



(REFERENCE COPY - Not for submission)

# FCC Form 399: Reimbursement Request

Facility **72098** | Service: **DTV** | Call **WGBX-TV** | Channel: **43 (UHF)** |  
ID:  
File **0000028580**  
Number:  
FRN: **0003764560** | Date **09/05**  
Submitted: **/2018**

## Applicant Information

### Applicant Name, Type, and Contact Information

| Applicant                          | Address  | Phone             | Email               | Applicant Type |
|------------------------------------|--|-------------------|---------------------|----------------|
| <b>WGBH EDUCATIONAL FOUNDATION</b> | Eric Brass<br>1 Guest Street<br>Boston,<br>MA 02135<br>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                   |
|---|--|-------------------|-------------------------|
| <b>Emeric Feldmar</b><br><i>Director of Engineering</i><br><i>WGBH Educational Foundation</i> | Emeric Feldmar<br>1 Guest Street<br>Boston, MA<br>02135<br>United States | +1 (617) 300-2371 | emeric_feldmar@wgbh.org |

**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   | 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<br>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 |
| <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 |

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

**Primary  
Transmitter**

**Add Transmitter Information**

| Section   | Question   | Response                       |
|---|--|--------------------------------|
| <b>Existing Transmitter<br/>Description</b>           | Type of change   | Purchase<br>New                |
|   | Use  | Primary<br>(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<br/>Manufacturer and Type</b> | Manufacturer   |                                |
|   | Model  | Millennium<br>CTT-U-<br>DCX-1H |
|   | Year   | 2001                           |
|   | Type   | Inductive<br>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<br>EVO 88.8 kW                     |
|                 | Transmitter Type                          | Solid State                                |
|                 | Solid State Cooling                       | Liquid Cooled                              |
|                 | Solid State Power capacity                | 90 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. |
| <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**

| 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<br>73.5 kW   |
|                 | Transmitter Type                  | Solid State   |
|                 | Solid State Cooling               | Liquid Cooled   |
|                 | Solid State Power capacity        | 75 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               |
| <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? | Yes               |
|  | Size  | 250.0 square feet |
| <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?             | Yes               |

**Interim Transmitter**      **Other Transmitter Cost Not Listed**

| Name                                  | Description   |
|---------------------------------------|---|
| <b>Engineering and Design</b>         | 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 |
| <b>Microwave Link to Interim Site</b> | Link from studio to interim transmitter site  |
| <b>RF Monitoring</b>                  | RF monitoring system  |

**Antennas**

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

**Primary  
Antenna**

**Add Antenna Information**

| Section   | Question  | Response           |
|---|---|--------------------|
| <b>Existing Antenna<br/>Description</b>           | Type of change  | Lease New          |
|   | Antenna Use   | Primary<br>(Main)  |
|   | Description of Use  | N/A                |
|   | Ownership   | Leased             |
|   | Owner   | American<br>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                 |
| <b>Existing Antenna<br/>Manufacturer and Type</b> | Class   | Full Power         |
|   | Mounting  | Top Mount          |
|   | Antenna position in stack                                       | Bottom             |
|   | Polarization  | Horizontal         |
|   | Type  | Broadband<br>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)<br>.....                        | 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 |
|-------------|-----------|
| 72099       | WGBH-TV   |
| 73982       | WSBK-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  |
|   | 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   | Circular        |
|   | Type   | Broadband Panel |
|   | Number of Stations Supported   | 4               |
|   | Number of Panels/Bays  | 14              |
|   | Lower Limit  | 470.00 MHz      |
|   | Upper Limit  | 698.00 MHz      |
|   | Design power capacity in use   | 85.0 %          |
|   | Other Antenna Type   | N/A             |
|   | ERP: (Effective Radiated Power)<br>.....                             | 500.0 kW        |
|   | Manufacturer   |                 |
|   |  |                 |

|                               |  |
|-------------------------------|--|
| Model                         | TUM-AP-04-14/56-2-T                                    |
| Year                          | 2018   |
| Justification for New Antenna | Existing antenna not usable at new channel assignments |

## 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  | 7 3/16 inches<br>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  |
|-----------------------|--|
| Combiner Installation | Installation and commission of combiner system. See ATC quotation. |

