

2018 Audiovisual Standards

April 23, 2018

Ver 4.0

THIS DOCUMENT IS A WORK IN PROGRESS AND SUBJECT TO CHANGE.
THE DETAILS SHOWN IN THIS DOCUMENT ARE TO BE USED AS REFERENCE AND WILL NEED
TO BE MODIFIED TO EACH INDIVIDUAL PROJECT.



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Standard Classroom

Purpose: The standard classroom will typically seat between 20 and 40 students. The largest projection screen possible will be installed based on the ceiling height. In some cases two projectors and screens may need to be installed in wide format rooms.

Furniture:

- Podium and Chair – College standard for most classrooms. Science installations require a different podium with a chemical resistant top. The BC facilities interior designer can obtain these specifications.

Display:

Standard:

- Epson Projector or college approved replacement model
- Draper Recessed 16:10 8' Projection Screen equivalent - 50" H X 80" W Viewing Area

Computer:

- College standard podium computer
- LCD Monitor with side-mounted USB ports

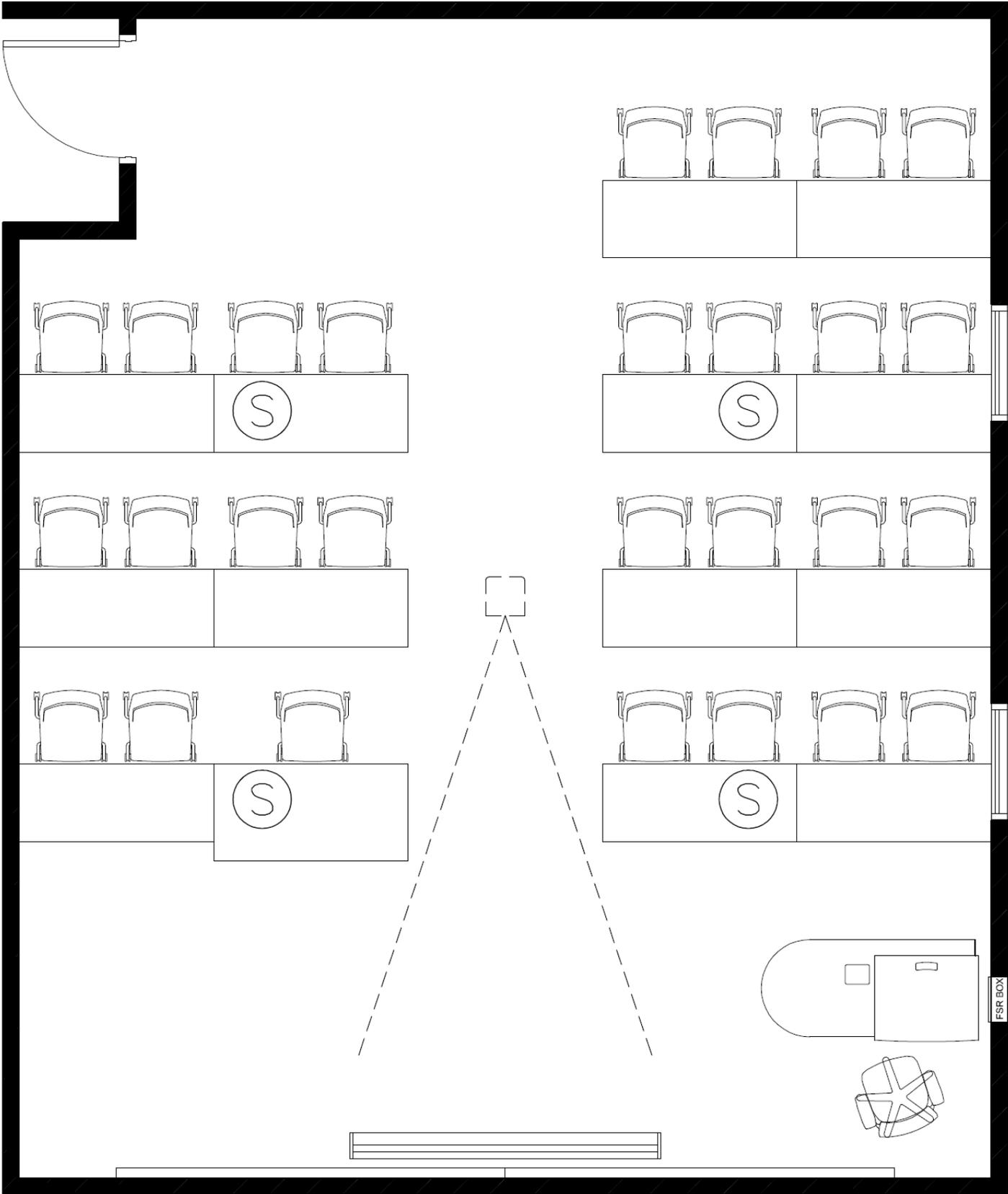
Audio and Controls:

- Ceiling mounted speakers
- Compact audio amp installed in podium
- Crestron Video and Audio switching/amplification
- Crestron LCD Touch Panel Control
- Remote Management via Crestron Fusion
- Crestron Occupancy Sensor

Typical Classroom Install:

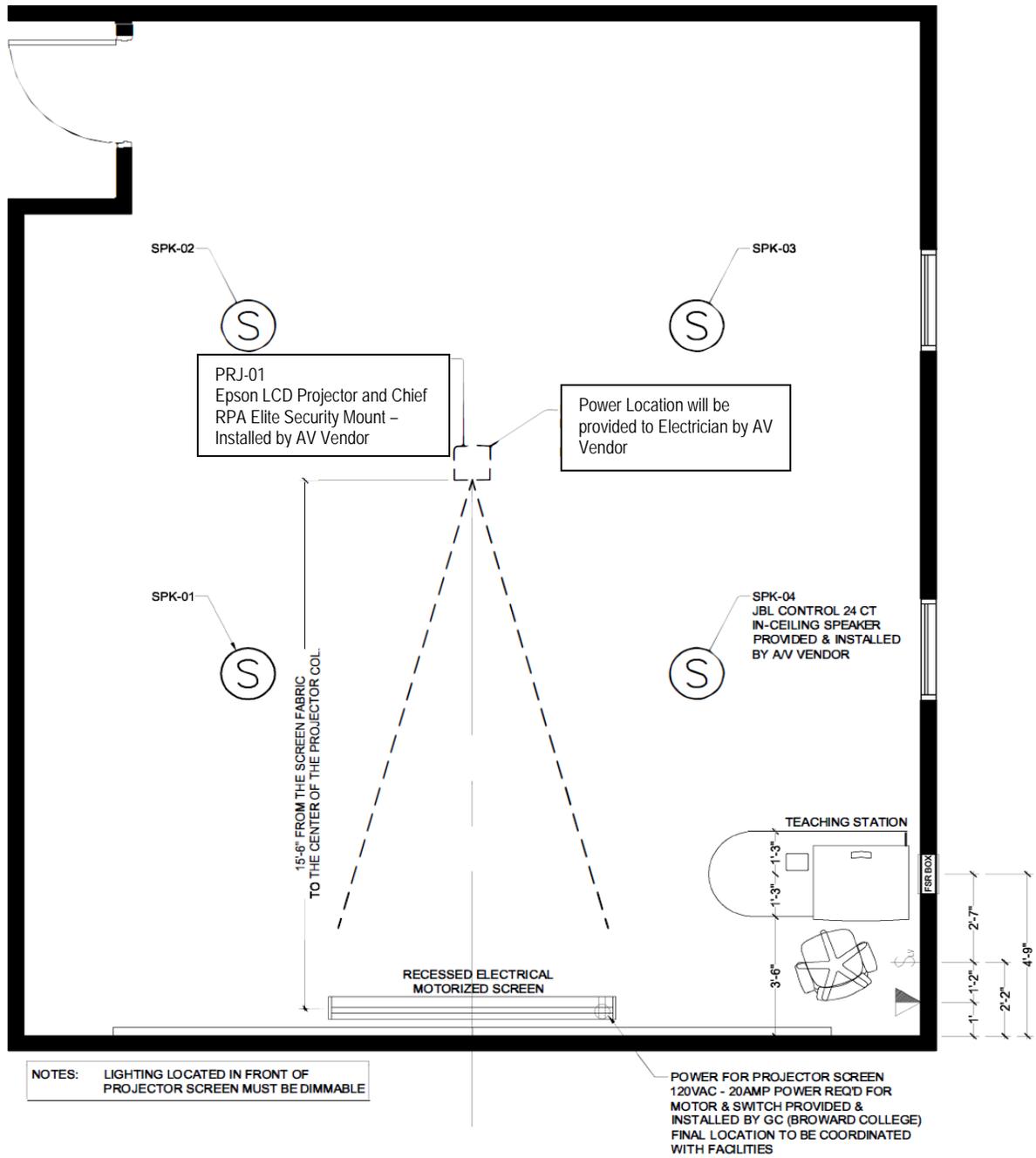


CLASSROOM



**Broward College
AUDIO VISUAL STANDARDS**

**Class Room
STANDARDS**



NOTE:
IN LIMITED CASES POWER, VIDEO, AND DATA TO THE PODIUM WILL TERMINATE FROM A FLOOR BOX. THE CONTRACTOR WILL PROVIDE A FLOOR BOX UNDER TEACHING STATION AND (2) 1-1/2" CONDUITS TERMINATED IN THE CEILING CLOSEST TO THE PODIUM. POWER WILL BE LOCATED UNDER THE TEACHING STATION. SEE PODIUM LAYOUT

Broward College AUDIO VISUAL STANDARDS

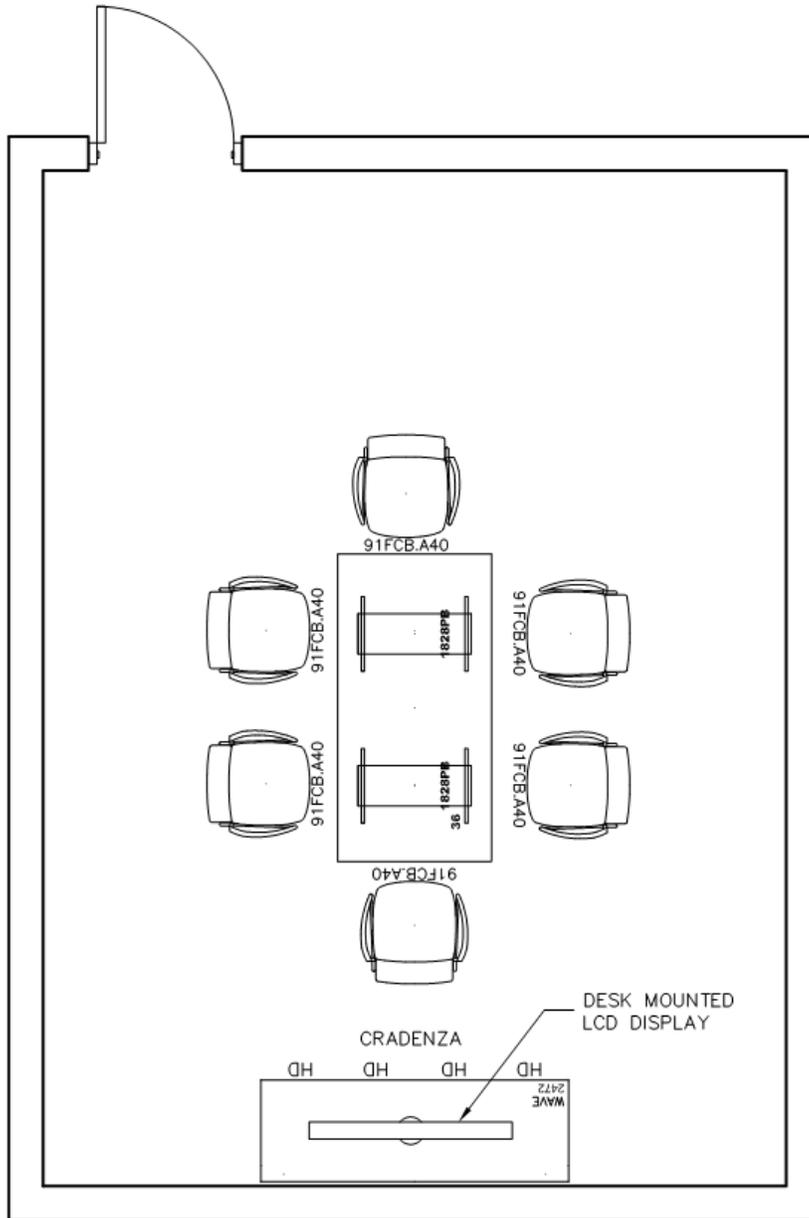
Class Room STANDARDS

Unless otherwise noted during site inspection the following installation standards shall apply:

