOORS

3'0"x7'0" hollow metal door assembly, complete	3	EA	2200.00	6,600	700.00	2,100	2900.00	8,700
16'0"x16'0" overhead door assembly, complete	1	EA	10000.00	10,000	4200.00	4,200	14200.00	14,200

INTERIOR PARTITIONS AND DOORS

3'0"x7'0" hollow metal door assembly, complete	4	EA	1800.00	7,200	650.00	2,600	2450.00	9,800
Metal stud partition walls	1,200	SF	9.00	10,800	13.00	15,600	22.00	26,400

<b>SUBTOTAL:</b>				<b>\$ 752,677</b>		<b>\$ 664,213</b>		<b>\$ 1,416,890</b>
------------------	--	--	--	-------------------	--	-------------------	--	---------------------

Labor Premium Time	16.70%					110,924		110,924
--------------------	--------	--	--	--	--	---------	--	---------

<b>SUBTOTAL SUBSTRUCTURE, ROOF, ETC.:</b>				<b>\$ 752,677</b>		<b>\$ 775,137</b>		<b>\$ 1,527,814</b>
---	--	--	--	-------------------	--	-------------------	--	---------------------

MECHANICAL

Plumbing

Water closet with flush valve	1	EA	1000.00	1,000	260.00	260	1260.00	1,260
-------------------------------	---	----	---------	-------	--------	-----	---------	-------

HMS Project No.: 19110

SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

MECHANICAL (Continued)

Plumbing (Continued)

Lavatories with faucet	2	EA	600.00	1,200	290.00	580	890.00	1,780
48" shower with faucet	1	EA	1750.00	1,750	650.00	650	2400.00	2,400
Utility sink with faucet and drain	1	EA	750.00	750	260.00	260	1010.00	1,010
4" floor drain	2	EA	220.00	440	210.00	420	430.00	860
Under floor waste and vent pipe	150	LF	35.00	5,250	32.00	4,800	67.00	10,050
Above floor waste and vent pipe	100	LF	29.00	2,900	27.00	2,700	56.00	5,600
Hot and cold water piping	250	LF	8.00	2,000	9.15	2,288	17.15	4,288

Heating

Fuel oil fired boilers with controls	2	EA	22500.00	45,000	8750.00	17,500	31250.00	62,500
Hydronic piping	2,000	SF	6.50	13,000	5.00	10,000	11.50	23,000

Ventilation

Fans, louvers, dampers, and ductwork	2,000	SF	3.00	6,000	2.75	5,500	5.75	11,500
--------------------------------------	-------	----	------	-------	------	-------	------	--------

Fuel Oil System

5,000 gallon, skid mounted fuel tank	1	EA	36000.00	36,000	10000.00	10,000	46000.00	46,000
--------------------------------------	---	----	----------	--------	----------	--------	----------	--------



HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

MECHANICAL (Continued)

Fuel Oil System (Continued)

Day tank	1	EA	5000.00	5,000	1000.00	1,000	6000.00	6,000
Fuel oil black steel pipe	300	LF	9.00	2,700	14.00	4,200	23.00	6,900

ELECTRICAL

Service and Distribution

Main distribution panel and equipment	1	EA	24500.00	24,500	6500.00	6,500	31000.00	31,000
Subpanels	3	EA	2150.00	6,450	700.00	2,100	2850.00	8,550
Conduit and conductors	1	LOT	2000.00	2,000	1700.00	1,700	3700.00	3,700

Lighting and Power

Lighting fixtures	2,000	SF	8.50	17,000	3.00	6,000	11.50	23,000
Devices, conduit, and conductors	2,000	SF	6.25	12,500	11.50	23,000	17.75	35,500

SPECIAL CONSTRUCTION

Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls for dosing equipment	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000

HMS Project No.: 19110

SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

SPECIAL CONSTRUCTION (Continued)

Moving bed biofilm reactor system by Nexom (per engineer)	1	LOT	2178000.00	2,178,000	208500.00	208,500	2386500.00	2,386,500
MBBR system controls and interfacing	1	LOT	35000.00	35,000	12000.00	12,000	47000.00	47,000
Nexom on site engineering support	7	DAYS	350.00	2,450	1250.00	8,750	1600.00	11,200
Miscellaneous process piping and valves	2,000	SF	30.00	60,000	12.00	24,000	42.00	84,000
127,000 gallon bioreactor tank	1	EA	233000.00	233,000	106000.00	106,000	339000.00	339,000
500 gallon sludge settling/storage tank	1	EA	1500.00	1,500	500.00	500	2000.00	2,000
150,000 gallon equalization tank	1	EA	275000.00	275,000	125000.00	125,000	400000.00	400,000
Piping to wastewater treatment plant	100	LF	19.50	1,950	18.75	1,875	38.25	3,825
Trenching for piping	100	LF	7.00	700	12.00	1,200	19.00	1,900
Ring wall foundation for 150,000 gallon tanks	80	CY	650.00	52,000	270.00	21,600	920.00	73,600
Excavation and backfill	540	CY	9.00	4,860	18.00	9,720	27.00	14,580
<b>SUBTOTAL:</b>				<b>\$ 3,048,050</b>		<b>\$ 624,853</b>		<b>\$ 3,672,903</b>
Labor Premium Time	16.70%					104,350		104,350
<b>SUBTOTAL:</b>				<b>\$ 3,048,050</b>		<b>\$ 729,203</b>		<b>\$ 3,777,253</b>

