

**TECHNICON DESIGN GROUP INC.**

1800 N. Perry Street, Suite 102
 Ottawa, Ohio 45875
 Phone: 419.523.5323
 email: info@technicondesigngroup.com

DATE: 03/20/2019**PROJECT NUMBER:** 57-2437-18**PROJECT NAME:** BGSU 2019 CLASSROOM UPGR - ENGINEERING**INTENT:**

This Addendum provides modifications and clarifications To the Bid Documents dated **03/01/2019** Bidder shall ascertain prior to submitting its Bid Form that it has received all Addenda issued and shall acknowledge receipt of each Addendum on the Bid Form.

In the event of a conflict between the terms and provisions of this Addendum and the terms and provisions of the Bidding Documents, the terms and provisions of this Addendum shall control. In all other respects, the Bidding Documents shall remain unchanged and in full force and effect.

ITEM	ADD DOCUMENT	REFERENCE	DESCRIPTION
GENERAL:			
1		Solicitation	The Base Bid Estimate has been increased to \$807,862. Alternate 1 Estimate has been increased to \$32,300. The Solicitation has been reissued.
2			All loose furnishings and equipment will be removed by the owner prior to construction and replaced after construction, unless noted otherwise on drawings.
SPECIFICATIONS:			
3		274100	Add Audio/Visual System Specification
ARCHITECTURAL:			
4		2/A401	Disregard/Remove Keynote F on southeast corner of Reflected Ceiling Plan
5		1/A202	Keynotes 9 and 6 apply to the entire room 2117A as per floorplan 1/A203
6		Sheets A101 through A301	Short throw projectors shall be ceiling mounted per Technology Drawings
7		General Construction Note 5	General Construction Note 5 on sheets A101 through A301 also applies to ceiling repair work on sheets A401 through A403
ELECTRICAL:			
8		E201	In Classroom 1002 eliminate dimmers and replace with switches (3-way switches for a and b, single-pole switch at eNook for c)
9		E202	In Classrooms 2117, 2119, 2121 eliminate dimmers and replace with switches (3-way switches for a and b, single-pole switch at eNook for c)

10		E203	Classroom 3010 circuit AVB to X23, eNook to X25, 27, and projector and CE to X29. Indicate circuit fed from panel 3XA located in room 3006. Add Note-C: Install new 20ASP breaker in existing panel as required, match existing. Apply Note-C to circuits on 1st and 3rd floors
11		E204	Add panel 2XB-2 as shown Add Notes-C & D as shown Indicate location of MDP on 3rd floor as shown
12		E207	Delete Sheet
13		E301	Update panel schedule Add Partial Panel Riser
TECHNOLOGY			
14		T001	Speaker Type S1: FULL-RANGE SPEAKER 90° X 90°, 8" DRIVER, 1" HF DRIVER, 60Hz-16kHz FREQUENCY RESPONSE, 175W, 92dB SENSITIVITY, 8 OHMS; JBL CONTROL 28 Speaker Type S2: IN-CEILING SUBWOOFER, 10" DRIVER, TUNED PORT TUBE, 25Hz-160Hz FREQUENCY RESPONSE, 400W, 8 OHMS, 15.9"H X 14.3" X 39.4"D, HORIZONTAL MOUNT, UNISTRUT MOUNT, GRILL ADAPTER KIT; EXTRON SF-10C-SUB
15		T101	Modify cable tray as shown Modify speaker layout as shown Modify connectivity types as shown
16		T102	Modify speaker layout as shown Modify connectivity types as shown
17		T103	Modify speaker layout as shown Modify connectivity types as shown
18		T104	Modify speaker layout as shown Modify connectivity types as shown
19		T201-T205	Update diagram as shown
20		T301	Modify equipment racks as shown
21		T302	Revise connectivity schedule and plate details as shown
22		T303	Revise entire sheet
23		T304	Add sheet as shown
END OF ADDENDUM 02			

Document 00 10 00 - Solicitation (General Contracting Project)

State of Ohio Standard Requirements for Public Facility Construction

Sealed bids will be received by:

**The BGSU Purchasing Department
BOWLING GREEN STATE UNIVERSITY
1851 N. Research Drive
Bowling Green, OH 43403**

for the following Project:

**Bid No.: 6905
2019 Classroom Upgr - Engineering
BOWLING GREEN STATE UNIVERSITY
Bowling Green, Wood County, OH 43403**

in accordance with the Contract Documents prepared by:

**Technicon Design Group, Inc.
1800 N. Perry Street – Suite 102
Ottawa, OH 45875
Phone No.: 419-523-5323
Fax No.: 419-523-9441
Contact Name: Gillian Stechschulte
Email: info@technicondesigngroup.com
Internet Address: www.technicondesigngroup.com**

Bidders may submit requests for consideration of a proposed Substitution for a specified product, equipment, or service to the Architect/Engineer (“A/E”) no later than 10 days prior to the bid opening. Additional products, equipment, and services may be accepted as approved Substitutions only by written Addendum.

From time to time, the Commission issues new editions of the “State of Ohio Standard Requirements for Public Facility Construction” and may issue interim changes. Bidders must submit Bids that comply with the version of the Standard Requirements included in the Contract Documents.

Prevailing Wage rates and Equal Employment Opportunity requirements are applicable to this Project.

This Project is subject to the State of Ohio’s Encouraging Diversity, Growth, and Equity (“EDGE”) Business Development Program. A Bidder is required to submit with its Bid and with its Bidder’s Qualifications form, certain information about the certified EDGE Business Enterprise(s) participating on the Project with the Bidder. Refer to **Section 6.1.11** of the **Instructions to Bidders**.

The EDGE Participation Goal for the Project is **5.0 percent**.

The percentage is determined by the contracted value of goods, services, materials, and labor that are provided by EDGE-certified business(es). The participation is calculated on the total amount of each awarded contract. For more information about EDGE, contact the State of Ohio EDGE Certification Office at <http://das.ohio.gov/eod>, or at its physical location: 4200 Surface Road, Columbus, Ohio 43228-1395; or by telephone at (614) 466-8380.

The Bidder may be subject to a Pre-Award Affirmative Action Compliance Review in accordance with Section 123:2-5-01 of the Ohio Administrative Code including a review of the Bidder’s employment records and an on-site review.

The Bidder must indicate on the Bid Form, the locations where its services will be performed in the spaces provided or by attachment in accordance with the requirements of Executive Order 2011-12K related to providing services only within the United States. Failure to do so may cause the Bid to be rejected as non-responsive.

DOMESTIC STEEL USE REQUIREMENTS AS SPECIFIED IN OHIO REVISED CODE SECTION 153.011 APPLY TO THIS PROJECT. COPIES OF OHIO REVISED CODE SECTION 153.011 CAN BE OBTAINED FROM ANY OF THE OFFICES OF THE OHIO FACILITIES CONSTRUCTION COMMISSION.

Bidders are encouraged to be enrolled in and to be in good standing in a Drug-Free Safety Program (“DFSP”) approved by the Ohio Bureau of Workers’ Compensation (“OBWC”) prior to submitting a Bid and provide, on the Bid Form with its Bid,

certain information relative to their enrollment in such a program; and, if awarded a Contract, shall comply with other DFSP criteria described in **Section 1.6** of the **General Conditions**.

Bids will be received for:

<u>General Contract</u>	<u>Estimate</u>
Base Bid:	\$807,862.00
Alternate 1 (New Ceilings, Lighting, and Diffusers in Rooms 1002, 2117, 2119 and 2121):	\$32,300.00
Alternate 2 (Markerboard Replacement – Education):	\$14,800.00
Alternate 3 (Markerboard Replacement – Olscamp):	\$9,800.00

until **Monday, March 25, 2019, at 1:30 p.m.**, when all Bids will be opened and read aloud.

All Bidders are strongly encouraged to attend the Pre-Bid Meeting on **Wednesday, March 13, 2019, at 1:30 p.m. until approximately 2:30 p.m.**, at the following location: BGSU Purchasing Department – 1851 N. Research Drive, Bowling Green, Ohio.

The Contractor is responsible for scheduling the Project, coordinating the Subcontractors, and providing other services identified in the Contract Documents.

Contract documents are available for download at no charge through the following link:

www.technicondesigngroup.com/plan-room

The Contract Documents may be reviewed for bidding purposes without charge during business hours at BGSU Purchasing Department and at the following locations:

Allied Construction Industries

3 Kovach Drive
Cincinnati, Ohio 45215
Phone: (513) 221-8020
Contact: Candi Oakley
E-mail: coakley@aci-construction.org
Website: www.aci-construction.org

BB-Bid Plan Room

Contractor's Register
800 East Main Street
Jefferson Valley, NY 10535
Phone: (800) 431-2584 Ext 3618
Contact: Kathy Stein
E-mail: kstein@thebluebook.com
Website: www.thebluebook.com

The Builder's Exchange, Inc. (Cleveland)

9555 Rockside Rd., Suite 300
Valley View, Ohio 44125
Phone: (216) 393-6300 Ext 39 / (866) 907-6300
Contact: Laurel Screptock
E-mail: info@bxohio.com
Website: www.bxcleve.com

The Builder's Exchange, Inc. (Dayton)

2077 Embury Park Road
Dayton, Ohio 45414
Phone: (937) 278-5723
Contact: John Grandetti [Do not send documents]
E-mail: jgrandetti@bxohio.com
Website: www.bxohio.com

The Builder's Exchange, Inc. (Toledo)

5555 Airport Highway, Suite 140
Toledo, Ohio 43615
Phone: (419) 865-3833 Ext 201
Contact: Sarah Skiver
E-mail: sskiver@bxohio.com
Website: www.bxohio.com

Builder's Exchange of East Central Ohio

5080 Aultman Road
North Canton, Ohio 44720
Phone: (330) 452-8039 Ext 104
Contact: Julie Thornberry
E-mail: jthornberry@buildersexchange.org
Website: www.mybx.org

Cincinnati Builders Exchange
 4350 Glendale-Milford Road, Suite 120
 Cincinnati, Ohio 45242
 Phone: (513) 769-4800 Ext 203
 Contact: Ashley Grandetti
 E-mail: agrandetti@bxohio.com
 Website: www.bxohio.com

Construction Journal
 7261 Engle Road, Suite 101
 Cleveland, Ohio 44130
 Phone: (800) 969-4700 / (440) 826-4700 Ext 17
 Contact: Ted Blaicher
 E-mail: ted.blaicher@constructionjournal.com
 Website: www.constructionjournal.com

Dodge Data Analytics
 c/o McGraw-Hill Company
 3315 Central Avenue
 Hot Springs, Arkansas 71913-6138
 Phone: (800) 393-6343
 Website: www.construction.com
 To upload project documents:
<http://construction.com/dodge/submit-project.asp>

Northeast Ohio Procurement Technical Assistance Center
 Lakeland Community College
 Engineering Building Room 222
 7700 Clock Tower Drive
 Kirtland, Ohio 44094
 Phone: (440) 525-7733
 Contact: Jane Stewart
 E-mail: jstewart@lakelandcc.edu
 Website: <http://lakelandcc.edu/ptac/>

South Point Procurement Technical Assistance Center
 Southern Ohio Procurement Outreach Center
 216 Collins Avenue
 South Point, Ohio 45680
 Phone: (740) 377-4550
 Contact: Jordan Lucas
 E-mail: jordan@sopoc.org
 Website: www.sopoc.org

Akron Minority Business Assistance Center
 Akron Urban League
 440 Vernon Odom Boulevard
 Akron, Ohio 44307
 Phone: (234) 542-4145
 Contact: Kimberly Irvin-Lee
 E-mail: klee@akronurbanleague.org
 Website: www.akronurbanleague.org

Pittsburgh Builders Exchange
 1813 North Franklin Street
 Pittsburgh, Pennsylvania 15233
 Phone: (412) 922-4200
 Contact: Karen Kleber
 E-mail: Karen@pghbx.org
 Website: www.pghbx.org

ConstructConnect
 30 Technology Parkway South - Suite 100
 Norcross, Georgia 30092
 Phone: (800) 364-2059 Ext. 8158
 Contact: Allen Blair
 E-mail: isqftmr@gmail.com
 Website: www.constructconnect.com

Subcontractors Association of Northeast Ohio
 637 Vernon Odom Blvd
 Akron, Ohio 44307
 Phone: (330) 762-9951 Ext 11
 Contact: Shelly Miller
 E-mail: safetycenter@saneo.com
 Secondary E-mail: planroom@saneo.com
 Website: www.saneo.com

Ohio University Procurement Technical Assistance Center
 Voinovich Center for Leadership and Public Affairs
 The Ridges, Building 20, Suite 143
 Athens, Ohio 45701
 Phone: (740) 597-1868
 Contact: Sharon Hopkins
 E-mail: ptac@ohio.edu
 Website: www.ohio.edu/ptac

Mahoning Valley Procurement Technical Assistance Center
 Mahoning Valley Economic Development Corporation
 4319 Belmont Avenue
 Youngstown, Ohio 44505
 Phone: (330) 759-3668 x24
 Contact: Norma Webb
 E-mail: norma@mvedc.com
 Website: www.mvedc.com

Cincinnati Minority Business Assistance Center
 Greater Cincinnati African American Chamber
 2945 Gilbert Avenue
 Cincinnati, Ohio 45206
 Phone: (513) 475-7151 Ext. 121
 Contact: Deborah Davis
 E-mail: deborah@african-americanchamber.com
 Website: www.african-americanchamber.com

Cleveland Minority Business Assistance Center

Urban League of Greater Cleveland
2930 Prospect Avenue
Cleveland, Ohio 44115
Phone: (216) 622-0999
Contact: Renee Ligon
E-mail: rligon@ulcleveland.org
Website: www.ulcleveland.org

Dayton Minority Business Assistance Center

City of Dayton c/o Human Relations Council
907 West Fifth Street
Dayton, Ohio 45402
Phone: (937) 333-1033
Contact: RoShawn Winburn
E-mail: roshawn.winburn@daytonohio.gov

Youngstown Minority Business Assistance Center

Youngstown Business Incubator
241 West Federal Street
Youngstown, Ohio 44503
Phone: (330) 884-6053
Contact: Carmella Williams
E-mail: cwilliams@ybi.org
Website: www.ybi.org

Columbus Minority Business Assistance Center

Columbus Urban League
788 Mt. Vernon Avenue
Columbus, Ohio 43203
Phone: (614) 372-2358
Contact: Melinda Carter [Paper + PDF]
E-mail: mcarter@cul.org
Website: www.cul.org

Toledo Minority Business Assistance Center

University of Toledo
2145 East Scott Park Drive
Toledo, Ohio 43607
Phone: (419) 530-3344
Contact: Lenora McIntyre
E-mail: nwombac@utoledo.edu
Website: www.nwombac.com
To mail project documents:
2801 West Bancroft Street, MS 420
Toledo, Ohio 43606

END OF DOCUMENT

SECTION 27 4100 – AUDIO/VISUAL SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Division 26 Basic Electrical Materials and Methods sections apply to work specified in this section.
- B. All Division 27 sections apply to work specified in this section.

1.02 DESCRIPTION OF WORK:

- A. Furnish and install complete and satisfactory operating systems for audio reinforcement, video display, video conferencing, and lecture capture. Systems shall be complete, ready for operation and shall include all electronics, programming, training, wiring, raceways when indicated, and auxiliary material required to fulfill the above objective whether or not specifically enumerated herein or on the drawings.

1. Systems Included:

- a. Provide sound amplification and reinforcement for voice and program audio with microphones for voice pick-up and audio processors for system tuning.
- b. Provide video source and display equipment.
- c. Provide system integrated controller.

1.03 QUALITY ASSURANCE:

- A. Installer Qualifications: The Contractor shall be a professional audio/visual system installation contractor, normally engaged in the business of audio/visual system installation. The Contractor shall show proof, as part of his bid, that he has been in the audio/visual system installation business for a period of not less than five years and has completed projects of a similar size and scope. The Owner and Architect reserve the right to reject any bids submitted by firms without sufficient experience in at least six projects of this size.
- B. The installing contractor shall have a minimum of one Infocomm Certified Technology Specialist with the CTS-I designation (AV System Installation Specialization).
- C. Each bidder shall hold current, valid franchises for the major lines of equipment furnished by him under these specifications.
- D. Contractor shall maintain on staff an Extron ECP certified technician to program

and interface with the system. If no Extron ECP certified technician is on staff, the services of an Extron ECP may be subcontracted, with costs to be included in bid. Extron ECP certifications must be submitted to BGSU CTS staff.

1.04 SUBMITTALS:

- A. System Equipment Shop Drawings shall be submitted electronically containing the following information:
 - 1. A detailed list of each piece of equipment with model numbers for each system component.
 - 2. Manufacturer's specification sheets on each item of equipment.
 - 3. A description of how the specified system functions.
 - 4. Confirmation that the manufacturer's representative will provide job site supervision during the installation of the system, perform the final testing of the system and instruct the operating personnel on the operation of the system.
 - 5. A letter addressed to the Owner from the manufacturer that states the relationship of the Contractor and the Manufacturer. This letter shall also serve as confirmation of the on-site supervision of the manufacturer's representative.
 - 6. Detailed one-line schematic wiring diagrams of the specified system and the interconnection wiring.
 - 7. Layout drawings for audio/visual systems showing accurately scaled components and spatial relationship to associated equipment. Include rack elevation with all equipment labeled.
 - 8. Preliminary Control system program outline and touch screen slides.
 - 9. A list of testing qualifications shall be provided. This list shall include the personnel who shall perform the final test and their qualifications, and the equipment that shall be used for the final test. Also, a description of how the test shall be performed must be provided.
 - 10. Shop drawings that are submitted for approval without all of this information shall not be considered for approval.
- B. Close out documents shall be submitted containing to hard copies and one electronic copy (USB drive) including the following information:
 - 1. Building wiring prints, equipment, schematics and/or necessary tools to maintain the system along with equipment operating instructions.
 - 2. Testing results, equipment shop drawings, and operating instructions.
 - 3. System programs and electronic files associated with all equipment.
 - 4. Affidavit of contractor completion and warranty commencement.

1.05 WARRANTY:

- A. The Contractor shall warranty all equipment, labor on equipment and wiring free from mechanical and electrical defects for a period of three years from the date of building acceptance by the Owner.

- B. The Contractor shall furnish to the Owner as part of this contract, a two-year contract effective from date of building acceptance for maintenance and inspection of the manufacturer's equipment including all parts, labor, etc., with a minimum of two inspections during each contract year.

PART 2 - PRODUCTS

- 2.01 The audio/visual system equipment shall be as specified on the drawings. All equipment substitutions shall be submitted to the Engineer/Architect ten (10) days prior to bid date. Equipment substitution shall not be accepted after an accepted bid.
- 2.02 If any equipment other than by the above manufacturers, directly called out on the Drawings, or approved by the Engineer, is found on the project, the Contractor shall remove the equipment and replace it with one of the above manufacturers.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS:

- A. The Contractor shall cooperate and coordinate as required with other Contractors who are responsible for work not included in this contract which may affect the audio/visual system installation in any way. He shall provide any and all information as required or requested in order for this work to be completed, in the best interest of the project. Such assistance or information shall be transmitted in writing to the requesting party in all cases.
- B. The contractor shall test the entire system after completion of installation. The test shall be in accordance with these specifications and the equipment manufacturer's requirements. A report of said test shall be submitted to the Engineer/Architect.
- C. Provide all required testing apparatus specified herein to complete successfully the audio/visual system equalization and tests. Provide approved factory trained personnel to perform the tests and adjust the equalizers required. The purpose of the equalization is to adjust the acoustic amplitude response of the sound system to a specified uniformity measured throughout the entire audience area. This adjustment is made to realize maximum acoustic gain, maximum intelligibility, and optimum tonal balance from the sound system throughout the audience. Each sound system in each room shall be individually tuned.
- D. Provide all required testing apparatus and source signals to complete successfully the video system testing and calibration. The video displays will be tested and adjusted for Brightness (black level), Contrast (white level), Color (saturation or chroma), Tint (hue), and Sharpness (detail). All displays will be calibrated to the NTSC and SMPTE standards.

- E. The Contractor shall inform the Engineer/Architect of time and date said test shall be performed. The Engineer/Architect shall be present during testing. Any and all testing performed without the Engineer/Architect present, shall be deemed invalid and shall be redone at a time that the Engineer/Architect are present.
- F. Provide the Owner complete proof of performance documentation at the time of acceptance to demonstrate that both the individual equipment pieces and the final system performance are equal to or better than the equipment and performance specifications listed. This proof shall be demonstrated by actual on-site tests and not by sales literature. To this end, the Contractor shall provide a factory-trained technician and all such test equipment as required to perform this function. Those unable to provide these system verification measurements shall not be accepted.
- G. The following audio test equipment shall be used for the above stated purpose: sound pressure level meter, 1/3 octave bank real-time spectrum analyzer, sine and square-wave generators, impedance bridge, audio oscilloscope, calibrated microphone and pink noise generator. Instruments as manufactured by Techtron, Ivie, Tektronix, Hewlett-Packard, Audio Precision, and B & K shall be considered acceptable for these measurements.
- H. The following video test equipment shall be used for the above stated purpose: video test signal generator for component, NTSC, digital and analog waveform monitor and vectorscope. Instruments as manufactured by Leader and Leitch-Hedco shall be considered acceptable for these measurements.

3.02 INSTALLATION REQUIREMENTS:

- A. The successful Contractor shall be responsible for furnishing all material, labor, equipment and services necessary for a full turnkey installation of the equipment described in this specification.
- B. Described below are the major tasks to be performed by the Contractor for the installation and test of the system equipment described in this specification. This is not intended to be a complete set of labor and installation services required of the Contractor. It is only intended to provide a checklist for bidders to qualify the scope of the project work. The Contractor shall provide all services required to implement the system unless specifically noted within this specification.
- C. The Contractor shall furnish and install the system equipment, in accordance with the manufacturer's instructions, and shall provide all interconnection cables and materials necessary for a full turnkey installation.
- D. The Contractor shall provide all supervision, labor, construction tools, equipment, hardware and wiring materials as specified, transportation, construction, loading, unloading, inspection and keeping inventory.

- E. Supervision, all final connections and all functional tests shall be by an InfoComm CTS-I installer.
- F. All installation work shall be performed in a neat, high quality manner and in conformity with all local and federal building codes.
- G. The Contractor shall clean and organize his work area daily. The Contractor shall keep the work area free of debris, trash, empty packing materials, cable reels, scrap wire and so forth and to dispose of all trash on a daily basis.
- H. All cutting, patching and restoration to the original condition of walls, ceilings, floors, etc., shall be the responsibility of the Contractor.
- I. All ceiling removal and restoration required for the execution of this work shall be the responsibility of the Contractor.
- J. All cables shall be identified at both ends with cable designation of equipment or outlet connection.
- K. Cable identification shall be by means of permanently applied, preprinted heat shrink tubing type wire markers (i.e., T & B, Nelco Products, or Engineer approved equal). Marker to be located within 6" of the termination. Use only manufacturer's approved type heat gun to shrink the wire markers.
- L. The contractor shall NOT place the contractor's name, logo, contact information, etc. on the front side of any equipment cabinet. Indication within the cabinet is allowed, but shall not exceed a 2" x 2" space.

3.03 FACILITY SPECIFIC INSTALLATION REQUIREMENTS:

- A. The AV one line drawings should be considered to be guidelines for the development of the final AV drawings and program.
- B. The contractor will review the Drawings and send in writing any identified issues or questions regarding the drawings prior to bidding the project to the Engineer for review with BGSU. Any changes will be provided in addendums prior to bidding.
- C. The contractor will have an Extron ECP certified staff person qualified to do the Extron programming per BGSU Standards as part of the contract. Contractors who do not have Extron ECP certified staff members must include with their bid a subcontractor who does possess the necessary ECP certification and this subcontractor MUST BE PRESENT ONSITE when tests are conducted by BGSU CTS staff.

- D. Contractor will provide complete submittal of the Extron programming including color screen shots of each screen in the program and the complete program to the engineer and the BGSU CTS Department for review eight weeks prior to the 1st day of classes.
- E. The engineer and the BGSU CTS Department will return their comments on the program submittal to the contractor within seven days of receipt
- F. Contractor will provide the final completed submittal with the Extron programming, color shots of each screen, and the approved one line drawing within five days of receiving the comments from the engineer and the BGSU CTS Department.
- G. Contractor will email to the project engineer, Jodi Gebauer (jlbarne@bgsu.edu) a complete "New AV Equipment Marking Sheets" on the BGSU CTS Department provided Excel equipment form to the BGSU CTS Department and the Engineer six weeks prior to the 1st day of classes. The contractor will:
 - a. Inventory all equipment and apply the asset barcode sticker provided by BGSU to each piece of equipment
 - b. Enter all information into the "New AV Equipment Marking Sheet": Building; Room #; Asset #; Equipment Description; Manufacturer; Model; Serial Number; Extron E#; Mac Address; IP Address; Data Cable Number; AV cable number used for video or other function
- H. BGSU CTS Department and the engineer will verify that all required equipment is listed per specification on the AV equipment list.
 - a. The contractor is not authorized to make any changes to the Equipment list without written approval from the Engineer and the CTS Department.
- I. Within five working days of the receipt of the AV Equipment inventory form the Engineer will notify the contractor, in writing, of any missing equipment that is required to complete the installation. Any missing equipment must be provided by the Contractor to meet the project schedule. The contractor will pay for any fees, costs for expedited production or shipping of the equipment, etc. these costs will not be reimbursed by the project. Also the project completion date will not be extended if the contractor fails to have the required equipment on site to meet the schedule.
- J. Final "New AV Equipment Marking Sheets" are to be emailed to the project engineer and Jodi Gebauer (jlbarne@bgsu.edu). Must be submitted at a minimum 30 days prior to the 1st day of classes so IP addresses can be assigned and BICs activated. BGSU will provide the IP addresses to the contractor.
- K. All Extron configurations must have the most current drivers for that model and Extron equipment must have the most current firmware . Must be compatible

with Touchlink for iPad and ready to use. All Device names shall be programmed into the GCP file for incorporation into Global Configurator. GVE and GVE ID as well as BGSU required status information including currently selected Input/Output in Global Configurator shall be included and properly labeled.

