



TO Prospective Supplier

FROM Kip Smalligan, Sr. Strategic Sourcing Specialist, GVSU Procurement Services
Ph 616/331-3211 Fax 616/331-3287 smalligk@gvsu.edu

DATE May 22, 2019

RE Request for Proposal #219-21
Kirkhof Center & Cook-DeWitt Center Audiovisual Upgrade

Grand Valley State University is accepting proposals for upgrade solutions to audiovisual equipment, systems and capabilities of the multi-purpose areas of the Russell H. Kirkhof Center (student center) and the Cook-DeWitt Center (small performance hall).

There will be a **mandatory** pre-bid meeting walk through of University spaces with Ryan Neloms (nelomsry@gvsu.edu) on Friday June 7, 2019 at 10 am -12:00 pm where the scope of needs will be further explained. Meet at the Cook DeWitt Center lobby which is building #35 on the [campus map](#) (next to the carillon tower).

Contact Kip Smalligan smalligk@gvsu.edu 616/331-3211 for a visitor parking permit. Parking Lots F, G, & H are the closest. You may park in any space allowed for faculty and staff, student commuters, or residents. NOTE: The main Campus Drive and West Campus Drive are closed for construction. [See this map for detour routes.](#)

Proposals will only be accepted by those suppliers that attend the pre-bid meeting.

If you wish to submit a proposal for this equipment and work, submit your response **by e-mail (smalligk@gvsu.edu) no later than 5:00 pm on Friday, June 21, 2019.** State "RFP #219-21" in the subject line of your e-mail. Proposals must be received by the above date and time. GVSU will confirm to you by e-mail that your proposal has been received. GVSU is not responsible for late, lost, misdirected, incomplete, or illegible, mail. No fax, verbal, or telephone responses will be accepted.

Direct questions to Kip Smalligan at 616/331-3211 or smalligk@gvsu.edu

GVSU RFP #219-22: Introduction

Grand Valley State University, established in 1960, is a four-year public university. It attracts more than 25,000 students with its high quality programs and state-of-the-art facilities. Grand Valley provides a fully accredited undergraduate and graduate liberal education and has campuses in Allendale, Grand Rapids, and Holland and centers in Muskegon, Detroit and Traverse City

GVSU is seeking audiovisual solutions to equip several rooms and spaces in its Kirkhof Center (student center) and Cook Dewitt Center (small performance hall) with improved technology, simplified operating systems, and flexibility to serve various customer needs. We are interested in improving facilities used for hosting internal and external events to offer reliable, quality audiovisual technologies for a range of uses. We require the flexibility of interconnecting systems to create large-audience options. We also desire to connect with speakers and audiences remotely using various technologies. Whenever possible, it is the intent that the end user will operate the equipment and technical support will not be required.

Important features will include equipment requirements, pricing, ease of use, and controllability.

GVSU RFP #219-21: Instructions

There will be a **mandatory** pre-bid meeting walk through of University spaces with Ryan Neloms (nelomsry@gvsu.edu) on Friday June 7, 2019 at 10 am -12:00 pm. Meet at the Cook DeWitt Center lobby which is building #35 on the [campus map](#) (next to the carillon tower).

Contact Kip Smalligan smalligk@gvsu.edu 616/331-3211 for a visitor parking permit. Parking Lots F, G, & H are the closest. You may park in any space allowed for faculty and staff, student commuters, or residents. NOTE: The main Campus Drive and West Campus Drive are closed for construction. [See this map for detour routes.](#)

[Proposals will only be accepted by those suppliers that attend the pre-bid meeting.](#)

If you wish to submit a proposal for this equipment and work, submit your response **by e-mail (smalligk@gvsu.edu) no later than 5:00 pm on Friday, June 21, 2019.** State "RFP #219-21" in the subject line of your e-mail.

Proposals must be received by the above date and time. GVSU will confirm to you by e-mail that your proposal has been received. GVSU is not responsible for late, lost, misdirected, incomplete, or illegible, mail. No fax, verbal, or telephone responses will be accepted.

Before sealing the envelope, check to be sure that:

- The unit and extended prices are provided
- Addenda received are acknowledged on page 23.
- The Proposal & Contract form on pages 23-24 is signed by an authorized individual

1. RFP Schedule:

May 22, 2019:	RFP released
June 7, 2019 @ 10:00 am:	Pre-Bid Walk Through
June 21, 2019 @ 5:00 pm:	Proposal submission deadline
June 28, 2019:	Proposal awarded

2. Should it become necessary to revise any part of the RFP, notice of the revision will be given in the form of an addendum to all prospective suppliers on record as having received the RFP. Any addendum notices will also be posted on the [Bid Opportunities page](#) of the GVSU Procurement Services website www.gvsu.edu/purchasing. Each supplier should acknowledge receipt of any addenda in their proposal on the Proposal form, but the failure of a supplier to receive or acknowledge receipt of any addendum, shall not relieve the supplier of the responsibility for complying with the terms thereof.
3. Grand Valley State University reserves the right to accept or reject any or all proposals.
4. Click on this link to see GVSU's [General Conditions](#)
5. Contact Ryan Neloms with any questions regarding specifications outlined in this RFP. Please submit questions via email to nelomsry@gvsu.edu
6. Please provide pricing for the Kirkhof Center and for the Cook Dewitt Center by facility. Each proposal should break down the cost for each room within the facility included in the project. The university may award each building separately. If there is a price advantage for being awarded both buildings, identify the savings in your proposal.
7. Include all costs in your proposal including freight, delivery, and installation. Provide an itemized cost list if optional or variable costs. All costs provided in your proposal are to be quoted F.O.B. destination GVSU, Allendale, Michigan.
8. Provide product availability
9. Provide warranty information for each product where applicable
10. Grand Valley State University is Michigan sales tax exempt. Exemption certificate will be provided to the awarded supplier.
11. Acceptance of proposal will be made by purchase order
12. Contact Kip Smalligan at 616/331-3211 or smalligk@gvsu.edu with any questions regarding the RFP process.