HMS Project No.: 19110

<b>SITE 2 - ADJACENT TO CITY SHOP PAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
Subcontractor's Overhead and Profit on Material and Labor		20.00%		609,610		145,841		755,451
<b>SUBTOTAL MECHANICAL, ELECTRICAL AND SPECIAL CONSTRUCTION:</b>				<b>\$ 3,657,660</b>		<b>\$ 875,044</b>		<b>\$ 4,532,704</b>
<b>SUBTOTAL SITE 2 - ALTERNATE 2B:</b>								<b>\$ 6,060,518</b>
General Requirements		40.00%						2,424,207
Contractor's Overhead, Profit, Bonds, and Insurances		10.00%						848,473
Design Fee for Architectural, Civil, Geotechnical, Electrical, Mechanical, and Structural Engineers		12.00%						1,119,984
Estimator's Contingency		30.00%						3,135,955
Escalation to Summer 2021		5.25%						713,430
<b>TOTAL ESTIMATED COST:</b>								<b>\$ 14,302,567</b>

HMS Project No.: 19110

**SITE 3 - KANAKANAK ROAD**  
**DRAFT SCHEMATIC DESIGN COST SUMMARY**

	<i>Material</i>	<i>Labor</i>	<i>Total</i>
01 - SITE WORK	\$ 4,981,014	\$ 2,822,432	\$ 7,803,446
02 - SUBSTRUCTURE	0	0	0
03 - SUPERSTRUCTURE	0	0	0
04 - EXTERIOR CLOSURE	0	0	0
05 - ROOF SYSTEMS	0	0	0
06 - INTERIOR CONSTRUCTION	0	0	0
07 - CONVEYING SYSTEMS	0	0	0
08 - MECHANICAL	0	0	0
09 - ELECTRICAL	0	0	0
10 - EQUIPMENT	0	0	0
11 - SPECIAL CONSTRUCTION	0	0	0
<b>SUBTOTAL:</b>	<b>\$ 4,981,014</b>	<b>\$ 2,822,432</b>	<b>\$ 7,803,446</b>
12 - GENERAL REQUIREMENTS			5,655,937
<b>SUBTOTAL:</b>			<b>\$ 13,459,383</b>
13 - CONTINGENCIES			4,956,418
<b>TOTAL ESTIMATED CONSTRUCTION COST:</b>			<b>\$ 18,415,801</b>

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b> <b>01 - SITE WORK</b> <b>012 - Site Preparation</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
SWPPP fee and implementation	1	LOT	10000.00	10,000	7500.00	7,500	17500.00	17,500
SWPPP weekly check and maintenance	32	WKS	150.00	4,800	250.00	8,000	400.00	12,800
Existing lagoon decommissioning (per Engineer)	1	LS	1000000.00	1,000,000				1,000,000
Wildlife management plan	1	LOT	500.00	500	1500.00	1,500	2000.00	2,000
Archaeological survey and investigation	1	EA	3000.00	3,000	20460.00	20,460	23460.00	23,460
Archaeological monitoring	14	DAYS	360.00	5,040	1200.00	16,800	1560.00	21,840
Site survey and staking	5	AC	1500.00	7,500	6500.00	32,500	8000.00	40,000
Traffic control, flaggers, signs, etc.	3	MOS	1000.00	3,000	7000.00	21,000	8000.00	24,000
Soil transfer at new building pad (36" in parking area, 72" under building area)	1,510	CY	22.50	33,975	17.00	25,670	39.50	59,645
Soil compaction tests (1 per 250 CY)	8	EA	225.00	1,800			225.00	1,800
<b>SUBTOTAL:</b>				<b>\$ 1,069,615</b>		<b>\$ 133,430</b>		<b>\$ 1,203,045</b>
Labor Premium Time	16.70%					22,283		22,283
<b>TOTAL ESTIMATED COST:</b>				<b>\$ 1,069,615</b>		<b>\$ 155,713</b>		<b>\$ 1,225,328</b>