Standard Classroom Layouts:

- 1) Projection Screen will be centered on front wall of classroom if possible. Projector and screen location may change based on ceiling obstructions or other structural features. If a door opening exists, screen will be centered between door and adjacent wall.
- 2) When the front of the class is also the wall with the entry door, the teaching station will be located to the side of the projection screen away from the door (See Fig 1)
- 3) FSR or multimedia box will be in the adjacent wall to the Podium (See Fig. 1 & 2). In the event the FSR box cannot be located at the podium side, the FSR box will be located behind the podium as close to the wall corner as possible to avoid a trip hazard caused by podium umbilical cord.
- 4) Projector screen switch and emergency phone shall be located above the FSR box mounted and proper height to meet Code Compliance. (See Fig. 1)
- 5) When the front of the class is opposite the wall with the entry door, the teaching station will be located to the side of the projection screen diagonal from the door (Fig 1 & 2).
- 6) Projector installed at the midpoint of the throw distance for the projector.
- 7) Speakers will be ceiling mounted to provide consistent sound volume over the seating area. Location and quantity will be identified during site inspection.
- 8) Audiovisual components may vary based on application. BC AV Solutions Leadership and Facilities Management must approve any variation from standard configurations.
- 9) BC AV Solutions Leadership will select computer used in podium.
- 10) Approved specs for Teaching Station/Stool (See Table 1)

Manufacturer	Description	Part Number
AV VENDOR	ROLLING RACK PODIUM	To be provided by awarded vendor
KI	LEFT PODIUM	
KI	RIGHT PODIUM	
KI	STOOL	



CONFERENCE ROOM "A"

6 Seats or Less

Broward College

STANDARD CONFERENCE ROOM A/V CONFIGURATIONS | CONFERENCE ROOM "A"

CONFERENCE ROOM "A" (6 seats or less)

Purpose: The configuration "A" or Small Conference Room typically seats less than six. The purpose of the conference room is for small team or department meetings and video conferencing using Microsoft Lync. This conference room is not intended for academic instruction.

Furniture:

- Table Dimensions: (Provided by BC Interior Design Specialist)
- Chairs: (Provided by BC Interior Design Specialist)

Display:

Standard:

- Epson Projector or college approved replacement model
- Draper Recessed 16:10 8' Projection Screen equivalent - 50" H X 80" W Viewing Area

Optional:

- 70" Professional Grade LCD/LED Display, wall-mounted
- If necessary, vendor will supply an OTA digital antenna and HD tuner for LCD Displays and projectors in conference room configurations.

Computer:

- College standard podium computer – Installed in credenza or under table
- RF Wireless keyboard and mouse

Audio and Controls:

- Crestron Mercury

Video Conferencing Camera:

Standard:

- Logitech HD Pro Webcam C920, 1080p Video, Auto Focus

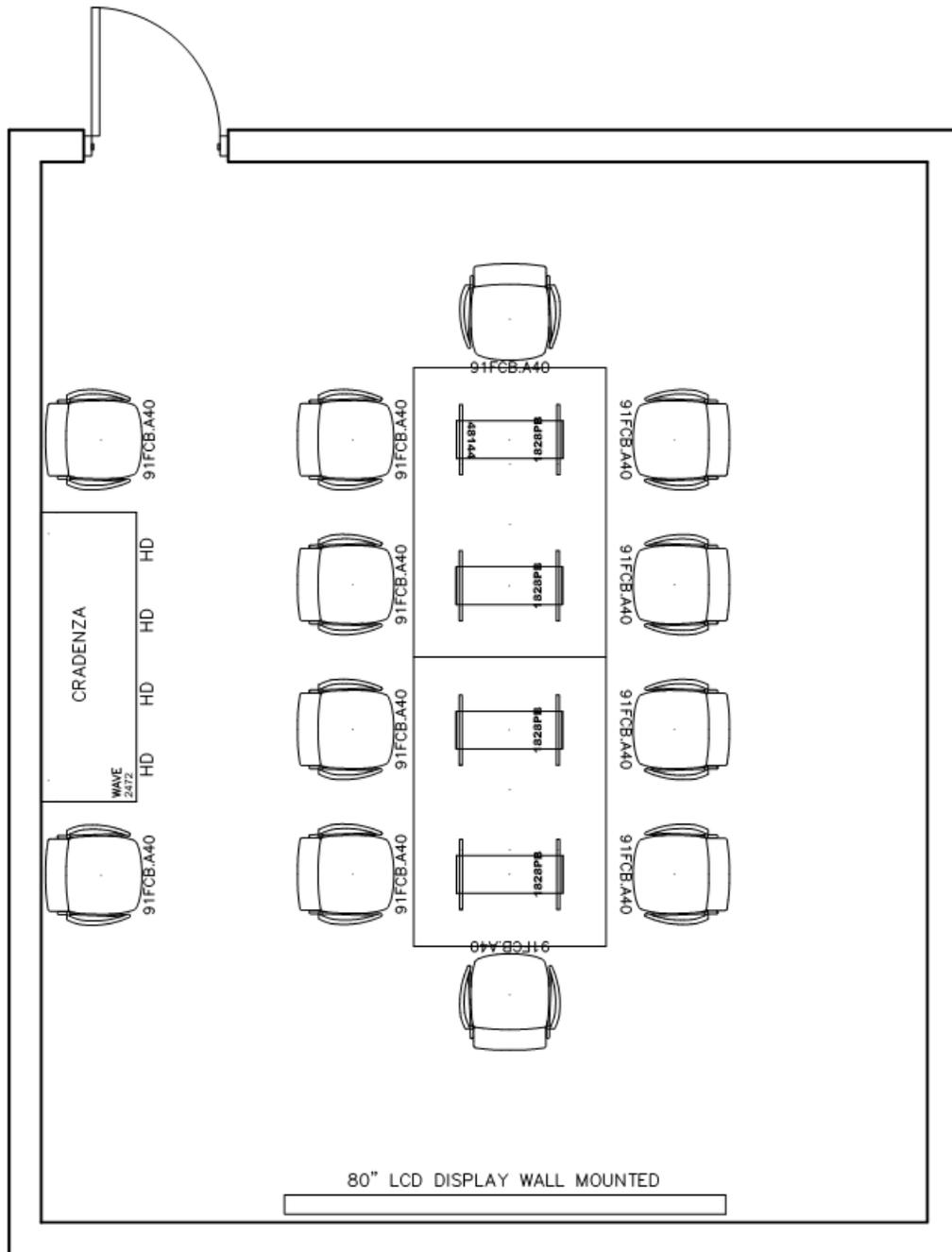


Conference Phone

- Crestron Mercury will provide audio from Skype/MS Teams.



Broward College
STANDARD CONFERENCE ROOM A/V CONFIGURATIONS | **CONFERENCE ROOM "B"**



CONFERENCE ROOM "B"
(6 - 10 SEATS)

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STANDARD CONFERENCE ROOM A/V CONFIGURATIONS | CONFERENCE ROOM "B"

CONFERENCE ROOM "B" (6 – 12 seats)

Purpose: The configuration "B" or Medium Conference Room typically seats between six and ten users. The purpose of the conference room is for team or department meetings and video conferencing using Microsoft Lync. This conference room is not intended for academic instruction.

Furniture:

- Table Dimensions: (Provided by BC Interior Design Specialist)
- Chairs: (Provided by BC Interior Design Specialist)

Display:

Standard:

- Epson Projector or college approved replacement model
- Draper Recessed 16:10 8' Projection Screen equivalent - 50" H X 80" W Viewing Area

Optional:

- 80" Professional Grade LCD/LED Display, wall-mounted
- If necessary, vendor will supply an OTA digital antenna and HD tuner for LCD Displays and projectors in conference room configurations.

Computer:

- College standard podium computer – Installed in credenza or under table
- RF Wireless keyboard and mouse

Audio and Controls:

- Ceiling mounted speakers
- Ceiling mounted microphones for video conferencing
- Compact audio amp installed in credenza
- Crestron Video and Audio switching/amplification
- Crestron LCD Touch Panel Control
- Remote Management via Crestron Fusion
- Crestron Occupancy Sensor

Video Conferencing Camera and Audio

Standard:

- Vaddio Zoom Shot Camera and Audio Module utilizing ceiling microphones (see photo #4)



Broward College

STANDARD CONFERENCE ROOM A/V CONFIGURATIONS

CONFERENCE ROOM "B"

Conference Phone

- Polycom SoundStation Duo



Conference Table Pop Ups (video, data, and power access):

- (1) Large Altinex Pop-Up boxes to be located at the center of the Conference Table – **Delete composite – add USB**
See photo



Conference Table Pop-Ups:

- (2) Small Altinex Pop-Up boxes to be located at each end of the Conference Table – See Photo



** Connections in these boxes will change with regard to connectivity requirements of the conference room and technology advances **

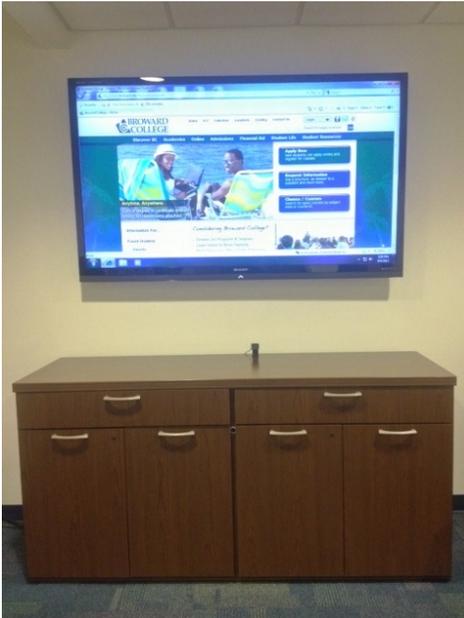
Broward College STANDARD CONFERENCE ROOM A/V CONFIGURATIONS

CONFERENCE ROOM "B"

Credenza:

Furniture provided by BC to house the AV equipment

BC Credenza



Typical Rack



Typical rack installed in an approved credenza. The Credenza designed for multimedia components have necessary vents, power, space for equipment racks, and IR extenders (built in the furniture)

