APPENDIX B

COST ESTIMATE TECHNOLOGY EQUIPMENT

## PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 1/11/20 B2, Addition / Renovation & C1, C2, & C3 New: 1,250 Students / 314,923 Sq.

Sec.		
Sec.	Description	Estimated Systematics Price
27 00 00	COMMUNICATIONS - TEL/DATA & A-V CABLING	
	TEL/DATA CABLING SYSTEM	\$1,421,300.00
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Data	
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Voice	
	WAP Wall Enclosures	
	MDF Closet (IDF & Site Fiber Cables, Racks, Patch Panels, etc.)	
	IDF Closet Fiber Cable, Racks, Patch Panels, etc.)	
	AUDIOVISUAL CABLING	\$96,000.00
	INTERACTIVE FLAT PANELS	<b>\$33,333.33</b>
	Face Plates	
	AV in-Wall Cabling	
	HDMI	
	VGA	
	3.5mm	
	Patch Cables/Line Cords	
	HDMI	
	VGA	
	3.5mm	
		\$1,517,300.00
Sec.	Description	Estimated Syst Price
27 41 00	Description IPTV AND VIDEO ON DEMAND SYSTEM	\$349,000.00
27 41 00	TV DISTRIBUTION	\$349,000.00
	MEDIA CONTROL	
	I Jacobars	
	Decoders DIGITAL SIGNAGE	
	DIGITAL SIGNAGE	
	*****	
	DIGITAL SIGNAGE Flat Panel TV Monitors	
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND	
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND	\$349,000.00
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND	\$349,000.00
Sec.	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND	
Sec. 27 41 01	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING	Estimated Syst
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description	Estimated Syst
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS	Estimated Syst Price
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated Syst Price
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage	Estimated Syst Price
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated Syst Price
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage	Estimated Syst Price \$128,000.00
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)	Estimated Syst Price \$128,000.00
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening,	\$128,000.00 \$148,000.00
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description  LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage	\$128,000.00 \$148,000.00
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description  LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description  LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)	\$128,000.00 \$148,000.00
	Description  LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center  Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00 \$15,500.00
	DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center	\$128,000.00 \$148,000.00 \$148,000.00

#### PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, & C3 New: 1,250 Students / 314,923 Sq. **Estimated System** Estimated Quantity Price Sec Description 27 41 20 CLASSROOM SPEECH REINFORCEMENT SYSTEMS \$222,200,00 Wireless Ceiling Panel System with hard wired electrical service 101 \$222,200.00 Estimated **Estimated System** Sec. Quantity **Price** Description 27 41 30 INSTRUCTIONAL AUDIOVISUAL SYSTEMS Classroom & Conference Room Interactive Flat Panel DisplaySystems 120 \$600,000.00 USB Extender Installation \$600,000.00 Estimated System Sec. Description **Price PUBLIC ADDRESS SYSTEM** 27 51 15 \$179,600.00 Console PA Speakers Horn PA Speakers Volume Controls Interfaces: Master Clock, Voice System, and Local Sound Systems Cabling \$179,600.00 **Estimated System** Sec **Price** Description 27 53 13 **CLOCK SYSTEM** \$104,000.00 Master Clock 12" Secondary Clocks 16" Secondary Clocks Wire Guards Low Voltage Wiring \$104,000.00

## PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, & C3 New: 1,250 Students / 314,923 Sq.

	Price
RITY SYSTEM	\$1,067,600.00
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Cabling	
Cabling	
ntrol and CCTV Surveillance System	
inition and CCTV 3th vehicline System	
gration S/W License	
gration 5/vv License	
D: 0.D.1: 1 :	
- Drives & Parking Lots	
le Mount - Fields	
es/Transformers	
n Video Management System	

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, & C3 New: 1,250 Students / 314,923 Sq.

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	<u>SECTION</u> 27 00 00	DESCRIPTION COMMUNICATIONS - TEL/DATA & A-V CABLING	ESTIMATED COST \$1,517,300.00
	27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$349,000.00
	27 41 01	LARGE VENUE AUDIOVISUAL SYSTEMS	\$455,000.00
	27 41 20	CLASSROOM SPEECH REINFORCEMENT SYSTEMS	\$222,200.00
	27 41 30	INSTRUCTIONAL AUDIOVISUAL SYSTEMS	\$600,000.00
	27 51 15	PUBLIC ADDRESS SYSTEM	\$179,600.00
	27 53 13	CLOCK SYSTEM	\$104,000.00
	28 16 00	INTEGRATED SECURITY SYSTEMS	\$1,067,600.00
		TOTAL ESTIMATED COST	\$4,494,700.00
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# PRELIMINARY COSTS FOR TECHNOLOGY FF&E NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, & C3 New: 1,250 Students / 314,923