- L. The contractor will review the program and send in writing any identified programming issues or questions regarding the programming, drivers or firmware within 5 days to the project engineer, and Jodi Gebauer (jlbarne@bgsu.edu).
- M. The contractor is not authorized to make any changes to the original Extron program without written approval from the Engineer and the CTS Department.
- N. All installation will be per the Extron drawings and programming approved by the engineer and the BGSU CTS Department.
- O. Contractor to pre-assemble the equipment rack and install the Extron Programming in their shop, not to be more than 25 miles from Bowling Green, for a demonstration for the engineer and the CTS Department five weeks prior to the 1st day of classes.
 - a. The Extron program will be installed on the system by the contractor and tested. BGSU must approve the final program and that it meets the BGSU standards.
 - b. BGSU will work with the contractor to correct programming issues
- P. All AV and lighting switches located in the room are to be labeled and provided with an engraved phenolic plate; black letters of 3/16" in height on a white background labeled with their function. Anytime an up/down symbol is used it should be a black triangle not an arrow. Final label size and content will be confirmed with the Engineer and CTS Department before manufacturing of the label.
- Q. Switchers and Transmitters/Receivers are to be labeled. Use a White label with Black print. Switcher buttons are 1/2"x1/2" and font is 1/8" (up to 2 lines). Touch panel buttons are 7/16"x3/4" and font is 1/8" (up to 2 lines). Switcher and Touch panel labels should be installed under the clear plastic cap that is over the button. Transmitters/Receivers are a white 1/4" PTouch style label with black letters. Should be labeled with input/output. Anytime an up/down symbol is used it should be a black triangle and not an arrow. Final label size and content will be confirmed with the Engineer and CTS Department before manufacturing of the label. All wiring should be labeled by contractor on both ends of cables.
- R. All labels will be installed prior to the beginning of AV testing by the Engineer and the CTS Department.
- S. The Contractor will provide a demonstration and training on the use of the AV system to the Project Engineer and the BGSU CTS Staff 21 days prior to the 1st day of classes.

- T. The Engineer and the BGSU CTS Department will then conduct their testing and develop the Engineer's punch list. Contractor will complete the Engineer's punch list within 72 hours of receiving the punch list.
- U. The complete AV installation must be installed 14 days prior to the 1st day of classes. This includes all equipment and cable installation, all programming installation, all testing and completion of all punch lists.
- V. The contractor must provide a fully functional system (equipment and Extron program) that meets all BGSU standards and specifications.
- W. Contractor will provide accurate as built drawings that includes all cable numbers within 10 days of the completion of the Engineer's punch list.

3.03 SINGLE AND MULTI DISPLAY ROOM CONTROL SYSTEM PROGRAMMING:

- A. Unless otherwise noted follow the standards below for all BGSU Extron programming.
 - 1. AV Distribution System and touchpanel controller shall be programmed as described herein and as required by owner. Contractor shall develop system programming through a series of meetings, storyboard submittals, and a final virtual run-through prior to programming. Programming shall be submitted to Owner prior to application for approval.
 - 2. Program flow drawings shall be submitted by the contractor for review prior to any programming taking place. No fewer than three meetings shall take place regarding program flow and touch panel interface prior to any programming being started
 - 3. Program flow review with follow-up email communication and approval or in-person meetings as necessary.
 - 4. Technical review of touch panel (mock-up touch panel will be required at this meeting).
 - 5. End-user touch panel review of mock-up touch panel
 - a. Present must be the AV Vendor Engineer and an Owner's representative.
 - b. End users will also be present at the end-user review of mock-up system.
 - 6. If necessary, access to the Owner's network for programming can be granted. Any request for this type of access should be submitted in writing no fewer than ten (10) business days prior to need.
 - 7. JPEG screen shots will be required of the touch panel once the design is final so that the end-user may begin to create a user instruction guide.
 - 8. Touch panel controller shall be programmed as described herein. Programming shall be submitted to the Owner as outlined in Supplemental Instructions below.
- B. Software/Firmware/Drivers
 - 1. Current and up to date on completion

2. Project name: BGSU – Building Room
3. Rename the controller to Building Room IPCP : (IP address). Rename the Touch panel to Building Room TP : (IP address)
4. If more than one display, rename the display to better identify it and easier tracking (Left Display, Right Display, Center Display etc – from the student's view)
5. Label all I/P and O/P within GC Pro, DSP, PCS etc .
6. With GUI designer each button, label, gauge etc will have a different ID name. If a button or label is copied and reused then the ID name must be updated to reflect the new buttons/label's function. This is essential when troubleshooting later.
7. Password for each device on the network and for the GC Pro config will be updated to the standard BGSU password. Contact BGSU CTS for this password.
8. A digital copy of all wire diagrams and programming (GC Pro, GUI, PCS, DSP etc) will be given to BGSU CTS at completion
9. In Toolbelt verify/change the Time Zone to Eastern Standard Time with Daylight Savings. Verify the time is correct.

C. GVE Settings within GC Pro

- 1) Make the controller a host (System settings when controller is selected)
- 2) Project> Project Properties>GVE Settings
 - a) Enable GVE Settings
 - b) Give GVE ID (BuildingRm)
 - c) Input names: Name to match each Input button within the config (PC, PC Main, PC Ext, HDMI, FB HDMI, Wall HDMI, eNook HDMI, VGA, Doc Cam, MAC, Blu-Ray, DVD, DVDVCR)
 - d) Global Viewer Editor
 - i) GlobalViewer Locations- Create folder (Building Room)
 - ii) Drag all parts from Controller and Devices window under the new folder
 - e) Communication Ports
 - i) Select each display and select GVE Command Mappings
 - ii) Map each status and control where applicable
 - f) User Interfaces
 - i) Add GVE reporting commands
 - (1) Start button (may be within a macro)- Add "Report GVE Input" command at bottom to report back to GVE what source is being displayed on startup. The standard is PC (Main). Device should be the Display and Input should be the input displaying on start up. Do this for each display if multiple displays. This is needed for GVE to report back the current source on
 - (2) All Input buttons- "Report GVE Input" command at bottom. Device should be the Display and Input should be the input displaying when the button is

pressed. Do this for each display if multiple displays.

D. Schedules

1. Invoke the Shutdown sequence (macro) every day of the week at 11pm

E. Monitors

1. Contact BGSU CTS for Monitor info

F. Display Notes

- 1) Output of switcher will be 720p to all displays
- 2) Aspect Ratio 16:9
- 3) Dynamic
- 4) TV's
 - a) Fit to Dot by Dot
 - b) Turn off ECO Mode
 - c) Turn of the Light Sensor

G. Audio Notes

- 1) Mic and Program audio levels are to be controlled separately
- 2) Microphones are always live. There will be no set audio levels for the mics throughout the programming.
- 3) Mic levels will be set to an appropriate level within DSP to allow simple adjustment by a technician within the hidden mic buttons on the touch panel
 - a) Appropriate Level= An average speaking person will be easily heard, no feedback or clipping, enough level adjustment available above and below for a technician to adjust as needed on the fly. Raising and lowering the level via the hidden page should not cause hum or feedback issues.
- 4) Program audio will be set to an appropriate level within DSP to allow simple volume adjustment via the touch panel. Adjust sensitivity and range in the GCPro config as needed to allow adequate volume adjustment via the touch panel.
- 5) PC Extended EDID will be set to DVI 720p no audio in PCS so only one "Extron" audio source will be detectable by the computer under the Sound settings. PC Extended will always default to PC Main audio.
- 6) Audio will follow last selected unless the selection is under the Monitor and/or Confidence monitor tab(s). If an input is selected under the Monitor or Confidence monitor tab, only the video will change and the audio will remain as-is. For multiple display rooms an Audio selection page will be added to allow the end user to manually change the audio separately if needed. There will be no audio when the doc cam is being used unless the instructor selects the audio from the audio selection page manually.

H. Variables

- 1) Create Variables as needed

- a) Examples
 - i) Audio Selection (PC, HDMI, None)
 - ii) Doc Cam Preset (1, 2, 3, None)
 - iii) Left Display Input State (PC Main, PC Ext, HDMI, Doc Cam)
 - iv) Right Display Input State (PC Main, PC Ext, HDMI, Doc Cam)
 - v) Monitor Input State (PC Main, PC Ext, HDMI, Doc Cam)
 - vi) Confidence Monitor State as needed

- I. Offline Page
 - 1) "This touch panel has lost connection with the controller. Please call CTS at 2-9400 immediately for assistance."

- J. Start Page
 - 1) Start page includes a Start button and Screen Control button
 - a) The Start button typically initiates the Startup macro (see *Startup Macro*)
 - b) In divisible rooms or rooms with multiple purposes, the Start button opens a pop up page with 2+ room configuration presets. Each preset will have its own macro associated with it to perform different functions.

- K. Startup (Macro)
 - 1) Show Startup page with gauge
 - 2) Enable Schedule
 - 3) Electric Screen: Screen(s) down
 - 4) Ceiling Doc Cam: Doc Cam Power Relay State ON. This command will put the relay into a closed state allowing power to the unit.
 - 5) Power on displays
 - 6) Ceiling Doc Cam: Power on the unit
 - 7) Set Program Audio Volume: Program Volume will have a set level on start up. This level will be determine by the room acoustics and size. The standard is that the gauge will show about 25-40% on startup and the audio level will be set so that sound can be heard but not scare anyone when the system starts up. The end user will then have the ability to raise the volume as needed. At 100% the volume should be loud but not so loud that damage could be done to the speakers or the audio starts clipping. When the volume is lowered to 0% on the gauge there should be no audio ("mute").
 - 8) Matrix Ties
 - a) Video
 - b) Audio
 - 9) Single Display Room: PC should display on startup and PC audio heard over the speakers
 - 10) Multiple Display Room:
 - a) Displays are side by side and easily viewable by all: PC Main will display on the Left Display and eNook/lectern Monitor. PC

Extended will display on the Right Display. Audio to the speakers will be PC Main Audio. (PC Extended audio will be set to DVI no audio in PCS so only 1 Extron audio will be detectable by the computer).

- b) If there is a Center Display and 2 side displays that only 2 images can be viewed at a time due to viewing angles then the Center Display will show PC Main and the side displays will show PC Extended.
- c) Confidence monitors in the back of the room will show PC Main.
- d) If there are additional displays please contact CTS for the startup information.
- e) Display tab (when applicable), input buttons and audio selection buttons (when applicable) will show button state feedback so that the end user can easily see what is selected.
- f) Note: Ceiling Doc Cam input button will change the video to doc cam and break the audio tie since there is no audio associated with the doc cam.
- g) Note: None of the input buttons under the eNook/lectern monitor or Confidence Monitor tab will change the audio. Video only.
- 11) Select the input of each display. See wire diagram.
- 12) Report GVE Input (see *GVE Settings within GC Pro* above))
- 13) Ceiling Doc Cam: Recall Preset 1 and Doc Cam Preset 1 State on (selected)
- 14) The primary display tab will be selected on the touch panel.
 - a) If the displays are side by side then the Left Display tab will be selected.
 - b) If the displays are not side by side then the display that is the primary focal point of the room will be the display tab selected
 - c) Note: Display tabs not needed for single display room or multiple display room that have a mirrored image on all.
- 15) Hide popup Starting up and show popup page to match the input selected

L. Shutdown (Macro)

- 1) Show Shutting Down page with gauge
- 2) Start Timer (timer length determined by warm up time of all displays)
- 3) Disable Schedule
- 4) Ceiling Doc Cam: Power Off the doc cam
- 5) Electric screen(s):Raise screen(s)
- 6) Ceiling Doc Cam: Doc Cam Power Relay State Off. This command will put the relay into an open state allowing NO power to the unit.
- 7) Power off the display(s)
- 8) Break all Audio and Video ties
- 9) Tie the PC (Main) video to the eNook/lectern monitor
- 10) Display Mute Off for all displays
- 11) Visual State of Display Mute button for all displays "Solid to Off"
- 12) Hide all pop up pages
- 13) Show Start Page

M. Main Page(s)

- 1) Theme: Jet with BGSU custom buttons
 - a) Contact BGSU CTS for specifications on buttons, gauges, logos and colors
- 2) Contact BGSU CTS for all button and color specifications
- 3) Include a Help button in upper left corner (square panel).
- 4) Below the Help button, in the left panel, include a Mute Display button (for multiple displays label buttons "Mute Left Display", "Mute Right Display", etc)
- 5) Electric Screen(s): Below the Mute Display button, in the left panel, include a Screen Control button in the left panel
- 6) In the lower left, in the left panel, include a hidden invisible button. (See *Hidden Button* below)
- 7) The space between the Screen Control button and hidden button, in the left panel, will be the area the Tech page will appear. (See *Tech page* below)
- 8) In the bottom panel, on the left side, include a Lecture Capture button (when applicable)
- 9) In the bottom panel, in the center, include the time
- 10) In the bottom panel, on the right side include a System off button
- 11) In the top panel, include the Display tabs (when applicable)
- 12) In the top panel, include the input buttons (PC Main, MAC, HDMI, VGA, Doc Cam)
 - a) Spacing should be equal
- 13) In the right panel, include an Audio Selection button (when applicable-Multiple Display)
- 14) In the right panel, include a Volume Up, Down and gauge
- 15) The Center panel will be used for the pop up pages

N. Display Tabs (each display)- For Multi Display rooms

- 1) Show Page
- 2) If/Else Condition
 - a) If _____ Display equals Doc Cam then show pop up doc cam
 - b) Else If _____ Display equals HDMI then show pop up HDMI
 - c) Else If _____ Display equals PC Ext then show pop up PC Ext
 - d) Else If _____ Display equals PC Main then show pop up PC Main

O. Input Buttons

Note: Repeat for each input button under every display tab.

- 1) PC (Main)
 - a) Show Pop up PC (Main)
 - i) Pop up page includes "PC Main is currently selected. Please check that the PC is turned on. There are no controls for this input. DVD: To play a DVD use VLC as the Media Player. Streaming Video: Double-click on the *WBGU* icon on the Desktop".
 - b) Select the input of the display per wire diagram

- c) _____ Display Input State (PC or PC Main). This is based on variables previously set for each display and the display name given (Left Display, Right Display etc)
- d) Audio Selection State PC (when applicable-Multi Display)
- e) Matrix Ties
 - i) Audio
 - ii) Video
- f) Report GVE Input: Device (Display), Input (PC or PC Main)
- g) Visual Feedback: On- PC (Main), OFF- all others inputs
- 2) PC Extended
 - a) Show Pop up PC Ext
 - i) Pop up page includes "PC Extended is currently selected. Please check that the PC is turned on. There are no controls for this input. DVD: To play a DVD use VLC as the Media Player. Streaming Video: Double-click on the *WBGU* icon on the Desktop".
 - b) Select the input of the display per wire diagram
 - c) _____ Display Input State (PC Ext). This is based on variables previously set for each display and the display name given (Left Display, Right Display etc)
 - d) Audio Selection State PC (when applicable-Multi Display)
 - e) Matrix Ties
 - i) Audio
 - ii) Video
 - f) Report GVE Input: Device (Display), Input (PC Ext)
 - g) Visual Feedback: On- PC Ext, OFF- all others inputs
- 3) HDMI
 - a) Show Pop up HDMI
 - i) Pop up page includes "HDMI is currently selected. There are no controls for this input.
 - b) Select the input of the display per wire diagram
 - c) _____ Display Input State (HDMI). This is based on variables previously set for each display and the display name given (Left Display, Right Display etc)
 - d) Audio Selection State HDMI (when applicable-Multi Display)
 - e) Matrix Ties
 - i) Audio
 - ii) Video
 - f) Report GVE Input: Device (Display), Input (HDMI)
 - g) Visual Feedback: On- HDMI, OFF- all others inputs
- 4) Doc Cam
 - a) Show Pop up Doc Cam
 - i) Pop up page includes buttons for
 - (1) Presets 1-3
 - (a) Presets can be set under the hidden DC Preset button within the Display Status page. Preset 1= zoomed in to the width of an 8" x 11" paper in portrait mode. Preset

2= zoomed to the width of an 8" x 11" paper in landscape mode. Preset 3= zoomed out to show the whole lectern or mobile table surface.

- (2) Zoom +/-
- (3) Focus Tele/Wide/Auto
- (4) Laser Pointer
 - (a) When presses the laser will show for 5 seconds and then turn off
 - (b) Button looks pressed while the laser is showing
- (5) Instructions
 - (a) Opens pop up page Doc Cam Instructions
 - (b) "Document Camera: If there is a reflection when using a transparency, press the Lectern Light Up/Down button to turn on/off the lectern light for better images. Using a white piece of paper behind your transparency will also help. To manually focus Up/Down, first press Auto and then press the Up/Down buttons."
- b) Select the input of the display per wire diagram
- c) _____ Display Input State (Doc Cam. This is based on variables previously set for each display and the display name given (Left Display, Right Display etc)
- d) Audio Selection State – Not applicable, No change to current selection
- e) Matrix Ties
 - i) Audio – Break audio tie, doc cam is the only input that breaks the audio tie because there is no audio associated with the doc cam
 - ii) Video
- f) Report GVE Input: Device (Display), Input (Doc Cam)
- g) Visual Feedback: On- Doc Cam, OFF- all others inputs

P. Help button

- 1) Show Pop up page Help
 - a) HELP pop up page includes
 - i) Close button
 - ii) Contact Information
 - (1) Standard: "For help please contact (BGSU Department) at (phone number)"
 - (2) For On the Grid rooms include CTS contact info "CTS at 2-9400"
 - (3) For Department owned spaces include Department contact info
 - (a) This information should be an office number and not a personal number where someone

will always be available to answer and/or a message included in their voicemail that directs them who to call after hours. Contact the Department Lead this information. They may also include an email or other information if needed.

- iii) Display(s) On button
 - (1) Power on all displays
 - (2) Select input on display(s) per wire diagram
 - (3) Wait 20 seconds and select input of display(s) again per wire diagram

Q. Mute Display (for each display)

- 1) When the Mute Display button is pressed the screen should raise and the video output of the switcher muted for that display. The button should blink when muted and solid when not muted. If the Mute Display button is muted and then the system shut down and later restarted the button will no longer blink to indicate that the switcher output is not muted.
- 2) If/Else Condition
 - a) If the video on output (#) _____ of the switcher is not muted then mute the video on output (#) _____, button will blink at a medium rate off to on and raise the screen
 - b) Else If video of the output (#) _____ of the switcher is muted then unmute the video on output (#) _____, button will return to normal (not blinking) and lower the screen
 - c) Else If video & sync of the output (#) _____ of the switcher is muted then unmute the video/sync on output (#) _____

R. Screen Controls

- 1) Show Pop up page Screen Control
 - a) SCREEN CONTROL pop up page includes Screen up and down controls for each screen
 - i) Pulse 1 second when applicable
 - b) Close button

S. Hidden Button

- 1) When Hidden button is pressed for 2 seconds the Tech Page will appear for 5 seconds
 - a) Button Properties: Hold Time = 2 seconds
 - b) Hold Expired: Show pop Tech, timeout 5 seconds

T. Tech Page

- 1) Tech page includes a Display Status button and Mic/Audio button
 - a) DISPLAY STATUS pop up page includes the following for each display
 - i) RS232 Status of display
 - ii) Basic remote control functions (UP, Down, Left, right, menu, Enter)

- iii) On and Off (power) buttons
- iv) DC Preset button
 - (1) Allows a technician to save doc cam presets without the remote. Note: IR will be turned off on the ceiling doc cam unit.
 - (2) DC PRESET SAVE pop up page includes
 - (a) Buttons for "1", "2", "3"
 - (b) Save Preset (1-3)
 - (c) Doc Cam Preset State (1-3)
- v) Close button
- b) MIC/AUD CONTROL pop up page includes
 - i) Mic Volume Up, Down, Mute and gauge for each Mic.
 - ii) Audio Reset button
 - (1) Resets the Program audio back to the Startup level (see level set under the starting up macro under the Start button)
 - iii) Close button

U. System Off

- 1) Show pop up Confirmation
 - a) CONFIRMATION pop up page includes
 - b) Power Down button
 - i) Starts Shutdown sequence
 - ii) See Shutdown (Macro) above
 - c) Cancel button
 - i) Hides pop up page Confirmation and returns to the main page
- 2) If press and hold System Off button for 5 seconds then a Connections status page will appear.
 - a) CONNECTION STATUS pop up page will include RS232 status feedback of all applicable equipment in the room
 - b) Tech can exit via the Close button

V. Audio Selection (multi display rooms)

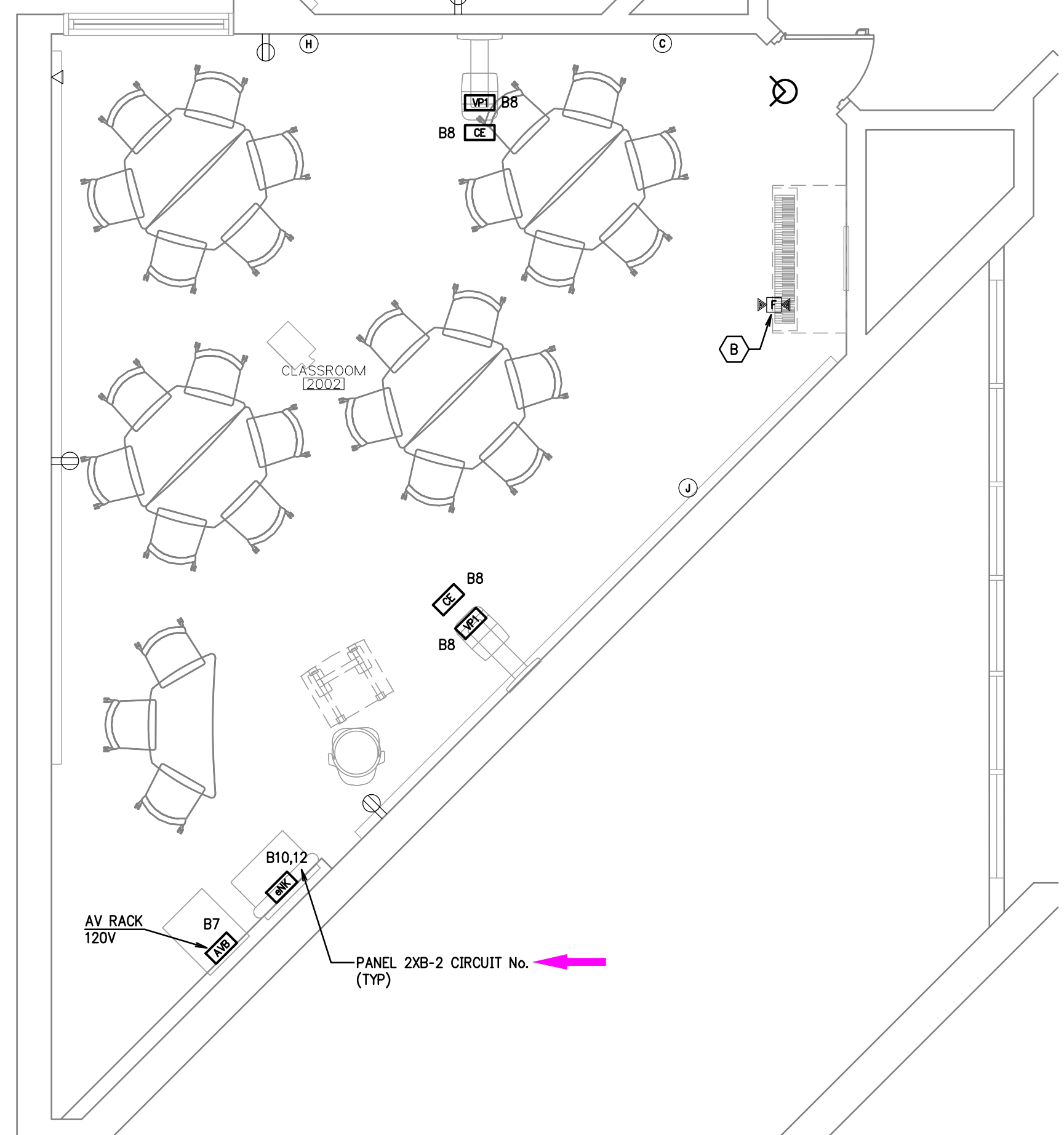
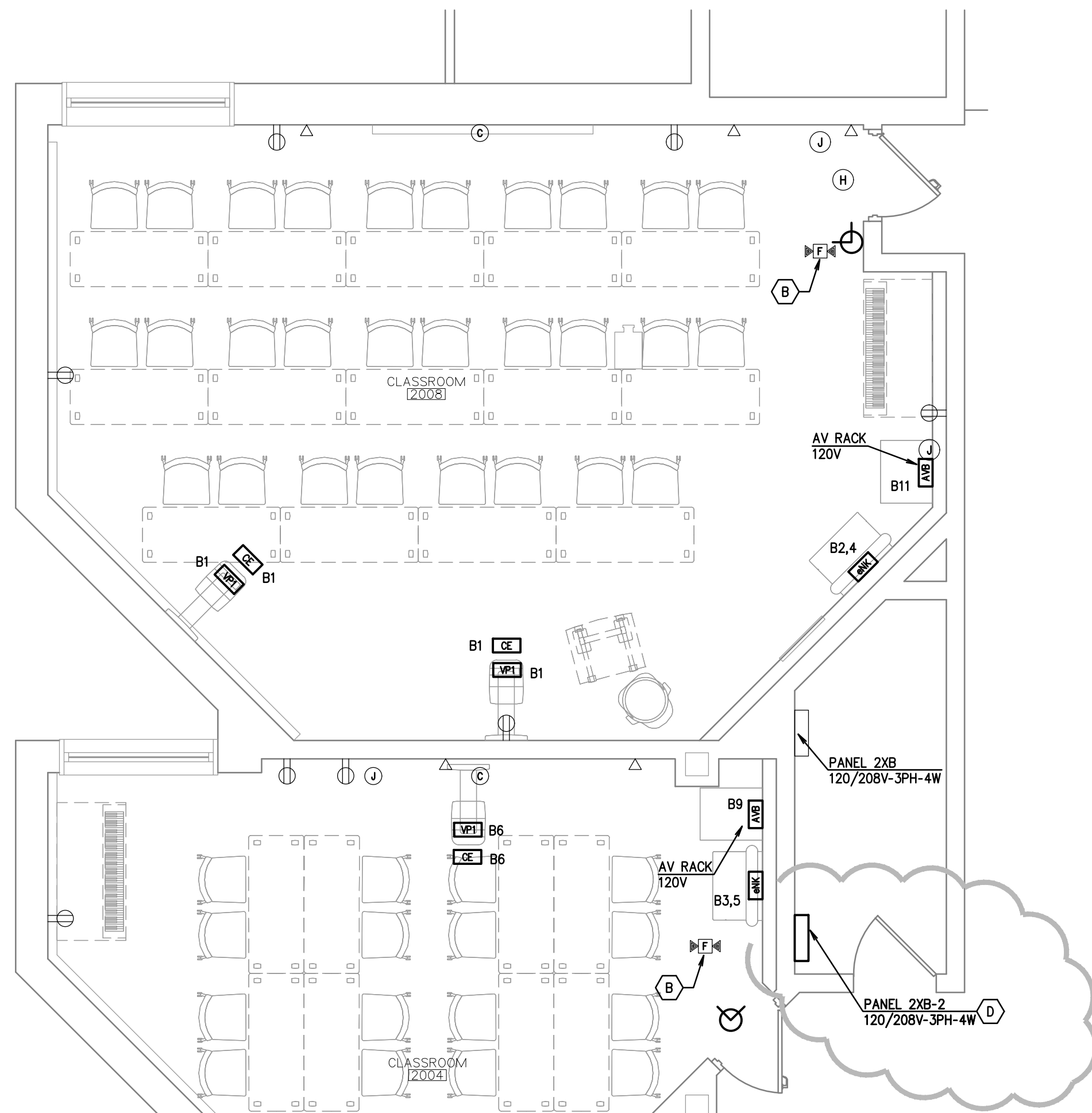
- 1) Shows pop up page Audio Selection
 - a) AUDIO CONTROL pop up page includes
 - i) PC button to select PC (Main) audio
 - (1) Audio Selection State PC (Main)
 - (2) Matrix Tie for Audio
 - (3) Visual Feedback ON for PC and OFF for all other audio sources
 - ii) HDMI button to manually select HDMI audio
 - (1) Audio Selection State HDMI
 - (2) Matrix Tie for Audio
 - (3) Visual Feedback ON for HDMI and OFF for all other audio sources
 - iii) May include other audio sources not mentioned above
 - iv) Close button