**Interim  
Antenna**

**New Antenna Costs**

| Section                                      | Question   | Response                |
|--|--|-------------------------|
| <b>New Antenna Description</b>               | Use  | Interim                 |
|  | Description of Use   | N/A                     |
|  | Change Type  | Purchase<br>New         |
|  | Ownership  | Leased                  |
|  | Owner  | American<br>Tower       |
|  | 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<br/>Manufacturer and Type</b> | Class  | Full Power              |
|  | Mounting   | Top Mount               |
|  | Antenna position in stack  | Bottom                  |
|  | Polarization   | Elliptical              |
|  | Type   | Broadband<br>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)<br>.....                             | 200.0 kW                |
|  | Manufacturer   |                         |
|  | Model  | TUM-AP-04-<br>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      |
|------------------------------------|---|---------------|
| <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?  | 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 |
|-------------------|--|-----|

Enter a list of RF channel numbers.

| RF Channel Number |
|-------------------|
| 33                |
| 20                |
| 21                |
| 32                |

Interim  
Antenna

Other Antenna Cost Not Listed

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

**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    |
|  | 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. |

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 | Interim site requires transmission line to |

|  |                                    |
|--|------------------------------------|
|  | accommodate<br>interim<br>antenna. |
|--|------------------------------------|

|                              |   |
|------------------------------|---|
| Interim<br>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 |
|-------------|-----------|---------|
| 26897       | WWBX      | FM      |
| 49385       | WXRV      | FM      |
| 1901        | WBZ-FM    | FM      |
| 13806       | WZLX      | FM      |
| 73238       | WLVI      | DTV     |
| 9639        | WODS      | FM      |
| 6463        | WFXT      | DTV     |

**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 tower with candelabra |
| <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         |

**Auxiliary  
Tower**

**Other Tower Expenses Not Listed**

| Name          | Description |
|---------------|-------------|
| Tower Permits | Permits     |



## Primary Tower

### Existing Tower

| Section  | Question  | Response  |
|--|---|---|
| <b>Existing Tower Description</b>                          | 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   |
| <b>Existing Tower Structure Registration</b>               | Do you have a tower registration number?                | Yes   |
|  | ASR Number  | 1003433   |
| <b>Coordinates (NAD83 ( North American Datum of 1983))</b> | 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 -<br>Guyed<br>Structure Used<br>for<br>Communication<br>Purposes |
|  | Tower Owner   | American<br>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 |
|-------------|-----------|---------|
| 68241       | WBUR-FM   | FM      |
| 25456       | WBZ-TV    | DTV     |
| 10542       | WKLB-FM   | FM      |
| 72099       | WGBH-TV   | DTV     |
| 65684       | WCVB-TV   | DTV     |
| 73982       | WSBK-TV   | DTV     |

**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 undocumented /poorly 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                     | N/A      |
| <b>Helicopter Services Required</b> | 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**

| Section   | Question   | Response  |
|---|--|---|
| <b>Services Costs<br/>Outside Project<br/>Management Services</b> | 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 |
| <b>Outside RF consulting<br/>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   | 2   |
|   | Do you have Distributed Transmission System engineering services?            | N/A   |
|   | Critical Facility  | N/A   |

|   |  |     |
|---|--|-----|
|   | Terrain-Shielded Facility  | N/A |
| <b>Attorney and Other<br/>Outside Consulting<br/>Services</b> | 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 |
| <b>RF Field Engineering<br/>Services</b>                      | 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 Other Professional Services Expenses Not Listed**  
**Professional Services Costs** Services not provided.

## 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   | 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      |
| <b>Other Miscellaneous Expenses</b> | 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   |
|--|---|
| <b>RF System Commission</b>                | Testing of the combiner system for optimal transmission patterns per ATC documentation  |
| <b>Site coordination meetings</b>          | Site coordination with broadcasters, contractors and vendors involved with the site deliveries and construction. Per attached ATC documentation |
| <b>Pre planning survey and engineering</b> | Site and transmitter building drawings.   |