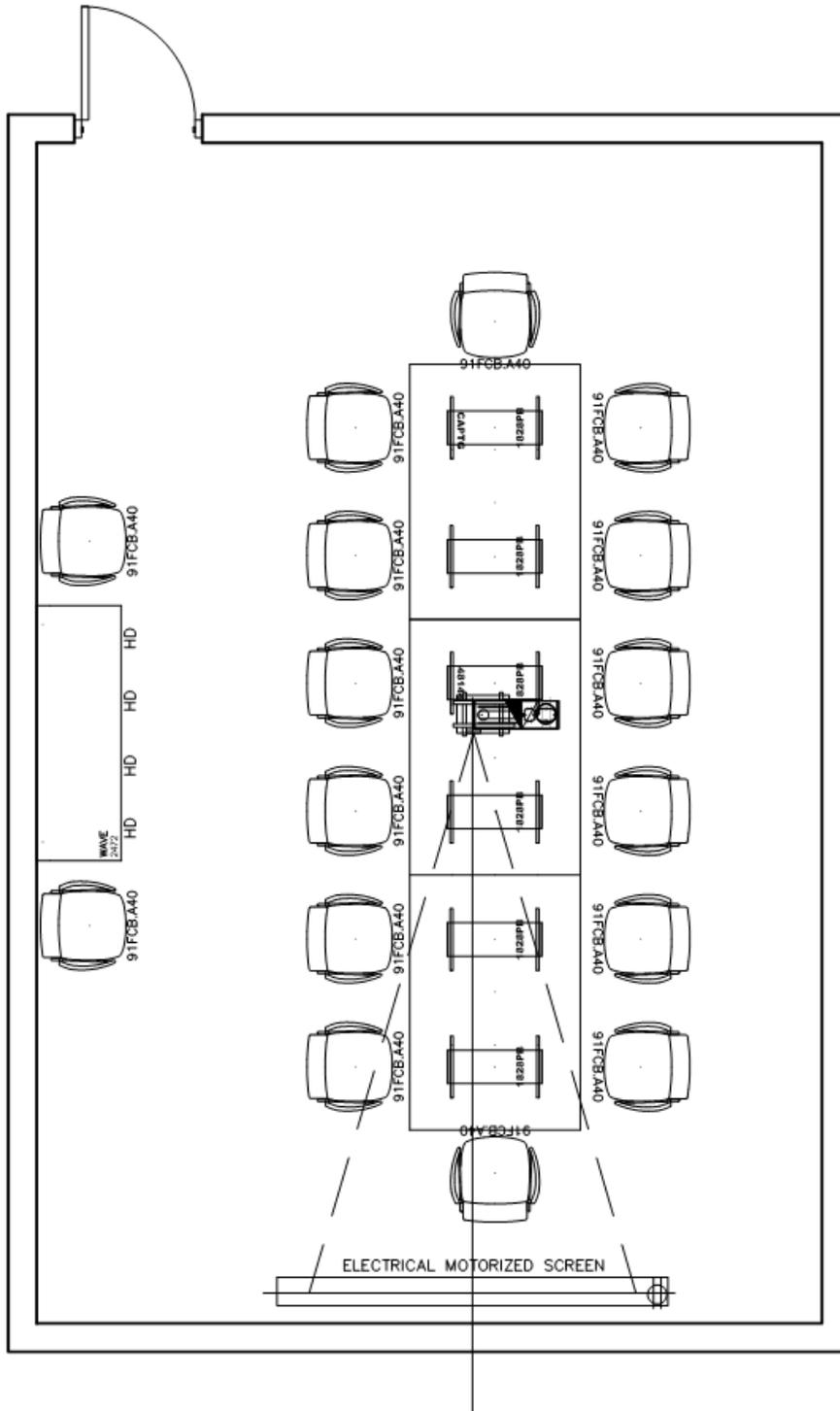
Broward College
STANDARD CONFERENCE ROOM A/V CONFIGURATIONS | **CONFERENCE ROOM "B"**



Conference Room "B" (6 - 12 Seats)

Broward College STANDARD CONFERENCE ROOM A/V CONFIGURATIONS

CONFERENCE ROOM "C"



CONFERENCE ROOM "C"

(11 - 20 SEATS)

Broward College

STANDARD CONFERENCE ROOM A/V CONFIGURATIONS | **CONFERENCE ROOM "C"**

CONFERENCE ROOM "C" (11-20 seats)

Purpose: The configuration "C" or Large Conference Room typically seats between eleven and twenty users. The purpose of the conference room is for division or department meetings and video conferencing using Lync video conferencing. The primary difference between the medium and large conference room is additional ceiling microphones, A DSP, and speakers.. This conference room is not intended for academic instruction.

Furniture:

- Table Dimensions: (Provided by BC Interior Design Specialist)
- Chairs: (Provided by BC Interior Design Specialist)

Display:

Standard:

- Epson Projector or college approved replacement model
- Draper Recessed 16:10 10' Projection Screen equivalent - 65" x 104" W Viewing Area

Optional:

- 90" Professional Grade LCD/LED Display, wall-mounted
- If necessary, vendor will supply an OTA digital antenna and HD tuner for LCD Displays and projectors in conference room configurations.

Computer:

- College standard podium computer – Installed in credenza or under table
- RF Wireless keyboard and mouse

Audio and Controls:

- Ceiling mounted speakers
- Ceiling mounted microphones for video conferencing
- Compact audio amp installed in credenza
- Crestron Video and Audio switching/amplification
- Crestron LCD Touch Panel Control
- Remote Management via Crestron Fusion
- Crestron Occupancy Sensor

Broward College STANDARD CONFERENCE ROOM A/V CONFIGURATIONS

CONFERENCE ROOM "C"

Video Conferencing Camera

Standard:

- Vaddio ZoomShot Camera and sound module



Conference Phone

Standard:

- Polycom SoundStation Duo



Conference Room Pop-Ups and Floor Cable Management

These are the same products as used in the Config "B" Medium conference room.

Broward College
STANDARD CONFERENCE ROOM A/V CONFIGURATIONS | **CONFERENCE ROOM "D"**

1) CUSTOM / MULT-PURPOSE CONFERENCE / TRAINING ROOM "D"

- Any room accommodating more than 20 people will be specified and quoted custom design per room.

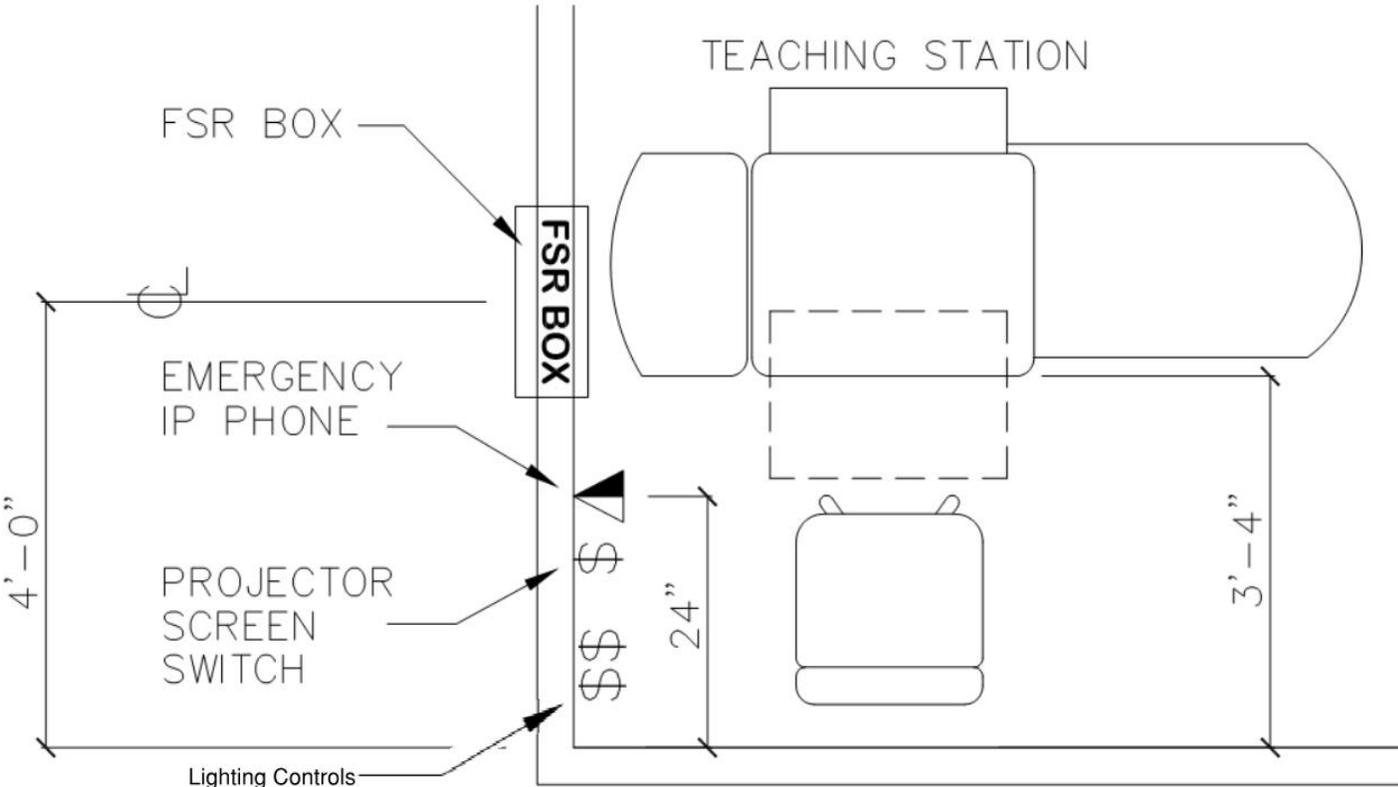
Instructions for Audio Video Contractor:

- 1) BC may provide a storage room at location for staging equipment and Vendor will be responsible for all equipment up until the Installation is complete and final walk-thru (signed-off) by BC.
- 2) All cable installation must meet State Requirement for Educational Facilities (SREF) and Local Code Compliance and BC Specifications as noted below but not limited to:
- 3) The project GC or electrician, will patch and paint all wall penetrations to match existing finishes. In addition, replace baseboard, carpet, chair rail, and ceiling tiles, if disturbed by the installation process.
- 4) All cables shall be routed above ceiling following the building lines. Place the cable where frequent changes in elevation can be avoided.
- 5) Install cable as high as practicable while maintaining a minimum distance of 24" above the finished ceiling.
- 6) Route cables away from equipment or building service areas and access panels ensuring proper working clearance.
- 7) Support cables independently from the building structure at maximum intervals of 48" with J-hooks.
- 8) Do not place cable on or use as a method of support other building systems such as HVAC ductwork, electrical conduits, fire sprinkler systems, water, sewer, drainage piping, etc. Do not attach cable supports to ceiling grid hanger wire.
- 9) When hanging hooks on drywall attach with sheet metal of sufficient length to be secured directly to the framing member.
- 10) When hanging hooks on concrete walls systems attach a plain hook with a plastic anchor and sheet metal screws or Tapcons. The fasteners shall be a minimum of 1" in length.
- 11) When hanging hooks on the building steel use the type with an integral or independent spring steel or set screw style beam clamp. Do not drill or cut structural steel members.
- 12) Support cable in other areas with ¼" all-thread attached to a steel structural member with a beam clamp or concrete anchor directly in the deck above. Attach the lower end of the rod to the ceiling grid using an Erico 3114Z34 drop rod securing clip or approved equal. Trim excess rod to within 1" of the spring steel "batwing". Install cable hooks with spring steel clips that are designed to attach directly to the rod such as Erico CAT214Z34.
- 13) Install all hangers plumb. The cable route selected shall allow for the drop rod clips to be placed at ceiling grid element joints. Clips & hangers may be installed mid-span only to provide support around an obstacle or meet the minimum support requirements at the grid
- 14) Secure cables to the hooks with cable ties. Provide plenum rated cable ties where required.
- 15) All cables that routed in the same direction shall be grouped (no fanning) together with maximum sag of 3" between supports.
- 16) Install a cable support within 24" of projector mast. Dress a 12" diameter service loop in the AV cabling and hang at this interval. Route the cable from the top of the service loop to the projector mast and secure with a cable tie and at maximum intervals of 12" to the finished ceiling. Secure the cable to the mast 6" above the ceiling tile. Secure loop with a minimum of 3 cable ties spaced equally around the loop.

