

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility ID: File	66781 000002	Service: DTV	Call Sign:	KIRO-TV	Channel: 23 (UHF)
гие	000002	0117			
Number:					
FRN: 00 1	14361620	Date	12/18		
		Submitted:	/2018		

Applicant Name, Type, and Contact Information

Applicant Information

Applicant	Address	Phone	Email	Applicant Type
KIRO-TV, INC. Doing Business As: KIRO-TV, INC.	Chief Engineer 2807 THIRD AVENUE SEATTLE, WA 98121 United States	+1 (206) 728-7777	dshaw@kiro7. com	Corporation

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer	Preparer Contact Name and Information				
Contact Information	Applicant	Address	Phone	Email	
	Donald Shaw Director Of Engineering KIRO TV INC KIRO-TV, Inc.	Don Shaw 2807 Third Avenue Seattle, WA 98121 United States	+1 (206) 728- 8240	dshaw@kirotv. com	

Broadcaster	Question	Response
Information and Transition Plan	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.	No
	Briefly describe transition plan	Phase 1: Raise Aux Antenna & extend current aux transmission line to help match existing coverage using current Main TX on CH-39. Phase 2: Install new main antenna, reuse existing transmission line, install new Main&Aux transmitters, go live on CH 23.

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

Auxiliary	Add Transmitter Information				
Transmitter	Section	Question	Response		
	Existing Transmitter Description	Type of change	Purchase New		
		Use	Auxiliary (Backup)		
		Description of Use	Aux Transmitter & emergency backup		
		Ownership	Owned		
		Owner	N/A		
		Site	N/A		
		Is this transmitter currently shared with another station?	No		
		Is this transmitter currently in operating condition?	Yes		
	Existing Transmitter	Manufacturer			
	Manufacturer and Type	Model	DHD60-P2		
		Year	2004		
		Туре	Solid State		
		Solid State Cooling	Air Cooled		
		Solid State Power Capacity	14 kW		

Auxiliary	New Transmitter Costs					
Transmitter	Section	Question	Response			
	New Transmitter	Use	Auxiliary (Backup)			
		Change Type	Purchase New			
		Is this a request for upgraded equipment?	No			
		Manufacturer				
		Model	ULXTE-24			
		Transmitter Type	Solid State			
		Solid State Cooling	Liquid Cooled			
		Solid State Power capacity	16.1 kW			
		Justification for New Transmitter	Current Gates transmitter cannot be re-tuned- see Gates supporting doc-(Gates Air Channel Change Notice KIRO AUX) for details.			

Other Transmitter Costs				
Section	Question	Response		
Electrical Service	Service Entrance (3 phases 800A 208V)	No		
	Switchgear (industrial 800 amp)	No		
	Transformer (480V)	Yes		
	Power	150 kVA		
	Rigid Conduit and Wiring	Yes		
	Section	SectionQuestionElectrical ServiceService Entrance (3 phases 800A 208V)Switchgear (industrial 800 amp)Transformer (480V)Power		

	Size	3 inches
	Length	240.0 feet
	Other Electrical Service	Yes
	Description	Electrician will remove existing service connections and dispose. New transformer conduits and heat exchanger feeds will be installed for new Aux. See Schneider proposal Queen Anne for cost details.
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Туре	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

AuxiliaryOther Transmitter Cost Not ListedTransmitterInformation not provided.

Primary	Existing Transmitter Information				
Transmitter	Section	Question	Response		
	Existing Transmitter Description	Type of change	Purchase New		
		Use	Primary (Main)		
		Description of Use	N/A		
		Ownership	Owned		
		Owner	N/A		
		Site	N/A		
		Is this transmitter currently shared with another station?	No		
		Is this transmitter currently in operating condition?	Yes		
	Existing Transmitter Manufacturer and Type	Manufacturer			
		Model	Sigma CD- 40P1		
		Year	1999		
		Туре	Inductive Output Tube		
		IOT Power Type	Two		
		Power Capacity	28.2 kW		

Existing Transmitter Information

Primary	New Transmitter Costs				
Transmitter	Section	Question	Response		
	New Transmitter	Use	Primary (Main)		
		Change Type	Purchase New		
		Is this a request for upgraded equipment?	Yes		
		Manufacturer			
		Model	ULXTE-50		
		Transmitter Type	Solid State		
		Solid State Cooling	Liquid Cooled		
		Solid State Power capacity	31.7 kW		
		Justification for New Transmitter	Current transmitter cannot be retuned to channel 23. See attached supporting docs from Gates and Comark to substantiate solid state vs. IOT. See Gates Air Main Transmitter quote (ULXTE-50 Main TX) for cost breakdowns.		

