

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

74070 Service: DTV Call WSOC-TV Channel: 19 (UHF) Facility Sign:

ID:

File 0000027842

Number:

FRN: 0001842491 Date 12/04

> Submitted: /2019

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
WSOC TELEVISION, LLC Doing Business As: WSOC TELEVISION, LLC	Director of Engineering /Operations 1901 North Tryon Street CHARLOTTE, NC 28206 United States	+1 (704) 335- 4732	ted. hand@coxinc. com	Limited Liability Company

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Information

Preparer Contact Name and Information

Applicant	Address	Phone	Email
Ted Hand Director of Engineering Operations WSOC Television, LLC	Ted Hand 1901 North Tryon Street Charlotte, NC 28206 United States	+1 (704) 335- 4732	ted.hand@coxinc. com

Broadcaster Information and Transition Plan

Question	Response
Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	Yes
Briefly describe transition plan	WSOC will install main transmitter first while operating on the auxiliary transmitter /antenna, then install the auxiliary system.

Transmitters

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

Auxiliary Transmitter

Existing Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	backup to main
	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	DHD60P2
	Year	2009
	Туре	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power Capacity	15 kW

Auxiliary Transmitter

New Transmitter Costs

Section	Question	Response
New Transmitter	Use	Auxiliary (Backup)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Manufacturer	
	Model	ULXTE-30
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	19.2 kW
	Justification for New Transmitter	Current transmitter will not tune to channel 19

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	Yes
	Size	2 inches
	Length	250.0 feet
	Other Electrical Service	Yes

	Description	Wiring for water pumps and mask filter blowers
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

Auxiliary Transmitter

Other Transmitter Cost Not Listed

Name	Description
Coax Switch	Coaxial switch use to switch from main to aux
Combiner	Use to combine WSOC Aux with WAXN Aux. Shared with WAXN-TV

Primary Transmitter

Existing Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
Existing Transmitter Manufacturer and Type	Manufacturer	
	Model	CD3200P2 Sigma
	Year	1999
	Туре	Inductive Output Tube
	IOT Power Type	Three
	Power Capacity	55 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	ULXTE-72
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	47.2 kW
	Justification for New Transmitter	Current transmitter is tuned for channel 34 and will not tuned to channel 19

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	500 kVA
	Rigid Conduit and Wiring	Yes
	Size	2 inches
	Length	250.0 feet
	Other Electrical Service	Yes

	Description	Wiring for water pumps and mask filter blowers
HVAC Service	Does the replacement transmitter require HVAC Service?	Yes
	Туре	Cooling Only
	Size	15 tons
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	Yes
	Size	320.0 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 Transmitter

Other Transmitter Cost Not Listed

Name	Description
RF Equipment	RF elbows, hangers, flanges, hardware kits
Plumbing Supplies	Plumbing supplies for liquid cooled transmitter
RF Hanging Supplies	Equipment to hang new mask filters and wave guide
Distilled Water	Distilled water for cooling system

Antennas

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

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?	No
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna	Class	Full Power
Manufacturer and Type	Mounting	Top Mount
	Antenna position in stack	Bottom
	Polarization	Horizontal
	Туре	Broadband Panel
	Number of Stations Supported	1
	Number of Panels	48
	Design power capacity in use	65.0 %
	Lower Limit	470.00 MHz
	Upper Limit	608.00 MHz
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	1000.0 kW

Manufacturer	
Model	TQP-0412-1
Year	1999

New Antenna Costs

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?	Yes
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	No
	Is antenna directional?	No
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna	Class	Full Power
Manufacturer and Types	Mounting	Top Mount
	Antenna position in stack	Bottom
	Polarization	Elliptical
	Туре	Broadband Slot
	Number of Stations Supported	1
	Number of Panels/Bays	48
	Lower Limit	470.00 MHz
	Upper Limit	608.00 MHz
	Design power capacity in use	100.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	1000.0 kW
	Manufacturer	

Model	TFU-31EBT /VP-R
Year	2019
Justification for New Antenna	Current antenna will not tune to channel 19. Current antenna will not support top mounted WAXN's antenna.

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	
	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	7 3/16 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	

Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Other Antenna Cost Not Listed

Information not provided.