- 17) Install a cable support within 6" of AV outlet conduit stub. Dress a 12" diameter service loop in the AV cabling and hang at this interval. Route the cable from the top of the service loop into the conduit stub. Secure the service loop with a minimum of 3 cables spaced equally around the loop.
- 18) Each room will have teaching station provided by BC. Vendor will install the media touch panel to the left of the monitor on the teaching station.
- 19) For a standard teaching station installation: FSR multimedia box will be installed by the Electrician. The AV Vendor will install the appropriate finish plate (inside the FSR unit) populated () RJ45 Data Connections, Speakon connector (for ceiling speaker output), (1) RJ-45 connection for HDMI over Cat5e, or Cat6. All FSR boxes should have a wire tie restraints for cables inside of box so flap will close.
- 20) Other, non-standard, AV installations may have variations regarding the number of connections and plate/jack termination.
- 21) Cables from workstation to FSR box should be pulled through a cutout on side of workstation and housed in a 12' black snake-skin umbilical. Cradle tie wraps should be used to fasten cables on inside of teacher's desk.
- 22) Altinex popup (Model TNP512C or equivalent) on teacher desk will be populated with (1) HDMI, (1) VGA, (1) audio 3.5 mm. (1) RJ-45, (2) power outlets
- 23) Flat Panel Display installations, Vendor will mount equipment using 3/4" fire treated plywood black backer and the designated wall mount bracket. Wall plate for LCD Display will be populated with (2) RJ45 connectors (1) for HDMI over CAT5e, or CAT6, and (1) Network for the display. A simple antenna to provide access to broadcast television will be installed above the ceiling
- 24) Structure to ceiling tile varies by room. Ceiling tiles size varies. Floor to ceiling height varies in every room. Walls are drywall.
- 25) Remove and discard old AV cabling from previous installations
- 26) BC will indicate final location of screen and projector.
- 27) Vendor will provide all tools and accessories needed. Vendor will not borrow ladders or any other equipment from the college or other vendors.
- 28) Vendor will not stand on desk or chair to reach ceiling. Equipment is not allowed to be placed on furniture.
- 29) Vendor will be responsible for any ceiling tile breakage resulting from the AV installation.
- 30) Vendor will clean up all construction debris by the end of the work period for that day if the installation is taking place in an active classroom.
- 31) All AV cables will be free run and tie wrapped in podium rack to all components and wall plate.
- 32) Quotes must be submitted by line item according to resulting contract and must be valid for at least 90 days.
- 33) AV Vendor shall be responsible for verifying all equipment is installed and operational before scheduling a final inspection with the college and permitting agency. The College must approve any sign-off forms and payment will be made only when an authorized individual signs the form. Once the sign-off forms are signed, a copy of the PO, original proposal, MEP inspection report, and invoice need to be submitted as a package to the job project manager.

Figure 2

TEACHER PODIUM



ENLARGE FLOOR PLAN

Figure 3

INTERIOR WALL ELEVATION – LCD DISPLAY

A. For applications (such as conference rooms) that require the installation of a LCD Display

LCD Display the following installation specs will apply:

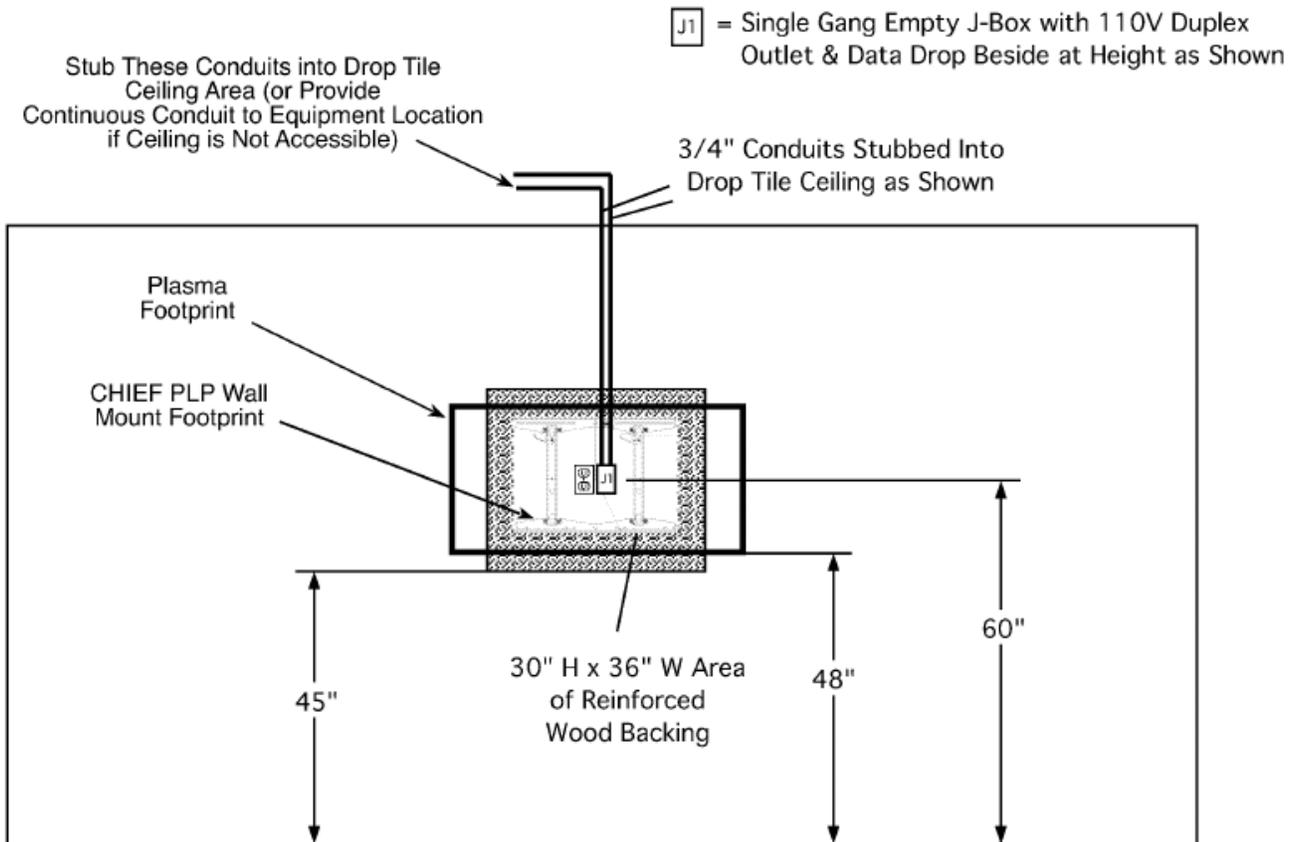


Figure 5

INTERIOR WALL ELEVATION
LCD DISPLAY ABOVE CREDENZA

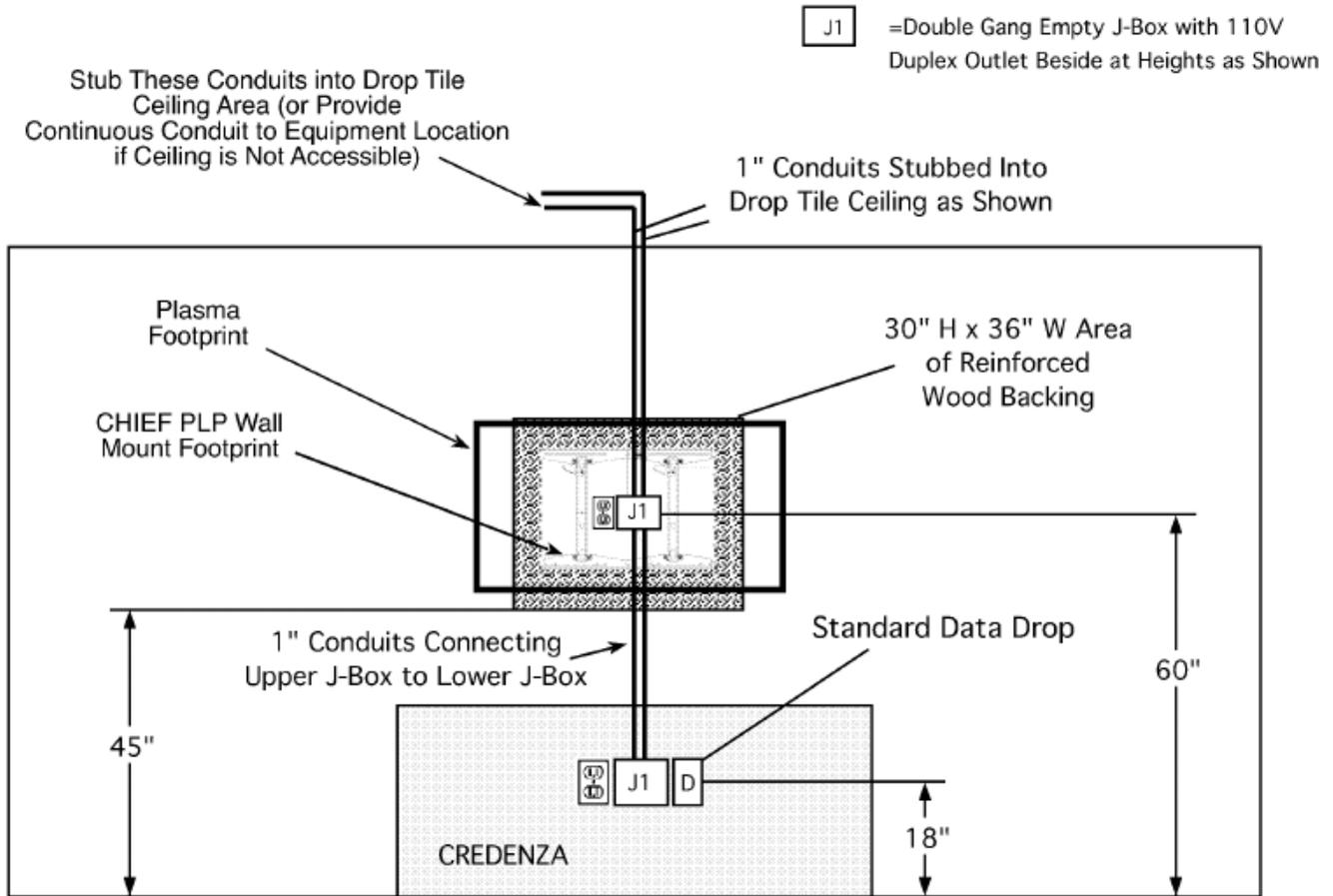
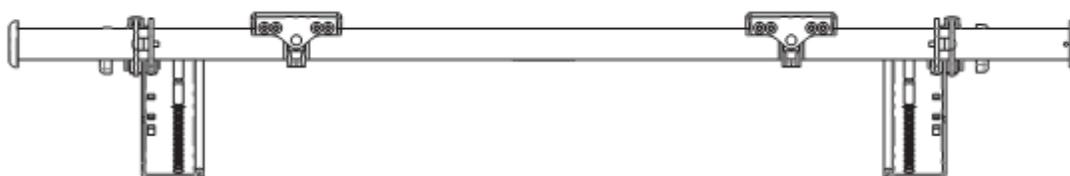
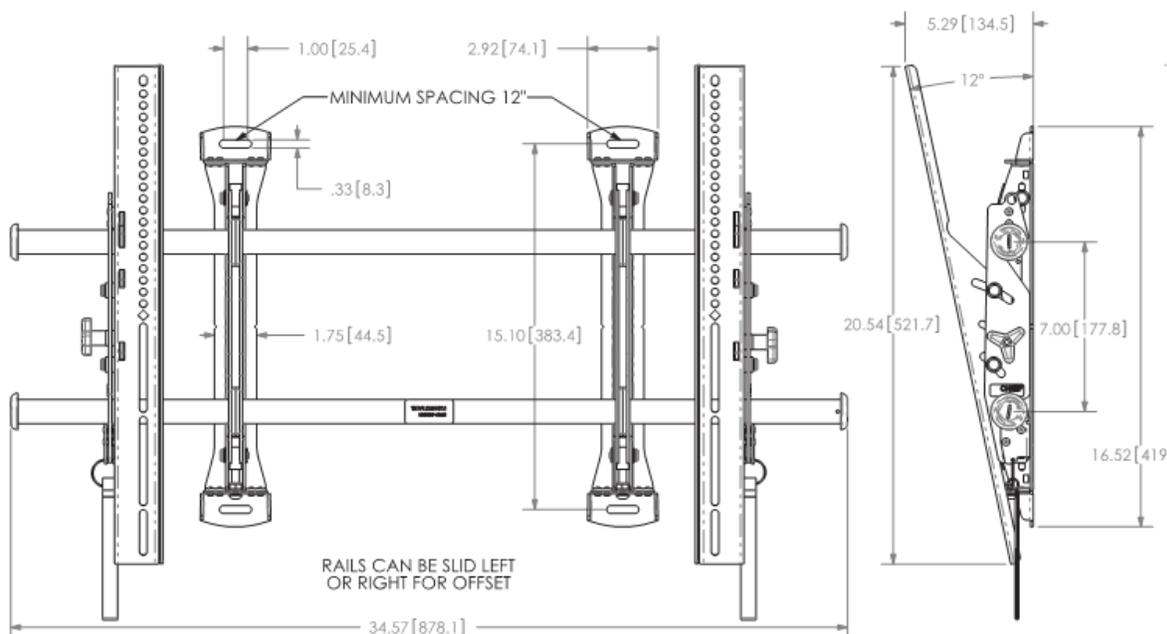