GVSU RFP #219-21: Specifications

1. Bid on new equipment; no rebuilt equipment allowed. See page 11, Section 2.3 on requests for alternate equipment
2. Include all costs in your proposal including freight, delivery, and installation as F.O.B. destination GVSU Campus, Allendale, Michigan. Provide an itemized cost list if optional or variable costs.
3. Installation, set-up and programing
Installation work schedule must be coordinated with Ryan Nyloms. All work must be completed and equipment functioning properly at project completion. Project must be completed by Friday August 2, 2019. Time is of the essence.
4. Licensing/Cost
 - a. Please provide pricing structure for the systems recommended. Break pricing out into these categories: software only, hardware only, software and hardware together. Break pricing further by facility, Kirkhof Center and Cook Dewitt, and then by room
 - b. Equipment cost and labor cost for installation/programming should be listed separately. Please provide an itemized list of each piece of equipment and the cost according to specifications.
 - c. What work, if any, will be subcontracted? (Wiring, electrical, etc.)
 - d. Support Services/Training
 - e. Describe any Service agreements your offer with regards to equipment specified
 - f. Describe your support structure and all costs associated with support.
 - g. Do you provide training on systems installed? Is there a cost structure to this?
 - h. What is your response time for technical service calls?
 - i. How will your company handle training and initial set up of the systems?
 - j. How is ongoing training handled?
 - k. Does your company offer technical support for meetings/events on a contractual basis?
Where are you currently doing so and under what considerations?
5. Other Criteria
 - a. GVSU must own all programming and source codes
 - b. All wiring designs and schematic drawings are shall be turned over to GVSU
 - c. All user manuals for any equipment included in the project must be turned over to GVSU

6. Evaluation Criteria

- a. Quality, technical performance, and functionality, of proposed equipment.
- b. Reference checks for supplier's ability to meet planning and delivery deadlines.
- c. Supplier's past experience with projects of similar scope and complexity.
- d. Warranties, guarantees and supplier's return policy
- e. Price of equipment and services
- f. Please provide a copy of your Crestron Dealer License
- g. Please provide a copy of your DMC-E License
- h. Please provide a copy of your Extron Dealer License

I. GENERAL

1.1 Summary of Work

A. Kirkhof Center: 2250 Grand River Room (GRR) and 2204 Pere Marquette Room

1. New video projection will be needed in Grand River Room as well as Pere Marquette. Old equipment will remain property Grand Valley State University.
2. Remote control of the room AV systems will be by a tablet. Two (2) 4" touch panels will control basic functionality for both room. An additional two (2) owner furnished tablets will have master control functionality. Contractor will provide Crestron App.
3. Four (4) wireless microphones will be added for presenters in addition to each wireless receiver will be combined with a hand held transmitter and a body pack transmitter with lapel microphone.
4. A teleconferencing system will be integrated into the room. Dialing will be via touch screen. Microphones and other audio sources will be able to be heard by the entire conference room. Teleconference system must be compatible and integrated with existing hearing loop system.
5. AV signals from: a CD player, MP3 player input, IP TV receiver and two (2) blue ray players will be able to be routed into any of the conference rooms. Additional HDMI input and output will be available at the equipment rack.

B. Kirkhof Center Rooms 2215/2216

1. Each of the two (2) conference rooms will receive a new video projector and replacement video screen material. Each projector may be configured independently so video may be routed from any of the wall boxes to any projector. The existing projector lifts will be reused.
2. A series of six (6) new ceiling speakers will provide coverage to each conference room. When rooms are open, audio sources may be combined to provide the same audio coverage to larger rooms.
3. Control of the room AV systems will be by two (2) podium mounted touch panels and four (2) portable rack mounted touch panels. An additional owner furnished iPad will have the same control functionality. The Contractor will provide the Crestron tablet app.
4. Two (2) channels of teleconference will allow two separate meetings to simultaneously conference call.
5. Two (2) wireless microphones will be added for presenters in addition to the existing wired microphone input jacks. Each wireless receiver will be combined with a hand held transmitter and a body pack transmitter with lapel microphone. Routing for the wireless microphones will be flexible so they may be used in any conference room and the lobby. Multiple antennae will be used for proper reception throughout the rooms.
6. AV signals from: a CD player, MP3 player input, IP TV receiver and two (2) blue ray players will be able to be routed into any of the conference rooms. Additional HDMI input and output will be available at the equipment rack.
7. Audio from the Grand River Room and Pere Marquette room will be extended into 2215/2216 for overflow.

C. Kirkhof Center Pere Marquette 2204

1. A new audio control interface and audio processor will be utilized in the space.
2. Audio from the Grand River Room will be extended into the Pere Marquette room for use as overflow. An audio/video output will be reused to accommodate a press multi-purpose box.
3. Control of the room AV systems will be by a 7" table-top touch screen. An additional two (2) owner furnished tablets will have master control functionality. Contractor will provide Crestron App.
4. Four (4) wireless microphones will be added for presenters in addition to each wireless receiver will be combined with a hand held transmitter and a body pack transmitter with lapel microphone.
5. A teleconferencing system will be integrated into the room. Dialing will be via touch screen. Microphones and other audio sources will be able to be heard by the far side of the conference. Far side callers will be heard over the speaker systems. Teleconference system must be compatible and integrated with existing hearing loop system.

6. AV signals from: a CD player, MP3 player input, IP TV receiver and two (2) blue ray players will be able to be routed into any of the conference rooms. Additional HDMI input and output will be available at the equipment rack.