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b> <b>01 - SITE WORK</b> <b>013 - Site Improvements</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
Purchase lot from Robert Himschoot (per engineer)	1	LOT	250000.00	250,000			250000.00	250,000
Archaeologist on site	8	MOS			10800.00	86,400	10800.00	86,400
Archaeologist per diem	240	DAYS			350.00	84,000	350.00	84,000
<u>ACCESS ROAD AND PAD</u>								
Pit run to road and pad, 48" deep	19,875	CY	17.00	337,875	12.00	238,500	29.00	576,375
6" D1	2,650	CY	39.00	103,350	11.00	29,150	50.00	132,500
Geotextile fabric	5,560	SY	9.20	51,152	1.65	9,174	10.85	60,326
Finish grade road/pad	130,000	SF			0.15	19,500	0.15	19,500
<u>UNDERGROUND PIPING</u>								
2" AC paving	240,000	SF	5.80	1,392,000	1.20	288,000	7.00	1,680,000
Rip rap at outfall	30	CY	350.00	10,500	18.75	563	368.75	11,063
<b>SUBTOTAL:</b>				<b>\$ 2,144,877</b>		<b>\$ 755,287</b>		<b>\$ 2,900,164</b>
Labor Premium Time	16.70%					126,133		126,133
<b>TOTAL ESTIMATED COST:</b>				<b>\$ 2,144,877</b>		<b>\$ 881,420</b>		<b>\$ 3,026,297</b>

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b> <b>01 - SITE WORK</b> <b>014 - Site Mechanical</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

PUMPER TRUCK DUMP STATION

10,000 gallon insulated tank and transfer line	1	EA	15000.00	15,000	6000.00	6,000	21000.00	21,000
Septic transfer pump	1	EA	2700.00	2,700	786.00	786	3486.00	3,486
Piping to Cell 1	30	LF	19.50	585	18.75	563	38.25	1,148
Trenching for piping	30	LF	7.00	210	12.00	360	19.00	570
Ring wall foundation for tank	7	CY	650.00	4,550	270.00	1,890	920.00	6,440
Excavation and backfill	25	CY	9.00	225	18.00	450	27.00	675
Dump station structure and amenities	1	LOT	3000.00	3,000	5000.00	5,000	8000.00	8,000

16'0"x24'0" DISCHARGE BUILDING

Excavation and backfill	124	CY	9.00	1,116	18.00	2,232	27.00	3,348
8'0" diameter concrete manhole	1	EA	10000.00	10,000	6000.00	6,000	16000.00	16,000
Foundation and slab on grade	23	CY	650.00	14,950	270.00	6,210	920.00	21,160
Building structure and finishes	384	SF	50.00	19,200	62.00	23,808	112.00	43,008
HVAC package	1	LOT	3500.00	3,500	4000.00	4,000	7500.00	7,500
Electrical package	1	LOT	2500.00	2,500	3200.00	3,200	5700.00	5,700

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b> <b>01 - SITE WORK</b> <b>014 - Site Mechanical</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

16'0"x24'0" DISCHARGE BUILDING (Continued)

Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Piping connection to outfall	20	LF	14.00	280	12.50	250	26.50	530

16'0"x24'0" DISINFECTION BUILDING

Excavation and backfill	124	CY	9.00	1,116	18.00	2,232	27.00	3,348
8'0" diameter concrete manhole	1	EA	10000.00	10,000	6000.00	6,000	16000.00	16,000
Foundation and slab on grade	23	CY	650.00	14,950	270.00	6,210	920.00	21,160
Building structure and finishes	384	SF	50.00	19,200	62.00	23,808	112.00	43,008
HVAC package	1	LOT	3500.00	3,500	4000.00	4,000	7500.00	7,500
Electrical package	1	LOT	2500.00	2,500	3200.00	3,200	5700.00	5,700
Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Piping connection to outfall	20	LF	14.00	280	12.50	250	26.50	530



HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD 01 - SITE WORK 014 - Site Mechanical	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

UNDERGROUND PIPING

8" diameter HDPE for gravity sewer and force main lines	20,000	LF	33.00	660,000	20.50	410,000	53.50	1,070,000
8" diameter HDPE for outfall	4,000	LF	33.00	132,000	20.50	82,000	53.50	214,000
Trenching and backfill	33,200	CY	9.00	298,800	18.00	597,600	27.00	896,400

LIFT STATIONS

Note: Excavation and backfill incidental to water and sewer piping.

Manhole and vault for lift station	3	EA	6500.00	19,500	4250.00	12,750	10750.00	32,250
Mechanical for lift stations	3	LOTS	18500.00	55,500	9750.00	29,250	28250.00	84,750
Pumps with grinders for lift stations	6	EA	22500.00	135,000	2550.00	15,300	25050.00	150,300
Electrical for lift stations	3	LOTS	1880.00	5,640	3000.00	9,000	4880.00	14,640

<b>SUBTOTAL:</b>				<b>\$ 1,472,102</b>		<b>\$ 1,274,849</b>		<b>\$ 2,746,951</b>
------------------	--	--	--	---------------------	--	---------------------	--	---------------------

Labor Premium Time	16.70%					212,900		212,900
--------------------	--------	--	--	--	--	---------	--	---------

<b>SUBTOTAL:</b>				<b>\$ 1,472,102</b>		<b>\$ 1,487,749</b>		<b>\$ 2,959,851</b>
------------------	--	--	--	---------------------	--	---------------------	--	---------------------

Subcontractor's Overhead and Profit on Material and Labor	20.00%			294,420		297,550		591,970
---	--------	--	--	---------	--	---------	--	---------