Figure 6

Photo #7 - LCD Wall Brackets



Large FUSION Micro-Adjustable Tilt Wall Mount
Overall Dimensions (H x W x D) 16.5" x 34.4" x 2.0"



INTERACTIVE BRIGHTLINK

- A. The projector bracket location must be on an existing wall stud within the 12" width of the bracket to support the projector or backing that is installed in the wall at bracket location. For the best results without adding backing, find the wall stud closest to the center of the board location and install the power on one side. Provide a single gang AV box at 100" AFF to the center of the boxes with a (1-1/4" min.) conduit stubbed into the accessible ceiling for AV cabling.

BrightLink (Option)**Owner Responsibilities - Broward College will:**

- Provide infrastructure for BrightLink (see attached)
- Remove existing chalk board

AV Vendor Responsibilities:

- Install BrightLink – top of board 81.5" AFF. Center of BrightLink will be different for each installation.
- Install new custom decora plate in FSR box
- Install custom DALITE/DRAPER whiteboard depending on size

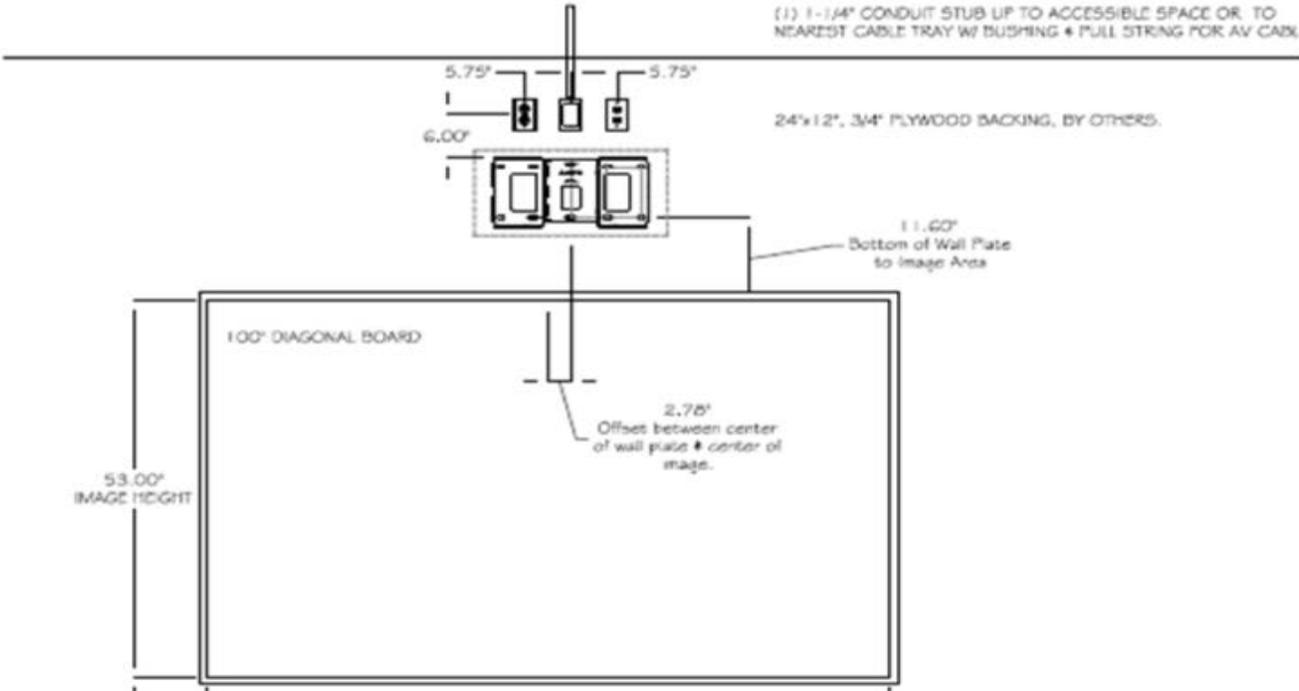
Notes:

A new processor may be required for this installation.

BrightLink power will be controlled by the existing Crestron touch panel. Only the desktop computer output will be seen on the BrightLink Projector.

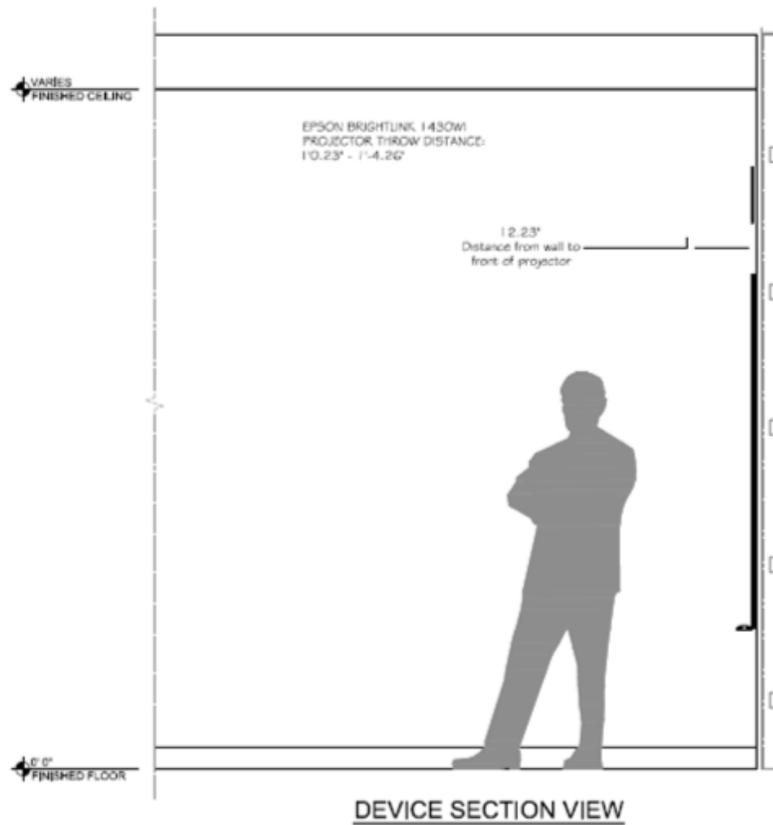
- When pulling cables – follow building lines. Cables above ceiling should be run vertically 48" max run between fasteners (sleeve anchors & tapcons). Hiltys can be used when installing hangers. Fender washers should not be used. Threaded rod will be installed where appropriate in every room. Whenever possible, put hooks on wall instead of ceiling.

Epson BrightLink



Epson BrightLink - ELEVATION

FRONT VIEW



AV PODIUM EQUIPMENT

Photo #1 - Crestron Control



Photo #2 - Touch Panel on Teacher's Podium

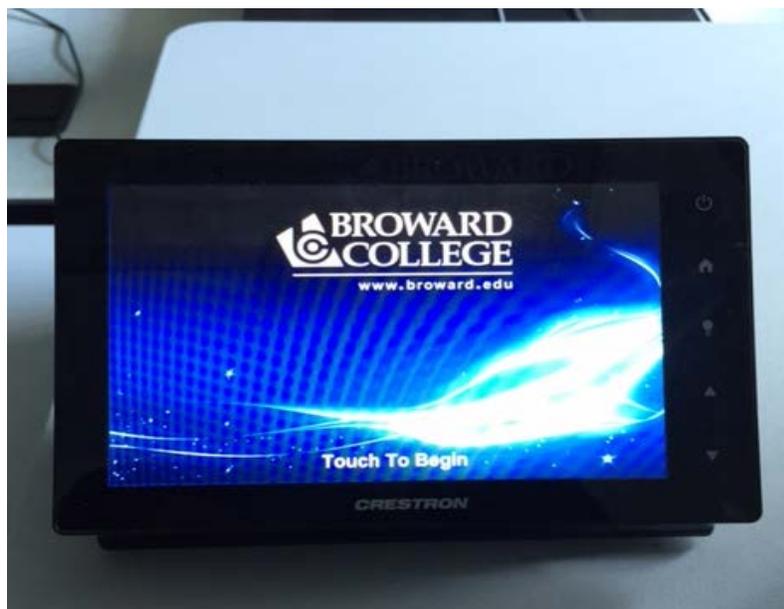


Photo #3 – Podium AV Equipment Rack



Photo #4 - Altinex Popup - Composite & Audio - No Longer Supported



**AV Conference Table Pop-ups:
(Small Pop-ups Shown)**



VIDEO CONFERENCING EQUIPMENT

Photo #1 (ZoomShot - Wall Mounted)



Photo #2 (RoboShot - Ceiling or Wall Mounted)



VIDEO CONFERENCING EQUIPMENT

Photo #3 - Video Conference Phone



Photo #4 - Ceiling Microphone



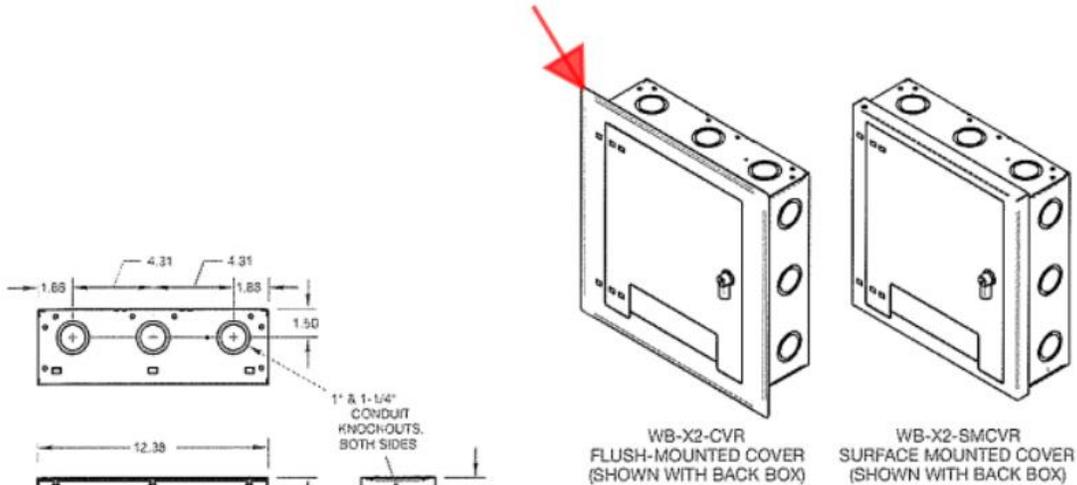
**FSR MULTI-MEDIA BOX
(COVER MUST BE FLUSH MOUNTED)**



