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RECEIVED
MAR 30 2005
STATE OF ALASKA
REGULATORY COMMISSION OF ALASKA

March 30, 2005

Regulatory Commission of Alaska
701 W. 8th Avenue, Suite 300
Anchorage, AK 99501

Re: Cost Review Broadband Internet Access – 12 Communities

Attn: John Paul R. Manaois

HMS #05025

Per your request, we have reviewed a representative sample of United Utility's costs for their previous grant proposal to install the infrastructure to provide broadband internet access to 12 communities in the lower Kuskokwim Delta. The review included costs for development of Bethel, Kongiganak and Tuntutuliak. In developing this review, we requested that U.U.I. provide actual costs incurred or anticipated. U.U.I. willingly provided this information in the form of invoices, paid invoices and purchase orders.

Pursuant to this, I have attached electronic versions of U.U.I.'s original spreadsheet that I have modified to include the representative projects, including their original grant proposal amount, and comparative amounts compiled by HMS during this review. This version, entitled "U.U.I. Budget Cost Variance for Rural Broadband Normalized," includes numbers in red in the U.U.I. review columns. It should be noted that these amounts have been reduced from their original amounts in order to indicate known and acknowledged cost saving by U.U.I. to date. This allows for a more accurate comparison between the cumulative totals generated by HMS and the cumulative totals indicated by U.U.I. in the revised columns.

In addition, with regard to the spreadsheet format, it is important to note that the cost items in green represent costs that were not changed from the U.U.I. cost. Cost and/or design information was not available for these items. Please note that in the electronic version of this spreadsheet I have added comments to cells to notate how the cost for that cell was generated. In select cells for significant cost items you will note that HMS has

Cost Review Broadband Internet Access – 12 Communities

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generated an independent estimate. When this is indicated you will find attached supporting documentation indicating our costs and assumptions. This is found primarily in the Piling, Pile Cap and Pad Construction task items.

We have also included a separate section to capture miscellaneous costs that do not fit into the cost categories as developed by U.U.I. Below this you will note that I have included a separate mark-up entitled "Contractor Coordination, Testing, Inspection, Quality Control, Misc. Transportation and Per Diem Expense." As you know the soft costs necessary in bush construction are a real and necessary expense and this is my attempt to capture these costs without developing a detailed job-site specific work plan which would be time consuming and expensive. If you wish to develop the costs for this in more detail, please let me know and I will be happy to do so.

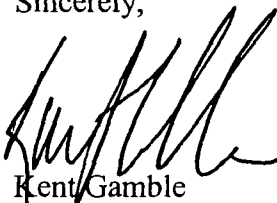
Also you will note that I have opted to include a 5% contingency consistent with U.U.I.'s revised cost column. Whether this is viewed as a justified increase in cost, given that U.U.I. opted to not include a contingency in their original grant proposal, is debatable. Certainly given the risk of operating in remote locations in Alaska, the inclusion of a reasonable contingency in the original request would have been prudent.

With regard to U.U.I.'s original costs for the representative projects, I am enclosing a copy of U.U.I.'s cost breakdowns that include the basis for the estimate for each of the three representative projects. As the costs were developed parametrically based on historical costs, it is not possible to provide a detailed cost estimate based on the design factors utilized. You may wish to request that U.U.I. provide actual cost information for the model projects used to develop the cost and then escalate these costs to today's pricing levels. It is not clear from the narrative on the attached breakdown whether U.U.I. escalated their cost assumptions to allow for inflation from the date on the cost models used.

What does seem clear, however, is that the significant cost increases indicated from the original grant proposal appear largely in keeping with what would be expected for the scope indicated.

Should you have questions or require additional information, please feel free to contact me.

Sincerely,



Kent Gamble

KG/as

Broadband Grant Forecast
 Cost Analysis - Expenditures (actual)
 Note: Cells so marked have comments that include background information. This information is not available in a print copy.