<b>TOTAL ESTIMATED COST:</b>				<b>\$ 1,766,522</b>		<b>\$ 1,785,299</b>		<b>\$ 3,551,821</b>
------------------------------	--	--	--	---------------------	--	---------------------	--	---------------------

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>MATERIAL</b>		<b>LABOR</b>		<b>TOTAL</b>	<b>TOTAL</b>
			<b>RATE</b>	<b>TOTAL</b>	<b>RATE</b>	<b>TOTAL</b>	<b>UNIT RATE</b>	<b>MATERIAL/LABOR</b>
			<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>12 - GENERAL REQUIREMENTS</b>								
General requirements	40.00%							3,121,378
Contractor's overhead, profit, bonds, and insurances	10.00%							1,092,482
Design fee for architectural, civil, geotechnical, electrical, mechanical, and structural engineers	12.00%							1,442,077
<b>TOTAL ESTIMATED COST:</b>								<b>\$ 5,655,937</b>

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b>	<i>QUANTITY</i>	<i>UNIT</i>	<i>MATERIAL</i>		<i>LABOR</i>		<i>TOTAL</i>	<i>TOTAL</i>
			<i>RATE</i>	<i>TOTAL</i>	<i>RATE</i>	<i>TOTAL</i>	<i>UNIT RATE</i>	<i>MATERIAL/LABOR</i>
			\$	\$	\$	\$	\$	\$
<b>13 - CONTINGENCIES</b>								

ESTIMATOR'S CONTINGENCY

The estimator's allowance for architectural and engineering requirements that are not apparent at this level of design documentation 30.00% \$ 4,037,815

ESCALATION CONTINGENCY

The allowance for escalation from the date of estimate to summer 2021 construction at the rate 3.50% per annum (18 months) 5.25% \$ 918,603

---

**TOTAL ESTIMATED COST:** **\$ 4,956,418**

---

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b>  <b>ALTERNATE 1 - WASTEWATER LAGOON</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

FOUNDATIONS

Excavation and backfill	120	CY			18.00	2,160	18.00	2,160
Footings and stem walls	9	CY	650.00	5,850	270.00	2,430	920.00	8,280
Insulation and waterproofing	240	SF	4.00	960	3.25	780	7.25	1,740

SLAB ON GRADE

Slab on grade	14	CY	650.00	9,100	270.00	3,780	920.00	12,880
Finish and cure slab	768	SF	0.30	230	1.30	998	1.60	1,228
Block outs for mechanical and electrical	6	SF	15.00	90	25.00	150	40.00	240
Trench drains	10	LF	180.00	1,800	65.00	650	245.00	2,450

ROOF CONSTRUCTION

Note: PEMB roof with exterior walls.

EXTERIOR WALLS

Pre-engineered metal building, including structure, 4" thick siding insulated panels, and 6" thick roof insulated panels

	768	SF	56.00	43,008	28.00	21,504	84.00	64,512
--	-----	----	-------	--------	-------	--------	-------	--------

EXTERIOR DOORS

3'0"x7'0" hollow metal door assembly, complete	1	EA	2200.00	2,200	700.00	700	2900.00	2,900
--	---	----	---------	-------	--------	-----	---------	-------

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD  ALTERNATE 1 - WASTEWATER LAGOON	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

EXTERIOR DOORS (Continued)

6'0"x7'0" hollow metal door assembly, complete	1	EA	4400.00	4,400	1400.00	1,400	5800.00	5,800
--	---	----	---------	-------	---------	-------	---------	-------

INTERIOR PARTITIONS AND DOORS

3'0"x7'0" hollow metal door assembly, complete	1	EA	1800.00	1,800	650.00	650	2450.00	2,450
--	---	----	---------	-------	--------	-----	---------	-------

Metal stud partition walls	190	SF	9.00	1,710	13.00	2,470	22.00	4,180
----------------------------	-----	----	------	-------	-------	-------	-------	-------

<b>SUBTOTAL:</b>				<b>\$ 71,148</b>		<b>\$ 37,672</b>		<b>\$ 108,820</b>
------------------	--	--	--	------------------	--	------------------	--	-------------------

Labor Premium Time	16.70%					6,291		6,291
--------------------	--------	--	--	--	--	-------	--	-------

<b>SUBTOTAL SUBSTRUCTURE, ROOF, ETC.:</b>				<b>\$ 71,148</b>		<b>\$ 43,963</b>		<b>\$ 115,111</b>
---	--	--	--	------------------	--	------------------	--	-------------------

MECHANICAL

Plumbing

Water closet with flush valve	1	EA	1000.00	1,000	260.00	260	1260.00	1,260
-------------------------------	---	----	---------	-------	--------	-----	---------	-------

Lavatory with faucet	1	EA	600.00	600	290.00	290	890.00	890
----------------------	---	----	--------	-----	--------	-----	--------	-----

48" shower with faucet	1	EA	1750.00	1,750	650.00	650	2400.00	2,400
------------------------	---	----	---------	-------	--------	-----	---------	-------

