



PROJECT MANUAL

RICHLAND ONE TV – MEDIA SERVICES STUDIO RENOVATION RICHLAND COUNTY SCHOOL DISTRICT ONE

JCS Commission No. 24022
Solicitation # 2026-001

JUNE 23, 2025



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NOTES ARE ON DRAWINGS)**

DIVISION 26 ELECTRICAL – NOT USED (ALL NOTES ARE ON DRAWINGS)

DIVISION 27 COMMUNICATIONS

27 4116 Integrated AV Communications

DIVISION 28 ELECTRONIC SAFETY AND SECURITY - NOT USED

DIVISION 31 EARTHWORK - NOT USED

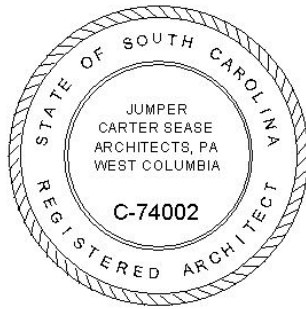
DIVISION 32 EXTERIOR IMPROVEMENTS - NOT USED

DIVISION 33 UTILITIES- NOT USED

END OF SECTION

OWNER	Richland School District One 1616 Richland Street Columbia, SC 29201
PROGRAM MANAGER	Ryan H. Jordan Richland County School District One 201 Park Street Columbia, SC 29201 (803)231-7047
ARCHITECT	Jumper Carter Sease Architects 412 Meeting Street West Columbia, SC 29169 P (843) 791-1020 Attention: Lori Long llong@jcsarchitects.com
ELECTRICAL ENGINEER	SIMS GROUP, USA 800 Columbiana Drive Suite 208 Irmo, SC 29063 803-765-1007 Attention: Chris Partrich chris@simsgroupusa.com
AUDIO/VISUAL COMMUNICATIONS CONSULTANT	Roy Thompson, System Consultant STAGE FRONT Atlanta Georgia Office 843.901.3485 cell roy.thompson@stagefront.net

END OF SECTION



ARCHITECTURE

1.0 GENERAL

- 1.1 Drawings Accompanying Specifications: The following Drawings bearing Architect's Commission No.24022 and dated May, 2025, and entitled as indicated on the list that accompanies this specification and is a part thereof:

DRAWING LIST

SHEET NO. SHEET TITLE

ARCHITECTURAL

T101	INDEX TO DRAWINGS, ABBREV, PROJECT CONTACTS, VICIINTY MAP, GENERANOTES
D101	DEMOLITION PLAN
A301	FLOOR PLAN, REFLECTED CEILING PLAN, FINISH SCHEDULE CASEWORK ELEVATIONS AND BUILDING SECTION
A302	TV SET DESIGN PLAN, DETAILS
A401	INTERIOR ELEVATIONS, WALL SECTIONS, ROOM FINISH SCHEDULE
E101	ELECTRICAL PLAN

INTEGRATED AV COMMUNICATIONS

AV-001	LEGEND
AV-101	FLOOR PLAN
AV-201	REFLECTED CEILING PLAN
AV-301	PLATE DETAILS
AV-302	RACK DETAILS
AV-701	FLOWS 1
AV-702	FLOWS 2
AV-703	FLOWS 3
AV-704	FLOWS 4

END OF SECTION

	Richland County School District One INVITATION FOR BIDS	Solicitation # Date Issued Procurement Officer Phone E-mail Address	2026-001 June 23, 2025 Carolyn Leigh Hodges 803.231.7052 carolyn.hodges@richlandone.org
	FOR CONSTRUCTION SERVICE		

Sealed bids for the Richland One Media Services -TV Studio Renovations will be received from qualified bidders that are, properly licensed under the laws of the State of South Carolina. These bids will be opened and read aloud by the Owner at the office of the Procurement Services, Central Services Facility, 201 Park Street, Columbia, SC 29201. Bids received after the indicated times will be rejected and returned to the Bidder unopened. All questions must be submitted via email to: Carolyn Hodges Construction Contracts Manager (E-mail Above).

SCHEDULE OF EVENTS	DATE AND TIME
Site Visits held on:	Only allowed at Prebid Conference
MANDATORY Pre-Bid conference will be held on: (Location of Pre-proposal Meeting: RCSD1 Wavery Administration Building, 1225 Oak Street, Columbia SC 29204)	July 8, 2025 at 1:00 PM
Bid Questions must be received by:	July 16, 2025 at 3:00 PM
Bid(s) must be received by:	July 22, 2025 at 3:00 PM
Bids will be opened on:	July 22, 2025 at 3:00 PM

PROJECT INFORMATION	
The name of the project is	RSD1 Media Services– TV STUDIO RENOVATION
Project Address:	1225 Oak Street, Columbia SC 29204
The Owner is:	Richland County School District One 201 Park Street Columbia, SC 29201
The Architect/Engineer is:	Jumper Carter Sease Architects 412 Meeting Street West Columbia, SC 29169
The Construction Manager is:	N/A

Description of the Project

The project is the for renovation of the existing RCSD1 TV studio at 1225 Oak Street in the existing RCSD1 Wavery Administration Building.

Bid Documents

Bidding Documents are available for inspection at the following locations:

- **Jumper Carter Sease Architects, 412 Meeting Street, West Columbia SC 29169 or at ARC Printing Services, West Columbia Office, 819 State Street, Cayce, SC 29033**

Bids will be binding for a period of 60 (sixty) calendar days from the date bids are opened.

COMPANY INFORMATION

1.) Name of Company: _____

Address: _____

Phone Number: _____

2.) Name of Assigned Contact: (Main) _____

Direct Phone Number: _____

Other Phone Number: _____

Email: _____

3.) Name of Assigned Contact: (Secondary) _____

Direct Phone Number: _____

Other Phone Number: _____

Email: _____

** If awarded the contract, these individuals cannot be switched for the duration of the contract unless permitted by the Richland County School District One.*

SIGNATURE

Name of Company

Printed Name of Firm Representative

Signature of Firm Representative

Date

SMALL / WOMEN / MINORITY BUSINESS ENTERPRISE POLICY

SMALL/ WOMEN/ MINORITY BUSINESS ENTERPRISE (S/W/MBE) CHECKLIST

NAME OF AGENCY: _____

PLEASE CHECK THE FOLLOWING THAT
APPLY TO YOUR AGENCY:

☐ **Minority Owned**

Minority Owned is defined as: At least fifty-one percent (51%) owned by one or more citizens of the United States who are determined to be socially and economically challenged.

☐ **Small Business**

"Small" Business is defined as having 15 employees or less.

☐ **Woman Owned**

Women Owned is defined as: At least fifty-one percent (51%) owned by one or more citizens of the United States who is a Female.

DEFINITIONS

"Minority Person" means a United States citizen who is economically and socially disadvantaged.

"Socially disadvantaged individuals" means those individuals who have been subject to racial or ethnic prejudice or cultural bias because of their identification as members of a certain group, without regard to their individual qualities. Such groups include but are not limited to African Americans, Hispanic Americans, Native Americans (including American Indians, Eskimos, Aleuts and Native Hawaiians), Asian Pacific Americans, Asians and women regardless of race or origin.

"Economically disadvantaged individuals" means those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged.

Printed Name of Firm Representative

Signature of Firm Representative

Date

**RICHLAND ONE**

ENGAGE • EDUCATE • EMPOWER

Procurement Services

Vendor Application 201

Park Street

Columbia, SC 29201

PH: 803-231-7033

(Subject to any federal, state and local laws)

Vendor No:

****The District does not accept vendor applications directly from vendors. Vendor applications (new and updated) must be submitted internally through a Richland County School District One employee before being created. (i.e. **Bookkeepers, Administrative Assistants, or Department Heads**). ****

****Richland One employees will forward completed applications to the Procurement Services Department. ****

****NO APPLICATION WILL BE PROCESSED WITHOUT A COMPLETE W-9 ATTACHED****

Please check the appropriate boxes:

☐ M-Minority ☐ S-Small ☐ W-Woman ☐ O-Other ☐ W-9 Attached

* What services are being rendered? _____ (ex. Consulting, professional development, etc.).

Name of Company: _____ Contact 1: _____ Contact 2: _____ Telephone Number: _____ Fax Number: _____	DBA: _____ SSN or FEIN: _____ Business License Number: _____ State: _____ How long in present business: _____ Years In the interest of protection for the District and its vendors, it is mandatory for vendors to have purchase authorization in the form of a signed Purchase Order BEFORE placing an order.
Address To Which Bids/Quotes and Purchase Orders Are To Be Mailed: Email Address For Electronic Purchase Order Transmittals To Be Mailed: _____ Website: _____	Remittance Address (If Different From Bids/Quotes/PO Mailing Address): P-Card Payment Preferred _____ Yes _____ No An active application does not legally entitle a vendor to any particular solicitation, therefore, vendors are encouraged to check the District's website: www.richlandone.org for legal notices of Invitation to Bid (IFB). The Procurement Department may also be contacted for solicitation information.
Type of Organization (Check One) _____ Individual _____ Partnership _____ Corporation _____ Other _____ RCSD One requires that no employee or Board of School Commissioners may have a special interest in any contract paid with funds belonging to or administered by the Board of School Commissioners. If you/your firm have such a relationship, attach a separate sheet explaining the relationship. All transactions are governed by the laws of the State of South Carolina and the Board of School Commissioners for RCSD One.	

I certify that information supplied herein is correct and neither the applicant nor any person in any connection with the applicant as a principal or officer, so far as known, now debarred, suspended or otherwise declared ineligible by any agency of Federal Government, agencies of the State of South Carolina or by Richland County School District One.

Person Authorized to Sign this Application, Title

Date

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

► Go to www.irs.gov/FormW9 for instructions and the latest information.

Print or type. See Specific Instructions on page 3.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.	
	2 Business name/disregarded entity name, if different from above	
	3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.	
	☐ Individual/sole proprietor or single-member LLC	☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
	☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► _____	
	Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.	
	☐ Other (see instructions) ► _____	
4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):		
Exempt payee code (if any) _____		
Exemption from FATCA reporting code (if any) _____		
(Applies to accounts maintained outside the U.S.)		
5 Address (number, street, and apt. or suite no.) See instructions.		
Requester's name and address (optional)		
6 City, state, and ZIP code		
7 List account number(s) here (optional)		

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number									
				-				-	
or									
Employer identification number									
				-					

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign
Here

Signature of
U.S. person ►

Date ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

INVITATION FOR CONSTRUCTION BIDS

PROJECT

PROJECT NAME: RSD1 TV STUDIO RENOVATIONS JCS PROJECT NUMBER: 24022
LOCATION : 1225 OAK STREET COLUMBIA SC 29204
DESCRIPTION OF PROJECT: This project is for the renovation of the existing RCSD1 MEDIA SERVICES -TV studio at 1225 Oak Street in the existing RCSD1 Waverly Administration Building.

OWNER

OWNER NAME: Richland School District One
ADDRESS: 201 Park Street
CITY: Columbia STATE: SC ZIP: 29201
OWNER REPRESENTATIVE: Ryan Jordan PHONE: 803-600-0746
Email: ryan.jordan@richlandone.org

ARCHITECT

ARCHITECTURAL FIRM: Jumper Carter Sease Architects.
ADDRESS: 412 Meeting Street CITY: West Columbia STATE: SC
ZIP: 29169 ARCHITECTURAL REPRESENTATIVE: Lori M. Long
Email: llong@jcsarchitects.com PHONE: (803) 791-1020

MANDATORY PRE-BID CONFERENCE

PRE-BID DATE: July 8, 2025 TIME: 1:00 p.m.
PRE-BID LOCATION: 1225 Oak Street, Columbia SC 29204.
COMMENTS: _____

BID

BID DATE: July 22, 2025 TIME: 3:00 p.m.
LOCATION: 201 Park Street, Columbia, SC 29201

BID SECURITY

Bid security is required in an amount not less than 5% of the Base Bid.

BONDS

The successful Contractor will be required to provide Performance and Labor and Material Payment Bonds, each in the amount of 100% of the Contract Price

PLANS

AVAILABLE FROM: JCS ARCHITECTS, WEST COLUMBIA SC 803-791-1020 Cindy Corely ccorely@jcsarchitects.com
Bidders must obtain Bidding Documents/Plans from the above listed source(s) to be listed as an official plan holder. Bidders that rely on copies obtained from any other source do so at their own risk. All written communications with official plan holders and bidders will be via email.

AIA DOCUMENT
A701 – 2018 Edition
"INSTRUCTIONS TO BIDDERS"

Note:

The original document is available for viewing at the following location:

Jumper Carter Sease Architects

412 Meeting Street

West Columbia, SC 29169

Bidders shall submit bids on Bid Form only.

BID SUBMITTED BY: _____
(Bidder's Name)

BID SUBMITTED TO: Richland County School District One
(Owner's Name)

FOR: PROJECT NAME: RSD1 MEDIA SERVICES TV STUDIO RENOVATIONS
PROJECT NUMBER: JCS Project # 24022

OFFER

§ 1. In response to the Invitation for Construction Bids and in compliance with the Instructions to Bidders for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the Owner on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

§ 2. Pursuant to Section 11-35-3030(1) of the SC Code of Laws, as amended, Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:

☐ **Bid Bond with Power of Attorney** ☐ **Electronic Bid Bond** ☐ **Cashier's Check**
(Bidder check one)

§ 3. Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into this Bid:

(Bidder, check all that apply. Note, there may be more boxes than actual addenda. Do not check boxes that do not apply)

ADDENDA: ☐ #1 ☐ #2 ☐ #3 ☐ #4 ☐ #5

§ 4. Bidder accepts all terms and conditions of the Invitation for Construction Bids, including, without limitation, those dealing with the disposition of Bid Security. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of sixty (60) Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner.

§ 5. Bidder herewith offers to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the following items of construction work:

§ 6.1 **BASE BID WORK** (as indicated in the Bidding Documents and generally described as follows):

RENOVATION OF THE EXISTING RCSD1 MEDIA SERVICES - TV STUDIO AT WAVERLY PLACE
DISTRICT OFFICE

\$ _____, which sum is hereafter called the Base Bid.

(Bidder to insert Base Bid Amount on line above in figures only)

§ 6.2 ALTERNATE #1 BID WORK *(as indicated in the Bidding Documents and generally described as follows):*

INTERIOR FINISHES IN STORAGE ROOM 002, INCLUDING NEW ACOUSTICAL GRID AND CEILING, NEW LAY IN LIGHT FIXTURES AND NEW FLOOR FINISHES AND RUBBER BASE, PAINTING AND NEW PLASTIC LAMINATE CASEWORK.

\$ _____, which sum is hereafter called the Base Bid.
(Bidder to insert Base Bid Amount on line above in figures only)

§ 8. LIST OF MANUFACTURERS, MATERIAL SUPPLIERS, AND SUBCONTRACTORS OTHER THAN SUBCONTRACTORS LISTED IN SECTION 7 ABOVE (FOR INFORMATION ONLY):

Pursuant to instructions in the Invitation for Construction Bids, if any, Bidder will provide to Owner upon the Owner's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that this list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements of SC Code Ann § 11-35-3020(b)(i).

§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES

a) CONTRACT TIME

Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued by the Owner. Bidder agrees to substantially complete the Work within 120 Calendar Days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b) LIQUIDATED DAMAGES

Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the amount of \$ 500.00 for each Calendar Day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This amount is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

§ 10. AGREEMENTS

- a) Bidder agrees that this bid is subject to the requirements of the laws of the State of South Carolina.
- b) Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the Owner.
- c) Bidder agrees that neither the Owner nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.

§ 11. ELECTRONIC BID BOND

By signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal and Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310, Bid Bond, included in the Bidding Documents.

ELECTRONIC BID BOND NUMBER: _____

SIGNATURE AND TITLE: _____

CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATION

SC Contractor's License Number(s): _____

Classification(s) & Limits: _____

Subclassification(s) & Limits: _____

By signing this Bid, the person signing reaffirms all representation and certification made by both the person signing and the Bidder, including without limitation, those appearing in Article 2 of the AIA Document A701, Instructions to Bidders, is expressly incorporated by reference.

BIDDER'S LEGAL NAME: _____

ADDRESS: _____

TELEPHONE: _____

EMAIL: _____

SIGNATURE: _____ **DATE:** _____

PRINT NAME: _____

TITLE: _____

AIA DOCUMENT
A310 (2010 Edition)
Bid Bond

Note:

The original document is available for viewing at the following location:

Jumper Carter Sease Architects

412 Meeting Street

West Columbia, SC 29169

AIA DOCUMENT

A101 – 2017 Edition

"STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR"

Note:

The original document is available for viewing at the following location:

Jumper Carter Sease Architects

412 Meeting Street

West Columbia, SC 29169

AIA DOCUMENT

A201 – 2017 Edition

"GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION"

Note:

The original document is available for viewing at the following location:

Jumper Carter Sease Architects

412 Meeting Street

West Columbia, SC 29169

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that *(Insert full name or legal title and address of Contractor)*

Name: _____

Address: _____

hereinafter referred to as "Contractor", and *(Insert full name and address of principal place of business of Surety)*

Name: _____

Address: _____

hereinafter called the "surety", are jointly and severally held and firmly bound unto *(Insert full name and address of Owner)*

Name: Richland County School District One

Address: 1616 Richland Street

Columbia, SC 29201

hereinafter referred to as "Owner", or its successors or assigns, the sum of _____ (\$ _____), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Owner to construct

Project Name: RSD1 MEDIA SERVICES - TV STUDIO RENOVATIONS

_____ Project Number _____

_____ Brief Description of Awarded Work:

Renovation of the Existing RCSD1 Media Services TV Studio to include but not limited to new finishes, new cameras and new Backdrop/set designs.