Primary Other Transmitter Costs Transmitter Section

Question

Electrical Service	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	Yes
	Power	150 kVA
	Rigid Conduit and Wiring	Yes
	Size	4 inches
	Length	100.0 feet
	Other Electrical Service	Yes
	Description	Electrician will remove existing electrical and install new transformer, conduits, and heat exchanger feeds for primary transmitter. See quote from Schneider for cost breakdowns.
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Туре	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	Yes
	Size	200.0 square feet
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A

Is a channel 14 Mask Filer needed?	N/A
Is additional field engineering time needed?	N/A
Number of Days	N/A

Primary Other Transmitter Cost Not Listed

Transmitter Information not provided.

Antennas Section		Question	Response	
Antenna Rela	ated Expenses	Do you have antenna related expenses?	Yes	

Auxiliary	Add Antenna Information						
Antenna	Section	Question	Response				
-	Existing Antenna Description	Type of change	Purchase New				
		Antenna Use	Auxiliary (Backup)				
		Description of Use	Aux Backup				
		Ownership	Owned				
		Owner	N/A				
		Site	N/A				
		Is this antenna currently shared with any other stations?	No				
		Is this antenna directional?	Yes				
		Is antenna in operating condition?	Yes				
		Is antenna located on or in close proximity to an antenna farm?	No				
	Existing Antenna	Class	Class A				
Manufa	Manufacturer and Type	Mounting	Side Mount				
		Antenna position in stack	Not in Stack				
		Polarization	Horizontal				
		Туре	Slotted Coaxial				
		Number of Stations Supported	N/A				
		Number of Panels	N/A				
		Design power capacity in use	N/A				
		Lower Limit	N/A				
		Upper Limit	N/A				
		Other Antenna Type	N/A				
		ERP: (Effective Radiated Power)	1000.0 kW				

Manufacturer	
Model	TFU- 32DSC C164
Year	2004

Auxiliary	New Antenna Costs						
Antenna	Section	Question	Response				
	New Antenna Description	Use	Auxiliary (Backup)				
		Description of Use	Aux Antenna				
		Change Type	Purchase New				
		Is this a request for upgraded equipment?	No				
		Ownership	Owned				
		Owner	N/A				
		Is antenna shared?	No				
		Is antenna directional?	Yes				
		Will antenna be located on or in close proximity to an antenna farm?	No				
	New Antenna	Class	Class A				
	Manufacturer and Types	Mounting	Side Mount				
		Antenna position in stack	Not in Stack				
		Polarization	Horizontal				
		Туре	Slotted Coaxial				
		Number of Stations Supported	N/A				
		Number of Panels/Bays	N/A				
		Lower Limit	N/A				
		Upper Limit	N/A				
		Design power capacity in use	N/A				
		Other Antenna Type	N/A				
		ERP: (Effective Radiated Power)	715.0 kW				
		Manufacturer					

Model	TFU-26JSC /R C164
Year	2019
Justification for New Antenna	Current Aux antenna cannot be retuned to Ch-23. KIRO will require new Dielectric antenna to meet repack assignment See KIRO AUX Dielectric quote for costs and details

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Auxiliary

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Antenna	
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Section	Question	Response	
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	No	
	Туре		
	Number of channels supported	N/A	
	Frequencies of channels supported	N/A	
	Frequency	N/A	
	Do you need a combiner output splitter /switcher for dual feed lines?	N/A	
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes	
	Broadband or Single Channel?	Single Channel	

	Feed Line Size	6 1/8 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	Yes
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	Yes
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Auxiliary Antenna

Other Antenna Cost Not Listed

Name	Description
Dielectric Custom Flanges	Custom Flanges to connect new Aux Antenna with current Transmission line
Antenna Support Brackets	Custom Support Brackets for Aux Antenna
Freight Charges	Freight Charges for Aux Antenna

