



(REFERENCE COPY - Not for submission)

# FCC Form 399: Reimbursement Request

Facility **73982** | Service: **DTV** | Call **WSBK-TV** | Channel: **21 (UHF)** |  
ID: | Sign:  
File **0000027826**  
Number:  
FRN: **0021079769** | Date **02/06**  
Submitted: **/2018**

## Applicant Information

### Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
<b>CBS TELEVISION LICENSES LLC</b> Doing Business As: CBS TELEVISION LICENSES LLC	Daniel G. Ryson 1725 DeSales St. NW Suite 501 Washington, DC 20036 United States	+1 (202) 457-4505	dryson@cbs.com	Limited Liability Company

## 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
<b>Daniel G. Ryson</b> <i>Associate Director of Spectrum Management</i> CBS	Daniel G. Ryson 1725 DeSales St. NW Suite 501 Washington, DC 20036 United States	+1 (202) 457-4074	dryson@cbs.com

**Broadcaster  
Information  
and  
Transition  
Plan**

Question	Response
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	American Tower will build an interim site in Needham, MA with broadband ant and tx bldg to be used by WSBK-TV and all stations listed above. Main site will be built in Needham Heights, MA

**Transmitters**

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

**Primary  
Transmitter**

**Existing Transmitter Information**

Section	Question	Response
<b>Existing Transmitter Description</b>	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
<b>Existing Transmitter Manufacturer and Type</b>	Manufacturer	
	Model	Diamond
	Year	2002
	Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power Capacity	7 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?	No
	Manufacturer	
	Model	UAXTE-12R44
	Transmitter Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power capacity	7.2 kW
	Justification for New Transmitter	Existing transmitter cannot be re-tuned to the new channel.

**Primary  
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	Yes

	Description	Surge suppressor and 75 kVa transformer. Required by primary transmitter. See Exhibit 1 Item D.
<b>HVAC Service</b>	Does the replacement transmitter require HVAC Service?	No
	Type	N/A
	Size	N/A
	Other Size	N/A
<b>Transmitter Building Addition/Modification or Leasehold Improvement</b>	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
<b>Channel 14 Costs</b>	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**  
Information not provided.

**Interim  
Transmitter**

**New Transmitter Costs**

Section	Question	Response
New Transmitter	Use	Interim
	Description of Use	N/A
	Change Type	Purchase
	Manufacturer	
	Model	UAXTE-16R44
	Transmitter Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power capacity	7.68 kW
	Justification for New Transmitter	Interim transmitter needed while construction at the main site is in progress. Our plan once specified a GatesAir UAXTE-12R44 but that transmitter is said to be unsuitable for interim operation on both channels 39 and 21.

**Interim  
Transmitter**

**Other Transmitter Costs**

Section	Question	Response
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<b>Electrical Service</b>	Service Entrance (3 phases 800A 208V)	Yes
	Switchgear (industrial 800 amp)	Yes
	Transformer (480V)	Yes
	Power	500 kVA
	Rigid Conduit and Wiring	Yes
	Size	2 inches
	Length	200.0 feet
	Other Electrical Service	Yes
	Description	Transformer and surge suppressor required for transmitter operation. See Exhibit 7, Item D.
<b>HVAC Service</b>	Does the replacement transmitter require HVAC Service?	Yes
	Type	Cooling Only
	Size	20 tons
	Other Size	N/A
<b>Transmitter Building Addition/Modification or Leasehold Improvement</b>	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
<b>Channel 14 Costs</b>	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
<b>Inside RF System</b>	Is an additional interior RF system required to support this interim transmitter?	No

Interim  
Transmitter

Other Transmitter Cost Not Listed

Name	Description
New Sub Panels	4 new sub panels at approximately 200 amps each, to power each additional transmitter, house power, HVAC, and ancillary equipment. See Exhibit 3.
4 Inch Conduit	100' L/F of 4" conduit and larger conductor to power new transmitters, HVAC, Air handlers and house power. The existing power supply is for the additional power demands of the new repack equipment. See Exhibit 3.