		Estimated	Estimated
Category	Description	Quantity	Price
1.	COMMUNICATIONS - VoIP VOICE SYSTEM		\$207,900.00
	Gateway/Router		
	Call Processor		
	Auto-attendant & Voice Mail		
	VoIP Handsets/Devices		
			\$207,900.00
		Estimated	Estimated
Category	Description	Quantity	Price
2.	SWITCHES / WIRELESS SYSTEM		
			<b>*</b>
	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		\$359,100.00
	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services		\$359,100.00 \$342,400.00
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		Estimated	\$342,400.00
		Estimated Quantity	\$342,400.00 \$701,500.00
	Infrastructure Wireless Equipment & Services		\$342,400.00 \$701,500.00 Estimated
Category	Infrastructure Wireless Equipment & Services  Description		\$342,400.00 \$701,500.00 Estimated
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services		\$342,400.00 \$701,500.00 Estimated Price
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	Quantity	\$342,400.00 \$701,500.00 Estimated Price \$207,900.00
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services	Quantity 173	\$342,400.00 \$701,500.00 Estimated Price \$207,900.00 \$147,000.00
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	173 225	\$342,400.00 \$701,500.00 Estimated Price \$207,900.00 \$147,000.00 \$214,500.00
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services	173 225 90	\$342,400.00 \$701,500.00 Estimated Price \$207,900.00 \$147,000.00 \$214,500.00 \$261,000.00
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services	173 225 90 1,250	\$342,400.00 \$701,500.00 Estimated Price \$207,900.00 \$147,000.00 \$214,500.00 \$261,000.00 \$406,250.00
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services  Charging Carts & Services	173 225 90 1,250	\$342,400.00 \$701,500.00 Estimated Price \$207,900.00 \$147,000.00 \$214,500.00 \$261,000.00 \$406,250.00 \$94,500.00
Category	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services  Charging Carts & Services  Peripherals (Printers) & Services	173 225 90 1,250	\$342,400.00 \$701,500.00 Estimated Price \$207,900.00 \$147,000.00 \$214,500.00 \$261,000.00 \$406,250.00 \$94,500.00 \$70,000.00

4.	AUDIOVISUAL EQUIPMENT		
	TV Studio Equipment		\$225,000.00
	Document Cameras	120	\$78,000.00
			\$303,000.00

Category	Description	Estimated Quantity	Estimated Price
5.	SPECIALIZED SYSTEMS		
	Language Lab System	31	\$90,000.00

SECTION	DESCRIPTION	COST
1.	VoIP VOICE SYSTEM	\$207,900.00
2.	SWITCHES / WIRELESS SYSTEM	\$701,500.00
3.	COMPUTER EQUIPMENT & PERIPHERALS	\$1,451,150.00
4.	AUDIOVISUAL EQUIPMENT	\$303,000.00
5.	SPECIALIZED SYSTEMS	\$90,000.00
	TOTAL ESTIMATED COST	\$2,753,550.00
	TOTAL ESTIMATED COST	\$2,753,550.00

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.400 Students / 334.3349 Sq. Ft.

	B2. Addition / Renovation & C1, C2, C3 New: 1,400 Students / 334	Estimated Syster
Sec.	Description	Price
27 00 00	COMMUNICATIONS - TEL/DATA & A-V CABLING	
	TEL/DATA CABLING SYSTEM	\$1,555,075.00
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Data	<b>*</b> *,000,01010
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Voice	
	WAP Wall Enclosures	
	MDF Closet (IDF & Site Fiber Cables, Racks, Patch Panels, etc.)	
	IDF Closet Fiber Cables, Racks, Patch Panels, etc.)	
	IDF Closet Fiber Cable, Racks, Fatch Fahers, etc.)	
	AUDIOVICUAL CADUNO	<b>#00.000.00</b>
	AUDIOVISUAL CABLING	\$99,200.00
	INTERACTIVE FLAT PANELS	
	Face Plates	
	AV in-Wall Cabling	
	HDMI	
	VGA	
	3.5mm	
	Patch Cables/Line Cords	
	HDMI	
	VGA	
	3.5mm	
		\$1,654,275.00
		Estimated Syste
Sec.	Description	Price
27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$355,000.00
	TV DISTRIBUTION	ψ555,000.00
	MEDIA CONTROL Decoders	
	MEDIA CONTROL	
	MEDIA CONTROL Decoders	
	MEDIA CONTROL Decoders DIGITAL SIGNAGE	
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors	
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND	
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND	\$355,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND	
Sec.	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING	\$355,000.00  Estimated Syste  Price
Sec. 27 41 01	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description	Estimated Syste
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS	Estimated Syste
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description	Estimated Syste
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated Syste
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	Estimated Syste
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)	Estimated Syste
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage	Estimated Syste Price \$128,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description  LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated Syste Price \$128,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installatio) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description  LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	Estimated Syste Price \$128,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installatio) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Sound System (Sound System Sound System Sou	\$128,000.00 \$148,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Fitness Center	\$128,000.00 \$148,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00
	MEDIA CONTROL Decoders DIGITAL SIGNAGE Flat Panel TV Monitors VIDEO ON DEMAND ORIGINATION BROADCASTING  Description LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Fitness Center	\$128,000.00 \$148,000.00 \$148,000.00

### PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,400 Students / 334,3349 Sq. Ft. Estimated System Estimated Quantity Sec. Price Description 27 41 20 CLASSROOM SPEECH REINFORCEMENT SYSTEMS Wireless Ceiling Panel System with hard wired electrical service 105 \$231,000.00 \$231,000.00 Estimated **Estimated System** Sec. Quantity **Price** Description 27 41 30 INSTRUCTIONAL AUDIOVISUAL SYSTEMS Classroom & Conference Room Interactive Flat Panel DisplaySystems 124 \$620,000.00 USB Extender Installation \$620,000.00 Estimated System Sec. Description **Price PUBLIC ADDRESS SYSTEM** 27 51 15 \$195,800.00 Console PA Speakers Horn PA Speakers Volume Controls Interfaces: Master Clock, Voice System, and Local Sound Systems Cabling \$195,800.00 **Estimated System** Sec. **Price** Description 27 53 13 **CLOCK SYSTEM** \$113,400.00 Master Clock 12" Secondary Clocks 16" Secondary Clocks Wire Guards Low Voltage Wiring \$113,400.00

PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY
NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA
11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.400 Students / 334.3349 Sq. Ft.