Primary Antenna	Existing Antenna Information			
	Section	Question	Response	
	Existing Antenna Description	Type of change	Purchase New	
		Antenna Use	Primary (Main)	
		Description of Use	N/A	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is the existing antenna shared with another station or stations?	No	
		Is the existing antenna directional?	Yes	
		Is antenna in operating condition?	Yes	
		Is antenna located on or in close proximity to an antenna farm?	No	
	Existing Antenna Manufacturer and Type	Class	Class A	
		Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Horizontal	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels	N/A	
		Design power capacity in use	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	1000.0 kW	

Manufacturer	
Model	TFU- 32DSC C164
Year	1999

Primary Antenna	Section	Question	Response
	New Antenna Description	Use	Primary (Main)
		Description of Use	N/A
		Change Type	Purchase New
		Is this a request for upgraded equipment?	No
		Ownership	Owned
		Owner	N/A
		Is antenna shared?	No
		Is antenna directional?	Yes
		Will antenna be located on or in close proximity to an antenna farm?	No
	New Antenna Manufacturer and Types	Class	Class A
		Mounting	Side Mount
		Antenna position in stack	Not in Stack
		Polarization	Horizontal
		Туре	Slotted Coaxial
		Number of Stations Supported	N/A
		Number of Panels/Bays	N/A
		Lower Limit	N/A
		Upper Limit	N/A
		Design power capacity in use	N/A
		Other Antenna Type	N/A
		ERP: (Effective Radiated Power)	715.0 kW
		Manufacturer	

Model	TFU-26JSC /R C164
	/R C164
Year	2018
Justification for New Antenna	Current
	MAIN
	antenna
	cannot be
	retuned to
	Ch-23. KIRC
	will require
	TFU-26JSC
	/R C164 to
	meet repack
	assignments
	See
	Dielectric
	MAIN ANT
	quote for
	cost details

Primary Other Antenna Costs

Antenna	Section	Question	Response
	Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	No
		Туре	
		Number of channels supported	N/A
		Frequencies of channels supported	N/A
Elbow C		Frequency	N/A
		Do you need a combiner output splitter /switcher for dual feed lines?	N/A
	Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
		Broadband or Single Channel?	Single Channel
		Feed Line Size	6 1/8 inches inches

Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	Yes
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	Yes
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Other Antenna Cost Not Listed

Primary Antenna

Name	Description
Dielectric Custom Flanges	Custom flanges needed to connect current transmission lines to new main antenna
Main Antenna Freight	Primary antenna Freight charges.
Main antenna Support Brackets	Custom support brackets needed for new primary antenna installation.

Transmissior	n Seffien	Question	Response
	Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

Existing Transmission Line Primary Existing Transmission

ssior	Section	Question	Response
	Existing Transmission Line Description	Type of change	Utilize Existing
		Use	Primary (Main)
		Description of Use	N/A
		Ownership	Owned
		Owner	N/A
		Site	N/A
		Is the existing transmission line shared with another station or stations?	No
		Is Transmission Line in operating condition?	Yes
	Existing Transmission Line Manufacturer and Type	Manufacturer	Dielectric
		Туре	Rigid
		Diameter	6 1/8 inches
		Other Diameter	N/A
		Segment Length	20 inches
		Other Segment Length	N/A
		Number of parallel runs	27
		Length	20 feet per run

Primary Other Transmission Line Expenses Not Listed

Transmission hometion not provided.

Auxiliary	Add Transmission Line			
Transmissio	n Line Section	Question	Response	
	Existing Transmission Line Description	Type of change	Utilize Existing	
		Use	Auxiliary (Backup)	
		Description of Use	Aux Transmission line	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is this transmission currently shared with any other stations?	No	
		Is Transmission Line in operating condition?	Yes	
	Existing Transmission Line Manufacturer and Type	Manufacturer	Dielectric	
		Туре	Rigid	
		Diameter	6 1/8 inches	
		Other Diameter	N/A	
		Segment Length	20 inches	
		Other Segment Length	N/A	
		Number of parallel runs	16	
		Length	20 feet per run	

AUX Transmission Extension	9 Transmission line extensions to raise current Aux antenna for better coverage prior to transition.