- W. Volume (Program Audio)
- 1) Volume Up, Down, Gauge
 - a) All ranges and sensitivity must match
 - b) Gauge should raise and lower at a comfortable speed. This can be accomplished by modifying the repeat rate and sensitivity
 - c) Repeat rate is typically 0.2
 - d) Command listed under Press and Repeat tabs

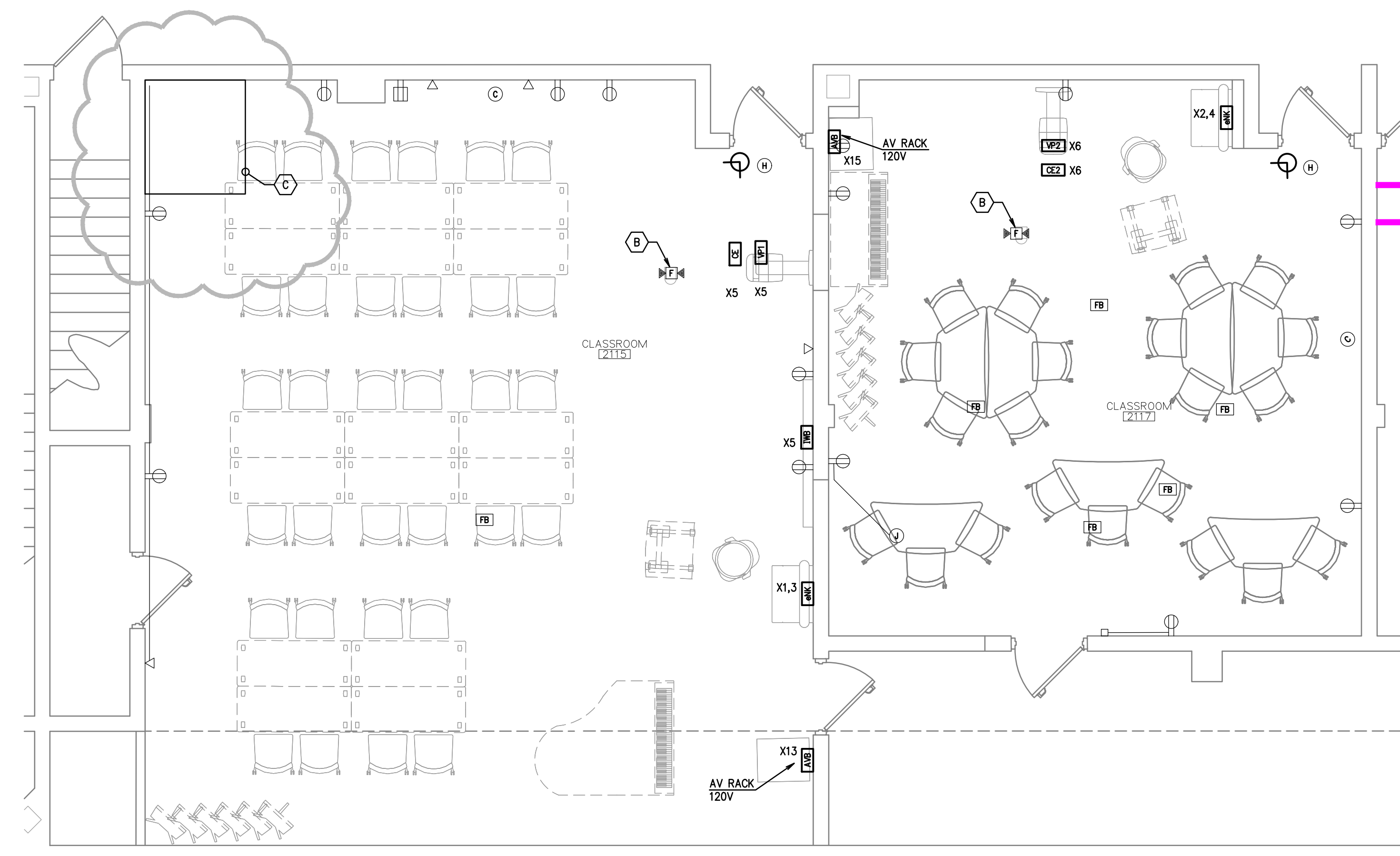
3.04 TRAINING:

- A. The Contractor shall include three one-day training course for the Owner's personnel on the operation and maintenance of the equipment provided. The training courses shall be split over a one year period at times as designated by the university.
- B. The training courses shall be taught by a manufacturer's representative at the Owner's location.
- C. A brief resume and background description shall be included of the Contractor's training personnel who will conduct the training sessions.
- D. The Contractor is responsible for providing all training materials. The Owner will be responsible for providing the training room facilities at the Owner's location. The Contractor shall videotape the training session.

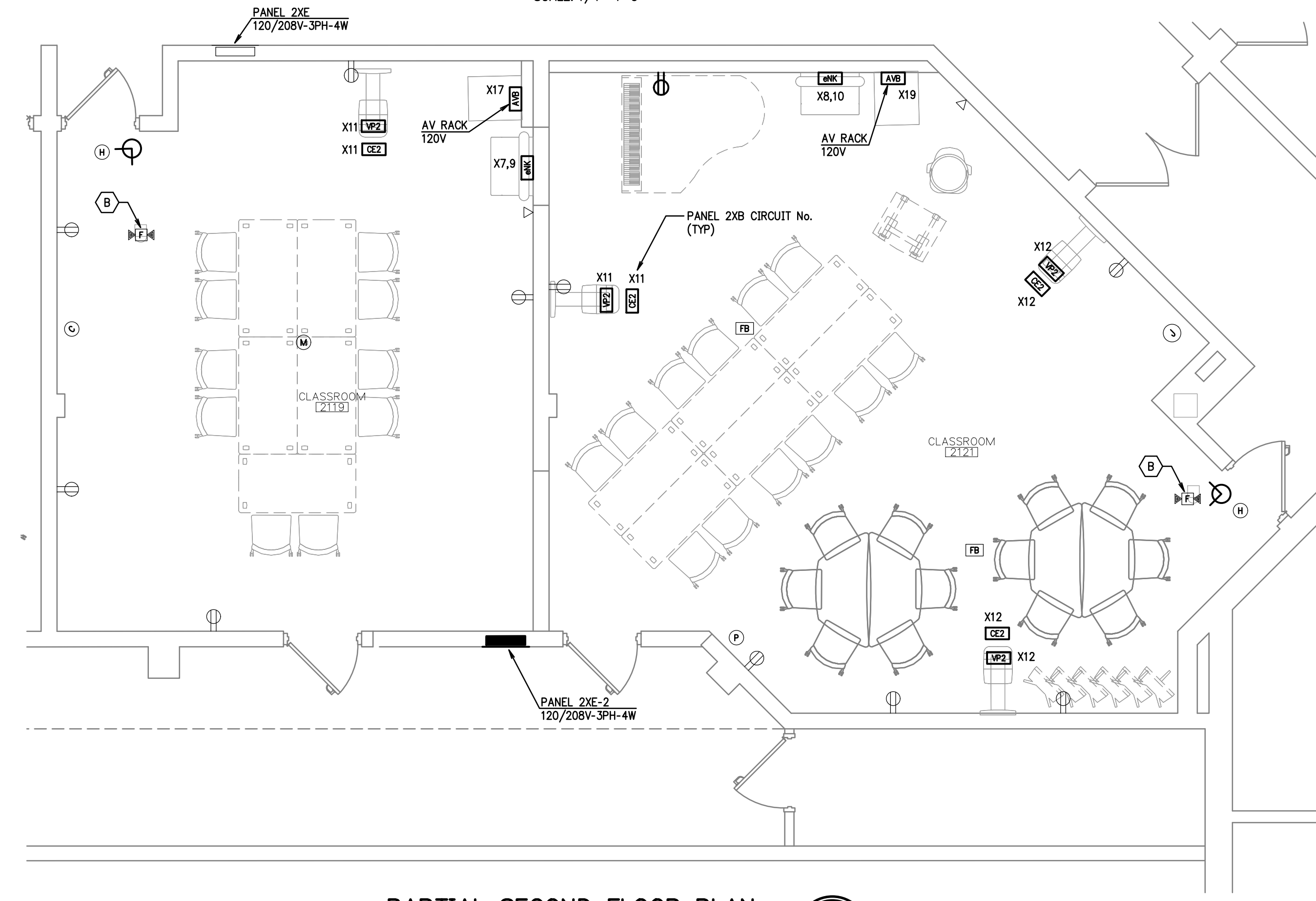
END OF SECTION 27 4100



PARTIAL SECOND FLOOR PLAN - POWER
SCALE: 1/4"=1'-0"

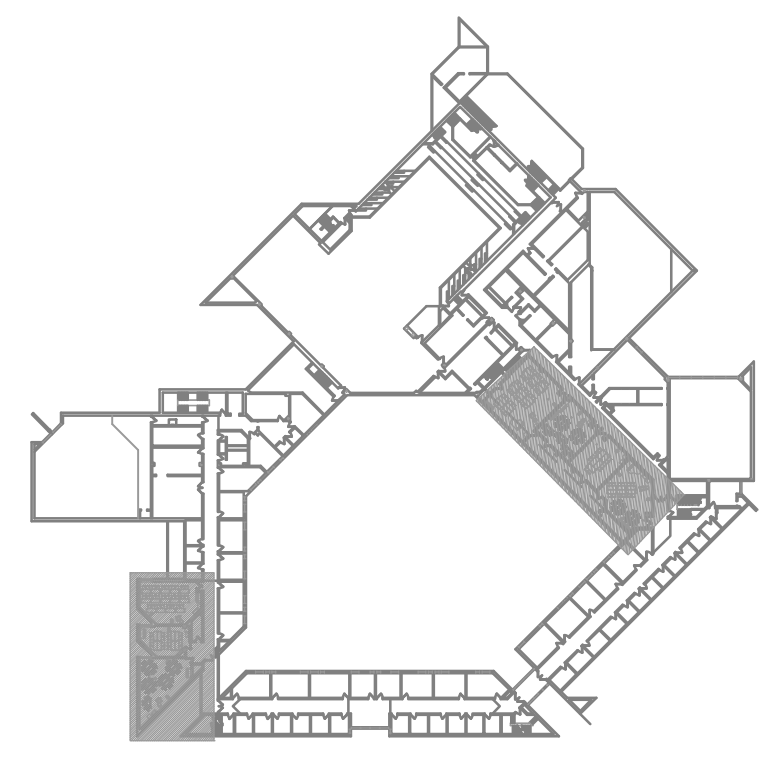


PARTIAL SECOND FLOOR PLAN - POWER
SCALE: 1/4"=1'-0"



PARTIAL SECOND FLOOR PLAN - POWER
SCALE: 1/4"=1'-0"

- PLAN NOTES:**
- A. INSTALL NEW RECEPTACLE IN EXISTING LOCATION, UTILIZE EXISTING BOX, CONDUIT, FEEDER, ETC., EXTEND FEEDERS AND UTILIZE BOX EXTENDER AS REQUIRED.
 - B. RE-INSTALL EXISTING FIRE ALARM DEVICE IN NEW CEILING AS REQUIRED.
 - C. MDP-2 LOCATED ON 3RD FLOOR IN THIS LOCATION. SEE PANEL RISER ON SHEET E301.
 - D. FIELD VERIFY EXACT PANEL LOCATION, COORDINATE WITH BGSU



SECOND FLOOR KEY PLAN
SCALE: SCALE: NONE

© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.
Plotted by: Chad Greiner Plot Date: 3/20/2019 10:59 AM Save Date: 3/20/2019 10:33 AM File Name: J018133-E204.DWG

JDRM ENGINEERING, INC.
MECHANICAL • ELECTRICAL • TECHNOLOGY
TECHNICON DESIGN GROUP INC.
ARCHITECTURE • ENGINEERING • DESIGN
1800 N Perry Street, Suite 102
Ottawa, Ohio 45875 P:419.523.5323
www.technicondesigngroup.com

2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY INDIVIDUALS, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED USE FOR THIS PROJECT. IF THE DRAWING IS USED FOR ANY OTHER PURPOSE, THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE DESIGN GROUP, INC. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY CONSEQUENCES OF SUCH USE. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY CONSEQUENCES OF SUCH USE. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY CONSEQUENCES OF SUCH USE.

DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE
02.21.19 BGSU REVIEW
03.01.19 FOR BIDS/PERMITS
03.19.19 ADDENDUM #2

DRAWN BY: CAG
CHECKED BY: DTK
DATE:
PLOT SCALE:
JOB NO. 57-2437-18
SHEET E204
OF SHEETS



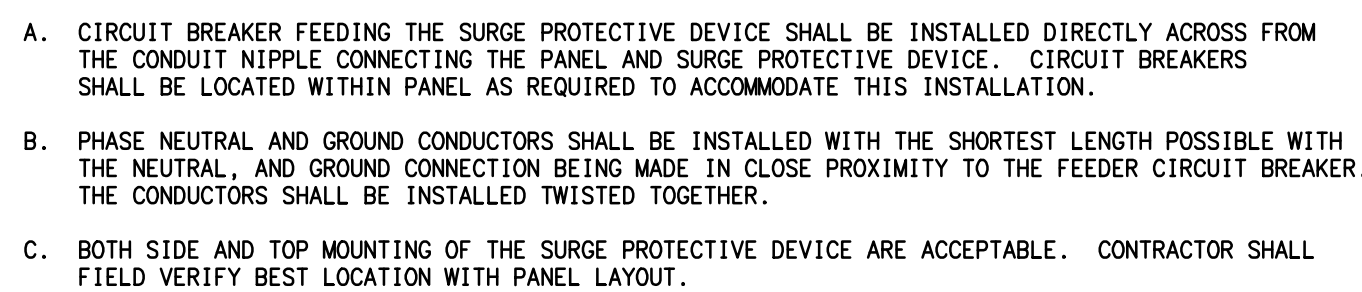
A. CABLE AND CONDUIT PENETRATION DETAILS ARE BASED ON A UL LISTED 2 HOUR FIRE RATED ASSEMBLY (MINIMUM) UTILIZING STI FIRESTOP PRODUCTS. MANUFACTURER'S SHALL BE STI, HILTI, 3M OR APPROVED EQUAL. REFER TO MANUFACTURER'S SPECIFICATIONS AND INSTALLATION DETAILS FOR EXACT INSTALLATION METHODS.

B. PACKING AND SEALANT DEPTHS SHALL BE PER MANUFACTURER'S SPECIFICATIONS FOR UL ASSEMBLY RATING COMPLIANCE.

C. ALL FIRE STOP LOCATIONS SHALL BE LABELED AT POINT OF PENETRATION LABEL SHALL IDENTIFY FIRE STOPPING MATERIAL, U.L. LISTING NUMBER AND HOUR RATING OF WALL/FLOOR.

SCALE: NONE

PANEL 2XB-2													
225A-W.L.O.													
VOLTAGE: 120/208V-3PH-4W													
NOTES	LOAD DESCRIPTION	LOAD	BKR AMP	BKR NO	PH	BKR NO	BKR AMP	LOAD	LOAD DESCRIPTION				NOTES
	VP - 2008	800	20	1	A	2	20	500	eInook - 2008				
	eInook - 2008	500	20	3	B	4	20	500	eInook - 2008				
	eInook - 2008	500	20	5	C	6	20	800	VP - 2004				
	AV RACK 2002	500	20	7	A	8	20	800	VP - 2004				
	AV RACK 2004	500	20	9	B	10	20	500	eInook - 2002				
	AV RACK 2008	500	20	11	C	12	20	500	eInook - 2002				
				13	A	14							
				15	B	16							
				17	C	18							
				19	A	20							
TOTAL CONNECTED LOAD:		6,900 W		19 AMPS									
2019-03-20													



SCALE: NONE

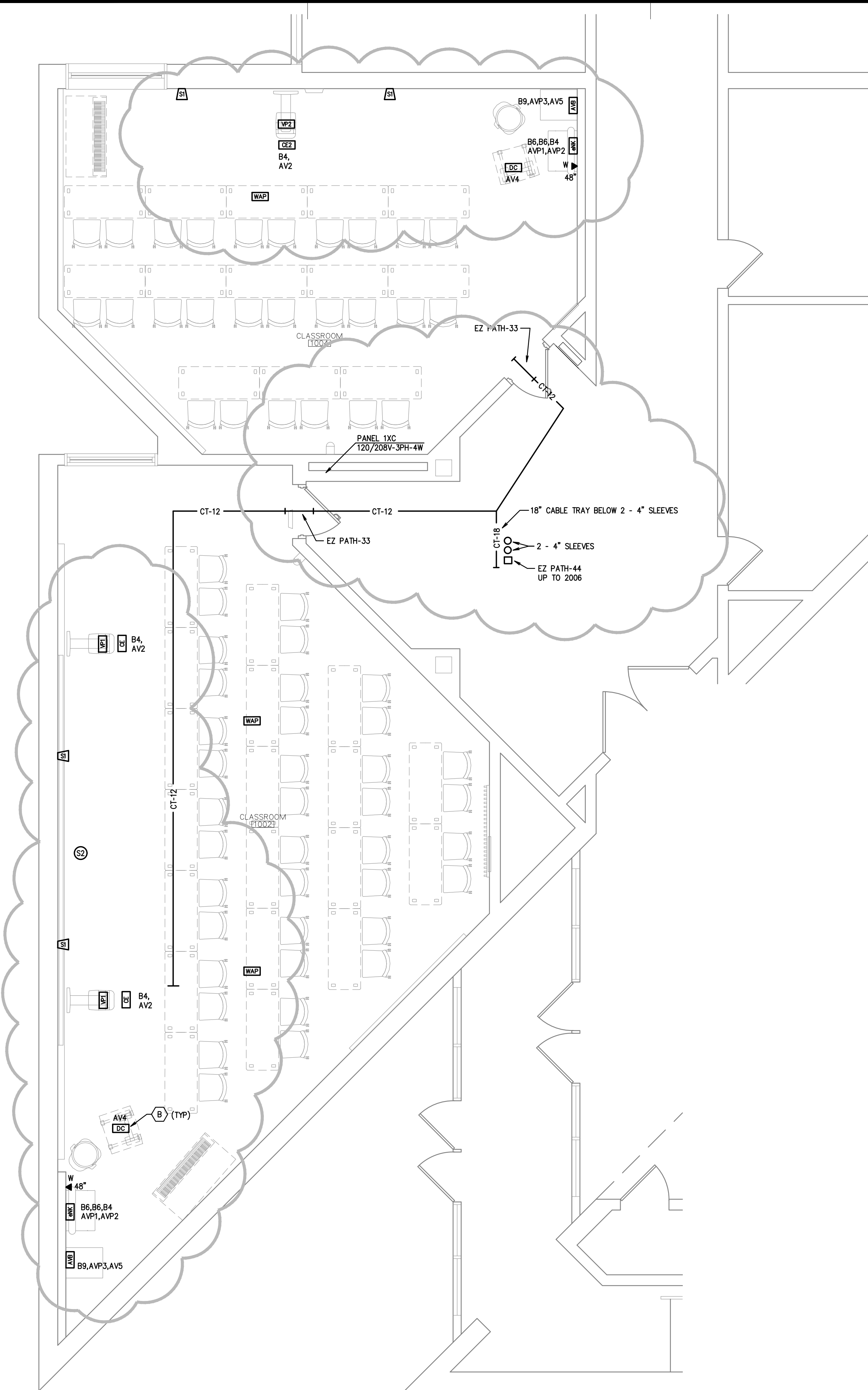
PANEL 2XE-6											
100A-M.L.O. VOLTAGE: 120/208V-3PH-4W											
NOTES	LOAD DESCRIPTION	LOAD	BKR AMP		PH	BKR AMP		LOAD	LOAD DESCRIPTION		NOTES
			BKR	AMP		BKR	AMP				
	eNook 2115	500	20	1	A	2	20	500	eNook 2117		
	eNook 2115	500	20	3	B	4	20	500	eNook 2117		
	VP 2115	800	20	5	C	6	20	800	VP 2117		
	eNook 2119	500	20	7	A	8	20	500	eNook 2121		
	eNook 2119	500	20	9	B	10	20	500	eNook 2121		
	VP 2119	400	20	11	C	12	20	800	VP 2121		
	AV RACK 2115	800	20	13	A	14					
	AV RACK 2117	800	20	15	B	16					
	AV RACK 2119	800	20	17	C	18					
	AV RACK 2121	800	20	19	A	20					
TOTAL CONNECTED LOAD:			10,000 W				28 AMPS				
2019-03-20											

- A. INSTALL 30A3P BREAKER IN MDP-2, MATCH EXISTING, VERIFY EXACT REQUIREMENTS.
- B. LOCATE XF-2 IN EQUIPMENT ROOM ADJACENT TO MDP-2, VERIFY EXACT LOCATION.

SCALE: NONE

© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.