	Bethel		Bethel Hms		Kongiganak		Kongiganak		Tuntutuliak		Tuntutuliak	
	Original	Revised	Review	Original	Revised	HMS	Review	Original	Revised	HMS	Review	
Buildings and Towers												
Building												
Building	\$ 80,000			\$ 100,000								
HVAC and wiring												
Building foundation design and piling												
Fencing - standard												
Grounding												
Installation												
Freight												
Power - Contract												
Contingency at 5%												
Building Subtotal	\$ 80,000	\$ 272,756	\$ 298,310	\$ 100,000	\$ 231,210	\$ 230,940	\$	\$	\$ 32,000	\$	\$ 32,025	\$
Tower Foundation												
Pilings	17,600			33,000								
Pile Caps	4,400			8,250								
Thermo Syphons												
Insulation	4,400			8,250								
Foundation engineering												
Soil Samples												
Foundation installation estimate	52,800			99,000								
Geotechnical Engineering												
Pad Construction/engineering												
Freight	8,800			16,500								
Contingency at 5%												
Foundation Subtotal	\$ 88,000	\$ 487,337	\$ 291,363	\$ 165,000	\$ 582,000	\$ 274,181	\$	\$ 50,000	\$ 312,000	\$	\$ 101,250	\$
Tower												
Erection Tower, antennas, waveguide												
Tower Height	33,000			33,000								
Tower	21,000			21,000								
Tower Lights												
Freight	6,000			6,000								
Contingency at 5%												
Tower Subtotal	\$ 60,000	\$ 230,886	\$ 205,133	\$ 60,000	\$ 240,039	\$ 230,486	\$	\$ 22,000	\$ 77,000	\$	\$ 57,126	\$
Total Buildings, Foundations, and Towers	\$ 228,000	\$ 990,979	\$ 794,807	\$ 325,000	\$ 1,053,249	\$ 735,607	\$	\$ 72,000	\$ 421,000	\$	\$ 190,401	\$

Miscellaneous Adjustments

-Freight discount+fuel surcharge
Landing & Lumber
Winter rig idle expense

Subtotal

Contractor coordination, testing,
inspection, quality control, Misc.
Transportation and perdiem expense
Bethel-20%, Tunt & Kong-30%

Total

\$ 794,807

\$ 158,961.40

\$ 953,768

\$ 218,399

\$ 65,519.57

\$ 283,918

\$ 736,962

\$ 221,088.74

\$ 958,051

Items in red indicate known cost reduction and have been entered into the UJI revised column to allow easy comparison with HMS cost projections. For original costs refer to "UJI budget cost variance for rural broadband original file.

HMS Project No.: 05025

TUNTUTULIAK THERMOPILES	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL UNIT RATE \$	TOTAL MATERIAL/LABOR \$
			RATE \$	TOTAL \$	RATE \$	TOTAL \$		

THERMO PILE FOUNDATIONS

Mobilization/demobilization equipment

Equipment idle time

Auger drill 22" diameter hole for 12" piles,
average 390" deep (14)

Install 12" diameter x 42'0" long piles

Cut 12" diameter piles to elevations

Weld 25" diameter x 1 3/4" pile top plate

Install 3" diameter x 7'0" long thermosyphons
to piles

Charge piles with refrigerant and test

Sand/slurry backfill around piles

Install thermistors to piles

Premium time

SUBTOTAL:

Subcontractor's Overhead and Profit

TOTAL ESTIMATED COST:

**COST REVIEW BROADBAND INTERNET ACCESS
(12) COMMUNITIES, ALASKA**

DATE: 3/30/2005

HMS Project No.: 05025

BETHEL PAD CONSTRUCTION	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL UNIT RATE \$	TOTAL MATERIAL/LABOR \$
			RATE \$	TOTAL \$	RATE \$	TOTAL \$		

Geo-fabric								
6" rigid insulation								
1/4" x 8" staking								
12" sand layer								
6" NFS layer								
Subgrade prep								
Paint gravel								
SUBTOTAL:								
Subcontractor's Overhead and Profit								

TOTAL ESTIMATED COST:

**COST REVIEW BROADBAND INTERNET ACCESS
(12) COMMUNITIES, ALASKA**

DATE: 3/30/2005

HMS Project No.: 05025

BETHEL PILING AND RELATED	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL UNIT RATE \$	TOTAL MATERIAL/LABOR \$
			RATE \$	TOTAL \$	RATE \$	TOTAL \$		

NOTE: Pile and thermistor pricing per U.U.I.
P.O.'s to National Pipe.