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

Existing Tower

Primary	Existing Tower		
Tower	Section	Question	Response
	Existing Tower	Type of change	Modify Existing
	Description	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?	No
		One or more FM, AM or TV radio broadcaster(s)	N/A
		Others Types of Users	N/A
		Is tower documented for structural analysis?	Yes
		Is tower compliant with Rev G?	Yes
	Existing Tower	Do you have a tower registration number?	Yes
	Structure Registration	ASR Number	1011408
	Coordinates (NAD83 (North American Datum	Latitude (NAD83)	47° 37' 58.9" N-
	of 1983))	Longitude (NAD83)	122° 21' 23.9" W-
		Overall Structure Height	607.93 feet
		Support Structure Height	529.85 feet
		Ground Elevation Above Mean Sea Level (AMSL)	399.93 feet

Structure Type	GTOWER - Guyed Structure Used for Communication Purposes
Tower Owner	IWG Towers Assets II, LLC
Date Constructed	07/22/1957

Tower Modification Costs Primary

	-
T	
lower	

Tower

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

Tower Rigging Costs Primary

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

Other Tower Expenses Not Listed Primary

Tower Information not provided.

Outside	Section	Question	Response
Professional	Services Costs Outside Project Management Services	Do you require outside project management services?	No
		Number of Hours	N/A
		Explanation	N/A
	Outside RF consulting Engineering Services	Perform engineering study for new channel assignment and antenna development	Yes
		Prepare engineering section of Form FCC Construction Permit Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes
		Prepare engineering section of Form FCC License to Cover Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes
		Prepare request for Special Temporary Authority	No
		Quantity	N/A
		Do you have Distributed Transmission System engineering services?	N/A
		Critical Facility	N/A
		Terrain-Shielded Facility	N/A
	Attorney and Other Outside Consulting	Prepare and file Form FCC Construction Permit Application	Yes
	Services	For Auxiliary Facility	Yes
		For Main Facility	Yes
		Prepare and file Form FCC License to Cover Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes

	Prepare request for Special Temporary Authority	No
	Quantity	N/A
	NEPA Section 106 environmental review	Yes
	Environmental Assessment	Yes
	ASR Modification	No
	FAA Consultation (including preparation of FAA Form 7460)	Yes
	Negotiation of Lease and other Matter for Shared Locations	No
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	No
RF Field Engineering Services	Comprehensive coverage verification via field study	Yes
	RF exposure measurements	Yes
	Additional Field Engineering Service	No
	Number of Days	N/A
	Justification	N/A

Outside Other Professional Services Expenses Not Listed

Professional	Services Costs	Description
	DTV Medical Notifications	Hire external service to conduct Medical Notifications related to repack

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

Other Expenses Not Listed

Other	Other Expenses Not Listed			
Expenses	Name	Description		
	Merrill Weiss Group	Perform RF studies pre and post repack. Assist with CPO applications.		

Transmitters

Cost Information

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 Transmitter ULXTE-50	\$1,192,090.23	\$1,190,340.23		\$681,884.68	
UHF - Liquid Cooled Solid State Transmitter 31.7 kW	\$1,134,990.23	\$1,134,990.23	10/15/18: Added Gates Air Change Order Q- 7725. Increased ULXTE-50- primary transmitter Cost \$8827.93- See Gates Air CO Q- 77525 & Gates Air CO Justification for details	\$679,424.41	N/A
Other Building Addition Size: 200.0	\$9,500.00	\$9,500.00	Remove existing wall to allow primary install. relocate duct work for aux transmitter room.	N/A	N/A

Auxiliary Transmitter ULXTE-24	\$733,980.00	\$679,329.46		\$379,460.27	
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	\$2,460.27	N/A
4" Rigid Conduit and Wiring (Cost per foot)	\$10,100.00	\$9,600.00	New main conduit runs. See Schneider Proposal Queen Anne for cost details.	N/A	N/A
Other Electrical Service: Electrician will remove existing electrical and install new transformer, conduits, and heat exchanger feeds for primary transmitter. See quote from Schneider for cost breakdowns.	\$11,950.00	\$11,950.00	Labor to remove existing electrical feeds and install new for primary transmitter. SEE Schneider Proposal Queen Anne for cost details.	N/A	N/A

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	Schneider					
Queen	proposal					
	Queen					
Anne for	Anne for					
cost details.	cost details.					