Plotted by: Chad Greiner Plot Date: 3/20/2019 10:59 AM Save Date: 3/19/2019 5:00 PM File Name: J01813-E3-01.DWG



PARTIAL FIRST FLOOR PLAN -
TECHNOLOGY

SCALE: 1/4"=1'-0"

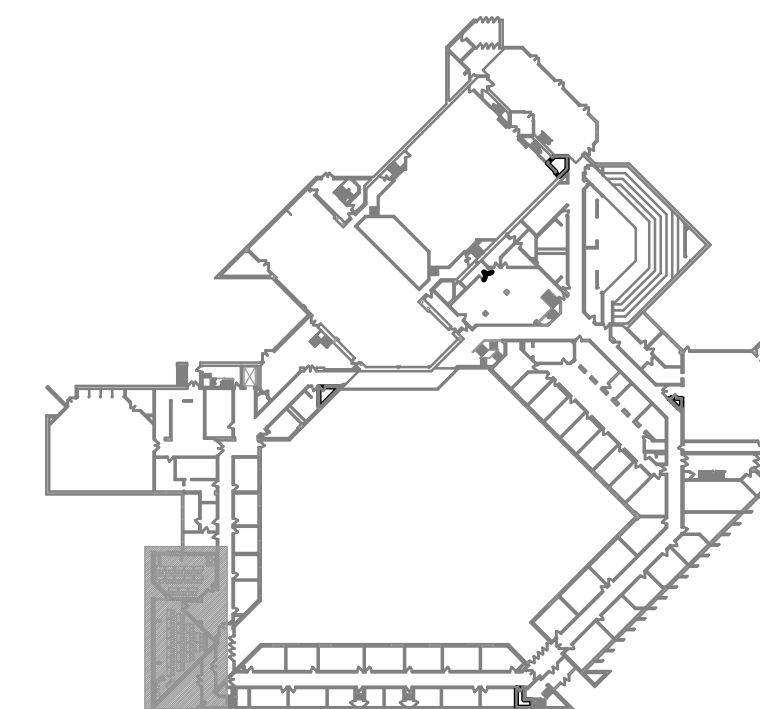


FLOOR PLANS NOTES:

- CABLE TRAY LOCATION IS DIAGRAMMATIC. COORDINATE EXACT LOCATION IN THE FIELD WITH THE EXISTING CONDITIONS AND NEW CONSTRUCTION.
- FIELD VERIFY EXACT DOCUMENT CAMERA LOCATION PRIOR TO ROUGH-IN/INSTALLATION.

INSTALLATION NOTES:

- ALL DATA/COM OUTLETS INSTALLED IN ROOMS 1002, 1004, 2002, 2004 AND 2008 WIRE BACK TO "T-21", ROOM 2006.
- ALL DATA/COM OUTLETS INSTALLED IN ROOMS 2115, 2117, 2119 AND 2121 WIRE BACK TO "T-32", ROOM 3001.
- ALL DATA/COM OUTLETS INSTALLED IN ROOM 3010 WIRE BACK TO "T-31", ROOM 3149.
- IF THE WAP (DATA JACKS) FOR THE WIRELESS ACCESS POINT IS TO BE INSTALLED ABOVE A DROP CEILING, THE CABLES WILL HAVE A 15 FOOT COIL PROPERLY SUPPORTED FROM BUILDING STRUCTURE WITH A DATA JACK ONLY ON EACH CABLE. CONTRACTOR TO INSTALL THE WIRELESS ACCESS POINT WITH THE CORRECT CEILING MOUNT AND THE RED PLENUM RATED CAT 6A SEVEN FOOT PATCH CORDS.
- INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL WIRELESS ACCESS POINTS THAT CAN BE READ FROM BELOW.
- INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL CABINETS AND BACKBOXES.
- PROVIDE ONE VERTICAL 12" CABLE LADDER FLOOR TO CEILING FOR EACH TWO (2) CONDUIT SLEEVES OR EZPATHS. CORE SLEEVES IN A SINGLE ROW, 6" ON CENTER AS CLOSE TO THE WALL AS POSSIBLE. ADD CORES AS REQUIRED. PROVIDE A MINIMUM OF ONE 12" LADDER TRAY PER AREA.
- (C) INDICATES CEILING MOUNTED, AS REQUIRED. VERIFY LOCATION.
- ENT CONDUIT ROUTED ABOVE THE DRYWALL CEILING.
- PROVIDE STAINLESS STEEL BLANK COVERS OVER OUTLETS NOT USED AT THIS POINT.



FIRST FLOOR KEY PLAN

SCALE: SCALE: NONE



© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.
Plotted by: Chad Greiner Plot Date: 3/20/2019 10:59 AM Save Date: 3/19/2019 2:09 PM File Name: J018133-T101.DWG

2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

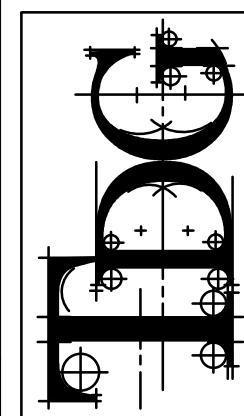
THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY INDIVIDUALS, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED USE FOR THIS PROJECT. IF THE DRAWING IS USED IN ANY MANNER OTHER THAN THE INTENDED USE, THE USER IS RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE DESIGN GROUP, INC. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY DAMAGES, LOSSES, OR INJURIES THAT MAY BE INCURRED BY THE USER OF THIS DRAWING. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY DAMAGES, LOSSES, OR INJURIES THAT MAY BE INCURRED BY THE USER OF THIS DRAWING. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY DAMAGES, LOSSES, OR INJURIES THAT MAY BE INCURRED BY THE USER OF THIS DRAWING.

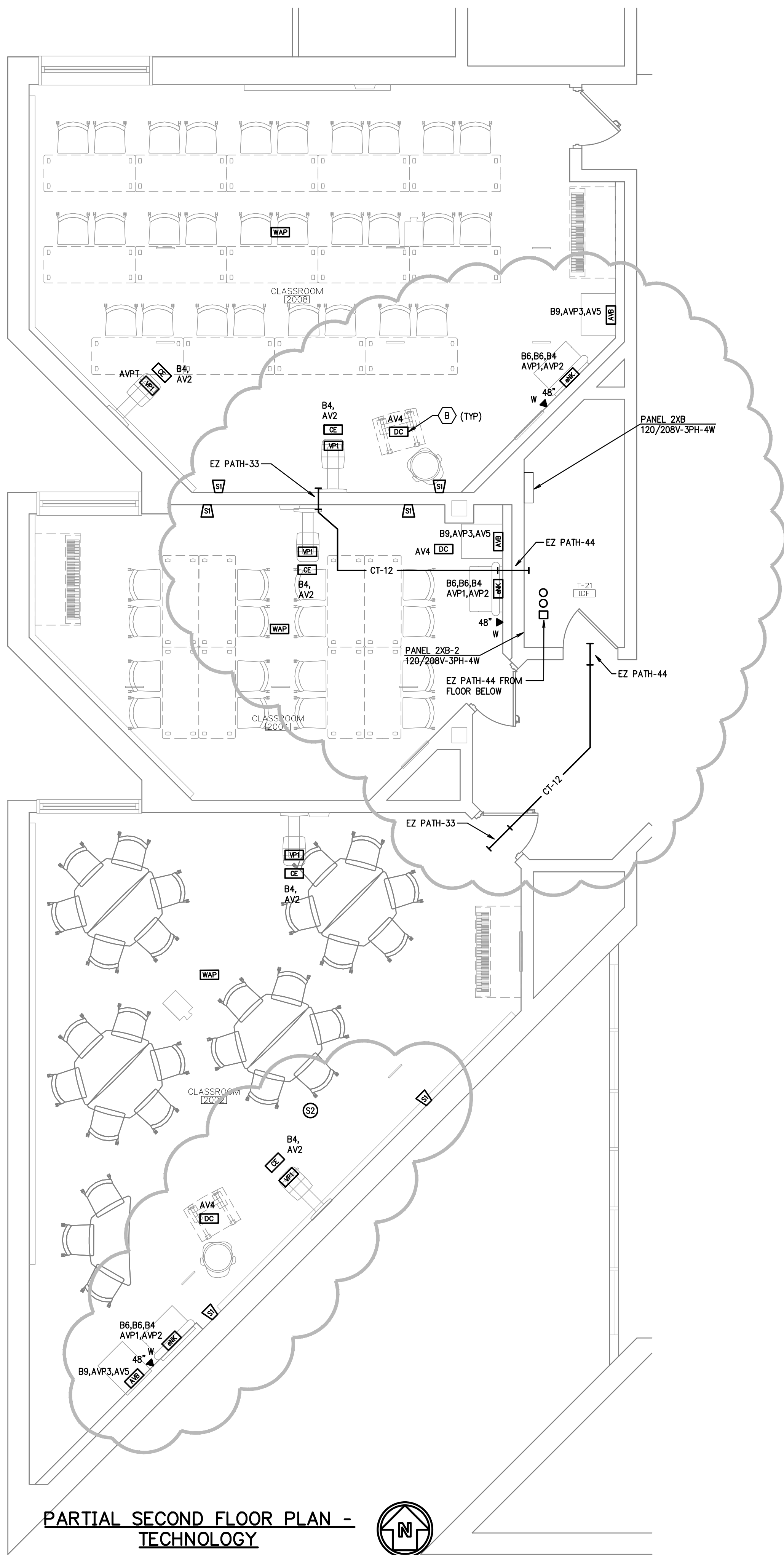
DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE
02.21.19 BGSU REVIEW
03.01.19 FOR BIDS/PERMITS
03.19.19 ADDENDUM #2

DRAWN BY: CAG
CHECKED BY: DTK
DATE:
PLOT SCALE:
JOB NO. 57-2437-18
SHEET
T101
OF SHEETS

JDRM ENGINEERING, INC.
MECHANICAL • ELECTRICAL • TECHNOLOGY
TECHNICON DESIGN GROUP INC.
ARCHITECTURE • ENGINEERING • DESIGN
1800 N Perry Street, Suite 102
Ottawa, Ohio 45875 P:419.523.5323
www.technicondesigngroup.com





**PARTIAL SECOND FLOOR PLAN -
TECHNOLOGY**

SCALE: 1/4"=1'-0"



IDF T-21 NOTES:

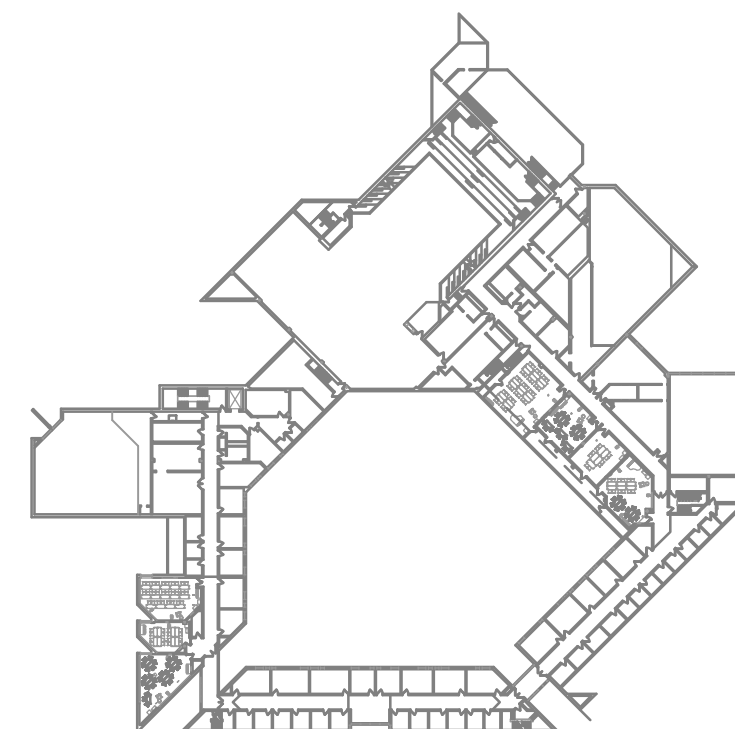
1. THE IDF ROOM IS A CLEAN AREA. THEREFORE ANY CONTRACTOR DOING WORK IN OR NEAR THIS ROOM IS RESPONSIBLE TO INSURE THAT ANY DUST PRODUCED BY THE WORK IS IMMEDIATELY CAPTURED AND NOT ALLOWED TO SPREAD IN THE ROOM. VACUUMS WITH HEPA FILTERS MUST BE USED IN THE IDF ROOM AT ALL TIMES. IF A CONTRACTOR FAILS TO KEEP THE ROOM CLEAN TO THE SATISFACTION OF THE BOSU ITS DEPARTMENT STAFF, THE CONTRACTOR CREATING THE DUST WILL HIRE, AT THE CONTRACTOR'S EXPENSE, A CONTRACTOR APPROVED BY THE BOSU ITS DEPARTMENT THAT SPECIALIZES IN THE CLEANING OF DATA ROOMS TO CLEAN THE ROOM.
2. REMOVE THE EXISTING FLORESCENT LIGHT FIXTURES FROM ROOM 2006 AS THEY CONFLICT WITH THE INSTALLATION OF THE NEW LADDER RACK AND CABLES.
3. INSTALL ONE FOUR FOOT BY TWO FOOT OVERHEAD LED LIGHT ABOVE THE HORIZONTAL LADDER RACKS AND EQUIPMENT RACKS AS DIRECTED BY THE ENGINEER AND BOSU ITS DEPARTMENT AND ONE TWO FOOT BY TWO FOOT LED LIGHT NEAR THE DOOR INSIDE ROOM 2006.
4. REMOVE EXISTING 6" VERTICAL CABLE MANAGER FROM EQUIPMENT RACK.
5. INSTALL A NEW 10" VERTICAL CABLE MANAGER ON EACH SIDE OF THE EQUIPMENT RACK.
6. INSTALL ON WEST WALL BY NEW EZPATH44 IN FLOOR AND NEW EZPATH 44 IN WEST WALL A NEW 18" LADDER RACK FROM FLOOR TO ABOVE HORIZONTAL LADDER
7. INSTALL NEW EZPATH44 IN FLOOR NEAR THE EXISTING FLOOR SLEEVES.
8. INSTALL NEW EZPATH44 IN WEST WALL INTO ROOM 2006 FROM ROOM 2004.
9. INSTALL NEW EZPATH44 IN EAST WALL NEXT TO EXISTING SLEEVES INTO ROOM 2006 FROM HALLWAY.
10. INSTALL WATERFALLS ON ALL EXISTING LADDER RACK AND NEW LADDER RACK.
11. ALL EZPATHS ARE TO HAVE RADIUS CONTROL MODULAR ON EACH END.
12. ADD ADDITIONAL HORIZONTAL 12"W CABLE LADDER IN THE ROOM AS REQUIRED TO SUPPORT NEW CABLES. INSTALL WATERFALLS ON ALL LADDER RACKS WHERE CABLES CHANGE DIRECTION AND ON CONDUITS ENTERING THE ROOM.
13. INSTALL HORIZONTAL 12"W CABLE LADDER AROUND THE PERIMETER OF THE ROOM, ABOVE THE RACKS PER THE RACK DETAIL, AND TO PROVIDE VERTICAL CABLE LADDER FROM THE FLOOR TO THE CEILING FOR SUPPORT OF CABLES ENTERING THE ROOM. INSTALL WATERFALLS ON ALL LADDER RACKS WHERE CABLES CHANGE DIRECTION AND ON CONDUITS ENTERING THE ROOM.
14. GROUND ALL CONDUITS, RACKS AND CABLE LADDERS USING #6 GROUND WIRE TO THE TSB IN THE ROOM PER THE PROJECT SPECIFICATIONS.
15. PRIOR TO THE INSTALLATION OF ANY COPPER PATCH PANELS IN THE ROOM ALL TRADES EXCEPT THE DATA CONTRACTOR MUST HAVE COMPLETED THEIR WORK IN THE ROOM AND THE ROOM MUST BE THOROUGHLY CLEANED AND FREE OF ALL DUST. THE ENGINEER AND THE ITS DEPARTMENT STAFF WILL INSPECT THE ROOM PRIOR TO INSTALLATION OF COPPER PATCH PANELS TO DETERMINE IF THE ROOM IS READY FOR INSTALLATION.
16. INSTALL TWO SYSTEMAX 360 GIGASPEED X100 PATCHMAX G56 U/UTP (UNSHIELDED) PATCH PANELS; 48 PORT, CATEGORY-6A IN THE DESIGNATED RACK.
17. DATA/COM "BIC IDENTIFICATION LABELING" ARE TO BE FOLLOWED IN CONJUNCTION WITH THE INSTALLATION SPREADSHEETS FURNISHED BY BOSU ITS DEPARTMENT.
18. LABEL ALL ELECTRICAL OUTLETS, LIGHT SWITCHES AND DROP CORDS WITH THE PANEL NAME AND OUTLET.
19. WHEN ALL WORK IS COMPLETE IN THE IDF THE ROOM WILL BE CLEAN OF ALL CONTRACTOR MATERIAL, ALL DUST AND DIRT FROM ALL SERVICES. IF THE DATA CONTRACTOR FAILS TO CLEAN THE ROOM TO THE SATISFACTION OF THE BOSU ITS DEPARTMENT STAFF THE DATA CONTRACTOR WILL HIRE, AT THE DATA CONTRACTOR'S EXPENSE, A CONTRACTOR APPROVED BY THE BOSU ITS DEPARTMENT THAT SPECIALIZES IN THE CLEANING OF DATA ROOMS TO CLEAN THE ROOM.

FLOOR PLANS NOTES:

- A. CABLE TRAY LOCATION IS DIAGRAMMATIC. COORDINATE EXACT LOCATION IN THE FIELD WITH THE EXISTING CONDITIONS AND NEW CONSTRUCTION.
- B. FIELD VERIFY EXACT DOCUMENT CAMERA LOCATION PRIOR TO ROUGH-IN/INSTALLATION.

INSTALLATION NOTES:

1. ALL DATA/COM OUTLETS INSTALLED IN ROOMS 1002, 1004, 2002, 2004 AND 2008 WIRE BACK TO "T-21", ROOM 2006.
2. ALL DATA/COM OUTLETS INSTALLED IN ROOMS 2115, 2117, 2119 AND 2121 WIRE BACK TO "T-32", ROOM 3001.
3. ALL DATA/COM OUTLETS INSTALLED IN ROOM 3010 WIRE BACK TO "T-31", ROOM 3149.
- IF THE WAP (DATA JACKS) FOR THE WIRELESS ACCESS POINT IS TO BE INSTALLED ABOVE A DROP CEILING, THE CABLES WILL HAVE A 15 FOOT COIL PROPERLY SUPPORTED FROM BUILDING STRUCTURE WITH A DATA JACK ONLY ON EACH CABLE. CONTRACTOR TO INSTALL THE WIRELESS ACCESS POINT WITH THE CORRECT CEILING MOUNT AND THE RED PLENUM RATED CAT 6A SEVEN FOOT PATCH CORDS.
5. INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL WIRELESS ACCESS POINTS THAT CAN BE READ FROM BELOW.
6. INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL CABINETS AND BACKBOXES.
7. PROVIDE ONE VERTICAL 12" CABLE LADDER FLOOR TO CEILING FOR EACH TWO (2) CONDUIT SLEEVES OR EZPATHS. CORE SLEEVES IN A SINGLE ROW, 6" ON CENTER AS CLOSE TO THE WALL AS POSSIBLE. ADD CORES AS REQUIRED. PROVIDE AN MINIMUM OF ONE 12" LADDER TRAY PER AREA.
9. (C) INDICATES CEILING MOUNTED, AS REQUIRED. VERIFY LOCATION.
10. ENT CONDUIT ROUTED ABOVE THE DRYWALL CEILING.
11. PROVIDE STAINLESS STEEL BLANK COVERS OVER OUTLETS NOT USED AT THIS POINT.



SECOND FLOOR KEY PLAN

SCALE: SCALE: NONE



© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.
Plotted by: Chad Greiner Plot Date: 3/20/2019 11:00 AM Save Date: 3/20/2019 10:35 AM File Name: J018133-T102.DWG

**2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG**

BGSU

BOWLING GREEN, OHIO, 43402

THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY INDIVIDUALS, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED USE FOR THE PROJECT. IF THE DRAWING IS USED IN ANY MANNER OTHER THAN THE INTENDED USE, THE USER IS RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE PROJECT MANAGER. THE USER IS RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE PROJECT MANAGER. THE USER IS RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE PROJECT MANAGER.

DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE

02.21.19	BGSU REVIEW
03.01.19	FOR BIDS/PERMITS
03.19.19	ADDENDUM #2

DRAWN BY: CAG

CHECKED BY: DTK

DATE:

PLOT SCALE:

JOB NO. 57-2437-18

SHEET

T102

OF SHEETS

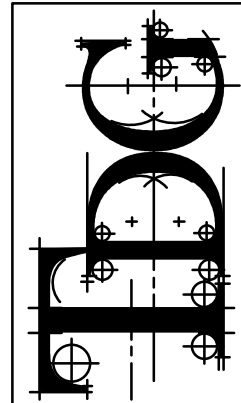
JDRM ENGINEERING, INC.

MECHANICAL • ELECTRICAL • TECHNOLOGY

TECHNICON DESIGN GROUP INC.

ARCHITECTURE • ENGINEERING • DESIGN

1800 N Perry Street, Suite 102
Ottawa, Ohio 45875 P:419.523.5323
www.technicondesigngroup.com

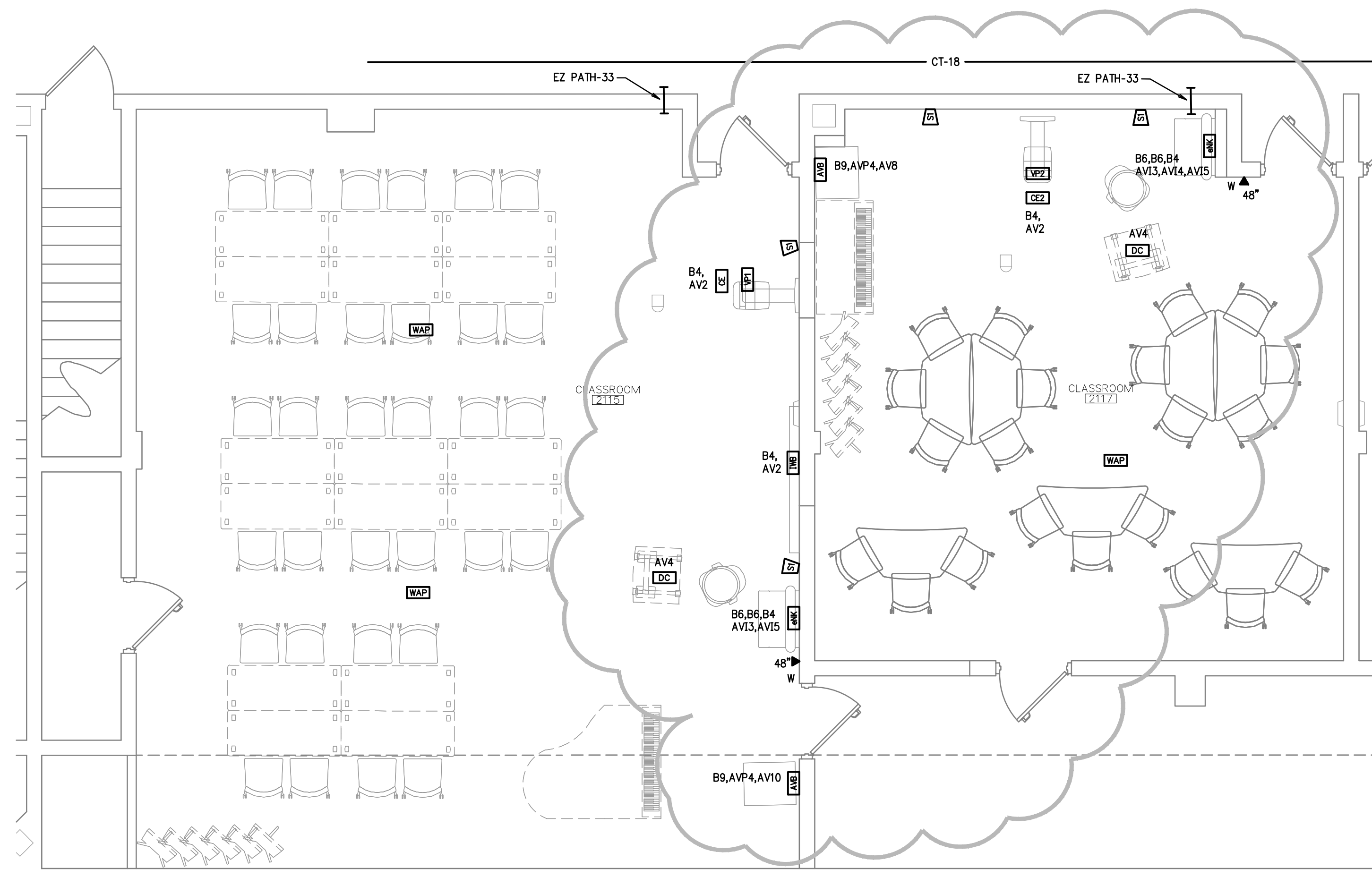


A. CABLE TRAY LOCATION IS DIAGRAMMATIC. COORDINATE EXACT LOCATION IN THE FIELD WITH THE EXISTING CONDITIONS AND NEW CONSTRUCTION.