**Antennas**

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

**Primary  
Antenna**

**Existing Antenna Information**

Section	Question	Response
<b>Existing Antenna Description</b>	Type of change	Lease New
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Owner	American Tower
	Site	N/A
	Is the existing antenna shared with another station or stations?	Yes
	Is the existing antenna directional?	No
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
<b>Existing Antenna Manufacturer and Type</b>	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Top
	Polarization	Horizontal
	Type	Broadband Panel
	Number of Stations Supported	4
	Number of Panels	99
	Design power capacity in use	87.0 %
	Lower Limit	470.00 MHz
	Upper Limit	698.00 MHz
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	135.0 kW

	Manufacturer	
	Model	TAD-24UDA-5/60-MR
	Year	1999

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

Facility ID	Call Sign
72098	WGBX-TV
25456	WBZ-TV
65684	WCVB-TV

**Primary  
Antenna**

**New Antenna Costs**

Section	Question	Response
<b>New Antenna Description</b>	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 Corporation
	Is antenna shared?	Yes
	Is antenna directional?	No
	Will antenna be located on or in close proximity to an antenna farm?	No
<b>New Antenna Manufacturer and Types</b>	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Broadband Panel
	Number of Stations Supported	4
	Number of Panels/Bays	56
	Lower Limit	470.00 MHz
	Upper Limit	608.00 MHz
	Design power capacity in use	99.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power) .....	92.2 kW
	Manufacturer	

Model	TUM-AP-O4-14/56H-2-T
Year	2020
Justification for New Antenna	Top Mount 14 bay Broadband antenna required to accommodate the new repack frequencies. This antenna will be a four-sided assembly mast. In use power capacity is unknown. Pre-transition antenna has 120 panels. See Exhibit 2.

## Primary Antenna

### Other Antenna Costs

Section	Question	Response
<b>Combiner for Shared Antenna</b>	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
<b>Elbow Complex</b>	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Broadband

	Feed Line Size	8 3/16 inches inches
<b>Side Mount Brackets</b>	Do you require the separate purchase of side mount brackets for a high power antenna?	No
<b>Pattern Scatter Analysis</b>	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
<b>Sweep Test</b>	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
<b>Combiner Installation</b>	Installation cost of the new dual chain combiner with 8 modules; replacing existing combiner. See Exhibit 2.

**Interim  
Antenna**

**New Antenna Costs**

Section	Question	Response
<b>New Antenna Description</b>	Use	Interim
	Description of Use	N/A
	Change Type	Lease New
	Ownership	Leased
	Owner	American Tower Corporation
	Is antenna shared?	Yes
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	No
<b>New Antenna Manufacturer and Type</b>	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Bottom
	Polarization	Elliptical
	Type	Broadband Panel
	Number of Stations Supported	5
	Number of Panels/Bays	56
	Lower Limit	470.00 MHz
	Upper Limit	650.00 MHz
	Design power capacity in use	99.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	99.2 kW
	Manufacturer	
	Model	TUM-AP-O4- 14/56H-2-T 14

Year	2018
Justification for New Antenna	Top Mount 14 bay Broadband antenna required to accommodate the new repack frequencies. This antenna will be a four-sided assembly mast. In use power capacity is unknown. See Exhibit 3.

## Interim Antenna

### Other Antenna Costs

Section	Question	Response
<b>Combiner for Shared Antenna</b>	Do you need a Combiner for a Shared Antenna?	Yes
	Type	New
	Number of channels supported	5
	Frequencies of channels supported	Upper and lower frequency
	Frequency	470.0 MHz - 650.0 MHz
	Do you need a combiner output splitter /switcher for dual feed lines?	No
<b>Elbow Complex</b>	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	B
	Feed Line Size	7 3/16 inches



<b>Side Mount Brackets</b>	Do you require the separate purchase of side mount brackets for an antenna?	No
<b>Pattern Scatter Analysis</b>	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
<b>Sweep Test</b>	Do you require the sweep testing of transmission line and antenna?	Yes

## Interim Antenna

### Other Antenna Cost Not Listed

Name	Description
<b>Tower Rent</b>	One-time tower rental during repack. See Exhibit 3.
<b>Combiner Installation</b>	Installation of combiner; Single chain of 5 high power constant impedance waveguide modules, and/or dual chains of 5 directional filter modules per Dielectric layout. required for broadband antenna system. See Exhibit 3.

**Transmission Line**

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

**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 Corporation
	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	1
	Length	1440 feet per run

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

Facility ID	Call Sign
72098	WGBX-TV
25456	WBZ-TV
65684	WCVB-TV

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

Name	Description
Refurbish Main Transmission Line	This cost is to refurbish existing 8-3/16" transmission line to be utilized by the new top mount antenna. See Exhibit 2.