Alternate #1 includes finishes and casework in adjacent Storage Room.

in accordance with Drawings and Specifications prepared by *(Insert full name and address of A-E)*

Name: Jumper Carter Sease Architects

Address: 412 Meeting Street

West Columbia, SC 29169

which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _____ **day of** _____, **2** _____
(shall be no earlier than Date of Contract)

BOND NUMBER _____

CONTRACTOR

By: _____
(Seal)

Print Name: _____

Print Title: _____

Witness: _____

SURETY

By: _____
(Seal)

Print Name: _____

Print Title: _____
(Attach Power of Attorney)

Witness: _____

(Additional Signatures, if any, appear on attached page)

PERFORMANCE BOND

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the full and faithful performance of the contract, which is incorporated herein by reference.
2. If the Contractor performs the contract, the Surety and the Contractor have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.
3. The Surety's obligation under this Bond shall arise after:
 - 3.1 The Owner has notified the Contractor and the Surety at the address described in paragraph 10 below, that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; or
 - 3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the Contract.
4. The Surety shall, within 15 days after receipt of notice of the Owner's declaration of a Contractor Default, and at the Surety's sole expense, take one of the following actions:
 - 4.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Contract; or
 - 4.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the Owner the amount of damages as described in paragraph 7 in excess of the Balance of the Contract Sum incurred by the Owner resulting from the Contractor Default; or
 - 4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and:
 - 4.4.1 After investigation, determine the amount for which it may be liable to the Owner and, within 60 days of waiving its rights under this paragraph, tender payment thereof to the Owner; or
 - 4.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons therefore.
5. Provided Surety has proceeded under paragraphs 4.1, 4.2, or 4.3, the Owner shall pay the Balance of the Contract Sum to either:
 - 5.1 Surety in accordance with the terms of the Contract; or
 - 5.2 Another contractor selected pursuant to paragraph 4.3 to perform the Contract.
 - 5.3 The balance of the Contract Sum due either the Surety or another contractor shall be reduced by the amount of damages as described in paragraph 7.
6. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond 15 days after receipt of written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner.
 - 6.1 If the Surety proceeds as provided in paragraph 4.4 and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, then without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
 - 6.2 Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the Dispute Resolution process defined in the Contract Documents and the laws of the State of South Carolina.
7. After the Owner has terminated the Contractor's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall be those of the Contractor under the Contract, and the responsibilities of the Owner to the Surety shall be those of the Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Sum to mitigation of costs and damages on the Contract, the Surety is obligated to the Owner without duplication for:
 - 7.1 The responsibilities of the Contractor for correction of defective Work and completion of the Contract; and
 - 7.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and
 - 7.3 Damages awarded pursuant to the Dispute Resolution Provisions of the Contract. Surety may join in any Dispute Resolution proceeding brought under the Contract and shall be bound by the results thereof; and
 - 7.4 Liquidated Damages, or if no Liquidated Damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Contract, and the Balance of the Contract Sum shall not be reduced or set-off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.
9. The Surety hereby waives notice of any change, including changes of time, to the contract or to related subcontracts, purchase orders and other obligations.
10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
11. Definitions
 - 11.1 Balance of the Contract Sum: The total amount payable by the Owner to the Contractor under the Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts to be received by the Owner in settlement of insurance or other Claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Contract.
 - 11.2 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform the Contract or otherwise to comply with the terms of the Contract.

LABOR & MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that *(Insert full name or legal title and address of Contractor)*

Name: _____

Address: _____

hereinafter referred to as "Contractor", and *(Insert full name and address of principal place of business of Surety)*

Name: _____

Address: _____

hereinafter called the "surety", are jointly and severally held and firmly bound unto *(Insert full name and address of Owner)*

Name: Richland County School District One

Address: 1616 Richland Street

Columbia, SC 29201

hereinafter referred to as "Owner", or its successors or assigns, the sum of _____ (\$ _____), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Owner to construct

Project Name: RSD1 MEDIA SERVICES - TV STUDIO RENOVATIONS

Project Number: JCS Project Number 24022

Brief Description of Awarded Work:

Renovation of the Existing RCSD1 Media Services TV Studio to include but not limited to new finishes, new cameras and new

Backdrop/set designs. Alternate #1 includes finishes and casework in adjacent Storage Room.

in accordance with Drawings and Specifications prepared by *(Insert full name and address of A-E)*

Name: Jumper Carter Sease Architects

Address: 412 Meeting Street

West Columbia, SC 29169

which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Labor and Material Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _____ **day of** _____, **2** _____
(shall be no earlier than Date of Contract)

BOND NUMBER _____

CONTRACTOR

SURETY

By: _____
(Seal)

By: _____
(Seal)

Print Name: _____

Print Name: _____

Print Title: _____

Print Title: _____
(Attach Power of Attorney)

Witness: _____

Witness: _____

(Additional Signatures, if any, appear on attached page)

LABOR AND MATERIAL PAYMENT BOND

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for all labor, materials and equipment required for use in the performance of the Contract, which is incorporated herein by reference.
 2. With respect to the Owner, this obligation shall be null and void if the Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and
 - 2.2 Defends, indemnifies and holds harmless the Owner from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract.
 3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
 4. With respect to Claimants, and subject to the provisions of Title 29, Chapter 5 and the provisions of §11-35-3030(2)(c) of the SC Code of Laws, as amended, the Surety's obligation under this Bond shall arise as follows:
 - 4.1 Every person who has furnished labor, material or rental equipment to the Contractor or its subcontractors for the work specified in the Contract, and who has not been paid in full therefore before the expiration of a period of ninety (90) days after the date on which the last of the labor was done or performed by him or material or rental equipment was furnished or supplied by him for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action for the sum or sums justly due him.
 - 4.2 A remote claimant shall have a right of action on the payment bond upon giving written notice by certified or registered mail to the Contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material or rental equipment upon which such claim is made.
 - 4.3 Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the county or circuit in which the construction contract was to be performed, but no such suit shall be commenced after the expiration of one year after the day on which the last of the labor was performed or material or rental equipment was supplied by the person bringing suit.
 5. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
 - 5.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 5.2 Pay or arrange for payment of any undisputed amounts.
 - 5.3 The Surety's failure to discharge its obligations under this paragraph 5 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a claim. However, if the Surety fails to discharge its obligations under this paragraph 5, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs to recover any sums found to be due and owing to the Claimant.
 6. Amounts owed by the Owner to the Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the contractor in the performance of the Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's prior right to use the funds for the completion of the Work.
 7. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Contract. The Owner shall not be liable for payment of any costs or expenses of any claimant under this bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
 8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
 9. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the Owner or the contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
 10. By the Contractor furnishing and the Owner accepting this Bond, they agree that this Bond has been furnished to comply with the statutory requirements of the South Carolina Code of Laws, as amended, and further, that any provision in this Bond conflicting with said statutory requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
 11. Upon request of any person or entity appearing to be a potential beneficiary of this bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
 12. Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the laws of the State of South Carolina.
- ### **13. DEFINITIONS**
- 13.1 Claimant: An individual or entity having a direct contract with the Contractor or with a Subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the Contractor and the Contractor's Subcontractors, and all other items for which a mechanic's lien might otherwise be asserted.
 - 13.2 Remote Claimant: A person having a direct contractual relationship with a subcontractor of the Contractor or subcontractor, but no contractual relationship expressed or implied with the Contractor.
 - 13.3 Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

AIA DOCUMENT
G702 & G703 – 1992 Edition
"APPLICATION AND CERTIFICATE FOR PAYMENT"

Note:

The original document is available for viewing at the following location:

Jumper Carter Sease
Architects

412 Meeting Street

West Columbia, SC 29169

1. EXPLANATION TO BIDDERS

Any pre-bid explanations desired by bidders regarding the meaning or interpretation of the drawings and specifications should be requested in written form from the Procurement Official pursuant to the requirements found on the Cover Sheet of the Solicitation. Oral explanations or instruction given before the award of the Contract will not be binding. Any interpretations made will be in the form of an addendum to the Specifications or Drawings and will be furnished to all bidders and its receipt by the bidder shall be acknowledged on the bid form in the space provided.

2. APPROVAL OF MATERIALS, EQUIPMENT AND SUBSTITUTIONS PRIOR TO OPENING OF BIDS

A. Substitutions:

The Contract shall be based on the standards of quality established in the Contract Documents. Products specified by reference to standard specifications such as ASTM and similar standards do not require further approval except for interface within the Work. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work via a pre-bid Amendment

B. "Or equal":

Where the phrase "or equal," or "equal as approved by the Architect", occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically approved for this Work by the Architect. The decision of the Architect shall be final.

C. Approval of Substitutions and "Or equal" Materials:

In cases where a bidder is in doubt concerning the acceptability of a material that he desires to use as a basis for this bid, the bidder may request the Architect/Engineer's approval to use such material in lieu of that particularly mentioned as a basis of this bid. Requests from material dealers and subcontractors must be made through a bidder. Such requests shall be submitted in writing to the Procurement Official pursuant to the requirements found on the Cover Sheet of the Solicitation who will provide it to the Program Manager, in duplicate, so that this request may then be forwarded to the Architect/Engineer for approval. The Architect/Engineer's approval to use the materials as a basis of bids will, if granted, be in writing and a copy will be forwarded to all other bidders as a pre-bid Amendment. Approval to use a material as a basis of bids shall not constitute final approval. Such approval granted prior to opening of bids shall be subject to reconsideration after the bids are received and before the award of the Contract. Final approval of all materials proposed in lieu of those particularly mentioned will be submitted through the apparent low Contractors as provided in Division 1 of the Contract Specifications, the General Conditions of the Contract for Construction, and otherwise as required by the Contract Documents. In view of the relatively short time available for consideration of requests and advising all parties concerned prior to opening bids, bidders should limit such requests to those they consider particularly important and should submit such requests as far in advance of the opening of bids as practical and no less than ten (10) days prior to bid opening.

3. AMENDMENT

Changes or corrections may be made in the General Drawings and Specifications after they have been issued

and before bids are received. In such cases, a written Amendment describing the change or corrections will be issued by the Program Manager to all bidders. Such Amendment will take precedence over the portion of the General Drawings and Specifications concerned and will be considered a part of the Contract Documents. Except in unusual cases, an Amendment will be issued to reach the bidder at least four (4) days prior to bid opening time.

4. EXAMINATION OF DRAWINGS AND SPECIFICATIONS

Each bidder shall carefully examine Drawings and Specifications and all Amendments or other revisions thereto and thoroughly familiarize himself with the detailed requirements thereof prior to submitting a bid. If any bidder is in doubt as to the true meaning of any part of the Drawings, Specifications or other documents, or if any part of the error, discrepancy, conflict or omission is noted, the bidder should immediately contact the Procurement Official in writing and request clarification pursuant to the requirements of the Cover Page of the Solicitation. The Program Manager and/or Architect/Engineer will clarify discrepancy, conflict or omission and will notify all bidders by Addendum in cases where the extent of the Work or the cost thereof will be appreciably affected. No allowance will be made after the bids are received for oversight by a bidder.

5. EXAMINATION OF OTHER CONDITIONS AFFECTING THE WORK

Each bidder shall examine and thoroughly familiarize himself with all existing conditions including all applicable laws, ordinances, rules and regulations that will affect the work prior to submitting a bid. He shall visit the site, examine the grounds and all existing buildings, utilities and roads and shall ascertain by any reasonable means all conditions that will in any manner affect his work. He shall ask the Procurement Official pursuant to the requirements found on the Cover Sheet of the Solicitation for any additional information that he deems necessary for him to be fully informed as to exactly what is to be expected prior to submitting a proposal. The drawings have been prepared on the basis of surveys and inspections of the site and physical conditions at the site. This, however, shall not relieve the bidder of the necessity for fully informing himself as to the existing physical conditions. Each bidder shall carefully examine the existing conditions as compared to the Contract Documents. Any discrepancies noted between same shall be noted in writing to the Procurement Official pursuant to the requirements found on the Cover Sheet of the Solicitation seven (7) days prior to the established bid date for inclusion in a written Amendment. Verbal or telephone changes will not be considered binding.

6. DRAWINGS AND SPECIFICATIONS

All copies of Drawings, Specifications and other documents furnished to bidders, sub-bidders and material suppliers shall be returned to the Program Manager within ten (10) days following the opening of bids.

7. PREPARATION AND SUBMISSION OF BID

Bids to be entitled to consideration must be made on the form provided by the solicitation and found in the Project Manual. All conditions set forth in the "Bid Form" and "Invitation to Bid" must be complied with. Figures shall be entered on the bid form in writing. All blank spaces shall be filled in properly or indicated as not applicable as necessary. No interlineations or alteration will be made on the bid form. If erasures are necessary and appear on the forms, each such erasure must be initialed by the person signing the bid. Bids shall be placed in an opaque envelope, sealed, addressed and delivered in the manner and at the time stipulated in the Invitation and/or Advertisement for Bids. Facsimile or telegraphic bids or bid modifications will not be considered.

8. BID GUARANTEE

The bidder shall include with his proposal a certified check or bid bond for the sum of not less than five percent (5%) of the total amount of the bid, as evidence of good faith and as a guarantee that if awarded the Contract, the bidder will execute the Contract and give performance and payment bond(s) as required by the Specifications.

9. RETURN OF BID BONDS OR CHECKS

Bid bonds and checks will be returned to all except the three lowest bidders within ten (10) days after the formal opening of bids. The bid bond or check of the three lowest bidders will be returned within 48 hours after the Owner and Contractor have executed a Contract and the executed performance bond and payment bonds has been approved by the Owner, or, if no award has been made within 60 days after the opening of bids so long as he has not been notified of the acceptance of this bid.

10. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the Contract and performance and payment bonds required within ten (10) days after he has received notice of the acceptance of this bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

11. BIDDERS QUALIFICATIONS

Proposals for each contract will be accepted from bidders who are regularly engaged in, and licensed to perform, the work they are bidding, which represents a significant portion of their total volume and who perform this work with workers regularly employed on their direct payrolls. Before a bid is considered for award, the bidder may be requested by the Program Manager to submit completed form SE-350 as to his previous experience in performing similar or comparable work and of his business and technical organization and financial resources and plant available to be used in contemplated work. The bidder may also be required to submit a statement of facts in detail on his proposed subcontractors as to their previous experience and past performance in performing similar work or comparable work.

12. ACCEPTANCE OR REJECTION OF BIDS

The Owner reserves the right to reject any and all bids when such rejection is in the best interest of the Owner to reject the bid of the bidder who has previously failed to perform or to complete on time Contracts of a similar nature; and to reject the bid of a bidder who is not, in the opinion of the Architect/Engineer and/or Program Manager, in a position to perform the Contract. The Owner reserves the right to reject any subcontractor who has previously failed to perform properly in the opinion of the Architect/Engineer, Program Manager or the Owner. The Owner also reserves the right to waive any minor informalities and technicalities in bidding. The Owner may also accept or reject any of the alternates that may be set forth on the "Bid Form", may accept any and all Alternates in any order or combination, and will determine the low bidder on the basis of the sum of the Base Bid and the Alternate(s) accepted. The Contract will be awarded (unless all bids are rejected), under normal circumstances, to the lowest responsive, responsible bidder. The Owner reserves the right; however, to award the Contract in its best interest and therefore may select a bidder other than the lowest if it considers such to be advantageous.

13. WITHDRAWAL OF BIDS

Bids may be withdrawn by written request received from bidders prior to the time fixed for the opening. Negligence on the part of the bidder or its subcontractors in preparing the bid confers no right for the withdrawal of the bid after it has been opened.

14. CONTRACTOR'S LICENSES

- A. Each bidder shall obtain a Contractor's License as required by and pursuant to the provisions of the Contractor's Licensing Law (1976 Code) Volume 14, Chapter 11, Section 40-11-10 through 40-11-340 as amended. Specialty Contractor's Licenses can be obtained for the various building trades and information regarding these licenses can be obtained from the South Carolina Licensing Board for Contractors. It shall be the bidder's responsibility to provide appropriate licensing to perform the work described in the contract documents.
- B. Any Owner hiring or contracting or having a Contract with any non-resident Contractor, where such contract exceeds \$10,000 or can be expected to exceed that amount, shall be required by law to withhold two percent (2%) of each and every payment made after January 1, 1959, to such non-resident individuals and partnerships, and foreign corporations as well.
- C. If a Contractor has any employees earning income in South Carolina who are legal residents of another state, he also becomes a withholding agent and must withhold South Carolina Income Taxes from the earnings of the non-resident employees on the basis of tables furnished by the South Carolina Tax Commission. If a Contractor subcontracts with other non-resident Contractors, he must withhold two percent (2%) of each and every payment made to the subcontractor if the total amount of the subcontract exceeds \$10,000 or can be expected to exceed that amount. The subcontractor may obtain in the same relief as a Contractor by posting bond, per stipulations of this Act.

15. CLEANLINESS

A particularly high standard of cleanliness will be rigidly enforced. Contractors will be required to perform daily clean-up and failure to do so will result in the work being performed by other forces.

16. WORK BY OTHER CONTRACTORS

By submission of this bid, bidder acknowledges that he has read and is totally familiar with the scope of any other Contractor's work.

17. EXISTING UTILITIES

Each Contractor shall be responsible for the protection of underground and overhead utilities in the work area which are shown on the Drawings and/or which can be detected by a visual inspection of the job site. Each Contractor is cautioned, however, that there may be existing unknown utilities neither visible nor shown on the Drawings. Each Contractor will take all reasonable precautions necessary to detect and preserve the service which these utilities provide. Should additional work be caused to the Contractor by the presence of such unknown underground utilities, the cost borne by the Contractor as a result of same shall be reimbursed by the Owner through the use of a negotiated Change Order.

18. PROHIBITION AGAINST GRATUITIES, ETC.

The Contractor's attention is directed to Section 8-13-705 of the South Carolina Code of Laws, 1976 as amended regarding the prohibition against gratuities and kickbacks, etc.

19. CONSTRUCTION SCHEDULE

The Contractor will be required to perform the work within the allocated time as outlined in the Specifications.

20. BONDS

A Performance Bond and Labor and Material Bond, executed on AIA Document A312-2019, will be required in the amount of one hundred percent (100%) of the Contract amount. Cost of bonds to be included with the bid.

21. ACCESS TO PROJECT

The Contractor will not be permitted to occupy the site of the Work or allowed on the property of the Owner until the written Notice to Proceed has been issued.

22. MINORITY PARTICIPATION

Richland County School District One strongly encourages Minority Participation in the bidding process. All businesses that are certified by the State of South Carolina as a Certified Minority Business must submit a copy of their certificate with their bid. Successful Bidder will be required to submit to the Program Manager, on a form provided, with each Application for Payment, a listing of all SWMBE subcontracts, whether certified or not.

23. PROTEST CLAUSE

Any actual or prospective bidder, offeror, contractor or subcontractor who is aggrieved in connection with the solicitation of a contract shall protest to the Chief Procurement Officer within fifteen (15) days of the date of issuance of the Invitation for Bids or Requests for Proposals or other solicitation documents, whichever is applicable, or any amendment thereto, if the amendment is at issue. Any actual or prospective bidder, offeror, contractor or subcontractor who is aggrieved in connection with the intended award or award of a contract shall protest to the Chief Procurement Officer within ten (10) days of the date of the notification of award posting in accordance with the Charleston County School District Procurement Code and Regulations.

END OF SECTION

SPECIAL CONDITIONS

GENERAL

Definition of Terms

1. The term "Architect/Engineer" refers to:

Jumper Carter Sease Architects
412 Meeting St,
West Columbia, SC 29169
2. The term "Owner" refers to:

Richland County School District One
3. The term "Contractor" refers to the prime contracting firms or person who, for a lump sum, fixed or wage, perform construction on the work included in the Plans and Specifications.