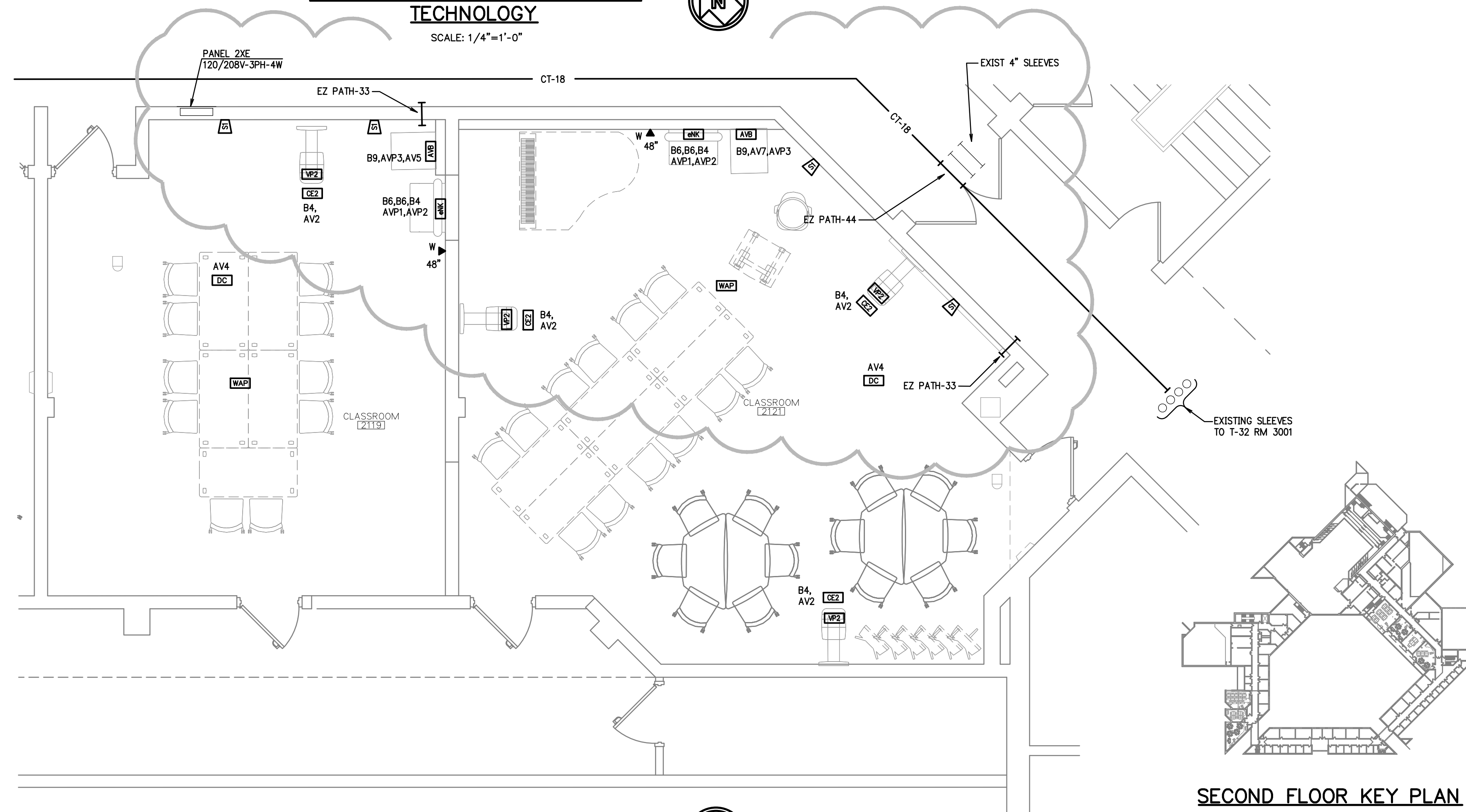
B. FIELD VERIFY EXACT DOCUMENT CAMERA LOCATION PRIOR TO ROUGH-IN/INSTALLATION.

1. ALL DATA/COM OUTLETS INSTALLED IN ROOMS 1002, 1004, 2002, 2004 AND 2008 WIRE BACK TO "T-21", ROOM 2006.
2. ALL DATA/COM OUTLETS INSTALLED IN ROOMS 2115, 2117, 2119 AND 2121 WIRE BACK TO "T-32", ROOM 3001.
3. ALL DATA/COM OUTLETS INSTALLED IN ROOM 3010 WIRE BACK TO "T-31", ROOM 3149.

4. IF THE WAP (DATA JACKS) FOR THE WIRELESS ACCESS POINT IS TO BE INSTALLED ABOVE A DROP CEILING, THE CABLES WILL HAVE A 15 FOOT COIL, PROPERLY SUPPORTED FROM BUILDING STRUCTURE WITH A DATA JACK ONLY ON EACH CABLE. CONTRACTOR TO INSTALL THE WIRELESS ACCESS POINT WITH THE CORRECT CABLE LENGTH AND THE RED PLENUM RATED CAT 6A SEVEN FOOT PATCH CORDS.
5. INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL WIRELESS ACCESS POINTS THAT CAN BE READ FROM BELOW.
6. INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL CABINETS AND BACKBOARDS.
7. PROVIDE ONE VERTICAL 1"2" CABLE LADDER FLOOR TO CEILING FOR EACH TWO (2) CONDUIT SLEEVES OR EPIMATS. CORES REQUIRED IN A SINGLE ROW, 6" ON CENTER AS CLOSE TO THE WALL AS POSSIBLE. ADD CORES AS REQUIRED, PROVIDE AN MINIMUM OF ONE 1"2" LADDER TRAY PER FLOOR.
8. (C) INDICATES CABLE MOUNTED, AS REQUIRED, VERIFY LOCATION.
9. END CONDUIT ROUTED ABOVE THE DRYWALL CEILING.
10. PROVIDE STAINLESS STEEL BLANK COVERS OVER OUTLETS NOT USED AT THIS POINT.



SCALE: 1/4"=1'-0"



SCALE: 1/4"=1'-0"



SCALE: SCALE: NONE

© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.

Plotted by: Chad Greiner Plot Date: 3/20/2019 11:00 AM Save Date: 3/19/2019 10:50 AM File Name: J018133-T103.DWG

2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY INDIVIDUALS, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED USE FOR THIS PROJECT. IF THIS DRAWING IS USED IN PART OR ITS ENTIRETY, ON WORK OTHER THAN THE PROJECT INTENDED BY TECHNICON DESIGN GROUP, INC., THE RIGHT IS RESERVED TO MAKE A CHARGE FOR ADDITIONAL ARCHITECTURAL AND/OR ENGINEERING FEES. THEREFORE, REUSE OR REPRODUCTION OF THIS DOCUMENT WITHOUT PRIOR WRITTEN CONSENT OF TECHNICON DESIGN GROUP, INC. IS STRICTLY PROHIBITED.

© 2019 TECHNICON DESIGN GROUP, INC.

DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE

02.21.19	BGSU REVIEW
03.01.19	FOR BIDS/PERMITS
03.19.19	ADDENDUM #2

DRAWN BY: CAG

CHECKED BY: DTK

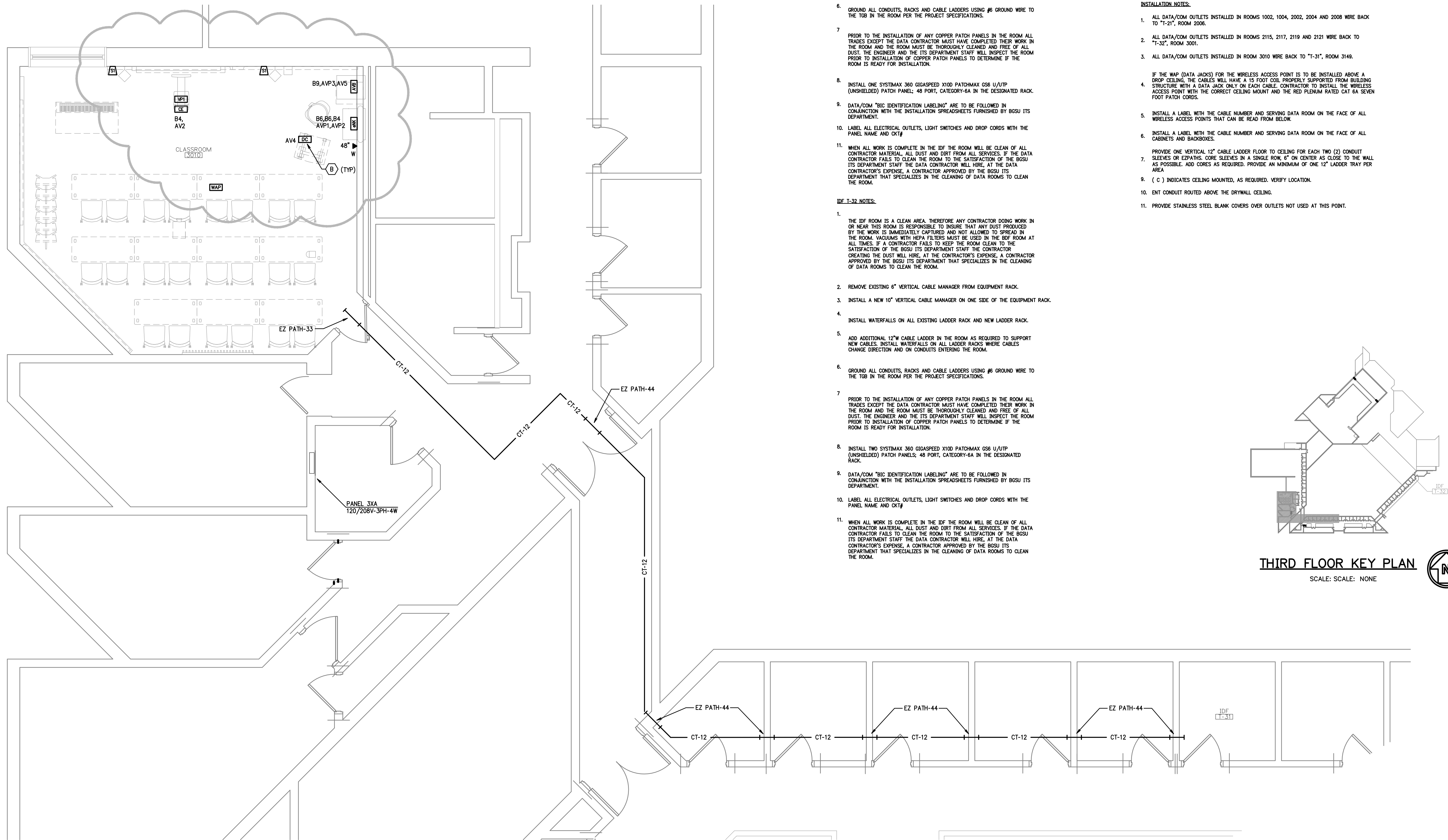
DATE:

PLOT SCALE:

JOB NO. 57-2437-18

SHEET
T103

OF SHEETS



IDE T-31 NOTES:

1. THE IDF ROOM IS A CLEAN AREA. THEREFORE ANY CONTRACTOR DOING WORK IN OR NEAR THIS ROOM IS RESPONSIBLE TO INSURE THAT ANY DUST PRODUCED BY THE WORK IS IMMEDIATELY CAPTURED AND NOT ALLOWED TO SPREAD IN THE ROOM. VACUUMS WITH HEPA FILTERS MUST BE USED IN THE IDF ROOM AT ALL TIMES. IF A CONTRACTOR FAILS TO KEEP THE ROOM CLEAN TO THE SATISFACTION OF THE BGSU ITS DEPARTMENT STAFF, THE CONTRACTOR CREATING THE DUST WILL HIRE, AT THE CONTRACTOR'S EXPENSE, A CONTRACTOR APPROVED BY THE BGSU ITS DEPARTMENT THAT SPECIALIZES IN THE CLEANING OF DATA ROOMS TO CLEAN THE ROOM.
2. REMOVE EXISTING 6" VERTICAL CABLE MANAGER FROM EQUIPMENT RACK.
3. INSTALL A NEW 10" VERTICAL CABLE MANAGER ON ONE SIDE OF THE EQUIPMENT RACK.
4. INSTALL WATERFALLS ON ALL EXISTING LADDER RACK AND NEW LADDER RACK.
5. ADD ADDITIONAL 12"W CABLE LADDER IN THE ROOM AS REQUIRED TO SUPPORT NEW CABLES. INSTALL WATERFALLS ON ALL LADDER RACKS WHERE CABLES CHANGE DIRECTION AND ON CONDUITS ENTERING THE ROOM.
6. GROUND ALL CONDUITS, RACKS AND CABLE LADDERS USING #6 GROUND WIRE TO THE TSB IN THE ROOM PER THE PROJECT SPECIFICATIONS.
7. PRIOR TO THE INSTALLATION OF ANY COPPER PATCH PANELS IN THE ROOM ALL TRADES EXCEPT THE DATA CONTRACTOR MUST HAVE COMPLETED THEIR WORK IN THE ROOM AND THE ROOM MUST BE THOROUGHLY CLEANED AND FREE OF ALL DUST. THE ENGINEER AND THE ITS DEPARTMENT STAFF WILL INSPECT THE ROOM PRIOR TO INSTALLATION OF COPPER PATCH PANELS TO DETERMINE IF THE ROOM IS READY FOR INSTALLATION.
8. INSTALL ONE SYSTIMAX 360 GIGASPEED X100 PATCHMAX G58 U/UTP (UNSHIELDED) PATCH PANEL; 48 PORT, CATEGORY-6A IN THE DESIGNATED RACK.
9. DATA/COM "BIC IDENTIFICATION LABELING" ARE TO BE FOLLOWED IN CONJUNCTION WITH THE INSTALLATION SPREADSHEETS FURNISHED BY BGSU ITS DEPARTMENT.
10. LABEL ALL ELECTRICAL OUTLETS, LIGHT SWITCHES AND DROP CORDS WITH THE PANEL NAME AND CKT#
11. WHEN ALL WORK IS COMPLETE IN THE IDF THE ROOM WILL BE CLEAN OF ALL CONTRACTOR MATERIAL. ALL DUST AND DIRT FROM ALL SERVICES. IF THE DATA CONTRACTOR FAILS TO CLEAN THE ROOM TO THE SATISFACTION OF THE BGSU ITS DEPARTMENT STAFF THE DATA CONTRACTOR WILL HIRE, AT THE DATA CONTRACTOR'S EXPENSE, A CONTRACTOR APPROVED BY THE BGSU ITS DEPARTMENT THAT SPECIALIZES IN THE CLEANING OF DATA ROOMS TO CLEAN THE ROOM.

IDE T-32 NOTES:

1. THE IDF ROOM IS A CLEAN AREA. THEREFORE ANY CONTRACTOR DOING WORK IN OR NEAR THIS ROOM IS RESPONSIBLE TO INSURE THAT ANY DUST PRODUCED BY THE WORK IS IMMEDIATELY CAPTURED AND NOT ALLOWED TO SPREAD IN THE ROOM. VACUUMS WITH HEPA FILTERS MUST BE USED IN THE IDF ROOM AT ALL TIMES. IF A CONTRACTOR FAILS TO KEEP THE ROOM CLEAN TO THE SATISFACTION OF THE BGSU ITS DEPARTMENT STAFF, THE CONTRACTOR CREATING THE DUST WILL HIRE, AT THE CONTRACTOR'S EXPENSE, A CONTRACTOR APPROVED BY THE BGSU ITS DEPARTMENT THAT SPECIALIZES IN THE CLEANING OF DATA ROOMS TO CLEAN THE ROOM.
2. REMOVE EXISTING 6" VERTICAL CABLE MANAGER FROM EQUIPMENT RACK.
3. INSTALL A NEW 10" VERTICAL CABLE MANAGER ON ONE SIDE OF THE EQUIPMENT RACK.
4. INSTALL WATERFALLS ON ALL EXISTING LADDER RACK AND NEW LADDER RACK.
5. ADD ADDITIONAL 12"W CABLE LADDER IN THE ROOM AS REQUIRED TO SUPPORT NEW CABLES. INSTALL WATERFALLS ON ALL LADDER RACKS WHERE CABLES CHANGE DIRECTION AND ON CONDUITS ENTERING THE ROOM.
6. GROUND ALL CONDUITS, RACKS AND CABLE LADDERS USING #6 GROUND WIRE TO THE TSB IN THE ROOM PER THE PROJECT SPECIFICATIONS.
7. PRIOR TO THE INSTALLATION OF ANY COPPER PATCH PANELS IN THE ROOM ALL TRADES EXCEPT THE DATA CONTRACTOR MUST HAVE COMPLETED THEIR WORK IN THE ROOM AND THE ROOM MUST BE THOROUGHLY CLEANED AND FREE OF ALL DUST. THE ENGINEER AND THE ITS DEPARTMENT STAFF WILL INSPECT THE ROOM PRIOR TO INSTALLATION OF COPPER PATCH PANELS TO DETERMINE IF THE ROOM IS READY FOR INSTALLATION.
8. INSTALL TWO SYSTIMAX 360 GIGASPEED X100 PATCHMAX G58 U/UTP (UNSHIELDED) PATCH PANELS; 48 PORT, CATEGORY-6A IN THE DESIGNATED RACK.
9. DATA/COM "BIC IDENTIFICATION LABELING" ARE TO BE FOLLOWED IN CONJUNCTION WITH THE INSTALLATION SPREADSHEETS FURNISHED BY BGSU ITS DEPARTMENT.
10. LABEL ALL ELECTRICAL OUTLETS, LIGHT SWITCHES AND DROP CORDS WITH THE PANEL NAME AND CKT#
11. WHEN ALL WORK IS COMPLETE IN THE IDF THE ROOM WILL BE CLEAN OF ALL CONTRACTOR MATERIAL. ALL DUST AND DIRT FROM ALL SERVICES. IF THE DATA CONTRACTOR FAILS TO CLEAN THE ROOM TO THE SATISFACTION OF THE BGSU ITS DEPARTMENT STAFF THE DATA CONTRACTOR WILL HIRE, AT THE DATA CONTRACTOR'S EXPENSE, A CONTRACTOR APPROVED BY THE BGSU ITS DEPARTMENT THAT SPECIALIZES IN THE CLEANING OF DATA ROOMS TO CLEAN THE ROOM.

FLOOR PLANS NOTES:

- A. CABLE TRAY LOCATION IS DIAGRAMMATIC. COORDINATE EXACT LOCATION IN THE FIELD WITH THE EXISTING CONDITIONS AND NEW CONSTRUCTION.
- B. FIELD VERIFY EXACT DOCUMENT CAMERA LOCATION PRIOR TO ROUGH-IN/INSTALLATION.

INSTALLATION NOTES:

1. ALL DATA/COM OUTLETS INSTALLED IN ROOMS 1002, 1004, 2002, 2004 AND 2008 WIRE BACK TO "T-21", ROOM 2006.
2. ALL DATA/COM OUTLETS INSTALLED IN ROOMS 2115, 2117, 2119 AND 2121 WIRE BACK TO "T-32", ROOM 3001.
3. ALL DATA/COM OUTLETS INSTALLED IN ROOM 3010 WIRE BACK TO "T-31", ROOM 3149.
- IF THE WAP (DATA JACKS) FOR THE WIRELESS ACCESS POINT IS TO BE INSTALLED ABOVE A DROP CEILING, THE CABLES WILL HAVE A 15 FOOT COIL PROPERLY SUPPORTED FROM BUILDING STRUCTURE WITH A DATA JACK ONLY ON EACH CABLE. CONTRACTOR TO INSTALL THE WIRELESS ACCESS POINT WITH THE CORRECT CEILING MOUNT AND THE RED PLENUM RATED CAT 6A SEVEN FOOT PATCH CORDS.
5. INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL WIRELESS ACCESS POINTS THAT CAN BE READ FROM BELOW.
6. INSTALL A LABEL WITH THE CABLE NUMBER AND SERVING DATA ROOM ON THE FACE OF ALL CABINETS AND BACKBOSES.
7. PROVIDE ONE VERTICAL 12" CABLE LADDER FLOOR TO CEILING FOR EACH TWO (2) CONDUIT SLEEVES OR EPATHS. CORE SLEEVES IN A SINGLE ROW, 6" ON CENTER AS CLOSE TO THE WALL AS POSSIBLE. ADD CORDS AS REQUIRED. PROVIDE AN MINIMUM OF ONE 12" LADDER TRAY PER AREA.
8. (C) INDICATES CEILING MOUNTED, AS REQUIRED. VERIFY LOCATION.
9. ENT CONDUIT ROUTED ABOVE THE DRYWALL CEILING.
10. PROVIDE STAINLESS STEEL BLANK COVERS OVER OUTLETS NOT USED AT THIS POINT.

JDRM ENGINEERING, INC.
MECHANICAL • ELECTRICAL • TECHNOLOGY

TECHNICON DESIGN GROUP INC.
ARCHITECTURE • ENGINEERING • DESIGN
1800 N Perry Street, Suite 102
Ottawa, Ohio 43875 P:419.523.5323
www.technicondesigngroup.com

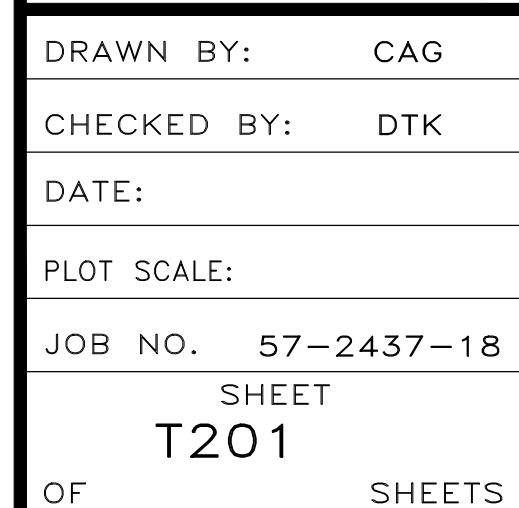
2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY INDIVIDUALS, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED USE FOR THIS PROJECT. IF THE DRAWING IS USED IN ANY MANNER OTHER THAN THE INTENDED USE, THE USER IS RESPONSIBLE FOR OBTAINING NECESSARY PERMISSIONS. THE USER IS NOT TO MAKE OR CHANGE ANY DIMENSIONS, SPECIFICATIONS, OR MATERIALS WITHOUT THE WRITTEN CONSENT OF TECHNICON DESIGN GROUP, INC. IS STRICTLY PROHIBITED.
© 2019 TECHNICON DESIGN GROUP, INC.

DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

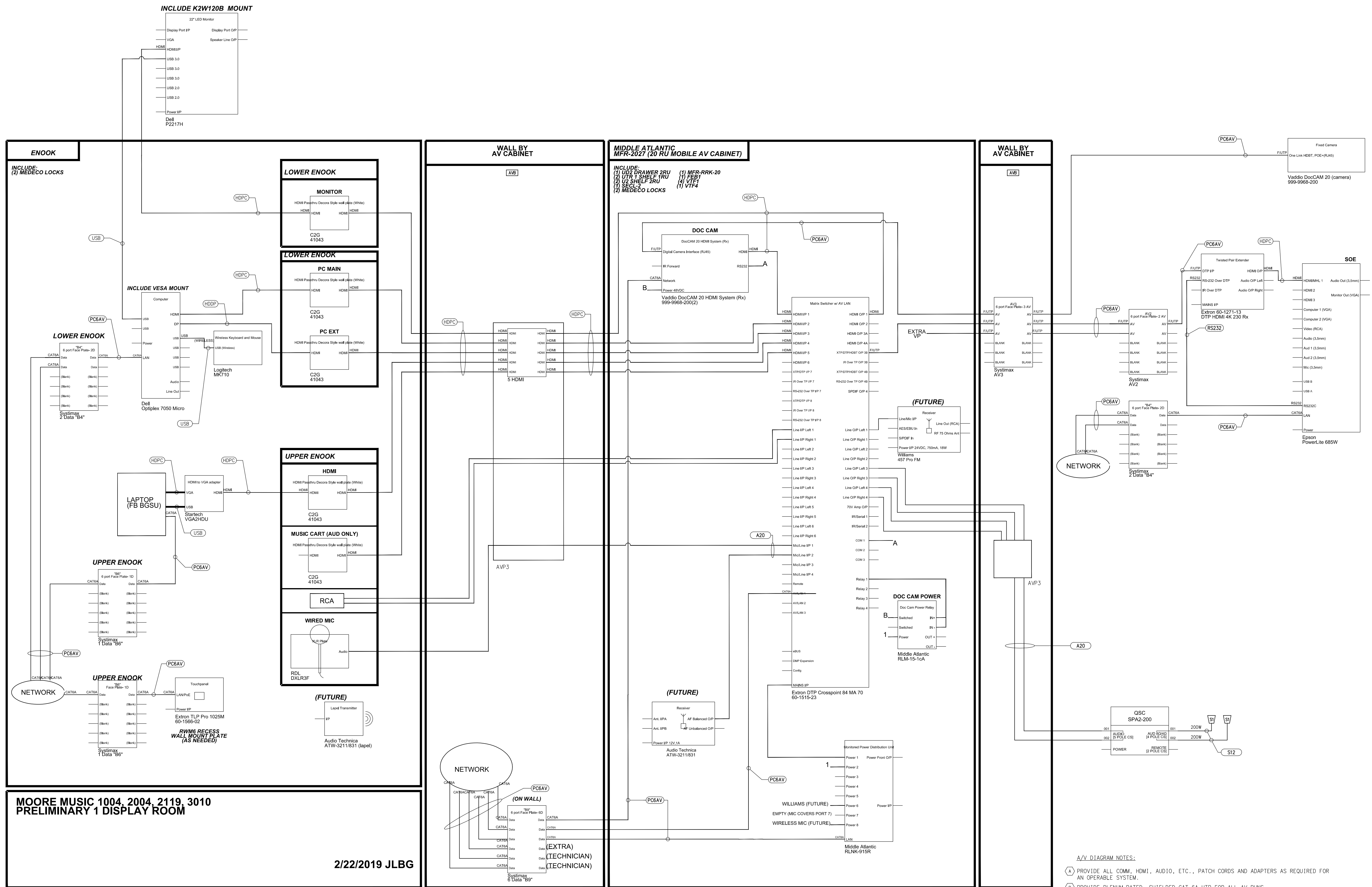
ISSUED DATE
02.21.19 BGSU REVIEW
03.01.19 FOR BIDS/PERMITS
03.19.19 ADDENDUM #2

DRAWN BY: CAG
CHECKED BY: DTK
DATE:
PLOT SCALE:
JOB NO. 57-2437-18
SHEET
T104
OF SHEETS



© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.