**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	7 3/16 inches
	Segment Length	Broadband
	Other Segment Length	
	Number of parallel runs	2
	Length	1250 feet per run
	Justification for New Transmission Line	Material cost for two (2) 7-3/16" Broadband rigid transmission lines, three

	(6) elbows (3 each line) and a nitrogen generator for pressurization control on the dual lines.
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Interim Transmission Line	<b>Other Transmission Line Expenses Not Listed</b> Information not provided.
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**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
	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?	Unknown
	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
9639	WODS	FM
73238	WLVI	DTV
6463	WFXT	DTV
26897	WBMX	FM
23439	WBOS	FM
1901	WBZ-FM	FM

**Auxiliary  
Tower**

**Tower Modification Costs**

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

**Auxiliary  
Tower**

**Tower Rigging Costs**

Section	Question	Response
<b>Tower Rigging Costs</b>	Complex Tower	Candelabra

<b>Helicopter Services Required</b>	Are helicopter services required?	No
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**Auxiliary  
Tower**

**Other Tower Expenses Not Listed**

Name	Description
<b>Tower Permit Packages</b>	Tower and ground equipment drawing package. Required for local approvals. See Exhibit 3.
<b>Construction Management</b>	Nine hours on Modification project management and fifteen hours for RF installation project management for a total of twenty days. See Exhibit 3.

## 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?	
	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	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
68241	WBUR-FM	FM
72098	WGBX-TV	DTV
72099	WGBH-TV	DTV
18783	WYDN	DTV
25456	WBZ-TV	DTV
10542	WKLB-FM	FM

**Primary  
Tower**

**Tower Modification Costs**

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

**Primary  
Tower**

**Tower Rigging Costs**

Section	Question	Response
<b>Tower Rigging Costs</b>	Complex Tower	Other
<b>Helicopter Services Required</b>	Are helicopter services required?	No

Primary  
Tower

Other Tower Expenses Not Listed

Name	Description
Construction Management	(44) hours on Modification project management and RF installation project management. See Exhibit 2.
Tower Permit Packages	Construction drawing packages for tower, building, and ground. See Exhibit 2.

**Outside  
Professional**

Section	Question	Response
<b>Services Costs Outside Project Management Services</b>	Do you require outside project management services?	Yes
	Number of Hours	250
	Explanation	Company lacks internal resources.
<b>Outside RF consulting Engineering Services</b>	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	1
	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A
<b>Attorney and Other Outside Consulting Services</b>	Prepare and file Form FCC Construction Permit Application	No
	For Auxiliary Facility	N/A
	For Main Facility	N/A
	Prepare and file Form FCC License to Cover Application	No
	For Auxiliary Facility	N/A

	For Main Facility	N/A
	Prepare request for Special Temporary Authority	No
	Quantity	N/A
	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	No
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
<b>RF Field Engineering Services</b>	Comprehensive coverage verification via field study	No
	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
<b>RF System Test</b>	Testing of the combiner to ensure all frequencies are tuned for optimal patterns. See Exhibits 2 and 3.
<b>Site Coordination Meeting</b>	Site coordination meetings with all broadcasters, contractors and vendors involved with the site deliveries and construction. This cost is for travel and logistics expenses accrued. (See Exhibit 2.)

## Other Expenses

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

**Other  
Expenses**

**Other Expenses Not Listed**

Name	Description
<b>Asbestos and Lead Paint Testing</b>	Asbestos testing, removal and abatement for walls which could contain lead paint and /or the flooring may contain asbestos, because of the age of the facility and the era when the original construction took place. (See Exhibit 3.)
<b>Building Partition</b>	This cost is to provide permitting for building partition and electrical service installation in the shared space. This install is to provide security for broadcasters and sufficient power for transmitters. See Exhibit 3.
<b>Ice Shield for HVAC</b>	Ice protection for HVAC compressor units near tower in areas prone to ice and snow. See Exhibit 3.
<b>Public Hearing</b>	Public hearing to alter height of primary tower by changing top antenna. See Exhibit 2.
<b>Site Coordination Meeting</b>	Site coordination meetings with all broadcasters, contractors and vendors involved with the site deliveries and construction. This cost is for travel and logistics expenses accrued. See Exhibits 2 and 3.
<b>Site Security</b>	Site security for installation and storage of Transmission line and materials for 30 days X 12 hours. These materials are a high risk of theft due to the material makeup such as copper, brass and aluminum. (See Exhibit 3.)
<b>Deinstall Old Transmitter</b>	Complete removal and deinstallation of existing WSBK transmitter. See Exhibit 1 Item F.