Utility sink with faucet and drain	1	EA	750.00	750	260.00	260	1010.00	1,010
------------------------------------	---	----	--------	-----	--------	-----	---------	-------

4" floor drain	1	EA	220.00	220	210.00	210	430.00	430
----------------	---	----	--------	-----	--------	-----	--------	-----

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD  ALTERNATE 1 - WASTEWATER LAGOON	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

MECHANICAL (Continued)

Plumbing (Continued)

Under floor waste and vent pipe	50	LF	35.00	1,750	32.00	1,600	67.00	3,350
Above floor waste and vent pipe	30	LF	29.00	870	27.00	810	56.00	1,680
Hot and cold water piping	80	LF	8.00	640	9.15	732	17.15	1,372

Heating

Fuel oil fired horizontal unit heater	1	EA	6500.00	6,500	1500.00	1,500	8000.00	8,000
---------------------------------------	---	----	---------	-------	---------	-------	---------	-------

Ventilation

Fans, louvers, dampers, and ductwork	768	SF	6.00	4,608	3.75	2,880	9.75	7,488
--------------------------------------	-----	----	------	-------	------	-------	------	-------

Fuel Oil System

1,000 gallon, skid mounted fuel tank	1	EA	20000.00	20,000	2500.00	2,500	22500.00	22,500
Day tank	1	EA	1000.00	1,000	250.00	250	1250.00	1,250
Fuel oil black steel pipe	75	LF	9.00	675	14.00	1,050	23.00	1,725

ELECTRICAL

Service and Distribution

Main distribution panel and equipment	1	EA	4500.00	4,500	1800.00	1,800	6300.00	6,300
---------------------------------------	---	----	---------	-------	---------	-------	---------	-------

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD  ALTERNATE 1 - WASTEWATER LAGOON	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

ELECTRICAL (Continued)

Service and Distribution (Continued)

Subpanel	1	EA	2150.00	2,150	700.00	700	2850.00	2,850
Conduit and conductors	1	LOT	1500.00	1,500	1200.00	1,200	2700.00	2,700

Lighting and Power

Lighting fixtures	768	SF	8.50	6,528	3.00	2,304	11.50	8,832
Devices, conduit, and conductors	768	SF	6.25	4,800	11.50	8,832	17.75	13,632

SPECIAL CONSTRUCTION

Aeration, baffles, motors, and blowers	1	LOT	375000.00	375,000	40000.00	40,000	415000.00	415,000
Monitoring and controls for aeration equipment	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Piping for aeration process	100	LF	42.00	4,200	28.00	2,800	70.00	7,000
Fittings for aeration process piping	25	EA	525.00	13,125	312.00	7,800	837.00	20,925

2-Cell Lagoon

Excavate for 2-cell lagoon 10'0" deep	122,500	BCY			17.00	2,082,500	17.00	2,082,500
Build 5'0" high berms	15,570	CY	17.00	264,690	12.00	186,840	29.00	451,530
Lagoon interior geomembrane liner	4,085	SY	9.20	37,582	1.65	6,740	10.85	44,322





HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD</b>	<i>QUANTITY</i>	<i>UNIT</i>	<i>MATERIAL</i>		<i>LABOR</i>		<i>TOTAL</i>	<i>TOTAL</i>
			<i>RATE</i>	<i>TOTAL</i>	<i>RATE</i>	<i>TOTAL</i>	<i>UNIT RATE</i>	<i>MATERIAL/LABOR</i>
			\$	\$	\$	\$	\$	\$
<b>ALTERNATE 1 - WASTEWATER LAGOON</b>								

Escalation to Summer 2021

5.25%

557,056

**TOTAL ESTIMATED COST:**

**\$ 11,167,639**

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

FOUNDATIONS

Excavation and backfill	445	CY	9.00	4,005	18.00	8,010	27.00	12,015
Footings and stem walls	33	CY	650.00	21,450	270.00	8,910	920.00	30,360
Insulation and waterproofing	960	SF	4.00	3,840	3.25	3,120	7.25	6,960

SLAB ON GRADE

Slab on grade	56	CY	650.00	36,400	270.00	15,120	920.00	51,520
Finish and cure slab	3,000	SF	0.30	900	1.30	3,900	1.60	4,800
Block outs for mechanical and electrical	6	SF	15.00	90	25.00	150	40.00	240
Trench drains	20	LF	180.00	3,600	65.00	1,300	245.00	4,900

ROOF CONSTRUCTION

Note: PEMB roof with exterior walls.