UHF - Liquid	\$684,000.00	\$631,319.46	10/15/18: Added	\$379,460.27	N/A
Cooled			Change		
Solid State			Order Q-		
Transmitter			77533.		
14.2 - 20 kW			Decreases		
			Aux TX		
			cost by		
			-\$471.75.		
			See Gates		
			Air CO and		
			CO Aux TX		
			Justification		
			for details.		
			Estimated		
			Cost above		
			reduced		
			-\$471.75.		
			Aux		
			transmitter		
			for		
			emergency		
			backup.		
			See Gates		
			KIRO Aux		
			TX quote		
			for details.		
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	\$0.00	N/A
3" Rigid	\$12,480.00	\$11,760.00	N/A	N/A	N/A
Conduit and Wiring	. ,	• ,			
(Cost per					
foot)					
1001)					
Sub-total	\$1,926,070.23	\$1,869,669.69	N/A	\$1,061,344.95	N/A
Total for all systems	\$3,018,925.73	\$2,940,672.69	N/A	\$1,245,358.95	N/A

Components

Actual Information	
Description	File Name

UHF - Liquid Cooled Solid State Transmitter 31.7 kW	Component Description:	Second (1/3)
		payment for KIR
	Amount:	Main Transmitter \$342,413.66
	Amount.	ψ 04 2, 4 15.00
	Component Description:	1/3 payment for
		KIRO Main Transmitter
	Amount:	\$337,010.75
Other Building Addition Size: 200.0	Information not provided.	
Other Electrical Service: Electrician will remove existing electrical and install new transformer, conduits, and heat exchanger feeds for primary transmitter. See quote from Schneider for cost breakdowns.	Information not provided.	
4" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
Transformer 3 phase/480v -		
150 KVA	Component Description:	1/3 payment for KIRO Main Electrical
	Amount:	\$2,460.27
	Component Description:	Second (1/3)
		payment for KIRC Main TX
		Transformer
	Amount:	\$2,460.27

Other Electrical Service: Electrician will remove existing service connections and dispose. New transformer conduits and heat exchanger feeds will be installed for new Aux. See Schneider proposal Queen Anne for cost details.	Information not provided.	
UHF - Liquid Cooled Solid State Transmitter 14.2 - 20 kW	Component Description:	Second (1/3) payment for KIRO Aux Transmitter
	Amount:	\$189,651.51
	Component Description:	1/3 down payment for KIRO Aux Transmitter
	Amount:	\$188,399.97
	Component Description:	First 1/3 payment for KIRO Aux Transmitter. Change order details included in
	Amount:	attachment \$189,808.76
Transformer 3 phase/480v - 150 KVA	Component Description:	1/3 payment for KIRO Aux
	Amount:	transmitter Transformer \$1,408.79
	Component Description:	Second (1/3) payment for KIRO Aux transformer.
	Amount:	\$1,408.79
3" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	

Antennas

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Antenna TFU-26JSC /R C164	\$205,396.25	\$203,063.75		\$92,007.00	
Main antenna Support Brackets	\$21,750.00	\$21,750.00	See Dielectric MAIN ANT quote for support bracket cost details.	\$9,787.50	N/A
Main Antenna Freight	\$17,500.00	\$17,500.00	See Dielectric MAIN Antenna quote for cost details on Freight.	\$7,605.00	N/A
Dielectric Custom Flanges	\$1,841.25	\$1,841.25	Custom flanges and transmission lines needed to connect current transmission line to new antenna. See Dielectric Main antenna quote,(Line 23) for costs and verifications.	\$1,726.65	N/A

Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	\$2,880.00	N/A
UHF - Lower Power, Side Mount, Class A, basic slot antenna, 715 kW input, directional,, horizontally polarized	\$145,275.00	\$145,275.00	New primary antenna for repack. See Dielectric MAIN ANTENNA quote for cost details.	\$65,373.75	N/A
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	\$12,300.00	\$10,297.50	See Dielectric MAIN ANT quote for elbow cost details.	\$4,634.10	N/A
Auxiliary Antenna TFU-26JSC /R C164	\$205,396.25	\$204,736.25		\$92,007.00	
Freight Charges	\$17,500.00	\$17,500.00	Freight charges for aux antenna- see Dielectric Aux antenna quote for details	\$7,605.00	N/A