## 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 UAXTE-16R44	\$407,677.34	\$321,637.34		\$91,252.45	
4 Inch Conduit	<i>\$1,920.00</i>	\$1,920.00	100' L/F of 4" conduit and larger conductor for 500 KVA power needed for the new transmitters, HVAC, Air handlers and house power. The existing power supply is for the additional power demands of the new repack equipment. See Exhibit 3.	N/A	N/A
Other -- HVAC Service Type: C Size:20 (Other)	<i>\$22,000.00</i>	\$22,000.00	Two 20 ton HVAC units required to maintain operational temperatures for repack transmitters. This is to supplement existing HVAC units already in place. See Exhibit 3.	N/A	N/A
Other Electrical Service: Transformer and surge	<i>\$4,226.37</i>	\$4,226.37	Transformer and surge suppressor. Required for proper operation	N/A	N/A

suppressor required for transmitter operation. See Exhibit 7, Item D.			of transmitter. See Exhibit 7 Item D.		
2" Rigid Conduit and Wiring (Cost per foot)	\$5,200.00	\$1,000.00	200 L/F of 2" conduit and conductor to adequately supply the HVAC, Air handlers and House power. The existing power supply is inadequate for the additional power demands of the new repack equipment. See Exhibit 3.	N/A	N/A
Transformer 3 phase /480v - 500 KVA	\$48,400.00	\$9,200.00	Install additional power, 500 KVA transformer, for new tenant space so customer can operate transmitter, heat exchangers and other equipment on the new repack frequency into the broadband antenna. See Exhibit 3.	N/A	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$7,260.00	Switchgear accommodates repack equipment and support the new 500 KVA transformer. The existing service does not have	N/A	N/A



			sufficient capacity to support multiple transmitters. See Exhibit 3.		
Service entrance 3 phase/800 amp/208 volt	\$14,400.00	\$2,700.00	New Switchgear required for the additional repack equipment. The switch will support the new 500 KVA transformer. The existing service does not have sufficient capacity to support multiple transmitters. See Exhibit 3.	N/A	N/A
UHF - Air Cooled Solid State Transmitter 7.68 kW	<b>\$263,330.97</b>	\$263,330.97	Originally proposed UAXTE-12R44 is said to be incapable of operating on both pre-transition and post-transition channels. See Exhibit 12 for justification. See also Exhibit 7 Items A, B, C, and E.	\$91,252.45	N/A
New Sub Panels	<b>\$10,000.00</b>	\$10,000.00	Four new 200 amp sub panels to power additional transmitter, house power, HVAC, and ancillary equipment. See Exhibit 3.	N/A	N/A
<b>Primary Transmitter UAXTE-</b>	<b>\$261,930.23</b>	<b>\$261,930.23</b>		<b>\$94,743.41</b>	

**12R44**

UHF - Air Cooled Solid State Transmitter 7.2 kW	<b>\$256,377.47</b>	\$256,377.47	Primary transmitter required for repack. See Exhibit 1, items A, B, C, and E.	\$94,743.41	N/A
Other Electrical Service: Surge suppressor and 75 kVa transformer. Required by primary transmitter. See Exhibit 1 Item D.	<b>\$5,552.76</b>	\$5,552.76	75 KVA transformer and parallel surge suppressor. Required for proper operation of the transmitter.	N/A	N/A
<b>Sub-total</b>	\$669,607.57	\$583,567.57	N/A	\$185,995.86	N/A
<b>Total for all systems</b>	\$4,342,130.57	\$1,474,651.57	N/A	\$188,770.86	N/A

**Components**

<b>Actual Information</b>	
<b>Description</b>	<b>File Name</b>
4 Inch Conduit	Information not provided.
Other -- HVAC Service Type: C Size:20 (Other)	Information not provided.
Other Electrical Service: Transformer and surge suppressor required for transmitter operation. See Exhibit 7, Item D.	Information not provided.
2" Rigid Conduit and Wiring (Cost per foot)	Information not provided.
Transformer 3 phase/480v - 500 KVA	Information not provided.
Switchgear - industrial 800 amp	Information not provided.