Plotted by: Chad Greiner Plot Date: 3/20/2019 11:00 AM Save Date: 3/19/2019 10:55 AM File Name: J18133-T201.DWG



AUDIO/VIDEO SYSTEM BLOCK DIAGRAM - ROOMS 1004, 2004, 2119, 3010
SCALE: NONE

ENTIRE SHEET REVISED

© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.
Plotted by: Chad Greiner Plot Date: 3/20/2019 11:00 AM Save Date: 3/20/2019 10:37 AM File Name: J018133-1202.DWG

- A/V DIAGRAM NOTES:
- (A) PROVIDE ALL COMM, HDMI, AUDIO, ETC., PATCH CORDS AND ADAPTERS AS REQUIRED FOR AN OPERABLE SYSTEM.
 - (B) PROVIDE PLENUM RATED, SHIELDED CAT-6A UTP FOR ALL AV RUNS.
 - (C) ALL EQUIPMENT, WIRING, INSTALLATION AND CONNECTIONS BY CONTRACTOR U.N.O.
 - (D) ALL PROGRAMMING TO BE PROVIDED BY THE CONTRACTOR AS DIRECTED AND REVIEWED BY BGSU CTS.
 - (E) USING "SERIAL OVER ETHERNET" FO PROJECTOR/DISPLAY CONTROL.
 - (F) SEE DRAWING T302 FOR AV CABLE SCHEDULE AND GENERAL AV NOTES.
 - (G) FUTURE = RUN WIRES BUT DO NOT PURCHASE EQUIPMENT.

JDRM ENGINEERING, INC.
MECHANICAL ELECTRICAL & TECHNOLOGY

TECHNICON DESIGN GROUP INC.
ARCHITECTURE ENGINEERING DESIGN
1800 N Perry Street, Suite 102
Ottawa, Ohio 45875 P: 419.523.5323
www.technicondesigngroup.com

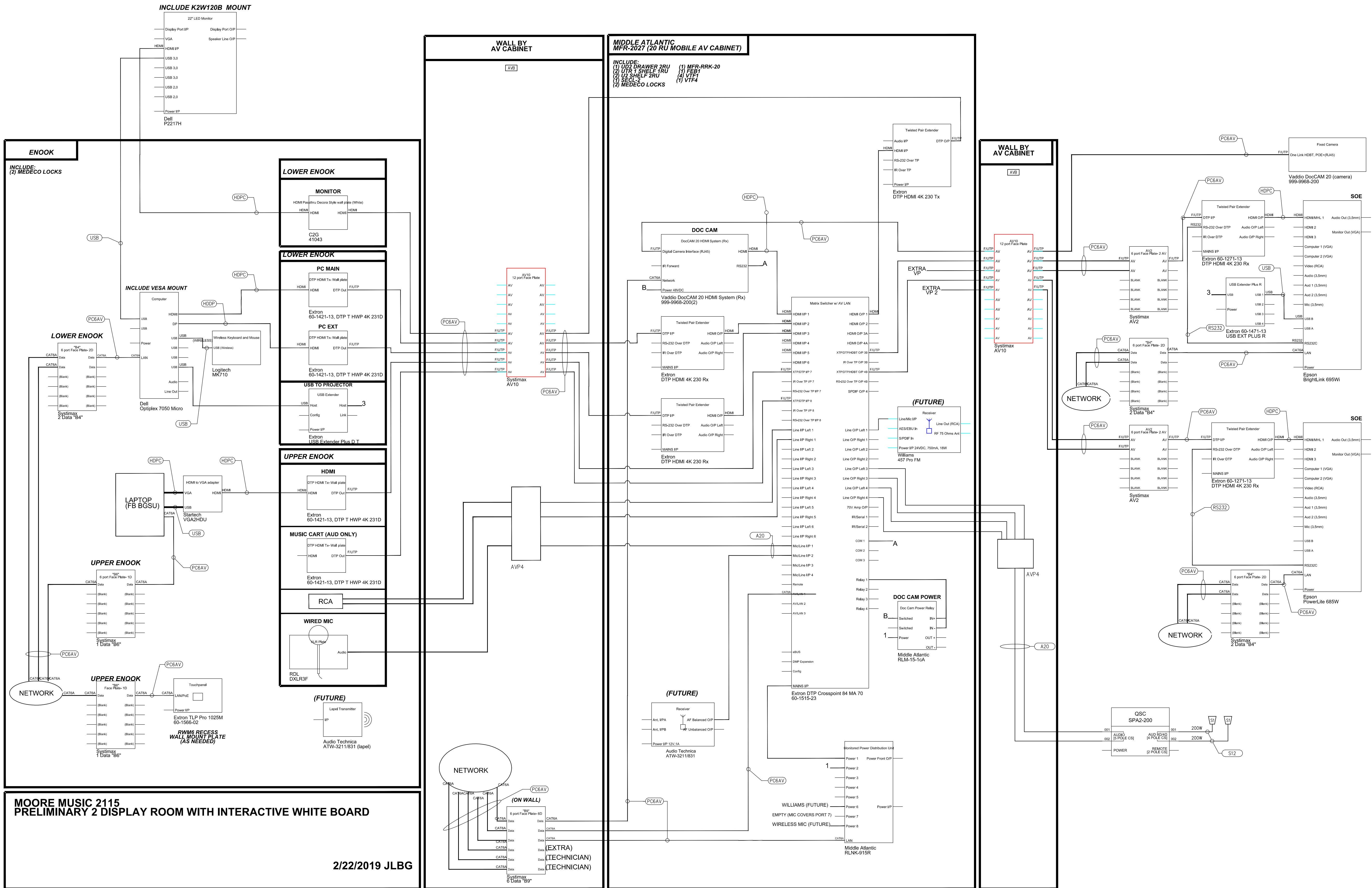
2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY ANY OTHER PARTY WITHOUT THE WRITTEN CONSENT OF JDRM ENGINEERING, INC. OR TECHNICON DESIGN GROUP, INC. THE RIGHT IS RESERVED TO MAKE A CHANGE FOR ADDITIONAL ARCHITECTURAL AND/OR ENGINEERING FEES. THEREFORE, REUSE OR REPRODUCTION OF THIS DOCUMENT WITHOUT THE WRITTEN CONSENT OF TECHNICON DESIGN GROUP, INC. IS STRICTLY PROHIBITED.
© 2019 TECHNICON DESIGN GROUP, INC.

DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE
02.21.19 BGSU REVIEW
03.01.19 FOR BIDS/PERMITS
03.19.19 ADDENDUM #2

DRAWN BY: CAG
CHECKED BY: DTK
DATE:
PLOT SCALE:
JOB NO. 57-2437-18
SHEET T202
OF SHEETS



- A/V DIAGRAM NOTES:
- (A) PROVIDE ALL COMM, HDMI, AUDIO, ETC., PATCH CORDS AND ADAPTERS AS REQUIRED FOR AN OPERABLE SYSTEM.
 - (B) PROVIDE PLENUM RATED, SHIELDED CAT-6A UTP FOR ALL AV RUNS.
 - (C) ALL EQUIPMENT, WIRING, INSTALLATION AND CONNECTIONS BY CONTRACTOR U.N.O.
 - (D) ALL PROGRAMMING TO BE PROVIDED BY THE CONTRACTOR AS DIRECTED AND REVIEWED BY BGSU CTS.
 - (E) USING "SERIAL OVER ETHERNET" TO PROJECTOR/DISPLAY CONTROL.
 - (F) SEE DRAWING T302 FOR AV CABLE SCHEDULE AND GENERAL AV NOTES.
 - (G) FUTURE = RUN WIRES BUT DO NOT PURCHASE EQUIPMENT.

AUDIO/VIDEO SYSTEM BLOCK DIAGRAM - ROOMS 2115
SCALE: NONE

ENTIRE SHEET REVISED

Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.
Plotted by: Chad Greiner Plot Date: 3/20/2019 11:00 AM Save Date: 3/20/2019 10:37 AM File Name: JDRM133-T203.DWG

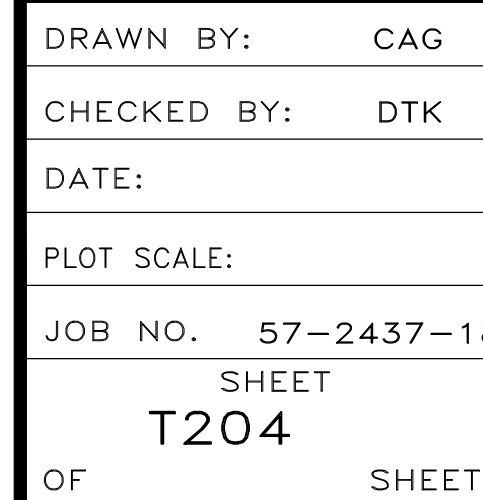
JDRM ENGINEERING, INC.
TECHNICON DESIGN GROUP INC.
ARCHITECTURE • ENGINEERING • DESIGN
1800 N Perry Street, Suite 102
Ottawa, Ohio 45875 P: 419.523.5323
www.technicondesigngroup.com

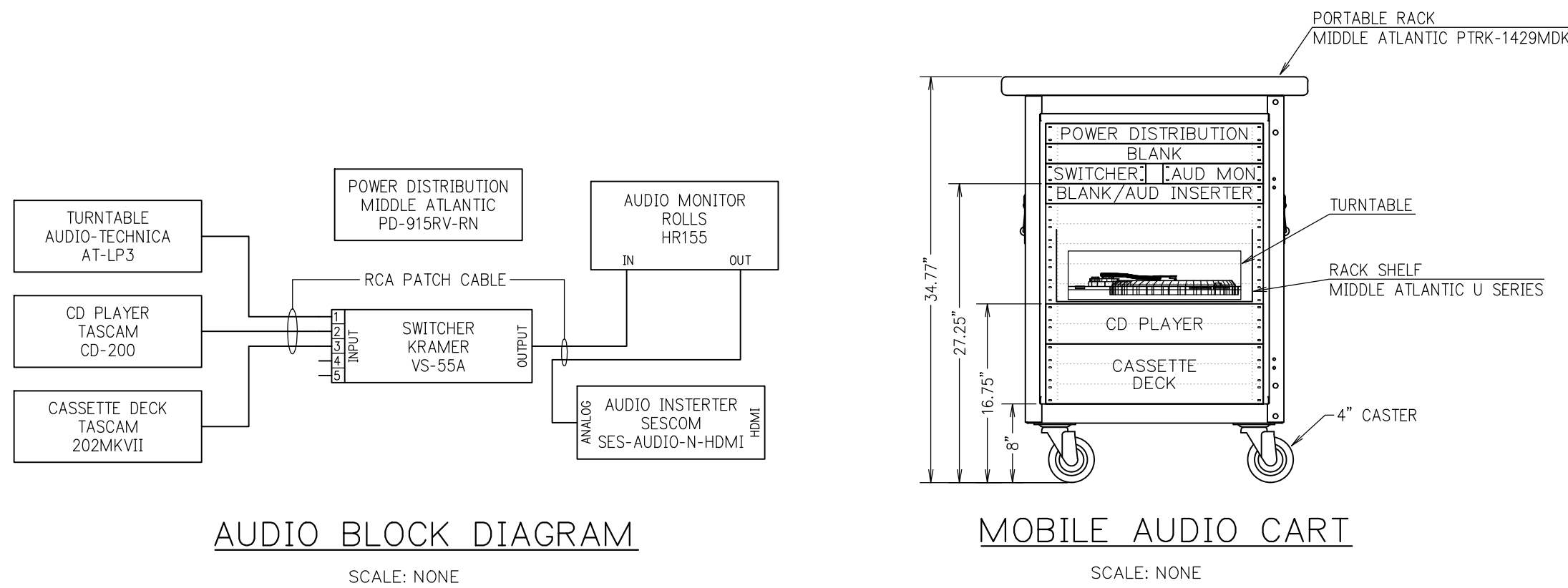
2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE	
02.21.19	BGSU REVIEW
03.01.19	FOR BIDS/PERMITS
03.19.19	ADDENDUM #2

DRAWN BY:	CAG
CHECKED BY:	DTK
DATE:	
PLOT SCALE:	
JOB NO.	57-2437-18
SHEET	T203
OF	SHEETS

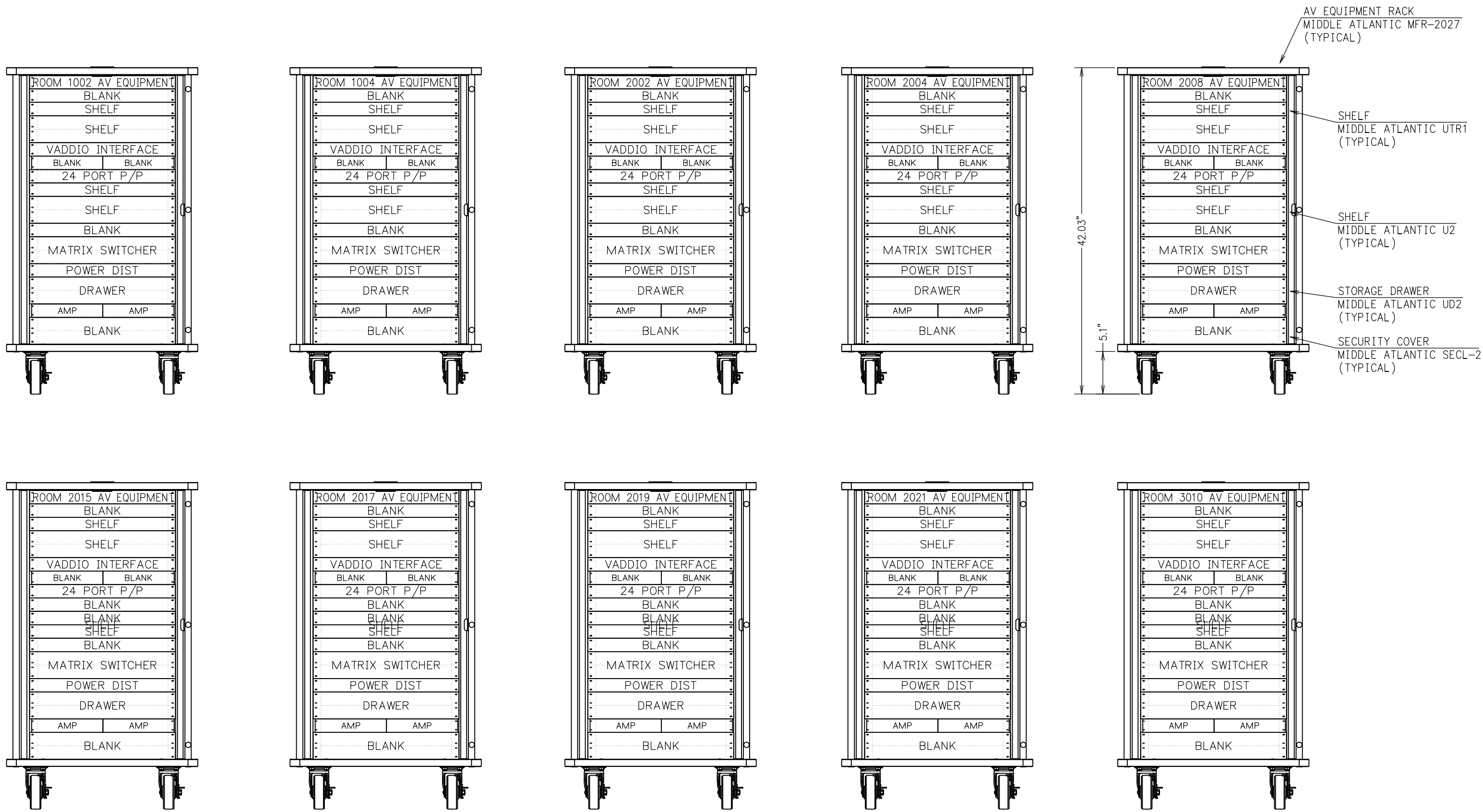




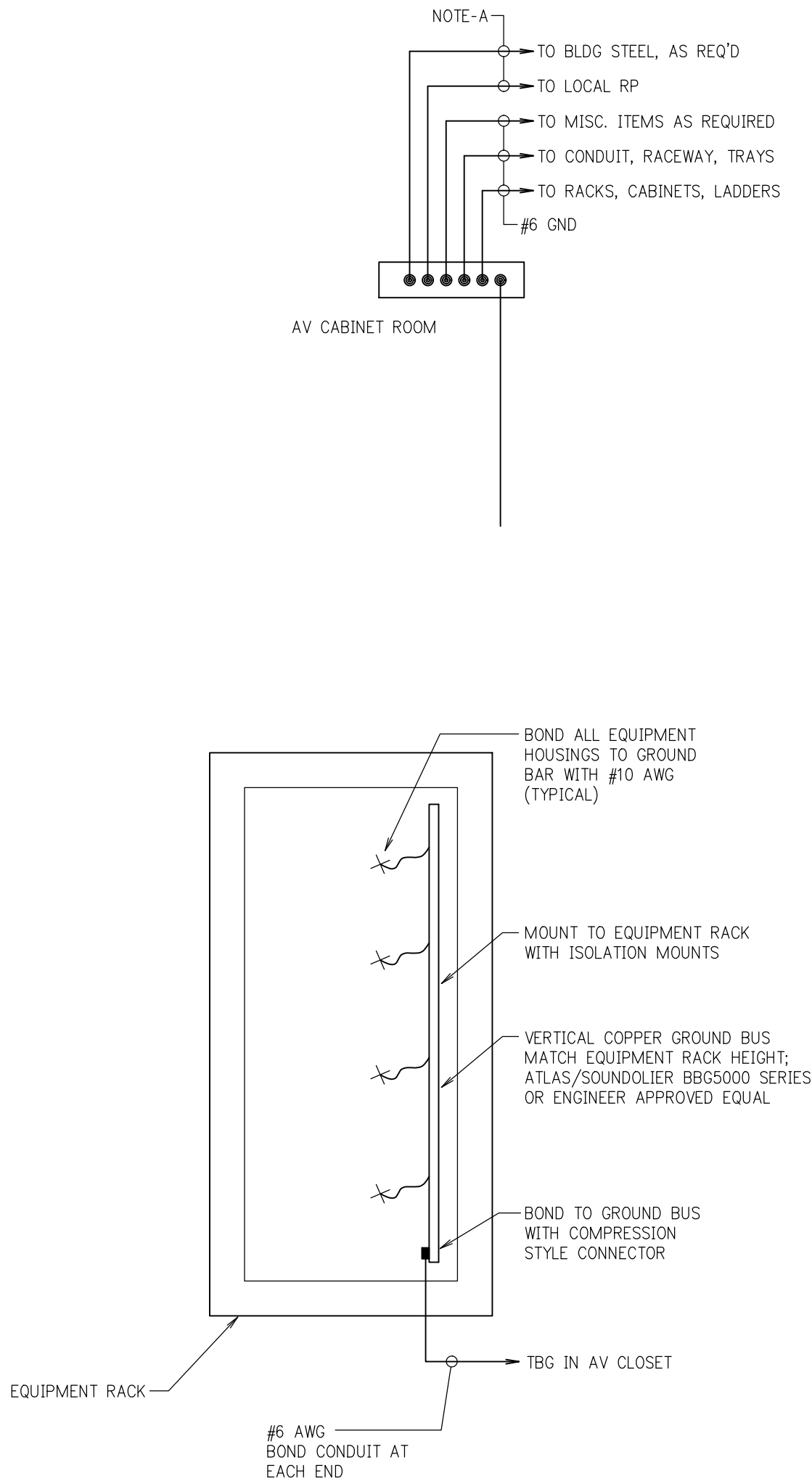
MOBILE AUDIO CART DETAILS
SCALE: NONE

AUDIOVISUAL CABLE SCHEDULE				
CABLE TYPE	ITEM	MANUFACTURER	MODEL	REMARKS
HDBVI	HDMI-DVI PATCH CORD	EXTRON	HDMI DVI-D	LENGTH AS REQUIRED
HDP	HDMI PATCH CABLE	EXTRON	HDMI PRO	LENGTH AS REQUIRED
3.5mm	PC AUDIO PATCH CABLE	EXTRON	A MINI	LENGTH AS REQUIRED
USB	USB PATCH CABLE	BTX	BTX-USBXX	LENGTH AS REQUIRED
A20	2#20 SHIELDED - PLENUM	WEST PENN	25292B	
S16	2#16 - PLENUM	WEST PENN	25225	
RS232	RS232 CONTROL	BELDEN	88105	
HDP	HDMI - DISPLAY PORT	CABLES 2 GO	57501	
S12	2#12 - PLENUM	WEST PENN	25227B	
S10	2#10 - PLENUM	WEST PENN	25210	
PC6AV	CAT-6A A/V CABLE	SEE CABLE SCHEDULE ON SHEET T302, CABLE TYPE (3)		
PC6D	DATA CAT-6A PATCH CORD/CABLE	SEE EQUIP. SCHEDULE ON SHEET T302, VERIFY PATCH CORD WITH THE OWNER		

- GENERAL A/V NOTES:
- THE CONTRACTOR SHALL INCLUDE A ONE DAY TRAINING COURSE FOR THE OWNER'S PERSONNEL ON THE OPERATION AND MAINTENANCE OF THE EQUIPMENT PROVIDED.
 - THE TRAINING COURSES SHALL BE TAUGHT BY A MANUFACTURER'S REPRESENTATIVE AT THE OWNER'S LOCATION. A BRIEF RESUME AND BACKGROUND DESCRIPTION SHALL BE INCLUDED OF THE CONTRACTOR'S TRAINING PERSONNEL WHO WILL CONDUCT THE TRAINING SESSIONS.
 - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TRAINING MATERIALS. THE OWNER WILL BE RESPONSIBLE FOR PROVIDING THE TRAINING ROOM FACILITIES AT THE OWNER'S LOCATION. THE CONTRACTOR SHALL FURNISH THE OWNER FOUR HARD COPIES OF THE SYSTEMS MANUAL IN THREE RING BINDERS AND FOUR COPIES OF THE SYSTEM MANUAL ELECTRONICALLY. PROVIDE FOUR DVD'S WITH COPIES OF THE TRAINING RECORDING WITH THE SYSTEM MANUALS.
 - SYSTEM MANUALS SHALL CONTAIN THE SYSTEM BLOCK DIAGRAM, BASIC SYSTEM OPERATION OUTLINE, EQUIPMENT OWNERS MANUALS, EQUIPMENT SERVICE AND REPAIR MANUALS, SYSTEM LAYOUT, DATE OF INSTALLATION AND CONTACT PERSON WITH PHONE NUMBER.
 - CONTRACTOR TO VERIFY THE MOST CURRENT PRODUCT AND/OR COM CODE NUMBER FOR ALL ITEMS IN THE EQUIPMENT SCHEDULE.
 - PROVIDE 20 4' SLATE PATCH CABLES FOR OWNER USE.