EXTERIOR WALLS

Pre-engineered metal building, including structure, 4" thick siding insulated panels, and 6" thick roof insulated panels	3,000	SF	56.00	168,000	28.00	84,000	84.00	252,000
--	-------	----	-------	---------	-------	--------	-------	---------

EXTERIOR DOORS

3'0"x7'0" hollow metal door assembly, complete	3	EA	2200.00	6,600	700.00	2,100	2900.00	8,700
--	---	----	---------	-------	--------	-------	---------	-------

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

EXTERIOR DOORS (Continued)

16'0"x16'0" overhead door assembly, complete	2	EA	10000.00	20,000	4200.00	8,400	14200.00	28,400
--	---	----	----------	--------	---------	-------	----------	--------

INTERIOR PARTITIONS AND DOORS

3'0"x7'0" hollow metal door assembly, complete	4	EA	1800.00	7,200	650.00	2,600	2450.00	9,800
--	---	----	---------	-------	--------	-------	---------	-------

Metal stud partition walls	1,600	SF	9.00	14,400	13.00	20,800	22.00	35,200
----------------------------	-------	----	------	--------	-------	--------	-------	--------

<b>SUBTOTAL:</b>				<b>\$ 286,485</b>		<b>\$ 158,410</b>		<b>\$ 444,895</b>
------------------	--	--	--	-------------------	--	-------------------	--	-------------------

Labor Premium Time	16.70%					26,454		26,454
--------------------	--------	--	--	--	--	--------	--	--------

<b>SUBTOTAL SUBSTRUCTURE, ROOF, ETC.:</b>				<b>\$ 286,485</b>		<b>\$ 184,864</b>		<b>\$ 471,349</b>
---	--	--	--	-------------------	--	-------------------	--	-------------------

MECHANICAL

Plumbing

Water closet with flush valve	1	EA	1000.00	1,000	260.00	260	1260.00	1,260
-------------------------------	---	----	---------	-------	--------	-----	---------	-------

Lavatories with faucet	2	EA	600.00	1,200	290.00	580	890.00	1,780
------------------------	---	----	--------	-------	--------	-----	--------	-------

48" shower with faucet	1	EA	1750.00	1,750	650.00	650	2400.00	2,400
------------------------	---	----	---------	-------	--------	-----	---------	-------

Utility sink with faucet and drain	1	EA	750.00	750	260.00	260	1010.00	1,010
------------------------------------	---	----	--------	-----	--------	-----	---------	-------

4" floor drain	2	EA	220.00	440	210.00	420	430.00	860
----------------	---	----	--------	-----	--------	-----	--------	-----

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

MECHANICAL (Continued)

Plumbing (Continued)

Under floor waste and vent pipe	150	LF	35.00	5,250	32.00	4,800	67.00	10,050
Above floor waste and vent pipe	100	LF	29.00	2,900	27.00	2,700	56.00	5,600
Hot and cold water piping	250	LF	8.00	2,000	9.15	2,288	17.15	4,288

Heating

Fuel oil fired boilers with controls	2	EA	22500.00	45,000	8750.00	17,500	31250.00	62,500
Hydronic piping	3,000	SF	6.50	19,500	5.00	15,000	11.50	34,500

Ventilation

Fans, louvers, dampers, and ductwork	3,000	SF	3.00	9,000	2.75	8,250	5.75	17,250
--------------------------------------	-------	----	------	-------	------	-------	------	--------

Fuel Oil System

5,000 gallon, skid mounted fuel tank	1	EA	36000.00	36,000	10000.00	10,000	46000.00	46,000
Day tank	1	EA	5000.00	5,000	1000.00	1,000	6000.00	6,000
Fuel oil black steel pipe	300	LF	9.00	2,700	14.00	4,200	23.00	6,900

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

ELECTRICAL

Service and Distribution

Main distribution panel and equipment	1	EA	24500.00	24,500	6500.00	6,500	31000.00	31,000
Subpanels	3	EA	2150.00	6,450	700.00	2,100	2850.00	8,550
Conduit and conductors	1	LOT	2000.00	2,000	1700.00	1,700	3700.00	3,700

Lighting and Power

Lighting fixtures	3,000	SF	8.50	25,500	3.00	9,000	11.50	34,500
Devices, conduit, and conductors	3,000	SF	6.25	18,750	11.50	34,500	17.75	53,250

SPECIAL CONSTRUCTION

Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls for dosing equipment	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Membrane bio-reactor units by Dynatec (per engineer)	1	LOT	820000.00	820,000	123000.00	123,000	943000.00	943,000
MBR system controls and interfacing	1	LOT	35000.00	35,000	12000.00	12,000	47000.00	47,000
Dynatec on site engineering support	7	DAYS	350.00	2,450	1250.00	8,750	1600.00	11,200
Miscellaneous process piping and valves	3,000	SF	30.00	90,000	12.00	36,000	42.00	126,000

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

SPECIAL CONSTRUCTION (Continued)