Transmission ^{Seffien}	Question	Response
Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

Existing Transmission Line

Auxiliary Transmission

n Line Section	Question	Response
Existing Transmission Line Description	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	backup to main
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing transmission line shared with another station or stations?	Yes
	Is Transmission Line in operating condition?	Yes
Existing Transmission	Manufacturer	
Line Manufacturer and Type	Туре	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	19 1/2 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	585 feet per run

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

Facility ID	Call Sign
12793	WAXN-TV

Auxiliary Transmis

New Transmission Line

ınsmissioı	n Section	Question	Response
New Transmission Line Costs		Use	Auxiliary (Backup)
		Description of Use	backup to main
		Change Type	Purchase New
		Is this a request for upgraded equipment?	No
		Туре	Rigid
		Diameter	6 1/8 inches
		Other Diameter	N/A
		Segment Length	20 inches
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	585 feet per run
		Justification for New Transmission Line	current line will not work at new channel 19

Other Transmission Line Expenses Not Listed Auxiliary Other Transmission
Transmission to inetion not provided.

Primary Transmission Line

Existing Transmission Line

n Line Settion	Question	Response
Existing Transmission Line Description	Type of change	Purchase New
	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	Manufacturer	
Line Manufacturer and Type	Туре	Rigid
	Diameter	7 3/16 inches
	Other Diameter	N/A
	Segment Length	19 1/2 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	1050 feet per run

Primary Transmi

New Transmission Line

smissio	n Line Section	Question	Response
New Transr Costs	New Transmission Line Costs	Use	Primary (Main)
		Description of Use	N/A
		Change Type	Purchase New
		Is this a request for upgraded equipment?	No
		Туре	Rigid
		Diameter	7 3/16 inches
		Other Diameter	N/A
		Segment Length	20 inches
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	1050 feet per run
		Justification for New Transmission Line	Current line is 19 1/2' and will not work for new channel 19

Primary Other Transmission Line Expenses Not Listed

Transmission Line tion 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

Primary Tower

Existing Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Is this tower consider Complex?	No
	Is this tower currently shared with any other stations?	Yes
	One or more FM, AM or TV radio broadcaster(s)	Yes
	Others Types of Users	No
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Yes
Existing Tower Structure	Do you have a tower registration number?	Yes
Registration	ASR Number	1004745
Coordinates (NAD83 (North American Datum of	Latitude (NAD83)	35° 15' 42.0" N-
1983))	Longitude (NAD83)	080° 43' 37.0" W-
	Overall Structure Height	1082.01 fe
	Support Structure Height	970.13 fee
	Ground Elevation Above Mean Sea Level (AMSL)	855.96 fee

Structure Type	TOWER - Free Standing or Guyed Structure
Tower Owner	IWG Towers Assets II, LLC
Date Constructed	01/31/2000

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
12793	WAXN-TV	DTV

Primary Tower

Tower Modification Costs

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

Primary Tower

Tower Rigging Costs

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

Primary Tower

Other Tower Expenses Not Listed

Information not provided.

Outside Professional

Section	Question	Response
Services Costs Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	25
	Explanation	Project Manager to coordinate crew and materials on site. Design interior RF design
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	No
	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 Services	Prepare and file Form FCC Construction Permit Application	Yes
	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	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	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	Yes
	Number of Days	2
	Justification	Combined Auxiliary antenna will have to be field tuned

Outside
Outside
Professional Services Expenses Not Listed
Professional Services ©qstsided.

Other Expenses

Section	Question	Response
AM Pattern Disturbance	Is an Impact Study needed?	No
	Is Remediation needed?	No
Facility Expenses	Name	N/A
	Other Distributed Transmission System Expenses Not listed	N/A
	Name	N/A
	Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
Permit and Filing Costs	Local Zoning	No
	Non-zoning permits	No
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	Yes
	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

Other Expenses Not Listed

Name	Description
County Permits	Building Permits from County
Equipment Rental	Rent of forklift & scissor Lift to move heavy equipment and work above floor level
Foundation Geotech Study	Foundation and soil testing of tower
LBP Work	LBP work and study

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
Primary Transmitter ULXTE-72	\$1,726,300.00	\$2,012,700.00		\$1,966,617.72	
Distilled Water	\$1,300.00	\$1,300.00	N/A	\$637.50	N/A
RF Hanging Supplies	\$6,500.00	\$6,500.00	N/A	\$3,139.19	N/A
Plumbing Supplies	\$3,200.00	\$3,200.00	N/A	\$2,803.03	N/A
RF Equipment	\$55,000.00	\$55,000.00	Transmitter reject loads would not fit within the room and had to moved to another room needing additional transmission lines, elbows, hangers and flanges	\$51,732.75	N/A
Other Building Addition Size: 320.0	\$20,600.00	\$20,600.00	N/A	\$14,188.11	N/A
15 Ton system	\$55,800.00	\$14,000.00	Cost to move a HVAC unit. Shared cost with WAXN- TV 12793	\$13,288.00	N/A

