



(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility **72098** | Service: **DTV** | Call **WGBX-TV** | Channel: **43 (UHF)**
 ID: | Sign:
 File **0000028580**
 Number:
 FRN: **0003764560** | Date **10/15**
 Submitted: **/2021**

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
WGBH EDUCATIONAL FOUNDATION	Eric Brass 1 Guest Street Boston, MA 02135 United States	+1 (617) 300-4405	ERIC_BRASS@WGBH.ORG	Not-for-Profit

Reimbursement Contact Information

Reimbursement Contact Name and Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Information

Preparer Contact Name and Information

Applicant	Address	Phone	Email
The Preparer is same as the reimbursement contact.			

Broadcaster Information and Transition Plan

Question	Response
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Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	Yes
Briefly describe transition plan	WGBX will operate on Ch. 43 from an interim site for 10-12 mos. while extensive tower work is conducted and then resume operations on Ch. 32 at its original tower. After the transition, WGBX will retune its interim transmitter to replace its existing aux.

Transmitters	Section	Question	Response
	Transmitter Related Expenses	Do you have transmitter related expenses?	Yes

Auxiliary Transmitter Add Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Retune Existing
	Use	Auxiliary (Backup)
	Ownership	Owned
	Owner	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
Existing Transmitter Manufacturer and Type	Manufacturer	Harris
	Model	Ranger CZ1000L

Year	2011
Type	Solid State
Solid State Cooling	Air Cooled
Solid State Power capacity	1 kW

Auxiliary Transmitter Retuning Transmitter Costs

Section	Question	Response
New IOT Tubes	Number of Tubes (including accessories) needed	N/A
New Mask Filter	Power	30 kW
	Other Power	N/A
New Exciter	Is a new exciter needed?	No

Auxiliary Transmitter Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	No
	Power	N/A
	Rigid Conduit and Wiring	No
	Size	N/A
	Length	N/A
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Type	N/A

	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Auxiliary Transmitter **Other Transmitter Cost Not Listed**
Information not provided.

**Primary
Transmitter**

Add Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
Existing Transmitter Manufacturer and Type	Manufacturer	
	Model	Millennium CTT-U- DCX-1H
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	22.3 kW

**Primary
Transmitter**

New Transmitter Costs

Section	Question	Response
New Transmitter	Use	Primary (Main)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	Manufacturer	
	Model	THU9-60 EVO 88.8 kW
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	88.8 kW
	Justification for New Transmitter	See attachment "Transmitter Justification"

**Primary
Transmitter**

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	Yes
	Power	300 kVA
	Rigid Conduit and Wiring	No
	Size	N/A
	Length	N/A
	Other Electrical Service	Yes

	Description	Conduit and wiring material and labor costs required for new transmitter.
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Type	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Primary Transmitter **Other Transmitter Cost Not Listed**

Name	Description
RF Monitor	RF Monitor System

**Interim
Transmitter**

New Transmitter Costs

Section	Question	Response
New Transmitter	Use	Interim
	Description of Use	N/A
	Change Type	Purchase
	Manufacturer	
	Model	THU9-EVO 73.5 kW
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	73.5 kW
	Justification for New Transmitter	Transitional site required to maintain full power operations during the 10-12 months while a reinforcement and new combiner system are installed on the existing tower.

**Interim
Transmitter**

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	Yes
	Switchgear (industrial 800 amp)	Yes
	Transformer (480V)	Yes
	Power	300 kVA
	Rigid Conduit and Wiring	Yes

	Size	4 inches
	Length	150.0 feet
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	Yes
	Type	Cooling Only
	Size	20 tons
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leasehold improvement?	Yes
	Size	250.0 square feet
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A
Inside RF System	Is an additional interior RF system required to support this interim transmitter?	Yes

Other Transmitter Cost Not Listed

Interim Transmitter

Name	Description
Engineering and Design	Interim and Main: Site Survey and Lidar Scanning, Outdoor Cooling Equipment Study, Design Coordination and Construction/Permit Set, Construction Phase Services-Site Inspection Visits /Punchlist
Microwave Link to Interim Site	Link from studio to interim transmitter site
Distribution and Encoding	Distribution and Encoding

Emergency Generator	Interim Tower Generator. Includes \$100,000 connection fee. Paragraph 3(b).
Monitoring	Monitoring

Antennas

Section	Question	Response
Antenna Related Expenses	Do you have antenna related expenses?	Yes

**Primary
Antenna**

Add Antenna Information

Section	Question	Response
Existing Antenna Description	Type of change	Lease New
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Owner	American Tower
	Site	N/A
	Is this antenna currently shared with any other stations?	Yes
	Is this antenna directional?	No
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Bottom
	Polarization	Horizontal
	Type	Broadband Panel
	Number of Stations Supported	5
	Number of Panels	24
	Design power capacity in use	87.1 %
	Lower Limit	500.00 MHz
	Upper Limit	660.00 MHz
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	625.0 kW

Manufacturer	
Model	TAD24UDA-5-60MR
Year	2001

Facility ID's and Call Signs of all stations with whom the antenna is shared.

Facility ID	Call Sign
25456	WBZ-TV
65684	WCVB-TV
72099	WGBH-TV
73982	WSBK-TV

**Primary
Antenna**

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Lease New
	Is this a request for upgraded equipment?	Yes
	Ownership	Leased
	Owner	American Tower
	Is antenna shared?	Yes
	Is antenna directional?	No
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna Manufacturer and Types	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Broadband Panel
	Number of Stations Supported	5
	Number of Panels/Bays	14
	Lower Limit	500.00 MHz
	Upper Limit	590.00 MHz
	Design power capacity in use	83.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	922.0 kW
	Manufacturer	
Model	PEP70E	

Year	2020
Justification for New Antenna	Existing antenna not usable at new channel assignments.

Primary Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
	Type	New
	Number of channels supported	4
	Frequencies of channels supported	RF channel
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	No
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Broadband
	Feed Line Size	7 3/16 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Enter a list of RF channel numbers.

RF Channel Number
20
21
32
33

**Primary
Antenna**

Other Antenna Cost Not Listed

Name	Description
Combiner Installation	Installation and commission of combiner system. See ATC quotation.

**Interim
Antenna**

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Interim
	Description of Use	N/A
	Change Type	Purchase New
	Ownership	Leased
	Owner	American Tower
	Is antenna shared?	Yes
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Bottom
	Polarization	Elliptical
	Type	Broadband Panel
	Number of Stations Supported	4
	Number of Panels/Bays	14
	Lower Limit	470.00 MHz
	Upper Limit	608.00 MHz
	Design power capacity in use	85.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	200.0 kW
	Manufacturer	
	Model	TUM-AP-04- 14/56-2-B

Year	2018
Justification for New Antenna	Interim antenna required for transitional site during the 10-12 months while a reinforcement and new combiner system are installed on the existing tower.

Interim Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
	Type	New
	Number of channels supported	4
	Frequencies of channels supported	RF channel
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	No
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	B
	Feed Line Size	8 3/16 inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for an antenna?	
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No

Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes
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Enter a list of RF channel numbers.

RF Channel Number
33
20
21
32

**Interim
Antenna**

Other Antenna Cost Not Listed

Name	Description
Nitrogen Generator	Nitrogen Generator Upgrade.
Tower rental	One-time tower rental during market repack period.
Combiner Installation	WGBX shared expense of installation, testing and commissioning of combiner

Transmission Line	Section	Question	Response
	Transmission Line Related Expenses		Do you have transmission line related expenses?

Primary Transmission Line
Existing Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Utilize Existing
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Owner	American Tower
	Site	N/A
	Is the existing transmission line shared with another station or stations?	Yes
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	Dielectric
	Type	Rigid
	Diameter	8 3/16 inches
	Other Diameter	N/A
	Segment Length	Broadband
	Other Segment Length	N/A
	Number of parallel runs	3
	Length	1469 feet per run

**Facility ID's and Call Signs of
all stations with whom the
transmission line is shared.**

Facility ID	Call Sign
72099	WGBH-TV
25456	WBZ-TV
65684	WCVB-TV
73982	WSBK-TV

**Primary
Transmission
Line**

Other Transmission Line Expenses Not Listed

Name	Description
Transmission line refurbish	Refurbish existing transmission lines per ATC.

**Primary
Transmission
Line**

Add Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Lease New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Owner	American Tower LLC
	Site	N/A
	Is this transmission currently shared with any other stations?	Yes
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	
	Type	Rigid
	Diameter	8 3/16 inches
	Other Diameter	N/A
	Segment Length	Broadband
	Other Segment Length	N/A
	Number of parallel runs	2
	Length	200 feet per run

Facility ID's and Call Signs of all stations with whom the transmission line is shared.

Facility ID	Call Sign
65684	WCVB-TV
30577	WUTF-TV
25456	WBZ-TV

73982

WSBK-TV

**Primary
Transmission
Line** **New Transmission Line**

Section	Question	Response
New Transmission Line Costs	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Lease New
	Is this a request for upgraded equipment?	No
	Type	Rigid
	Diameter	8 3/16 inches
	Other Diameter	N/A
	Segment Length	19 1/2 inches
	Other Segment Length	N/A
	Number of parallel runs	2
	Length	20 feet per run
Justification for New Transmission Line	Connection of tower to new equipment.	

**Primary
Transmission
Line** **Other Transmission Line Expenses Not Listed**

Information not provided.

**Interim
Transmission
Line**

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Interim
	Description of Use	N/A
	Change Type	Lease New
	Type	Rigid
	Diameter	8 3/16 inches
	Segment Length	Broadband
	Other Segment Length	
	Number of parallel runs	2
	Length	1250 feet per run
	Justification for New Transmission Line	Interim site requires transmission line to accommodate interim antenna.

**Interim
Transmission
Line**

Other Transmission Line Expenses Not Listed

Information not provided.