15,000 gallon bioreactor tank	1	EA	44700.00	44,700	11000.00	11,000	55700.00	55,700
2,000 gallon sludge settling/storage tank	1	EA	13600.00	13,600	2000.00	2,000	15600.00	15,600
150,000 gallon equalization tank	1	EA	275000.00	275,000	125000.00	125,000	400000.00	400,000
Piping to wastewater treatment plant	50	LF	19.50	975	18.75	938	38.25	1,913
Trenching for piping	50	LF	7.00	350	12.00	600	19.00	950
Ring wall foundation for tank	40	CY	650.00	26,000	270.00	10,800	920.00	36,800
Excavation and backfill	270	CY	9.00	2,430	18.00	4,860	27.00	7,290
<b>SUBTOTAL:</b>				<b>\$ 1,538,345</b>		<b>\$ 462,906</b>		<b>\$ 2,001,251</b>
Labor Premium Time	16.70%					77,305		77,305
<b>SUBTOTAL:</b>				<b>\$ 1,538,345</b>		<b>\$ 540,211</b>		<b>\$ 2,078,556</b>
Subcontractor's Overhead and Profit on Material and Labor	20.00%			307,669		108,042		415,711
<b>SUBTOTAL MECHANICAL, ELECTRICAL AND SPECIAL CONSTRUCTION:</b>				<b>\$ 1,846,014</b>		<b>\$ 648,253</b>		<b>\$ 2,494,267</b>
<b>SUBTOTAL SITE 3 - ALTERNATE 2A:</b>								<b>\$ 2,965,616</b>

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD ALTERNATE 2A - MBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
General Requirements	40.00%							1,186,246
Contractor's Overhead, Profit, Bonds, and Insurances	10.00%							415,186
Design Fee for Architectural, Civil, Geotechnical, Electrical, Mechanical, and Structural Engineers	12.00%							548,046
Estimator's Contingency	30.00%							1,534,528
Escalation to Summer 2021	5.25%							349,105
<b>TOTAL ESTIMATED COST:</b>								<b>\$ 6,998,727</b>

HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

FOUNDATIONS

Excavation and backfill	296	CY	9.00	2,664	18.00	5,328	27.00	7,992
Footings and stem walls	22	CY	650.00	14,300	270.00	5,940	920.00	20,240
Insulation and waterproofing	640	SF	4.00	2,560	3.25	2,080	7.25	4,640

SLAB ON GRADE

Slab on grade	37	CY	650.00	24,050	270.00	9,990	920.00	34,040
Finish and cure slab	2,000	SF	0.30	600	1.30	2,600	1.60	3,200
Block outs for mechanical and electrical	6	SF	15.00	90	25.00	150	40.00	240
Trench drains	20	LF	180.00	3,600	65.00	1,300	245.00	4,900

ROOF CONSTRUCTION

Note: PEMB roof with exterior walls.

EXTERIOR WALLS

Pre-engineered metal building, including structure, 4" thick siding insulated panels, and 6" thick roof insulated panels	2,000	SF	56.00	112,000	28.00	56,000	84.00	168,000
--	-------	----	-------	---------	-------	--------	-------	---------

EXTERIOR DOORS

3'0"x7'0" hollow metal door assembly, complete	3	EA	2200.00	6,600	700.00	2,100	2900.00	8,700
--	---	----	---------	-------	--------	-------	---------	-------



HMS Project No.: 19110

SITE 3 - KANAKANAK ROAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

EXTERIOR DOORS (Continued)

16'0"x16'0" overhead door assembly, complete	1	EA	10000.00	10,000	4200.00	4,200	14200.00	14,200
--	---	----	----------	--------	---------	-------	----------	--------

INTERIOR PARTITIONS AND DOORS

3'0"x7'0" hollow metal door assembly, complete	4	EA	1800.00	7,200	650.00	2,600	2450.00	9,800
--	---	----	---------	-------	--------	-------	---------	-------

Metal stud partition walls	1,200	SF	9.00	10,800	13.00	15,600	22.00	26,400
----------------------------	-------	----	------	--------	-------	--------	-------	--------

<b>SUBTOTAL:</b>				<b>\$ 194,464</b>		<b>\$ 107,888</b>		<b>\$ 302,352</b>
------------------	--	--	--	-------------------	--	-------------------	--	-------------------

Labor Premium Time	16.70%					18,017		18,017
--------------------	--------	--	--	--	--	--------	--	--------

<b>SUBTOTAL SUBSTRUCTURE, ROOF, ETC.:</b>				<b>\$ 194,464</b>		<b>\$ 125,905</b>		<b>\$ 320,369</b>
---	--	--	--	-------------------	--	-------------------	--	-------------------

MECHANICAL

Plumbing

Water closet with flush valve	1	EA	1000.00	1,000	260.00	260	1260.00	1,260
-------------------------------	---	----	---------	-------	--------	-----	---------	-------

Lavatories with faucet	2	EA	600.00	1,200	290.00	580	890.00	1,780
------------------------	---	----	--------	-------	--------	-----	--------	-------

48" shower with faucet	1	EA	1750.00	1,750	650.00	650	2400.00	2,400
------------------------	---	----	---------	-------	--------	-----	---------	-------

Utility sink with faucet and drain	1	EA	750.00	750	260.00	260	1010.00	1,010
------------------------------------	---	----	--------	-----	--------	-----	---------	-------

4" floor drain	2	EA	220.00	440	210.00	420	430.00	860
----------------	---	----	--------	-----	--------	-----	--------	-----