Sec. 3 16 00	Description	Price
0 10 00	INTEGRATED ELECTRONIC SECURITY SYSTEM	\$1,164,000.00
	Duress/Panic Alarm System	
	Notify 2.0 Network Application (3-years)	
	Controller	
	Wireless Repeaters	
	Office Panel	
	Wireless Panic / Duress Button	
	Interfaces	
	Video Notification	
	Public Address System	
	Emergency responder 2-way Radio	
	Email/Text Notification	
	Zinaw i ox i romodiori	
	Visitor Door Entry System	
	Master Stations	
	Video Intercom Door Stations	
	Audio Intercom Door Stations	
	Addio Intorcom Boor Otations	
	Intrusion Detection Equipment and Cabling	
	Door Contacts	
	Motion Sensors	
	Control Panel	
	Strobes	
	Sirens	
	Keypads	
	Cabling	
	Integrated / Converged Access Control and CCTV Surveillance System	
	Proximity/Card Readers	
	Main Controller (32 portal License)	
	Network Nodes (Up to 8 Readers)	
	Intrusion Alarm Control Panel Integration S/W License	
	Data Base Workstation	
	Identity Management S/W System	
	Fobs/Cards	
	Security Card Reader Wiring	
	Site Pole Cameras - w/ Pole Mount - Drives & Parking Lots	
	Site Pole Cameras - 3 MP/IR w/ Pole Mount - Fields	
	NEMA Enclosure for Poles	
	Fiber Transceivers & Power Supplies/Transformers	
	Building Exterior Cameras	
	Building Interior Cameras	
	PoE Switches (Edge)	
	PoE Switches (Aggregate)	
	View Station with 42" monitor	
	Network Video Recorder (NVR) with Video Management System	
	IP CCTV Camera Licenses	
	Fiber Cabling	
	Cat 6E Cabling	

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,400 Students / 334,3349 Sq. Ft.

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	<u>SECTION</u> 27 00 00	DESCRIPTION COMMUNICATIONS - TEL/DATA & A-V CABLING	ESTIMATED COST \$1,654,275.00
	27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$355,000.00
	27 41 01	LARGE VENUE AUDIOVISUAL SYSTEMS	\$455,000.00
	27 41 20	CLASSROOM SPEECH REINFORCEMENT SYSTEMS	\$231,000.00
	27 41 30	INSTRUCTIONAL AUDIOVISUAL SYSTEMS	\$620,000.00
	27 51 15	PUBLIC ADDRESS SYSTEM	\$195,800.00
	27 53 13	CLOCK SYSTEM	\$113,400.00
	28 16 00	INTEGRATED SECURITY SYSTEMS	\$1,164,000.00
		TOTAL ESTIMATED COST	\$4,788,475.00
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# PRELIMINARY COSTS FOR TECHNOLOGY FF&E NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.400 Students / 334.3349

0-1		Estimated	Estimated
Category	Description	Quantity	Price
1.	COMMUNICATIONS - VoIP VOICE SYSTEM		\$237,000.00
	Gateway/Router		
	Call Processor		
	Auto-attendant & Voice Mail		
	VoIP Handsets/Devices		
		_	\$237,000.00
		Estimated	Estimated
Category	Description	Quantity	Price
2.	SWITCHES / WIRELESS SYSTEM		
	Infractructure Cuitabas (10ChE Baskbana Circhit to Baskton) & Comissa		\$391,500.00
	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		Ψοθ 1,500.00
	Infrastructure Wireless Equipment & Services		
			\$373,400.00 \$764,900.00
			\$373,400.00
		Estimated	\$373,400.00 \$764,900.00 Estimated
Category		Estimated Quantity	\$373,400.00 \$764,900.00
Category 3.	Infrastructure Wireless Equipment & Services		\$373,400.00 \$764,900.00 Estimated
	Infrastructure Wireless Equipment & Services  Description		\$373,400.00 \$764,900.00 Estimated Price
	Infrastructure Wireless Equipment & Services  Description COMPUTER EQUIPMENT AND PERIPHERALS		\$373,400.00 \$764,900.00 Estimated Price \$226,700.00
Category 3.	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	Quantity	\$373,400.00 \$764,900.00 Estimated Price \$226,700.00 \$159,000.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services	Quantity 186	\$373,400.00 \$764,900.00 Estimated Price \$226,700.00 \$159,000.00 \$223,500.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	186 235	\$373,400.00 \$764,900.00 Estimated Price \$226,700.00 \$159,000.00 \$223,500.00 \$261,000.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services	186 235 90	\$373,400.00 \$764,900.00 Estimated Price \$226,700.00 \$159,000.00 \$223,500.00 \$261,000.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services	186 235 90 1,400	\$373,400.00  \$764,900.00  Estimated Price  \$226,700.00 \$159,000.00 \$223,500.00 \$261,000.00 \$455,000.00 \$94,500.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services  Charging Carts & Services	186 235 90 1,400	\$373,400.00  \$764,900.00  Estimated Price  \$226,700.00 \$159,000.00 \$223,500.00 \$261,000.00 \$455,000.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services  Charging Carts & Services  Peripherals (Printers) & Services	186 235 90 1,400	\$373,400.00  \$764,900.00  Estimated Price  \$226,700.00 \$159,000.00 \$223,500.00 \$261,000.00 \$455,000.00 \$94,500.00 \$70,000.00