D. Cook Dewitt Center

1. A new HD pan-tilt-zoom camera will be installed at the rear of the auditorium. Audio will be combined with the video signal by an IP encoder. This stream will be transmitted on the university network.
2. A new audio mixing board will be placed in the tech booth with additional ceiling speakers for hearing. Eight (4) new channels of wireless microphone along with 6 wired options will replace the existing units. The existing audio tie lines, microphone inputs, and other audio inputs between the stage and the tech booth will be maintained. Two (2) 7 inch touch panels will control room AV functionality (user would like ability to have sound board password activated). One (1) panel will be located in the tech booth and the other located on stage. An additional two (2) owner furnished tablets will have the same control functionality. The Contractor will provide the Crestron tablet app.
3. Two (2) occupancy sensors will turn off the AV systems when the room is not in use.
4. The new equipment including: video switcher, wireless microphone receivers, amplifiers, audio processors and other system electronics will be installed in the existing tech booth equipment racks.

1.2 Definitions and Terms

A. The following definitions shall be used.

1. Install – Take equipment and place in appropriate location. Attach all wires and secure equipment.
2. Furnish – Deliver to the owner in new packaging.
3. Supply – Furnish to the owner unpackaged and ready for installation by owner or other contractor.
4. Provide – Furnish and install.
5. OFE – Owner Furnished Equipment (existing equipment to be reused in the system).

B. The following terms shall be used to refer to the division of labor and define various entities associated with the project.

1. Owner – Organization or person who has undertaken to construct the space.
2. Construction Manager – General Contractor as hired by the owner.
3. Installing Contractor – The successful bidder of this section as awarded by the construction manager.
4. Electrical Contractor – The successful bidder for the electrical portions of the contract, typically, but not limited to, division 16.
5. Subcontractor – Company or organization contracted by the Installing Contractor to perform or supply any portion of this specification.
6. Consultant – Individual or company hired by the architect or owner to design the systems, write the specification, and detail schematic drawings.
7. Architect – Company or individual hired by the owner to provide the design of the space.

1.3 Submittals

A. Submittal sheets are required to be submitted for all specified equipment. Only items that are requested as substitutes by the Installing Contractor shall be submitted. All submittals and shop drawings shall be submitted and approved by the Consultant prior to the beginning of installation. These submittals shall be provided not more than 6 weeks following award of contract

1. Submittal sheets are required for all equipment to be installed as specified. Installing Contractor shall furnish either electronic PDF or (6) sets of printed submittal sheets for any equipment request that is not the specified product. Any submittal sets are to be bound on the left side and printed on 8.5x11 inch paper.
2. Installing Contractor shall furnish either an electronic PDF or (4) printed sets of shop drawings detailing a complete installation plan. Shop drawings are expected to expand upon the construction documents and shall show all components and wires, complete with individual wire numbers, proposed rack layouts, riser diagrams and schematics for individual subsystems, calculations, and details of proposed rigging. Schematics shall show a separate designation for each device and labeling shall correspond to that of the rack layouts. Installing Contractor shall convey that the system is ready to install as shown in the shop drawings, and that details not explicitly defined by this specification or on the drawings have been addressed by the Contractor. Shop drawings are to be bound on the left side and printed on E-size (30x42) paper.
3. Scanned or copied versions of the construction documents will not be accepted and shall be automatically rejected. All drawings are to be done in a clear and professional manner.
4. Failure to furnish all information as noted above shall result in the rejection of submittals. Questions regarding submittal information should be directed to the Consultant prior to drawing submissions.
5. The Consultant's ACAD 2004 drawings shall be available for floor plans, conduit & wire pull layouts, and some detail drawings. Earlier versions of drawings can be supplied for an additional charge of \$20 per drawing. It shall be the responsibility of the Contractor to implement any drawings furnished by the Consultant. Any time expended by the Consultant at the request of the Installing Contractor to interface drawings to other third party software shall be billed to the Installing Contractor at the Consultant's standard hourly rate. Additional charges may be assessed by the Architect or Construction Manager for furnishing electronic copies of drawings.

B. See section 3 for additional post-installation submittal requirements.

1.4 Division of Labor

A. Electrical Contractor shall furnish and install all conduit and boxes associated with the audio and video systems as specified, as shown on the drawings, and as required by the Installing Contractor.

- B. Electrical Contractor shall provide a #6 technical ground wire from the insulated ground bus bar in panel boards feeding the audio/video systems to the equipment racks for connection to the rack buss bar.
- C. Any floor pockets and wall boxes shall be furnished and installed by the Electrical Contractor. All cover plates, lids, electrical outlets, and other accessory items associated with floor boxes or wall boxes shall be furnished and installed by the Electrical Contractor.
- D. Engraved panels in floor boxes and on wall plates shall be furnished and installed by the Installing Contractor.
- E. All electrical connections carrying line voltage (above 100 volts) shall be connected and terminated by the Electrical Contractor. All line voltage wire and cable for the audio and video systems shall be provided by the Electrical Contractor.
- F. All electrical connections carrying low voltage (below 100 volts) shall be connected and terminated by the Installing Contractor. All low voltage wire and cable for the audio and video systems shall be provided by the Installing Contractor.

1.5 Quality Assurance

- A. All electrical installation shall be in compliance with the N.E.C., and shall be inspected by the Michigan Department of Labor/State Electrical Inspection Authority.
- B. Bidders for this section are expected to be an authorized dealer for all major pieces of equipment or purchasing them through an authorized dealer. Documentation of dealer Crestron dealer status must be submitted as part of the bid. Additional dealer status documentation may be requested from bidders. Failure to provide adequate documentation may be grounds for disqualification from the bidding process.
- C. The master/lead technician working on site shall have a minimum certification of NICET Level 2, CTS, or C-EST. Contractors unable to provide proper certification should confirm qualifications with the Consultant prior to bidding. Failure to provide proper qualifications shall be grounds for disqualification from the bidding process.