Service entrance 3 phase /800 amp/208 volt	Information not provided.	
UHF - Air Cooled Solid State Transmitter 7.68 kW	<b>Component Description:</b>	WSBK Interim Transmitter Down Payment.
	<b>Amount:</b>	\$91,252.45
New Sub Panels	Information not provided.	
UHF - Air Cooled Solid State Transmitter 7.2 kW	<b>Component Description:</b>	WSBK Primary Transmitter Down Payment. See Exhibit 8.
	<b>Amount:</b>	\$94,743.41
Other Electrical Service: Surge suppressor and 75 kVa transformer. Required by primary transmitter. See Exhibit 1 Item D.	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-O4-14/56H-2-T 14	\$255,603.00	\$225,023.00		\$0.00	
Combiner Installation	<i>\$7,000.00</i>	\$7,000.00	Installation of combiner; Single chain of 5 high power constant impedance waveguide modules, and /or dual chains of 5 directional filter modules per Dielectric layout. See Exhibit 3.	N/A	N/A
Tower Rent	<i>\$57,600.00</i>	\$57,600.00	One-time interim tower rental for repack period.	N/A	N/A
Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	\$16,850.00	\$7,200.00	Two (2) Elbow complex for the input of the new Broadband antenna. See Exhibit 3.	N/A	N/A
New combiner, cost per	\$84,200.00	\$67,000.00	Single chain of 5 high power constant impedance	N/A	N/A

channel (without antenna)			waveguide modules, and /or dual chains of 5 directional filter modules per Dielectric layout. See Exhibit 3.		
Sweep test of existing antenna	\$6,730.00	\$3,000.00	RF system testing for two (2) lines and one (1) antenna. See Exhibit 3.	N/A	N/A
UHF - High Power Top Mount Five Station broadband panel antenna elliptically or circularly polarized	<b>\$83,223.00</b>	\$83,223.00	New Antenna and assembly mast. Stack will be placed directly onto existing center tower section and require a short pedestal of height. See Exhibit 3.	N/A	N/A
<b>Primary Antenna TUM-AP- O4-14/56H- 2-T</b>	<b>\$1,208,630.00</b>	<b>\$246,363.00</b>		<b>\$0.00</b>	
UHF - High Power Top Mount (200-1000 kW), Four Station broadband panel antenna, elliptically or circularly polarized	\$1,090,000.00	\$148,613.00	TUM-AP-O4- 14/56H-2-T Top Mount 14 bay Broadband antenna, with 56 elements total, required to accommodate the new repack frequencies. This antenna will be a four-	N/A	N/A

sided  
assembly  
mast. See  
Exhibit 2.

Sweep test of existing antenna	\$6,730.00	\$5,000.00	RF System Testing. See Exhibit 2.	N/A	N/A
New combiner, cost per channel (without antenna)	\$84,200.00	\$75,000.00	Dual chain of 4 constant impedance waveguide modules, and /or dual chains of 4 directional filter modules per Dielectric layout. Combiner is intended to go in location of existing Dielectric antenna feed combiner and splitter system. See Exhibit 2.	N/A	N/A
Elbow complex, broadband, at antenna input, per 8 3/16. feedline (if needed)	\$18,950.00	\$9,000.00	Elbow complex for top mount antenna being used for repacked stations aux antenna (2) Elbows @ \$18,000/ea. See Exhibit 2.	N/A	N/A
Combiner Installation	<b>\$8,750.00</b>	\$8,750.00	Installation cost of the new dual chain combiner with 8 modules; replacing existing	N/A	N/A

			combiner. See Exhibit 2.		
<b>Sub-total</b>	\$1,464,233.00	\$471,386.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$4,342,130.57	\$1,474,651.57	N/A	\$188,770.86	N/A

**Components**

Information not provided.

## 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
<b>Interim Transmission Line</b>	<b>\$832,500.00</b>	<b>\$64,375.00</b>		<b>\$0.00</b>	
Rigid Transmission Line - copper, 7 3 /16" broadband	\$832,500.00	\$64,375.00	Material cost for two (2) 7-3 /16" Broadband rigid transmission lines, three (6) elbows (3 each line) and a nitrogen generator for pressurization control on the dual lines. Two (2) lines at 1250' each or 2500' total. See Exhibit 3.	N/A	N/A
<b>Primary Transmission Line</b>	<b>\$30,000.00</b>	<b>\$30,000.00</b>		<b>\$0.00</b>	
Refurbish Main Transmission Line	<i>\$30,000.00</i>	\$30,000.00	This cost is to refurbish existing 8-3 /16" transmission line to be utilized by the new top mount antenna. See Exhibit 2.	N/A	N/A
<b>Sub-total</b>	<b>\$862,500.00</b>	<b>\$94,375.00</b>	N/A	<b>\$0.00</b>	N/A



<b>Total for all systems</b>	\$4,342,130.57	\$1,474,651.57	N/A	\$188,770.86	N/A
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## Components

Information not provided.