Mobilize rig to site (local rig)

Rig stand-by

HP 12 x 74 piling including extra (16) each
(labor only)

HP 12 x 74 piling including extra (16) each
(material only)

Thermistor tubing (labor only)

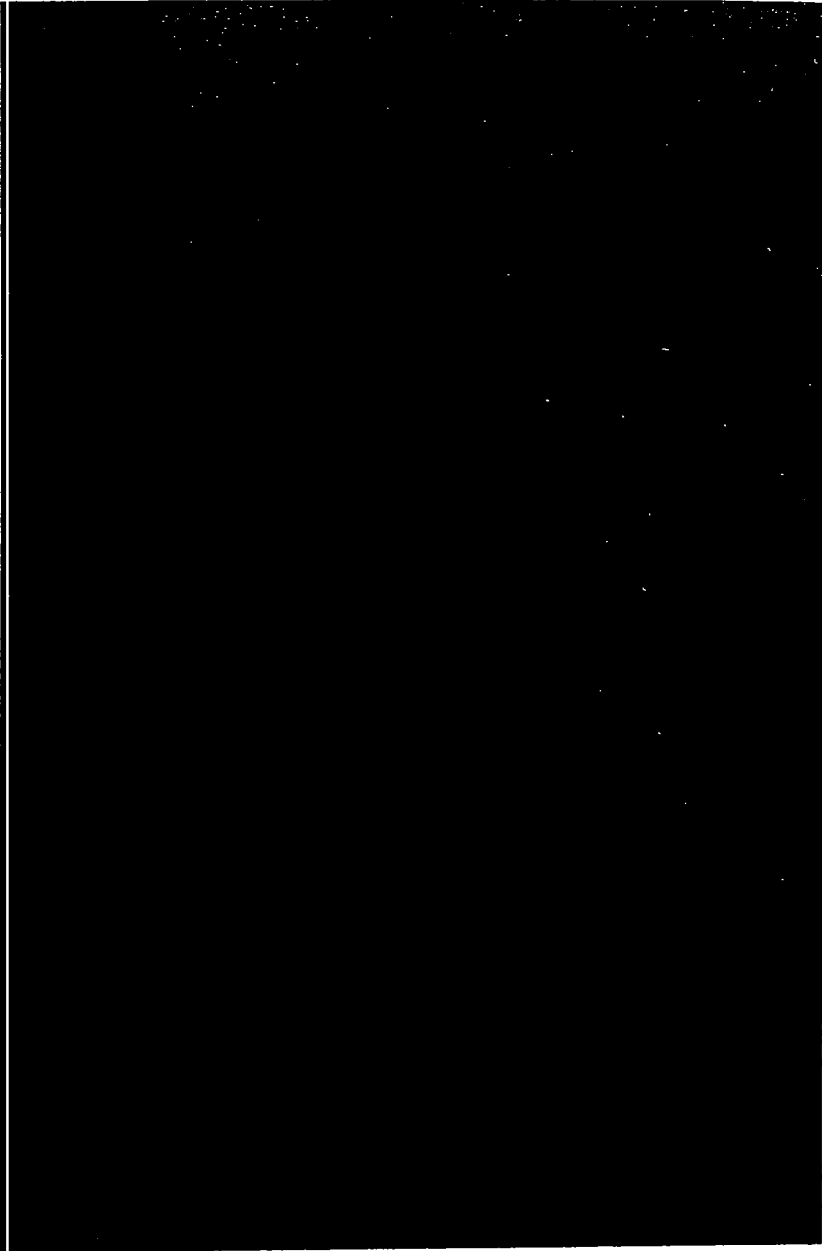
Thermistor tubing (material)

Drive pile 43'0" embedment

Cut pile to elevation

SUBTOTAL:

Subcontractor's Overhead and Profit



TOTAL ESTIMATED COST:

COST REVIEW BROADBAND INTERNET ACCESS
 (12) COMMUNITIES, ALASKA

DATE: 3/30/2005

HMS Project No.: 05025

BETHEL PILE CAPS (x4)	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL UNIT RATE \$	TOTAL MATERIAL/LABOR \$
			RATE \$	TOTAL \$	RATE \$	TOTAL \$		