1.6 Standards

- A. All equipment and installation practices, where applicable standards have been established, shall be built and installed to the standards of the following institutions:
 - 1. Underwriters Laboratories, Inc. (UL): Comply with requirements of UL-50
 - 2. NFPA 70, National Electric Code (NEC)
 - 3. EIA Compliance: Comply with following Electronics Industries Standards.
 - a. Sound Systems, EIA-160
 - b. Loudspeakers, Dynamic Magnetic Structures and Impedance, EIA-299-A
 - c. Racks, Panels and associated equipment, EIA-310-A
 - d. Amplifiers for Sound Equipment, SE-101-A
 - e. Speakers for Sound Equipment, SE-103
 - 4. TIA/EIA-607 Telecommunications Grounding
 - 5. BICSI Telecommunications Distribution Methods Manual (13th edition)
 - 6. Federal Communications Commission Part 15

7. Audio Engineering Society (AES)

1.7 Delivery Storage, and Handling

- A. Include delivery, storage, and handling of all products and materials to be delivered and installed.
- B. Installing contractor shall be responsible for providing on-site storage if necessary. Installing Contractor may negotiate a storage facility with the Construction Manager, but shall still be responsible for his own materials.

1.8 Project Conditions

- A. Installing Contractor bears the responsibility to verify all site conditions and coordinate with the Electrical Contractor to ensure a complete and functional system is supplied to the Owner.
- B. Verify dimensions of major components to check for entry through doors, ceiling height clearance, and column interference prior to the installation of the equipment.
- C. Installing Contractor shall stay aware of all project time schedules and shall coordinate with all other trades for all aspects of the work.
- D. During the installation, and up to the date of final acceptance, the Contractor shall be under obligation to protect his/her work against damage and loss. Such damage shall be replaced or repaired at no cost to the Owner.
- E. Installing Contractor shall include provisions in the bid to make at least three (3) visits to the site prior to beginning of site work to verify site conditions, coordinate with other trades, meet with representatives of the Owner, or deal with other issues that may arise in the course of building construction.
- F. In addition to the three (3) site visits the Installing Contractor shall attend progress meetings and foreman meetings as required by the Construction Manager.

1.9 Warranty

- A. The Installing Contractor shall provide timely maintenance of any malfunctions of the installed systems, at no additional cost to the owner, for a period of twelve (12) months from the date of acceptance by the owner unless damage or failure of the system is caused by misuse, abuse, neglect, or accident.
- B. Contractors bidding this section shall provide 24-hour emergency pager service to the owner and shall respond to all calls within 4 hours.
- C. The Installing Contractor shall guarantee availability of local service by factory trained personnel from an authorized distributor of the equipment manufacturer. The distributor shall have available a stock of the manufacturer's standard parts.
- D. Contractors shall make an extended warranty plan available to the owner. The Owner shall have the option of contracting with the Installing Contractor for the Contractor-specified period, terms, and price.

II. EQUIPMENT

2.1 Equipment and Materials - General

- A. All equipment and components shall be new and the manufacturer's current model.
- B. All components and the system as a whole shall meet or exceed the minimum standards issued by the EIA.
- C. All work and materials in conjunction with this installation shall meet or exceed the provisions of the National Electrical Code and other applicable codes.
- D. The materials, appliances, equipment and devices shall be tested and listed by UL, CSA, ETL or CE. Each major component shall bear the manufacturer's name, catalog number, and certification mark or logo. Installing Contractor shall supply all products with Electrical Certification as required by the local Authority Having Jurisdiction (AHJ). Any specified products not in compliance with the requirements shall immediately be brought to the attention of the consultant and owner.
- E. The Installing Contractor shall be responsible for providing a complete and fully functional system, including all necessary components, whether included in this specification or not.
- F. Pricing for Alternates shall be provided on the same document as the base bid, under a separate line item for each Alternate. All costs associated with each Alternate shall be included in the price for each.

2.2 Manufacturers

- A. Listing of approved manufacturers for each component follows component description below.
- B. The base bid shall be based on the specified equipment or approved equivalent equipment. Alternate equipment must be so noted on a separate bid form with an ADD or DEDUCT to the base bid.
- C. All approved equivalent equipment must meet or exceed the specified equipment in every aspect of performance, form, and function.
- D. Additionally, any substitutions of loudspeakers, whether submitted as approved equivalent or as a voluntary alternate, must be accompanied by EASE data showing intelligibility and loudspeaker coverage throughout the intended listening area. Coordinate submittal with Consultant; submittal is required for approval.

2.3 Requests for Alternate Equipment

- A. Requests for equipment to be considered as alternates shall be considered only when the following have been submitted to the Consultant:
 - 1. A list of such alternate equipment and materials for consideration as equal
 - 2. Six (6) copies of working shop drawings
 - 3. EASE Speaker data (if applicable)

4. A demo piece of the proposed equipment to be substituted may, at the discretion of the consultant, be requested for testing and review. If such a request is made by the consultant, the Installing Contractor shall provide a demo piece (or pieces if applicable) of the proposed equipment or arrange a demonstration of the proposed equipment in a similar environment.
5. If a request for alternate equipment is refused, the Installing Contractor shall provide the equipment as specified.