Location of Site

Richland One Waverley Administration Building, 1225 Oak Street, Columbia SC 29204

The work includes renovation of the existing RCSD1 TV STUDIO, located within the existing RCSD1 Administration Building at 1225 Oak Street, Columbia SC 29204. The renovation will include demolition of existing wall surfaces, demolition and removal of some items within the current space as shown on the demolition drawings; preparing and installing new acoustical wall covering over existing wood framed wall treatment. Painting of all spaces including dry fall of the existing acoustical ceiling system and pipe grid system; and other finishes as noted. Scope of work also includes, purchase and installation of new TV Sets as shown on the drawings A302. Completion of the work to be completed by December 15, 2025.

Time of Completion

It is the intent of the Owner to award the Contract and issue a Notice of Award if the bid is acceptable and is within the funds available for the project. Based on this, the Contractor shall commence work under this Contract within 7 days of the date of Notice to Proceed and achieve Overall Project Substantial Completion date of 120 calendar days from date of "Access to Site". Any change from this schedule must have written approval of the Owner.

Bidder expressly understand and agrees that the Owner may withhold Project liquidated damages for each consecutive calendar day thereafter the project remains incomplete in accordance with AIA Document A101 and AIA 201 SCOSE version with and addendum to refer OSE / SFAA / State of SC to the District, as outlined in Division 1 General Requirements, Section 017700 Closeout Procedures, Punch List and Deficiency List and Punchlist Liquidated Damages as also described therein.

Contractor's Construction Schedule

The Contractor shall submit to the Owner Project Manager and Architect a Construction schedule, as required in the AIA Document A232 -2019 General Conditions, within thirty (14) calendar days of the Notice to Proceed. No Pay Applications will be processed until the Contractor has delivered an acceptable Construction Schedule as outlined in Section 013201 Project Schedule and as required in the AIA Document A232 General Conditions.

Contractors Quality Control:

The Contractor shall establish a Quality Control Program for his work acceptable to the Owner's Project Manager and Architect and in accordance with the Contract Documents, and as outlined in Section 014500 Quality Control..

Contractors Supervision:

The Contractor shall have on-site for the duration of his work and at all times that work is being performed a competent representative, capable of the following:

1. Supervision of tradesmen and coordination of the work of subcontractors.
2. Reading and interpreting the Contract Documents.
3. Orderly coordination of this work with the Project Manager and Architect in the daily execution of the work.
4. Laying out his work.

The Contractor's Superintendent shall be the sole supervisor of the Contractor's Labor Force and shall be on site whenever work is being performed. He shall attend the regularly scheduled progress meetings on-site, keep himself and his company informed of scheduled requirements, safety hazards and general job conditions. He shall plan and pursue the work under his supervision in a professional and expeditious manner, in close coordination with the requirements of the Contractor's approved Construction Schedule.

The Contractors Superintendent shall maintain a written daily report/log of the progress of the work. This Log shall be kept at the jobsite, and made available to the A/E, Program Manager or Owner. A copy of the Contractors Daily Report/Log shall be delivered to the Program Manager by 11:00 AM the following work day. These reports shall contain as a minimum: Date, Day, Low and High Temperatures, Record of Precipitation, Quantity of the Contractors and Sub-Contractors personnel on site, A general description of work activities performed, Visitors, Deliveries, Inspections and any other comments that pertain to job progress. Receipt of Daily Reports shall be a prerequisite for approval of Monthly Progress Payments by the Program Manager.

The Contractor shall submit resume/qualifications of the Contractor's Superintendent within 7 days of Notice to Proceed and prior to the start of work on site, unless previously submitted.

Owner Approval of Subcontractors and Personnel

The Contractor shall not employ any subcontractor, superintendent or workmen whose employment on the project is objectionable to the Owner, Architect/Engineer or Project Manager.

The Contractor shall submit a list of all Subcontractors within 7 days of Notice to Proceed.

Contract Sublet, Assign and Transfer

The Contractor shall not sublet, assign or transfer this contract without written approval of the Owner.

Submittals

The Contractor shall submit for review by the Architect/ Engineer, Shop Drawings, and Schedules, required by the Contract Documents, individual Specification Sections, and as outlined in Section 013300 Submittal Procedures. No Pay Applications will be processed until the Contractor has provided a "Submittal Schedule" and acceptable submittal information.

All submittals shall be transmitted to the Program Manager for forwarding to the Architect/ Engineer for review based upon the Submittal Schedule which shall be prepared in conjunction with the Construction Schedule.

Initial Submittals required are as follows:

1. Prior to Mobilizing On-Site.
 - a. Insurance Certificates.
2. Following Notice to Proceed.
 - a. Labor and Material Payment bond (within 7 days after Contract execution by Owner and prior to mobilizing on site)
 - b. Performance Bond (within 7 days after Contract execution by Owner and prior to mobilizing on site)
 - c. Shop Drawing Submittal Schedule (within 10 days)
 - d. Schedule of Values (within 7 days)
 - e. Superintendent's and Quality Control Representative's Resume (within 7 days unless previously submitted)
 - f. Detailed Construction Schedule (within 10 days)
 - g. Subcontractors listing and Major Material Suppliers (within 7 days)
 - h. All required Submittals (within 14 days)
 - i. A letter accepting all project conditions prior to the start of work as required by Special Condition I. herein.

Project Closeout, Punch List, and Deficiency List

The Contractor shall complete all punch list and deficiency items, and submit all close out documents as outlined in Division 01 General Requirements, Section 017700 Closeout Procedures, Punch List and Deficiency List.

Pay applications will be held if all punch list items are not completed within 30 days of Substantial Completion. Retainage will continue to be withheld, and Final Payment will not be processed until all Closeout Documents, As Built and Record Drawings, Warranties and Guarantees and other items required for closeout are transmitted to the Project Manager.

Cleanliness

A particularly high standard of cleanliness will be rigidly enforced. The Contractor will be required to perform daily cleanup in accordance with paragraphs 3.15.1 and 3.15.2 of AIA Document AIA-232 – General Conditions, and as outlined in Section 014700, Cleaning.

Special Conditions

The following scope of work (and/or special conditions) is considered a part of the bid requirements for this project. All terms and conditions as outlined in the project plans, specifications and amendments shall apply.

1. The Waverly building is an occupied operational administrative staff building for the RCSD1.

2. Contractors must follow all RCSD1 Security Protocols while working on this site.
3. Construction activities must not impede the Owner's ability to carry out their daily operations.
4. Construction activities must not impede the fire lane, parking unless agreed upon by the Project Manager, or deliveries and entrances and exits of the building.
5. On-site parking for subcontractors will be coordinated by the Project Manager.
6. Contractor will be given an area of the existing parking lot for waste receptable and storage unit for the duration of the construction. After construction is complete, the contractor is to ensure existing condition on site are left in the same or better shape than before the construction began.
7. Contractor to schedule his work in accordance with all noise ordinances per the authority having jurisdiction.
8. The existing fire alarm system is functional and should not be altered for this renovation. Fire alarm devices must be protected during construction and be verified to be in working order after completion of the construction.

END OF SECTION

PART 1 - GENERAL

1.1 Related Documents

- 1.1.1 Furnish and install products specified under options and conditions for substitutions stated in this section and referred to in the General Conditions.

1.2 Products Lists

- 1.2.1 Within the bidding period for non-specified manufacturers of items specified by reference standards, submit to Architect for review five (5) copies of complete list of major products which are proposed for installation.
- 1.2.2 Tabulate products by specifications' section number and title.
- 1.2.3 For products only by reference standards, list for each product:
 - A. Name and address of manufacturer
 - B. Trade name
 - C. Model or catalog designation
 - D. Manufacturer's data:
 - 1) Reference standards
 - 2) Performance test data

1.3 Contractor's Options

- 1.3.1 For products specified only by reference standard, select product meeting that standard by any manufacturer.
- 1.3.2 For products specified by naming several products or manufacturers, select any one of the products and manufacturers named which complies with the specifications.
- 1.3.3 For products specified by naming several products or manufacturers and stating "or equivalent", "or equal," or "or approved equal" submit a request as for substitutions, for any product or manufacturer which is not specifically named.

1.4 Substitutions

- 1.4.1 Contractor's Base Bid shall be in strict accordance with the drawings and project manual. Contractor has the option of requesting substitutions during the bidding period by submitting completed substitution requests a minimum of ten (10) days prior to Bid Date or as described in Section 002113 Instruction to Bidders.
 - A. After the end of that period, requests will be considered only in case of product unavailability or other conditions beyond the control of the Contractor.

- B. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1) Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2) Agrees to provide the same warranty for the substitution as for the specified product.
 - 3) Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4) Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 5) Waives claims for additional costs or time extension that may subsequently become apparent.
 - 6) Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

1.4.2 Submit separate requests for each substitution. Support each request with the following:

- A. Complete data substantiating compliance of proposed substitution with requirements stated in contract documents:
 - 1) Product identification, including the manufacturer's name and address.
 - 2) Manufacturer's literature; identify:
 - a. Product description
 - b. Reference standards
 - c. Performance and test data
 - 3) Samples, as applicable.
 - 4) Name and address of similar projects on which product has been used, and date of each installation.
- B. Itemized comparison of the proposed substitution with product specified; list significant variations.
- C. Data relating to changes in construction schedule.
- D. Any effect of substitution on separate contracts.
- E. List of changes required in other work or products.
- F. Designation of required license fees or royalties.
- G. Designation of availability of maintenance services, sources of replacement materials.
- H. Details regarding any difference in cost.

1.4.3 Substitutions will not be considered for acceptance when:

- A. They are indicated or implied on shop drawings or product data submittals without formal request from Contractor.
- B. Acceptance will require substantial revision of contract documents.
- C. In the judgment of Architect/Engineer, do not include adequate information necessary for

a complete evaluation.

D. If requested after contract award directly by a trade Contractor, sub-contractor or supplier.

1.4.4 Substitute products shall not be ordered or installed without written acceptance of Architect/Engineer.

1.4.5 Architect/Engineer will determine acceptability of proposed substitutions.

1.5 Contractor's Representation

1.5.1 In making formal request for substitution, Contractor represents the following:

- A. He has investigated the proposed product and has determined that it is equivalent to or superior in all respects to that specified.
- B. He will provide same warranties or bonds for substitution as for product specified.
- C. He will coordinate installation of accepted substitution into the work, and make such changes as may be required for the work to be complete in all respects.
- D. He waives claims for additional costs caused by substitution which may subsequently become apparent.

1.6 Architect/Engineer Duties

1.6.1 Review Contractor's request for substitutions with reasonable promptness.

1.6.2 Notification to Contractor shall be in accordance with General Conditions.

1.7 Substitution Request Form

1.7.1 The Substitution Request Form follows this Section.

END OF SECTION

SUBSTITUTION REQUEST FORM

TO:

PROJECT:

We hereby submit for your consideration the following product instead of the specified item for the above project:

<u>Drawing</u>	<u>Spec. Sect. No.</u>	<u>Paragraph</u>	<u>Specified Item</u>
_____	_____	_____	_____

Proposed Substitution:

Attach complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Submit with request all necessary samples and substantiating data to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance.

Fill in blanks below:

A. Does the substitution affect dimensions shown on the Drawings?

Yes ____ No ____

If yes, clearly indicate the changes:

B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution? Yes ____ No ____

C. What effect does substitution have on other Contracts or other Trades?

D. What effect does substitution have on construction schedule?

E. Manufacturer's warranties of the proposed and specified items are:
Same ____ Different ____ (Explain on attachment.)

F. Reason for request:

G. Itemized comparison of specified item(s) with the proposed substitution; list significant variations:

H. Accurate cost data comparing proposed substitution with product specified:

I. Designation of maintenance services and sources:
(Attach additional sheets if required.)

CERTIFICATE OF EQUAL PERFORMANCE AND
ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

quality are equivalent or superior to the specified item.

Submitted By:

The undersigned states that the function, appearance and

Signature:

Title:

Firm:

Address:

Telephone:

Signature shall be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in rejection of proposed substitution.

For Use By Architect:

____ Accepted ____ Accepted as Noted

____ Not Accepted

____ Received Too Late

By:

Date:

Remarks:

FORM OF AGREEMENT AND GENERAL CONDITIONS

I. FORM OF AGREEMENT

The Form of Agreement between the Owner and Contractor shall be AIA 101 and 201 SCOSE version with an addendum to refer OSE / SFAA / State of SC to the District as amended, and is hereby made a part of these Documents.

II. GENERAL CONDITIONS

The "General Conditions of the Contract for Construction, Program Manager as Adviser Edition", American Institute of Architects (AIA) Document A232 – 2019 Edition as amended, is hereby made a part of these Documents.

END OF SECTION

Owner: Richland County School District One

Building Number: _____

Project Title: _____

Project Address: _____

Project Manual Date: _____

Date of Substantial Completion: _____

Know all men by these present that we, _____
(Contractor, Subcontractor, Material Supplier or Equipment Manufacturer)

having furnished labor, materials, equipment and/or supplies; installed new [Describe project components i.e. sheet rock, ACT, plumbing piping/fixture etc.] installed system and/or miscellaneous roof system components; from, to and/or on the above referenced Project under contract between the Owner and Contractor, warrant to Owner with respect to said work that no materials containing asbestos fibers or lead containing paint or plumbing fixtures were incorporated into the work, and that, to our knowledge and belief, no materials containing asbestos or lead remain in or are covered by the work

Exceptions: _____
If there are no exception, state "No Exception" here.

Signature: _____

Title: _____

_____ State
_____ County
I, _____, a Notary Public for _____ County, _____, do hereby certify that _____ personally appeared before me this day and acknowledged the due execution of the foregoing instrument Witness my hand and official seal, this _____ day of _____, 20____.
_____ Notary Public
(OFFICIAL SEAL)
My commission expires _____ 20____.

End of Section

- 1.0 GENERAL
- 1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract including General & Supplementary Conditions and other Division-1 specification sections, apply to work of this section.
- 1.2 SCOPE: This section describes the allowances that are to be included in the contractor's bid and entered on the Form of Proposal
- 1.3 ALLOWANCE: The following allowances to be used as directed by Architect. Any unused portion of these allowances shall be credited to the Owner at the completion of the work. These allowances shall be considered actual costs and the contractor's profit, insurance, taxes, installation cost, and protection of installed products, will be figured in the bids, except as otherwise noted.
- 1.4 TV SET DESIGN COMPONENTS:
\$80,000 - including Material, S.C. Sales Tax AND Installation of the movable TV SET DESIGN backdrops, desk and monitoring system, green screen and components required for the complete SET DESIGN SYSTEM.
- 1.5 CONTINGENCY (GENERAL CONTINGENCY to be used as deemed necessary by the Project Manager and architect):
\$10,000.00 - including Material, S.C. Sales Tax and Installation.

NOTE: Allowance money shall be used as directed by the Owner/Architect for the work list and/or other work as deemed necessary for a successful project by the Owner.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. NO EXTRA WORK SHALL BE PERFORMED WITHOUT FIRST RECEIVING WRITTEN APPROVAL FROM THE PROJECT MANAGER.
- B. Work included: Make such changes in the Work, in the Contract Sum, in the Contract Time of Completion, to any combination thereof, as are described in written Construction Change Directives or written Change Orders signed by the Owner, the Program Manager and the Architect and issued after execution of the Contract, in accordance with provisions of this Section.
- C. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to AIA 101 and 201 SCOSE version with an addendum to refer OSE / SFAA / State of SC to the District as amended, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Changes in the Work are described further in Article 7 and other articles of the General Conditions.

1.2 QUALITY ASSURANCE

- A. Include within the Contractor's quality assurance program such measures as are needed to assure familiarity of the Contractor's staff and employees with these procedures for processing Change Order data.

1.3 SUBMITTALS

- A. Make submittals directly to the Program Manager.
- B. Submit the number of copies called for under the various items listed in this Section along with appropriate back-up materials. Potential Change Orders will be submitted through PROCORE.

1.4 PROCESSING CHANGES INITIATED BY THE OWNER

- A. Should the Owner contemplate making a change in the Work or a change in the Contract Time of Completion, the Program Manager will issue a Proposed Change Order request or a Construction Change Directive to the Contractor.
 - 1. Proposed Change Order requests will describe the contemplated change and will request that the Contractor provide a detailed price and estimate of time that it seeks in the event the change is authorized by the Owner.
 - 2. Construction Change Directives will be dated and will be numbered in sequence.
 - 3. The Construction Change Directives will describe the contemplated change, and will carry one of the following instructions to the Contractor:
 - a. Make the described change in the Work at no change in the Contract Sum and no

change in the Contract Time of Completion in accordance with Paragraph 7.3 of the General Conditions.

- b. Make the described change in the Work, and provide for a credit or cost to be determined in accordance with Paragraph 7.3.7 of the General Conditions.
 - B. If the Contractor has been directed by the Program Manager to make the described change in the Work at no change in the Contract Sum and no change in the Contract Time of Completion, but the Contractor wishes to make a claim for one or both of such changes, the Contractor shall proceed with the change and shall notify the Program Manager as provided for under Article 15.1 of the General Conditions.
 - C. If the Contractor has been directed by the Program Manager to make the described change subject to later determination of cost or credit in accordance with Paragraph 7.3 of the General Conditions, the Contractor shall:
 1. Take such measures as needed to make the change;
 2. Consult with the Program Manager and/or Architect and reach agreement on the most appropriate method for determining credit or cost for the change.
 - D. If the Contractor has been directed by the Program Manager to promptly advise him as to credit or cost proposed for the described change, the Contractor shall:
 1. Analyze the described change and its impact on costs and time;
 2. Secure the required information and forward it to the Program Manager for review;
 3. Meet with the Program Manager and/or Architect as required to explain costs and, when appropriate, determine other acceptable ways to achieve the desired objective;
 4. Alert pertinent personnel and subcontractors as to the impending change and, to the maximum extent possible, avoid such work as would increase the Owner's cost for making the change, advising the Program Manager in writing when avoidance no longer is practicable.

1.5 PROCESSING CHANGES INITIATED BY THE CONTRACTOR

If the Contractor recommends a change in the Work, he shall submit a Proposed Change Order with detailed cost and time information as detailed below.

1.6 PROCESSING CHANGE ORDERS

CONTRACTOR'S ACTIONS

- A. Make written reply to the Program Manager in response to each Proposed Change Order request or Construction Change Directive.
 1. State proposed change in the Contract Sum, if any.
 2. State proposed change in the Contract Time of Completion, if any.

3. Clearly describe other changes in the Work required by the proposed change or desirable therewith, if any.
4. Include full backup data such as, subcontractor's letter of proposal or similar information.
5. Submit this response in a single copy.