Tower Equipment And Rigging Costs

Section	Question	Response
Tower Equipment or Rigging Costs Changes	Do you have tower equipment or rigging costs changes?	Yes

Auxiliary Tower

Add Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Auxiliary (Backup)
	Description of Use	Interim Tower
	Ownership	Leased
	Is this tower consider Complex?	Candelabra
	Is this tower currently shared with any other stations?	Yes
	One or more FM, AM or TV radio broadcaster(s)	Yes
	Others Types of Users	No
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Unknown
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1004233
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	42° 18' 10.7" N-
	Longitude (NAD83)	071° 13' 04.9" W-
	Overall Structure Height	1200.77 feet
	Support Structure Height	1101.04 feet
	Ground Elevation Above Mean Sea Level (AMSL)	150.92 feet
	Structure Type	GTOWER - Guyed

	Structure Used for Communication Purposes
Tower Owner	American Towers, LLC
Date Constructed	04/19/2005

**FM, AM or TV radio
broadcasters. Facility ID's,
Call Signs and Services of
other broadcast stations with
whom the tower is shared**

Facility ID	Call Sign	Service
49385	WXRV	FM
13806	WZLX	FM
1901	WBZ-FM	FM
6463	WFXT	DTV
26897	WWBX	FM
22667	WODS	AM
73238	WLVI	DTV
72098	WGBX-TV	DTV

**Auxiliary
Tower**

Tower Modification Costs

Section	Question	Response
Engineering Study	Please what type of engineering study is required, if any:	Study needed for tower with candelabra
Tower Reinforcements	Please select whether tower reinforcements are needed:	Minor Reinforcements needed

**Auxiliary
Tower**

Tower Rigging Costs

Section	Question	Response
Tower Rigging Costs	Complex Tower	Candelabra
Helicopter Services Required	Are helicopter services required?	No

**Auxiliary
Tower**

Other Tower Expenses Not Listed

Name	Description
Tower Permits	Permits

Primary Tower

Existing Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Is this tower consider Complex?	No
	Is this tower currently shared with any other stations?	Yes
	One or more FM, AM or TV radio broadcaster(s)	Yes
	Others Types of Users	No
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Yes
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1003433
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	42° 18' 37.0" N-
	Longitude (NAD83)	071° 14' 12.0" W-
	Overall Structure Height	1296.24 feet
	Support Structure Height	1192.24 feet
	Ground Elevation Above Mean Sea Level (AMSL)	152.89 feet
	Structure Type	GTOWER - Guyed Structure Used for Communication Purposes
	Tower Owner	American Tower, LLC
	Date Constructed	01/01/1957

**FM, AM or TV radio
broadcasters. Facility ID's,
Call Signs and Services of
other broadcast stations with
whom the tower is shared**

Facility ID	Call Sign	Service
65684	WCVB-TV	DTV
25456	WBZ-TV	DTV
10542	WKLB-FM	FM
68241	WBUR-FM	FM
73982	WSBK-TV	DTV
72099	WGBH-TV	DTV

**Primary
Tower**

Tower Modification Costs

Section	Question	Response
Engineering Study	Please what type of engineering study is required, if any:	Study needed for undocumented /poorly documented tower
Tower Reinforcements	Please select whether tower reinforcements are needed:	Minor Reinforcements needed

**Primary
Tower**

Tower Rigging Costs

Section	Question	Response
Tower Rigging Costs	Complex Tower	N/A
Helicopter Services Required	Are helicopter services required?	No

**Primary
Tower**

Other Tower Expenses Not Listed

Name	Description
Tower Permit Package	Generation of a construction drawing package per ATC quote

Outside Professional Services Costs

Section	Question	Response
Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	95
	Explanation	American Tower (ATC) outside project management required to coordinate WGBX w multiple broadcasters including interim move to second tower with shared antenna and related infrastructure
Outside RF consulting Engineering Services	Perform engineering study for new channel assignment and antenna development	Yes
	Prepare engineering section of Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare engineering section of Form FCC License to Cover Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	2
	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A

	Terrain-Shielded Facility	N/A
Attorney and Other Outside Consulting Services	Prepare and file Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	2
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	No
	FAA Consultation (including preparation of FAA Form 7460)	No
	Negotiation of Lease and other Matter for Shared Locations	Yes
	Prepare or Review FCC Form 399 for Reimbursement	Yes
Address transition timing and coordination issues w/ other stations and wireless providers	Yes	
RF Field Engineering Services	Comprehensive coverage verification via field study	Yes
	RF exposure measurements	No
	Additional Field Engineering Service	No
	Number of Days	N/A
	Justification	N/A

**Outside
Professional
Services
Costs**

Other Professional Services Expenses Not Listed

Name	Description
Attorney Fees - Prepare Transition Progress Report	Attorney Fees - Prepare Transition Progress Report
Attorney Fees - Draft Viewer Announcements	Attorney Fees - Draft Viewer Announcements

Other Expenses

Section	Question	Response
AM Pattern Disturbance	Is an Impact Study needed?	No
	Is Remediation needed?	No
Facility Expenses	Name	N/A
	Other Distributed Transmission System Expenses Not listed	N/A
	Name	N/A
	Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
Permit and Filing Costs	Local Zoning	Yes
	Non-zoning permits	Yes
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	Yes
	FCC License to Cover Application	Yes
	FCC Special Temporary Authority Application	Yes
Other Miscellaneous Expenses	Does this relocation require paying Disposal Costs (for equipment and other waste, net of any salvage value)?	Yes
	Does this relocation require Equipment Delivery or Handling Charges not otherwise included in individual item costs?	Yes
	Does this relocation require Equipment Storage?	Yes
	Does this relocation require the Development and Airing of an Announcement regarding an upcoming channel change?	Yes
	Does this relocation require MVPD Notification of a Channel Change?	Yes

**Other
Expenses**

Other Expenses Not Listed

Name	Description
Building Renovation	Modifications to existing buildings needed to house new transmitter.
Engineering Construction Services	Site Survey and Lidar Scanning; Outdoor Cooling Equipment Study; Design Coordination and Construction/Permit Set; Construction Phase Services and Project Expenses
Pre planning survey and engineering	Site and transmitter building drawings.
RF System Commission	Testing of the combiner system for optimal transmission patterns per ATC documentation
Site coordination meetings	Site coordination with broadcasters, contractors and vendors involved with the site deliveries and construction. Per attached ATC documentation
Transition site encoding and transport stream conversion	Enable transition to the temporary transitional site.
Transmitter Installation and Commissioning	Transmitter Installation and Commissioning
Transmitter and RF System	Set-up, installation, commissioning and proof of performance of Interim and Main transmitter systems. Marsand, Inc. - Main \$93,400, Int. \$72,500
Remote Control	Burk ARC Plus Touch V5 Remote Control

Cost Information

Transmitters

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Interim Transmitter THU9-EVO 73.5 kW	\$2,620,472.76	\$2,277,410.60		\$1,431,978.83	
Monitoring	<i>\$9,443.38</i>	\$9,443.38	Dexon - Cisco Meraki Sencore Monitoring Receivers. Ramtronix Sony	\$5,551.80	Amount matches Estimated Cost.
Emergency Generator	<i>\$100,000.00</i>	\$100,000.00	Emergency Power Generator connection fee.	\$100,000.00	N/A
Distribution and Encoding	<i>\$30,000.00</i>	\$30,000.00	Ross Video Limited	\$0.00	N/A
Microwave Link to Interim Site	<i>\$150,094.77</i>	\$150,094.77	Per attached quote from Vislink. \$119,289.40 Evertz quote CCCQ55261-04 50% cost share. \$24,370.87 Evertz quote CCCQ47196-02 50% cost share \$6,434.50	\$118,083.47	N/A
Engineering and Design	<i>\$0.00</i>	\$0.00	Main: \$112,992.35 Interim:	N/A	N/A

			\$79,068.67 Site Survey and Lidar Scanning Outdoor Cooling Equipment Study Design Coordination and Construction /Permit Set Construction Phase Services (Site Inspection Visits /Punchlist)		
UHF inside RF system including switching	\$147,500.00	\$140,000.00	Dielectric	\$0.00	N/A
Other -- Building Addition Size: 250.0	<i>\$37,305.61</i>	\$37,305.61	Includes Ice shield and permitting per ATC quote \$26,894.29. Bomara Assoc. \$4,791.82. Hopewell Precision \$5,619.50.	\$37,305.61	Scope significantly increased from original estimate, fire panels were relocated, full electrical demo, water line relocation.
Other -- HVAC Service Type: C Size:20 (Other)	<i>\$42,579.00</i>	\$42,579.00	HVAC Services for 10 Ton Cooling System \$4,104.00 for load room cooling. HVAC Heating and Cooling for	\$42,579.00	N/A

			20 Ton System and Ice Shield for HVAC	\$13,910.00.	
4" Rigid Conduit and Wiring (Cost per foot)	\$15,150.00	\$41,146.81	2", 3" and 4" conduit. Increase in scope to complete trenching, conduit installation and transformer pads that was originally expected to be in electricity provider scope. \$34540.00. Cable.	\$37,142.13	N/A
Transformer 3 phase /480v - 300 KVA	\$36,800.00	\$142,091.91	ATC quote \$35,617.94. C&W quote \$89,451. C&W Inv. #7155 \$17,022.97. The ATC Needham site did not have adequate available power to service the interim TRX. Add. utility power was required, as well as assoc. switch gear and transformers	\$142,091.91	N/A

			beyond initial est.		
Switchgear - industrial 800 amp	\$38,200.00	\$12,000.00	N/A	\$12,000.00	N/A
Service entrance 3 phase/800 amp/208 volt	\$14,400.00	\$22,568.80	Increase in scope to complete trenching, conduit installation and transformer pads that was originally expected to be in electricity provider scope.	\$22,568.80	N/A
UHF - Liquid Cooled Solid State Transmitter 68.5 - 75 kW	\$1,999,000.00	\$1,550,180.32	N/A	\$914,656.11	Like-for-Like total of \$914,656.11 vs. upgraded equipment purchase total of \$1,550,180.32 for WGBX CH43 (Interim) THU9-EVO 73.5kW ATSC /67kW OFDM.
Primary Transmitter THU9-60 EVO 88.8kW	\$2,815,875.00	\$2,291,493.59		\$1,059,979.97	
RF Monitor	<i>\$4,075.00</i>	\$4,075.00	Orolia - Epsilon Clock for monitoring.	\$4,075.00	N/A
Other Electrical Service:	<i>\$145,000.00</i>	\$145,000.00	C&W 10/18 /19 Proposal \$115,933.00	\$141,248.86	N/A

Conduit and wiring material and labor costs required for new transmitter.						for WGBX Main electrical installation at Cedar St. Needham. De-icer addition \$10,534.41. C&W 10/22 /19 Proposal \$11,670.00. C&W \$1,301.33 EOS - Cable
UHF - Liquid Cooled Solid State Transmitter 86.8 . 106 kW	\$2,630,000.00	\$2,112,418.59	N/A	\$914,656.11	Like-for-Like total of \$914,656.11 vs. upgraded equipment purchase total of \$2,112,418.59 for WGBX CH43 (Main) THU9-60 88.5 kW ATSC/80. 5 kW OFDM.	
Transformer 3 phase /480v - 300 KVA	\$36,800.00	\$30,000.00	N/A	\$0.00	N/A	
Auxiliary Transmitter Ranger CZ1000L	\$137,800.00	\$30,000.00		\$0.00		
30 kW mask filter	\$32,600.00	\$30,000.00	Existing backup transmitter cannot be retuned. Estimate is for retuning interim transmitter for post-transition channel,	\$0.00	N/A	

which is less expensive than replacing existing backup transmitter.