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

MECHANICAL (Continued)

Plumbing (Continued)

Under floor waste and vent pipe	150	LF	35.00	5,250	32.00	4,800	67.00	10,050
Above floor waste and vent pipe	100	LF	29.00	2,900	27.00	2,700	56.00	5,600
Hot and cold water piping	250	LF	8.00	2,000	9.15	2,288	17.15	4,288

Heating

Fuel oil fired boilers with controls	2	EA	22500.00	45,000	8750.00	17,500	31250.00	62,500
Hydronic piping	2,000	SF	6.50	13,000	5.00	10,000	11.50	23,000

Ventilation

Fans, louvers, dampers, and ductwork	2,000	SF	3.00	6,000	2.75	5,500	5.75	11,500
--------------------------------------	-------	----	------	-------	------	-------	------	--------

Fuel Oil System

5,000 gallon, skid mounted fuel tank	1	EA	36000.00	36,000	10000.00	10,000	46000.00	46,000
Day tank	1	EA	5000.00	5,000	1000.00	1,000	6000.00	6,000
Fuel oil black steel pipe	300	LF	9.00	2,700	14.00	4,200	23.00	6,900

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

ELECTRICAL

Service and Distribution

Main distribution panel and equipment	1	EA	24500.00	24,500	6500.00	6,500	31000.00	31,000
Subpanels	3	EA	2150.00	6,450	700.00	2,100	2850.00	8,550
Conduit and conductors	1	LOT	2000.00	2,000	1700.00	1,700	3700.00	3,700

Lighting and Power

Lighting fixtures	2,000	SF	8.50	17,000	3.00	6,000	11.50	23,000
Devices, conduit, and conductors	2,000	SF	6.25	12,500	11.50	23,000	17.75	35,500

SPECIAL CONSTRUCTION

Dosing equipment and piping	1	LOT	9650.00	9,650	2750.00	2,750	12400.00	12,400
Monitoring and controls for dosing equipment	1	LOT	8500.00	8,500	3500.00	3,500	12000.00	12,000
Moving bed biofilm reactor system by Nexom (per engineer)	1	LOT	2178000.00	2,178,000	208500.00	208,500	2386500.00	2,386,500
MBBR system controls and interfacing	1	LOT	35000.00	35,000	12000.00	12,000	47000.00	47,000
Nexom on site engineering support	7	DAYS	350.00	2,450	1250.00	8,750	1600.00	11,200
Miscellaneous process piping and valves	2,000	SF	30.00	60,000	12.00	24,000	42.00	84,000

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$

SPECIAL CONSTRUCTION (Continued)

127,000 gallon bioreactor tank	1	EA	233000.00	233,000	106000.00	106,000	339000.00	339,000
500 gallon sludge settling/storage tank	1	EA	1500.00	1,500	500.00	500	2000.00	2,000
150,000 gallon equalization tank	1	EA	275000.00	275,000	125000.00	125,000	400000.00	400,000
Piping to wastewater treatment plant	100	LF	19.50	1,950	18.75	1,875	38.25	3,825
Trenching for piping	100	LF	7.00	700	12.00	1,200	19.00	1,900
Ring wall foundation for 150,000 gallon tanks	80	CY	650.00	52,000	270.00	21,600	920.00	73,600
Excavation and backfill	540	CY	9.00	4,860	18.00	9,720	27.00	14,580
<b>SUBTOTAL:</b>				<b>\$ 3,048,050</b>		<b>\$ 624,853</b>		<b>\$ 3,672,903</b>
Labor Premium Time	16.70%					104,350		104,350
<b>SUBTOTAL:</b>				<b>\$ 3,048,050</b>		<b>\$ 729,203</b>		<b>\$ 3,777,253</b>
Subcontractor's Overhead and Profit on Material and Labor	20.00%			609,610		145,841		755,451
<b>SUBTOTAL MECHANICAL, ELECTRICAL AND SPECIAL CONSTRUCTION:</b>				<b>\$ 3,657,660</b>		<b>\$ 875,044</b>		<b>\$ 4,532,704</b>
<b>SUBTOTAL SITE 3 - ALTERNATE 2B:</b>								<b>\$ 4,853,073</b>

HMS Project No.: 19110

<b>SITE 3 - KANAKANAK ROAD ALTERNATE 2B - MBBR WASTEWATER TREATMENT PLANT</b>	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL	TOTAL
			RATE	TOTAL	RATE	TOTAL	UNIT RATE	MATERIAL/LABOR
			\$	\$	\$	\$	\$	\$
General Requirements	40.00%							1,941,229
Contractor's Overhead, Profit, Bonds, and Insurances	10.00%							679,430
Design Fee for Architectural, Civil, Geotechnical, Electrical, Mechanical, and Structural Engineers	12.00%							896,848
Estimator's Contingency	30.00%							2,511,174
Escalation to Summer 2021	5.25%							571,292
<b>TOTAL ESTIMATED COST:</b>								<b>\$ 11,453,046</b>