CABINET ELEVATIONS
SCALE: NONE



EQUIPMENT RACK GROUNDING DETAIL
SCALE: NONE

CONNECTIVITY SCHEDULE					
Mark	Description	Manufacturer	Product #	Com Code	Cable Type
B4	BIC 4 Connectivity: 2-Data Connectivity Consisting of: One (1) 6 Port, Single Gang, White Faceplate: Two (2) CAT-6A Blue Modular Data Jack: Four (4) White blank filler covers: Notes: 1, 2, 3, and 4	Systimax Systimax Systimax	M16L-262 MGS800-318-BLUE M20AP-262	108-168-584 760-092-452 107-067-828	2 (1)
B6	BIC 6 Connectivity: 1-Data Outlet Connectivity Consisting of: One (1) 6 Port, Single Gang, White Faceplate: One (1) CAT-6A Blue Modular Data Jack: Five (5) White blank filler covers: Notes: 1, 2, 3, and 4	Systimax Systimax Systimax	M16L-262 MGS800-318-BLUE M20AP-262	108-168-584 760-092-452 107-067-828	1 (1)
B9	BIC 9 Connectivity: 6-Data outlets Connectivity Consisting of: One (1) 6 Port, Single Gang, White Faceplate: Six (6) CAT-6A Blue Modular Data Jack: Notes: 1, 2, 3, and 4	Systimax Systimax	M16L-262 MGS800-318-BLUE	108-168-584 760-092-452	6 (1)
WAP	BIC 4 Connectivity: 2-Data Connectivity Consisting of: Two (2) CAT-6A Blue Modular Data Jack: Notes: 2, 3, and 7	Systimax	MGS800-318-BLUE	760-092-452	2 (1)
W	Wall phone outlet One (1) 6 Port, Single Gang, White Faceplate: One (1) CAT-6A Blue Modular Data Jack: Five (5) White blank filler covers: Notes: 1, 2, 3, 4, and 5	Systimax Systimax Systimax	M16L-262 MGS800-318-BLUE M20AP-262	108-168-584 760-092-452 107-067-828	1 (1)
AV2	AV2 Shielded Connectivity@Data/2-AV Outlet Connectivity Consisting of: One (1) 8 Port, Single Gang, White Faceplate: Two (2) CAT-6A Shielded High Density Information Jack: Four (4) White blank filler covers: Notes: 1, 2, 3, 4, and 9	Systimax Systimax Systimax	M16L-262 HGS820 M20AP-262	108-168-584 760-152-801 107-067-828	2 (2)
AV4	AV4 Shielded Connectivity@Data/4-AV Outlet Connectivity Consisting of: One (1) 8 Port, Single Gang, White Faceplate: Four (4) CAT-6A Shielded High Density Information Jack: Two (2) White blank filler covers: Notes: 1, 2, 3, 4, and 9	Systimax Systimax Systimax	M16L-262 HGS820 M20AP-262	108-168-584 760-152-801 107-067-828	4 (2)
AV5	AV5 Shielded Connectivity@Data/5-AV Outlet Connectivity Consisting of: One (1) 8 Port, Single Gang, White Faceplate: Five (5) CAT-6A Shielded High Density Information Jack: One (1) White blank filler covers: Notes: 1, 2, 3, 4, and 9	Systimax Systimax Systimax	M16L-262 HGS820 M20AP-262	108-168-584 760-152-801 107-067-828	5 (2)
AV7	AV7 Shielded Connectivity@Data/7-AV Outlet Connectivity Consisting of: One (1) 12 Port, Two Gang, White Faceplate: Seven (7) CAT-6A Shielded High Density Information Jack: Five (5) White blank filler covers: Notes: 1, 2, 3, 4, and 9	Systimax Systimax Systimax	M2BL-262 HGS820 M20AP-262	108-685-025 760-152-801 107-067-828	7 (2)
AV8	AV8 Shielded Connectivity@Data/8-AV Outlet Connectivity Consisting of: One (1) 12 Port, Two Gang, White Faceplate: Eight (8) CAT-6A Shielded High Density Information Jack: Five (5) White blank filler covers: Notes: 1, 2, 3, 4, and 9	Systimax Systimax Systimax	M2BL-262 HGS820 M20AP-262	108-685-025 760-152-801 107-067-828	8 (2)
AV10	AV10 Shielded Connectivity@Data/10-AV Outlet Connectivity Consisting of: One (1) 12 Port, Two Gang, White Faceplate: Ten (10) CAT-6A Shielded High Density Information Jack: Five (5) White blank filler covers: Notes: 1, 2, 3, 4, and 9	Systimax Systimax Systimax	M2BL-262 HGS820 M20AP-262	108-685-025 760-152-801 107-067-828	10 (2)
AV13	AV13 Connectivity: 0-Data/3-AV Outlet Connectivity Consisting of: One (1) Three Gang Decora, White Faceplate One (1) HDMI & RS232 Interface Transmitter One (1) Microphone Input XLR One (1) White Blank Decora Filler Plate Notes: 2, 3, 6, 7, 8, and 9	Extron Extron RDL Extron	DTP T HWP 4K 231 D TX D-XLR3F	60-1421-13	
AV14	AV14 Connectivity: 0-Data/1-AV Outlet Connectivity Consisting of: One (1) Two Gang Decora, White Faceplate One (1) USB Extender D T One (1) White Blank Decora Filler Plate Notes: 2, 3, 6, 9, and 10	Extron Extron		60-1473-13	
AV15	AV15 Connectivity: 0-Data/2-AV Outlet Connectivity Consisting of: One (1) Three Gang Decora, White Faceplate Two (2) HDMI & RS232 Interface Transmitter One (1) USB Extender D T Notes: 2, 3, 6, 8, and 9	Extron Extron	DTP T HWP 4K 231 D TX	60-1421-13 60-1473-13	
AV16	AV16 Connectivity: 0-Data/3-AV Outlet Connectivity Consisting of: One (1) Three Gang Decora, White Faceplate Two (2) HDMI & RS232 Interface Transmitter One (1) custom Microphone Input XLR One (1) custom LR RCA Notes: 2, 3, 6, and 9	Extron Extron RDL	DTP T HWP 4K 231 D TX D-XLR3F	60-1421-13	
AV17	AV17 Connectivity: 0-Data/3-AV Outlet Connectivity Consisting of: One (1) Three Gang Decora, White Faceplate Three (3) HDMI & RS232 Interface Transmitter Notes: 2, 3, 6, and 9	Extron Extron	DTP T HWP 4K 231 D TX	60-1421-13	
AVP1	AVP1 Connectivity: 0-Data/3-AV Outlet Connectivity Consisting of: One (1) Three Gang Decora, White Faceplate Two (2) HDMI Pass-Through One (1) custom Microphone Input XLR One (1) custom LR RCA Notes: 2, 3, 6, and 9	Extron Extron RDL	41043 D-XLR3F		
AVP2	AVP2 Connectivity: 0-Data/3-AV Outlet Connectivity Consisting of: One (1) Three Gang Decora, White Faceplate Three (3) HDMI Pass-Through Notes: 2, 3, 6, and 9	Extron Extron	41043		
AVP3	AVP1 Connectivity: 0-Data/8-AV Outlet Connectivity Consisting of: One (1) Five Gang Decora, White Faceplate Five (5) Locking HDMI Pass-Through One (1) Microphone Input XLR Two (2) 4-pole Speaker Notes: 2, 3, 6, and 9	Extron Neutrik RDL Proco	NAHDMI-W D-XLR3F WP1009		
AVP4	AVP4 Connectivity: 0-Data/2-AV Outlet Connectivity Consisting of: One (1) Two Gang Decora, White Faceplate Two (2) 4-pole Speaker One (1) custom Microphone Input XLR One (1) custom LR RCA Notes: 2, 3, 6, and 9	Extron Proco RDL	WP1009 D-XLR3F		

Connectivity Schedule Notes:

- Six port faceplates shall be labeled with the BIC # in the room in the top label area and the data room the cables are fed from shall be identified on the bottom label.
- Outlet to be installed in the location indicated.
- Contractor to verify the most current Product and Com Code number
- Contractor shall provide 106 frames and activation plates as required for outlets located in surface mounted raceway
- The contractor to install BGSU provided wall phones at the designated locations, including the installation of station cables.

- Install inside in all wall boxes the BIC # and the data room the cables are fed from using self adhering labels. Also attach the same information to the outside of the wall boxes.
- WAPs shall have the BIC# and the data room designation the cables are fed from installed inside the back box and the Cable number installed on the face of the WAP with a self adhering labels.
- Provide HDMI cable equalizer (Extron HDMI 101) for HDMI cable runs beyond 30 feet and for video projector locations.
- Refer to AV system block diagram for system interconnection requirements.
- Provide a HDMI patch cable from all HDMI connectors of an appropriate length for connection to equipment for the attended use

EQUIPMENT SCHEDULE

Mark	Description	Manufacturer	Product #	Com Code
A	10" wide and 10.62" deep and 84" in height vertical cable organizer; for use between and at the end of the 84" relay racks as indicated on the drawings. CPl MCS-EFX Master Cabling Section Extended Fingers Provide four	CPI	40083-703	
B	SYSTEMAX 360 GigaSPEED X100 PATCHMAX G28 U/UTP (unshielded) Patch Panel; 48 ports, Category-6A, for 19" Rack Mounting, 19" W x 3.5" H x 10.5" D, Two (2) rows of twenty-four (24) 8-position ports, T568B wiring sequence, prewired to 110 type terminations on the rear; with stuffer caps and designation label kits, printed and installed, horizontal cable management on the front and back side cable management bars. (Provide five.)	SYSTEMAX	360-PM-GS6-2U-48	760-128-207
C	GIGASPEED X100 360GS10E Solid Cordage Modular Patch Cord, CAT 6A, Light Blue Jacket, four (4) feet in length. (Non-Plenum) Provide 230	SYSTEMAX	360GS10E-LB-4ft	CPSSX2-02F004
D	GIGASPEED X100 360GS10E Solid Cordage Modular Patch Cord, CAT 6A, Light Blue Jacket, seven (7) feet in length. (Non-Plenum) Provide 65	SYSTEMAX	360GS10E-LB-7ft	CPSSX2-02F007
E	GIGASPEED X100 360GS10E Solid Cordage Modular Patch Cord, CAT 6A, Red Jacket, four (4) feet in length. (Plenum) Provide 30	SYSTEMAX	360GS10E-P-RD-4ft	CPSSY2-07F004
F	GIGASPEED X100 360GS10E Solid Cordage Modular Patch Cord, CAT 6A, Red Jacket, ten (10) feet in length. (Plenum) Provide 30	SYSTEMAX	360GS10E-P-RD-10ft	CPSSY2-07F010
G	GIGASPEED X100 G10FP on 2295 Solid Plenum F/UTP Cordage, F/UTP Modular Patch Cord, CAT 6A, Dark Gray Jacket four (4) feet in length. (Plenum) (Provide as required)	SYSTEMAX	G10FP-P-DG-4FT	CPG6K2-03F004
H	GIGASPEED X100 G10FP on 2295 Solid Plenum F/UTP Cordage, F/UTP Modular Patch Cord, CAT 6A, Dark Gray Jacket seven (7) feet in length. (Plenum) (Provide as required)	SYSTEMAX	G10FP-P-DG-7FT	CPG6K2-03F007

EQUIPMENT SCHEDULE NOTES:

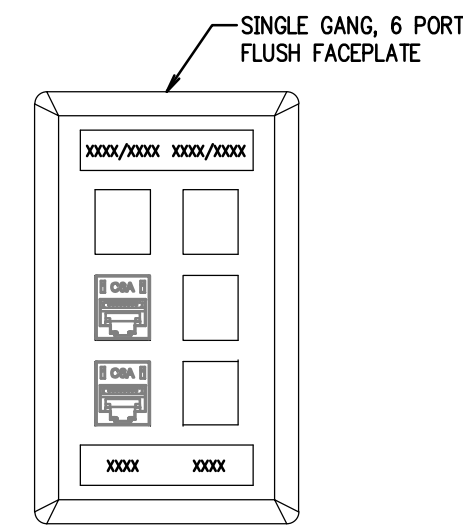
A. Contractor to verify the most current Product and/or Com Code number for all items in the Equipment Schedule.

CABLE SCHEDULE

Mark	Cable Use	Cable Description	Cable Type	Manufacturer	Product #	Com Code
(1)	Horizontal voice and data cable Blue Jacket	GigaSPEED X100 2091B; 100 OHM, 4-unshielded twisted pair (U/UTP), 23 AWG solid copper, N.O.D 0.285", CMP	Category-6A	Systimax	2091B BL 4/23 R1000	760-105-338
(2)	Horizontal AV Cable; Slate Jacket (Plenum cable)	GigaSPEED X100 2291A ETL Verified CAT 6A F/UTP SHIELDED Cable, 4 twisted pair count, 23 AWG solid copper, N.O.D. 0.276", CMP	Category-6A	Systimax	2291B SL 4/23 R1000	760-122-655

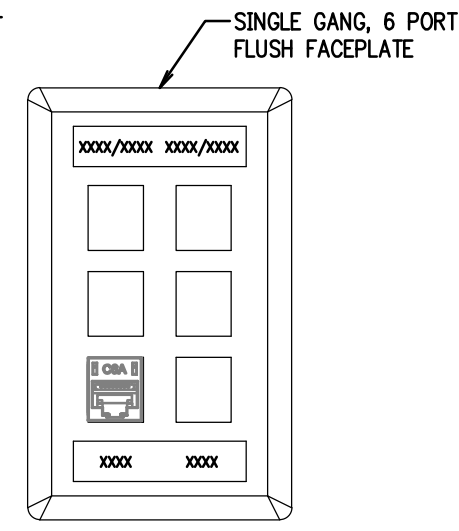
CABLE SCHEDULE NOTES:

A. Contractor to verify the most current Product and/or Com Code numbers for all cables listed.



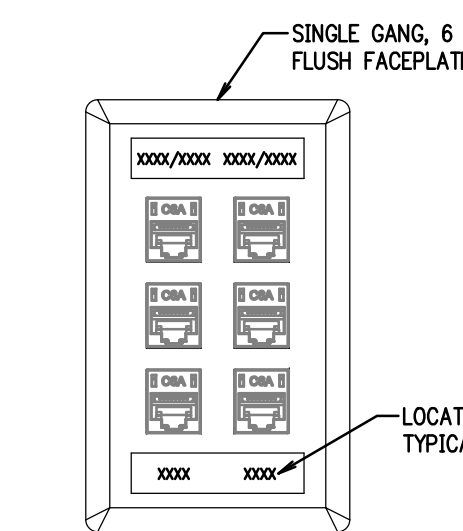
"B4" DETAIL

SCALE: NONE



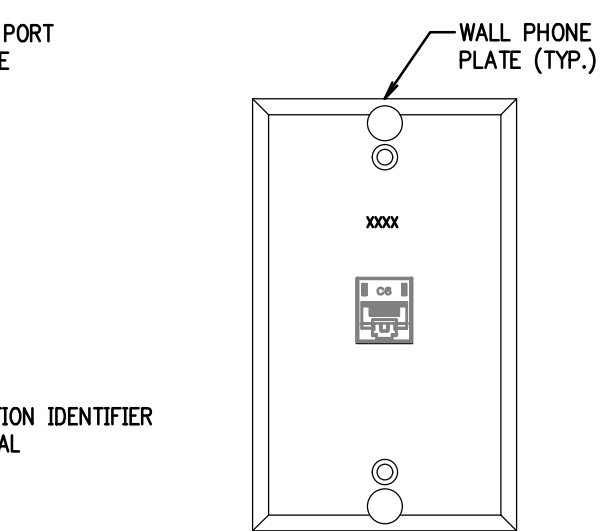
"B6" DETAIL

SCALE: NONE



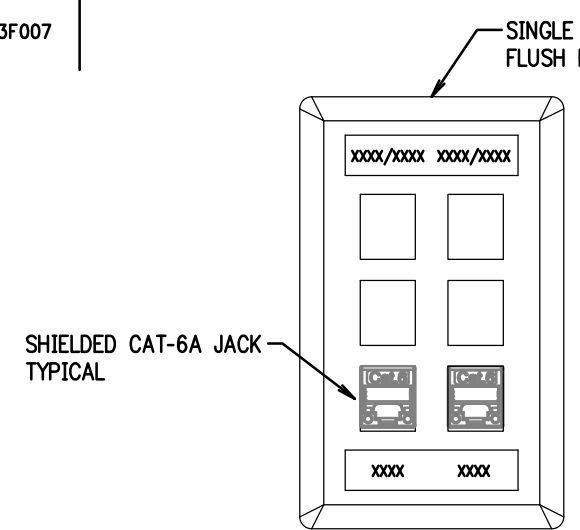
"B9" DETAIL

SCALE: NONE



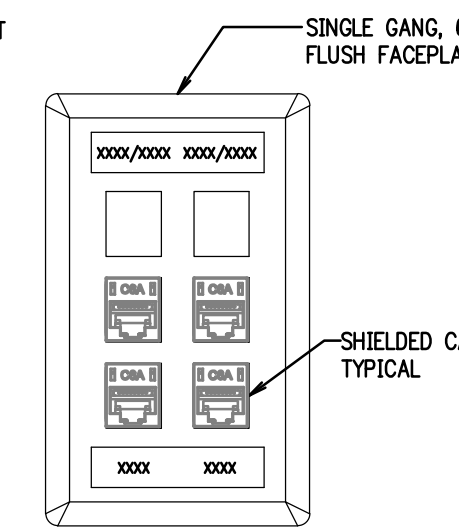
"W" DETAIL

SCALE: NONE



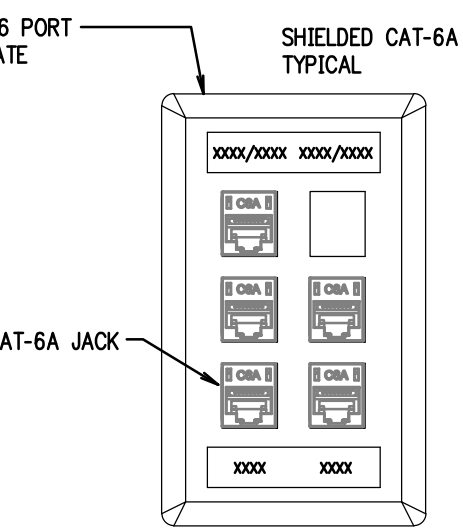
"AV2" DETAIL

SCALE: NONE



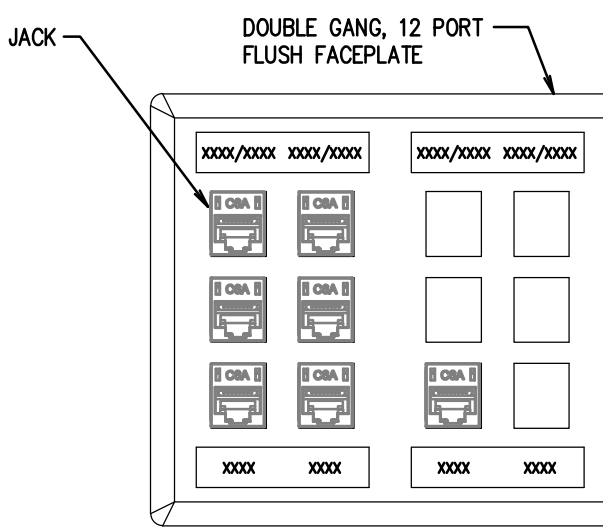
"AV4" DETAIL

SCALE: NONE



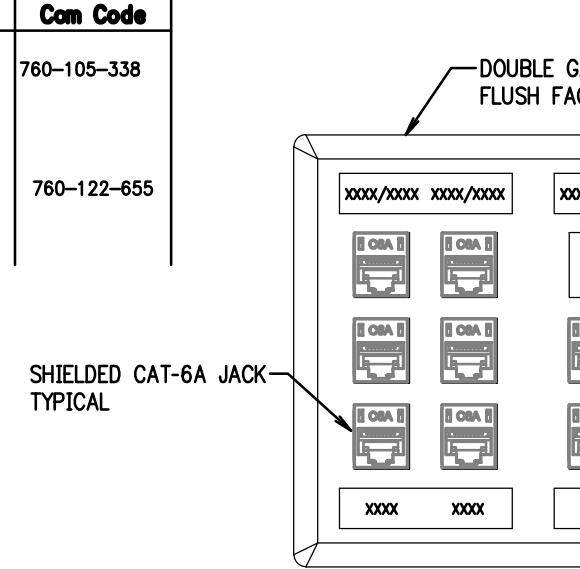
"AV5" DETAIL

SCALE: NONE



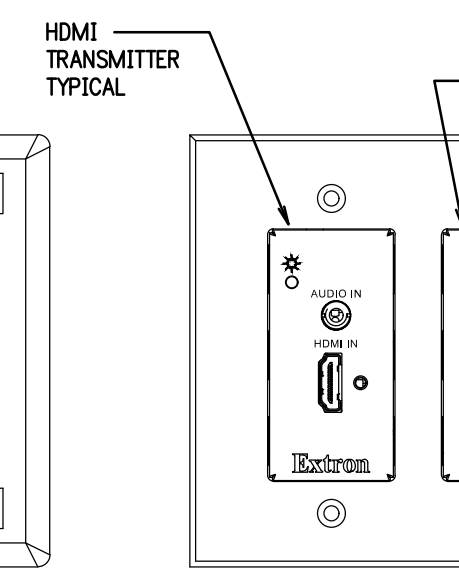
"AV7" DETAIL

SCALE: NONE



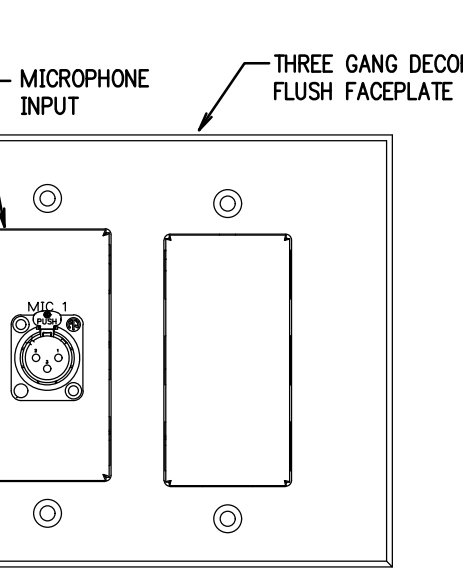
"AV8" DETAIL

SCALE: NONE



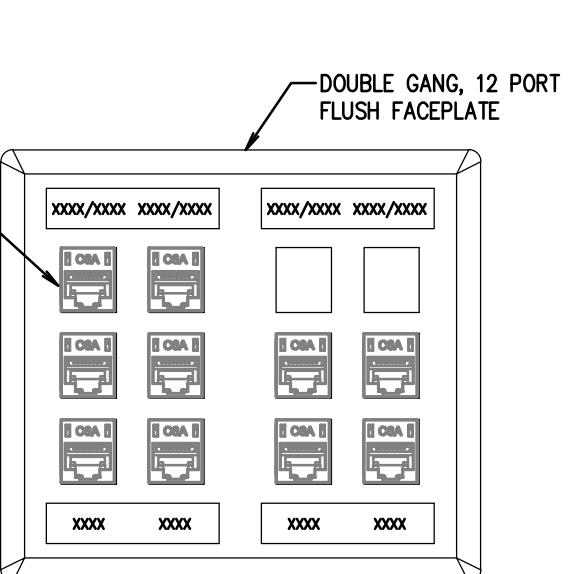
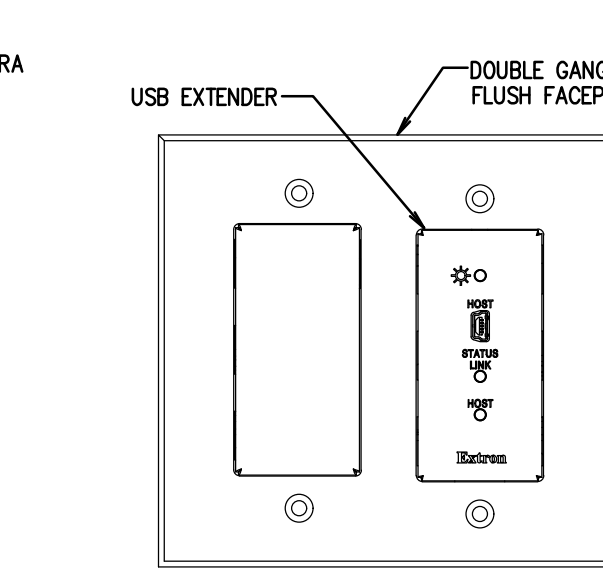
"AV13" DETAIL

SCALE: NONE



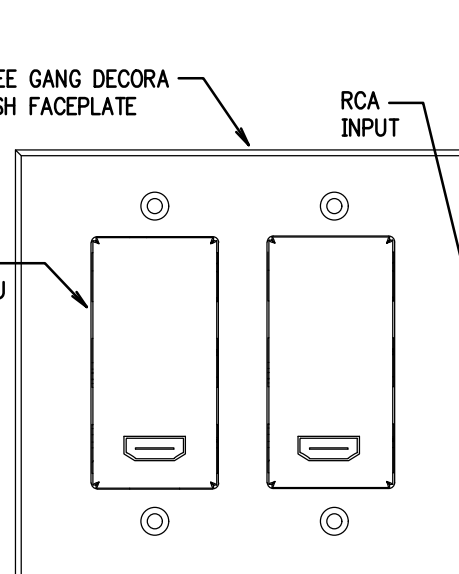
"AV14" DETAIL

SCALE: NONE



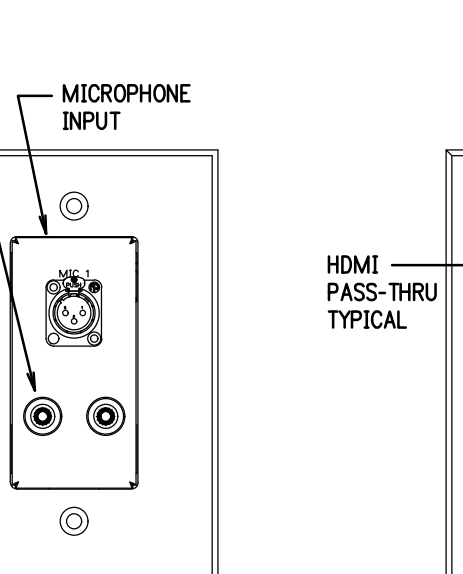
"AV10" DETAIL

SCALE: NONE



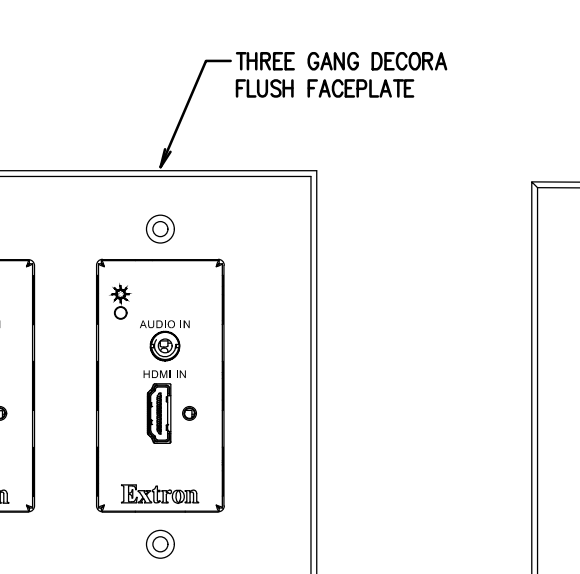
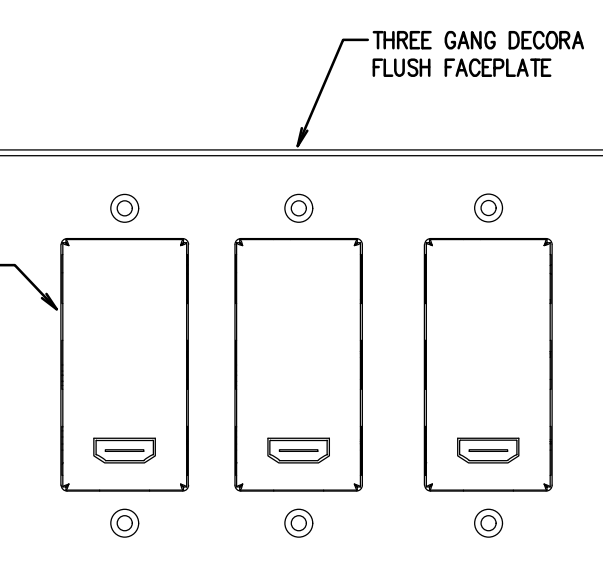
"AVP1" DETAIL