PROGRAM MANAGER'S ACTIONS

- A. When cost or credit for the change has been agreed upon by the Owner and the Contractor, or the Owner has directed that cost or credit be determined in accordance with provisions of Paragraph 7.3 of the General Conditions, the Program Manager will issue a Change Order or Constructive Change Directive to the Contractor.
- B. Change Orders will be dated and will be numbered in sequence.
- C. The Change Order will describe the change or changes, will refer to the Construction Change Directive(s) involved, and will be signed by the Contractor, Owner, the Program Manager and the Architect.
- D. The Program Manager will issue four copies of each Change Order to the Contractor.
 1. The Contractor promptly shall sign all four copies and return all four (4) copies to the Program Manager for the Architect's signature.
 2. The Program Manager will sign and forward the four copies to the Architect for his signature.
 3. The Architect will sign all four copies and return four copies to the Construction Manager for the Owner's signature.
 4. The Owner will sign all four copies, retain one copy for his file and return the remaining three copies to the Program Manager who will then forward fully executed copies to the Contractor, Architect and the Office of School Facilities.
- E. Should the Contractor disagree with the stipulated change in Contract Sum, or change in Contract Time of Completion, or both:
 1. The Contractor promptly shall return four copies of the Change Order, unsigned by him, to the Program Manager with a letter signed by the Contractor describing the reason(s) for the Contractor's disagreement. Use PROCORE and via email as digital transfer.
 2. The Contractor's disagreement with the Change Order shall not in any way relieve the Contractor of his responsibility to proceed with the change as ordered under pertinent provisions of the Contract Documents.

END OF SECTION

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Comply with procedures described in this Section when applying for progress payment and final payment under the Contract.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, AIA Documents AIA 101 and 201 SCOSE version with an addendum to refer OSE / SFAA / State of SC to the District, as amended, General Conditions AIA 232-2019 Article 9, Supplementary Conditions and Sections in Division 1 of these Specifications.
 - 2. The Contract Sum and the schedule for payments are described in the Form of Agreement, AIA A132 as amended.
 - 3. Payments upon Substantial Completion and Completion of the Work are described in the AIA A232, General Conditions, as amended and in Division I of these Specifications, including - General Requirements – 017700 Execution and Closeout Procedures.
 - 4. The Program Manager's and Architect's approval of applications for progress payment and final payment is contingent upon the Program Manager's and Architect's approval of status of Project Record Documents pursuant to the requirements of Section 017839 and the AIA A232 General Conditions, as amended.
 - 5. The Program Manager's and Architect's approval of applications for progress payment is contingent upon receipt of Project Schedule updates, properly cost loaded if required, to be submitted along with each pay application as described in Section 013201 Project Schedule and the AIA A132 and A232, as amended.

1.2 QUALITY ASSURANCE

- A. Prior to approval of payment application Number One, secure the Program Manager's approval of the Project Schedule Section 013201, Submittal Schedule Section 013300 Submittal Procedures, and Schedule of Values Section 012973 of these Specifications.
- B. During progress of the Work, modify the Schedule of Values as approved by the Program Manager to reflect changes in the Contract Sum due to Change Orders or other modifications of the Contract.
- C. Base requests for payment on the approved Schedule of Values.
- D. Payment Application Times: Each progress payment date is as indicated in the Agreement. The period of construction Work covered by each Application or Payment is the period indicated in the Agreement.
- E. Application Preparation: complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Contractor. Incomplete applications will be returned without action.

1.3 SUBMITTALS

A. Formal Submittal: Unless otherwise directed by the Program Manager:

1. After review of the draft payment application by the Contractor, Program Manager and Architect, submit a formal submittal of the request for payment by filling in all appropriate information, by typewriter or neat lettering in ink, on AIA Document G702, "Application and Certificate for Payment", plus Continuation Sheets, AIA Document G703, using data from the Schedule of Values and the accompanying cost loaded schedule, if applicable. Submit other supporting documentation required by the Program Manager as detailed by the AIA A132 and A232 including, but not limited to lien waivers, Consent of Surety, etc.
2. Sign and notarize the Application and Certificate for Payment.
3. Unless instructed by the Program Manager to submit hard copies of pay applications, submit pay applications electronically via Procore.
 - a. If hard copies are to be submitted, all copies shall bear original signatures and original notarizations.
4. The Program Manager will review the formal submittal and, upon agreement, will distribute to Architect for Approval and Signature.
5. Request for Payment against any change order will not be honored until the change order is signed by all appropriate parties.

B. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect any Certificates of Partial Substantial Completion issued previously for Owner occupancy or designated portions of the Work.

Administrative actions and submittal that shall proceed or coincide with this application include:

1. Occupancy permits and similar approvals.
2. Warranties (guarantees) and maintenance agreements.
3. Test/adjust/balance records.
4. Maintenance instructions.
5. Start-up performance reports.
6. Change-over information related to Owner's occupancy, use operation and maintenance.
7. Final cleaning.
8. Application for reduction of retainage and consent of surety.
9. Advice on shifting insurance coverages and proof of the continuation of required insurance coverage.
10. Punch list of incomplete Work, recognized as exception to Architect's Certificate of Substantial Completion (area by area).
11. Change of door locks to Owner's access keys.
12. Satisfactory completion of training, commissioning, etc.
13. Any other items requested by the Program Manager including release of liens/claims from subcontractors/suppliers, etc.

- C. Final Payment Application: In conjunction with the requirements of administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. A final release which indicates no further claims will be submitted against this contract.
 4. Assurance that Work is complete.
 5. Transmittal of required Project Construction Records to Owner including all record documents.
 6. Proof that all taxes, fees and similar obligations have been paid.
 7. All required lien releases/waiver of claims from subcontractors, suppliers and other vendors.
 8. Consent of Surety.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.
- B. Related Work:
 - 1. Documents affecting work of this Section include but are not necessarily limited to AIA A132 and A232, as amended, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Schedule of Values is required to be compatible with the continuation sheet, accompanying applications for payment, as described in Section 012900 – Payment Procedures as well as schedule cost loading if required by Section 013201 – Project Schedule.

1.2 QUALITY ASSURANCE

- A. Use required means to assure arithmetical accuracy of the sums described.
- B. When so required by the Program Manager and/or Architect, provide copies of the subcontractor's Schedule of Values or other data acceptable to the Program Manager and/or Architect, substantiating the sums described.

1.3 SUBMITTALS

- A. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed for each construction phase:
 - a. Generic name.
 - b. Related Specification Section.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Dollar value.
 - g. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items. Follow Primavera P6 schedule along the monthly activities, phases and associated milestones.
 4. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.
 5. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work. Proof of storage must have images and stored in bonded secured location.
 6. Allowances: Show line item value of each allowance noted in Section 012100 Allowances.
 7. Overhead Coordination Drawings: Provide a line item value for Overhead Coordination Drawings.
 8. Margins of Cost: Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in Applications for Payment. Each item shall be complete including its total cost and proportionate share of general overhead and profit margin.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place shall be shown as separate line items in the Schedule of Values.
 9. Schedule Updating: Update the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum.
- B. Prior to first application for payment, submit a proposed schedule of values to the Program Manager.
1. Meet with the Project Manager and determine additional data, if any required to be submitted.
 2. Secure the Project Manager's approval of the schedule of values prior to submitting first application for payment. NO APPLICATIONS FOR PAYMENT WILL BE PROCESSED PRIOR TO APPROVAL OF THE SCHEDULE OF VALUES, as well as other submittals required by contract to accompany payment applications.
 3. AIA Form G703 and "Form A" shall be submitted with all columns and spaces completed.

END OF SECTION

**NEW ELEMENTARY & PRIMARY AT LAMBS CAMPUS
SECTION 013119**

PROJECT MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Various project meetings will be conducted throughout the construction period to enable orderly review during progress of the Work, to provide for systematic discussion of problems, to provide for efficient dispute resolution and to coordinate all phases of the Project toward completion in accordance with the Contract Documents. DUE TO THE LIMITED CONSTRUCTION TIME FRAME, OAC MEETINGS WILL BE SCHEDULED WEEKLY WITH THE APPROVAL OF THE PROJECT MANAGER AND ARCHITECT
- B. This Section specifies administrative and procedural requirements for project meetings including, but not limited to:
 - a. Pre-construction conferences.
 - b. Weekly Project meetings.
 - c. Quality Control Meetings.
 - d. Pre-installation conferences.
 - e. Informal jobsite meetings (no minutes required)

1.2 QUALITY ASSURANCE

- A. Each person designated by the Contractor to attend and participate in these project meetings must have proper authority to commit the Contractor to actions agreed upon in the project meetings. Any change in personnel by a Contractor will be forwarded in writing to the Program Manager prior to the change.

1.3 SUBMITTALS

- A. Agenda Items: To the maximum extent practicable, advise the Project Manager and Architect/Engineer in writing at least 24 hours in advance of project meetings of agenda items proposed by the Contractor.
- B. Minutes:
 - 1. Unless indicated otherwise, the architect will compile minutes for Pre-construction conference, Weekly Project Meetings and will furnish one copy to the Contractor, Architect/Engineer(s) and required copies to the Owner. The Contractor may make and distribute such other copies as appropriate.
 - 2. The Contractor's Quality Control Officer will compile minutes for Quality Control Meetings and Pre-installation Meetings. The QC Officer will furnish one copy to the Program Manager and Architect.

PART 2 - PRODUCTS

(No products are required in this Section)

**NEW ELEMENTARY & PRIMARY AT LAMBS CAMPUS
SECTION 013119**

PROJECT MEETINGS

PART 3 - EXECUTION

3.1 MEETING SCHEDULE

- A. The preconstruction conference will be held prior to the start of work on site and within 15 working days of the Notice to Proceed.
- B. Informal job site meetings with on-site job superintendents will be held daily or on an as needed basis. Contractor safety meetings will be held on a weekly basis, at a minimum.
- C. Formal project meetings with attendance of the Prime Contractor's office Project Manager and Superintendent will be held weekly.
- D. Pre-installation and other quality control meetings will be held as requested by the Program Manager or Contractor prior to installation of specific items or as required by the contract specifications.
- E. Coordination meetings will be held as requested by the Project Manager or Contractor prior to any project work requiring coordination with the Owner, Contractor, subcontractors, governmental agencies or suppliers of specific items or as required by the contract specifications.
- F. Dispute Resolution Board meetings shall be held as requested by the parties to the Contract. Members of the DRB will attend all monthly Executive Briefings.
- G. Coordinate as necessary to establish a mutually acceptable schedule for all meetings.

3.2 MEETING LOCATION

- A. The OAC meetings will be held at the job site. Architect must be present during Pre-Construction Meeting, Weekly Project Meeting

3.3 PRECONSTRUCTION MEETING

- A. A Preconstruction Meeting will be scheduled to be held within 15 working days after the Owner has issued the Notice to Proceed.
 - 1. Provide attendance by authorized representatives of the Prime Contractor and major subcontractors, at the Contractor's discretion.
 - 2. The Program Manager will advise other interested parties, including the Owner, Architect and request their attendance, as necessary.
- B. Minimum Agenda: Data will be distributed and discussed on at least the following items:
 - 1. Organizational arrangement of Prime Contractor's forces and personnel, and identification of major subcontractors, material suppliers, Program Manager, and Architect.
 - 2. Channels and procedures for communication.
 - 3. Construction schedule, including sequence of critical work.

PROJECT MEETINGS

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**NEW ELEMENTARY & PRIMARY AT LAMBS CAMPUS
SECTION 013119**

PROJECT MEETINGS

4. Contract Documents, including distribution of required copies of original Documents and revisions.
5. Generation and review of Submittal Registry, Processing of Submittals, Shop Drawings and other data submitted to the Program Manager for transmittal to Architect for review.
6. Processing of Bulletins, field decisions, CCDs, Change Orders, and Payment Applications.
7. Rules and regulations governing performance of the Work;
8. Procedures for safety and first aid, security, quality control, housekeeping and related matters.
9. Preparation of record drawings.
10. Use of the premises.
11. Office, work and storage areas.
12. Equipment deliveries and priorities.
13. Working hours.
14. Request for Information format.
15. Notification of Defective and Non-Conforming Work format.
16. Rejection of Work format.
17. Inspection Procedures
18. Quality Control
19. Procure

3.4 PROJECT MEETINGS

A. Attendance:

1. To the maximum extent practicable, assign the same person or persons to represent the Prime Contractor at project meetings throughout progress of the Work. PM, Superintendent, QA Rep, Program Manager, Program Site Rep, Architect must attend in person.
2. Conduct progress meetings at the Project site on a weekly basis, or more frequently if necessary. Notify the Program Manager and Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.
3. Attendees: In addition to representatives of the Owner and Architect, each subcontractor,

PROJECT MEETINGS

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**NEW ELEMENTARY & PRIMARY AT LAMBS CAMPUS
SECTION 013119**

PROJECT MEETINGS

supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at the meetings by persons familiar with the Project and authorized to conclude matters relating to progress.

B. Minimum Agenda:

1. Review, revise as necessary, and approve minutes of previous meetings.
2. Review progress of the Work since last meeting, including status of submittals for approval. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Review Two-Week Look Ahead of upcoming activities. Review of Project Superintendent and Quality Control Manager's daily reports since the last Project Meeting.
3. Identify problems that impede planned progress.
4. Develop corrective measures and procedures to regain planned schedule.
5. Complete other current business.
6. Review Quality and work standards, updated as-built documents, and record documents as required.
7. Schedule Updating: Revise the "look ahead" construction schedule after each progress meeting where revisions to the schedule have been made or recognized. The Contractor shall issue the revised "look ahead" schedule concurrently with the report of each meeting.
8. Review the present and future needs of each entity present, including such items as:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Deliveries
 - e. Off-site fabrication problems.
 - f. Access.
 - g. Site utilization.
 - h. Temporary facilities and services.
 - i. Hours of work.
 - j. Hazards and risks.
 - k. Cleaning and site conditions.
 - l. Change Orders.
 - m. Documentation of information for payment requests.
 - n. Critical submittals.
 - o. Critical RFI's.
 - p. Quality Control

C. Revisions to minutes:

PROJECT MEETINGS

013119

**NEW ELEMENTARY & PRIMARY AT LAMBS CAMPUS
SECTION 013119**

PROJECT MEETINGS

1. Unless published minutes are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.
 2. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.
 3. Challenge to minutes shall be settled as priority portion of "old business" at the next regularly scheduled meeting.
- D. Reporting: No later than three (3) days after each progress meeting date, the Program Manager will distribute copies of minutes of the meeting to the Contractor, Architect/Engineer(s), and Owner.

END OF SECTION

1.0 GENERAL

The Contractor shall prepare, maintain and update a schedule prepared using only, Primavera Project Planner Software by Primavera Systems, Inc. (P6) or equivalent system as a means of project control and decision making for the project. The Schedule shall be prepared in such a manner as to permit the orderly planning, organization and execution, to avoid conflict and ensure the orderly progress of work. The schedule shall be sufficiently detailed to accurately depict all the work required by the Contract. The schedule shall be updated and revised as necessary no less than monthly and shall accurately reflect and report the actual performance and progress of the work in accordance with Section 013201 Project Schedule.

1.1 SUBMITTALS

The following shall be submitted in accordance with the paragraph herein titled "Submittal Procedures," Section 7.0 SCHEDULE SUBMISSION, and as required in Article 3.10 of the General Conditions of the Contract for Construction AIA Document A232 – 2019 as amended, and Division I Sections.

1.1.1 Schedules

- a. P6 Project Schedule (Target Schedule).
- b. Monthly Schedule Updates to coincide with Pay App submission.
- c. Look ahead Schedules as required by the Project Manager

1.2 QUALIFICATIONS

In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. The Scheduler shall have previously developed, created and maintained at least 5 previous computerized schedules of similar size and complexity of this contract. A resume outlining the qualifications of the Scheduler shall be submitted for acceptance by the Program Manager. If at a later date, the Program Manager, with concurrence of the Owner, notifies the Contractor that the Contractor's Scheduler is objectionable, the Contractor will propose a new Scheduler in writing, meeting the qualification requirements. Payments will not be processed until an acceptable Scheduler is provided.

2.0 EXECUTION

2.1 GENERAL

Pursuant to the requirements of the Contract Documents, a Project schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development and maintenance.

Subcontractors and suppliers working on the project should also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used for project management and Coordination, to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis for all progress payments.

2.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring contractor progress. Lack of an approved schedule shall result in the inability of the Program Manager and Architect to evaluate the Contractor's progress for the purpose of

payment. The Contractor shall provide the necessary schedule and cost reports for review and agreement of invoice quantities. No progress payments will be made until the schedule and other documents as required have been approved by the Program Manager.

2.2.1 PAYMENT

Each pay application should correlate to the latest schedule update. No pay applications will be processed without the schedule update as well as other required submittals.

3.0 PRELIMINARY MEETING

The Program Manager will request a preliminary meeting to discuss the proposed schedule requirements prior to submission of the schedule.

4.0 PROJECT SCHEDULE

4.1 PROJECT SCHEDULE REQUIREMENTS

4.2.1 Critical Sequence

The project critical path shall provide a realistic and uninterrupted sequence of activities to achieve project completion in a timely manner as required by the Contract Documents.

4.2.2 Constructability

The project schedule must represent a realistic sequence of construction activities. The schedule must reflect work completed when submitting it during pay applications.

4.3 SCHEDULE REQUIREMENTS

The project schedule shall include an appropriate level of detail. Failure to develop or update the Project schedule or provide data to the Program Manager at the appropriate level of detail, as specified by the Program Manager, shall result in the disapproval of the schedule.

Failure by the Contractor to include any element of work required for performance of the Contract shall not excuse the Contractor from completing the Work within the Contract Time and/or any Contract Milestone Date.

Seasonal weather conditions will not be considered in this project

4.3.1 Activity Durations

Contractor submission shall use reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (all non-procurement activities original durations shall be 20 work days or less).

4.3.2 Submittal and Material Procurement Activities

In addition to construction activities, the schedule shall include the submittal and approval of materials, samples, and shop drawings, the procurement of critical and long lead-time materials and equipment. Schedule submittal activities shall allow sufficient time for material to be procured and installed even if the submittal is unacceptable, and re-submittal is required.

Coordinate transmittals of different types of submittals for related elements of the work so processing will not be delayed by need to review submittals concurrently for coordination.

4.3.3 Owner Activities

Owner and other agency activities shall be shown. These activities include, but are not limited to, approvals, inspections, owner furnished equipment. A minimum of a ten (10) work day duration will be allowed for processing, approval and return of submittal, samples and shop drawings where approval is required.

4.3.4 Administrative Activities

The Contractor shall include a level of activity detail to adhere to required administrative procedures, but not limited to, preparing schedules, safety plans, permits, inspections/surveys, installing and removing temporary facilities/utilities, pre-installation meetings, pour notifications, start-up/testing, Sub Contractor/Project closeout, and training of personnel.

4.3.5 Project Milestones

Project milestones shall be included in the schedule to indicate key project and construction milestones including interim completion, final completion and construction assigned milestones. Phase completion dates, if contained in this contract, must be included as project milestones.

4.3.6 Contract Specifications

The project Schedule shall include a level of activity detail to adhere to contract specifications (i.e. permit, notification, specified sequence of work, cure times, and required test and inspection points.)

4.4 SCHEDULE PROJECT COMPLETION

The schedule interval shall extend from the Notice to Proceed to the Contract Completion date.