Antenna Support Brackets	\$21,750.00	\$21,750.00	Custom antenna support brackets for Aux antenna-see Dielectric aux antenna quote for details.	\$9,787.50	N/A
Dielectric Custom Flanges	\$1,841.25	\$1,841.25	Custom flanges to connect the new TFU Aux antenna to current 61 /8" transmission line.	\$1,726.65	N/A
UHF - Lower Power, Side Mount, Class A, basic slot antenna, 715 kW input, directional,, horizontally polarized	\$145,275.00	\$145,275.00	See Dielectric Aux antenna quote for details	\$65,373.75	N/A
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	\$12,300.00	\$11,970.00	See Dielectric AUX antenna for cost details	\$4,634.10	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	\$2,880.00	N/A
Sub-total	\$410,792.50	\$407,800.00	N/A	\$184,014.00	N/A

Total for	\$3,018,925.73	\$2,940,672.69	N/A	\$1,245,358.95	N/A
all					
systems					

Actual Information Description	File Name	
Main antenna Support Brackets	Component Description: Amount:	45 percent down payment for KIRO main antenna mount brackets \$9,787.50
	Component Description: Amount:	45 percent down payment for KIRO main antenna mount brackets \$9,787.50
Main Antenna Freight		
-	Component Description:	45 percent charge for Main antenna Freight
	Amount:	\$7,605.00
	Component Description:	Dielectric 45% Main Antenna
	Amount:	Freight \$7,605.00

Dielectric Custom Flanges		
	Component Description:	45 percent payment for KIRO main antenna flange. Item number (5) RTLSCR675-20 & Line Item (6) RTT 675 . see attached MAN 00426 for details \$1,726.65
	Component Description:	45 percent payment for KIRO main antenna flange. Item number (5) RTLSCR675-20 & Line Item (6) RTT 675 . see attached MAN 00426 for details \$1,726.65
Sweep test of existing antenna	Component Description:	45 percent payment for sweep
	Amount:	of main antenna \$2,880.00
	Component Description:	45 percent payment for sweep of main antenna
	Amount:	\$2,880.00

Mount, Class A, basic slot antenna, 715 kW input, directional,, horizontally polarized	Component Description:	45% payment for KIRO Main Ant. Invoice MAN00426. Cove letter for Vpol reimbursement at (\$9517.50) removed and detailed in attache cover letter. \$65,373.75
Elbow complex, single		
channel, at antenna input, per 6 1/8. feedline (if needed)	Component Description:	45 percent down payment for KIRO Main antenna
	Amount:	Elbow complex \$4,634.10
	Component Description:	45 percent down payment for KIRO Main antenna
	Amount:	Elbow complex \$4,634.10
Freight Charges		
	Component Description:	45% Dielectric Au Antenna Freight
	Amount:	Charges \$7,605.00
	Component Description:	45% Payment for KIRO Aux antenna
		freight

Antenna Support Brackets		
	Component Description:	45% payment for
		KIRO Aux Mount
		brackets
	Amount:	\$9,787.50
	Component Description:	45% Dielectric Aux
		Antenna Custom
		Mounting Brackets
	Amount:	\$9,787.50
Dielectric Custom Flanges		
	Component Description:	45% payment for
		KIRO Aux Flange-
		Line Item (5)
		RTLSCR675-20 &
		Line item (6)
		RTT675-See
		attached Invoice
		MAN00427 for
		details
	Amount:	\$1,726.65
	Component Description:	45% Dielectric Aux
		Antenna Flange
		Item Numbers
		(RTLSCR675-20)-
		(RTT675)
	Amount:	\$1,726.65
UHF - Lower Power, Side Mount, Class A, basic slot		
	Component Description:	45% payment for
antenna, 715 kW input,		KIRO Aux antenna.
directional,, horizontally polarized		See attached
polalizeu		Cover Letter,
		Change Order and
		Invoice MAN00427
		attached for details.
	Amount:	\$65,373.75

channel, at antenna input, per 6 1/8. feedline (if needed)	Component Description:	45% Dielectric Au Antenna Elbow complex
	Amount:	\$4,634.10
	Component Description:	45% payment for
	Amount:	KIRO Aux Elbow \$4,634.10
Sweep test of existing		
antenna	Component Description:	45% payment for
		KIRO Aux sweep
	Amount:	\$2,880.00
	Component Description:	45% Dielectric Au
		Antenna Sweep
		Test
	Amount:	\$2,880.00