## 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     | \$2,637,200.42              | \$2,108,450.74 |   | \$530,480.90 |                           |
| RF Monitoring                            | <i>\$22,000.00</i>          | \$22,000.00    | N/A   | N/A          | N/A                       |
| Microwave Link to Interim Site           | <i>\$119,289.40</i>         | \$119,289.40   | Per attached quote from Vislink.  | \$49,996.80  | N/A                       |
| Engineering and Design                   | <i>\$192,061.02</i>         | \$192,061.02   | Main: \$112,992.35<br>Interim: \$79,068.67<br>Site Survey and Lidar Scanning<br>Outdoor Cooling Equipment Study<br>Design<br>Coordination and Construction /Permit Set<br>Construction Phase Services (Site Inspection Visits /Punchlist) | N/A          | N/A                       |
| UHF inside RF system including switching | \$147,500.00                | \$140,000.00   | N/A   | N/A          | N/A                       |
| Other --                                 | <i>\$26,000.00</i>          | \$26,000.00    | Includes Ice  | \$6,500.00   | N/A                       |

|   |                       |                       |   |                     |     |
|---|-----------------------|-----------------------|---|---------------------|-----|
| HVAC<br>Service<br>Type: C<br>Size:20<br>(Other)                        |                       |                       | Shield for<br>HVAC<br>\$4,000   |                     |     |
| 4" Rigid<br>Conduit and<br>Wiring<br>(Cost per<br>foot)                 | \$15,150.00           | \$2,920.00            | 200' of 2"<br>conduit<br>@\$25/ft 100'<br>of 4" conduit<br>@\$96/ft                       | \$730.00            | N/A |
| Transformer<br>3 phase<br>/480v - 300<br>KVA                            | \$36,800.00           | \$19,200.00           | Includes<br>costs for<br>transformer<br>and new<br>electrical<br>panels per<br>ATC quote. | \$4,800.00          | N/A |
| Switchgear<br>- industrial<br>800 amp                                   | \$38,200.00           | \$7,260.00            | N/A   | \$1,815.00          | N/A |
| Service<br>entrance 3<br>phase/800<br>amp/208<br>volt                   | \$14,400.00           | \$2,740.00            | N/A   | \$685.00            | N/A |
| UHF -<br>Liquid<br>Cooled<br>Solid State<br>Transmitter<br>68.5 - 75 kW | \$1,999,000.00        | \$1,550,180.32        | N/A   | \$465,054.10        | N/A |
| Other --<br>Building<br>Addition<br>Size: 250.0                         | \$26,800.00           | \$26,800.00           | Includes Ice<br>shield and<br>permitting<br>per ATC<br>quote.                             | \$900.00            | N/A |
| <b>Primary<br/>Transmitter<br/>THU9-60<br/>EVO 88.8kW</b>               | <b>\$2,718,800.00</b> | <b>\$2,194,418.59</b> |   | <b>\$633,725.58</b> |     |
| Transformer<br>3 phase<br>/480v - 300<br>KVA                            | \$36,800.00           | \$30,000.00           | N/A   | \$0.00              | N/A |

|   |                     |                    |   |               |     |
|---|---------------------|--------------------|---|---------------|-----|
| UHF -<br>Liquid<br>Cooled<br>Solid State<br>Transmitter<br>86.8 . 106<br>kW   | \$2,630,000.00      | \$2,112,418.59     | N/A   | \$633,725.58  | N/A |
| RF Monitor  | <b>\$22,000.00</b>  | \$22,000.00        | N/A   | N/A           | N/A |
| Other<br>Electrical<br>Service:<br>Conduit and<br>wiring<br>material<br>and labor<br>costs<br>required for<br>new<br>transmitter. | <b>\$30,000.00</b>  | \$30,000.00        | N/A   | N/A           | N/A |
| <b>Auxiliary<br/>Transmitter<br/>Ranger<br/>CZ1000L</b>   | <b>\$137,800.00</b> | <b>\$44,131.25</b> |   | <b>\$0.00</b> |     |
| 30 kW<br>mask filter  | \$32,600.00         | \$30,000.00        | Existing<br>backup<br>transmitter<br>cannot be<br>retuned.<br>Estimate is<br>for retuning<br>interim<br>transmitter<br>for post-<br>transition<br>channel,<br>which is less<br>expensive<br>than<br>replacing<br>existing<br>backup<br>transmitter. | N/A           | N/A |
| UHF and<br>VHF - minor<br>banding<br>issues   | \$105,200.00        | \$14,131.25        | Existing<br>backup<br>transmitter<br>cannot be<br>retuned.  | N/A           | N/A |

Estimate is for retuning interim transmitter for post-transition channel, which is less expensive than replacing existing backup transmitter.

|                              |                 |                |     |                |     |
|------------------------------|-----------------|----------------|-----|----------------|-----|
| <b>Sub-total</b>             | \$5,493,800.42  | \$4,347,000.58 | N/A | \$1,164,206.48 | N/A |
| <b>Total for all systems</b> | \$10,063,110.42 | \$5,531,970.58 | N/A | \$1,285,774.73 | N/A |