4.5 SCHEDULE LOGIC

The schedule logic shall indicate a level of interdependency to indicate how the completion of one activity initiates the start of succeeding activities.

4.5.1 Negative Lags

Lag durations contained in the project schedule shall not have negative value.

4.5.2 Activities Ties

As a minimum, all activities with the exception of the start milestone and final completion milestone must have at a minimum one proceeding relationship tie and one succeeding relationship tie.

4.6 Cost Loading

The schedule shall be cost loaded, and meet the following criteria:

- a. Cost loaded schedule must correlate with the Schedule of Values.
- b. All construction activities shall be cost loaded and represent realistic costs and be consistent throughout the schedule.
- c. Include receipt of material with estimated procurement cost for major items for which payment of material will be requested.

4.7 ACTIVITY CODING

At a minimum, all activities will be coded to identified activity type, work area, phase, work type and responsibility. The assigned code structure must be incorporated into the schedule along with any other coding that the contractor deems necessary.

4.8 ACTIVITY CALENDARS AND WORK PERIODS

The Project Schedule shall indicate the contractor's intended work schedule.

4.9 SCHEDULE ABBREVIATIONS

The contractor shall clearly explain abbreviations used in the CPM schedule in a legend of symbols either separate or attached to the schedule.

5.0 PROJECT SCHEDULE SUBMISSION AND APPROVAL

The Contractor shall provide the submissions as described below. The data disk, program, reports, and network diagrams required for each submission are contained in Section 7.0 SCHEDULE SUBMISSION.

5.2 PROJECT SCHEDULE

The Project Schedule shall be submitted for approval within thirty (30) calendar days after Notice to Proceed. The schedule shall provide reasonable sequence of activities that represent work through the entire project and shall be at a reasonable level of detail.

5.2.1 Review and Evaluation

The Contractor shall participate in a meeting to discuss, review and evaluate the proposed schedule and reports with the Project Manager. Revisions necessary as a result of this review shall be resubmitted for approval by the Project Manager within seven Calendar days after the Conference. Allow seven days for the Program Manager review.

5.2.2 Approved Schedule

Once the Project Manager approves the schedule, the schedule will then be considered "frozen" and then be classified as the "target schedule." The target schedule will be the baseline to analyze all changes. The

approved schedule shall then be the schedule to be used by the Contractor for planning, organizing and directing the work, reporting the progress and requesting payment for work accomplished.

Upon establishment of a Target schedule, the Contractor shall sign on the face of the Construction Schedule documents, which shall then indicate the Contractor's acceptance and approval of the Construction Schedule.

Acceptance by the Owner of the Contractor's Construction Schedule will be a condition precedent to the making of any progress payments under the Contract. The Owner will notify the Contractor in writing of acceptance of the Construction Schedule.

5.3 SCHEDULE UPDATES

Once the schedule is approved, the monthly schedule update will begin within 30 days.

5.3.1 Pay Application

Schedule updates shall be submitted with each pay application.

5.3.2 Progress Reporting

The Contractor and the Contractor's Scheduler must, at a minimum, attend monthly progress meetings to report project schedule status and upcoming work status.

6.0 SCHEDULE UPDATES

The Contractor shall submit schedule updates every month through project completion. These submissions shall enable the Program Manager to assess Contractors progress. If the Contractor fails or refuses to furnish the information and project schedule data, which, in the judgment of the Program Manager and/or Architect, is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided adequate information upon which progress payment may be made.

6.2 PROJECT COMPLETION

Project completion and interim completions shall be easily identified and based on early completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path.

6.2.1 Late Completions

If negative float exists and is over 14 calendar days, then a recovery schedule will be prepared to reflect how the contractor intends to recover the lost time per Section 6.5 RECOVERY SCHEDULE. Payment requests may be reduced or withheld until CPM schedule is brought back into compliance with contract requirements.

6.3 OUT OF SEQUENCE PROGRESS

Activities that have posted progress without predecessors being completed (Out-of-Sequence Progress) will be allowed only on a case-by-case approval by the Program Manager. The Program Manager may direct that changes in schedule logic be made to correct any or all out-of-sequence work.

6.4 SCHEDULE REVISIONS

If a major change in scope of work, sequencing means or methods or some other factor that makes the baseline schedule obsolete occurs, the Contractor shall submit the revised plan for the approval of the Project Manager. If schedule changes are required (i.e. activities added, durations changed, sequences changed) the Project Manager shall be notified in writing stating the schedule revisions and the reasons for change. The Project Manager considers these changes to be of a major nature, the Contractor may be required to revise and resubmit for approval, without additional cost to the Owner. Upon approval, the revised schedule will be considered the new baseline to which future analysis will be performed.

6.5 RECOVERY SCHEDULE

Whenever the Contractor fails to achieve a milestone established in the Contract Schedule, or the Contractor's progress is not commensurate with that required to adhere to the contract time or milestones, the Contractor shall promptly undertake appropriate action at no additional cost to the Owner to recover the CPM Schedule.

The Contractor shall submit with the next application for payment a written recovery statement to the Program Manager describing the cause for slippage and the action planned by the Contractor to recover the Schedule.

The Contractor's failure or neglect to take appropriate recovery action and to submit a written recovery statement shall constitute reasonable evidence that the Contractor is not executing the work, or separate part of the work, with a diligence that will insure its completion within the applicable contract time. The Program Manager shall constitute this as the basis to recommend the withholding an appropriate amount of any payment otherwise due and may recommend that the Owner order the Contractor to take "Extraordinary Measures" which are detailed as follows: In the event the Owner determines that the performance of the Work has not progressed or reached the level of completion required by the Contract Documents, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation, (1) working additional shifts or overtime; (2) supplying additional manpower, equipment, and facilities; and (3) other similar measures (referred to collectively as "Extraordinary Measures"). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule. The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Extraordinary Measures required by the Owner.

7.0 SCHEDULE SUBMISSION

The contractor shall submit Reports, Diagrams and Charts with all project schedules and updated schedules in accordance with the submission section requirements. The Contractor shall include on all reports and graphics the Project Title, Contractor Name, Update Number, Revision Number and Date.

7.2 ELECTRONIC FILE SUBMISSION

One export file containing the project schedule shall be provided with all schedule submissions. Submission should include a schedule in pdf format as well as a critical path schedule in .pdf format as well.

7.2.3 File Name

Each File submitted shall have a name related to the project name and version number. The contractor shall develop a naming convention that will ensure that the names of the files submitted are unique and indicate sequence of submittal.

7.3 SCHEDULE REPORTS

7.3.1 Activity Data

The computer-generated schedule reports shall include a tabulation of each activity shown on the detailed network diagram. The format for each activity for the schedule reports listed below shall contain the following information as a minimum:

- a. Activity Numbers
- b. Activity Description
- c. Original duration
- d. Remaining Duration
- e. Early Start Date
- f. Early Finish Date
- g. Percentage Complete
- h. Total float
- i. Responsibility Code
- j. Budget amount of activity
- k. Contractor's earnings based on portion of activity completed
- l. Actual Start and Finish dates shall be printed for those activities in progress or completed.

END OF SECTION

1.0 GENERAL

- A. The Contractor shall submit for review by the Architect/Engineer, Shop Drawings manufacturer's data, samples, schedules and other submittals required by the Specifications, or that may be requested by the Architect/Engineer, and no work shall be fabricated by the Contractor, except at his own risk, until such review has been completed.

1.1 FORM OF SUBMISSION MATERIALS

A. SHOP DRAWING SCHEDULE

1. Within ten (10) days after date of Notice to Proceed, Contractor shall submit to the ARCHITECT a Shop Drawing Submittal Schedule, which shall include the following minimum information:
 - a. List all items to be submitted for review referenced to the specific specifications section.
 - b. Name of subcontractor if applicable.
 - c. Supplier and date of purchase order.
 - d. Total fabrication and delivery time from time submittals are returned to the Contractor.
 - e. Scheduled delivery date.
 - f. The Submittal Schedule shall reflect all installation dates. This will require that sufficient lead time be allowed to address an adequate review period, securing necessary approvals, possible revisions and re-submittals, placing orders and securing delivery dates.
 - g. The Submittal Schedule shall use PROCORE submittal registry builder and process SPECIFICATION DOCUMENTS direct through PROCORE registry builder. The registry will be reviewed by Architect and Program Manager.

(NOTE): No applications for payment will be processed unless the above listed information has been submitted. The initial Shop Drawing Schedule must be approved by the District Program Manager and Architect prior to the first progress payment. Further this shop drawing schedule must be updated monthly and submitted with the Contractor's monthly application for payment. This is in addition to the requirement for monthly project schedule updates.

B. SHOP DRAWINGS

1. Scale and Measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work.
2. Submit all Shop Drawings electronically through Procore for review by the Program Manager and the Architect.

3. After review comments have been received, the Contractor is to provide "Field Use" drawings incorporating all review comments.

C. MANUFACTURER'S LITERATURE

1. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.

D. SAMPLES

1. Provide Sample or Samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.
2. Number of Samples required:
 - a. Unless otherwise specified, submit samples in the quantity which is required to be returned, plus two which will be retained by the Architect and Program Manager.
 - b. By prearrangement in specific cases, a single sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Architect.

E. COLORS AND PATTERNS

1. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Architect for selection.

1.2 SUBMISSION PROCEDURE

A. IDENTIFICATION OF SUBMITTALS

1. Multiple submittals on a single transmittal are **not acceptable**. Accompany each submittal with a letter of transmittal showing all information required for identification and checking. Submitted files for review **MUST BE ENTITLED BY THE SPECIFICATION DIVISION AND BOOKMARKED FOR REVIEW. ANY SUBMITTAL OVER 10 PAGES AND NOT BOOKMARKED WILL BE REJECTED WITHOUT REVIEW.**
2. Consecutively number all submittals.
 - a. When material is resubmitted for any reason, transmit with the original number and sequential alphabetic suffix.
3. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
4. Maintain an accurate submittal log for duration of the Work, showing current status of all submittals at all times. Make the submittal log available to the Architect and Program Manager for their review, upon request. PROCORE shall be used to track submittal current status. Program manager will generate routing scheme.

B. GROUPING OF SUBMITTALS

1. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
 - a. Partial submittals will be rejected as not complying with the provisions of the Contract.

C. CHECKING SUBMITTALS PRIOR TO SUBMISSION

1. Prior to each submittal, **GC MUST** carefully review and coordinate all aspects of each item being submitted. Architect will review and label submittals as APPROVED, APPROVED AS NOTED, REVISE and RESUBMIT or REJECTED. Program manager will REVIEW FOR RECORD. Program Manager will have 48 hours to review submittal.
2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
3. The drawings submitted shall be marked with the name of the project, **NUMBERED WITH FILE TITLE OF THE SPECIFICATION SECTION BEING SUBMITTED** and bear the signed and dated stamp of the approval of that Contractor as evidence that the drawings have been checked by the Contractor. Any drawings submitted without this stamp of approval will not be considered and will be returned to the Contractor for re-submission. If the shop drawings show variation from the requirements of the Contract because of standard shop practice or with reasons, the Contractor shall make specific mention of such variations in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment; otherwise, that Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract even though such shop drawings have been approved.

D. DELIVERY AND TIMING OF SUBMITTALS

1. A submittal registry shall be transmitted electronically to the Program Manager for forwarding to the Architect/Engineer for review within sixty (60) days after the Notice to Proceed. Any variance to this shall be noted in the Contractor's Submittal Schedule
2. In scheduling, allow at least fifteen (15) calendar days for review by the Architect following their receipt of the submittal.
2. Make all submittals far enough in advance to schedule dates for installation, to provide time for required reviews, for securing necessary approvals, for revisions for re-submittals, and for placing orders and securing delivery.

E. ARCHITECT'S REVIEW

1. Review by the Architect does not relieve the Contractor from responsibility for errors which may exist in the submitted data.
2. The review of Shop Drawings will be general and shall not be construed as:

- a. Permitting any departure from the Contract Requirements.
 - b. Relieving the Contractor of the responsibility for any error in details, dimensions or otherwise that may exist.
 - c. Approving departures from additional details or instruction previously furnished by the Architect/Engineer.
3. Revisions:
 - a. Make revisions required by the Architect.
 - b. If the Contractor considers any required revisions to be a change, he shall notify the Program Manager and/or Architect as provided for in the General Conditions.
 - c. Make only those revisions directed or approved by the Architect.
4. If a drawing, as submitted, indicates a departure from the Contract requirements which the Architect/Engineer finds to be in the interest of the Owner and to be minor as not to involve a change in the Contract Price or time for performance, the Architect/Engineer may approve the drawing.

F. FINAL DISTRIBUTION OF SUBMITTALS

1. Reviewed submittals shall be distributed to the Program Manager and Architect via Procore. The Contractor shall be responsible for the distribution of the Shop Drawings and schedules within his own organization and to his Subcontractors.
2. The Contractor shall maintain at the site one record copy of all approved Shop Drawings, Product Data, Samples, and FOR FIELD USE Drawings. These shall be available to the Program Manager, Architect, Third Party Inspectors, and Commissioning Agents. These records shall be delivered to the Program Manager for submittal to the Owner at the end of Work.
3. The Contractor will advise the Program Manager of the date that reviewed shop drawings are forwarded to the manufacturers or fabricators. Un-priced copies of purchase orders placed with suppliers or fabricators are to be forwarded to the Program Manager when orders are placed.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. This section describes the requirements for the Electronic Project Management System (EPMS), Procore.

1.2 RELATED DOCUMENTS

- 1.3 AIA 101 and 201 SCOSE version with an addendum to refer OSE / SFAA / State of SC to the District as amended, and AIA A232 (2009) General Conditions of the Contract for Construction, as amended SCOPE.

- A. The Contractor will implement the internet/web site Electronic Project Management System (EPMS), Procore for the project and provide information to the owner and architect via Procore. A high-speed internet connection is required. In general, Procore will receive input, provide viewing and printing of various documents (which may include drawings and technical information) and be a central repository for information to all project team members.

- B. The Procore web site will be provided by the Contractor. Contractor will be required to obtain necessary licenses and have a high-speed internet connection.

- C. Procore will be designed to inform team members regarding new or updated documents. The following plus any other items determined during setup shall be entered and tracked online:

1. Request for Information (RFI)
2. Supplemental Instructions
3. Submittals / Shop drawings
4. Proposed Change Orders (PCO)
5. Change Orders and log
6. Pay Requests
7. Reports (daily, monthly, etc.)
8. Schedules with monthly updates as per pay apps and if up dates are required.
9. Special Inspections
10. Closeout procedures (punch list, warranty)

- D. Email is expected to be a primary communications tool between Architect and project team members who upload information to Procore.

1. In an effort to protect proprietary information and prohibit unauthorized use or modifications, levels of access security will be assigned by Project Manager. Prints of drawings and the associated costs for reproduction and distribution by the Architect is not part of the Work.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.1 TRAINING

- A. One training session by Procore to the team members at the beginning of the EPMS implementation will be provided.

3.2 SUPPORT

- A. Will be available to all project team members.

3.3 OPERATION

- A. Contractor shall maintain a Windows-based computer system including high speed internet access and ability to create/mark-up documents using Adobe Acrobat (pdf) and to scan documents. Procore shall maintain the EPMS server and back-up the information.

3.4 DURATION

- A. PROCORE Web site will be active during the construction. Owner will have option to continue to use the web site after the completion of the project.

3.5 ARCHIVE

- A. All files on the web site will be archived at the end of the project. These archives will be made available to the Contractor for download over the internet, at their expense/labor.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Throughout the Project Documents, reference is made to specifications and standards issued by nationally recognized professional and/or trade organizations.
1. Unless otherwise specifically stated, all manufacturer's catalogs, specifications, instructions or other information or literature that are referred to in the specifications shall be considered as the latest edition and/or revision of such publication that is in effect on the date of the Invitation or Advertisement for Bids.
 2. When standard specifications such as the American Society for Testing and Materials, Federal specifications, Department of Commerce (Commercial Standards), American Institute of Steel Construction, or other well-known public or trade associations, are cited as a standard to govern materials and/or workmanship, such specifications or portions thereof as referred to shall be equally as binding and have the full force and effect as though it were copied into these specifications. Such standards as are mentioned are generally recognized by and available to the trades concerned. The Program Manager will, however, upon request of a bidder or Contractor, furnish for inspection a copy of any standard specifications mentioned or direct the bidder or Contractor to an easily available copy. Unless otherwise specifically stated, the standard specifications referred to shall be considered as the latest edition and/or revision of such specifications that is in effect on the date of the Invitation for Bids. In case of any conflicts between standard specifications and the written portion of the Specifications, the specifications as actually written herein will govern.
 3. The referenced standards are generally identified by abbreviating the name of the organization following with the specification/standard number.
 4. Unless specifically indicated otherwise, all references to standards refer to the latest edition available at the time of bidding.

1.2 ABBREVIATIONS

- A. Wherever the following abbreviations are used in these Project Documents, they are to be construed the same as the respective expressions represented:

AASHO	American Association of State Highway Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AGA	American Gas Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALS	American Lumber Standards

ANSI	American National Standards Institute, Inc.
APA	American Plywood Association

ARI	Air Conditioning and Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASTM	American Society for Testing Materials
AWI	Architectural Woodwork Institute
AWWA	American Water Works Association
AWPA	American Wood Preservers Association
AWS	American Welding Society
BIA	Brick Institute of America
CE	Corps of Engineers
CISPI	Cast Iron Soil Pipe Institute
CRSI	Concrete Reinforcing Steel Institute
CTI	Ceramic Tile Institute of America
DOT	Department of Transportation
EPA	Environmental Protection Agency
FSS	Federal Specifications and Standards, General Services Administration
GA	Gypsum Association
IEEE	Institute of Electrical and Electronics Engineers
MBMA	Metal Building Manufacturer's Association
MCAA	Mechanical Contractors Association of America
MFMA	Marble Flooring Manufacturers Association
MIA	Marble Institute of America
ML/SFA	Metal Lath/Steel Framing Association
NAAMM	National Association of Architectural Metal Manufacturers
NAPA	National Asphalt Pavement Association
NBHA	National Builders Hardware Association
NCMA	National Concrete Masonry Association
NEC	National Electric Code (Now NFPA)
NECA	National Electrical Contractors Association
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
NPCA	National Paint and Coating Association
NRCA	National Roofing Contractors Association
NTMA	National Terrazzo and Mosaic Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
SDI	Steel Deck Institute
S.D.I.	Steel Door Institute
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SSPC	Steel Structures Painting Council
TCA	Tile Council of America, Inc.
UL	Underwriters Laboratories, Inc.

END OF SECTION

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Quality control of products and workmanship.
- B. Manufacturer's instructions.
- C. Manufacturer's certificates and field services.
- D. Mockups.