Transmission Line

Cost Information

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 Transmission Line	\$0.00	\$0.00		\$0.00	
Auxiliary Transmission Line	\$20,973.00	\$20,973.00		\$0.00	
AUX Transmission Extension	\$20,973.00	\$20,973.00	9 20' Transmission lines to extend aux antenna prior to transition. see Dielectric Aux Trans Extension quote for details	\$0.00	N/A
Sub-total	\$20,973.00	\$20,973.00	N/A	\$0.00	N/A
Total for all systems	\$3,018,925.73	\$2,940,672.69	N/A	\$1,245,358.95	N/A

Components

Information not provided.

Tower Equipment and Rigging Costs

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Tower GTOWER	\$381,100.00	\$370,480.00		\$0.00	
Tall Tower (greater than 500')	\$210,500.00	\$200,000.00	Rigging and equipment to remove current Main&Aux antennas, transmission lines. Install new repack antennas and transmission lines.	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$150,000.00	To meet new wind load stress induced by new repack antennas new Mid- Bay horizontals will need to be added to the KIRO Tower. See attached, TEC repack analysis for specifics.	N/A	N/A

Structural engineering tower load study for well documented tower	\$12,600.00	\$20,480.00	TEC Engineering repack tower load study-see TEC Quote for details.	N/A	N/A
Sub-total	\$381,100.00	\$370,480.00	N/A	\$0.00	N/A
Total for all systems	\$3,018,925.73	\$2,940,672.69	N/A	\$1,245,358.95	N/A

Information not provided.

Outside Professional Services

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Outside Professional Services	\$161,930.00	\$154,250.00		\$0.00	
DTV Medical Notifications	\$7,500.00	\$7,500.00	Hire external company to perform DTV Medical notifications for Repack.	N/A	N/A
FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	\$2,105.00	\$2,000.00	N/A	N/A	N/A
Environmental Assessment, if triggered by NEPA Section 106 review or for certain structures over 450 feet	\$10,520.00	\$10,000.00	N/A	N/A	N/A
NEPA Section 106 environmental review, if needed	\$6,310.00	\$6,000.00	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	\$0.00	N/A
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	\$4,210.00	\$4,000.00	N/A	\$0.00	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	\$0.00	N/A
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	\$0.00	N/A

RF Consulting	\$2,105.00	\$2,000.00	N/A	N/A	N/A
Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application					
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	N/A	N/A
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$7,000.00	N/A	N/A	N/A
Prepare and or review reimbursement form	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Comprehensive coverage verification via field study, if needed	\$84,200.00	\$80,000.00	N/A	N/A	N/A
RF Exposure Measurements	\$21,050.00	\$20,000.00	N/A	N/A	N/A
Sub-total	\$161,930.00	\$154,250.00	N/A	\$0.00	N/A
Total for all systems	\$3,018,925.73	\$2,940,672.69	N/A	\$1,245,358.95	N/A

Actual Information Description	File Name	
DTV Medical Notifications	Information not provided.	
FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	Information not provided.	
Environmental Assessment, if triggered by NEPA Section 106 review or for certain structures over 450 feet	Information not provided.	
NEPA Section 106 environmental review, if needed	Information not provided.	
Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Component Description:	Legal reimbursement for various 399 and repack prep. Invoices have bee consolidated in attachment \$2,250.00
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	Component Description: Amount:	Legal Invoice for KIRO repack prep and 399 submissio \$4,000.00
Attorney Fees - Prepare	Component Description:	Legal Invoices for
and File FCC Form 2100 (main), Construction Permit Application		KIRO 399,2100

RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Component Description: Amount:	Legal Invoice fo 399 and repack \$1,500.00
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Information not provided.	
Perform engineering study for new channel assignment and antenna development	Information not provided.	
Prepare and or review reimbursement form	Information not provided.	
Comprehensive coverage verification via field study, if needed	Information not provided.	
RF Exposure Measurements	Information not provided.	