Other Electrical	\$56,000.00	\$56,000.00	Based on actual	\$55,724.00	N/A
Service:			quote.		
Wiring for			Changed		
water			conduit		
pumps and			estimate to		
mask filter			\$0.		
blowers			Reduced		
			Transformer		
			from		
			\$41,000 to		
			\$6100.		
			Overall		
			electrical		
			cost are		
			lower than		
			first		
			estimated.		
			Changed		
			from		
			\$51482 to		
			\$55000 due		
			to change in		
			mask filter		
			setup.		
2" Rigid	\$6,500.00	\$0.00	Cost	N/A	N/A
Conduit and			lowered		
Wiring			here but		
(Cost per			added to		
foot)			overall		
			electrical		
			cost		
Transformer	\$48,400.00	\$6,100.00	Cost	\$6,100.00	N/A
3 phase			lowered by		
/480v - 500			\$41,000.		
KVA			Some		
			added back		
			to Overall		
			electrical		
			cost		

UHF - Liquid Cooled Solid State Transmitter 35 - 50 kW Auxiliary Transmitter ULXTE-30	\$1,473,000.00 \$714,500.00	\$1,850,000.00 \$656,864.87	Extra submission in transmitter line account. When removed, this will go down	\$1,819,005.14 \$556,106.76	The sub total is more than the Estimated Cost because the payment for \$497,967.16 has been requested twice. The last item (#5) needs to be deleted. Thank you Ted H.
Combiner	\$9,300.00	\$9,300.00	This is half the cost. Shared with WAXN-TV. Added cost of freight to ship from Dielectric	\$8,293.13	N/A
Coax Switch	\$4,700.00	\$4,700.00	N/A	N/A	N/A
Other Electrical Service: Wiring for water pumps and mask filter blowers	\$10,000.00	\$10,000.00	N/A	N/A	N/A
2" Rigid Conduit and Wiring	\$6,500.00	\$6,250.00	N/A	N/A	N/A

(Cost per foot)

\$684,000.00	\$626,614.87	N/A	\$547,813.63	N/A
\$2,440,800.00	\$2,669,564.87	N/A	\$2,522,724.48	N/A
\$4,834,895.00	\$4,834,229.40	N/A	\$3,944,761.33	N/A
	\$2,440,800.00	\$2,440,800.00 \$2,669,564.87	\$2,440,800.00 \$2,669,564.87 N/A	\$2,440,800.00 \$2,669,564.87 N/A \$2,522,724.48

Components

Componente		
Actual Information Description	File Name	
Distilled Water	Component Description: Amount:	Distilled Water for cleaning and cooling of transmitter corrected invoice date \$637.50
RF Hanging Supplies	Component Description: Amount:	see attached letter Grainger 110718. pdf \$1,018.13
	Component Description: Amount:	1 5/8" pipe clamps for coolant pipes to transmitter \$406.27
	Component Description: Amount:	Channel washers Unistruit 3/8" \$30.92

Component Description: Copper Elbows

Coolant Pipes 1 1

/2"

Amount: \$139.43

Component Description: Copper Elbows

Coolant pipes 1 1

/2"

Amount: \$278.85

Component Description: Transfer Pump

used to fill coolant

system of transmitter

Amount: \$298.81

Component Description: Unistrit Channel

Washers 3/8"

Amount: \$61.84

Component Description: Cleaner used to

clean copper pipes

after soldering

Amount: \$88.60

Component Description: Unistrit Channel

Washers 3/8"