UHF and VHF - minor banding issues	\$105,200.00	\$0.00	Existing backup transmitter cannot be retuned. Estimate is for retuning interim transmitter for post-transition channel, which is less expensive than replacing existing backup transmitter. **No expense due to phase change.	N/A	N/A
Sub-total	\$5,574,147.76	\$4,598,904.19	N/A	\$2,491,958.80	N/A
Total for all systems	\$11,134,348.27	\$7,060,651.48	N/A	\$4,353,054.08	N/A

Components

Actual Information	
Description	File Name
Monitoring	<p>Component Description: Keyence AP-C30K pressure sensor and configuration.</p> <p>Amount: \$137.50</p>

	<p>Component Description: Monitor/bracket</p> <p>Amount: \$1,236.53</p>
	<p>Component Description: 50% share of Cisco Meraki Ethernet Switch.</p> <p>Amount: \$685.00</p>
	<p>Component Description: 50% share Meraki subscription license.</p> <p>Amount: \$503.00</p>
	<p>Component Description: Monitor.</p> <p>Amount: \$2,152.05</p>
	<p>Component Description: 50% share of Kings KN-59-104 Straight Plug.</p> <p>Amount: \$127.13</p>
	<p>Component Description: 50% share of Kings KN-59-104 Straight Plug.</p> <p>Amount: \$110.17</p>
	<p>Component Description: Epsilon Clock for monitoring.</p> <p>Amount: \$4,492.00</p>
Emergency Generator	<p>Component Description: Emergency power generator connection fee.</p> <p>Amount: \$100,000.00</p>
Distribution and Encoding	

Component Description: OpenGear 3.0
Advanced
Networking Frame
Controller; Utility
Video D/A RML.
Amount: \$3,648.47

Component Description: OpenGear 3.0
Frame with Cooling
and Adv Network;
OG3-FR power
supply and Nielsen
Watermark
encoder.
Amount: \$24,968.25

Component Description: Dual HD/SD-SDI
Equalizing DA;
openGear OGX
Frame; 600 Watt
Universal Power
Supply.
Amount: \$4,149.63

Component Description: OpenGear 3.0
Frame with Cooling
and Adv Network.
Amount: \$1,382.77

Microwave Link to Interim
Site

Component Description: Adjustment for
Evertz
Microsystems Inv.
284746
previously
approved and paid.
Amount: (\$6,434.50)

Component Description: 50% WGBX shared expense. Ethernet Transceiver.
Amount: \$6,434.50

Component Description: 50% Shared expense. HD 4X1 Router.
Amount: \$1,402.50

Component Description: WGBX Cabot Street, Duplex NON-Standby STL /TSL STL - 7012.5 MHz and TSL 6912.5MHz. G3 - Antennas, Waveguide and accessories.
Amount: \$49,996.79

Component Description: 50% Shared expense. HD/SD SDI Relocking DA7 Outpt.
Amount: \$1,925.00

Component Description: 50% WGBX shared expense. Ethernet Transceiver.
Amount: \$24,370.87

Component Description: 6' Ice Shield for parabolic antenna.
Amount: \$5,249.00

Component Description: 50% WGBX shared expense. Ethernet Transceiver
\$24,370.88 minus 50% of credit for equipment exchange
\$10,030.00.
Amount: \$14,340.88

Component Description: WGBX Cabot Street, Duplex NON-Standby STL /TSL STL - 7012.5 MHz and TSL 6912.5MHz. G3 - Antennas, Waveguide and accessories.
Amount: \$49,996.80

Component Description: Deducted \$1,500 travel. WGBX Cabot Street, Duplex NON-Standby STL/TSL STL - 7012.5 MHz and TSL 6912.5 MHz. G3 - Antennas, Waveguide and accessories.
Amount: \$48,496.79

Component Description: 50% WGBX shared expense. Ethernet Transceiver.
Amount: \$6,434.50

	<p>Component Description: 50% Shared expense. 4CH HD /SD Transceiver.</p> <p>Amount: \$7,710.00</p>
Engineering and Design	Information not provided.
UHF inside RF system including switching	<p>Component Description: 50% of shared expense. Belden RSNSKITU.</p> <p>Amount: \$73.15</p> <p>Component Description: 50% of shared expense. Belden cable.</p> <p>Amount: \$957.00</p> <p>Component Description: 50% of shared expense. Kings connectors.</p> <p>Amount: \$196.00</p> <p>Component Description: 50% of shared expense. Belden cable & connectors.</p> <p>Amount: \$2,461.25</p>
Other -- Building Addition Size: 250.0	<p>Component Description: Approx. 600 to 1500 square foot addition (costs vary with location, site access, and construction type) \$900.00 Testing for Asbestos and Lead Paint \$900.00</p> <p>Amount: \$1,800.00</p>

Component Description: 50% WGBX shared expense. UPS for transmitter electronics.
Amount: \$4,791.82

Component Description: Approx. 600 to 1500 square foot addition.
\$25,544.29.
Asbestos Testing (\$1,350.00).
Amount: \$24,194.29

Component Description: 50% WGBX shared expense. UPS for transmitter electronics.
Amount: \$4,791.82

Component Description: 50% WGBX shared expense. UPS for transmitter electronics.
Amount: \$4,791.82

Component Description: Approx. 600 to 1500 square foot addition (costs vary with location, site access, and construction type)
\$900.00 Testing for Asbestos and Lead Paint \$900.00
Amount: \$1,800.00

Component Description: Remaining balance due plus freight for equipment racks.
Amount: \$2,909.75

Component Description: 50% down payment of equipment racks.
Amount: \$2,709.75

Component Description: Approx. 600 to 1500 square foot addition (costs vary with location, site access, and construction type)
\$450.00 Testing for Asbestos and Lead Paint \$450.00
Amount: \$900.00

Other -- HVAC Service
Type: C Size:20 (Other)

Component Description: 20 Ton System
\$11,000.00 Ice Shield for HVAC equipment
\$2,000.00
Amount: \$13,000.00

Component Description: 20 Ton System
\$5,500.00 Ice Shield for HVAC equipment
\$1,000.00
Amount: \$6,500.00

Component Description: 20 Ton System
\$11,000.00 Ice Shield for HVAC equipment
\$2,000.00.
Amount: \$13,000.00

	<p>Component Description: 20 Ton System \$8,065.00; Ice Shield for HVAC equipment \$10,910.00; 10 Ton System \$4,104.00.</p> <p>Amount: \$23,079.00</p>
<p>4" Rigid Conduit and Wiring (Cost per foot)</p>	<p>Component Description: 2inch Rigid Conduit and Wiring (Cost per foot) \$500.00 4inch Rigid Conduit and Wiring (Cost per foot) \$960.17</p> <p>Amount: \$1,460.17</p> <p>Component Description: 2inch Rigid Conduit and Wiring (Cost per foot) \$500.00 4inch Rigid Conduit and Wiring (Cost per foot) \$960.17</p> <p>Amount: \$1,460.17</p> <p>Component Description: 50% split expense of Belden 10/C 24 AWG Cable.</p> <p>Amount: \$319.15</p> <p>Component Description: 50% split expense of Belden 1592A-4.</p> <p>Amount: \$139.50</p> <p>Component Description: Video Patch Cord.</p> <p>Amount: \$148.50</p>

Component Description: 2inch Rigid Conduit and Wiring (Cost per foot) \$250.00
4inch Rigid Conduit and Wiring (Cost per foot) \$480.08
Amount: \$730.08

Component Description: Partial request for (1) Switch Control Cable for the WGBX Interim facility.
Amount: \$1,225.00

Component Description: 7/8" Jumper Cable.
Amount: \$2,450.00

Component Description: Bittree HD Video Jackfield.
Amount: \$2,516.00

Component Description: 50% split expense of Belden RG-223 /U Coax.
Amount: \$918.48

Component Description: 2 inch/3 inch/4 inch Rigid Conduit and Wiring. \$6,750.00, \$7840.00, \$17,759.75.
Amount: \$32,349.75

Transformer 3 phase/480v
- 300 KVA

Component Description: Transformer 3 phase/480v-500KVA \$4,600.
Other Transmitter
Cost Not Listed:
New electrical sub-panels \$5,000.

Amount: \$9,600.00

Component Description: 30% Deposit for Interim electrical.

Amount: \$26,835.30

Component Description: 40% Progress payment for Interim electrical.

Amount: \$35,780.40

Component Description: 40% Progress payment for Interim electrical.

Amount: \$35,780.40

Component Description: Partial request for highlighted items related to electrical power installation.

Amount: \$17,022.97

Component Description: 15% Progress payment for Interim electrical.

Amount: \$13,417.65

Component Description: Transformer 3 phase/480v-500KVA \$2,300.
Other Transmitter
Cost Not Listed:
New electrical sub-panels \$2,500.
Amount: \$4,800.00

Component Description: 15% Final payment for Interim electrical.
Amount: \$13,417.65

Component Description: 30% Deposit for Interim electrical.
Amount: \$26,835.30

Component Description: Transformer 3 phase/480v-500KVA \$4,021.20.
Other Transmitter
Cost Not Listed:
New electrical sub-panels \$17,196.74.
Amount: \$21,217.94

Component Description: Transformer 3 phase/480v-500KVA \$4,600.
Other Transmitter
Cost Not Listed:
New electrical sub-panels \$5,000.
Amount: \$9,600.00

Switchgear - industrial 800 amp

Component Description: Switchgear - Industrial 800 amp
Amount: \$1,815.00

	<p>Component Description: Switchgear - Industrial 800 amp</p> <p>Amount: \$3,630.00</p> <p>Component Description: Switchgear - Industrial 800 amp.</p> <p>Amount: \$3,630.00</p> <p>Component Description: Switchgear - Industrial 800 amp.</p> <p>Amount: \$6,555.00</p>
<p>Service entrance 3 phase /800 amp/208 volt</p>	<p>Component Description: Service entrance 3 phase/800 amp /208 volt.</p> <p>Amount: \$1,370.00</p> <p>Component Description: Service entrance 3 phase/800 amp /208 volt</p> <p>Amount: \$1,370.00</p> <p>Component Description: Service entrance 3 phase/800 amp /208 volt.</p> <p>Amount: \$685.00</p> <p>Component Description: Service entrance 3 phase/800 amp /208 volt.</p> <p>Amount: \$20,513.80</p>
<p>UHF - Liquid Cooled Solid State Transmitter 68.5 - 75 kW</p>	

Component Description: 60% payment due Upon Delivery of Like-for-Like total of \$1,202,579.92 for WGBX CH43 (Interim) THU9-EVO 73.5kW ATSC /67kW OFDM.