III. EXECUTION

3.1 GENERAL INSTALLATION (MATERIAL AND WORKMANSHIP)

- A. Non-compliance with any of the following so viewed by Owner's sole discretion shall be cause for rejection of Work by the Owner, and replacement by Installing Contractor to Owner's satisfaction, and at no added cost to the Owner.
- B. Material, workmanship, wire, and wiring methods shall be performed as specified.
- C. If, in the opinion of the Installing Contractor, an installation practice is desired or required, which is contrary to these specifications or drawings, a written request for modification shall be made to the Owner and Engineer. Modifications shall not be implemented without the written approval from the Engineer.
- D. All materials and labor shall be furnished, whether specifically mentioned or not, to form a complete system operational as per the intentions and description set forth in Part 1. Include the delivery, unloading, placement, fastening to walls, floors, ceiling, or counters, other structures where required, interconnecting wiring of the systems components, equipment alignment, and all other work whether it is necessary to result in complete operational systems.
- E. All installation activities shall be in accordance with accepted broadcast and audio engineering practices. All efforts shall be invoked to ensure the owner's desire that the system have extended life.
- F. It shall be the responsibility of the Installing Contractor to cooperate at all times, and to the fullest extent, with all trades and contractors doing work in the building, to the end that lost time, work stoppages, interference, and inefficiencies do not occur. Communicate installation scheduling with the Electrical Contractor, and coordinate with other trades.
- G. Installing Contractor bears the responsibility to verify all site conditions and coordinate with the Electrical Contractor to ensure a complete and functional system is provided to the Owner.
- H. Verify dimensions of major components to check for entry through doors, ceiling height clearance, and column interference prior to the installation of the equipment.
- I. During the installation, and up to the date of final acceptance, the Installing Contractor shall be under obligation to protect his/her finished and unfinished work against damage and loss; such work shall be replaced or repaired at no cost to the Owner

3.2 Control System Installation

- A. The Consultant has provided rough layouts of all Crestron Control System Panels as part of the project drawings. These layouts are a functional representation only. All functions shown on these panels must be accomplished in the Control System programming.
- B. The Installing Contractor shall provide all Touchpanel and control system programming.
- C. The Installing Contractor shall have all programming performed Liquid Pixel Group.
- D. All Touchpanel layouts shall be provided to the Consultant as an executable file for review of function and design before the Control System programming is done.
- E. The Consultant shall review the Touchpanels for confirmation of function and acceptable overall design. The Consultant may request changes in overall layouts, colors, text fonts or other aspects of the design. Such changes shall be incorporated into the Touchpanel layouts by the Installing Contractor without claim for additional payment.
- F. If the Touchpanel layouts are deemed unacceptable by the Consultant, Architect, or Owner's representative, the Installing Contractor shall take whatever means necessary to provide acceptable programming without claim for additional payment.
- G. Potential contractors are encouraged to submit samples of prior Touchpanel layouts to the Consultant prior to beginning the actual panel layouts to confirm overall design qualifications and capabilities.

3.3. Subcontract

- A. The Installing Contractor shall be responsible for the complete and unconditional implementation of each system, even though he may have subcontracted a portion of the installation or had certain manufacturers install their own equipment.
- B. Any delay in system commissioning caused by a Subcontractor shall be the responsibility of the Installing Contractor. If such delays cause significant disruption to the successful completion and usage of the project, the Installing Contractor shall be liable for reasonable compensation to the owner.

3.4 Physical Installation

- A. All equipment not specifically portable shall be held firmly in place and supported by fastenings, brackets, etc., capable of supporting the load with a minimum safety factor of 5 or as approved by the Architect.
- B. Boxes, equipment, cabling, rack, etc. shall be installed and secured plumb and square with building lines.
- C. At all times during the installation the Installing Contractor shall consider not only the operational efficiency of equipment but also the aesthetics of the space. Questions or conflicts between operation and aesthetics should be directed to the Architect and Owner's Representative.

3.5 Conduit and Cable Routing

- A. Electrical Contractor shall furnish and install all conduit and boxes associated with the audio and video systems as shown on the drawings or as required by the Installing Contractor.
- B. Electrical Contractor shall provide all junction boxes for the audio and video systems with appropriate covers.
- C. All conduits not specifically identified shall be 3/4".
- D. All conduits below grade shall be PVC or as required by code. All conduits above grade shall be EMT or as required by code. Refer to conduit specification for details.
- E. There shall be no more than three (3) 90-degree bends in audio or video conduit between pull points. If a conduit run requires more than two bends or if the conduit run is in excess of 150' in total length, insert a pull box. If it is not practical to install a pull box in the run due to field conditions, the conduit size shall be increased to the next trade size for each additional 90-degree bend. Offsets shall be considered as equivalent to a 90-degree bend.
- F. All conduits to be labeled at the source box with the destination box in a clear and logical manner.
- G. Ends of all conduits are to be deburred and bushed.
- H. All conduits terminating inside of an audio/video enclosure (e.g. rack) or not terminating in a junction/pull box shall be provided with plastic insulated bushings.
- I. Electrical Contractor shall provide a poly pull-line in each conduit.
- J. Line voltage conduits shall maintain a minimum of 24" separation from audio or video signal conduits except to cross at 90-degree angles when necessary.
- K. The main audio racks, any auxiliary audio rack, and any other audio panel containing electronic audio system devices, must be isolated or insulated from any metallic conduits. The final connection to these audio racks or panels shall be with PVC, non-metallic flex or any other non-metallic conduit. Or, where shown the cables can enter the rack or panel in a bundle through a bushed opening.
- L. Junction boxes and pull boxes in the conduit system do not have to be isolated, only racks or panels with electrical power and electronic audio devices.
- M. Electrical power feed to an audio rack or audio panel shall also be via PVC or non-metallic or insulated conduit.
- N. All cables shall be laced or tied securely to assure no malfunctions resulting from interference of other trades or routine future maintenance.

3.6 Cable Installation

- A. All wires and cables shall be marked at every termination and connection point with permanent clear wrap-around number or letter cable markers. There shall be no unmarked cables in the systems. Any unmarked cables found at Contractor Checkout shall be immediately labeled. Failure to label wires can be cause for rejection of work by the Owner and shall be corrected at no additional cost to the owner. Marking codes used on cables shall correspond to codes shown on drawings or be approved by the Owner and Consultant.