## Components

| Actual Information                            |   |
|---|---|
| Description                                   | File Name   |
| RF Monitoring                                 | Information not provided.   |
| Microwave Link to Interim Site                | <p><b>Component Description:</b> WGBX Cabot Street, Duplex NON-Standby STL /TSL STL - 7012.5 MHz and TSL 6912.5MHz. G3 - Antennas, Waveguide and accessories.</p> <p><b>Amount:</b> \$49,996.80</p> |
| Engineering and Design                        | Information not provided.   |
| UHF inside RF system including switching      | Information not provided.   |
| Other -- HVAC Service Type: C Size:20 (Other) |   |

|  |  |
|--|--|
|  | <p><b>Component Description:</b> 20 Ton System<br/>\$5,500.00 Ice<br/>Shield for HVAC<br/>equipment<br/>\$1,000.00</p> <p><b>Amount:</b> \$6,500.00</p>  |
| 4" Rigid Conduit and Wiring<br>(Cost per foot)                 | <p><b>Component Description:</b> 2inch Rigid<br/>Conduit and Wiring<br/>(Cost per foot)<br/>\$250.00 4inch<br/>Rigid Conduit and<br/>Wiring (Cost per<br/>foot) \$480.00</p> <p><b>Amount:</b> \$730.00</p>    |
| Transformer 3 phase/480v -<br>300 KVA                          | <p><b>Component Description:</b> Transformer 3<br/>phase/480v-<br/>500KVA \$2,300.<br/>Other Transmitter<br/>Cost Not Listed:<br/>New electrical sub-<br/>panels \$2,500.</p> <p><b>Amount:</b> \$4,800.00</p> |
| Switchgear - industrial 800<br>amp                             | <p><b>Component Description:</b> Switchgear -<br/>Industrial 800 amp</p> <p><b>Amount:</b> \$1,815.00</p>  |
| Service entrance 3 phase<br>/800 amp/208 volt                  | <p><b>Component Description:</b> Service entrance</p> <p><b>Amount:</b> \$685.00</p>   |
| UHF - Liquid Cooled Solid<br>State Transmitter 68.5 - 75<br>kW |  |

|  |  |
|--|--|
|  | <b>Component Description:</b> 30%<br>Downpayment for<br>WGBX CH43<br>THU9-EVO 73.5<br>kW ATSC/67kW<br>OFDM.<br><b>Amount:</b> \$465,054.10   |
| Other -- Building Addition<br>Size: 250.0  | <b>Component Description:</b> Approx. 600 to<br>1500 square foot<br>addition (costs<br>vary with location,<br>site access, and<br>construction type)<br>\$450.00 Testing<br>for Asbestos and<br>Lead Paint \$450.00<br><b>Amount:</b> \$900.00 |
| Transformer 3 phase/480v -<br>300 KVA  | Information not provided.  |
| UHF - Liquid Cooled Solid<br>State Transmitter 86.8 . 106<br>kW  | <b>Component Description:</b> 30% Downpayment<br><b>Amount:</b> \$633,725.58   |
| RF Monitor   | Information not provided.  |
| Other Electrical Service:<br>Conduit and wiring material<br>and labor costs required for<br>new transmitter. | Information not provided.  |
| 30 kW mask filter  | Information not provided.  |
| UHF and VHF - minor<br>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 |
|--|-----------------------------|---------------------|--|--------------------|---------------------------|
| <b>Interim Antenna TUM-AP-04-14/56-2-B</b>   | <b>\$1,262,380.00</b>       | <b>\$280,962.00</b> |  | <b>\$70,241.00</b> |                           |
| Tower rental   | <i>\$57,600.00</i>          | \$57,600.00         | One-time tower rental during market repack period. | \$14,400.00        | N/A                       |
| UHF - High Power Top Mount (200-1000 kW), Four Station broadband panel antenna, elliptically or circularly polarized | \$1,090,000.00              | \$71,302.00         | N/A  | \$17,826.00        | N/A                       |
| Combiner Installation  | <i>\$7,000.00</i>           | \$7,000.00          | N/A  | \$1,750.00         | N/A                       |
| Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)   | \$16,850.00                 | \$6,660.00          | N/A  | \$1,665.00         | N/A                       |
| New combiner, cost per   | \$84,200.00                 | \$135,400.00        | Actual cost from American                          | \$33,850.00        | N/A                       |