Amount: \$721,547.95

Component Description: 60% payment due Upon Delivery of Like-for-Like total of \$1,202,579.92 for WGBX CH43 (Interim) THU9-EVO 73.5kW ATSC /67kW OFDM.

Amount: \$721,547.95

Component Description: Final 10% payment due Upon Acceptance. Like-for-Like total of \$914,656.11.

Amount: \$91,465.61

Component Description: 60% payment due Upon Delivery of Like-for-Like total of \$1,202,579.92 for WGBX CH43 (Interim) THU9-EVO 73.5kW ATSC /67kW OFDM. Requesting reimbursement of 90% payment schedule balance due of Like-for-Like minus previous payment received.

Amount: \$358,136.40

	<p>Component Description: 30% Downpayment for WGBX CH43 THU9-EVO 73.5kW ATSC/67kW OFDM.</p> <p>Amount: \$465,054.10</p>
RF Monitor	<p>Component Description: Epsilon Clock for monitoring.</p> <p>Amount: \$4,075.00</p>
Other Electrical Service: Conduit and wiring material and labor costs required for new transmitter.	<p>Component Description: Belden 10/C 24 AWG Cable.</p> <p>Amount: \$319.15</p> <p>Component Description: Belden 7883A-4 Cable.</p> <p>Amount: \$174.00</p> <p>Component Description: Platinum EZRJ45 Boots/Connectors</p> <p>Amount: \$91.97</p> <p>Component Description: 8' LED Strip light and switch above new transmitter.</p> <p>Amount: \$1,301.33</p> <p>Component Description: 70% balance due of WGBX Main electrical installation \$81,153.10. New feed for De-Icer \$9,720.31 plus \$814.10 for De-Icer troubleshooting.</p> <p>Amount: \$91,687.51</p>

Component Description: Partial request for (1) Switch Control Cable for the WGBX Main facility.
Amount: \$1,225.00

Component Description: 30% Deposit for electrical installation of WGBX Main transmitter at 350 Cedar St. Needham.
Amount: \$34,779.90

Component Description: Demo power and conduits to existing transmitter.
Amount: \$11,670.00

UHF - Liquid Cooled Solid State Transmitter 86.8 . 106 kW

Component Description: Final 10% payment due Upon Acceptance. Like-for-Like total of \$914,656.11.
Amount: \$91,465.61

Component Description: 60% payment due Upon Delivery of Like-for-Like Total of \$1,202,579.92 for WGBX (Main) THU9-60 EVO 88.5 kW ATSC/80.5 kW OFDM. Requesting reimbursement of 90% payment schedule balance due of Like-for-Like minus previous payment received.

Amount: \$462,416.52

Component Description: 60% payment due Upon Delivery of Like-for-Like Total of \$1,202,579.92 for WGBX (Main) THU9-60 EVO 88.5 kW ATSC/80.5 kW OFDM.

Amount: \$721,547.95

Component Description: 30% Downpayment of Like-for-Like Total of \$1,202,579.92.

Amount: \$360,773.98

Component Description: 60% payment due Upon Delivery of Like-for-Like Total of \$1,202,579.92 for WGBX (Main) THU9-60 EVO 88.5 kW ATSC/80.5 kW OFDM.

Amount: \$721,547.95

Transformer 3 phase/480v
- 300 KVA

Information not provided.

30 kW mask filter	Information not provided.
UHF and VHF - minor banding issues	Information not provided.

Cost Information

Antennas

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Interim Antenna TUM-AP-04-14/56-2-B	\$1,275,067.40	\$271,571.60		\$261,257.40	
Combiner Installation	<i>\$14,530.00</i>	\$14,530.00	N/A	\$14,530.00	N/A
Tower rental	<i>\$57,600.00</i>	\$57,600.00	One-time tower rental during market repack period.	\$57,600.00	N/A
Nitrogen Generator	<i>\$3,057.40</i>	\$3,057.40	Nitrogen Generator Upgrade.	\$3,057.40	N/A
Elbow complex, broadband, at antenna input, per 8 3/16. feedline (if needed)	\$18,950.00	\$7,076.25	N/A	\$7,076.25	N/A
New combiner, cost per channel (without antenna)	\$84,200.00	\$107,129.17	Actual cost from American Tower based on design and fabrication of the four station combining system.	\$107,129.17	N/A
Sweep test of existing antenna	\$6,730.00	\$3,000.00	N/A	\$3,000.00	N/A
UHF - High Power Top Mount (200-1000 kW), Four Station	\$1,090,000.00	\$79,178.78	N/A	\$68,864.58	N/A

broadband
panel
antenna,
elliptically
or
circularly
polarized

Primary Antenna PEP70E	\$1,323,355.98	\$343,970.76		\$224,903.45	
Combiner Installation	<i>\$15,199.58</i>	\$15,199.58	N/A	\$7,012.80	N/A
Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	\$16,850.00	\$10,000.00	N/A	\$5,990.40	N/A
New combiner, cost per channel (without antenna)	\$84,200.00	\$97,357.18	Actual cost inclusive of \$8750 installation charge. Final cost including freight and tax.	\$97,357.18	Final cos covering freight an tax.
Sweep test of existing antenna	\$6,730.00	\$5,000.00	N/A	\$4,166.67	N/A
UHF - High Power Top Mount Five Station broadband panel antenna elliptically or circularly polarized	<i>\$110,376.40</i>	\$110,376.40	***New line updating antenna make /model***\$126,250 plus side mount bracket expense of \$3,750.	\$4,338.80	N/A
UHF - High Power Top Mount (200-1000 kW), Four	\$1,090,000.00	\$106,037.60	***System Notice: Estimate adjusted and locked because line has been superseded.	\$106,037.60	N/A

Station broadband panel antenna, elliptically or circularly polarized

***\$126,250 plus side mount bracket expense of \$3,750.

Sub-total	\$2,598,423.38	\$615,542.36	N/A	\$486,160.85	N/A
Total for all systems	\$11,134,348.27	\$7,060,651.48	N/A	\$4,353,054.08	N/A

Components

Actual Information Description	File Name
Combiner Installation	Component Description: Combiner installation Amount: \$1,750.00
	Component Description: Combiner installation. Amount: \$9,280.00
	Component Description: Combiner installation. Amount: \$3,500.00
	Component Description: Combiner installation Amount: \$3,500.00
Tower rental	Component Description: ATC one-time tower rental during market repack period. Amount: \$28,800.00
	Component Description: ATC one-time tower rental during market repack period. Amount: \$14,400.00

	<p>Component Description: ATC one-time tower rental during market repack period.</p> <p>Amount: \$28,800.00</p>
	<p>Component Description: ATC one-time tower rental during market repack period.</p> <p>Amount: \$14,400.00</p>
Nitrogen Generator	<p>Component Description: Nitrogen Generator Upgrade.</p> <p>Amount: \$750.00</p>
	<p>Component Description: Nitrogen Generator Upgrade.</p> <p>Amount: \$2,307.40</p>
Elbow complex, broadband, at antenna input, per 8 3/16. feedline (if needed)	<p>Component Description: Elbow complex, single channel, at antenna input, per 8-3/16" feedline (if needed).</p> <p>Amount: \$3,330.00</p>
	<p>Component Description: Elbow complex, single channel, at antenna input, per 8 3/16" feedline (if needed).</p> <p>Amount: \$1,665.00</p>
	<p>Component Description: Elbow complex, single channel, at antenna input, per 8-3/16" feedline (if needed).</p> <p>Amount: \$3,330.00</p>
	<p>Component Description: Elbow complex, single channel, at antenna input, per 8-3/16" feedline.</p> <p>Amount: \$2,081.25</p>
New combiner, cost per	

channel
(without
antenna)

Component Description: New combiner, cost per channel
(without antenna).

Amount: \$67,700.00

Component Description: New combiner, cost per channel
(without antenna)

Amount: \$67,700.00

Component Description: New combiner, cost per channel
(without antenna)

Amount: \$5,579.17

Component Description: New combiner, cost per channel
(without antenna)

Amount: \$33,850.00

Sweep test of
existing
antenna

Component Description: Sweep test of transmission line
and antenna.

Amount: \$1,500.00

Component Description: Sweep test of transmission line
and antenna.

Amount: \$750.00

Component Description: Sweep test of transmission line
and antenna.

Amount: \$750.00

Component Description: Sweep test of transmission line
and antenna.

Amount: \$1,500.00

UHF - High
Power Top
Mount (200-
1000 kW),
Four Station

broadband panel antenna, elliptically or circularly polarized

Component Description: Four station broadband panel antenna, elliptically or circularly polarized. \$25,701.98-\$10,314.20 for upgrade.
Amount: \$15,387.78

Component Description: Four station broadband panel antenna, elliptically or circularly polarized.
Amount: \$35,651.20

Component Description: Four station broadband panel antenna, elliptically or circularly polarized
Amount: \$17,825.60

Component Description: Four station broadband panel antenna, elliptically or circularly polarized.
Amount: \$35,651.20

Combiner Installation

Component Description: Combiner installation.
Amount: \$2,812.50

Component Description: Combiner installation. Final actual cost came in lower then estimated.
Amount: (\$8,186.78)

Component Description: Combiner installation.
Amount: \$12,387.08

Component Description: Combiner installation.
Amount: \$2,812.50

Elbow complex,

broadband, at antenna input, per 7 3/16. feedline (if needed)

Component Description: Elbow complex, broadband, at antenna input, per 8 3/16 feedline (if needed).
Amount: \$2,500.00

Component Description: Elbow complex, broadband, at antenna input, per 8 3/16 feedline (if needed).
Amount: \$2,500.00

Component Description: Elbow complex, broadband, at antenna input, per 8 3/16 feedline (if needed).
Amount: \$5,500.00

Component Description: Elbow complex, broadband, at antenna input, per 8 3/16 feedline. Actual cost came in lower then estimated.
Amount: (\$2,009.60)

New combiner, cost per channel (without antenna)

Component Description: New combiner, cost per channel (without antenna).
Amount: \$22,875.00

Component Description: New combiner, cost per channel (without antenna).
Amount: \$22,875.00

Component Description: New combiner, cost per channel (without antenna). Final cost covering freight and tax.
Amount: \$4,251.77

Component Description: New combiner, cost per channel (without antenna).
Amount: \$70,230.41

Sweep test of existing antenna

Component Description: Sweep test of transmission line and antenna.