SCALE: NONE



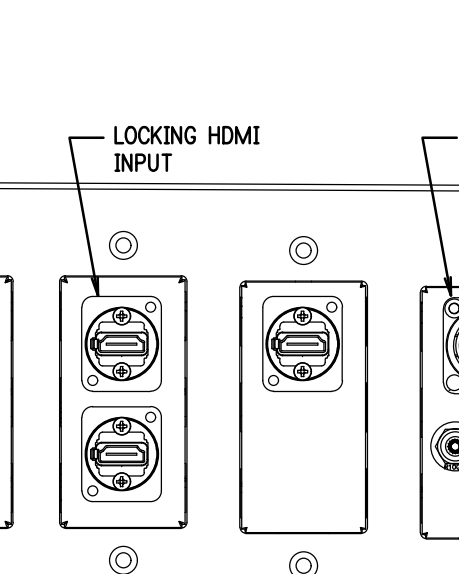
"AVP2" DETAIL

SCALE: NONE



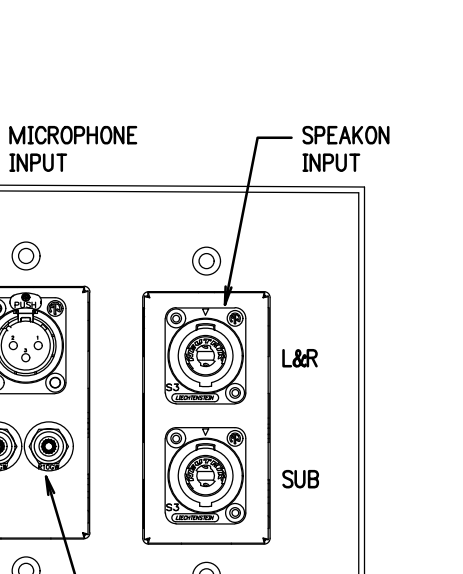
"AV17" DETAIL

SCALE: NONE



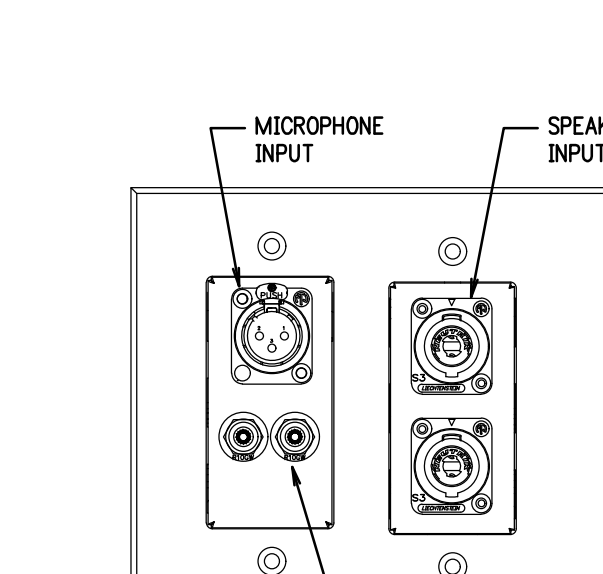
"AVP3" DETAIL

SCALE: NONE



"AVP4" DETAIL

SCALE: NONE



ENTIRE SHEET REVISED

© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request.
Plotted by: Chad Greiner Plot Date: 3/20/2019 11:00 AM Save Date: 3/20/2019 10:55 AM File Name: J018133-1302.DWG

JDRM ENGINEERING, INC.
MECHANICAL • ELECTRICAL • TECHNOLOGY

TECHNICON DESIGN GROUP INC.
ARCHITECTURE • ENGINEERING • DESIGN
1800 N Perry Street, Suite 102
Ottawa, Ohio 45875 P:419.523.5323
www.technicondesigngroup.com

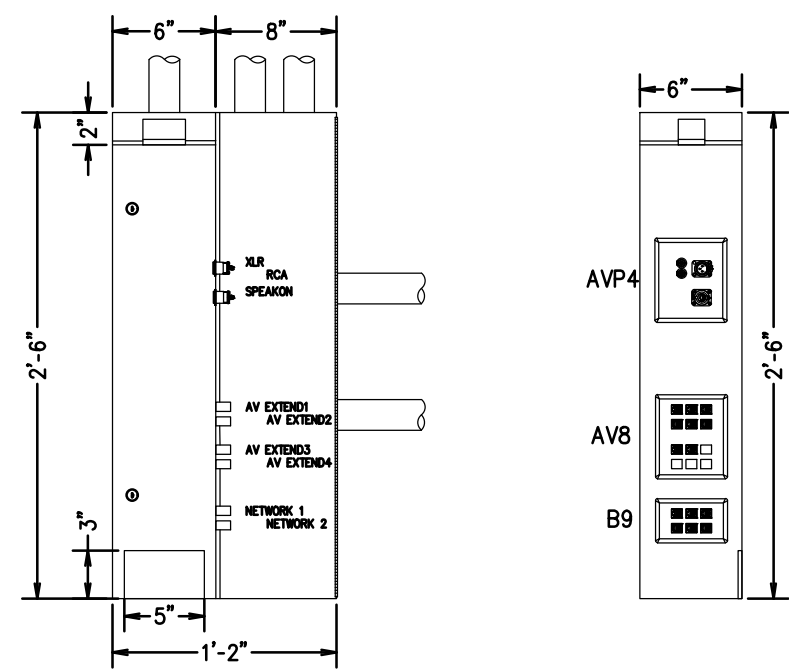
2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY INDIVIDUALS, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED USE FOR THE PROJECT. IF THE DRAWING IS USED IN ANY MANNER OTHER THAN THE PROJECT, THE USER ASSUMES ALL LIABILITY FOR ANY DAMAGE, LOSS, OR INJURY. THE USER AGREES TO INDEMNIFY AND HOLD HARMLESS TECHNICON DESIGN GROUP, INC. FROM AND AGAINST ALL SUCH DAMAGES, LOSSES, AND INJURIES. THIS AGREEMENT SHALL BE GOVERNED BY THE LAWS OF THE STATE OF OHIO. © 2019 TECHNICON DESIGN GROUP, INC.

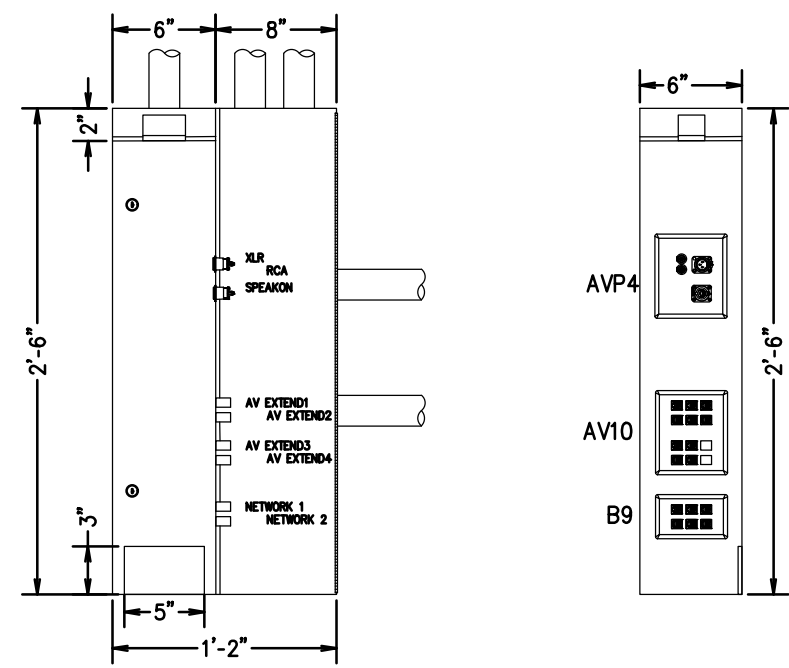
DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE
02.21.19 BGSU REVIEW
03.01.19 FOR BIDS/PERMITS
03.19.19 ADDENDUM #2

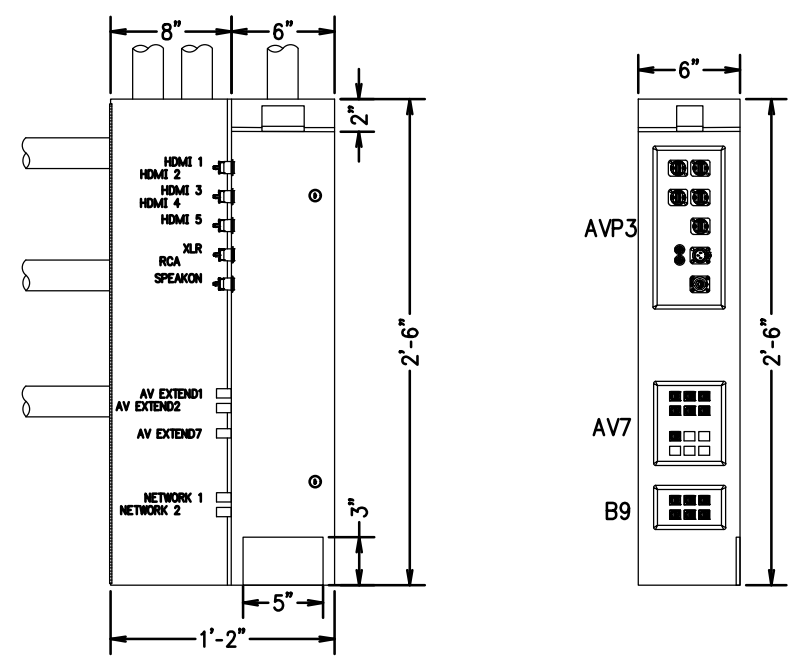
DRAWN BY: CAG
CHECKED BY: DTK
DATE:
PLOT SCALE:
JOB NO. 57-2437-18
SHEET
T302
OF SHEETS



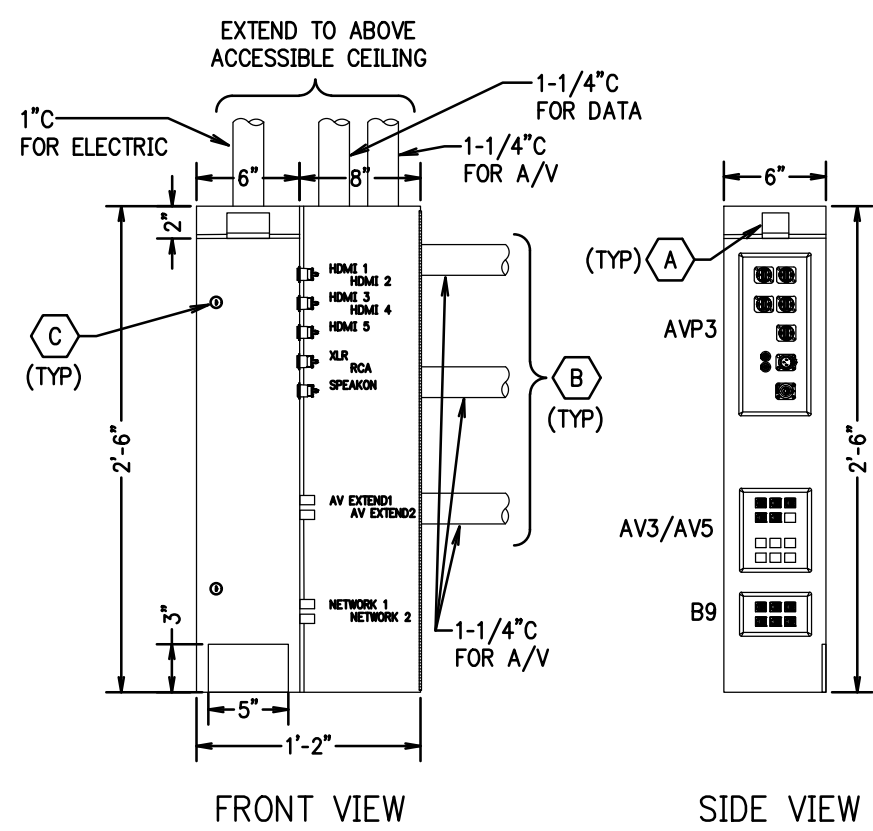
ROOM 2117



ROOM 2115



ROOM 2121

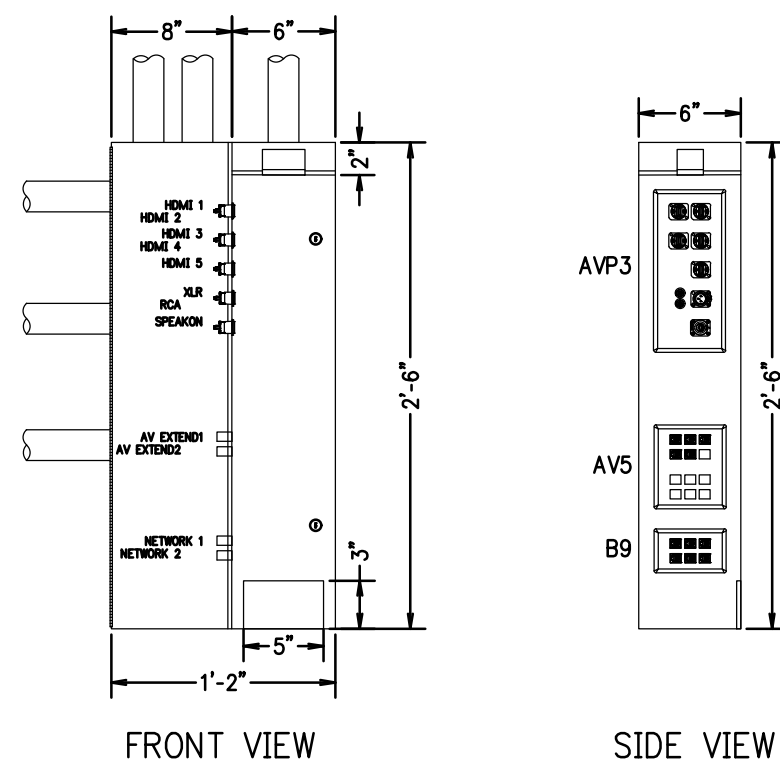


ROOMS 1002, 1004, 2004,
2008, 2119, 3010

- NOTES:
- DUPLEX RECEPTACLE
 - EXTEND CONDUITS TO eNOOK, VERIFY EXACT PATH.
 - MEDECO LOCK, COORDINATE KEYING WITH BGSU

AV BACKBOX DETAIL

SCALE: NONE

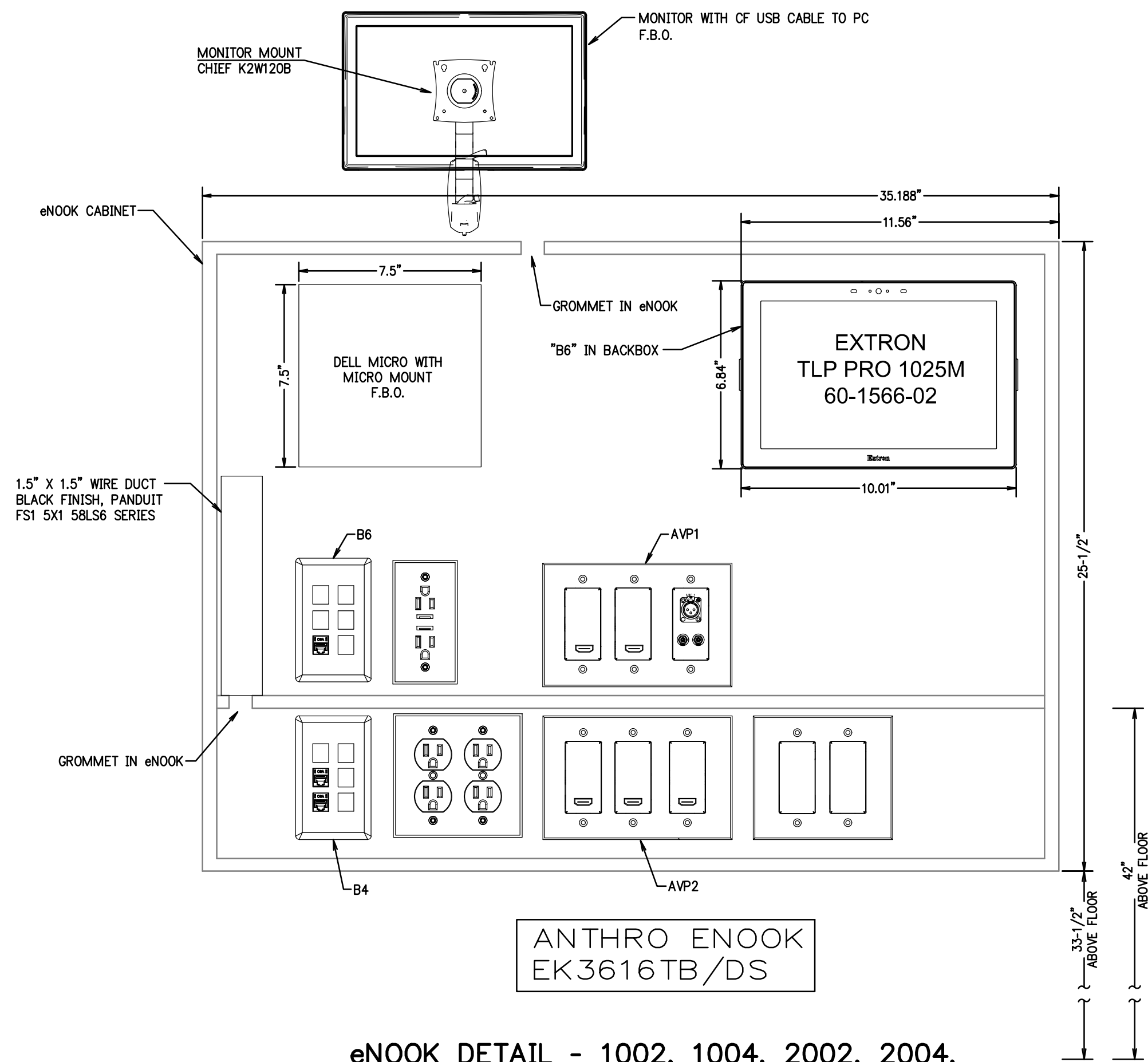
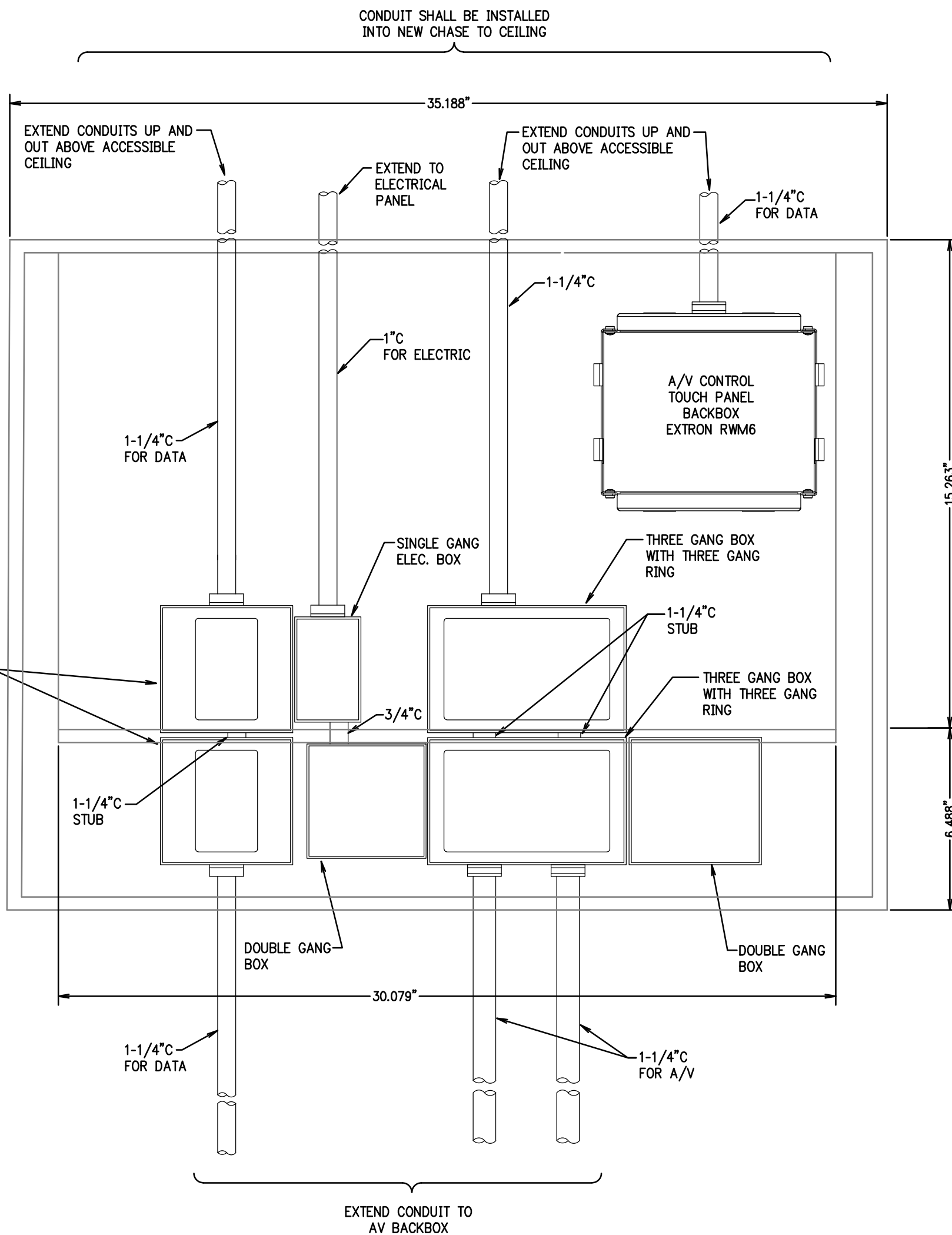


ROOM 2002

eNOOK CONDUITS & BACKBOX DETAIL

SCALE: NONE

- eNOOK DETAIL NOTES:
- CONDUITS MAY STUB DOWN IF REQUIRED
 - VERIFY EXACT LOCATION OF eNOOK WITH BGSU ITS
 - ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO INSTALLATION



eNOOK DETAIL - 1002, 1004, 2002, 2004,
2008, 2119, 2121, 3010
SCALE: NONE

- eNOOK DETAIL NOTES:
- CONDUITS MAY STUB DOWN IF REQUIRED
 - VERIFY EXACT LOCATION OF eNOOK WITH BGSU ITS
 - ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO INSTALLATION

ENTIRE SHEET REVISED

© Copyright 2019 This drawing and all information contained herein is the exclusive property of JDRM Engineering, Inc. and is not to be copied or used in any way without the express written consent of JDRM Engineering, Inc. and must be returned upon request. Plotted by: Chad Greiner Plot Date: 3/20/2019 11:00 AM Save Date: 3/20/2019 10:48 AM File Name: J018133-T303.DWG

2019 CLASSROOM UPGRADE PROJECT
MOORE MUSICAL ARTS BLDG
BGSU
BOWLING GREEN, OHIO, 43402

JDRM ENGINEERING, INC.
MECHANICAL • ELECTRICAL • TECHNOLOGY

TECHNICON DESIGN GROUP INC.
ARCHITECTURE • ENGINEERING • DESIGN
1800 N Perry Street, Suite 102
Ottawa, Ohio 45875 P:419.523.5323
www.technicondesigngroup.com

THE CONTENTS OF THIS DRAWING SHALL NOT BE USED OR REPRODUCED BY INDIVIDUALS, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED USE FOR THIS PROJECT. IF THE DRAWING IS USED IN ANY MANNER OTHER THAN THE INTENDED USE, THE USER ASSUMES ALL LIABILITY FOR ANY DAMAGE, LOSS, OR INJURY THAT MAY BE CAUSED BY SUCH USE. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY DAMAGE, LOSS, OR INJURY THAT MAY BE CAUSED BY SUCH USE. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY DAMAGE, LOSS, OR INJURY THAT MAY BE CAUSED BY SUCH USE. THE DESIGN GROUP, INC. IS NOT RESPONSIBLE FOR ANY DAMAGE, LOSS, OR INJURY THAT MAY BE CAUSED BY SUCH USE.

© 2019 TECHNICON DESIGN GROUP, INC.

DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

ISSUED DATE	
02.21.19	BGSU REVIEW
03.01.19	FOR BIDS/PERMITS
03.19.19	ADDENDUM #2

DRAWN BY:	CAG
CHECKED BY:	DTK
DATE:	
PLOT SCALE:	
JOB NO.	57-2437-18
SHEET	T303
OF	SHEETS