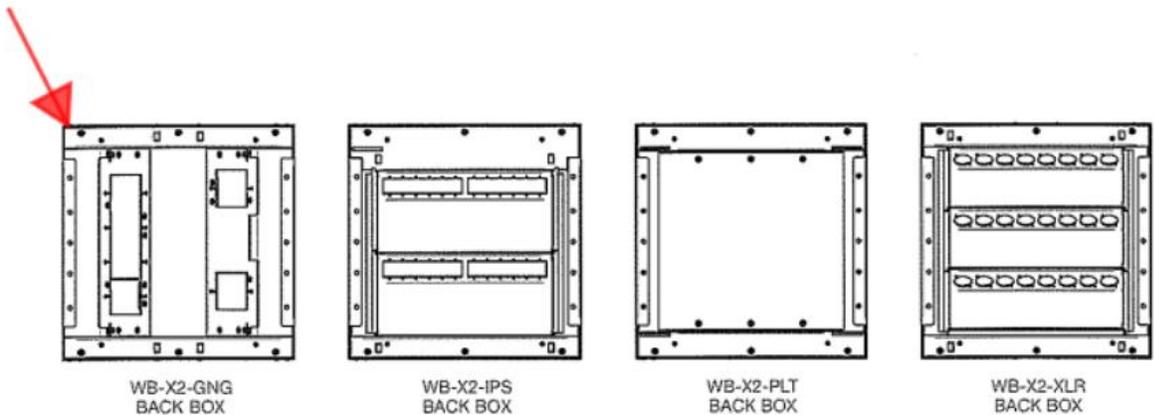
Broward College AUDIO VISUAL INFRASTRUCTURE REQUIREMENTS

INFRASTRUCTURE FSR BOX

WB-X2

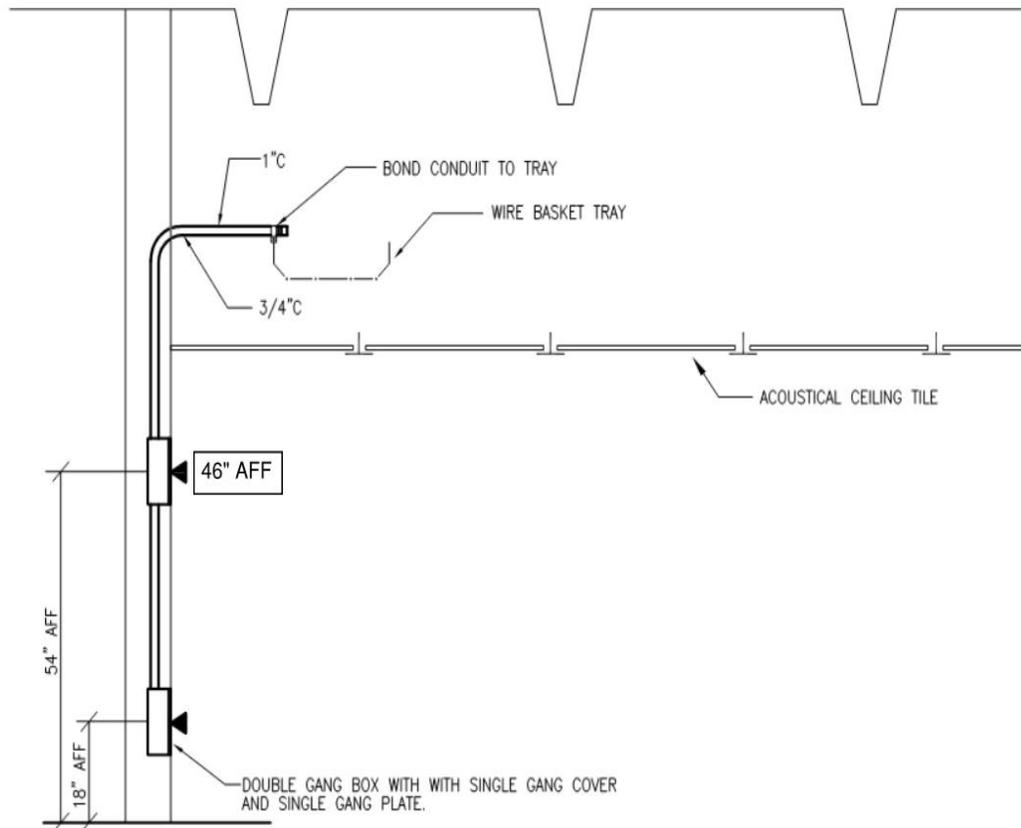


MODEL	FEATURES
WB-X2-GNG	BACK BOX, (2) 1 GANG AND (1) 4 GANG OPENINGS IN 2 ROWS w/KO's
WB-X2-IPS	BACK BOX, (24) IPS SLOTS, 2 ROWS OF 12 IPS SLOTS w/KO's
WB-X2-PLT	BACK BOX ONLY w/KO's
WB-X2-XLR	BACK BOX, (24) XLR HOLES, 3 ROWS OF 8 XLR HOLES w/KO's
WB-X2NK-GNG	BACK BOX, (2) 1 GANG AND (1) 4 GANG OPENINGS IN 2 ROWS w/o KO's
WB-X2NK-IPS	BACK BOX, (24) IPS SLOTS, 2 ROWS OF 12 IPS SLOTS w/o KO's
WB-X2NK-PLT	BACK BOX ONLY w/o KO's
WB-X2NK-XLR	BACK BOX, (24) XLR HOLES, 3 ROWS OF 8 XLR HOLES w/o KO's
WB-X2-CVR-BLK	LOCKING COVER, BLACK
WB-X2-CVR-WHT	LOCKING COVER, WHITE
WB-X2-SMCVR-BLK	LOCKING COVER, BLACK (SURFACE MOUNT)
WB-X2-SMCVR-WHT	LOCKING COVER, WHITE (SURFACE MOUNT)



Note: If the walls are painted black, select WB-X2-CVR-BLK

TYPICAL PODIUM VOICE/DATA DETAIL



TYPICAL TEACHER STATION VOICE/DATA DETAIL

NO SCALE

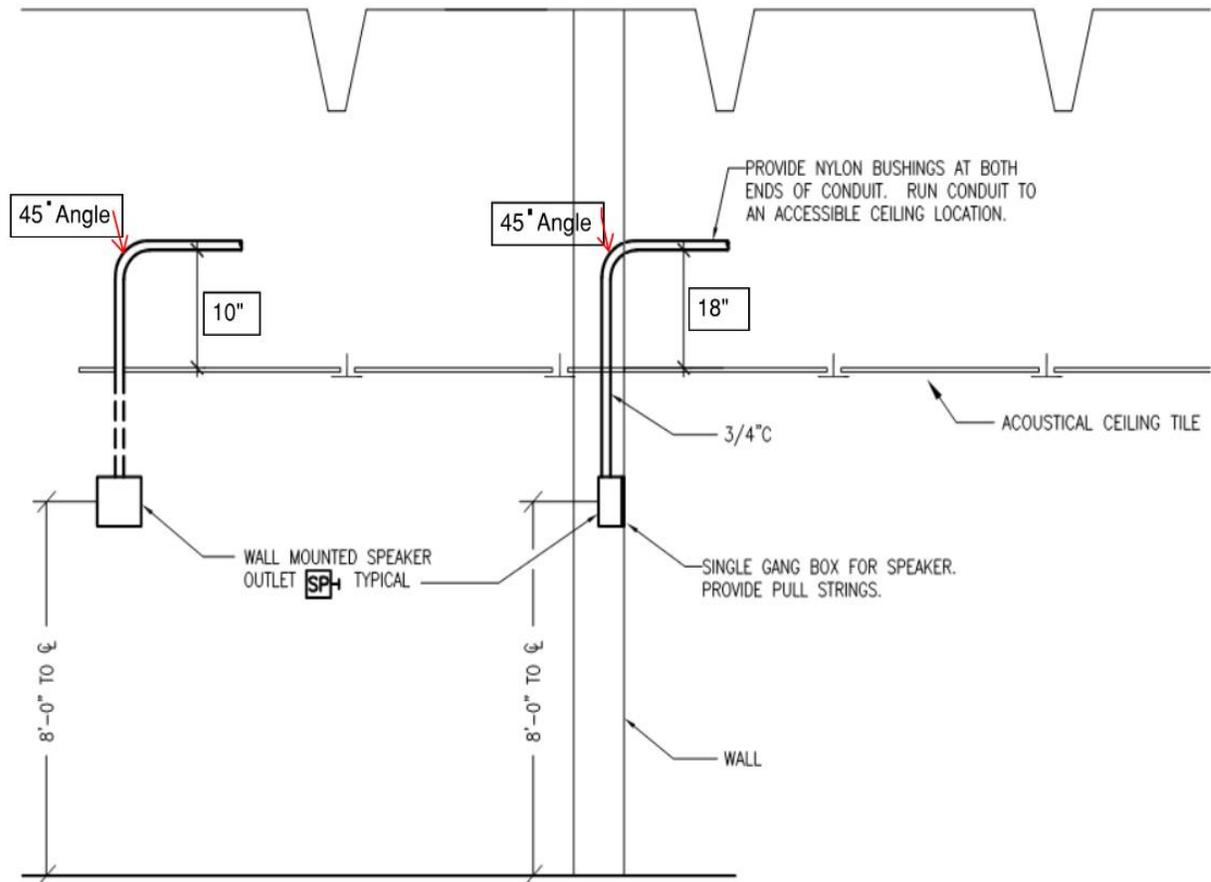
Notes:

- PROVIDE NYLON BUSHINGS AT BOTH ENDS OF CONDUIT
- COORDINATE LOCATION OF PROJECTION UNITY WITH ARCHITECTURAL DRAWINGS

SYMBOL INDICATES RACEWAY/OUTLET BOX PROVISION FOR FUTURE.