| channel<br>(without<br>antenna)  |                       |                     | Tower<br>based on<br>design and<br>fabrication<br>of the four<br>station<br>combining<br>system. |               |     |
|--|-----------------------|---------------------|--|---------------|-----|
| Sweep test<br>of existing<br>antenna   | \$6,730.00            | \$3,000.00          | N/A  | \$750.00      | N/A |
| <b>Primary<br/>Antenna<br/>TUM-AP-04-<br/>14/56-2-T</b>  | <b>\$1,204,780.00</b> | <b>\$254,763.00</b> |  | <b>\$0.00</b> |     |
| New<br>combiner,<br>cost per<br>channel<br>(without<br>antenna)  | \$84,200.00           | \$83,750.00         | Actual cost<br>inclusive of<br>\$8750<br>installation<br>charge.                                 | N/A           | N/A |
| Combiner<br>Installation   | <b>\$7,000.00</b>     | \$7,000.00          | N/A  | N/A           | N/A |
| UHF - High<br>Power Top<br>Mount<br>(200-1000<br>kW), Four<br>Station<br>broadband<br>panel<br>antenna,<br>elliptically<br>or<br>circularly<br>polarized | \$1,090,000.00        | \$148,613.00        | N/A  | N/A           | N/A |
| Sweep test<br>of existing<br>antenna   | \$6,730.00            | \$6,400.00          | N/A  | N/A           | N/A |
| Elbow<br>complex,<br>broadband,<br>at antenna<br>input, per 7<br>3/16.   | \$16,850.00           | \$9,000.00          | N/A  | N/A           | N/A |



feedline (if  
needed)

|                                      |                 |                |     |                |     |
|--------------------------------------|-----------------|----------------|-----|----------------|-----|
| <b>Sub-total</b>                     | \$2,467,160.00  | \$535,725.00   | N/A | \$70,241.00    | N/A |
| <b>Total for<br/>all<br/>systems</b> | \$10,063,110.42 | \$5,531,970.58 | N/A | \$1,285,774.73 | N/A |

## Components

| Actual Information   |  |
|--|--|
| Description  | File Name  |
| Tower rental   | <b>Component Description:</b> ATC one-time tower rental during market repack period.<br><b>Amount:</b> \$14,400.00                     |
| UHF - High Power Top Mount (200-1000 kW), Four Station broadband panel antenna, elliptically or circularly polarized | <b>Component Description:</b> Four station broadband panel antenna, elliptically or circularly polarized<br><b>Amount:</b> \$17,826.00 |
| Combiner Installation  | <b>Component Description:</b> Combiner installation<br><b>Amount:</b> \$1,750.00   |
| Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)   | <b>Component Description:</b> Elbow complex, single channel, at antenna input<br><b>Amount:</b> \$1,665.00                             |
| New combiner, cost per channel (without antenna)   |  |

|  |  |
|--|--|
|  | <b>Component Description:</b> New combiner,<br>cost per channel<br>(without antenna)<br><br><b>Amount:</b> \$33,850.00 |
| Sweep test of existing antenna   | <b>Component Description:</b> Sweep test of<br>transmission line<br>and antenna.<br><br><b>Amount:</b> \$750.00        |
| New combiner, cost per channel (without antenna)   | Information not provided.  |
| Combiner Installation  | Information not provided.  |
| UHF - High Power Top Mount (200-1000 kW), Four Station broadband panel antenna, elliptically or circularly polarized | Information not provided.  |
| Sweep test of existing antenna   | Information not provided.  |
| Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)   | 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 |
|---|-----------------------------|----------------|---|----------------|---------------------------|
| Interim Transmission Line                           | \$832,500.00                | \$87,900.00    |   | \$21,975.00    |                           |
| Rigid Transmission Line - copper, 7 3/16" broadband | \$832,500.00                | \$87,900.00    | Transmission Line \$84,900 Nitrogen Generator Upgrade \$3,000               | \$21,975.00    | N/A                       |
| Primary Transmission Line                           | \$30,000.00                 | \$30,000.00    |   | \$0.00         |                           |
| Transmission line refurbish                         | <i>\$30,000.00</i>          | \$30,000.00    | Cost to refurbish two (2) existing 8-3/16" transmission lines per ATC quote | N/A            | N/A                       |
| Sub-total   | \$862,500.00                | \$117,900.00   | N/A   | \$21,975.00    | N/A                       |
| Total for all systems                               | \$10,063,110.42             | \$5,531,970.58 | N/A   | \$1,285,774.73 | N/A                       |