1 3/4"x19"x19" plate

W27x84 cross

5/8" stiffener

2 1/4" leveling plate

1 1/4" tower plate

Angle

1 1/2"x9" pile cap bolts

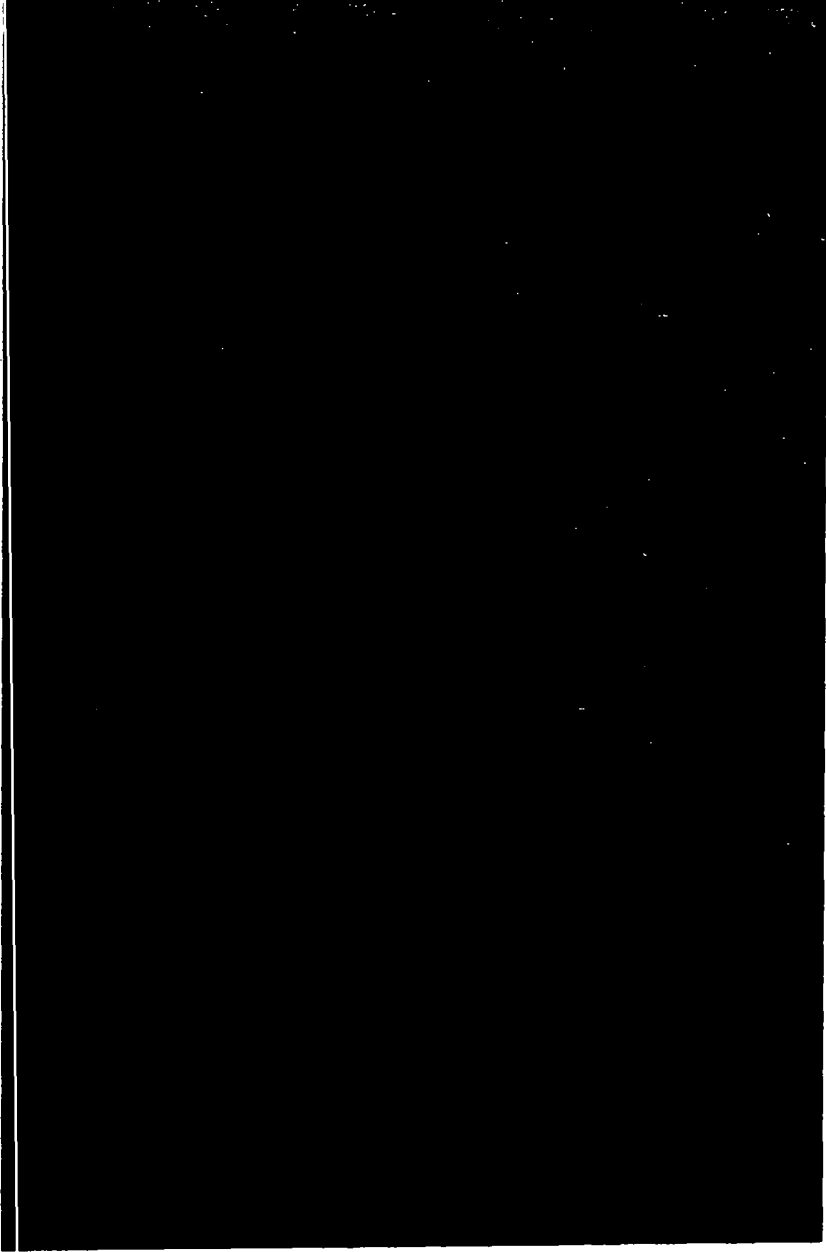
1 1/4"x9" anchor bolts

Epoxy paint

Galvanizing

SUBTOTAL:

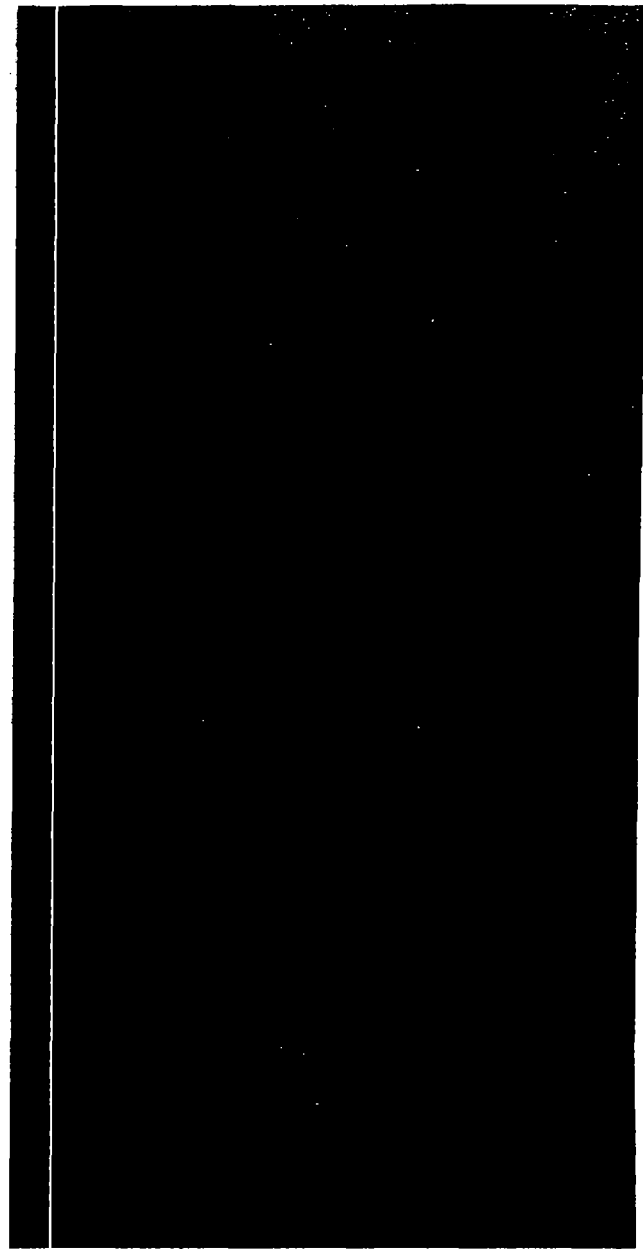
Subcontractor's Overhead and Profit



TOTAL ESTIMATED COST:

HMS Project No.: 05025

KONGIGANAK PAD CONSTRUCTION	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL UNIT RATE \$	TOTAL MATERIAL/LABOR \$
			RATE \$	TOTAL \$	RATE \$	TOTAL \$		



Geo-fabric
 6" rigid insulation
 1/4"x8" staking
 12" sand layer
 6" NFS layer
 Subgrade prep
 Paint gravel
 SUBTOTAL:
 Subcontractor's Overhead and Profit

TOTAL ESTIMATED COST:

HMS Project No.: 05025

KONGIGANAK PILING AND RELATED	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL UNIT RATE \$	TOTAL MATERIAL/LABOR \$
			RATE \$	TOTAL \$	RATE \$	TOTAL \$		

NOTE: Pile and thermistor pricing per U.U.I.
 P.O.'s to National Pipe.

Mobilize rig to site

Standby time

Piling material (W21x101) per P.O.

Piling labor

Thermistor tubing (material only)