- B. Cables utilizing molded plastic or solderless insulation displacement connectors shall be unacceptable.
- C. All cable installed in ducts, plenums, and other spaces used for environmental air shall be Type CMP (refer to NEC Article 800.53) or be installed in metallic conduit (in compliance with NEC Article 300.22).
- D. There shall be no wire splices in conduit.
- E. Terminal block, boards, strips, or connectors shall be furnished for all cables, which interface with racks, cabinets, consoles, or equipment modules.
- F. All cables shall be grouped according to the signals being carried in order to reduce signal contamination and cross-talk. Separate groups shall be formed for the following cables.
 - a. Group one: Power Cables
 - b. Group two: Control Cables
 - c. Group three: Video Cables
 - d. Group four: Microphone level audio cables.
 - e. Group five: Line level audio cables.
 - f. Group six: Speaker level audio cables.
- 4 Do not mix signal cables and electrical power cables in the same conduit.
- 5 Do not tie-wrap or bundle signal cables to an electrical power cable.
- 6 Power cables, control cables, and high level cables shall be run on the left side of an equipment rack, as viewed from the rear. All other cables shall be run on the right side of the equipment rack, as viewed from the rear.
- 7 All inter-rack cabling shall be neatly strapped, dressed, and supported as approved by the Owner or Consultant. Cabling within racks shall be contained in Panduit finger tray and secured to lacer bars when appropriate. Such cables shall remain separated as indicated herein.
- 8 All cables routed outside of racks and conduit shall be contained in a suitable harness or wireway to maintain a neat, clean, and finished product.
- 9 All cables shall be cut to the length dictated by the run. All equipment installed in racks shall have a service loop of appropriate length.

- a. For equipment mounted in drawers or slides, the interconnecting cables shall be provided with a service loop of appropriate length to allow for full travel of drawer or slide and enough slack to service and remove any necessary items.
- b. For equipment mounted in racks accessible from both front and back, provide a service loop length sufficient to plug and unplug cable from the unit to allow for trouble-shooting and service of equipment.
- c. For equipment mounted in racks accessible from the front only, provide a service loop length sufficient to remove the unit from the rack and easily plug and unplug all connectors.

3.7 Connector Plate Receptable Installation

- A. All connectors shall be manufactured by Neutrik unless expressly approved on the drawings or specifications, or pre-approved before bid by the Engineer and Consultant. All panel-mount receptacles shall be compatible with Neutrik D-series punch holes.
- B. Unless otherwise detailed herein, the following types of connectors shall be used on all points of connection in the system, including connection boxes, panels, inter-rack and intra-rack wiring, and wireway:
 1. Audio (microphone level) = XLR type:
 - a. Cable mounted: NC3FX-BAG or NC3MX-BAG
 - b. Panel Mounted: NC3FDL-1-BAG or NC3MDL-1-BAG
 2. Audio (line level) = XLR type:
 - a. Cable mounted: NC3FX-BAG or NC3MX-BAG
 - b. Panel mounted: NC3FDL-1-BAG or NC3MDL-1-BAG
 3. Audio (line level) = ¼" TS type (use only for interconnecting equipment with no other means of connection, unbalanced connections only):
 - a. Cable mounted: NP2C-BAG
 4. Audio (line level) = ¼" TRS type (use only for interconnecting equipment with no other means of connection, balanced connections only):
 - a. Cable mounted: NP3C-BAG
 5. Audio (line level) = stereo RCA phono type (use only for interconnecting equipment with no other means of connection or where noted on the drawings or specifications, unbalanced connections only):
 - a. Cable mounted: NF2C-B-2
 - b. Panel mounted: NF2D-B-9 and NF2D-B-2
 6. Audio (speaker) = Neutrik NL4 type—jack shall be insulated from panel:
 - a. Cable mounted: NL4FC
 - b. Panel mounted: NL4MP
 7. Audio (intercom) = XLR type:
 - a. Cable mounted: NC3FX-BAG or NC3MX-BAG
 - b. Panel mounted: NC3FDL-1-BAG or NC3MDL-1-BAG

8. Audio (combo jack) = Combo Jack:
 - a. Panel mounted: NCJ6FI-S (NCJ9FI-S also acceptable)
9. Network (CAT5) = Ethercon:
 - a. Cable mounted: NE8MC-B
 - b. Panel mounted: NE8FDV-YK
10. Video (composite) = BNC type:
 - a. Cable mounted: Match part number to manufacturer's cable
 - b. Panel mounted: NBB75DFIB or Canare BCJ-JRU or feed-through type
11. Video (composite) = RCA phono type:
 - a. Cable mounted: NF2C-B-2 (use one only) or match part no. to mfgr.'s cable
 - b. Panel mounted: NF2D-B-4 or Canare RJ-R
12. Video (RF) = F type
 - a. Panel mounted: Canare FJ-JRU or feed-through type
13. Video (VGA) = 15-pin din type
14. Remote Camera = Triax
 - a. Cable mounted: Kings 7705-1 (male), 7703-1 (female)
 - b. Panel mounted: Kings 7702-1 (male), 7702-4 (female)
15. Camera Control = CCU type
 - a. Hirose JRC21BP-26P or equivalent

3.8 Identification

- A. Except where otherwise specified, label all connectors on plates or panels, switches, controls, and receptacles. Labeling material to have white lettering and to be engraved black plastic laminate with metal backing or engraved black anodized aluminum plates. Minimum plate thickness shall be .125". Black P-Touch Extra Strength Adhesive labels with white lettering for rack-mounted equipment labels are also acceptable. All labels are to be relatively permanent and shall be done in a professional and orderly manner. Any labels found to be unacceptable upon project inspection shall be remedied by the Installing Contractor without claim for additional payment. All labels shall correspond to the drawings.
- B. Identify all wires and cables at every termination and connection point with permanent type markers.
- C. Every piece of rack-mounted equipment shall have an engraved or P-Touch label indicating function and schematic label. Provide and install on front panel engraved labels for each item of rack-mounted equipment. Designate function and input and output line(s) or loudspeaker(s) served by labeled equipment. Key all designations to system functional and patch panel diagrams.