Components

| Actual Information                                  |  |
|---|--|
| Description   | File Name  |
| Rigid Transmission Line - copper, 7 3/16" broadband | <div><div>Component Description:</div><div>8 3/16inch<br/>\$21,225.00<br/>Nitrogren<br/>Generator<br/>Upgrade \$750.00</div><div>Amount:</div><div>\$21,975.00</div></div> |

|                             |                           |
|-----------------------------|---------------------------|
| Transmission line refurbish | 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 |
|--|-----------------------------|----------------|--|-------------|---------------------------|
| Primary Tower<br>GTOWER  | \$404,200.00                | \$119,900.00   |  | \$620.00    |                           |
| 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. | \$0.00      | N/A                       |
| 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  | \$620.00    | N/A                       |
| Tall Tower (greater than 500')   | \$210,500.00                | \$60,500.00    | N/A  | N/A         | N/A                       |
| Minor tower reinforcement /modifications   | \$158,000.00                | \$25,000.00    | N/A  | N/A         | N/A                       |
| Auxiliary Tower<br>GTOWER  | \$608,400.00                | \$167,900.00   |  | \$21,925.00 |                           |
| Minor tower reinforcement /modifications   | \$158,000.00                | \$20,500.00    | Major tower reinforcement /modification \$17,500   | \$5,125.00  | N/A                       |

|   |                 |                |  |                |     |
|---|-----------------|----------------|--|----------------|-----|
|   |                 |                | Construction project management (Tower modifications reinforcements and facilities)                                  |                |     |
|   |                 |                | \$3,000  |                |     |
| Tower Permits   | \$9,400.00      | \$9,400.00     | Tower permit drawing plus ground & building A&E permit drawing per attached ATC quote                                | \$2,350.00     | N/A |
| Complex Tower (includes, for example, those with candelabras and/or stacked antennas) | \$421,000.00    | \$119,000.00   | Rigging, testing for asbestos and lead paint, site security, public hearing, and tower rental per attached ATC quote | \$13,975.00    | N/A |
| Structural engineering tower load study for a documented tower with candelabra        | \$20,000.00     | \$19,000.00    | N/A  | \$475.00       | N/A |
| <b>Sub-total</b>  | \$1,012,600.00  | \$287,800.00   | N/A  | \$22,545.00    | N/A |
| <b>Total for all systems</b>  | \$10,063,110.42 | \$5,531,970.58 | N/A  | \$1,285,774.73 | N/A |

## Components

| Actual Information  |                           |
|---|---------------------------|
| Description   | File Name                 |
| Tower Permit Package  | Information not provided. |
| Tower mapping for an undocumented/poorly documented tower and |                           |

|   |  |
|---|--|
| preparation of documentation necessary for tower load study                           | <p><b>Component Description:</b></p> <p>Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study</p> <p><b>Amount:</b></p> <p>\$620.00</p>                       |
| Tall Tower (greater than 500')  | Information not provided.  |
| Minor tower reinforcement /modifications  | Information not provided.  |
| Minor tower reinforcement /modifications  | <p><b>Component Description:</b></p> <p>Major tower reinforcement /modification \$4,375.00 Construction project management (Tower modification reinforcements and facilities) \$750.00</p> <p><b>Amount:</b></p> <p>\$5,125.00</p> |
| Tower Permits   | <p><b>Component Description:</b></p> <p>Tower Permit Drawing Package \$1,175.00 Ground &amp; Building A&amp;E Permit Drawing Package \$1,175.00</p> <p><b>Amount:</b></p> <p>\$2,350.00</p>  |
| Complex Tower (includes, for example, those with candelabras and/or stacked antennas) | <p><b>Component Description:</b></p> <p>Complex Tower</p> <p><b>Amount:</b></p> <p>\$13,975.00</p>   |
| 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:**