Other Expenses

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Other Expenses	\$118,060.00	\$117,500.00		\$0.00	
Merrill Weiss Group	\$32,825.00	\$32,825.00	RF studies pre-post repack. See Merrill Weiss group quote for specifics.	\$0.00	N/A
MVPD Notification of Channel Change	\$11,750.00	\$11,750.00	MVPD notifications	N/A	N/A
Equipment Storage	\$5,000.00	\$5,000.00	up to 8 weeks antenna storage in Dielectric warehouse.	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	\$6,500.00	\$6,500.00	Costs to dispose of high voltage cabinets, current transmitters, transmission line and misc. equipment related to repack.	N/A	N/A
FCC Filing Fees - Form 2100 license to cover application	\$335.00	\$325.00	N/A	N/A	N/A

DTV Medical Facility Notification	\$11,550.00	\$11,000.00	N/A	N/A	N/A
Non-zoning permits	\$800.00	\$800.00	Seattle street closure permits.	N/A	N/A
Local Zoning	\$2,000.00	\$2,000.00	Seattle local zoning- Estimates based on previous projects in this area.	N/A	N/A
Equipment Delivery and Handling Charges	\$32,300.00	\$32,300.00	N/A	N/A	N/A
Develop and air announcement of upcoming channel change	\$15,000.00	\$15,000.00	Develop internal and external awareness campaign for repack.	N/A	N/A
Sub-total	\$118,060.00	\$117,500.00	N/A	\$0.00	N/A
Total for all systems	\$3,018,925.73	\$2,940,672.69	N/A	\$1,245,358.95	N/A

Actual Information	
Description	File Name

Merrill Weiss Group		
	Component Description: Amount:	RF studies, FCC /Repack planning for KIRO TV. See attached cover letter with weiss quote, CMG PO 5505, WEISS IN 1217012-R \$18,885.00
	Component Description: Amount:	RF studies /planning, FCC repack planning- see attached cover letter, CMC PO & WEISS Invoice 1216012 \$13,664.00
MVPD Notification of Channel Change	Information not provided.	
Equipment Storage	Information not provided.	
Disposal Costs (for equipment and other waste, net of any salvage value)	Information not provided.	
FCC Filing Fees - Form 2100 license to cover application	Information not provided.	
DTV Medical Facility Notification	Information not provided.	
Non-zoning permits	Information not provided.	
Local Zoning	Information not provided.	
Equipment Delivery and Handling Charges	Information not provided.	
Develop and air announcement of upcoming channel change	Information not provided.	

Cost Information	Grand Total			
		Predetermined Cost Estimate	Estimated Cost	Actual Cost
	Total for all systems	\$3,018,925.73	\$2,940,672.69	\$1,245,358.95

Reimbursem	entestiatus	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	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.	
		 The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 	
		2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.	
		3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.	

- 4. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (broadcasters) or to continue to carry the signal of a broadcaster that changes channels (MVPD).
- 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.

 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.	Donald Warren Shaw Director Of Engineering 12/18/2018

Certification	Section	Question	Response
	Submission of Actual Cost Documentation Statements	WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISIONMENT (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).	
		 The Authorized Person signing below certifies and represents that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 	
		2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct.	
		3. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.	

- 4. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.
- 5. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster **Relocation Fund are** necessary to change channels (full power and Class A stations) and/or otherwise modify a television station's facility as a result of the spectrum repack (LPTV/TV Translator stations); or to minimize service disruption resulting from a repacked television station (FM stations); or to continue to carry the signal of a broadcaster that changes channels (MVPD).
- The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
- 7. The above-named entity certifies that the cost information /documents submitted reflect costs actually incurred.

8.	The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.	
9.	The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite for obtaining the payments herein requested.	
an au name	are, under penalty of perjury, that I am thorized representative of the above- d applicant for the Authorization(s) ied above.	Donald Warren Shaw Director Of Engineering 12/18/2018

Attachments

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