3.9 Loudspeaker Installation

- A. Mount loudspeakers per manufacturers' specifications using appropriate brackets.
- B. All rigging and support steel required for installation shall be furnished by the Installing Contractor. Installing Contractor is responsible to verify weight and load conditions for all rigging to ensure structural integrity of the building. Any additional structural enhancements shall be performed at the expense of the Installing Contractor without claim for additional payment. If significant structural adjustments are necessary, a Structural Engineer licensed to work in the State of Michigan shall be retained by the Installing Contractor to certify the proposed hanging methods.
- C. All loudspeakers shall be installed per plans and arranged as shown on the drawings. All conflicts should be reported and satisfactorily worked out with other trades. If significant changes are required, verify with the Consultant prior to making changes. Failure to verify with the Consultant shall result in the Installing Contractor assuming full liability for speaker placement. If a changed speaker placement is deemed unacceptable by the owner the Installing Contractor shall rectify the problems to the owner's satisfaction without claim for additional payment.
- D. All loudspeakers shall be installed with the ability to adjust speakers +/-5 degrees vertically. Some adjustment may be necessary at the system commissioning with the Consultant.

3.10 Grounding Procedures

- A. Electrical Contractor and Installing Contractor shall coordinate all materials and work related to the grounding of the audio system. Carry out drawing details and notes in these specifications and on the drawings.
- B. In order to minimize problems resulting from improper grounding, and to achieve maximum signal-to-noise ratios, the following grounding procedures shall be adhered to:
 - 1. Under no circumstances shall the racks contact the raceway system, the steel structure of the building or ventilation ducts.
 - 2. All ground cables shall be insulated, especially if the cable is enclosed in a conduit or has any possibility of contact with metallic boxes or a conduit system.
 - 3. The system ground copper conductor must not touch any metallic object or device between the main building electrical ground point, and the audio racks. Similarly, with any extension of this ground, to the stage manager panel or other audio panel, caution must be observed to preserve the audio system ground potential by insulating the ground wire at all times.
 - 4. Under no conditions shall the AC neutral conductor, at any location, be used for a system ground.
- D. Audio Cable Shields: All audio cable shields shall be grounded at both ends. There shall be no exceptions except in locations where a ground loop, hum, or other interference results. If any of these conditions is present, the Installing contractor shall lift the audio shield of one end. All

such locations shall be noted on the as-built drawings. For ungrounded portable equipment, such as microphones, the shield shall be connected at both ends.

- E. There shall be no deviations from the above unless specifically required by the manufacturer of the equipment or when necessary to minimize crosstalk and to maximize signal-to-noise ratios in the audio, video, and control systems.
- F. If a different installation practice is desired by the Installing Contractor in regards to the signal grounding, the Installing Contractor may submit alternate grounding methods to the Engineer/Consultant for approval. Installing contractor shall bear all responsibility for any deviations from the above stated grounding procedure, even if allowed by the Consultant, Owner, or Architect.

3.11 Contractor System Checkout

- A. Before Acceptance Tests are scheduled, the Installing Contractor shall perform his own systems checkout. Installing Contractor shall furnish all required test equipment and shall perform all work necessary to determine and/or modify performance of the system to meet the requirements of these specifications and drawings. This work shall include the following:
 - 1. Testing of all inputs, outputs, and tie-lines.
 - 2. Testing of all display devices, equipment configurations, speakers and jacks.
 - 3. Testing of any other wires or components.
 - 4. Test all audio for compliance with the Performance Standards.
 - 5. Check all controls functions, from all controlling points to all controlled devices, for specified operation.
 - 6. Compile a report of all tested lines showing device tested, date of test, initials of person performing the test, and pass/fail status. See Appendix A (pg 23) for testing report template.

3.12 System Performance, Tests, and Adjustments

- A. Testing Personnel: The Installing Contractor shall have a minimum of two persons knowledgeable as to the systems as installed available for testing and adjustment with the Consultant.
 - 1. All costs to the Installing Contractor for testing personnel shall be included in the bid.
 - 2. Installing Contractor shall allow for up to (8) eight hours of testing and adjustments with the Consultant.
 - 3. Failure of the Installing Contractor to provide adequate personnel or testing equipment causing lost time to the Consultant shall result in the Installing Contractor paying the Consultant's standard hourly rate for additional time and expenses as necessary.
- B. Test Equipment:

All equipment for testing and adjustments to the sound system shall be furnished by the Installing Contractor. Test equipment shall include:

1. Computer Measurement Platform: SMAART, TEF, SIM or other approved equal
 2. Dual Trace Oscilloscope
 3. High Quality Multi-meter: Fluke or Similar
 4. Sweepable Tone Generator
 5. The Consultant may choose to bring and use some of his own test equipment.
 6. Furnish make, model, and serial number of all test equipment to be used to the Consultant prior to performing any test and adjustments to the system.
- C. Loudspeaker Impedances: Measure and record the impedance of each loudspeaker line. For high frequency drivers take impedance measurement at 4000 Hz. For mid-range drivers take impedance measurement at 1000 Hz. For low frequency drivers take impedance measurements at 100 Hz. An impedance sweep may also be performed using TEF, SMAART, or other approved equal. Results of all impedance tests shall be recorded and furnished to the owner for future system repair and trouble-shooting.
- D. Noise and RF Pickup:
1. Set up system for each specified mode of operation.
 2. Check to ensure that system is free of noise, hum, and radio frequency interference.
- E. Buzzes, Rattles, Distortion:
1. Apply high-quality music signal to the system. Adjust the system for frequent peaks at its specified maximum sound pressure level.
 2. Apply sine-wave sweep from 50 to 5,000 Hz at 10 dB below full amplifier power.
 3. In both cases, listen carefully for buzzes, rattles and objectionable distortion.
 4. Correct all causes of such defects. If cause is outside system, promptly notify the Owner indicating cause and suggested corrective procedures.
- F. Equalization:
1. The Installing Contractor and the specific personnel in charge of the tuning shall have completed, tuned, and tested at least five similar systems. Prior to system commissioning furnish names of personnel involved in project management, final adjustment, and tuning. Furnish a profile of experience and training of the personnel completing the tuning.
 2. Final equalization and setup shall be done under the supervision of the Consultant. As described in the above sections.
- G. Project Close-out Submittals:

1. All tuning and adjustment shall have hard copy data bound and turned over to the Engineer and Consultant. Submit record drawings and Documentation of Tests, Measurements and Adjustments performed. All submittals shall be furnished before final payment is released.
2. A copy of all DSP settings shall be burned to CD and placed in the rack after the completion and acceptance of all work and testing.
3. The original submittal drawings shall be corrected for record purposes and show all changes and additions.