Amount: \$92.76

Component Description: Unistrit stands,

connecting plates

Amount: \$457.75

Component Description: Cleaner

Degreaser used to clean copper pipes

after soldering

Amount: \$265.83

Plumbing Supplies		
	Component Description:	Anchors Concrete, pipe cutter vise
	Amount:	\$647.84
	Component Description:	Plumbing supplies, concrete anchors, threaded rod, unistruit, pipe
	Amount:	clamps \$1,554.10
	Component Description:	Struct washer, copper pipe, anchors, pipe cutter
	Amount:	\$601.09
RF Equipment		
	Component Description: Amount:	Freight of RF parts - WSOC (Main) \$1,212.62
		V.,
	Component Description:	RF Parts for WSOC-TV 74070
	Amount:	\$544.30
	Component Description:	WSOC 74070 Parts costs 2772.00 plus
	Amount:	freight of 91.90 \$2,863.90
	Component Description:	RF parts for WSOC-TV 74070 Parts were \$3492.00 plus
	Amount:	\$109.57 for freight \$3,601.57

Component Description: RF parts for

WSOC TV 74070 1098.00 plus 358.17 frieght

Amount: \$1,456.17

Component Description: RF parts for

WSOC-TV 74070 6301.80 plus 175.49 for freight

Amount: \$6,477.29

Component Description: WSOC-TV 74070

\$8046.00 parts cost plus \$217.14

freight

Amount: \$8,263.14

Component Description: Elbow & anchor

for WSOC Main

install

Amount: \$2,752.50

Component Description: WSOC-TV 74070.

\$270.00 parts plus

\$18.72 freight

Amount: \$288.72

Component Description: RF Equipment,

Hangers, Elbows, Hardware Kits,

Flangeds

Amount: \$6,769.85

Component Description: WSOC inside T/L

Amount:

7 3/16" and hangers

\$10,659.84

Component Description:

Amount:

Amount:

RF sample cables

\$1,630.70

Component Description: Transmission line,

flange adapters, line hangers to move WSOC current Auxiliary Transmitter to make room for new WSOC Main transmitter

\$4,204.87

Component Description: Pipe Clamps &

strut angles

Amount: \$415.70

Component Description: WSOC-TV 74070

\$508.50 parts cost

plus \$83.08 freight

Amount: \$591.58

Other -- Building Addition

Size: 320.0

Component Description:

Metal doors for

building addition - WSOC Share

Amount: \$1,821.11

Component Description: Building Addition

Shared cost with WAXN-TV 12793

Amount: \$12,367.00

Component Description:	Cost to move a
	HVAC Condenser,
	includes new
	concrete pad and
	ice bridge. ADDED
	CO PER MSG
	1991307
Amount:	\$13,288.00

Other Electrical Service: Wiring for water pumps and **Component Description:** Electrical work mask filter blowers during install of WSOC-TV transmitter Amount: \$30,889.20 **Component Description:** Payment for installing Mask Filter cooling fans ADDED QUOTE PER MSG 1993914 Amount: \$2,490.00 **Component Description:** 35% payment on PO CPG11681. Invoice # 13395 Amount: \$18,018.70 **Component Description:** Payment for additional AC breakers and unistrut ADDED **QUOTE PER** MSG 1994016 \$1,752.00 Amount: **Component Description:** Final payment for WSOC transmitter electrical work Amount: \$2,574.10

Information not provided.

2" Rigid Conduit and Wiring

(Cost per foot)

Transformer 3 phase/480v - 500 KVA	Component Description: Amount:	480 VAC to 240 VAC, 300 KVA transformer for WSOC transmitter install \$6,100.00
UHF - Liquid Cooled Solid State Transmitter 35 - 50 kW	Component Description:	1/3 Down payment due prior to
	Amount:	shipment \$453,899.62
	Component Description:	Invoice 3 of 3 for WSOC main Transmitter
	Amount:	\$331,959.59
	Component Description:	Re-submit of invoice & quote. Incorrect amount entered the first time. This is corrected amount.
	Amount:	\$497,967.16
	Component Description:	Down Payment for WSOC Main Transmitter
	Amount:	\$497,967.16
	Component Description:	WSOC Main Payment
	Amount:	\$37,211.61
	Component Description:	1/3 down payment of WSOC-TV MAIN transmitter
	Amount:	\$497,967.16

Combiner		
	Component Description:	cost of freight to
		ship from Dielectric
	Amount:	\$995.63
	Component Description:	1/2 of the invoice amount. shared with WAXN 12793
	Amount:	\$7,297.50
Coax Switch	Information not provided.	
Other Electrical Service: Wiring for water pumps and mask filter blowers	Information not provided.	
2" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
UHF - Liquid Cooled Solid		
State Transmitter 14.2 - 20 kW	Component Description:	WSOC AUX TX 2nd payment
	Amount:	\$192,203.04
	Component Description:	1/3 down payment of WSOC-TV AUX transmitter minus the estimated
	Amount:	freight (1/3 of \$7700, \$2566.67) \$206,304.95
	Common and Donoring to ma	WOOD ALLY TY
	Component Description:	WSOC AUX TX 3rd payment
	Amount:	\$146,738.97
	Component Description:	Re-submit with PO
		& Invoice