\$475.00



## 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 |
|--|-----------------------------|---------------------|--|-------------------|---------------------------|
| <b>Outside Professional Services</b>                           | <b>\$139,860.00</b>         | <b>\$158,545.00</b> |  | <b>\$4,245.00</b> |                           |
| Comprehensive coverage verification via field study, if needed | \$84,200.00                 | \$80,000.00         | Field study \$80,000 - vendor unknown  | N/A               | N/A                       |
| Prepare and or review reimbursement form                       | \$2,630.00                  | \$5,000.00          | Complex request with shared tower and need for interim facilities, also to be shared with multiple broadcasters; responding to FCC inquiries.  | N/A               | N/A                       |
| Project management of the transition                           | \$15,010.00                 | \$35,460.00         | Primary: 44 hrs construction project mgt + 94.8 hrs of project mgt for transition + RF sys test<br>Interim: 24 hrs construction project mgt + 94.8 hrs project mgt for transition + RF sys test<br>Per attached ATC quotes | \$2,370.00        | 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                                    | \$4,100.00 | \$3,000.00 | N/A  | 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 |
| Attorney Fees - Prepare and File request for Special Temporary Authorization           | \$7,360.00 | \$7,000.00 | N/A  | N/A        | N/A |
| Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application | \$5,260.00 | \$5,000.00 | N/A  | N/A        | N/A |
| Address transition timing and coordination issues w/ other stations and wireless       | \$2,630.00 | \$6,260.00 | Address transition timing and site coordination meeting for primary and interim sites per attached ATC quotes. | \$625.00   | N/A |
| Perform engineering study for new channel assignment                                   | \$7,360.00 | \$6,075.00 | \$5,000 ATC<br>\$1,075.00 Orion Broadcast Solutions.   | \$1,250.00 | N/A |

and antenna  
development

|  |                 |                |     |                |     |
|--|-----------------|----------------|-----|----------------|-----|
| Prepare engineering section of FCC Form 2100 (main), Construction Permit Application | \$3,155.00      | \$3,000.00     | N/A | N/A            | N/A |
| Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application  | \$2,365.00      | \$2,250.00     | N/A | N/A            | N/A |
| <b>Sub-total</b>   | \$139,860.00    | \$158,545.00   | N/A | \$4,245.00     | N/A |
| <b>Total for all systems</b>   | \$10,063,110.42 | \$5,531,970.58 | N/A | \$1,285,774.73 | N/A |

## Components

| Actual Information  |  |
|---|--|
| Description   | File Name  |
| Comprehensive coverage verification via field study, if needed                    | Information not provided.  |
| Prepare and or review reimbursement form  | Information not provided.  |
| Project management of the transition  | <p><b>Component Description:</b> Project management of the transition, if needed (Cost per hour per customer)</p> <p><b>Amount:</b> \$2,370.00</p> |
| Prepare engineering section of FCC Form 2100 (main), License to Cover Application | Information not provided.  |
| Prepare request for Special   | Information not provided.  |

|  |   |
|--|---|
| Temporary Authorization  |   |
| Attorney Fees - Negotiation of lease and other matters for shared locations            | Information not provided.   |
| Attorney Fees - Prepare and File request for Special Temporary Authorization           | Information not provided.   |
| Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application | Information not provided.   |
| Address transition timing and coordination issues w/ other stations and wireless       | <div> <div> <b>Component Description:</b> </div> <div> Address transition timing and coordination issues with other stations and wireless (Cost per customer) </div> </div> <div> <b>Amount:</b> </div> <div> \$625.00 </div> |
| Perform engineering study for new channel assignment and antenna development           | <div> <div> <b>Component Description:</b> </div> <div> Perform engineering study for new channel assignment and antenna development (Cost per customer) </div> </div> <div> <b>Amount:</b> </div> <div> \$1,250.00 </div>     |
| Prepare engineering section of FCC Form 2100 (main), Construction Permit Application   | Information not provided.   |
| Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application     | Information not provided.   |

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  | \$87,190.00                 | \$85,000.00    |  | \$2,562.25  |                           |
| RF System Commission                                    | <i>\$8,000.00</i>           | \$8,000.00     | Includes primary and interim sites per ATC quotes. | \$624.25    | N/A                       |
| Pre planning survey and engineering                     | <i>\$5,000.00</i>           | \$5,000.00     | N/A  | N/A         | N/A                       |
| Site coordination meetings                              | <i>\$1,760.00</i>           | \$1,760.00     | N/A  | N/A         | N/A                       |
| MVPD Notification of Channel Change                     | <i>\$8,000.00</i>           | \$8,000.00     | N/A  | N/A         | N/A                       |
| Develop and air announcement of upcoming channel change | <i>\$30,000.00</i>          | \$30,000.00    | N/A  | N/A         | N/A                       |
| Equipment Storage                                       | <i>\$5,000.00</i>           | \$5,000.00     | N/A  | \$900.00    | N/A                       |
| Equipment Delivery and Handling Charges                 | <i>\$8,500.00</i>           | \$8,500.00     | Includes primary and interim sites per ATC quotes. | \$750.00    | N/A                       |
| Disposal Costs (for                                     | <i>\$5,000.00</i>           | \$5,000.00     | N/A  | N/A         | N/A                       |