## 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
<b>Auxiliary Tower GTOWER</b>	<b>\$604,000.00</b>	<b>\$82,835.00</b>		<b>\$0.00</b>	
Tower Permit Packages	<i>\$9,400.00</i>	\$9,400.00	Prepare tower, building, and ground drawings for local permits and approvals. Required to support required modifications needed for repack. See Exhibit 3.	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$10,000.00	It is expected that the additional loads imposed on the tower by the new appurtenances required for the repack project will cause the tower to fail. The structural failure is expected to be in the minor category. See Exhibit 3.	N/A	N/A
Construction Management	<i>\$3,000.00</i>	\$3,000.00	9 hours on Modification project management and 15 hours	N/A	N/A

			for RF installation project management for a total of 20 days. See Exhibit 3.		
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$56,000.00	This candelabra is classified as complex structure. The cost includes the installation of the new antenna, two transmission lines and all the required tower brackets. See Exhibit 3.	N/A	N/A
Structural engineering tower load study for well documented tower	\$12,600.00	\$4,435.00	Structural tower mapping to ensure the proper structural information is relayed to engineering for proposed repack equipment. Rigorous Structural analysis to access the structural capacity and modifications needed. See Exhibit 3.	N/A	N/A
<b>Primary Tower GTOWER</b>	<b>\$606,500.00</b>	<b>\$111,488.00</b>		<b>\$0.00</b>	
Tower Permit Packages	\$9,400.00	\$9,400.00	Generation of tower, building, and	N/A	N/A

			ground drawing packages required for local permits. See Exhibit 2.		
Construction Management	<b>\$5,500.00</b>	\$5,500.00	(44) hours on Modification project management and RF installation project management. See Exhibit 2.	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$25,000.00	Additional loads imposed on the tower by the new appurtenances required for the repack project will cause the tower to fail. The structural failure is expected to be in the minor category. See Exhibit 2.	N/A	N/A
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$60,500.00	Tower has stacked antennas and is thus a complex structure. (Disregard other parts of form would accept that answer.) Cost includes antenna installation, transmission lines and transmission	N/A	N/A

line brackets.  
See Exhibit 2.

Structural engineering tower load study for well documented tower	\$12,600.00	\$11,088.00	Structural mapping, analysis, and engineering needed to accommodate the repacked equipment. See Exhibit 2.	N/A	N/A
<b>Sub-total</b>	\$1,210,500.00	\$194,323.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$4,342,130.57	\$1,474,651.57	N/A	\$188,770.86	N/A

## Components

Information not provided.

## 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
<b>Outside Professional Services</b>	<b>\$70,245.00</b>	<b>\$72,260.00</b>		<b>\$2,775.00</b>	
Site Coordination Meeting	<i>\$1,760.00</i>	\$1,760.00	Site coordination meetings with all broadcasters, contractors and vendors involved with the site deliveries and construction. This cost is for travel and logistics expenses accrued. (See Exhibit 2.)	N/A	N/A
Attorney Fees - Negotiation of lease and other matters for shared locations	\$4,210.00	\$4,000.00	N/A	N/A	N/A
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$10,500.00	Perform engineering study for new channel assignment and antenna development. (See Exhibits 2 and 3.)	\$775.00	N/A

Project management of the transition	\$39,500.00	\$37,500.00	Company lacks sufficient resources.	N/A	N/A
Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$4,500.00	Coordination and transition planning with all parties onsite. (See Exhibits 2 and 3)	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
Prepare request for Special Temporary Authorization	\$2,050.00	\$1,500.00	N/A	N/A	N/A
RF System Test	<b>\$8,000.00</b>	\$8,000.00	Testing of the combiner to ensure all frequencies are tuned for optimal patterns. (See Exhibits 2 and 3.)	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	\$2,000.00	N/A
<b>Sub-total</b>	\$70,245.00	\$72,260.00	N/A	\$2,775.00	N/A
<b>Total for all</b>	\$4,342,130.57	\$1,474,651.57	N/A	\$188,770.86	N/A