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
Primary Antenna TUP-04-12- 1 (S)	\$253,730.00	\$4,185.00		\$4,185.00	
UHF - High Power Top Mount (200-1000 kW), One station antenna, horizontally polarized	\$247,000.00	N/A	N/A	N/A	N/A
Sweep test of existing antenna	\$6,730.00	\$4,185.00	***System Notice: Estimate adjusted and locked because line has been superseded. ***Dummy enter per Jeff Newman 202-418- 2046	\$4,185.00	Actual is lower than estimated
Primary Antenna TFU-31EBT /VP-R	\$435,630.00	\$454,109.53		\$448,763.03	

Elbow complex, single channel, at antenna input, per 7 3/16. feedline (if needed)	\$13,900.00	\$16,000.00	added freight cost	\$15,791.25	Freight cost was added
Sweep test of existing antenna	\$6,730.00	\$4,180.00	N/A	\$0.00	N/A
UHF - High Power Top Mount One Station antenna elliptically or circularly polarized	\$168,000.00	\$168,000.00	N/A	\$167,042.25	N/A
UHF - High Power Top Mount (200-1000 kW), One station antenna, horizontally polarized	\$247,000.00	\$265,929.53	***System Notice: Estimate adjusted and locked because line has been superseded. ***Based on actual quote from Dielectric LLC	\$265,929.53	N/A
Sub-total	\$689,360.00	\$458,294.53	N/A	\$452,948.03	N/A
Total for all systems	\$4,834,895.00	\$4,834,229.40	N/A	\$3,944,761.33	N/A

Actual Information	
Description	File Name

Information not provided.	
Component Description: Amount:	Reimbursement for Engineering Contract work. \$4,185.00
Component Description:	Elbow Complex
Amount:	Freight \$3,408.75
Component Description:	Down payment of elbow complex
Amount:	ADDED QUOTE \$5,572.13
Component Description:	Elbow Complex WSOC Main
Amount:	\$12,382.50
Component Description:	Item #21 Repack sweep Redo
	requested 5/9/18 per Natasha Lamothe
Amount:	\$2,880.00
	Component Description: Amount: Component Description: Amount: Component Description: Amount: Component Description: Amount:

UHF - High Power Top Mount (200-1000 kW), One station antenna, horizontally polarized

Component Description: WSOC Main

Antenna, TL, EC,

Eng (second 45% payment)

Amount: \$265,929.53

Component Description: Down payment of

antenna/TL, elbow

complex MSG 2122577

Amount: \$265,929.53

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
Primary Transmission Line	\$304,500.00	\$289,800.00		\$137,925.49	
Rigid Transmission Line - copper, 7 3 /16"	\$304,500.00	\$289,800.00	N/A	\$137,925.49	N/A
Auxiliary Transmission Line	\$118,170.00	\$112,320.00		\$57,134.39	
Rigid Transmission Line - copper, 6 1/8"	\$118,170.00	\$112,320.00	N/A	\$57,134.39	N/A
Sub-total	\$422,670.00	\$402,120.00	N/A	\$195,059.88	N/A
Total for all systems	\$4,834,895.00	\$4,834,229.40	N/A	\$3,944,761.33	N/A

Actual Information	
Description	File Name

Rigid Transmission Line - copper, 7 3/16"

Component Description: Item #20 Extra 7-

75 T/L redo requested 5/9/18 per Natasha Lamothe ADDED

QUOTE

Amount: \$5,872.50

Component Description: TL

Amount:

TL WSOC Main \$7,597.65

Component Description: TL for WSOC Main

Amount:

\$36,262.94

Component Description: Down payment

transmission line (Item 4) ADDED

QUOTE

Amount: \$84,562.65

Component Description: freight cost for

extra TL

Amount: \$1,109.61

Component Description: Transmission Line

Amount:

\$84,526.65

Component Description: extra TL for WSOC

Amount:

\$5,364.00

Component Description: TL WSOC Main

Amount: \$3,064.64

Rigid Transmission Line - copper, 6 1/8"