1.2 RELATED REQUIREMENTS

- A. AIA A132 and A232, as amended
- B. Division 00 – Procurement and Contracting Requirements
- C. Division 01 – General Requirements
- D. Section 013201 – Project Schedule
- E. Section 013301 – Electronic Project Management System (EPMS), Procore
- F. Section 013300 – Submittals Procedures: Submittal of manufacturer's instructions.
- G. Section 014529 – Testing Laboratory Services
- H. Section 014533 – Collective Inspections and Structural Testing
- I. Section 014700 – Cleaning
- J. Section 016600 – Product Storage and Handling Requirements
- K. Section 019113 – General Commissioning Requirements
- L. Individual Specification Sections – Quality requirements and Mock-ups required

1.3 DESCRIPTION / SUBMITTALS

- A. Maintain quality control over supervision, subcontractors, suppliers, manufacturers, products, services, workmanship, handling & storage, inspections, and site conditions to produce Work in accordance with Contract Documents.
- B. The Contractor is required to HAVE AND DISCUSS a “Quality Control Plan” for this project with the architect and owner project manager prior to the start of demolition and prior to the processing of the first Application for Payment.

The Contractor's QC Plan should include, but not limited to the following:

1. Identify the Contractor's Quality Control Officer and provide qualifications.
2. Prepare weekly QC reports addressing the quality aspects of the project work being performed by Subcontractors and the Contractor's forces.
3. Develop Logs and Checklist to monitor the detailed quality assurance requirements listed in individual specifications.
4. Review specifications, drawings, shop drawings, and submittals and conduct preconstruction meetings for each activity of work.
5. Evaluate Construction techniques and identify potential problems prior to installation.
6. Develop a method of verification that ongoing work is acceptable.
7. Maintain an adequate inspection system and perform or schedule inspections that will ensure IBC, OSF and Local Codes are contract compliant.
8. Review the AHJ Inspections Program Manual's testing requirements and schedule all required tests and inspections.
9. The Contractor shall notify the Program Manager of required inspections and maintain inspection records on site available to the Architect/ Engineer, Program Manager, and Owner.
10. Have Manufacturer provide qualified representative to observe and inspect field conditions, quality of workmanship, test and start-up of equipment, adjustment and balance of equipment as required in individual specification sections.
11. Hold QC Coordination Meetings to show how Subcontractors installations will interface with other Subcontractors and the Contractor's installations. Provide Coordination between the Contractor, Subcontractors, Program Manager, Architect, Engineers, Inspectors and Commissioning Agents. Provide all project team members with reports, verifications, and approvals of Quality Control Activities.

1.4 WORKMANSHIP

- A. Comply with industry standards of the region except when more restrictive tolerances or specified requirements indicate more rigid standards or precise workmanship.
- B. Provide suitably qualified personnel to produce Work of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and cracking.
- D. Provide finishes to match approved samples.
- E. All items shall be installed in a workmanlike manner in accordance with the best recognized practice in the field concerned. Manufactured items shall be installed in strict accordance with manufacturer's printed directions, specifications and/or recommendations for installation of highest quality. All

working parts shall be properly adjusted after installation and left in perfect working order. Unless otherwise indicated, items exposed to weather or subject to flooding or wetting shall be installed so as to shed and not hold water. Items shall in all cases be installed plumb and true and/or in proper relation to surrounding materials.

- F. Unless otherwise specifically specified, all items and parts thereof that is made of steel, iron or other ferrous metal that are not galvanized, plated, or otherwise specified to be factory finished, shall be cleaned, and painted with one shop coat of the best quality rust inhibitive metallic primer. After installation, all exposed metal connections and abrasions shall be touched up with the same materials as the shop coat and left in good condition for final finishing as required in the technical specifications.

1.5 MANUFACTURER'S INSTRUCTIONS

- A. Require compliance with instructions in full detail, including each step in sequence.
- B. Should instructions conflict with Contract Documents, request clarification from Program Manager before proceeding.

1.6 MANUFACTURER'S CERTIFICATES

- A. When required in individual Specifications section, submit manufacturer's certificate, in duplicate, certifying that products meet or exceed specified requirements, executed by responsible officer.

1.7 MANUFACTURER'S FIELD SERVICES

- A. When required in individual Specifications section, have manufacturer provide qualified representative to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment and test, adjust, and balance of equipment, as applicable, and make written report of observations and recommendations to Program Manager.

1.8 MOCKUPS

- A. The Contractor shall build an integrated exterior building mockup as noted on the drawings. Integrated exterior building mockup shall be at a minimum 8'-0" wide x 6'-0" tall or as noted on the drawings.
- B. The integrated exterior mockup shall include exterior systems noted on the drawings. Integrated exterior building mockup shall at a minimum include the exterior wall assembly, air barrier system, flashing systems, exterior cladding, window frame, glazing and coping.
- C. The Contractor shall provide requirements of Governmental Agencies for Scope and Complexity of Mockup Construction.
- D. The Contractor shall provide a schedule of timing of Mockup installations for coordination with Governmental Agencies and Construction activities to ensure a seamless workflow.
- E. The Contractor shall notify the Program Manager when the Mockup is ready for inspection by the Architect/Engineer.

- F. Assemble and erect complete, with specified attachment and anchorage devices, flashings, seals and finishes.
- G. Remove mockup and clean up the area when directed by the Program Manager.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- 1.1.1 Work included: Throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this section and the Contract Documents. Failure to do so may result in a reduction of the Contract Sum if the Program Manager has the required cleanup performed by others.
- 1.1.2 Related work:
 - A. Documents affecting work of this section include but are not necessarily limited to AIA A132 and A232, as amended, General Conditions, Supplemental Conditions, and Sections in Division 1 of these Specifications.
 - B. In addition to standards described in this section, comply with requirements for cleaning as described in pertinent other sections of these Specifications.

1.2 QUALITY ASSURANCE

- 1.2.1 Conduct daily cleaning and inspection and more often if necessary, to verify that requirements for cleanliness are being met. Inspect road entrances periodically throughout the day to ensure roads remain clean. With flag men in front of every cleaner sweep roads at the end of every day. This is an active campus.
- 1.2.2 In addition to the standards described in this section, comply with pertinent requirements of governmental agencies having jurisdiction.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

- 2.1.1 Provide required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

2.2 COMPATIBILITY

- 2.2.1 Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

PART 3 - EXECUTION

3.1 PROGRESS CLEANING

- 3.1.1 General
 - A. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage and providing required protection of materials.

- B. Do not allow accumulation of scrap, debris, waste material and other items not required for construction of this work.
- C. At least once each week and more often if necessary, completely remove all scrap, debris and waste material from the job site. Provide adequate storage for all items waiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- D. Locations on site for stored materials and/or debris must be pre-approved by the Program Manager.
- E. The General Contractor shall be solely responsible to assure clean systems and finishes throughout duration of project. Use of RAM BOARD coverings to protect surfaces are required over areas needing protection from foot traffic.

3.1.2 Site

- A. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove such items to the place designated for their storage.
- B. Weekly, and more often, if necessary, inspect all arrangements of materials stored on the site. Restack, tidy, or otherwise service arrangements to meet the requirements of subparagraph 3.1.1A above. Protect materials by covering them. Loose debris must be pickup in dumpster areas and along fence row daily.
- C. Maintain the site in a neat, safe, and orderly condition at all times.

3.1.3 Final Cleaning – Perform final cleaning as detailed in each technical specification, and as follows:

- A. Conduct cleaning and waste removal operations to comply with local laws and ordinances, Federal and local environmental and antipollution regulations.
- B. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or until to condition of clean as defined in Paragraph 3.2.1.
- C. Complete the following cleaning operations before requesting inspection for a Certificate of Substantial Completion for the entire project, or any portion of the project.
 - 1. Clean project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - 2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - 3. Rake grounds that are neither planted nor paved to a smooth, even-textured Surface IF DISTURBED BY CONSTRUCTION.
 - 4. Remove tools, construction equipment, machinery, and surplus material from project site.

5. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
6. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
7. Sweep concrete floors broom clean in unoccupied spaces.
8. Vacuum carpet and similar soft surfaces, removing debris and excess nap. Shampoo if visible soil or stains remain.
9. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
10. Remove labels that are not permanent.
11. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
12. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
13. Remove grease, dust, dirt, stains, labels, fingerprints, protection and other foreign materials from sight-exposed interior and exterior surfaces and of concealed spaces to ensure performance.
14. HVAC – vacuum clean all ducts, blowers, and coils, and replace filters if units have been used during construction. Clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
15. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
16. Replace parts subject to unusual operating conditions.
17. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
18. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned-out bulbs and those noticeably dimmed by hours of use, and defective and noisy starts in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

19. Clean, buff, and/or polish hard surface flooring as required in technical specifications.
20. Pest control – Engage an experienced, licensed exterminator to make a final inspection and rid project of rodents, insects, and other pests. Have the exterminator prepare a report to be submitted to the Program Manager.
21. Comply with all safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on project property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the project site and dispose of lawfully.
22. Contractor shall maintain finally cleaned areas until the project is accepted by the Owner.

3.2 FINAL CLEANING

- 3.2.1 "Clean," for the purpose of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
- 3.2.2 Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.1 above.
- 3.2.3 Schedule final cleaning as approved by the Architect/Engineer to enable the Owner to accept a completely clean work.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection to be provided by the General Contractor.

Because of the level of security of this existing operating facility of the District, These temporary utilities shall be provided by the General Contractor to include, but shall not be limited to, the following: temporary toilet facilities, potable water, temporary lighting fixtures as required for the work. Power and water required for construction means and methods will be provided by the District but MUST be coordinated prior to accessing both power and water.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, and the Technical Specification Divisions 0 through 48 apply to this Section.

1.03 SUMMARY

- A. Temporary utilities required by the General Contractor may include but are not limited to:
1. Temporary lighting fixtures as required to complete the work.
 - 2.. Telephone service.
 3. High Speed Internet for staff and workers
- B. Temporary construction and support facilities required may include but are not limited to:
1. Temporary A/C.
 2. Sanitary facilities including drinking water.
 4. Dewatering equipment and drains.
 5. Temporary enclosures (including dust barriers).
 6. Temporary Project identifications signs and bulletin boards.
 7. Waste disposal service.
 8. Rodent and pest control.
 9. Construction aids and miscellaneous services and facilities.
 10. Temporary toilet facilities (portalets).
- C. Security and protection facilities required may include but are not limited to:
1. Barricades, warning signs.
 2. Sidewalk bridge or enclosure fence for the site.
 3. Environmental protection.
 4. Dust partitions.
 5. Flagmen.

1.04 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations with authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Environmental protection regulations.
- B. Standards: Comply with NFPA code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities" and other requirements required by laws and regulations.
 - 1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
 - 2. Temporary Electrical Service: The General Contractor shall provide complete temporary electrical service. This service shall be adequate to operate hand tools and machines requiring 120-volt and/or 230-volt single phase electrical service and shall run to a point that can be reached by extension cords for 120-volt equipment. Extension cords shall be properly sized for the amperage drawn by the equipment connected thereto. Any additional cost involving electrical service for equipment with voltage requirements in excess of the above shall be the responsibility of the General Contractor.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.05 PROJECT CONDITIONS

- A. Temporary Utilities: Indicate dates for implementation and termination of each temporary utility on the Project Schedule. At the date of Substantial Completion, change over from use of temporary service to use of the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures including, but not limited to, access available for emergency vehicles, provision of proper fire suppression/fire extinguishers, etc.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Water: Provide potable water approved by local health authorities.

2.02 EQUIPMENT

- A. Water Hoses: Provide 3/4" heavy-duty, abrasion resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- B. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- C. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Lamps shall be furnished by Contractor. Current shall be paid for by the Contractor. Any additional cost involving service and current for lighting or equipment with voltage requirements in excess of the above or exceeding one 5 HP (each unit) shall be the responsibility of the Contractor.
 - 1. Task Lighting: Task lighting is defined as the additional lighting needs over and above that which is required as Temporary Lighting. Task lighting required by any trade in order to perform their Contract work shall be furnished by the Contractor or his subcontractor.
- D. First Aid Supplies: Comply with governing regulations.
- E. Fire Extinguishers: Provide hand-carried, portable UL-rated, extinguishers for temporary offices.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities and utilities. Locate facilities and utility connections where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities and utility connections as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities and/or utility connections are no longer needed, or are replaced by authorized use of completed permanent facilities and utilities pursuant to written direction from the Program Manager.

3.02 TEMPORARY UTILITY INSTALLATION

- A. Maintain Access to Fire Hydrants: Should fire hydrants exist on the project site or adjacent properties, and if these hydrants may be susceptible to damaged caused by the operation of the Contractor, they shall be protected by means approved by the Program Manager and/or governing authority.

3.03 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Security Enclosure: The General Contractor and each Subcontractor shall be responsible for security and protection to his equipment and the site-stored and installed products under his jurisdiction, whether paid for by the Owner or not, until the Owner accepts the Project.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
 - 1. Divisions 02 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from that required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.3 SUBMITTALS

- A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
 - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
 - 2. Form: Tabulate information for each product under the following column headings:
 - a. Specification Section number and title.
 - b. Generic name used in the Contract Documents.
 - c. Proprietary name, model number, and similar designations.
 - d. Manufacturer's name and address.
 - e. Projected delivery date or time span of delivery period.
 - f. Identification of items that require early submittal approval for scheduled delivery date.
 - 3. Completed List: Within 60 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 - 4. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections

- and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use form provided by the Construction Manager / Architect.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction, where available for type of material proposed.
 - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
 - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect cannot decide on use of a proposed substitution within time allocated.
- C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor through Construction Manager of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 1 Section "Submittal Procedure."

- b. Use product specified if Architect cannot decide on use of a comparable product request within time allocated.
- D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedure." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Store cementitious products and materials on elevated platforms.
 - 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 7. Protect stored products from damage and liquids from freezing.
- D. Material Moisture and Mold Control: Comply with recommendations contained in Associated General Contractors (AGC) document "Managing the Risk of Mold in the Construction of Buildings." Prepare and submit plan for protecting materials from water damage, including the following:
 - 1. Indicate delivery, checking and storage operations affected by water damage control efforts.
 - 2. Indicate procedures for protecting porous materials from water damage, and how damaged materials will be handled.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet work has dried sufficiently to permit installation of related finish materials.
 - 4. Describe protocol for dealing with large and unexpected water intrusion into completed portions of building. Indicate procedures for investigation of cause and effects, and methods for dealing with both.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 - 3. Refer to Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Close-out Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - 4. Where products are accompanied by the term "as selected," Architect will make selection.
 - 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 - 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
 - 7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
 - 1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 - 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
 - 3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 - 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 - 5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with

- requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
 8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
 9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product match.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
 10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

- A. Requests for substitution following award of contract must comply with requirements of this article and are restricted to those necessitated by the following circumstances:
 1. Specified product is no longer available for purchase.
 2. Specified product is not available within schedule requirements of project.
 3. Specified product is not compatible with other product approved for project.
 4. Specified warranty is not available.
- B. Timing: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
- C. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied and so certified by Contractor. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 1. Requested substitution does not require extensive revisions to the Contract Documents.
 2. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 3. Substitution request is fully documented and properly submitted.
 4. Requested substitution will not adversely affect Contractor's Construction Schedule.
 5. Requested substitution has received necessary approvals of authorities having jurisdiction.

6. Requested substitution is compatible with other portions of the Work.
7. Requested substitution has been coordinated with other portions of the Work.
8. Requested substitution provides specified warranty.
9. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: This Section establishes general requirements pertaining to cutting (including excavating), fitting and patching of the work required to:
 - 1. Make the several parts fit properly;
 - 2. Uncover work to provide for installing, inspection, both, of ill-timed work;
 - 3. Remove and replace work not conforming to requirements of the Contract Documents; and
 - 4. Remove and replace defective work.
- B. Related Work:
 - 1. Documents affecting work of this section include, but are not necessarily limited to, AIA A132 and A232, as amended, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. In addition to other requirements specified; upon the Program Managers and/or Architect's request to uncover work to provide for inspection by the Program Manager and/or Architect of covered work, and remove samples of installed materials for testing.
 - 3. Do not cut or alter work performed under separate contracts without the Architect's written permission.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- B. Requirements for Structural Work: Do not cut and patch any structural elements, including, but not limited to the following.
 - 1. Foundation construction.
 - 2. Bearing and retaining walls.
 - 3. Structural concrete.
 - 4. Structural steel.
 - 5. Lintels.
 - 6. Primary framing members.
 - 7. Structural decking.
 - 8. Miscellaneous structural metals.
 - 9. Exterior curtain wall construction.
 - 10. Equipment supports.
 - 11. Piping, ductwork, vessels, and equipment.

- C. Operational and Safety Limitations: Do not cut and patch the following operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
1. Shoring, bracing, and sheeting.
 2. Primary operational systems and equipment.
 3. Air or smoke barriers.
 4. Water, moisture, or vapor barrier.
 5. Membranes and flashings.
 6. Fire protection systems.
 7. Noise and vibration control elements and systems.
 8. Control systems.
 9. Communications systems.
 10. Conveying systems.
 11. Electrical wiring systems.
- D. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's or Program Manager's opinion, result in a visual evidence of cutting and patching. The Contractor shall remove and replace Work cut and patched in a visually unsatisfactory manner.

1.3 SUBMITTALS

- A. Request for Architect's consent:
1. Prior to cutting, submit a written request to the District's Program Manager who will forward it to the Architect for permission to proceed with cutting.
 2. Should conditions of the Work, or schedule indicate a required change of materials or methods for cutting and patching, so notify the PM and Architect and secure the Architect's written permission and any required Change Order prior to proceeding.
- B. Where approval of procedures for cutting and patching is required from the Architect before proceeding, submit a written proposal to the PM describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:
1. If considered a change to the Work, and prior to cutting and patching performed pursuant to the Architect's instructions, submit cost estimate to the Architect. Secure the Architect's approval of cost estimates and type of reimbursement before proceeding with cutting and patching.
 2. Submit written notice to the Program Manager and/or Architect designating the time the Work will be uncovered, to provide for the Program Manager's and/or Architect's observation.
 3. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

4. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
5. List products to be used and firms or entities that will perform Work.
6. Indicate dates when cutting and patching is to be performed.
7. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
8. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
9. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.
10. Any disruptions to the Owner occupied space/public space or active utility cutoffs must be scheduled, approved and coordinated with the Owner. The Owner requires a seventy-two (72) hour minimum notice. Contractors are requested to coordinate same accordingly.
11. Discrepancies: If uncovered conditions are not as anticipated, immediately notify the PM and secure needed directions. Do not proceed until unsatisfactory conditions are corrected.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. For replacement of items removed, use materials complying with pertinent Sections of these Specifications.

2.2 PAYMENT FOR COSTS

- A. The Owner will reimburse the Contractor for cutting and patching performed pursuant to any written Change Order, after claim for such reimbursement is submitted by the Contractor to the PM and approved by the Architect. Perform other cutting and patching needed to comply with the Contract Documents at no additional cost to the Owner.

