

## PROJECT DESCRIPTION AND SCOPE OF WORK

Diablo Valley College is seeking contractors to submit bids for an upgrade to the audio video systems (AVS) in the MATH Building on the Pleasant Hill Campus. This document addresses BOTH the infrastructure and equipment upgrade Scope of Work (SOW) on this project.

See the released bid document for dates and instructions for the job walk, RFI procedures, bid submission, and timeline completion expectations.

Work is to be done when there are no students in the classrooms. This allows for install to be done at normal working hours during winter break. However, if the contractor elects to get things done before breaks it will require evening, night, or weekend work when students are not around during class semesters. Therefore, if your company has a different rate for those hours, that will need to be accounted for in your quote (a change order will not be issued later). This project will be considered public works and public works wages will be required. However, it is not a PLA project.

*The selection of the contractor will be determined based on who is lowest bidder, but also demonstrates the inclusion of entire scope of work and materials required for a functional and aesthetically appealing installation (labels, velcro, raceway, conduit, etc.), as well as, timeline and warranty proposed with bids.*

### **Project Summary:**

Diablo Valley College Math Building has **14** classrooms and the school is looking to upgrade those AV systems. Any equipment not re-used for this project shall be removed by the contractor and handed over to the school after removal. All existing cabling that will not be re-used is to be removed and discarded by the contractor. Any cables that will be re-used the contractor is to re-terminate, test, and label with the new labeling scheme. If any new electrical outlets or conduit/outlet boxes are needed to complete this SOW, contractor is responsible to either subcontract or do as part of this bid.

All of the classrooms will be controlled with a new Owner Furnished Contractor Installed (OFICI) Crestron CP4N processor that will be located in the data closet on the second floor. The projectors, touch panel interfaces, screen controllers, and video switches will all be controlled using LAN connections which will be cabled to the second floor data closet and connected to an OFICI network chassis switch. The contractor will be responsible for pulling new cables and terminating these new cables along with re-used cables onto new patch panels and patch with new patch cords. All cables shall be labeled on the cables, patch panels, faceplates, and patch cords.

All classrooms will have the same base design for AV. There may be a few rooms that will have more than 1 projector and screen (a list of those room will be determined at the job walk and sent in an addendum). The base design will be as follows:

(See the issued single line drawings for specific details including cable types and part numbers)

NOTE: When an item is listed as OFICI the contractor is responsible for ALL cabling between devices and to the data closet. Additionally, contractor is also responsible for ALL pathway materials (conduit, firestop, raceway, J-hooks, cable tray, etc), Velcro for bundling (Zip ties are only allowed initially and are to be removed after being velcroed), labels for cables/plates/panels/patch cords, faceplates/panels and

connectors. As well as materials to mount the devices in place at their locations. This is what is meant by contractor furnish and install (F&I) and OFCI when mentioned in this SOW.

At the Teacher's Desk there will be an OFCI touch monitor that will be connected via contractor F&I HDMI and USB cables to an OFCI Crestron Touch Panel interface. This touch panel interface shall connect to an OFCI Crestron DM Lite video switcher via a contractor F&I HDMI cable. Additionally, the contractor shall F&I HDMI cables for connecting the switch input 1 to the room PC, input 2 to the desktop for a laptop, and input 3 to an OFCI document camera. The switcher will provide a mirrored output of the first DM Lite output so that the teacher can see the source being sent to the projector along with the controls for the AV system around the image.

The Crestron video switcher will have 2 DM Lite outputs. The contractor will be responsible to F&I a Shielded Cat6 cable between the switcher output 1 and an OFCI receiver at an OFCI projector. As mentioned earlier in some rooms there may be a 2<sup>nd</sup> OFCI projector and contractor is responsible for F&I of that cable as well.

Both the touch panel interface and the DM Lite switcher shall have a contractor F&I Cat6 cable pulled back to the data closet on the 2<sup>nd</sup> floor and patched to the OFCI chassis network switch.

At the projector, the contractor shall F&I a ceiling mount system and electrical power for rooms with 2<sup>nd</sup> projectors if there is no existing projector. If rooms have an existing projector the existing mounting system should be able to be re-used. After the job walk a list will be issued of rooms that will need new ceiling mounting systems or new power. The OFCI receiver at the projector will connect via contractor F&I HDMI and serial cabling to the OFCI Panasonic projector.

The projector shall have a contractor F&I Cat6 cable pulled back to the data closet on the 2<sup>nd</sup> floor and patched to the OFCI chassis network switch.

Also, at the projector, shall be a contractor F&I amplifier connected to the projector audio output with contractor F&I speaker cabling to the left and right of a contractor F&I electric screen. The cables will connect to contractor F&I wall mounted speakers mounted to the left and right of the screen. At the screen will also be a OFCI Crestron 4 relay controller expander. This expander shall have a contractor F&I Cat6 cable pulled back to the data closet on the 2<sup>nd</sup> floor and patched to the OFCI chassis network switch. The contractor will also connect relay expander to the screen in that room. First relay will be up and second relay will be down. Since this expander has 4 relays one will be used for every 2 rooms. Contractor will be responsible for pulling the contact cable to the other room's screen. If contractor wants they can include in their quote the cost to F&I 7 additional Crestron CEN-IO-RY-4 units and home run cables for those in each room instead of cabling between 2 rooms for every owner provided relay.