Component Description: Freight for field cut

section of TL 1/2 of invoiced shared with WAXN 12793

Amount: \$2,411.89

Component Description: Field cut TL

sections 1/2 of invoice shared with WAXN 12793

Amount: \$2,887.50

Component Description: WSOC share of

AUX TL

Amount: \$29,442.50

Component Description: 1/2 of the

outstanding

balance of invoice shared with WAXN

12793

Amount: \$22,392.50

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 TOWER	\$381,100.00	\$577,000.00		\$551,751.50	
Structural engineering tower load study for well documented tower	\$12,600.00	\$15,000.00	Based on actually quote from Tower Engineering Company, Seattle, WA	\$13,337.50	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$162,000.00	Based on actual invoices	\$161,274.00	Based on actual invoices
Tall Tower (greater than 500')	\$210,500.00	\$400,000.00	This is half the cost. The other half is on WAXN-TV's form. Based on actually quotes. Includes Main and Aux work	\$377,140.00	N/A
Sub-total	\$381,100.00	\$577,000.00	N/A	\$551,751.50	N/A
Total for all systems	\$4,834,895.00	\$4,834,229.40	N/A	\$3,944,761.33	N/A

Actual Information		
Description	File Name	

Structural engineering tower load study for well	Commonant Descriptions	Toward and Objects
documented tower	Component Description:	Tower Load Study Fee
	Amount:	\$600.00
	Amount.	ψ000.00
	Component Description:	Rigging Review &
		Analysis
	Amount:	\$2,750.00
	Component Description:	Climbing &
		drawings for tower
		modification
	Amount:	\$6,437.50
	Component Description:	Engineer visit
		from TEC
	Amount:	\$3,550.00
Minor tower reinforcement		
/modifications	Component Description:	Labor for Tower
		Modifications
	Amount:	\$130,303.00
	Component Description:	Engineering
	Somponent Description.	Linginidening
		Structural

Tall Tower (greater than 500')

Component Description: 30% down

payment on WSOC Tower work (Main)

Amount: \$94,012.80

Component Description: WSOC Aux 2nd

payment

Amount: \$19,102.20

Component Description: 30% down

payment on

WSOC tower work

(Aux)

Amount: \$19,102.20

Component Description: WSOC Main 3rd

payment

Amount: \$125,350.40

Component Description: WSOC Aux 3rd

payment

Amount: \$25,469.60

Component Description: WSOC main 2nd

payment

Amount: \$94,102.80

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
Outside Professional Services	\$155,365.00	\$163,700.00		\$22,548.10	
Additional Field Engineering Service, 2 Days	\$17,500.00	\$17,500.00	N/A	\$2,880.00	N/A
RF Exposure Measurements	\$21,050.00	\$20,000.00	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
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
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	\$4,210.00	\$4,000.00	N/A	\$3,056.70	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	\$4,813.40	N/A

Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$22,200.00	Actual Engineering Cost. See attached.	\$11,798.00	Actual is less than Estimated. This invoice is for work with WSOC and WAXN. Requesting 50% for WSOC
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	N/A	N/A
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	\$2,105.00	\$2,000.00	N/A	N/A	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 and or review reimbursement form	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Sub-total	\$155,365.00	\$163,700.00	N/A	\$22,548.10	N/A
Total for all systems	\$4,834,895.00	\$4,834,229.40	N/A	\$3,944,761.33	N/A

Actual Information Description	File Name	
Additional Field Engineering Service, 2 Days	Component Description: Amount:	Field Engineer Travel Expense \$2,880.00
RF Exposure Measurements	Information not provided.	
Comprehensive coverage verification via field study, if needed	Information not provided.	
Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Information not provided.	

Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application

Component Description: Full payment of

invoice for legal services for

WSOC-TV repack.

Amount: \$1,336.30

Component Description: Re-submit of

invoice after removal of non-reimbursable item.

New amount requested

Amount: \$299.20

Component Description: Full payment of

invoice for legal services for

WSOC-TV repack.

Amount: \$1,421.20

Component Description: Full payment of

invoice for legal services for

WSOC-TV repack.

Amount: \$419.80

Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	Component Description: Amount:	Full Payment of invoice for legal services for WSOC-TV repack. #The is a redo, correcting the wrong amount of invoice 5/8/18 # \$2,521.80
	Component Description:	Full payment of invoice for legal services for WSOC-TV repack.
	Amount: Component Description:	\$358.10 Full payment of
	Amount:	invoice for legal services for WSOC-TV repack. \$1,933.50
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	Information not provided.	
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	Component Description: Amount:	Engineering Study for WSOC-TV \$1,275.00
	Component Description: Amount:	Requesting 50% of invoice WSOC \$10,523.00
Project management of the transition	Information not provided.	
Prepare and or review reimbursement form	Information not provided.	