AUDIOVISUAL EQUIPMENT		
TV Studio Equipment		\$225,000.00
Document Cameras	124	\$80,600.00
-	TV Studio Equipment	TV Studio Equipment

Category	Description	Estimated Quantity	Estimated Price
5.	SPECIALIZED SYSTEMS		
	Language Lab System	31	\$90,000.00

SECTION	DESCRIPTION	ESTIMATED
1.	VoIP VOICE SYSTEM	\$237,000.00
2.	SWITCHES / WIRELESS SYSTEM	\$764,900.00
3.	COMPUTER EQUIPMENT & PERIPHERALS	\$1,589,700.00
4.	AUDIOVISUAL EQUIPMENT	\$305,600.00
5.	SPECIALIZED SYSTEMS	\$90,000.00
	TOTAL ESTIMATED COST	\$2,987,200.00

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.600 Students / 382.653 Sq. Ft.

1/11/20	B2. Addition / Renovation & C1, C2, C3 New: 1,600 Students / 38	<u>2.653 Sq. F</u>
Sec.	Description	Estimated Systemated Price
27 00 00	COMMUNICATIONS - TEL/DATA & A-V CABLING	
	TEL/DATA CABLING SYSTEM	\$1,739,625.00
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Data	* 1,1 22,2
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Voice	
	WAP Wall Enclosures	
	MDF Closet (IDF & Site Fiber Cables, Racks, Patch Panels, etc.)	
	IDF Closet Fiber Cable, Racks, Patch Panels, etc.)	
	AUDIOVISUAL CABLING	\$104,000.00
	INTERACTIVE FLAT PANELS	***************************************
	Face Plates	
	AV in-Wall Cabling	
	HDMI	
	VGA	
	3.5mm	
	Patch Cables/Line Cords	
	HDMI	
	VGA	
	3.5mm	
		\$1,843,625.00
		Estimated Syst
Sec.	Description	Price
7 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$360,000.00
	TV DISTRIBUTION	
	MEDIA CONTROL	
	Decoders	
	DIGITAL SIGNAGE	
	Flat Panel TV Monitors	
	VIDEO ON DEMAND	
	ORIGINATION BROADCASTING	
		\$360,000.00
		Estimated Syst
Sec.	Description	Price
7 41 01	LARGE VENUE AUDIOVISUAL SYSTEMS	
	Gymnasium	\$128,000.00
	<b>Sound System</b> (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)	
	Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	
	Auditorium/Stage	\$148,000.00
	Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	
	Control System, Cabling, Installatio)	
	Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	
	Cafeteria/Stage	\$148,000.00
	<b>Sound System</b> (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)	
	Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	
	Fitness Contor	¢4E E00.00
	Fitness Center Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)	\$15,500.00
	Weights	\$15,500.00
	Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)	Ţ.3,000.00
		\$455,000.00

### PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.600 Students / 382.653 Sq. Ft. **Estimated System** Estimated Quantity Price Sec Description 27 41 20 CLASSROOM SPEECH REINFORCEMENT SYSTEMS \$244,200,00 Wireless Ceiling Panel System with hard wired electrical service 111 \$244,200.00 Estimated **Estimated System** Sec. Quantity **Price** Description 27 41 30 INSTRUCTIONAL AUDIOVISUAL SYSTEMS Classroom & Conference Room Interactive Flat Panel DisplaySystems 130 \$650,000.00 USB Extender Installation \$650,000.00 Estimated System Sec. Description **Price PUBLIC ADDRESS SYSTEM** 27 51 15 \$218,200.00 Console PA Speakers Horn PA Speakers Volume Controls Interfaces: Master Clock, Voice System, and Local Sound Systems Cabling \$218,200.00 **Estimated System** Sec. **Price** Description 27 53 13 **CLOCK SYSTEM** \$126,300.00 Master Clock 12" Secondary Clocks 16" Secondary Clocks Wire Guards Low Voltage Wiring \$126,300.00

## PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.600 Students / 382.653 Sq. Ft.

Sec.	Description	Price
8 16 00	INTEGRATED ELECTRONIC SECURITY SYSTEM	\$1,297,200.00
	Durana / Davis Alaum Ouatam	
	Duress/Panic Alarm System	
	Notify 2.0 Network Application (3-years)	
	Controller	
	Wireless Repeaters	
	Office Panel	
	Wireless Panic / Duress Button	
	Interfaces	
	Video Notification	
	Public Address System	
	Emergency responder 2-way Radio	
	Email/Text Notification	
	Visitor Door Entry System	
	Master Stations	
	Video Intercom Door Stations	
	Audio Intercom Door Stations	
	Interesting Detection Equipment and Oakling	
	Intrusion Detection Equipment and Cabling  Door Contacts	
	Motion Sensors	
	Control Panel	
	Strobes	
	Sirens	
	Keypads	
	Cabling	
	Cabing	
	Integrated / Converged Access Control and CCTV Surveillance System	
	Proximity/Card Readers	
	Main Controller (32 portal License)	
	Network Nodes (Up to 8 Readers)	
	Intrusion Alarm Control Panel Integration S/W License	
	Data Base Workstation	
	Identity Management S/W System	
	Fobs/Cards	
	Security Card Reader Wiring	
	Site Pole Cameras - w/ Pole Mount - Drives & Parking Lots	
	Site Pole Cameras - 3 MP/IR w/ Pole Mount - Fields	
	NEMA Enclosure for Poles	
	Fiber Transceivers & Power Supplies/Transformers	
	Building Exterior Cameras	
	Building Interior Cameras	
	PoE Switches (Edge)	
	PoE Switches (Aggregate)	
	View Station with 42" monitor	
	Network Video Recorder (NVR) with Video Management System	
	IP CCTV Camera Licenses	
	Fiber Cabling	
	Cat 6E Cabling	
	Cat be Cabling	

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,600 Students / 382.653 Sq. Ft.