Amount: \$2,916.67

Component Description: Sweep test of transmission line and antenna.

Amount: \$1,250.00

Component Description: Sweep test of transmission line and antenna.

Amount: \$1,250.00

UHF - High Power Top Mount Five Station broadband panel antenna elliptically or circularly polarized

Component Description: \$74,475.10 UHF - High Power Top Mount (200-1000 kW) Four station broadband panel antenna, elliptically or circularly polarized. \$937.50 Side mount brackets for high power antennas.

Amount: \$73,537.60

Component Description: RFS PEP70E UHF Antenna. Final cost covering freight and tax.

Amount: \$4,338.80

Component Description: \$31,562.50 UHF - High Power Top Mount (200-1000 kW) Four station broadband panel antenna, elliptically or circularly polarized. \$937.50 Side mount brackets for high power antennas.

Amount: \$32,500.00

UHF - High Power Top Mount (200-1000 kW), Four Station

broadband
panel
antenna,
elliptically or
circularly
polarized

Component Description: \$31,562.50 UHF - High Power Top Mount (200-1000 kW) Four station broadband panel antenna, elliptically or circularly polarized. \$937.50 Side mount brackets for high power antennas.

Amount: \$32,500.00

Component Description: \$74,475.10 UHF - High Power Top Mount (200-1000 kW) Four station broadband panel antenna, elliptically or circularly polarized. (\$937.50) Side mount brackets for high power antennas.

Amount: \$73,537.60

Component Description: \$31,562.50 UHF - High Power Top Mount (200-1000 kW) Four station broadband panel antenna, elliptically or circularly polarized. \$937.50 Side mount brackets for high power antennas.

Amount: \$32,500.00

Cost Information

Transmission Line

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Interim Transmission Line	\$997,500.00	\$168,962.57		\$168,962.56	
Rigid Transmission Line - copper, 8 3/16" broadband	\$997,500.00	\$168,962.57	Rigid Transmission Line - copper 7 3/16" \$24,354; copper 8 3/16" \$113,496 and Nitrogen Generator Upgrade \$3,000. Dielectric \$27,283.59	\$168,962.56	N/A
Primary Transmission Line	\$0.00	\$0.00		\$0.00	
Transmission line refurbish	<i>\$0.00</i>	\$0.00	Cost to refurbish two (2) existing 8-3/16" transmission lines per ATC quote. IT HAS BEEN DETERMINED THAT THE EXPENSE IS NOT REIMBURSABLE UNDER THE FCC GUIDELINES.	\$0.00	N/A
Primary Transmission Line	\$13,880.00	\$31,891.35		\$31,891.35	
Rigid Transmission Line -	\$13,880.00	\$31,891.35	Cost for elbows, connectors cut pieces, 80' of	\$31,891.35	N/A

copper, 8 3
/16"

transmission line,
freight and tax.

Sub-total	\$1,011,380.00	\$200,853.92	N/A	\$200,853.91	N/A
Total for all systems	\$11,134,348.27	\$7,060,651.48	N/A	\$4,353,054.08	N/A

Components

Actual Information	
Description	File Name
Rigid Transmission Line - copper, 8 3/16" broadband	<p>Component Description: Rigid Transmission Line - copper 8 3/16" \$42,450.00 and Nitrogen Generator Upgrade \$1,500.00.</p> <p>Amount: \$43,950.00</p>
	<p>Component Description: T/L Tuner w/freight charges.</p> <p>Amount: \$3,241.29</p>
	<p>Component Description: Freight charges.</p> <p>Amount: \$1,530.90</p>
	<p>Component Description: Rigid Transmission Line - copper 8 3/16" \$42,450.00 and Nitrogen Generator Upgrade \$1,500.00.</p> <p>Amount: \$43,950.00</p>

	<p>Component Description: Rigid Transmission Line - copper 8 3/16" \$49,821.47; 7 3/16" \$24,354.00 and Nitrogen Generator Upgrade \$1,578.50.</p> <p>Amount: \$75,753.97</p> <p>Component Description: Rigid Transmission Line - copper 8 3/16" \$21,225.00 and Nitrogen Generator Upgrade \$750.00.</p> <p>Amount: \$21,975.00</p> <p>Component Description: Rigid transmission line, flange assy, conn anchor, kit assy, hanger kit.</p> <p>Amount: \$22,511.40</p>
Transmission line refurbish	<p>Component Description: \$12,187.50 8 3/16" broadband \$750.00 Nitrogen Generator Upgrade.</p> <p>Amount: \$12,937.50</p>
Rigid Transmission Line - copper, 8 3/16"	<p>Component Description: Freight charges.</p> <p>Amount: \$238.28</p>

Component Description: Expedited freight charges - due to an installation drawing measurement change expedited shipping of parts was necessary for the installation crew to stay on schedule.

Amount: \$500.75

Component Description: Flange Assembly, Hardware, Hanger, Coax.

Amount: \$9,009.36

Component Description: Conn 7-75 Anch Adptr Die/Myat.

Amount: \$793.64

Component Description: Freight charges.

Amount: \$500.75

Component Description: Expedited freight charges - due to an installation drawing measurement change expedited shipping of parts was necessary for the installation crew to stay on schedule.

Amount: \$60.52

Component Description: Freight charges.

Amount: \$60.52

Component Description: Expedited freight charges - due to an installation drawing measurement change expedited shipping of parts was necessary for the installation crew to stay on schedule.

Amount: \$238.28

Component Description: Cost for elbows, connectors, cut pieces. 80' of transmission line. freight and tax.

Amount: \$19,480.80

Component Description: T/L Tuner Section.

Amount: \$1,808.00

Cost Information

Tower Equipment and Rigging Costs

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Tower	\$404,200.00	\$171,957.25		\$87,630.59	
GTOWER					
Tower Permit Package	<i>\$9,400.00</i>	\$9,400.00	Tower permit drawing plus ground & building A&E permit drawing per attached ATC quote \$4,700 + \$4,700.	\$3,133.34	N/A
Tall Tower (greater than 500')	\$210,500.00	\$60,500.00	N/A	\$0.00	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$77,057.25	Actual American Tower costs.	\$77,057.25	Sub-total matches the Estimated Cost.
Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study	\$26,300.00	\$25,000.00	N/A	\$7,440.00	N/A
Auxiliary Tower	\$608,400.00	\$465,256.13		\$446,318.63	
GTOWER					
Tower Permits	<i>\$9,400.00</i>	\$9,400.00	Tower permit drawing plus	\$3,762.50	N/A

			ground & building A&E permit drawing per attached ATC quote		
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$393,845.43	Rigging, testing for asbestos and lead paint, site security, public hearing, and tower rental per attached ATC quote. Helicopter Lift \$42,508.00.	\$393,845.43	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$43,010.70	Major tower reinforcement /modification \$31,682.25 Construction project management (Tower modifications reinforcements and facilities) \$11,328.45	\$43,010.70	N/A
Structural engineering tower load study for a documented tower with candelabra	\$20,000.00	\$19,000.00	N/A	\$5,700.00	N/A
Sub-total	\$1,012,600.00	\$637,213.38	N/A	\$533,949.22	N/A
Total for all systems	\$11,134,348.27	\$7,060,651.48	N/A	\$4,353,054.08	N/A

Components

Actual Information	
Description	File Name
Tower Permit Package	

	<p>Component Description: \$1,175 Tower Permit Drawing Package. \$1,175 Ground & Building A&E Permit Drawing Package.</p> <p>Amount: \$2,350.00</p> <p>Component Description: \$391.67 Tower Permit Drawing Package. \$391.67 Ground & Building A&E Permit Drawing Package.</p> <p>Amount: \$783.34</p> <p>Component Description: \$1,175 Tower Permit Drawing Package. \$1,175 Ground & Building A&E Permit Drawing Package.</p> <p>Amount: \$2,350.00</p>
Tall Tower (greater than 500')	Information not provided.
Minor tower reinforcement /modifications	<p>Component Description: \$6,250.00 Minor tower reinforcement /modifications (Labor and materials) \$1,312.50 Construction project management (Tower Modification reinforcements and facilities)</p> <p>Amount: \$7,562.50</p>

Component Description: \$58,616.54 Minor tower reinforcement /modifications (Labor and materials)
\$5,687.50 Construction project management (Tower Modification reinforcements and facilities)
Amount: \$64,304.04

Component Description: \$6,250.00 Minor tower reinforcement /modifications (Labor and materials)
\$1,312.50 Construction project management (Tower Modification reinforcements and facilities).
Amount: \$7,562.50

Component Description: Final costs:
\$64,866.54 Minor tower reinforcement /modifications (Labor and materials)
\$12,190.71 Construction project management (Tower Modification reinforcements and facilities)
Amount: \$5,190.71

Tower mapping for an undocumented/poorly documented tower and preparation of documentation necessary for tower load study

Component Description:

Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study.

Amount:

\$2,893.33

Component Description:

Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study.

Amount:

\$1,240.00

Component Description:

Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study

Amount:

\$620.00

Component Description:

Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study.

Amount:

\$1,240.00

Component Description: Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study.
Amount: \$620.00

Component Description: Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study
Amount: \$1,240.00

Component Description: Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study.
Amount: \$826.67

Component Description: Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study.
Amount: \$1,240.00

Tower Permits

Component Description: Tower Permit
Drawing Package
\$2,350.00 Ground
& Building A&E
Permit Drawing
Package \$2,350.00
Amount: \$4,700.00

Component Description: Tower Permit
Drawing Package
(\$3,525.00)
Ground & Building
A&E Permit
Drawing Package
\$237.50
Amount: (\$3,287.50)

Component Description: Tower Permit
Drawing Package
\$1,175.00 Ground
& Building A&E
Permit Drawing
Package \$1,175.00
Amount: \$2,350.00

Component Description: Tower Permit
Drawing Package
\$2,350.00 Ground
& Building A&E
Permit Drawing
Package \$2,350.00.
Amount: \$4,700.00

Complex Tower (includes,
for example, those with
candelabras and/or stacked
antennas)

Component Description: Complex tower.
Amount: \$97,731.72

Component Description: Complex Tower
Amount: \$27,950.13

Component Description: Complex Tower.
Amount: \$18,562.50

Component Description: Complex Tower
Amount: \$13,975.07

Component Description: Complex Tower.
Amount: \$143,551.50

Component Description: Complex Tower
\$49,566.51 and
Helicopter Lift
42,508.00.
Amount: \$92,074.51

Component Description: Complex Tower.
Amount: \$27,950.13

Component Description: Complex Tower.
Amount: \$18,562.50

Minor tower reinforcement
/modifications

Component Description: Major tower
reinforcement
/modification
\$8,750.00
Construction
project
management
(Tower
modification
reinforcements and
facilities) \$1,500.00.
Amount: \$10,250.00

Component Description: Major tower reinforcement /modification \$4,375.00 Construction project management (Tower modification reinforcements and facilities) \$750.00

Amount: \$5,125.00

Component Description: Major tower reinforcement /modification \$8,750.00 Construction project management (Tower modification reinforcements and facilities) \$1,500.00

Amount: \$10,250.00

Component Description: Major tower reinforcement /modification \$18,557.25 Construction project management (Tower modification reinforcements and facilities) \$9,078.45.