- ◀ SYMBOL INDICATES CABLES. (VERIFY WITH BC ELECTRICAL DEPARTMENT)

BLDG 72 DETAIL



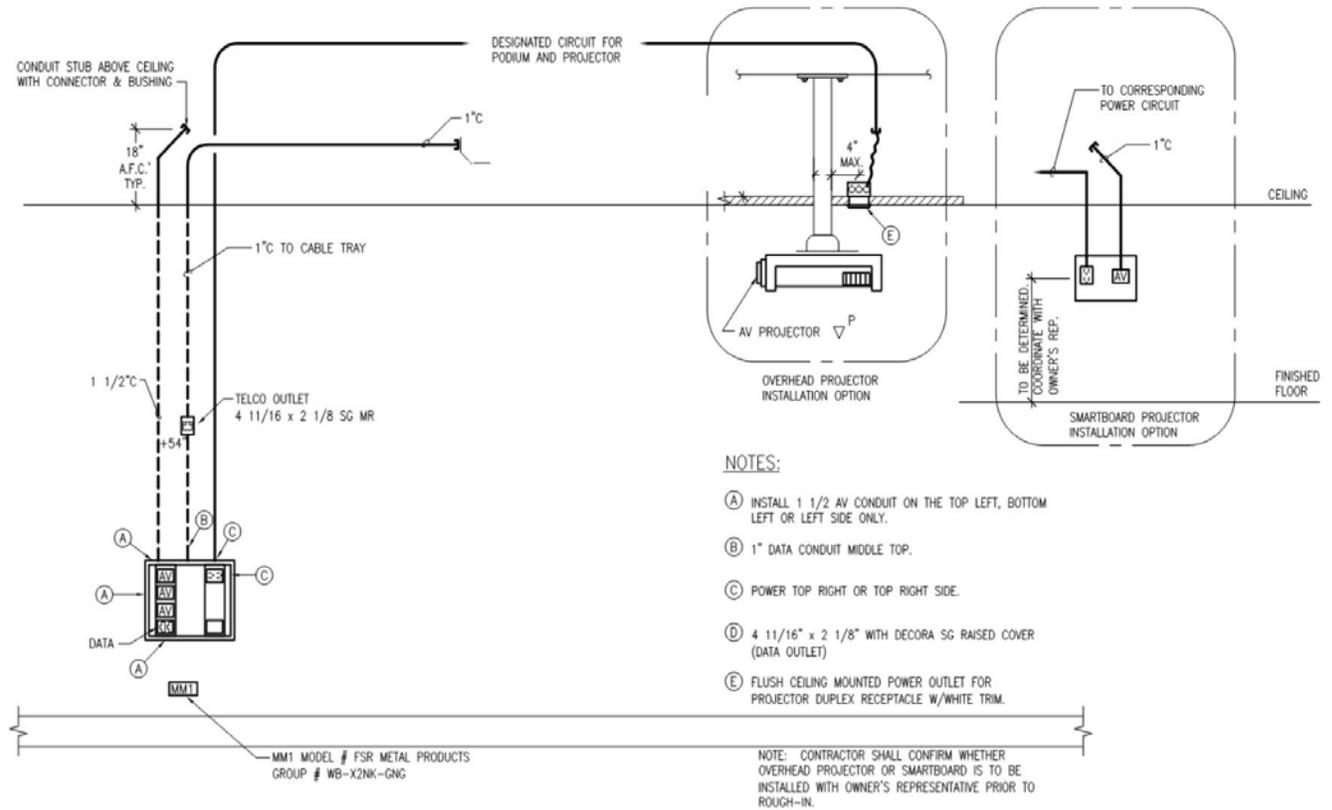
NOTES:

- 1) CEILING MOUNTED SPEAKERS DO NOT SECURE RACEWAY**
 - 2) SPEAKERS ARE PROVIDED & INSTALLED BY BROWARD COLLEGE A CONTRACTOR**
- TYPICAL CEILING SPEAKER ROUGH-IN INSTALLATION**

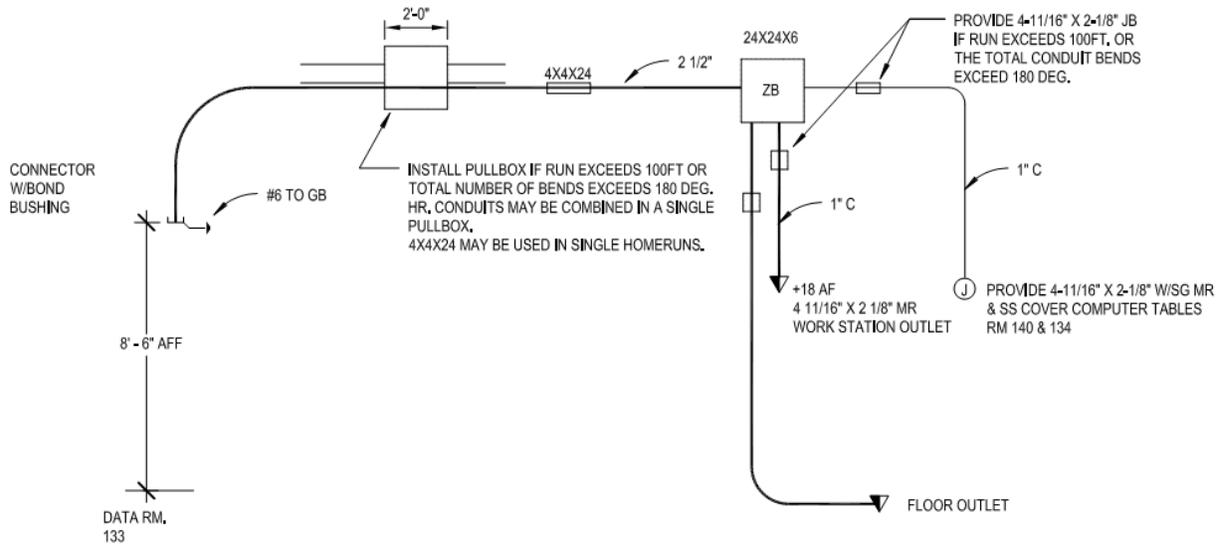
Broward College AUDIO VISUAL INFRASTRUCTURE REQUIREMENTS

INFRASTRUCTURE REQUIREMENTS

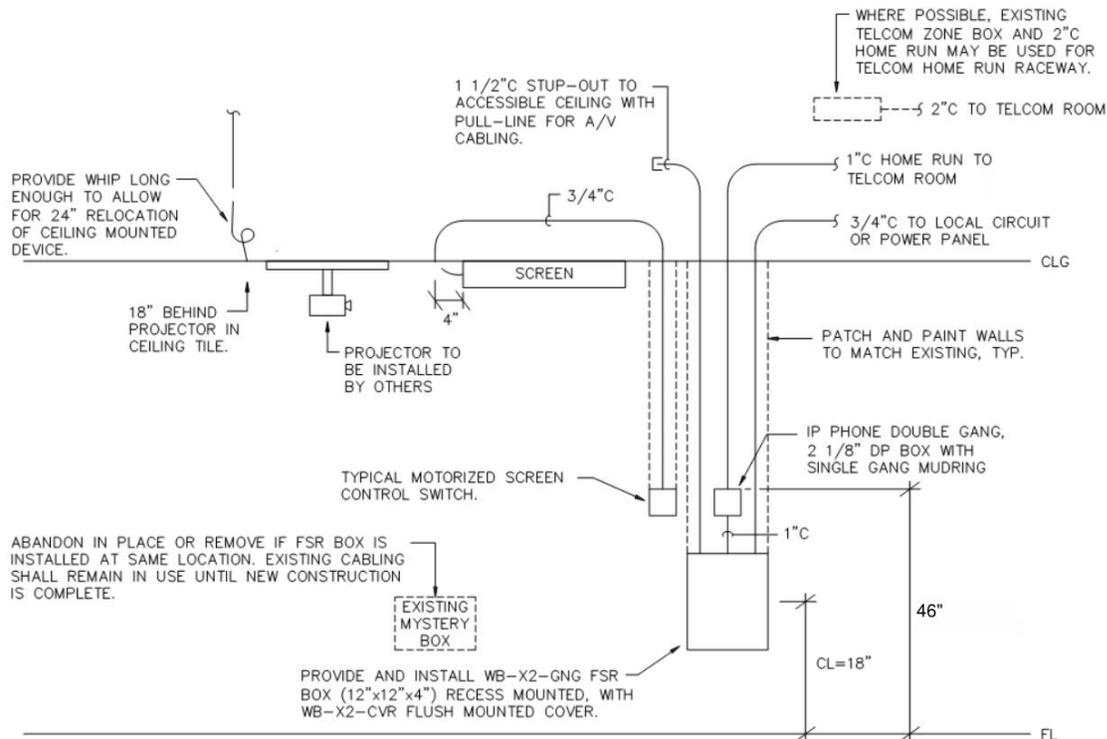
AV OUTLET INSTALLATION



CEILING MOUNTED RECEPTACLE/DATA OUTLET FOR SCREEN PROJECTOR



TYPICAL AV INFRASTRUCTURE REQUIREMENTS



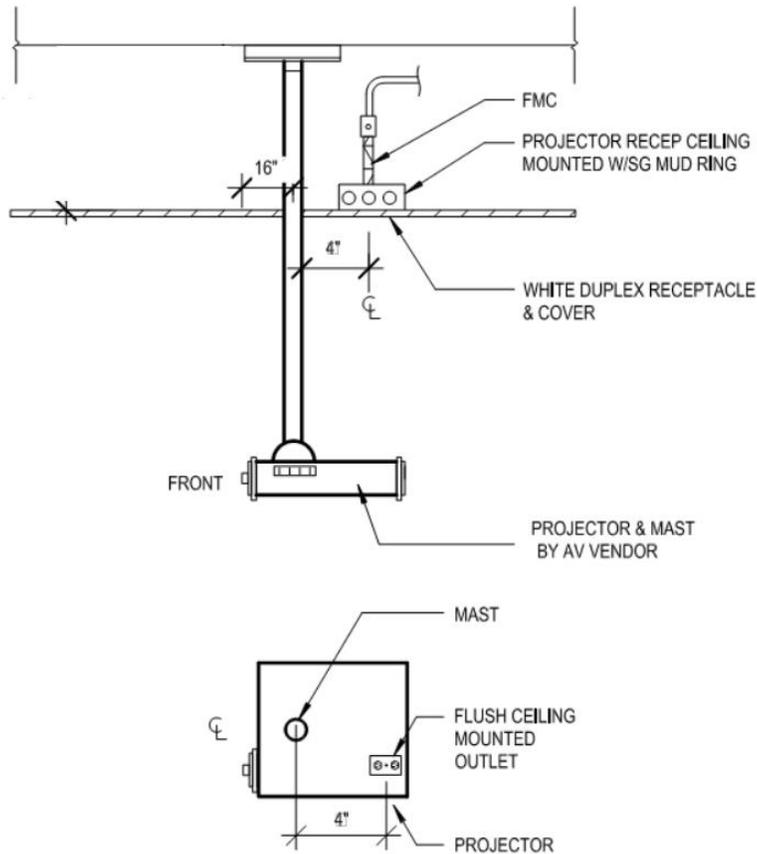
NOTE: AT LOCATIONS WHERE THE FSR BOX IS BEING INSTALLED AT THE SAME LOCATION AS THE EXISTING MYSTERY BOX, THE CONTRACTOR SHALL PULL BACK THE EXISTING CABLING ABOVE CEILING, PULL BACK CEILING TILE AND ALLOW CABLING TO HANG DOWN FOR CONTINUED USE BY FACULTY UNTIL FSR BOX CONSTRUCTION IS COMPLETE.