<u>SECTION</u> 27 00 00	DESCRIPTION COMMUNICATIONS - TEL/DATA & A-V CABLING	ESTIMATED COST \$1,843,625.00
27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$360,000.00
27 41 01	LARGE VENUE AUDIOVISUAL SYSTEMS	\$455,000.00
27 41 20	CLASSROOM SPEECH REINFORCEMENT SYSTEMS	\$244,200.00
27 41 30	INSTRUCTIONAL AUDIOVISUAL SYSTEMS	\$650,000.00
27 51 15	PUBLIC ADDRESS SYSTEM	\$218,200.00
27 53 13	CLOCK SYSTEM	\$126,300.00
28 16 00	INTEGRATED SECURITY SYSTEMS	\$1,297,200.00
	TOTAL ESTIMATED COST	\$5,194,525.00

# PRELIMINARY COSTS FOR TECHNOLOGY FF&E NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,600 Students / 382.653

1/11/20	B2. Addition / Renovation & C1, C2, C3 New: 1	Estimated	Estimated
Category	Description	Quantity	Price
1.	COMMUNICATIONS - VoIP VOICE SYSTEM		\$264,100.00
	Gateway/Router		
	Call Processor		
	Auto-attendant & Voice Mail		
	VoIP Handsets/Devices		
			\$264,100.00
	1	Estimated	Estimated
Category	Description	Quantity	Price
2.	SWITCHES / WIRELESS SYSTEM		
2.			
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		\$436,300.00
2.			\$436,300.00 \$416,100.00
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		\$416,100.00
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		· '
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services	Estimated	\$416,100.00
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services	Estimated Quantity	\$416,100.00 \$852,400.00
	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS		\$416,100.00 \$852,400.00 Estimated
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS Servers, Central Equipment, Vmware & Services		\$416,100.00 \$852,400.00 Estimated
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS		\$416,100.00 \$852,400.00 Estimated Price
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	Quantity	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services	Quantity 196	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$167,000.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	196 235	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$167,000.00 \$223,500.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services  Charging Carts & Services	196 235 90	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$167,000.00 \$223,500.00 \$261,000.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services	196 235 90 1,600	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$167,000.00 \$223,500.00 \$261,000.00 \$520,000.00

4.	AUDIOVISUAL EQUIPMENT		
	TV Studio Equipment		\$225,000.00
	Document Cameras	130	\$84,500.00
			\$309,500.00

Category	Description	Estimated Quantity	Estimated Price
5.	SPECIALIZED SYSTEMS		
	Language Lab System	31	\$90,000.00

SECTION	DESCRIPTION	ESTIMATED
1.	VoIP VOICE SYSTEM	\$264,100.00
2.	SWITCHES / WIRELESS SYSTEM	\$852,400.00
3.	COMPUTER EQUIPMENT & PERIPHERALS	\$1,738,600.00
4.	AUDIOVISUAL EQUIPMENT	\$309,500.00
5.	SPECIALIZED SYSTEMS	\$90,000.00
	TOTAL ESTIMATED COST	\$3,254,600.00

\$1,738,600.00

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.660 Students / 393.327 Sq. Ft.

Sec.		
	Description	Estimated Syste Price
27 00 00	COMMUNICATIONS - TEL/DATA & A-V CABLING	
	TEL/DATA CABLING SYSTEM	\$1,789,450.00
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Data	
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Voice	
	WAP Wall Enclosures	
	MDF Closet (IDF & Site Fiber Cables, Racks, Patch Panels, etc.)	
	IDF Closet Fiber Cable, Racks, Patch Panels, etc.)	
	151 Global Fiber Gable, Fateria, Fateria, etc.)	
	AUDIOVISUAL CABLING	\$105,600.00
	INTERACTIVE FLAT PANELS	\$103,000.00
	Face Plates	
	AV in-Wall Cabling	
	HDMI	
	VGA	
	3.5mm	
	Patch Cables/Line Cords	
	HDMI	
	VGA	
	3.5mm	
	0.011111	
		\$1,895,050.00
Sec.	Description	Estimated System Price
27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$398,000.00
	TV DISTRIBUTION	φ390,000.00
	MEDIA CONTROL	
	Decoders	
	DIGITAL SIGNAGE	
	Flat Panel TV Monitors	
	VIDEO ON DEMAND	
	ORIGINATION BROADCASTING	
		\$398,000.00
Sec.	Description	\$398,000.00 Estimated System
Sec. 27 41 01	Description  LARGE VENUE AUDIOVISUAL SYSTEMS	Estimated Syste
	Description  LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium	Estimated Syste
	LARGE VENUE AUDIOVISUAL SYSTEMS	Estimated Syst Price
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated System Price
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	Estimated Systematics Price \$128,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)	Estimated System Price
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation) Auditorium/Stage	Estimated System Price \$128,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation) Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated System Price \$128,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	Estimated System Price \$128,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage	\$128,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)	\$128,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening,	\$128,000.00 \$148,000.00
	Control System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)	\$128,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center	\$128,000.00 \$148,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)  Weights	\$128,000.00 \$148,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center  Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00 \$148,000.00

### PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.660 Students / 393.327 Sq. Ft. Estimated System Estimated Quantity Price Sec Description 27 41 20 CLASSROOM SPEECH REINFORCEMENT SYSTEMS \$248,600,00 Wireless Ceiling Panel System with hard wired electrical service 113 \$248,600.00 Estimated **Estimated System** Sec. Quantity **Price** Description 27 41 30 INSTRUCTIONAL AUDIOVISUAL SYSTEMS Classroom & Conference Room Interactive Flat Panel DisplaySystems 132 \$660,000.00 USB Extender Installation \$660,000.00 Estimated System Sec. Description **Price PUBLIC ADDRESS SYSTEM** 27 51 15 \$224,200.00 Console PA Speakers Horn PA Speakers Volume Controls Interfaces: Master Clock, Voice System, and Local Sound Systems Cabling \$224,200.00 **Estimated System** Sec. **Price** Description 27 53 13 **CLOCK SYSTEM** \$129,800.00 Master Clock 12" Secondary Clocks 16" Secondary Clocks Wire Guards Low Voltage Wiring \$129,800.00

## PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.660 Students / 393.327 Sq. Ft.

Sec.	Description	Price
28 16 00	INTEGRATED ELECTRONIC SECURITY SYSTEM	\$1,297,200.00
	Duress/Panic Alarm System	
	Notify 2.0 Network Application (3-years)	
	Controller	
	Wireless Repeaters	
	Office Panel	
	Wireless Panic / Duress Button	
	Interfaces	
	Video Notification	
	Public Address System	
	Emergency responder 2-way Radio	
	Email/Text Notification	
	Emaily rext induffication	
	Visitor Door Entry System	
	Master Stations	
	Video Intercom Door Stations	
	Audio Intercom Door Stations	
	Intrusion Detection Equipment and Cabling	
	Door Contacts	
	Motion Sensors	
	Control Panel	
	Strobes	
	Sirens	
	Keypads	
	Cabling	
	Intermeted / Occurred Access Control and COTV Committees Control	
	Integrated / Converged Access Control and CCTV Surveillance System Proximity/Card Readers	
	Main Controller (32 portal License)	
	Network Nodes (Up to 8 Readers)  Intrusion Alarm Control Panel Integration S/W License	
	Data Base Workstation	
	Identity Management S/W System	
	Fobs/Cards Sequently Cord Reader Wiring	
	Security Card Reader Wiring	
	Site Pole Cameras - w/ Pole Mount - Drives & Parking Lots Site Pole Cameras - 3 MP/IR w/ Pole Mount - Fields	
	NEMA Enclosure for Poles Fiber Transceivers & Power Supplies/Transformers	
	Building Exterior Cameras  Building Interior Cameras	
	PoE Switches (Edge)	
	PoE Switches (Aggregate)	
	View Station with 42" monitor	
	Network Video Recorder (NVR) with Video Management System	
	IP CCTV Camera Licenses	
	Fiber Cabling	
	Cat 6E Cabling	

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,660 Students / 393,327 Sq. Ft.

<u>SECTION</u> 27 00 00	DESCRIPTION COMMUNICATIONS - TEL/DATA & A-V CABLING	ESTIMATED COST \$1,895,050.00
27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$398,000.00
27 41 01	LARGE VENUE AUDIOVISUAL SYSTEMS	\$455,000.00
27 41 20	CLASSROOM SPEECH REINFORCEMENT SYSTEMS	\$248,600.00
27 41 30	INSTRUCTIONAL AUDIOVISUAL SYSTEMS	\$660,000.00
27 51 15	PUBLIC ADDRESS SYSTEM	\$224,200.00
27 53 13	CLOCK SYSTEM	\$129,800.00
28 16 00	INTEGRATED SECURITY SYSTEMS	\$1,297,200.00
	TOTAL ESTIMATED COST	\$5,307,850.00

# PRELIMINARY COSTS FOR TECHNOLOGY FF&E NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,660 Students / 393,327

		,660 Studer	
Category	Description	Estimated Quantity	Estimated Price
1.	COMMUNICATIONS - VoIP VOICE SYSTEM		\$264,100.00
	Gateway/Router		
	Call Processor		
	Auto-attendant & Voice Mail		
	VoIP Handsets/Devices		
			\$264,100.00
	т	Estimated	Estimated
Category	Description	Quantity	Price
2.	SWITCHES / WIRELESS SYSTEM		
	Infractivisticas Control of (100h F. Bookhana Circhit to Bookton) & Comisso		\$436,300.00
	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		Ψ430,300.00
	Infrastructure Switches (10GDE Backbone, Gigabit to Desktop) & Services  Infrastructure Wireless Equipment & Services		\$416,100.00
			\$416,100.00
		Estimated	\$416,100.00
Category		Estimated Quantity	\$416,100.00 \$852,400.00
Category 3.	Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS		\$416,100.00 \$852,400.00 Estimated
	Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services		\$416,100.00 \$852,400.00 Estimated
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services		\$416,100.00 \$852,400.00 Estimated Price
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	Quantity	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$169,000.00 \$223,500.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services	Quantity 198	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$169,000.00 \$223,500.00 \$261,000.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services	198 235	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$169,000.00 \$223,500.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services  Charging Carts & Services	198 235 90	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$169,000.00 \$223,500.00 \$261,000.00
	Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services	198 235 90 1,660	\$416,100.00 \$852,400.00 Estimated Price \$252,600.00 \$169,000.00 \$223,500.00 \$261,000.00 \$539,500.00