Amount: \$27,635.70

Structural engineering tower load study for a documented tower with candelabra

Component Description: Structural engineering tower load study for a documented tower with candelabra.
Amount: \$950.00

Component Description: Structural engineering tower load study for a documented tower with candelabra.
Amount: \$950.00

Component Description: Structural engineering tower load study for a documented tower with candelabra.
Amount: \$2,216.67

Component Description: Structural engineering tower load study for a documented tower with candelabra.
Amount: \$475.00

Component Description: Structural engineering tower load study for a documented tower with candelabra.
Amount: \$633.33

Component Description: Structural engineering tower load study for a documented tower with candelabra.
Amount: \$475.00

Component Description:

Structural
engineering tower
load study for a
documented tower
with candelabra

Amount:

\$950.00

Component Description:

Structural
engineering tower
load study for a
documented tower
with candelabra.

Amount:

\$950.00

Cost Information

Outside Professional Services

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Outside Professional Services	\$146,860.00	\$211,633.50		\$98,557.65	
Attorney Fees - Prepare Transition Progress Report	<i>\$5,000.00</i>	\$5,000.00	N/A	\$368.50	N/A
Comprehensive coverage verification via field study, if needed	\$84,200.00	\$80,000.00	Field study \$80,000 - vendor unknown	\$0.00	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	\$7,360.00	\$7,000.00	N/A	\$0.00	N/A
Attorney Fees - Negotiation of lease and other matters for shared locations	\$4,210.00	\$27,000.00	Complex request with shared tower and need for interim facilities, also to be shared with multiple broadcasters; responding to FCC inquiries.	\$26,336.00	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main),	\$2,365.00	\$2,250.00	N/A	\$848.75	N/A

License to
Cover
Application

Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$6,459.00	Complex request with shared tower and need for interim facilities, also to be shared with multiple broadcasters; responding to FCC inquiries.	\$5,789.00	N/A
Prepare request for Special Temporary Authorization	\$4,100.00	\$4,345.75	Complex request with shared tower and need for interim facilities, also to be shared with multiple broadcasters; responding to FCC inquiries.	\$4,345.75	revise.
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	\$0.00	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	N/A	N/A
Perform engineering study for new channel assignment	\$7,360.00	\$13,525.00	\$5,000 ATC Aux \$5,000 ATC Main \$1,075.00 Orion	\$13,525.00	N/A

and antenna
development

Broadcast
Solutions.
\$375.00
Chesapeake
#4090
\$550.00
Chesapeake
#4205

Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$9,093.75	Address transition timing and site coordination meeting for primary and interim sites per attached ATC quotes. Wiley Rein legal fees.	\$9,093.73	N/A
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Prepare and or review reimbursement form	\$2,630.00	\$15,000.00	Complex request with shared tower and need for interim facilities, also to be shared with multiple broadcasters; responding to FCC inquiries.	\$14,061.50	N/A
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Project management of the transition	\$15,010.00	\$35,460.00	Primary: 44 hrs constr. proj. mgt + 94.8 hrs of proj. mgt for transition + RF sys test Interim: 24 hrs constr. proj. mgt + 94.8 hrs proj. mgt for transition + RF sys test	\$23,854.42	N/A
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Per ATC
quotes
\$35,460.00

Attorney Fees - Draft Viewer Announcements	<i>\$2,000.00</i>	\$2,000.00	N/A	\$335.00	N/A
Sub-total	\$146,860.00	\$211,633.50	N/A	\$98,557.65	N/A
Total for all systems	\$11,134,348.27	\$7,060,651.48	N/A	\$4,353,054.08	N/A

Components

Actual Information	
Description	File Name
Attorney Fees - Prepare Transition Progress Report	<p>Component Description: Professional services on 8/2-5/19.</p> <p>Amount: \$502.50</p>
	<p>Component Description: Draft transition progress reports 8/2/19.</p> <p>Amount: \$201.00</p>
	<p>Component Description: Professional services on 1/7/19.</p> <p>Amount: \$167.50</p>
Comprehensive coverage verification via field study, if needed	<p>Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.</p> <p>Amount: \$1,075.00</p>

	<p>Component Description: Moved to Perform Engineering study as instructed by FCC. Analysis of power levels, interference analysis and studies related to FCC applications and filings.</p> <p>Amount: N/A</p> <p>Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.</p> <p>Amount: \$187.50</p> <p>Component Description: Moved to Perform Engineering study as instructed by FCC. Analysis of power levels, interference analysis and studies related to FCC applications and filings.</p> <p>Amount: N/A</p>
Attorney Fees - Prepare and File request for Special Temporary Authorization	Information not provided.
Attorney Fees - Negotiation of lease and other matters for shared locations	<p>Component Description: Partial reimbursement for professional services from 2/13-15/18.</p> <p>Amount: \$1,156.00</p>

Component Description: Partial reimbursement for professional services from 3/6-19/18.
Amount: \$7,616.00

Component Description: Partial reimbursement for professional services from 4/19-27/18.
Amount: \$8,092.00

Component Description: For professional services from 1/2-19/18.
Amount: \$4,414.00

Component Description: Partial reimbursement for services on 10/5/17.
Amount: \$847.50

Component Description: Partial reimbursement for services on 10/31/17, 11/9/17, 11/13/17 and 11/20/17.
Amount: \$4,210.50

Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application

Component Description: Professional services on 8/15/19.
Amount: \$167.50

Component Description: Professional services on 7/15-16/20.
Amount: \$558.75

	<p>Component Description: 6/19/20 Review repack status.</p> <p>Amount: \$186.25</p> <p>Component Description: Professional services on 2/5/20.</p> <p>Amount: \$103.75</p>
<p>Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application</p>	<p>Component Description: Professional services on 7/22/19.</p> <p>Amount: \$1,172.50</p> <p>Component Description: Professional services on 8/2-7/19.</p> <p>Amount: \$670.00</p> <p>Component Description: Professional services on 5/30/17.</p> <p>Amount: \$423.75</p> <p>Component Description: Partial reimbursement for professional services on 6/20/17.</p> <p>Amount: \$113.00</p> <p>Component Description: Professional services on 1/15-16/20.</p> <p>Amount: \$931.25</p> <p>Component Description: Professional service on 10/19/17 & 10/30/17.</p> <p>Amount: \$459.00</p>

Component Description: Partial reimbursement for . 30 hrs. on 12/18/17.
Amount: \$270.00

Component Description: Partial reimbursement for professional services on 6/6-30 /17.
Amount: \$1,742.50

Component Description: Professional services on 2/12-25 /20.
Amount: \$372.50

Component Description: Professional services on 1/9/18.
Amount: \$304.50

Prepare request for Special Temporary Authorization

Component Description: Professional services on 7/11-31 /19.
Amount: \$2,345.00

Component Description: Professional services on 9/28-29 /17.
Amount: \$825.00

Component Description: Professional services on 2/26/20.
Amount: \$186.25

	<p>Component Description: Professional services on 3/18/20.</p> <p>Amount: \$186.25</p>
	<p>Component Description: Professional services on 4/20/20.</p> <p>Amount: \$186.25</p>
	<p>Component Description: Professional services on 1/2-3/18.</p> <p>Amount: \$617.00</p>
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Information not provided.
Perform engineering study for new channel assignment and antenna development	<p>Component Description: Preparation of engineering portions of FCC application.</p> <p>Amount: \$350.00</p>
	<p>Component Description: Perform engineering study for new channel assignment and antenna development (Cost per customer)</p> <p>Amount: \$2,500.00</p>

Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.

Amount: \$375.00

Component Description: Perform engineering study for new channel assignment and antenna development.

Amount: \$1,250.00

Component Description: Develop final operating constants, FCC application prep. Provide exhibits.

Amount: \$575.00

Component Description: Perform engineering study for new channel assignment and antenna development (Cost per customer)

Amount: \$1,250.00

Component Description: Perform engineering study for new channel assignment and antenna development.

Amount: \$3,750.00

Component Description: Perform engineering study for new channel assignment and antenna development (Cost per customer).
Amount: \$2,500.00

Component Description: Develop technical parameters for interim antenna on repack CH. 32 for use during transition. Prep, upload exhibits for FCC application.
Amount: \$600.00

Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.
Amount: \$550.00

Component Description: Perform engineering study for new channel assignment and antenna development.
Amount: \$1,250.00

Component Description: Perform engineering study for new channel assignment and antenna development.
Amount: \$1,250.00

	<p>Component Description:</p> <p>Amount:</p>	<p>Frequency Search - 7 GHz Duplex path. \$1,075.00</p>
<p>Address transition timing and coordination issues w/ other stations and wireless</p>	<p>Component Description:</p> <p>Amount:</p>	<p>Address transition timing and coordination issues with other stations and wireless (Cost per customer) \$625.00</p>
	<p>Component Description:</p> <p>Amount:</p>	<p>Address transition timing and coordination issues with other stations and wireless. \$500.00</p>
	<p>Component Description:</p> <p>Amount:</p>	<p>Address transition timing and coordination issues with other stations and wireless. \$500.00</p>
	<p>Component Description:</p> <p>Amount:</p>	<p>Address transition timing and coordination issues with other stations and wireless (Cost per customer). \$1,250.00</p>

Component Description: Address transition timing and coordination issues with other stations and wireless (Cost per customer)

Amount: \$1,250.00

Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.

Amount: \$375.00

Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.

Amount: \$550.00

Component Description: \$1,000 Address transition timing and coordination issues with other stations and wireless. (\$.02) Project management of transition.