### **Project Bill of Materials:**

The contractor is responsible for providing a complete system and installation, including materials and consumables as needed to complete the system. All items will be the responsibility of the contractor to furnish (except OFCI items). This includes materials needed to install and mount OFCI equipment as well as contractor F&I equipment as well. This also includes power needs and pathway materials. All cables will be terminated with jacks and terminated in modular patch panels at the data closet and faceplates in outlet boxes or surface mount "biscuit" blocks and connected to the network switch and devices using

a patch cord. This will allow the basic link to not be tampered and only patch cords replaced with future change outs.

Provide with the quote a list of materials or a material submittal so that a comparison can be made when evaluating pricing from bids.

#### **Cabling:**

**In the bid proposal please state which cabling solution will be used and show verification that contractor can provide at least a 15-year warranty (preferably a lifetime warranty).**

The contractor will be responsible to provide the cable, any material required for the pathway to the locations (J-hooks, raceways, cable trays, etc.), the jacks, outlet boxes/plates at the station side and rack, patch cord of appropriate lengths to connect network switches and devices at the station. All cables, jacks (on both ends), and patch cords shall be labeled with computer generated labels at the switch to easily identify where they are going (devices/purposes).

Cabling shall be Cat6 for data and for DM extensions shall be Cat6 STP. Provide an alternate for Cat6A cabling.

Patch panels shall be modular so that color coding can be used for jack identification if requested by the owner. Unless told otherwise, patch cords and jacks for AV shall be grey. Contractor is also responsible to locate all cabling terminations in the data closet for the AV system near the OFCI AV LAN switch(es). IF cables are being re-used plan to relocate to the new patch panels and to re-terminate and test and label to match the new cabling. Cables shall NOT be re-used unless they are Cat6 or greater.

In rooms, cables shall terminate on walls, to get to the tables use flat patch cords and/or cable protection so that pathway between the wall and table will not be a trip hazard. This protection shall be held in place and not moveable when walked on or kicked.

Cables at ceiling locations do NOT have to be in conduit or raceway, but shall be installed aesthetically and held in place with proper supports. Cables going down walls and to the teacher desk shall be in conduit, raceway, or appropriate cable pathway. Colors for pathway shall be matched to the site or blend in aesthetically.

Cabling and jacks do NOT have to be Crestron DM, but the proposed solution shall be a manufacturer partnered solution and offer a minimum of 15 year cabling warranty (ex: Panduit, Leviton, etc).

If local code requires plenum cabling in the space that shall be used. Otherwise, plenum cabling is not needed since the cabling exits each room individually and shall be have contractor F&I firestop.

#### **Other Materials:**

For contractor F&I materials the following is suggested as a baseline comparison or to use:

- Stewart Audio Compact Amplifier at the projector DSP100-2-CV-D (or Equal – provide a submittal if propose other): <https://stewartaudio.com/products/dsp100-2-cv-d/>
- Draper 101640U Screen (or Equal – provide a submittal if propose other) <https://www.draperinc.com/projectionscreens/productdetail.aspx?detail=243&part=101640U#abs-4>

- Bose DesignMax DM5SE 829705-0110 ( equal or better alternative is acceptable as long as it does not exceed 80 watts since the amp has 100 watt channels).  
[https://assets.bose.com/content/dam/Bose\\_DAM/Web/pro/global/products/loudspeakers/designmax\\_dm5se/downloads/tds\\_designmax\\_dm5se\\_en.pdf](https://assets.bose.com/content/dam/Bose_DAM/Web/pro/global/products/loudspeakers/designmax_dm5se/downloads/tds_designmax_dm5se_en.pdf)

**Additional Installation/Project Requirements:**

1. Contractor is to furnish as built drawings showing the cable pathway, the locations of the stations, and what they are labeled. This submittal can be given electronically. The as-builts shall be given in original ACAD, Stardraw, or Viso format as well as in PDF format. Post a binder or a laminated drawing in the data closet for easy reference.
2. Contractor is responsible to work with the school programmer and IT departments to develop an IP schedule and document the MAC address, serial numbers, and IP addresses for each device in each room onto a excel or google spreadsheet. The contractor is to also configure each device with the addresses on the sheet so that the programmer can connect to the system in one location and upload the program and configure the devices.
3. Contractor is responsible for adjusting the projector image to fill the screen and be square and in focus.
4. Contractor is to provide an installer at least a half day to work with the school programmer to test an initial room and then to make adjustments/corrections resulting from that meeting afterwards to ensure proper connections and functionality. This shall be done with the first room. Provide an installer at project end to check the rooms and adjust if anything is discovered.
5. Contractors will furnish TIA test results using a Fluke or equivalent tester that has been calibrated within the last six months. In addition to the results, provide a document that lists all the settings used while taking the tests. These tests can be submitted in PDF format.
6. Provide a digital folder or document with pictures showing the installation at the data rack, station, displays, teacher's desk, projector, and screen with speakers.
7. At the data rack, provide a slide out shelf at a height that a technician can set a laptop on it and type comfortably.
8. Deliver all removed existing AV equipment to the school's representative unless told to discard in writing.
9. Provide the following warranties:
  - a. a one-year contractor warranty
  - b. Manufacturer material warranties
  - c. Cabling manufacturer 15 year or greater warranty
10. Confirm before submitting bid that contractor has all addendum as those will provide additional clarification and SOW when responding to RFI.