AUDIOVISUAL EQUIPMENT		
TV Studio Equipment		\$225,000.00
Document Cameras	132	\$85,800.00
	TV Studio Equipment	TV Studio Equipment

Category	Description	Estimated Quantity	Estimated Price
5.	SPECIALIZED SYSTEMS		
	Language Lab System	31	\$90,000.00

SECTION	DESCRIPTION	ESTIMATED
1.	VoIP VOICE SYSTEM	\$264,100.00
2.	SWITCHES / WIRELESS SYSTEM	\$852,400.00
3.	COMPUTER EQUIPMENT & PERIPHERALS	\$1,810,100.00
4.	AUDIOVISUAL EQUIPMENT	\$310,800.00
5.	SPECIALIZED SYSTEMS	\$90,000.00
	TOTAL ESTIMATED COST	\$3,327,400.00

\$1,810,100.00

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.722 Students / 403.554 Sq. Ft.

Sec.		3,554 Sq. F
	Description	Estimated System Price
27 00 00	COMMUNICATIONS - TEL/DATA & A-V CABLING	
	TEL/DATA CABLING SYSTEM	\$1,837,925.00
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Data	. , ,
	Cat. 6E UTP Horizontal Cabling and Patch Cables - Voice	
	WAP Wall Enclosures	
	MDF Closet (IDF & Site Fiber Cables, Racks, Patch Panels, etc.)	
	IDF Closet Fiber Cable, Racks, Patch Panels, etc.)	
	IDI Giosel Fiber Cable, Nacks, Falcit Fariers, etc.)	
	AUDIOVICUAL CARLING	£400,400,00
	AUDIOVISUAL CABLING	\$106,400.00
	INTERACTIVE FLAT PANELS	
	Face Plates	
	AV in-Wall Cabling	
	HDMI	
	VGA	
	3.5mm	
	Patch Cables/Line Cords	
	HDMI	
	VGA	
	3.5mm	
	3.311111	
		\$1,944,325.00
		·
Sec.	Description	Estimated System Price
27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$398,000.00
	TV DISTRIBUTION	ψοσο,σσο.σσ
	MEDIA CONTROL	
	Decoders	
	DIGITAL SIGNAGE	
	Flat Panel TV Monitors	
	VIDEO ON DEMAND	
	ORIGINATION BROADCASTING	
		\$398,000.00
		<b>+</b> ,
Sec.	Description	
Sec. 27 41 01	LARGE VENUE AUDIOVISUAL SYSTEMS	Estimated Systo Price
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium	Estimated Syste
	LARGE VENUE AUDIOVISUAL SYSTEMS	Estimated Syst Price
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated Syst Price
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage	Estimated System Price
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation) Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening,	Estimated System Price
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation) Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)	Estimated System Price \$128,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	Estimated System Price \$128,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage	Estimated Syst Price \$128,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio) Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening,	\$128,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center	\$128,000.00 \$148,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS Gymnasium Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center  Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00
	Control System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Video System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Auditorium/Stage Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Fitness Center Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)  Weights	\$128,000.00 \$148,000.00 \$148,000.00
	LARGE VENUE AUDIOVISUAL SYSTEMS  Gymnasium  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Auditorium/Stage  Sound System (Sound System Sound Headend Equipment, Speakers, Microphones, Assisted Listening, Control System, Cabling, Installatio)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Cafeteria/Stage  Sound System (Sound Headend Equipment, Speakers, Microphones, Mixing Board, Assisted Listening, Cabling, Installation)  Video System (Projection Screen, Video Projector, AV Switch, Control System, Cabling, Installation)  Fitness Center  Sound System (Sound Headend Equipment, Speakers, Microphones, Control System, Cabling, Installation)	\$128,000.00 \$148,000.00 \$148,000.00

### PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.722 Students / 403.554 Sq. Ft. Estimated System Estimated Quantity Price Sec Description 27 41 20 CLASSROOM SPEECH REINFORCEMENT SYSTEMS \$250.800.00 Wireless Ceiling Panel System with hard wired electrical service 114 \$250,800.00 Estimated **Estimated System** Sec. Quantity **Price** Description 27 41 30 INSTRUCTIONAL AUDIOVISUAL SYSTEMS Classroom & Conference Room Interactive Flat Panel DisplaySystems 133 \$665,000.00 USB Extender Installation \$665,000.00 Estimated System Sec. Description **Price PUBLIC ADDRESS SYSTEM** \$230,100.00 27 51 15 Console PA Speakers Horn PA Speakers Volume Controls Interfaces: Master Clock, Voice System, and Local Sound Systems Cabling \$230,100.00 **Estimated System** Sec. **Price** Description 27 53 13 **CLOCK SYSTEM** \$133,200.00 Master Clock 12" Secondary Clocks 16" Secondary Clocks Wire Guards Low Voltage Wiring \$133,200.00

PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY
NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA
11/11/20 B2. Addition / Renovation & C1. C2. C3 New: 1.722 Students / 403.554 Sq. Ft.