Amount: \$999.98

Component Description: Address transition timing and coordination issues with other stations and wireless \$625.00. Site coordination \$1,250.00.
Amount: \$1,875.00

Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.
Amount: \$1,075.00

Component Description: Address transition timing and coordination issues with other stations and wireless.
Amount: \$1,500.00

Component Description: Analysis of power levels, interference analysis and studies related to FCC applications and filings.
Amount: \$187.50

Component Description: Partial reimbursement for profession services on 11/1-26/18.
Amount: \$2,343.75

Prepare and or review reimbursement form

Component Description: Professional services on 9/9-29 /21.
Amount: \$1,365.00

Component Description: Professional services from 10/9-18/17.
Amount: \$565.00

Component Description: Professional services on 7/9/20.
Amount: \$372.50

Component Description: Professional services on 4/26/18.
Amount: \$156.25

Component Description: Partial reimbursement for 5 /23-26/21 Review reimbursement form.
Amount: \$468.00

Component Description: 9/9-17/19 Review reimbursement form.
Amount: \$1,340.00

Component Description: 12/10-17/19 Review reimbursement form.
Amount: \$837.50

Component Description: Professional services 1/12/18.
Amount: \$500.00

Component Description: Partial reimbursement for professional services on 5/9-18/17.
Amount: \$226.00

Component Description: Professional services on 6/10/21.
Amount: \$195.00

Component Description: 11/13-21/19 Review reimbursement form.
Amount: \$502.50

Component Description: Professional services on 1/6/19 & 1/31/19.
Amount: \$335.00

Component Description: 10/2-31/19 Review reimbursement form.
Amount: \$335.00

Component Description: Partial reimbursement. Professional services from 8/23-31/17.
Amount: \$2,260.00

	<p>Component Description: Professional services 7/7-12/17.</p> <p>Amount: \$3,473.75</p> <p>Component Description: Professional services from 9/1-14 /17.</p> <p>Amount: \$1,130.00</p>
<p>Project management of the transition</p>	<p>Component Description: This has been resubmitted under Other Expenses: Engineering Construction Services as requested by FCC.</p> <p>Amount: N/A</p> <p>Component Description: Project management of the transition, if needed.</p> <p>Amount: \$7,110.02</p> <p>Component Description: WGBX UHF Main: Design Coordination and Construction.</p> <p>Amount: \$34,237.45</p> <p>Component Description: This has been resubmitted under Other Expenses: Engineering Construction Services as requested by FCC.</p> <p>Amount: N/A</p>

Component Description: This has been resubmitted under Other Expenses: Engineering Construction Services as requested by FCC.
Amount: N/A

Component Description: WGBX TRX Interim: Construction Phase Services.
Amount: \$4,894.40

Component Description: Project management of the transition.
Amount: \$2,370.00

Component Description: Project management of the transition, if needed (Cost per hour per customer)
Amount: \$2,370.00

Component Description: Project management of the transition, if needed (Cost per hour per customer)
Amount: \$4,740.00

Component Description: WGBX TRX Interim: Design Coordination and Construction
Amount: \$51,537.31

Component Description: WGBX TRX
Interim: Site
Survey, Outdoor
Cooling Equipment.
Amount: \$7,127.52

Component Description: WGBX UHF Main:
Site Survey,
Outdoor Cooling
Equip. Study,
Demo Plan.
Amount: \$21,312.32

Component Description: Project
management of the
transition, if needed.
Amount: \$2,370.00

Component Description: This has been
resubmitted under
Other Expenses:
Engineering
Construction
Services as
requested by FCC.
Amount: N/A

Component Description: Project
management of the
transition, if needed
(Cost per hour per
customer).
Amount: \$4,740.00

	<p>Component Description: This has been resubmitted under Other Expenses: Engineering Construction Services as requested by FCC.</p> <p>Amount: N/A</p> <p>Component Description: This has been resubmitted under Other Expenses: Engineering Construction Services as requested by FCC.</p> <p>Amount: N/A</p> <p>Component Description: Project management of the transition, if needed.</p> <p>Amount: \$2,370.00</p> <p>Component Description: This has been resubmitted under Other Expenses: Engineering Construction Services as requested by FCC.</p> <p>Amount: N/A</p>
<p>Attorney Fees - Draft Viewer Announcements</p>	<p>Component Description: Draft instructions for WGBX-TV repack announcements on 5/9/19.</p> <p>Amount: \$335.00</p>

Cost Information

Other Expenses

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Other Expenses	\$790,937.13	\$796,504.13		\$541,573.65	
Remote Control	<i>\$15,118.73</i>	\$15,118.73	NFB Consulting - Statmon Recon SCMS - WGBX Aux - Burk ARC Remote Control	\$6,036.67	N/A
Transmitter and RF System	<i>\$13,748.00</i>	\$13,748.00	American Tower: RF Field Engineering Services.	\$13,748.00	N/A
Transmitter Installation and Commissioning	<i>\$184,257.67</i>	\$184,257.67	Marsand, Inc. - Installation of WGBX Main and WGBX Interim transmitters; additional mobilization and proof-of-performance.	\$184,257.67	N/A
Transition site encoding and transport stream conversion	<i>\$134,226.18</i>	\$134,226.18	Heartland Video Systems ELC-X2S; transport stream converter.	\$2,791.28	N/A
Site coordination	<i>\$2,612.24</i>	\$2,612.24	N/A	\$2,612.24	N/A

meetings					
RF System Commission	<i>\$10,000.00</i>	\$10,000.00	Includes primary and interim sites per ATC quotes.	\$10,000.00	N/A
Pre planning survey and engineering	<i>\$5,000.00</i>	\$5,000.00	N/A	\$0.00	N/A
Engineering Construction Services	<i>\$268,000.00</i>	\$268,000.00	EJC International Services - professional engineering services to replace existing main transmitter at 350 Cedar Street and provide a new aux transmitter at 140 Cabot Street. Wireless Construction \$75,000.	\$192,061.02	N/A
Building Renovation	<i>\$75,467.50</i>	\$75,467.50	Wireless Construction: Heat Exchanger pads, CMU wall demo, custom hatch plates, ladder brackets, installation of access ladder, filter plinth, decom of existing combiner equipment.	\$75,467.50	N/A
MVPD	<i>\$8,430.00</i>	\$8,430.00	DTV	\$8,430.00	N/A

Notification of Channel Change			Notification - MVPD Notification Services: Notification of Cable and Satellite MVPD Providers of new RF Channel and Transport Stream Parameters on Repack Channel. x 2 due to Phase Change.		
Develop and air announcement of upcoming channel change	<i>\$30,000.00</i>	\$30,000.00	N/A	\$0.00	N/A
Equipment Storage	<i>\$5,000.00</i>	\$5,000.00	N/A	\$4,509.35	N/A
Equipment Delivery and Handling Charges	<i>\$12,000.00</i>	\$12,000.00	Includes primary and interim sites per ATC quotes.	\$11,006.11	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	<i>\$11,146.81</i>	\$11,146.81	N.E. Disposal, American Tower.	\$11,146.81	Actual costs have been submitted. These match the Estimated cost.
Non-zoning permits	<i>\$1,500.00</i>	\$1,500.00	Includes primary and interim sites per ATC quotes.	\$0.00	N/A
Local Zoning	<i>\$1,240.00</i>	\$1,240.00	Public	\$750.00	N/A

			hearing for primary and interim sites per ATC quotes. ATC Public Hearing \$400		
FCC Filing Fees - Special Temporary Authorization request	\$195.00	\$0.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 license to cover application	\$335.00	\$99.00	Wiley Rein Inv. # 1433074.	\$99.00	N/A
FCC Filing Fees - Form 2100 minor change CP application	\$1,110.00	\$0.00	N/A	\$0.00	N/A
DTV Medical Facility Notification	\$11,550.00	\$18,658.00	DTV Notification Service: Notification of Medical Facilities - Transmitter Medical Facility Notification. x 2 due to Phase Change	\$18,658.00	N/A
Sub-total	\$790,937.13	\$796,504.13	N/A	\$541,573.65	N/A
Total for all systems	\$11,134,348.27	\$7,060,651.48	N/A	\$4,353,054.08	N/A

Components

Actual Information Description	File Name
Remote Control	

	<p>Component Description: WGBX share of Statmon STC-RSCON. Quote did not include shipping.</p> <p>Amount: \$6,036.67</p> <p>Component Description: WGBX Aux - Burk ARC Remote Control.</p> <p>Amount: \$9,082.06</p>
Transmitter and RF System	<p>Component Description: Comprehensive coverage verification via field study.</p> <p>Amount: \$13,748.00</p>
Transmitter Installation and Commissioning	<p>Component Description: 50% Balance due for installation of the WGBX Interim transmitter.</p> <p>Amount: \$36,250.00</p> <p>Component Description: 50% Deposit for installation of the WGBX Interim transmitter.</p> <p>Amount: \$36,250.00</p> <p>Component Description: Final installation and initialization of the WGBX Interim transmitter. Completion of technical proof of performance.</p> <p>Amount: \$12,123.63</p>

	<p>Component Description: 50% Balance due for installation of the WGBX Main transmitter.</p> <p>Amount: \$46,700.00</p> <p>Component Description: Final installation and initialization of the WGBX Main transmitter. Completion of technical proof of performance.</p> <p>Amount: \$6,234.04</p> <p>Component Description: 50% Deposit for installation of the WGBX Main transmitter.</p> <p>Amount: \$46,700.00</p>
Transition site encoding and transport stream conversion	<p>Component Description: Harmonic HD/SD Encoder Bundle for transitional site.</p> <p>Amount: \$131,434.90</p> <p>Component Description: Single interface unidirectional transport stream converter.</p> <p>Amount: \$2,791.28</p>
Site coordination meetings	<p>Component Description: Site Coordination Meeting.</p> <p>Amount: \$1,500.00</p>

	<p>Component Description: Site Coordination Meeting.</p> <p>Amount: \$612.24</p>
	<p>Component Description: Site Coordination Meeting.</p> <p>Amount: \$500.00</p>
	<p>Component Description: Site Coordination Meeting.</p> <p>Amount: \$500.00</p>
RF System Commission	<p>Component Description: RF System Test.</p> <p>Amount: \$1,375.00</p>
	<p>Component Description: RF System Test</p> <p>Amount: \$625.00</p>
	<p>Component Description: RF System Test</p> <p>Amount: \$1,250.00</p>
	<p>Component Description: RF System Test.</p> <p>Amount: \$3,625.00</p>
	<p>Component Description: RF System Test.</p> <p>Amount: \$1,250.00</p>
	<p>Component Description: RF System Test</p> <p>Amount: \$3,125.00</p>
	<p>Component Description: RF System Test.</p> <p>Amount: \$1,375.00</p>
Pre planning survey and	Information not provided.

engineering

Engineering Construction
Services

Component Description:

WGBX UHF
Interim: Site Survey
and Lidar
Scanning, Outdoor
Cooling Equipment
Study, Design
Coordination and
Construction,
Project Expenses.