Broward College AUDIO VISUAL INFRASTRUCTURE REQUIREMENTS

INFRASTRUCTURE REQUIREMENTS PROJECTOR

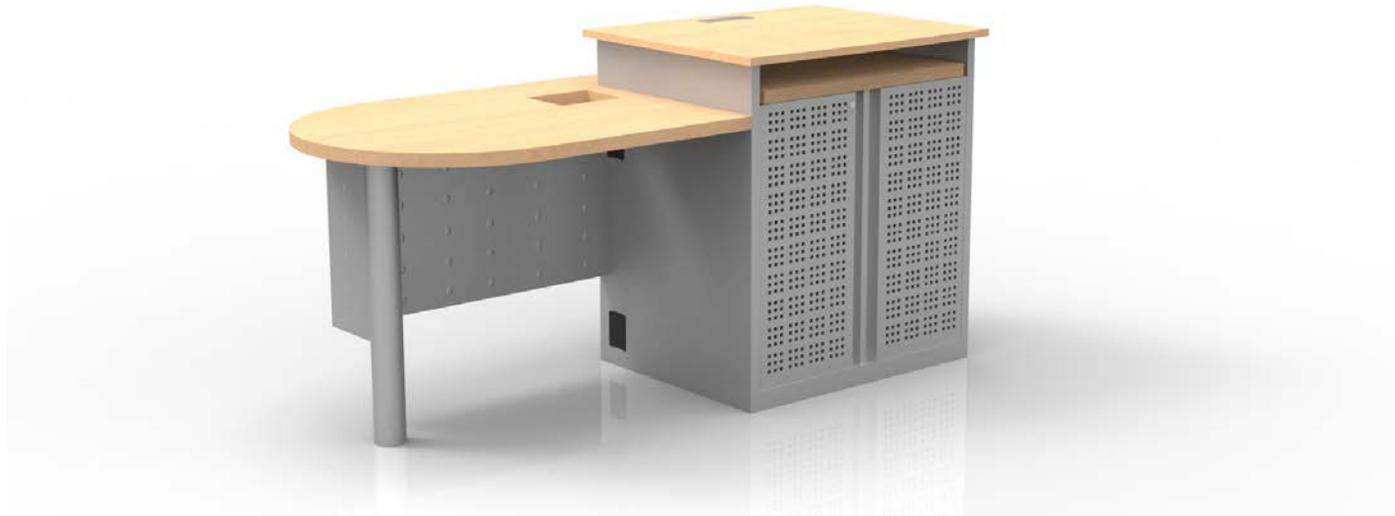


PROJECTOR



PROJECTOR MOUNT DETAIL & PLAN VIEW

Approved Classroom Podium – designed by BC and KI
INSTRUCTOR SIDE



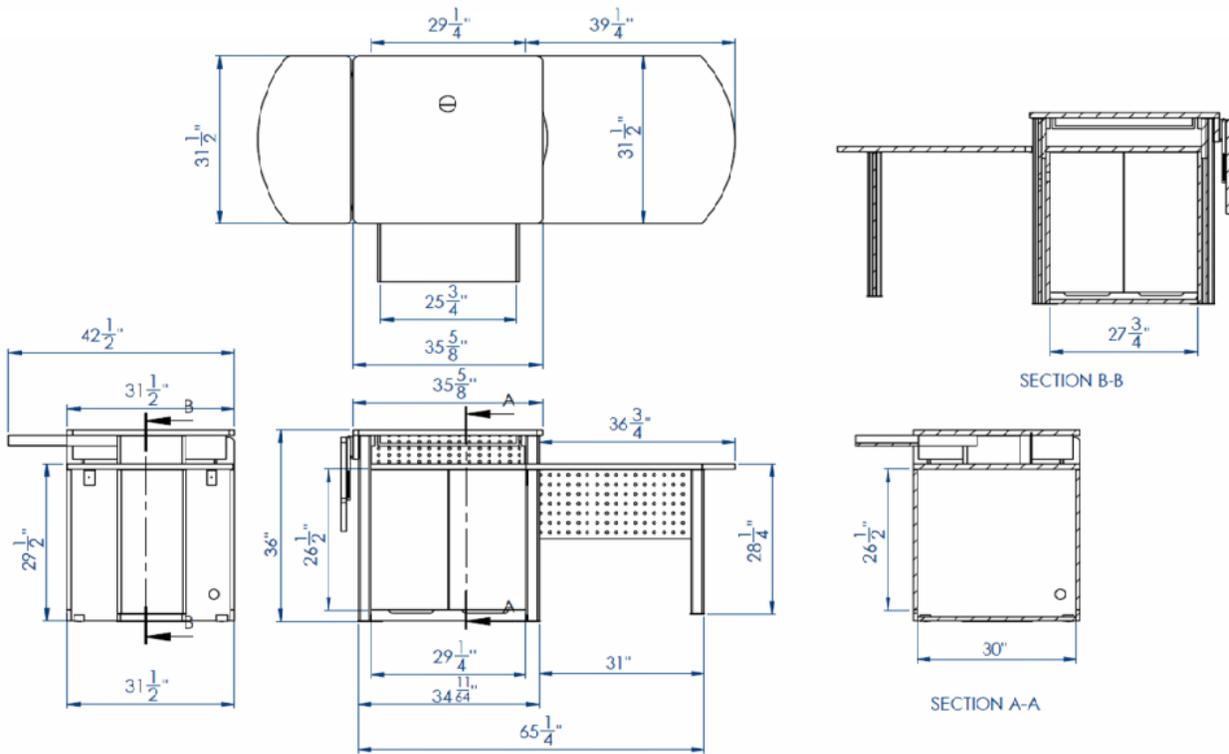
STUDENT SIDE – FRONT VIEW



Approved Classroom Podium**ADD ALTERNATE OPTION:**

Broward College custom logo applied to unit. This will typically will be used in a large multi-purpose Conference Room. Artwork supplied by Owner. Color and final location to be determined by Owner.

TEACHING STATION (PODIUM)
(2013-2017)



FLOOR PLAN AND ELEVATION VIEWS

ROLLING RACK(OPTION "A")

MIDDLE ATLANTIC: PTRK-MDK14

14-SPACE (24-1/2"), W/PLEX-FRONT DOOR & MARBLE GRAPHITE LAMINATE TOP, CASTERS & SHELF

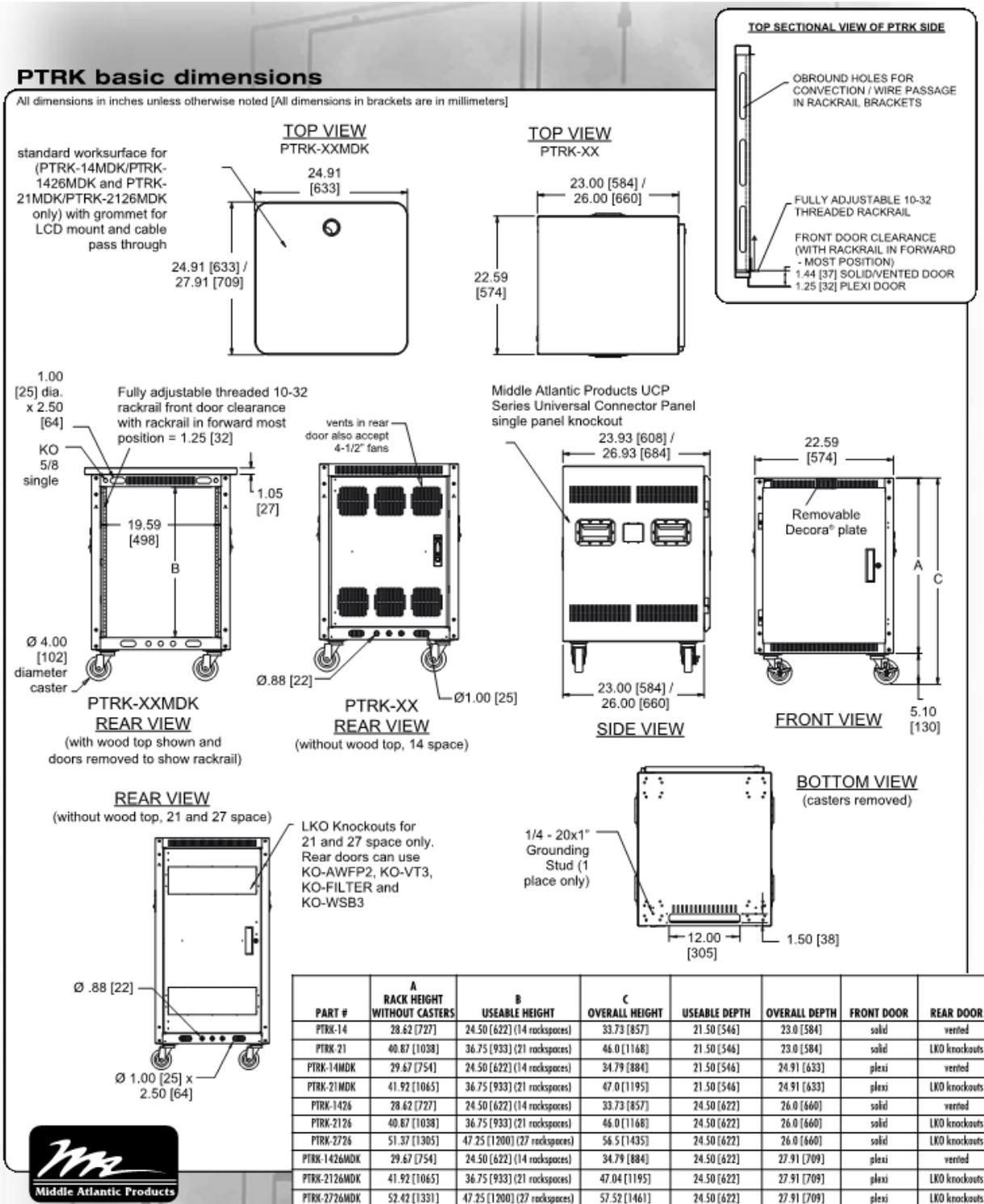


PTRK-21

Comes standard with wood top and plexi front door as shown

PTRK-14MDK (shown with optional LCD mount)

MIDDLE ATLANTIC: PTRK-MDK14



A Group brand | **legrand**

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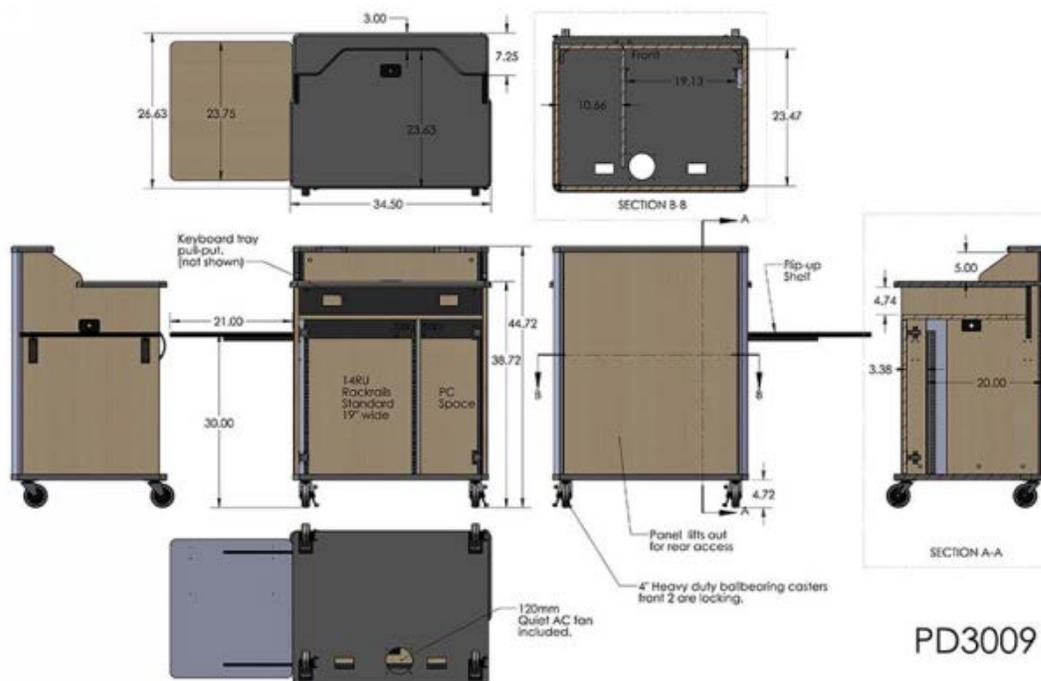
ROLLING PODIUM W/ FLIP-UP SHELF (OPTION "B")

VFI - PD3009



Place your cursor over each image thumbnail for a better view

MODEL	WIDTH	DEPTH	HEIGHT
PD3009	35"	27"	44.5"
MPL - MAPLE	MC - MEDIUM CHERRY	DC - DARK CHERRY	B - BLACK



PD3009