28 16 00	Description INTEGRATED ELECTRONIC SECURITY SYSTEM				
	INTEGRATED ELECTRONIC SECURITY STSTEM	\$1,368,100.0			
	Duress/Panic Alarm System				
	Notify 2.0 Network Application (3-years)				
	Controller				
	Wireless Repeaters				
	Office Panel				
	Wireless Panic / Duress Button				
	Interfaces				
	Video Notification				
	Public Address System				
	Emergency responder 2-way Radio				
	Email/Text Notification				
	Visitor Door Entry System				
	Master Stations				
	Video Intercom Door Stations				
	Audio Intercom Door Stations				
	Intrusion Detection Equipment and Cabling				
	Door Contacts				
	Motion Sensors				
	Control Panel				
	Strobes				
	Sirens				
	Keypads				
	Cabling				
	Integrated / Converged Access Control and CCTV Surveillance System				
	Proximity/Card Readers				
	Main Controller (32 portal License)				
	Network Nodes (Up to 8 Readers)				
	Intrusion Alarm Control Panel Integration S/W License				
	Data Base Workstation				
	Identity Management S/W System				
	Fobs/Cards				
	Security Card Reader Wiring				
	Site Pole Cameras - w/ Pole Mount - Drives & Parking Lots				
	Site Pole Cameras - 3 MP/IR w/ Pole Mount - Fields				
	NEMA Enclosure for Poles				
	Fiber Transceivers & Power Supplies/Transformers				
	Building Exterior Cameras				
	Building Interior Cameras				
	PoE Switches (Edge)				
	PoE Switches (Aggregate)				
	View Station with 42" monitor				
	Network Video Recorder (NVR) with Video Management System				
	IP CCTV Camera Licenses				
	Fiber Cabling				
	Cat 6E Cabling				

# PRELIMINARY CONSTRUCTION COSTS FOR TECHNOLOGY & SECURITY NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,722 Students / 403,554 Sq. Ft.

		ESTIMATED
SECTION	DESCRIPTION	COST
27 00 00	COMMUNICATIONS - TEL/DATA & A-V CABLING	\$1,944,325.00
27 41 00	IPTV AND VIDEO ON DEMAND SYSTEM	\$398,000.00
27 41 01	LARGE VENUE AUDIOVISUAL SYSTEMS	\$455,000.00
27 41 20	CLASSROOM SPEECH REINFORCEMENT SYSTEMS	\$250,800.00
27 41 30	INSTRUCTIONAL AUDIOVISUAL SYSTEMS	\$665,000.00
27 51 15	PUBLIC ADDRESS SYSTEM	\$230,100.00
27 53 13	CLOCK SYSTEM	\$133,200.00
28 16 00	INTEGRATED SECURITY SYSTEMS	\$1,368,100.00
	TOTAL ESTIMATED COST	\$5,444,525.00

# PRELIMINARY COSTS FOR TECHNOLOGY FF&E NORTHEAST METRO REGIONAL VOCATIONAL HIGH SCHOOL, WAKEFIELD, MA 11/11/20 B2. Addition / Renovation & C1, C2, C3 New: 1,722 Students / 403,554

Category	Description	Estimated Quantity	Estimated Price
1.	COMMUNICATIONS - VoIP VOICE SYSTEM	Quantity	\$278,500.00
	Gateway/Router	+	ΨΖ10,000.00
	Call Processor	+	
	Auto-attendant & Voice Mail	+	
	VoIP Handsets/Devices	+	
	Voli Fiditudeta/201000		
			\$278,500.00
		I Estimated I	Estimated
Category	Description	Quantity	Price
	SWITCHES / WIRELESS SYSTEM	-	
2.	SVIII CHES / WIRELESS STSTEW		
2.			\$460,100.00
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services		\$460,100.00 \$438,800.00
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services		\$438,800.00 \$898,900.00
	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services	Estimated	\$438,800.00 \$898,900.00 Estimated
2.	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description	Estimated Quantity	\$438,800.00 \$898,900.00
	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS		\$438,800.00 \$898,900.00 Estimated Price
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS Servers, Central Equipment, Vmware & Services		\$438,800.00 \$898,900.00 Estimated Price
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services		\$438,800.00 \$898,900.00 Estimated Price \$266,400.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	Quantity	\$438,800.00 \$898,900.00 Estimated Price \$266,400.00 \$170,000.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services	Quantity 199	\$438,800.00 \$898,900.00 Estimated Price \$266,400.00 \$170,000.00 \$223,500.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services	199 235	\$438,800.00 \$898,900.00 Estimated Price \$266,400.00 \$170,000.00 \$223,500.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services	199 235 90	\$438,800.00 \$898,900.00 Estimated Price \$266,400.00 \$170,000.00 \$223,500.00 \$261,000.00
Category	Infrastructure Switches (10GbE Backbone, Gigabit to Desktop) & Services Infrastructure Wireless Equipment & Services  Description  COMPUTER EQUIPMENT AND PERIPHERALS  Servers, Central Equipment, Vmware & Services  Admin / Teacher / Instructor Computers & Services  Computer Lab Desktop Computers & Services  MAC Desktop Computers & Services  Student Chromebooks & Services	199 235 90 1,722	\$438,800.00 \$898,900.00 Estimated Price \$266,400.00 \$170,000.00 \$223,500.00 \$261,000.00 \$559,650.00

225,000.00
223,000.00
86,450.00
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Category	Description	Estimated Quantity	Estimated Price
5.	SPECIALIZED SYSTEMS		
	Language Lab System	31	\$90,000.00

SECTION	DESCRIPTION	ESTIMATED
1.	VoIP VOICE SYSTEM	\$278,500.00
2.	SWITCHES / WIRELESS SYSTEM	\$898,900.00
3.	COMPUTER EQUIPMENT & PERIPHERALS	\$1,895,050.00
4.	AUDIOVISUAL EQUIPMENT	\$311,450.00
5.	SPECIALIZED SYSTEMS	\$90,000.00
	TOTAL ESTIMATED COST	\$3,473,900.00