Amount:

\$51,537.31

Component Description:

WGBX UHF
Interim: Site Survey
and Lidar
Scanning, Outdoor
Cooling Equipment
Study, Design
Coordination and
Construction,
Construction Phase
Services, Project
Expenses.

Amount:

\$5,115.04

Component Description:

WGBX UHF
Interim: Site Survey
and Lidar
Scanning, Outdoor
Cooling Equipment
Study, Design
Coordination and
Construction,
Construction Phase
Services, Project
Expenses.

Amount:

\$4,894.40

Component Description:

WGBX UHF
Interim: Site Survey
and Lidar
Scanning, Outdoor
Cooling Equipment
Study, Design
Coordination and
Construction,
Construction Phase
Services, Project
Expenses.

Amount:

\$4,894.40

Component Description:

WGBX UHF Main:
Site Survey and
Lidar Scanning,
Outdoor Cooling
Equipment Study,
Demo Plan, Design
Coordination and
Construction,
Project Expenses.

Amount:

\$33,237.46

Component Description:

WGBX UHF
Interim: Site Survey
and Lidar
Scanning, Outdoor
Cooling Equipment
Study, Project
Expenses.

Amount:

\$7,127.52

Component Description: WGBX UHF
Interim: Site Survey
and Lidar
Scanning, Outdoor
Cooling Equipment
Study, Design
Coordination and
Construction,
Construction Phase
Services, Project
Expenses.

Amount: \$5,500.00

Component Description: WGBX UHF Main:
Site Survey and
Lidar Scanning,
Outdoor Cooling
Equipment Study,
Demo Plan, Design
Coordination and
Construction,
Project Expenses.

Amount: \$5,307.52

Component Description: WGBX UHF Main:
Site Survey and
Lidar Scanning,
Outdoor Cooling
Equipment Study,
Demo Plan, Project
Expenses.

Amount: \$21,312.32

Component Description: WGBX UHF Main:
Site Survey and
Lidar Scanning,
Outdoor Cooling
Equipment Study,
Demo Plan, Design
Coordination and
Construction,
Project Expenses.

Amount: \$34,237.45

	<p>Component Description: WGBX UHF Main: Site Survey and Lidar Scanning, Outdoor Cooling Equipment Study, Demo Plan, Design Coordination and Construction, Project Expenses.</p> <p>Amount: \$18,897.60</p>
Building Renovation	<p>Component Description: Filter plinth labor and materials.</p> <p>Amount: \$8,500.00</p> <p>Component Description: Room referb, HVAC labor and materials.</p> <p>Amount: \$26,997.50</p> <p>Component Description: Decom of existing combiner equipment, including cabinet removals, heat exchangers and associated coolant lines.</p> <p>Amount: \$8,500.00</p> <p>Component Description: Heat Exchanger Pads; CMU Wall Demo.</p> <p>Amount: \$9,800.00</p> <p>Component Description: Completion of room refurb, HVAC labor and materials.</p> <p>Amount: \$17,457.50</p>

	<p>Component Description: On-site labor to cut back a smoke detector tube in order to install a new cable tray.</p> <p>Amount: \$860.00</p> <p>Component Description: Requesting 50% of total. Monitor installation. Hatch plate for heat exchanger; ladder brackets; access ladder; microflex window.</p> <p>Amount: \$3,352.50</p>
<p>MVPD Notification of Channel Change</p>	<p>Component Description: MVPD Notification Services: Notification of Cable and Satellite MVPD Providers of new RF Channel and Transport Stream Parameters on Repack Channel.</p> <p>Amount: \$4,215.00</p> <p>Component Description: 2nd Notification due to phase change. MVPD Notification Services: Notification of Cable and Satellite MVPD Providers.</p> <p>Amount: \$4,215.00</p>

	<p>Component Description: Notification of Cable and Satellite MVPD Providers of new RF Channel and Transport Stream Parameters on Repack Channel.</p> <p>Amount: \$4,215.00</p>
Develop and air announcement of upcoming channel change	Information not provided.
Equipment Storage	<p>Component Description: Equipment storage.</p> <p>Amount: \$1,456.20</p> <p>Component Description: Equipment Storage \$1,000. Site Security (\$2,700.00). Security System - Bldg. 140</p> <p>Amount: \$2,053.15.</p> <p>Amount: \$353.15</p> <p>Component Description: Site Security Company during construction for theft prevention and vandalism.</p> <p>Amount: \$1,800.00</p> <p>Component Description: Site Security Company during construction for theft prevention and vandalism.</p> <p>Amount: \$900.00</p>

	<p>Component Description: Site Security Company during construction for theft prevention and vandalism.</p> <p>Amount: \$1,800.00</p>
Equipment Delivery and Handling Charges	<p>Component Description: Equipment Delivery and Handling Charges.</p> <p>Amount: \$1,375.00</p> <p>Component Description: Equipment Delivery and Handling Charges (Cost per customer)</p> <p>Amount: \$1,500.00</p> <p>Component Description: Equipment Delivery and Handling Charges.</p> <p>Amount: (\$2,250.00)</p> <p>Component Description: Equipment Delivery and Handling Charges.</p> <p>Amount: \$1,375.00</p> <p>Component Description: 50% shared moving expense.</p> <p>Amount: \$4,210.75</p> <p>Component Description: Local transportation.</p> <p>Amount: \$165.00</p>

Component Description: 50% shared moving expense.
Amount: \$355.00

Component Description: Local transportation.
Amount: \$800.00

Component Description: 50% shared moving expense.
Amount: \$770.00

Component Description: Local transportation.
Amount: \$1,010.00

Component Description: Equipment Delivery and Handling Charges (Cost per customer).
Amount: \$1,500.00

Component Description: Equipment Delivery and Handling Charges.
Amount: \$3,125.00

Component Description: Equipment Delivery and Handling Charges.
Amount: (\$1,979.64)

Component Description: Equipment Delivery and Handling Charges (Cost per customer)
Amount: \$750.00

	<p>Component Description: Local transportation.</p> <p>Amount: \$1,175.00</p>
Disposal Costs (for equipment and other waste, net of any salvage value)	<p>Component Description: Disposal cost.</p> <p>Amount: \$4,646.06</p>
	<p>Component Description: Transformer oil disposal.</p> <p>Amount: \$3,452.75</p>
	<p>Component Description: Disposal cost.</p> <p>Amount: \$3,048.00</p>
Non-zoning permits	Information not provided.
Local Zoning	<p>Component Description: Obtain building permits from local zoning authorities. \$375.00 Public Hearing. \$200.00</p> <p>Amount: \$575.00</p>
	<p>Component Description: \$187.50 Obtain building permits from local zoning authorities. \$110.00 Public Hearing.</p> <p>Amount: \$297.50</p>
	<p>Component Description: Obtain building permits from local zoning authorities (\$562.50) Public Hearing (\$300.00).</p> <p>Amount: (\$862.50)</p>

	<p>Component Description: \$562.50 Obtain building permits from local zoning authorities. (\$110.00) Public Hearing.</p> <p>Amount: \$452.50</p> <p>Component Description: \$187.50 Obtain building permits from local zoning authorities. \$110.00 Public Hearing.</p> <p>Amount: \$297.50</p> <p>Component Description: Obtain building permits from local zoning authorities. \$375.00 Public Hearing. \$200.00.</p> <p>Amount: \$575.00</p> <p>Component Description: Obtain building permits from local zoning authorities. \$187.50 Public Hearing. \$100</p> <p>Amount: \$287.50</p>
FCC Filing Fees - Special Temporary Authorization request	Information not provided.
FCC Filing Fees - Form 2100 license to cover application	<p>Component Description: Filing Fee.</p> <p>Amount: \$99.00</p>
FCC Filing Fees - Form 2100 minor change CP application	Information not provided.
DTV Medical Facility Notification	

Component Description: 2nd Notification due to phase change. DTV Notification Services: Notification of Medical Facilities.
Amount: \$9,329.00

Component Description: Transmitter Medical Facility Notification.
Amount: \$9,329.00

Component Description: DTV Notification Service: Notification of Medical Facilities - Transmitter Medical Facility Notification.
Amount: \$9,329.00

Cost Information **Grand Total**

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$11,134,348.27	\$7,060,651.48	\$4,353,054.08

Reimbursement Status

Question	Response
The facility has ceased operating on its pre-auction channel.	Yes
Construction of final facilities or all necessary modifications are complete.	Yes
All receipts for reimbursement have been submitted no further costs are expected to be incurred. Note this will lock the Form 399 from further editing and begin close-out procedures with the Fund Administrator.	Yes

Certification	Section	Question	Response
	<p>Submission of Estimated Expenses Statements</p>	<p>WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.</p>	
		<ol style="list-style-type: none"> 1. The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations. 3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount. 4. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (broadcasters) or to continue to carry the 	

signal of a broadcaster that changes channels (MVPD).

5. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
6. The above-named entity certifies that it will maintain and provide to the Commission detailed records, including receipts, of all costs eligible for reimbursement actually incurred.
7. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.
8. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.

I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.

Tracy Deschenes
Business Manager Broadcast Technology

Certification	Section	Question	Response
	<p>Submission of Actual Cost Documentation Statements</p>	<p>WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).</p>	
		<ol style="list-style-type: none"> 1. The Authorized Person signing below certifies and represents that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct. 3. The above-named entity acknowledges that all certifications and attached documentation are considered material representations. 4. The above-named entity acknowledges the submission of the information herein 	

creates no obligation on the part of the government to pay any amount.

5. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (full power and Class A stations) and/or otherwise modify a television station's facility as a result of the spectrum repack (LPTV/TV Translator stations); or to minimize service disruption resulting from a repacked television station (FM stations); or to continue to carry the signal of a broadcaster that changes channels (MVPD) .
6. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
7. The above-named entity certifies that the cost information /documents submitted reflect costs actually incurred.
8. The above-named entity acknowledges that overpayments or payments in error

must be promptly refunded to the Commission.

9. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite for obtaining the payments herein requested.

I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.

**Tracy
Deschenes**
*Business
Manager
Broadcast
Technology*

10/15/2021

Certification	Section	Question	Response
	Submission of Final Allocation or Accounting Information Statements	<p>WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.</p>	
		<ol style="list-style-type: none"> 1. The Authorized Person signing below certifies and represents that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. The above-named entity acknowledges that all certifications and attached documentation are considered material representations. 2. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount. 3. The above-named entity certifies that all costs identified as "actual costs" herein accurately represent the costs actually paid by the above- 	

named entity, including any discounts, refunds, or rebates.

4. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
5. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.
6. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.

I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.

Tracy Deschenes
*Business Manager
Broadcast Technology*

10/15/2021

Attachments