|   |                        |                       |   |                       |            |
|---|------------------------|-----------------------|---|-----------------------|------------|
| equipment and other waste, net of any salvage value)      |                        |                       |   |                       |            |
| Non-zoning permits  | <b>\$1,500.00</b>      | \$1,500.00            | Includes primary and interim sites per ATC quotes.                                    | N/A                   | N/A        |
| Local Zoning  | <b>\$1,240.00</b>      | \$1,240.00            | Public hearing for primary and interim sites per ATC quotes. ATC Public Hearing \$400 | \$288.00              | N/A        |
| FCC Filing Fees - Form 2100 license to cover application  | \$335.00               | \$0.00                | N/A   | N/A                   | N/A        |
| FCC Filing Fees - Form 2100 minor change CP application   | \$1,110.00             | \$0.00                | N/A   | N/A                   | N/A        |
| DTV Medical Facility Notification                         | \$11,550.00            | \$11,000.00           | N/A   | N/A                   | N/A        |
| FCC Filing Fees - Special Temporary Authorization request | \$195.00               | \$0.00                | N/A   | N/A                   | N/A        |
| <b>Sub-total</b>  | <b>\$87,190.00</b>     | <b>\$85,000.00</b>    | <b>N/A</b>  | <b>\$2,562.25</b>     | <b>N/A</b> |
| <b>Total for all systems</b>                              | <b>\$10,063,110.42</b> | <b>\$5,531,970.58</b> | <b>N/A</b>  | <b>\$1,285,774.73</b> | <b>N/A</b> |

## Components

| Actual Information   |  |
|--|--|
| Description  | File Name  |
| RF System Commission   | <b>Component Description:</b> RF System Test<br><b>Amount:</b> \$624.25  |
| Pre planning survey and engineering                                      | Information not provided.  |
| Site coordination meetings   | Information not provided.  |
| MVPD Notification of Channel Change                                      | Information not provided.  |
| Develop and air announcement of upcoming channel change                  | Information not provided.  |
| Equipment Storage  | <b>Component Description:</b> Site Security Company during construction for theft prevention and vandalism.<br><b>Amount:</b> \$900.00 |
| Equipment Delivery and Handling Charges                                  | <b>Component Description:</b> Equipment Delivery and Handling Charges (Cost per customer)<br><b>Amount:</b> \$750.00                   |
| Disposal Costs (for equipment and other waste, net of any salvage value) | Information not provided.  |
| Non-zoning permits   | Information not provided.  |
| Local Zoning   |  |

|   |   |
|---|---|
|   | <p><b>Component Description:</b></p> <p>Obtain building permits from local zoning authorities. \$188.00 Public Hearing. \$100</p> <p><b>Amount:</b></p> <p>\$288.00</p> |
| FCC Filing Fees - Form 2100 license to cover application  | Information not provided.   |
| FCC Filing Fees - Form 2100 minor change CP application   | Information not provided.   |
| DTV Medical Facility Notification                         | Information not provided.   |
| FCC Filing Fees - Special Temporary Authorization request | Information not provided.   |



**Cost  
Information**

**Grand Total**

|                       | Predetermined<br>Cost Estimate | Estimated Cost | Actual Cost    |
|-----------------------|--------------------------------|----------------|----------------|
| Total for all systems | \$10,063,110.42                | \$5,531,970.58 | \$1,285,774.73 |

**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.

**Emeric  
Feldmar**  
*Director of  
Engineering*

09/05/2018

| Certification | Section  | Question  | Response |
|---------------|--|---|----------|
|               | Submission of Actual Cost Documentation Statements | <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"> <li>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.</li> <li>2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct.</li> <li>3. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.</li> <li>4. The above-named entity acknowledges the submission of the information herein</li> </ol> |          |

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

|  |  |  |
|--|--|--|
|  | <p>must be promptly refunded to the Commission.</p> <p>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.</p> |  |
|  | <p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>  | <p><b>Emeric Feldmar</b><br/> <i>Director of Engineering</i></p> <p>09/05/2018</p> |

## Attachments