PART 3 - INSPECTION

3.1 SURFACE CONDITIONS

- A. Inspection:
 1. Inspect existing conditions; including elements subject to movement or damage during cutting, excavating, patching and backfilling.

2. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed.
 3. After uncovering the work, inspect conditions affecting installation of new work. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- B. Discrepancies:
1. If uncovered conditions are not as anticipated, immediately notify the PM and secure needed directions.
 2. Do not proceed until unsatisfactory conditions are corrected to the satisfaction of the PM and/or Architect.

3.2 PREPARATION PRIOR TO CUTTING

- A. Provide required protection including, but not necessarily limited to, shoring, bracing and support to maintain structural integrity of the Work. Protect all existing construction.
- B. Provide required fire protection including, but not necessarily limited to, fire blankets and fire extinguishing equipment.

3.3 PERFORMANCE

- A. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction.
 1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbances of adjacent surfaces. Temporarily cover openings when not in use.
 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 3. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
 4. Comply with requirements of applicable specification Sections where cutting and patching requires excavating and backfilling.
 5. By-pass utility services such as pipe or conduit before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance or moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Where removal of walls or partition extends from one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
 - a. Where patching occurs in a smooth painted surface, extend final coat over entire unbroken area containing the patch, after the patched area has received primer and second coat.
4. Patch, repair or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance. All damaged products shall be replaced with approved equals at the Contractor's expense.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Completely remove paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION

A. DEFICIENCY LISTS

1. During the construction of the Work, the Architect/Engineer shall inspect the work for general conformance to the Contract Documents. Concurrently, the Program Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents and will report to both the Owner and the Architect defects and deficiencies observed in the Work.
2. Should observations or inspections reveal work that is not in conformance with the Contract Documents, and if the nature of the non-conformance warrants, at the sole discretion of the Program Manager and/or Architect/Engineer, a written list of deficiencies will be issued.
3. The "deficiency list" as hereinafter called, shall stipulate the item or items of work that are in non-conformance and shall specify a reasonable time for the deficient work to be brought into conformance with the Contract Documents, but in no event shall this time exceed thirty (30) days.
4. Upon receipt of the deficiency list, the Contractor shall by any and all means at his disposal, endeavor to correct the work within the time stipulated. The Contractor shall notify the Program Manager in writing when the work has been corrected and request inspection.
5. If the inspection reveals the deficiency has been corrected, the item shall be rescinded from the deficiency list.
6. During the period that the deficiency list is in effect, the Program Manager and/or Architect may, at their discretion, reduce progress payments accordingly until the deficiency is corrected.
7. During the course of construction, the Architect/Engineer(s) will perform periodic site visits and inspections. Written comments of the Architect/Engineer(s) pertaining to such visits shall be issued as an Architect/Engineer(s) Field Report. It shall be the responsibility of the Contractor to issue a response to each Field Report within ten (10) days of receipt. Failure to respond in writing within this time period could result in delays of approval of progress payment requests.

B. PUNCH LIST/FINAL INSPECTION

1. When the Contractor determines that his work or portions of his work are sufficiently near completion to warrant a preliminary inspection, he shall prepare a preliminary punch list and submit it along with a written request for a preliminary review to the Program Manager.
2. At a mutually agreeable time, the Program Manager and Contractor shall conduct a preliminary review of the Work for completeness and general conformance to the Contract Documents. At this preliminary review, a punch list of incomplete or non-conformance work shall be prepared by the Contractor.
3. The Program Manager shall establish a reasonable time period for the completion or correction of all items on the preliminary review punch list, but in no event shall this time exceed fourteen (14) days. At the completion of the preliminary review punch list, the Substantial Completion inspection shall be scheduled.
4. The Substantial Completion inspection shall be performed by the Architect/Engineer with attendance by the Program Manager and Contractor. The Owner may attend at its discretion. The Contractor

shall present to the Architect/Engineer a certification letter that the project is complete along with a written list of any incomplete work, and a reason why the item of work is incomplete and give a date when the work will be complete. Substantial Completion inspection shall NOT be conducted unless the Contractor presents this certification letter and list.

5. At the conclusion of the Substantial Completion inspection the Architect will review the project and determine if the completeness of the work allows Substantial Completion to be established. In addition to an overall state of completeness, other items that must be completed when making this determination include:
 - a. All building systems have passed operable testing and acceptance by the Owner's Commissioning Agent.
 - b. A final copy of the completed TABS report has been submitted for review.
 - c. The Office of School Facilities Inspection has been successfully completed.
 - d. Inspection by the SC Office of the State Fire Marshal has been successfully completed.

Should the amount of incomplete work be such that a Certificate of Substantial Completion cannot be issued, another Substantial Completion inspection shall be required.

7. Once Substantial Completion has been established, the Architect and Program Manager shall issue a Certificate of Substantial Completion and a Substantial Completion punch list.
8. If the Contractor fails to obtain Final Completion with 100% of the Substantial Completion punch list completed with-in 30 days of the date of Substantial Completion, the Owner shall be entitled to liquidated damages as noted in paragraph 3.6.1 of AIA Document A132-2019 Standard Form of Agreement Between Owner and Contractor, and as noted in paragraph 9.10.5 of AIA Document A232-2019 General Conditions of the Contract for Construction. Additionally, at the end this thirty (30) day period the Owner reserves the right to take over the project and expedite the completion of the remaining punch list items at any time with their forces, or by contract, or any other means available, with all cost, including those for additional oversight by the Program Manager and/or Architect, deducted from the remaining contract funds. Substantial Completion punch list liquidated damages will continue until a Final Completion Certificate is obtained regardless of how the punch list is completed.
9. Any work on site after the date of Substantial Completion, including punch list work, must not prevent school operations, and must be coordinated with the Program Manager and the School Principal with adequate notice. In addition, the Contractor's Superintendent must be on site any time work is in progress. By bidding this work, the Contractor acknowledges that he will provide an on-site superintendent at all times work is in progress.
10. Upon completion of all Work, including punch list work, the Contractor shall submit a written request that the work is ready for a final inspection and acceptance, as described in Article 9.10 of AIA Document A232-2019 General Conditions of the Contract for Construction.

C. PROJECT CLOSEOUT

1. Final Closeout and Payment

- a. No funds for Punchlist, Closeout, Retainage or Final Payment Application shall be processed for payment until final inspection and final acceptance of all work and closeout documentation has been received, approved, and accepted by the Architect and Program Manager. Partial funds may be released for Closeout Documents as they are approved by the Architect.
- b. Contractor shall submit final closeout items within thirty (30) days after Date of Substantial Completion. If closeout documents are not timely submitted and the Owner determines that they are impacting operations of the school, the Owner may elect to procure closeout submittals directly from the appropriate subcontractor, supplier or other vendor with all related costs deducted from the Contract Sum by change order.

2. Closeout Checklist

- a. The Closeout Checklist items must be submitted to the Program Manager and approved by the Architect, see insert.

2. Related Work

- a. Other requirements affecting work of this Section include, but are not necessarily limited to, AIA A132 and A232- 2019 General Conditions, as amended, Division 01 – Section 013300 - Submittal Procedures, 013301 Elect Project Management System (EPMS), Procure, 017823 Operation & Maintenance Data, and 017836 Warranties/Bonds.

D. RESPONSIBILITY

1. It shall be the Contractor's responsibility to see that all requirements of this Section of the Specifications are executed and completed in a timely manner. The Contractor shall be responsible for any Architect and Program Manager costs due to late submittal of closeout documents or incomplete work, including uncompleted punch list items, beyond thirty (30) days past the date of Substantial Completion.
2. No provisions of this Section of the Specifications shall in any way relieve the Contractor of the completion of his work on time and in accordance with the approved Construction Schedule.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: To aid the continued instruction of operating and maintenance personnel, and to provide a positive source of information regarding the products incorporated into the Work, furnish, and deliver the data described in this Section and in pertinent other sections of these Specifications.
- B. Related Work:
 - 1. Documents affecting work of this section include, but are not necessarily limited to, AIA A132 and A232- 2019 General Conditions, as amended and Sections in Division 01 of these Specifications.
 - 2. Required contents of submittals also may be amplified in pertinent other Sections of these Specifications.

1.2 QUALITY ASSURANCE

- A. In preparing data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with the requirements of this Section, and skilled in technical writing to the extent needed for communicating the essential data.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of AIA A132 and A232- 2019 General Conditions, as amended, Division 01 – Section 013300 - Submittal Procedures and 013301 Elect Project Management System (EPMS), Procore.
- B. Submit the Operation and Maintenance Manual to the Architect electronically in pdf format with Shop Drawing submittals and within sixty (60) days of the Notice to Proceed.
 - 1. The PDF file is to include a Table of Contents and be bookmarked to each section in the Table of Contents.
 - 2. Refer to Closeout Checklist for additional submission criteria.
- C. Submittals of approved copies of operation and maintenance data will be a prerequisite for approval of payment applications.

PART 2 - PRODUCTS

2.1 INSTRUCTION MANUALS

- A. Where instruction Manuals are required to be submitted under other Sections of these Specifications, prepare in accordance with the provision of this Section.
- B. Format:

1. Size: 8-1/2" x 11"
 2. Paper: White bond, at least 20 lb. weight
 3. Text: Neatly written or printed
 4. Drawings: 11" in height, preferable; bind in with text; foldout acceptable; larger drawings acceptable but fold to fit within the Manual and provide a drawing pocket inside rear cover or bind in with text.
 5. Flysheets: Separate each portion of the Manual with neatly prepared flysheets briefly describing contents of the ensuing portion; flysheets may be in color.
 6. Binding: Use heavy-duty plastic or fiber
 7. Measurements: Provide all measurements in U.S. standard units such as feet-and-inches, lbs. and cfm; where items may be expected to be measured within ten years in accordance with metric formula, provide additional measurements in the "International System of Units" (SI).
- C. Provide front and back covers for each Manual, using durable material approved by the Architect, and clearly identified on or through the cover with at least the following information:

OPERATING AND MAINTENANCE INSTRUCTIONS

(_____ Name and address of Work	_____)
(_____ Name of Contractor	_____)
(_____ General subject of this manual	_____)
(_____ Approval signature of Program Manager	_____)
(_____ Approval date	_____)

- D. Contents: Include at least the following:
1. Neatly typewritten index near the front of the Manual, giving immediate information as to location within the Manual of all emergency information regarding the installation.
 2. Complete instructions regarding the installation and maintenance of all equipment involved including lubrication, disassembly, and reassembly.
 3. Complete nomenclature of all parts of all equipment.
 4. Complete nomenclature and part number of all other data pertinent to procurement procedures.
 5. Copy of all guarantees and warranties issued.
 6. Manufacturer's bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturer's data.
 7. Such other data as required in pertinent Sections of these Specifications.

PART 3 - EXECUTION

3.1 INSTRUCTION MANUALS

- A. Complete the Manuals in strict accordance with the approved preliminary drafts and the Program Manager's and Architect's review comments.
- B. Any and all other items required by the specific specifications relating to the maintenance and operations of the various components of the work or any and all certificates and testing reports required by the specific specifications shall be incorporated into the maintenance manuals. Items of this nature shall include but are not limited to:
 - 1. Test and balance reports of HVAC systems.
 - 2. Test and certification reports of electrical systems such as fire alarm and life safety systems, communications systems, clock systems, etc.
 - 3. Valve tag lists
 - 4. Certification of sterilization of potable water systems.

3.2 MAINTENANCE TRAINING

- A. Comply with pertinent provisions of AIA A132 and A232- 2019 General Conditions, as amended and Division 01.
- B. Each Contractor, Subcontractor, and/or Factory Representative shall instruct the Owner in the proper care, maintenance and operation of all systems installed under his Contract. Provide a written letter stating that the Owner has been instructed and list the following:
 - 1. Date, time, and place of instruction
 - 2. Parties present
 - 3. Systems and items instructions were given on

END OF SECTION

PART 1 - GENERAL

1.1 WORK INCLUDES

- A. Compile specified warranties and bonds.
- B. Compile specified service and maintenance contracts.
- C. Co-execute submittals when so specified.
- D. Review submittals to verify compliance with Contract Documents.
- E. Submit to Program Manager for review and transmittal to Owner.
- F. Related Requirements in Other Parts of Project Manual:
 - 1. Bid or Proposal Bonds: Instruction to Bidders.
 - 2. Performance Bond and Labor and Material Payment Bond: General Conditions of the Contract.
 - 3. General Warranty of Construction: General Conditions of the Contract.
- G. Related Requirements Specified in Other Sections:
 - 1. Comply with pertinent provisions of AIA A132 and A232- 2019 General Conditions, as amended, Division 01 – Section 013300 - Submittal Procedures, and Division 01 - Section 017700 – Closeout Procedures.
 - 2. Operations & Maintenance Data: Section 017823 – Operations and Maintenance Data.
 - 3. Warranties and Bonds Required for Specific Products:
 - 4. Provision and Warranties & Bonds, Duration:

1.2 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bond and service and maintenance contracts, executed by each of respective manufacturers, suppliers, and subcontractors.
- B. Number original signed copies required: Two (2) each.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
 - 1. Product or work item.
 - 2. Firm, with name of principal, address, and telephone number.
 - 3. Scope.

4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service and maintenance contract.
6. Provide information for Owner's personnel:
 - a. Proper procedure in case of failure.
 - b. Instances which might affect validity of warranty or bond.
7. Contractor, name or responsible principal, address and telephone number.

1.3 FORM OF SUBMITTAL

- A. Prepare in duplicate packets.
- B. Format:
 1. Size 8-1/2 in. x 11 in., punch sheets for 3-ring binder.
 - a. Fold larger sheets to fit into binders.
 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
 - a. Title of Project
 - b. Name of Contractor
- C. Binders: Commercial quality three-ring, with durable and cleanable plastic covers.
- D. Electronic Submission:
 1. USB Storage Device – Submit two (2) USB storage devices
 2. File Medium - Required data shall be PDF format.

1.4 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during progress of construction:
 1. Submit "Draft" documents within sixty (60) days of Notice to Proceed for format approval.
 2. Note: Warranty periods for equipment started during construction will not start until substantial completion for the project.
- B. Submit final documents thirty (30) days after Date of Substantial Completion.
- C. For items of work, where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of

warranty period.

1.5 SUBMITTALS REQUIRED

- A. Submit warranties, bonds, and service and maintenance contracts as specified in respective sections of Specifications.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

1. Throughout progress of the Work, maintain an accurate record of changes in the Contract Documents, as described in Paragraph 2.1 below. Upon completion of the Work, deliver the recorded changes to the Construction Manager.
2. To aid in the continued instruction of operating and maintenance personnel, and to provide a positive source of information regarding the products incorporated into the Work, furnish and deliver the operation and maintenance manuals and data as described in this Section and in other pertinent sections of these Specifications.
4. Compile specified guarantees, warranties and bonds, as well as specified service and maintenance contracts. Co-execute submittals when so specified and review submittals to verify compliance with Contract Documents. Submit to Construction Manager for review and transmittal to Owner.

B. Related work:

1. Documents affecting work of this section include, but are not necessarily limited to, the contract documents, addenda and General and Supplementary Conditions.
2. Other requirements affecting Project Record Documents may appear in pertinent other Sections of these specifications.
3. Documents affecting the various warranties required:
 - a. General Warranty of Construction: General Conditions of the Contract.
 - b. Warranties, Guarantees, & Bonds Required for Specific Products: Each respective section of Specifications as listed in the Project Manual.
 - c. Provision for Duration of Warranties Guarantees, & Bonds: The respective section of specifications which specifies the product.

1.2 QUALITY ASSURANCE

- A. Delegate the responsibility for maintenance of Record Drawings to one person on the Contractor's staff as approved by the Architect/Engineer.
- B. In preparing operation and maintenance manuals and data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with the requirements of this Section, and skilled in technical writing to the extent needed for communicating the essential data.
- C. In preparing warranties, guarantees, and bonds, utilize personnel familiar with the requirements of the specifications regarding each. A detailed analysis of each specification is to be performed to assure all specified warranties, guarantees, and

bonds are accounted for and submitted.

D. Accuracy of records:

1. Accuracy of records shall be such that a future search for items shown on the Project Record Drawings may rely reasonably on the information provided under this Section of the Work.

1.3 SUBMITTALS

A. Project Record Drawings

1. The Architect/Engineer's approval of the current status of Project Record Drawings may be a prerequisite to the Architect/Engineer's approval of requests for progress payment and request for final payment under the Contract.
2. Prior to submitting each request for progress payment, secure the Architect/Engineer's approval of the current status of the Project Record Drawings.
3. Prior to submitting request for final payment, submit the final Project Record Drawings to the Architect/Engineer and secure his approval.

B. Operation and Maintenance Manuals

1. Comply with pertinent provisions of Section 01 33 00 Submittal Procedure.
2. Unless otherwise directed in other Sections, or in writing by the Project Manager, submit **(TBD by owner)** copies of the final Manual to the Construction Manager prior to indoctrination of operation and maintenance personnel.
3. Submittals of approved copies of operation and maintenance data will be a prerequisite for approval of final payment applications.

C. Warranties, Guarantees and Bonds

1. Provide warranties, guarantees, and bonds as specified in Divisions 01-33.
2. Unless otherwise directed in other Sections, or in writing by the Construction Manager, submit two copies of each specified warranty, guarantee, and bond to the Construction Manager.
3. Submittals of approved copies of warranties, guarantees, and bonds will be a prerequisite for approval of final payment applications

PART 2 - PRODUCTS

2.1 JOB SET RECORD DOCUMENTS

- A. Promptly following receipt of the Owner's Notice to Proceed, obtain and provide, at no charge to the Owner:
 - 1. One complete set of all Documents comprising the Contract, including Plans, Specification Manuals, and Shop Drawings.
- B. Immediately upon receipt of the job set described in subparagraph 2.1.A.1 above, identify each of the Documents with the title, "RECORD DRAWINGS - JOB SET", and "RECORD SPECIFICATIONS - JOB SET".
- C. Preservation:
 - 1. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of the Architect. Maintain the job set of Record Drawings completely protected from deterioration and from loss and damage until completion of the Work and transfer to the Construction Manager.
 - 2. In the event of loss of recorded data, use means necessary to again secure the data to the Architect/Engineer's approval.
 - a. Such means shall include, if necessary in the opinion of the Architect/Engineer, removal and replacement of concealing materials.
 - b. In such case, provide replacements to the standards originally required by the Contract Documents.
 - 3. Do not use the job set for any purpose except entry of new data and for review by the Architect.
 - 4. Maintain the job set at the site of Work that is designated by the Architect.
- D. Making entries on Job Set Drawings:
 - 1. Use erasable colored pencil, preferably red (not ink or indelible pencil) to delineate changes.
 - 2. Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modifications.
 - 3. Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations.

E. Submittal:

1. Submit "marked-up" set of drawings to the Project Manager.
2. Make any necessary additions as required by the Architect.
3. Submit one complete set of Product Data (Shop Drawing) submittals. All submittals are to include approval stamp of Architect/Engineer.