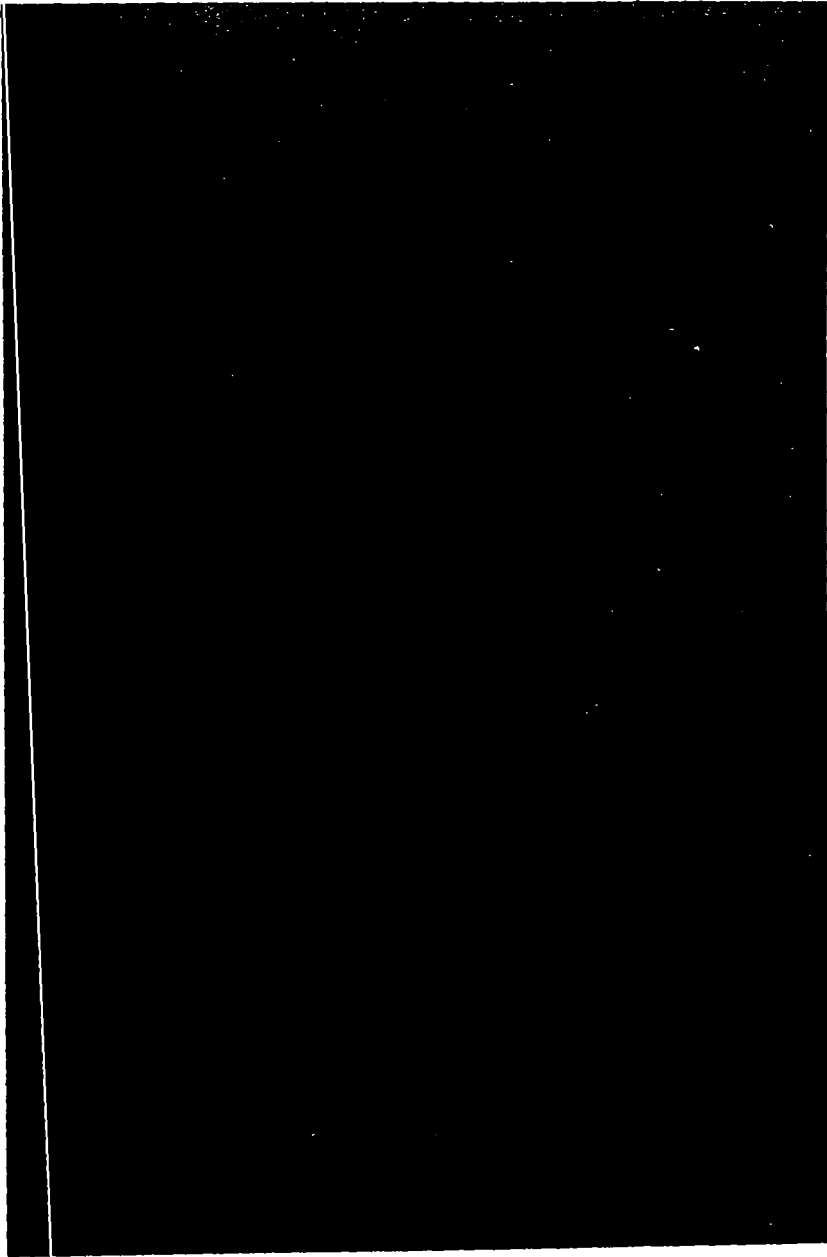
Thermistor tubing (labor only)

Drive pile 58'0" embedment

Cut to elevation

SUBTOTAL:

Subcontractor's Overhead and Profit



TOTAL ESTIMATED COST:

DATE: 3/30/2005

HMS Project No.: 05025

KONGIGANAK PILE CAPS (x3)	QUANTITY	UNIT	MATERIAL		LABOR		TOTAL UNIT RATE \$	TOTAL MATERIAL/LABOR \$
			RATE \$	TOTAL \$	RATE \$	TOTAL \$		

W beam cross								
5/8" stiffener plate								
1 1/2" plate								
2 1/2" plate								
1/2" plate								
2 1/2" plate at pile cap								
1" diameter x 9" bolts								
1 1/2" diameter x 8" bolts								
Epoxy paint								
Galvanizing								
SUBTOTAL:								
Subcontractor's Overhead and Profit								

TOTAL ESTIMATED COST:

Buildings and Towers Building	Assumptions, Budget Original Estimate	Konstant Original	Assumptions, Konstant Original Estimate	Buildings and Towers Building	Assumptions, Tower Original Estimate	Yamuhwa Original	Assumptions, Tower Original Estimate
Building	\$ 48,000.00 Base price - historical	\$ 48,000.00	Base price - historical	Building and Towers Building			Existing building utilized at this site
HVAC and wiring	\$ 10,000.00 (INSTRUMENTED - historical)	\$ 10,000.00	Historical - historical	Building and Towers Building			
Insulation (including materials)	\$ 7,000.00 Remove the historical of \$25K was reduced to this value in Budget	\$ 23,000.00	Historical - Average	Building and Towers Building			
Frighit	\$ 15,000.00 Remove the historical of \$20K was reduced to this value in Budget	\$ 20,000.00	Historical Average	Building and Towers Building			
Building Subtotal	\$ 80,000.00	\$ 100,000.00	Rounded down to even number	Building Subtotal	\$ 10,000.00	\$ 10,000.00	
Tower				Tower			Serve per unit values as Bethel assumptions
Erection Tower, antenna, waveguide	\$ 23,000.00 To get a baseline for tower costs, inclusive of foundation costs, ULI reviewed the actual costs of three 100' towers ULI built in 1997: Liverpod (\$84,370), Central (\$119,036), and Tahakak (\$115,277).	\$ 33,000.00	Serve per unit values as Bethel assumptions	Erection Tower, antenna, waveguide	\$ 12,000.00	\$ 12,000.00	This cost is a historical loading factor
Tower	\$ 6,000.00 Although the foundations were very different at each of the sites, the towers were all 100' different unless HVAC and wiring and all antenna.	\$ 21,000.00	This cost is a historical loading factor	Tower	\$ 7,700.00	\$ 7,700.00	This cost is a historical loading factor
Frighit	\$ 6,000.00 Cost was not based on a specific type of foundation, ULI also reviewed historical costs for three phone towers installed at Pheas (\$47,826), Toplek (\$42,855), and Mountain Village (\$40,000). From both of these reviews, ULI determined the following per foot tower costs: \$1007.00/foot for steel towers and \$1160.00/foot for aluminum towers. The tower cost estimates for the towers were modified for each site based on the site location and mobilization costs e.g. Bethel tower costs were reduced due to equipment availability, reduce logistics, etc.	\$6,000.00	This cost is a historical loading factor	Frighit	\$ 2,200.00	\$ 2,200.00	This cost is a historical loading factor
Tower Subtotal	\$ 60,000.00	\$60,000.00		Tower Subtotal	\$ 22,000.00	\$ 22,000.00	
Tower Foundation				Tower Foundation			
Frighit	\$ 17,800.00 Single pile per leg, 4 legs. This cost is a historical loading factor	\$ 30,000.00	Single pile per leg, 4 legs. This cost is a historical loading factor	Frighit	\$ 2,500.00	\$ 2,500.00	Single pile cap. This cost is a historical loading factor
Pile Caps	\$ 4,400.00 Single pile cap. This cost is a historical loading factor	\$ 2,250.00	Single pile cap. This cost is a historical loading factor	Pile Caps	\$ 2,500.00	\$ 2,500.00	Single pile cap. This cost is a historical loading factor
Foundation engineering	\$ 4,400.00 This cost is a historical loading factor	\$ 2,250.00	This cost is a historical loading factor	Foundation engineering	\$ 2,500.00	\$ 2,500.00	This cost is a historical loading factor
Foundation installation estimate	\$ 4,400.00 This cost is a historical loading factor	\$ 2,250.00	This cost is a historical loading factor	Foundation installation estimate	\$ 2,500.00	\$ 2,500.00	This cost is a historical loading factor
Frighit	\$ 4,400.00 This cost is a historical loading factor	\$ 2,250.00	This cost is a historical loading factor	Frighit	\$ 2,500.00	\$ 2,500.00	This cost is a historical loading factor
Foundation Subtotal	\$ 80,000.00	\$164,000.00		Foundation Subtotal	\$ 10,000.00	\$ 10,000.00	This cost is a historical loading factor
Sub Total Buildings and Towers	\$ 228,000.00	\$ 298,000.00		Sub Total Buildings and Towers	\$ 72,000.00	\$ 72,000.00	

Buildings and Towers Building	Assumptions, Budget Original Estimate	Konstant Original	Assumptions, Konstant Original Estimate	Buildings and Towers Building	Assumptions, Tower Original Estimate	Yamuhwa Original	Assumptions, Tower Original Estimate
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Frighit	\$ 15,000.00 Remove the historical of \$20K was reduced to this value in Budget	\$ 20,000.00	Historical Average	Building and Towers Building			
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Pile Caps	\$ 4,400.00 Single pile cap. This cost is a historical loading factor	\$ 2,250.00	Single pile cap. This cost is a historical loading factor	Pile Caps	\$ 2,500.00	\$ 2,500.00	Single pile cap. This cost is a historical loading factor
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