3.13 Purchaser Training

- A. The Installing Contractor shall provide a minimum of six (6) hours (three 2 hour sessions) of on-the-job training sessions for the installed systems for Owner-designated personnel, instructing them in the operation and maintenance of the systems. The training sessions shall take place after the systems are operational, at a time prearranged with the Owner. The training time is to be part of the total of the installation and shall be included in the installation charges.
- B. A printed “quick start” guide will be given to each of the training participants. Additionally the quick start guide will be posted at the tech desk and on the equipment rack. Guides should be laminated.
- C. The Installing Contractor shall provide a copy of the software for every component that utilizes an outboard computer for setup and configuration. The Installing Contractor shall demonstrate the usage of each configuration software and train the Owner’s Representative for at least one hour for each software. This training time is to be part of the training time listed in part A above.
- D. The Installing Contractor shall instruct the owner in the proper use of all equipment. The Installing Contractor shall have a knowledgeable representative present for the first official use of each system (i.e. production, meeting, event, etc.). Installing Contractor’s Representative shall have sufficient knowledge of systems as installed so as to troubleshoot any problems that may arise during the first usage. Installing Contractor’s Representative shall be present for the entire first usage of the system unless other arrangements are made with the Owner.
- E. Furnish and turn over to the owner three sets of operating/maintenance manuals consisting of:
 1. A numerical index with equipment items listed
 2. Equipment Brochures/Data Sheets
 3. Operating Instructions
 4. Service information and schematic diagrams
 5. System as-built drawings and wiring diagrams
 6. Test and tuning data
 7. List of keys and numbers

3.14 Final Acceptance Testing and Inspection of Completed Installation

- A. Upon approval of the Contractor Test Report, the Installing Contractor shall demonstrate operation of each major component in the presence of the Consultant and the Owner’s Representative, using each microphone and loudspeaker furnished, all required microphone and loudspeaker positions, and all input, control and amplification equipment. Testing of each video and computer input of the system shall also be performed to verify proper function.

- B. After demonstration, assist as required in acceptance tests by representatives of the Owner.

- C. A factory-trained representative of the manufacturer of the major equipment shall demonstrate that the systems function properly in every respect. The demonstration shall be made in the presence of the Owner.

- D. The Consultant and the Owner's Representative will both verify that all of the above items have been completed to satisfaction and that all installation details have been completed before a recommendation of final payment shall be made.

- E. The Installing Contractor, at the Installing Contractor's expense, shall rectify any components not found to function in a satisfactory manner as defined by this specification.

3.15 APPENDIX A TESTING CHECKLIST EXAMPLE

LINE	PASS/FAIL	INITIALS	DATE
Mic #xxx			
Video #xxx			
Monitor #xxx			
Speaker #xxx			
Fiber #xxx			



PROPOSAL FORM
RFP #219-21 Kirkhof Center & Cook-DeWitt Center Audiovisual Upgrade

The undersigned certifies that to the best of his/her knowledge:

- There is no officer or employee of Grand Valley State University who has, or whose relative has a substantial interest in any contract award subsequent to this proposal.
- The names of any and all public officers or employees of Grand Valley State University who have, or whose relative has, a substantial interest in any contract award subsequent to this proposal are identified by name as part of this submittal.

Name(s) _____

The undersigned further certifies that their company ____ IS or ____IS NOT currently debarred, suspended or proposed for debarment by any federal entity. The undersigned agrees to notify the University of any change in this status, should one occur, until such time as an award has been made under this procurement action.

Supplier declares the following legal status in submitting this proposal:

- A partnership
- A corporation organized and existing under the laws of the State of _____
- An individual doing business as (DBA) _____

(Optional) Supplier declares that company is at least 51% owned, controlled and actively managed by (check all that apply)

- | | | |
|--|--|---|
| <input type="checkbox"/> African-American | <input type="checkbox"/> Native American | <input type="checkbox"/> Woman/Women |
| <input type="checkbox"/> Asian American | <input type="checkbox"/> Multi-Racial | <input type="checkbox"/> ADA Disabled Person(s) |
| <input type="checkbox"/> Hispanic American | | |

Supplier acknowledges receipt of the following addenda:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

BASE PROPOSAL _____ ATTACH YOUR PROPOSAL _____ dollars

(\$ _____)

The undersigned proposes to furnish all labor, materials, equipment, tools and services required to complete the work in accordance with the proposed Contract Documents listed herein, including all addenda issued pertaining to same, for the sum or sums as stated, and agrees that these Documents will constitute the Contract if accepted by Grand Valley State University.

Company Name

Address

City/State/Zip

Office Phone No.

Cellular Phone No.

Fax No.

Authorized Agent Signature

Name & Title

Witness Signature

Name

Tax Identification No.

Date

VIII. ACCEPTANCE: This proposal is accepted by Grand Valley State University

Authorized Agent Signature

Name & Title

Witness Signature

Name

Office Phone No.

Cellular Phone No.

E-mail

38 1684280
GVSU Tax Identification No.

Date