**Components**

<b>Actual Information</b>	
<b>Description</b>	<b>File Name</b>
Site Coordination Meeting	Information not provided.
Attorney Fees - Negotiation of lease and other matters for shared locations	Information not provided.
Perform engineering study for new channel assignment and antenna development	<b>Component Description:</b> Preliminary Interference study of initial channel assignment.  <b>Amount:</b> \$775.00
Project management of the transition	Information not provided.
Address transition timing and coordination issues w/ other stations and wireless	Information not provided.
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.
Prepare request for Special Temporary Authorization	Information not provided.
RF System Test	Information not provided.
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	<b>Component Description:</b> Find "work around" to Canadian coordination. See Exhibit 13 for a revised invoice showing dates worked.  <b>Amount:</b> \$550.00



**Component Description:**

Final interference  
study and CP  
Application -  
Engineering  
Section.

**Amount:**

\$1,450.00

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**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
<b>Other Expenses</b>	<b>\$65,045.00</b>	<b>\$58,740.00</b>		<b>\$0.00</b>	
Deinstall Old Transmitter	<i>\$16,100.00</i>	\$16,100.00	Deinstall and remove old WSBK transmitter. See Exhibit 1 Item F.	N/A	N/A
Site Security	<i>\$3,600.00</i>	\$3,600.00	Site security for installation and storage of Transmission line and materials for 30 days X 12 hours. These materials are a high risk of theft due to the material makeup such as copper, brass and aluminum. (See Exhibit 3.)	N/A	N/A
Site Coordination Meeting	<i>\$1,760.00</i>	\$1,760.00	Site coordination meetings with tower owner, all broadcasters, contractors and vendors involved with the site deliveries and construction.	N/A	N/A

			This cost is for travel and logistics expenses accrued. See Exhibit 2.		
Public Hearing	<b>\$440.00</b>	\$440.00	Public hearing cost (See Exhibit 3.)	N/A	N/A
Ice Shield for HVAC	<b>\$4,000.00</b>	\$4,000.00	Ice protection for HVAC compressor split units placed in close proximity of tower in areas prone to ice and snow. See Exhibit 3.	N/A	N/A
Building Partition	<b>\$1,800.00</b>	\$1,800.00	This cost is to provide permitting for building partition and electrical service installation in the shared space. This install is to provide security for broadcasters and sufficient power for transmitters. See Exhibit 3.	N/A	N/A
DTV Medical Facility Notification	\$11,550.00	\$5,250.00	See Exhibit 5	N/A	N/A
FCC Filing Fees - Special	\$195.00	\$190.00	N/A	N/A	N/A

Temporary  
Authorization  
request

Non-zoning permits	<b>\$1,500.00</b>	\$1,500.00	The cost of preparation and submission of the needed forms for permits required for electrical, building permits. (See Exhibits 2 and 3.)	N/A	N/A
Equipment Delivery and Handling Charges	<b>\$21,300.00</b>	\$21,300.00	This cost is for the material /equipment, delivery and offloading by transmitter manufacturer, and third party contractors. (See Exhibits 1, 2, 3, and 7.)	N/A	N/A
MVPD Notification of Channel Change	<b>\$1,000.00</b>	\$1,000.00	N/A	N/A	N/A
Asbestos and Lead Paint Testing	<b>\$1,800.00</b>	\$1,800.00	Asbestos testing, removal and abatement for walls which could contain lead paint and /or the flooring may contain asbestos, because of the age of the	N/A	N/A

			facility and the era when the original construction took place. (See Exhibit 3.)		
<b>Sub-total</b>	\$65,045.00	\$58,740.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$4,342,130.57	\$1,474,651.57	N/A	\$188,770.86	N/A

**Components**

Information not provided.

Cost Information	Grand Total		
	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$4,342,130.57	\$1,474,651.57	\$188,770.86

Reimbursement Status	Question	Response
	The facility has ceased operating on its pre-auction channel.	No
	Construction of final facilities or all necessary modifications are complete.	No
	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.	No

Certification	Section	Question	Response
	Submission of Estimated Expenses 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"> <li>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.</li> <li>2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.</li> <li>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.</li> <li>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</li> </ol>	

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.

**Andrew J Siegel**  
*Assistant Secretary*

02/06/2018



## Attachments