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	\$228,020.00	\$220,420.00		\$199,729.34	
LBP Work	\$90,000.00	\$90,000.00	N/A	\$88,800.00	N/A
Foundation Geotech Study	\$9,800.00	\$9,800.00	N/A	\$9,790.00	N/A
Equipment Rental	\$90,000.00	\$90,000.00	Based on actual invoices	\$85,861.12	Based on actual invoices
County Permits	\$4,625.00	\$4,625.00	N/A	\$4,625.00	N/A
MVPD Notification of Channel Change	\$7,500.00	\$7,500.00	N/A	N/A	N/A
DTV Medical Facility Notification	\$11,550.00	\$4,000.00	N/A	\$3,275.00	N/A
FCC Filing Fees - Form 2100 minor change CP application	\$1,110.00	\$1,070.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 license to cover application	\$335.00	\$325.00	N/A	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	\$3,500.00	\$3,500.00	N/A	N/A	N/A

Equipment Delivery and Handling					
Charges					
Equipment Storage	\$8,500.00	\$8,500.00	N/A	\$7,378.22	Based on actually invoices
Develop and air announcement of upcoming channel change	\$1,100.00	\$1,100.00	N/A	N/A	N/A
Sub-total	\$228,020.00	\$220,420.00	N/A	\$199,729.34	N/A
Total for all systems	\$4,834,895.00	\$4,834,229.40	N/A	\$3,944,761.33	N/A

Actual Information	
Description	File Name

LBP Work		
	Component Description:	Industrial Hygenist
	Amount:	Support \$6,250.00
	Amount:	φο,230.00
	Component Description:	LBP Consulting
		Antenna
	Amount:	Transmission \$16,400.00
		• -,
	Component Description:	Industrial Hygenist
		Support
	Amount:	\$6,250.00
	Component Description:	LBP Remediation
	Amount:	\$50,000.00
	Component Description:	LBP Consulting
	Amount:	\$9,900.00
Foundation Geotech Study		
	Component Description:	Foundation and
	Amazanta	Geotech Study
	Amount:	\$9,790.00
Equipment Rental		
	Component Description:	November 2018
	Amount:	Scissor Lift Rental \$1,059.11
	Amount.	φ1,009.11
	Component Description:	December 2018
		Scissor Lift Rental
		Colocol Ent Itolital

Component Description: Monthly rental

payment for forklift used at transmitter

site

Amount: \$3,487.61

Component Description: Fork Lift for 6/19

Amount: \$3,487.61

Component Description: Scissor Lift for 10

/19

Amount: \$1,058.21

Component Description: Fork Lift for 9/19

Amount: \$3,487.61

Component Description: Fork Lift for 11/19

Amount: \$3,487.61

Component Description: Scissor Lift for 9/19

Amount: \$1,058.21

Component Description: Scissor Lift for 3/19

Amount: \$1,058.21

Component Description: Scissor Lift for 5/19

Amount: \$1,058.21

Component Description: Scissor Lift for 2/19

Amount: \$1,058.21

Component Description: Scissor Lift for 7/19

Amount: \$1,058.21

Component Description:

Amount:

Scissor Lift for 8/19

\$1,058.21

Component Description:

Amount:

Fork Lift for 5/19

\$3,487.61

Component Description:

Amount:

Fork Lift for 7/19

\$3,487.61

Component Description:

Amount:

Scissor Lift for 6/19

\$1,058.21

Component Description:

Amount:

Fork Lift for 10/19

\$3,487.61

Component Description:

Amount:

Scissor Lift for 4/19

\$1,058.21

Component Description:

Amount:

Fork Lift for 8/19

\$3,487.61

Component Description:

Amount:

Fork Lift for 4/19

\$3,487.61

Component Description:

June 2018 rental of Fork Lift

Amount:

\$3,770.02

Component Description:

July 2018 Fork Lift

Rental

Amount:

\$3,481.73

Component Description: monthly payment

for forklift used at transmitter site

Amount: \$3,487.61

Component Description: June 2018 Scissor

Lift Rental

Amount: \$1,359.41

Component Description: January 2019

Fork Lift Rental

Amount: \$3,481.73

Component Description: October 2018

Scissor Lift Rental

Amount: \$1,059.11

Component Description: July 2018 Scissor

Lift Rental

Amount: \$1,059.11

Component Description: November 2018

Fork Lift Rental

Amount: \$3,481.73

Component Description: September 2018

Scissor Lift Rental

Amount: \$1,059.11

Component Description: August 2018 Fork

Lift Rental

Amount: \$3,481.73

Component Description: September 2018

Fork Lift Rental

Amount: \$3,481.73

Component Description: February 2019
Fork Lift Rental

Amount: \$3,487.61

Component Description: February 2019

Scissor Lift Rental

Amount: \$1,058.21

Component Description: January 2019

Scissor Lift Rental

Amount: \$1,059.11

Component Description: October 2018

Fork Lift Rental \$3,481.73

Component Description: December 2018

Fork Lift Rental \$3,481.73

Component Description: August 2018

Scissor Lift Rental

Amount: \$1,059.11

County Permits

Component Description:

Amount:

Amount:

Amount:

Permits

\$4,625.00

MVPD Notification of Channel Change

Information not provided.

DTV Medical Facility Notification		
Nouncation	Component Description:	Medical Notification - WSOC # I uploaded correct quote that has same price as invoice #
	Amount:	\$3,275.00
FCC Filing Fees - Form 2100 minor change CP application	Information not provided.	
FCC Filing Fees - Form 2100 license to cover application	Information not provided.	
Disposal Costs (for equipment and other waste, net of any salvage value)	Information not provided.	
Equipment Delivery and Handling Charges	Information not provided.	
Equipment Storage		
	Component Description:	Mobile Mini
	Amount:	Monthly Rental \$696.55
	Component Description:	Mobile Mini
	Amount:	Monthly Rental \$186.15
	Component Description:	Mobile Mini
	Amount:	Monthly Rental \$186.15
	Component Description:	Mobile Mini
		Monthly Rental

Component Description: Mobile Mini

Monthly Rental

Amount: \$186.15

Component Description: Mobile Mini

Monthly Rental

Amount: \$185.15

Component Description: Crane to unload

wsoc antenna from truck

Amount: \$2,359.22

Component Description: Mobile Mini

Monthly Rental

Amount: \$186.15

Component Description: Mobile Mini

Monthly Rental

Amount: \$186.15

Component Description: Mobile Mini

Monthly Rental

Amount: \$696.55

Component Description: Mobile Mini

Monthly Rental

Amount: \$186.15

Component Description: Mobile Mini

Monthly Rental

Amount: \$186.15

Component Description: Mobile Mini

Monthly Rental

Amount: \$186.15

Component Description:

Mobile Mini Monthly Rental

Amount:

\$696.55

Component Description:

Mobile Mini Monthly Rental

Amount:

\$186.15

Component Description:

Mobile Mini Monthly Rental

Amount:

\$696.55

Component Description:

Mobile Mini Monthly Rental

Amount:

\$186.15

Develop and air announcement of upcoming channel change

Information not provided.

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$4,834,895.00	\$4,834,229.40	\$3,944,761.33

Reimbursem	envestiarus	Response
	The facility has ceased operating on its pre- auction channel.	Yes
	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

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.

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

- 4. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (broadcasters) or to continue to carry the signal of a broadcaster that changes channels (MVPD).
- 5. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
- 6. The above-named entity certifies that it will maintain and provide to the Commission detailed records, including receipts, of all costs eligible for reimbursement actually incurred.
- 7. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.

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

I declare, under penalty of perjury, that I am an authorized representative of the abovenamed applicant for the Authorization(s) specified above. Ted Hand
Director of
Engineering
/Operations

12/04/2019

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).

- 1. The Authorized
 Person signing
 below certifies and
 represents that he
 /she is authorized to
 submit this TV
 Broadcaster
 Relocation Fund
 Reimbursement
 Form on behalf of
 the above-named
 entity.
- The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct.
- The above-named entity acknowledges that all certifications and attached documentation are considered material representations.

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

- 8. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.
- 9. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite for obtaining the payments herein requested.

I declare, under penalty of perjury, that I am an authorized representative of the abovenamed applicant for the Authorization(s) specified above. **Ted Hand**Director of
Engineering
/Operations

12/04/2019

Attachments