2.2 OPERATION AND MAINTENANCE MANUALS

A. INSTRUCTION MANUALS: Where Instruction Manuals are required to be submitted under other Sections of these Specifications, prepare in accordance with the provision of this Section.

1. Format:
 - a. Size: 8-1/2" x 11"
 - b. Paper: White bond, at least 20 lb. weight
 - c. Text: Neatly written or printed
 - d. Drawings: 11" in height, preferable; bind in with text; foldout acceptable; larger drawings acceptable but fold to fit within the Manual and provide a drawing pocket inside rear cover or bind in with text.
 - e. Flysheets: Separate each portion of the Manual with neatly prepared flysheets briefly describing contents of the ensuing portion; flysheets may be in color.
 - f. Binding: Use heavy-duty plastic or fiber
 - g. Measurements: Provide all measurements in U.S. standard units such as feet-and-inches, lbs, and cfm; where items may be expected to be measured within ten years in accordance with metric formula, provide additional measurements in the "International System of Units" (SI).
2. Provide front and back covers for each Manual, using durable material approved by the Architect, and clearly identified on or through the cover with at least the following information:

OPERATING AND MAINTENANCE INSTRUCTIONS

(name and address of work)
(name of Contractor)
(general subject of this manual)
(approval signature of Construction Manager)
(approval date)

3. Contents: Include at least the following:
 - a. Neatly typewritten index near the front of the Manual, giving immediate information as to location within the Manual of all emergency information regarding the installation.
 - b. Complete instructions regarding the installation and maintenance of all equipment involved including lubrication, disassembly, and reassembly.
 - c. Complete nomenclature of all parts of all equipment.
 - d. Complete nomenclature and part number of all other data pertinent to procurement procedures.
 - e. Copy of all guarantees and warranties issued.
 - f. Manufacturer's bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturer's data.
 - g. Such other data as required in pertinent Sections of these Specifications.
 4. Complete the Manuals in strict accordance with the approved preliminary drafts and the Construction Manager's and Architect's review comments.
 5. Any and all other items required by the specific specifications relating to the maintenance and operations of the various components of the work or any and all certificates and testing reports required by the specific specifications shall be incorporated into the maintenance manuals. Items of this nature shall include but are not limited to:
 - a. Test and balance reports of HVAC systems.
 - b. Test and certification reports of electrical systems such as fire alarm and life safety systems, communications systems, clock systems, etc.
 - c. Valve tag lists
 - d. Certification of sterilization of potable water systems.
- B. MAINTENANCE TRAINING: Each Subcontractor shall instruct the Owner in the proper care, maintenance and operation of all systems installed under his Contract. Provide a written letter stating that the Owner has been instructed and list the following:
1. Date, time and place of instruction
 2. Parties present
 3. Systems and items instructions were given on

2.3 WARRANTIES, GUARANTEES, AND BONDS

- A. All work under this Contract shall be guaranteed by the Contractor against defects in material or workmanship for a period of one year from the Date of Substantial Completion, as established in writing by the Architect/Engineer, unless a longer period is specified for a particular item of work in the specifications. In which case, the longer period shall be the Guarantee Period.
- B. Prior to the end of the Guarantee Period, the Owner may have the Architect/Engineer inspect the Work, and shall advise the Architect/Engineer of any known defects. The Architect/Engineer or the Owner shall notify the Contractor, in writing, of any defects found.
- C. The Contractor agrees to repair or replace all defects in material or workmanship within sixty (60) days of the date of the written notice from the Architect/Engineer or the Owner.
- D. The Contractor shall furnish the Owner with three (3) copies of a written one-year guarantee delivered with the close-out documents, on the Contractor's stationery with original signatures on each copy, signed and sealed the same as the Bid Form, stating:

"The undersigned guarantees all work furnished by (Company Name), for a period of one (1) year from the date of Substantial Completion, and agrees to repair or replace defects within sixty (60) days upon notice of defects by the Owner."

- E. Submit warranties, bonds, service and maintenance contracts as specified in respective sections of Specifications.
 - 1. Assemble warranties, bond and service and maintenance contracts, executed by each of respective manufacturers, suppliers, and subcontractors.
 - 2. Number of original signed copies required: Two each.
 - a. Format:
 - 1). Size 8-1/2 in. x 11 in., punch sheets for 3-ring binder.
 - 2). Fold larger sheets to fit into binders.
 - 3). Cover: Identify each packet with typed or printed title "GUARANTEES, WARRANTIES AND BONDS". List:
 - a). Title of Project
 - b). Name of Contractor
 - 3. Binders: Commercial quality three-ring, with durable and cleanable plastic covers.
 - 4. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
 - a. Product or work item.

- b. Firm, with name of principal, address and telephone number.
 - c. Scope.
 - d. Date of beginning of warranty, bond or service and maintenance contract.
 - e. Duration of warranty, bond or service and maintenance contract.
 - f. Provide information for Owner's personnel:
 - 1). Proper procedure in case of failure.
 - 2). Instances which might affect validity of warranty or bond.
 - g. Contractor, name or responsible principal, address and telephone number.
- F. For equipment or component parts of equipment put into service during progress of construction:
- 1. Submit documents within 10 days after inspection and acceptance.
 - 2. Note: Warranty periods for equipment started during construction will not start until substantial completion for the project, including all HVAC equipment such as split system heat pumps, dehumidification equipment, exhaust fans, air handlers, etc.
- G. Otherwise make submittals within ten days after Date of Substantial Completion, prior to final request for payment.
- H. For items of work, where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

END OF SECTION

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of interior finishes and miscellaneous materials as indicated in drawings.
2. Disconnecting, capping or sealing, and/or removing local electrical and low voltage as indicate on drawings.
3. Salvaging items for reuse by Owner as indicated on drawings or directed on site.

1.2 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Photographic Survey: Submit photographic survey of conditions of building before start of demolition.
- B. Proposed Protection Measures: Refer to drawings for proposed occupant exit routes related to this work along with proposed locations of construction of barriers.
- C. Schedule of demolition activities with starting and ending dates for each activity.
- D. Pre-demolition photographs or video is required.

1.5 CLOSEOUT SUBMITTALS

A. Inventory of items that have been removed and salvaged.

1.6 QUALITY ASSURANCE

1.7 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - a. Coordinate with Owner for any owner salvaged items.
- B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- C. On-site storage or sale of removed items or materials is not permitted.
- D. Arrange demolition schedule so as not to interfere with Owner's on-site operations or operations of adjacent occupied buildings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and/or capped as required before starting demolition operations.
- B. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

- A. Salvaged Items: Comply with the following:
 - 1. Store items in a secure area until delivery to location determined by the Owner is determined.
 - 2. Transport items to storage area designated by Owner.
 - 3. Protect items from damage during transport and storage.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Utilities, Mechanical and Electrical systems to the rooms and locations of this scope of work need only be temporarily disconnected when specific work is performed. Coordination of these disconnections will need to be coordinated with the owner and GC is to determine the extent that the disconnection will affect the adjacent occupied Spaces.
- B. GC must coordinate with the owner prior to disconnecting any systems.

3.4 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.
- B. Existing Utilities to Remain: Maintain utility services to remain and protect from damage during demolition operations. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
- C. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.
 - 1. Protect adjacent buildings and facilities from damage due to demolition activities.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 4. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 - 5. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 - 6. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.
- D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.5 DEMOLITION

- A. General: Demolish indicated interior building components and finishes as indicated in drawings. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Do not use cutting torches in any case without the written consent of the owner and architect.
 2. Maintain portable fire-suppression devices during flame-cutting operations.
 3. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Site Access and Temporary Controls: Conduct demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed egress paths.
- C. Explosives: Use of explosives is not permitted.
- D. Salvage: Items to be removed and salvaged are indicated on Drawings.
1. Coordinate with the owner for any other items to be salvaged.
- 3.6 CLEANING
- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
 - B. Do not burn demolished materials.
 - C. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION 02 4116

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wood blocking, miscellaneous framing and nailers.
 - 2. Plywood backing panels.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
 - 1. Wood-preservative-treated wood.
 - 2. Fire-retardant-treated wood.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 - 3. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 for interior construction not in contact with ground,.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all indicated rough carpentry items and the following:
 - 1. Wood nailers, blocking, stripping, and similar members in connection with interior wall finishes systems as specified
 - 2. Wood furring, stripping, and similar concealed members.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Furring.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.
- C. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
 - 2. Eastern softwoods; No. 2 Common grade; NeLMA.

2.4 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C, in thickness indicated or, if not indicated, not less than 3/4-inch (19-mm) nominal thickness. All panels are to be coated on all surfaces before installation with two coats of intumescent paint. Documentation of the product used along with documentation that all side are painted must be kept by the contractor.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Comply with AWWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- C. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

3.2 PROTECTION

- A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet enough that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Perforated metal wall panels
 - 2. Acoustical backing
 - 3. Mounting systems
 - 4. Accessories; provide other necessary items including devices for attachment to construction, secondary members, splines, splices, connecting clips, wall connectors, wall angles, and other devices required for a complete installation.
 - 5. Supplemental support framing: Provide fully engineered secondary framing as required to meet code, conforming to layout shown in drawings, to support wall panel system.
- B. Related Sections / Work:
 - 1. Sections 05 40 00 – Cold-Formed Metal Framing
 - 2. Sections 09 90 00 – Paintings and Coatings
 - 3. Division 26 – Electrical
- C. This Section covers the general requirements only for Acoustical Metal Wall Panel System as shown on the drawings. The supplying and installation of additional accessory features and other items not specifically mentioned herein, but which are necessary to make a complete installation, shall also be included or clarified accordingly.
- D. Qualification Data:
 - 1. Certificates:
 - a. Data substantiating manufacturer and installer qualifications.
 - b. Certified data attesting fire rated materials comply with specifications.
 - 2. Manufacturer's Instructions: Detailed installation instructions and maintenance data.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)

1. E 84 – “Standard Test Method for Surface Burning Characteristics of Building Materials”
2. E 488 – “Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements”
3. B 209 – “Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate”
4. C 423 – “Sound Absorption and Sound Absorption Coefficients by Reverberation Room Method”
5. A 653 – “Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip process”
6. E 1477 – “Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by use of Integrating-Sphere Reflectometers”
7. D 1044 – “Practice for Abrasion Resistance”
8. D 1002 – “Practice for Adhesion Resistance”

1.4 SUBMITTALS

- A. Product Data: Manufacturer’s published literature, including specifications.
- B. Product Certification: Manufacturer’s certifications that products comply with specified requirements and governing codes including product data, laboratory test reports and research reports showing compliance with specified standards.
- C. Shop Drawings: Submit shop drawings drawn to scale, and indicating penetrations and wall mounted items. Show the following details:
 1. Panel layout on each wall indicated on drawings, with all electrical and AV components indicated with critical dimensions
 2. Details of system assembly and connections to building components.
- D. Samples for Verification: Full-size units (or as specified below) of each type of ceiling assembly indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics. Submit samples for each type specified.
 1. Min. 12” x 12” attachment system with (2) 14” long panels in attachment system.
 2. 14” long samples of each exposed molding or trim.

1.5 QUALITY ASSURANCE

- A. Manufacturer/Installer Qualifications:
 1. Provide metal system components produced by a single manufacturer with a minimum 5 years’ experience in actual production of specified products and with resources to provide consistent quality in appearance and physical properties, without delaying the work.

2. Provide mounting system components produced by a single manufacturer to provide compatible components for a complete metal wall system installation.
3. Perform installations using a firm with installers having no less than 3 years of successful experience on projects of similar size and requirements.

B. Regulatory Requirements:

1. Fire Rating Performance Characteristics: Install system to provide a flame spread of 0 - 25, complying with certified testing to ASTM E 84.
2. Structural Criteria: Install and certify system to comply with structural and wind load requirements of governing codes.

C. Mock-Up: Prior to beginning installation erect a mock-up section, where directed, using all system components.

D. Pre-installation Conference: Conduct a conference, prior to start of installation, to review system requirements, shop drawings, and all coordination needs.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver system components in manufacturer's original unopened packages, clearly labeled.
- B. Store components in fully enclosed dry space. Carefully place on skids, to prevent damage from moisture and other construction activities.
- C. Handle components to prevent damage to surfaces and edges, and to prevent distortion and other physical damage.

1.7 PROJECT CONDITIONS

- A. Begin system installations only after spaces have received schedule paint finishes, and after all wet work and overhead work have been completed.
- B. Prior to starting installations, allow materials to reach ambient room temperature and humidity intended to be maintained for occupancy.

1.8 WARRANTY

- A. Provide specified manufacturer's warranty against defects in workmanship, discoloration, or other defect considered undesirable by the Architect or Employer.
- B. This warranty shall remain in effect for a minimum period of one (1) year from date of initial acceptance.

1.9 MAINTENANCE & EXTRA MATERIALS

- A. Maintenance Instructions: Provide manufacturer's standard maintenance and cleaning instructions for finishes provided.

- B. Extra Materials: Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents. Only typical system components are included with attic stock.

- 1. Acoustical Wall Units: Full-size units equal to two percent (2%) of amount installed.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Metal Louver, Slat Panels:

- 1. Fortina metal louver & slat panel system manufactured by B&N Industries, Main Offices: 1409 Chapin Avenue, 2nd Floor, Burlingame, California 94010, Phone: 1.800.350.4127. www.BNind.com or APPROVED EQUAL.

- A. Backrail Attachment Systems:

- 1. Fortina metal louver & slat panel system manufactured by B&N Industries, Main Offices: 1409 Chapin Avenue, 2nd Floor, Burlingame, California 94010, Phone: 1.800.350.4127. www.BNind.com or APPROVED EQUAL.

2.2 SYSTEM MATERIALS

- A. Linear metal panel wall system for *interior* installations RUN VERTICALLY ON WALL as indicated on Drawings.

- B. Panel Profile Type: Linear panels, aluminum with square edges; Utilizes Universal Carrier.

- 1. Pattern: layout as shown in Architectural Drawings.

- C. Linear Suspension System:

- 1. Carrier: Universal hat-shaped, .038" roll-formed aluminum section with hook-shaped tabs spaced to receive wall panels at 2" on-center and 27/32" apart. Support holes spaced 4" on-center. Finish: Factory-applied black enamel

- D. Perforations: Microperforated with acoustical material on back of panel

- E. Panel Finish:

- 1. Finish: Powder coated from manufacturer standard color selections, color to be selected by Architect.

2.3 ACCESSORY MATERIALS

- A. Panel End Caps: Formed, stamped, or milled end caps with matching finish.

- B. Panel Splice: **The proposed layout should NOT require END to END Spicing.**

- C. Acoustic Material: Non-woven black fabric.

PART 3- EXECUTION

3.1 EXAMINATION

- A. Examine substrates and structural framing to which acoustical metal panels attach or abut, with installer present, for compliance with requirements specified in this and other Sections that affect installation and anchorage, and other conditions affecting performance of metal panel wall system.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other anchors whose installation is specified in other Sections.
- B. Measure each wall area and establish layout of acoustical metal pan units to balance border widths at opposite edges of each wall section. Avoid using less-than-half-width units at borders, and comply with layout shown on interior wall elevations.
- C. Survey substrate for wall attachment to assure squareness and proper elevation for wall panel installation.

3.3 INSTALLATION

- A. General: Install acoustical metal pan wall panels per manufacturers shop drawings provided, per manufacturer's written instructions and to comply with publications referenced below.
 - 1. IBC (International Building Code) Standard for Seismic Zone for local area

3.4 ADJUST AND CLEAN

- A. Adjust components to provide uniform tolerances.
- B. Replace all wall panels that are scratched, dented or otherwise damaged.
- C. Clean exposed surfaces with non-solvent, non-abrasive commercial type cleaner.

End of Section

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Resilient flooring (LVT)
- B. Installation accessories.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors.
- B. Section 09 6600 – Resilient Tile Flooring.

1.03 REFERENCE STANDARDS

- A. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2009a.
- B. ASTM F 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2008.
- C. ASTM F 1344 - Standard Specification for Rubber Floor Tile; 2004 (Reapproved 2009).
- D. ASTM F 1700 - Standard Specification for Solid Vinyl Floor Tile; 2004.
- E. ASTM F 1861 - Standard Specification for Resilient Wall Base; 2008.
- F. ASTM F 2195 - Standard Specification for Linoleum Floor Tile; 2007.
- G. CAL (CHPS LEM) - Low-Emitting Materials Product List; California Collaborative for High Performance Schools (CHPS); current edition at www.chps.net/.
- H. FS RR-T-650 - Treads, Metallic and Nonmetallic, Skid Resistant; Federal Specifications and Standards; Revision E, 1994.
- I. GEI (SCH) - GREENGUARD "Children and Schools" Certified Products; GREENGUARD Environmental Institute; current listings at www.greenguard.org.
- J. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; National Fire Protection Association; 2006.
- K. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.
- L. SCS (CPD) - SCS Certified Products; Scientific Certification Systems; current listings at www.scscertified.com.

1.04 SUBMITTALS

- A. See Section 01-3300 - Submittal Procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- D. Verification Samples: Submit three samples, 4 x4 inch in size illustrating color and pattern for each resilient flooring product specified.
- E. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of sub-floor is acceptable.
- F. Manufacturer's Certification: Product certificates signed by the manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

- G. Manufacturer's Instructions: Manufacturer's installation instructions.
- H. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
- I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Flooring Material: 5 percent of each type and color of tile material, but not less than one box.
 - 2. Extra Wall Base: 100 linear feet of each type and color.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 10 years documented experience.
- B. Installer Qualifications: Contractor specializing in installing the products specified in this section with minimum 5 years documented experience.
- C. Provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives for each type of flooring specified.
- D. Provide flooring material to meet the following fire test performance criteria as tested by a recognized independent testing laboratory:
 - 1. ASTM E648, Critical Radian Flux of 0.45 watts per sq cm or greater, Class I.
 - 2. ASTM E662, (Smoke Generation) Maximum Specific Optical Density of 450 or less.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.
- B. Store materials in a clean, dry, enclosed space off the ground, and protected from the weather and from extremes of heat and cold. Protect adhesives from freezing.
- C. Protect roll materials from damage by storing on end.

1.07 FIELD CONDITIONS

- A. Maintain temperature in storage area between 65 degrees F and 85 degrees F.
- B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 68 degrees F to achieve temperature stability.
- C. The concrete sub-floor surfaces shall be dry enough and ready for resilient flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F 710.
- D. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65 F and a maximum temperature of 85 F for at least 48 hours before and during installation. After installation, maintain a minimum temperature of 68 F in areas where work is completed.
- E. Install resilient flooring and accessories after the other finishing operations, including painting, have been completed.
- F. Close spaces to traffic during the installation of the flooring.

1.08 WARRANTY

- A. Luxury Vinyl Tile: Provide manufacturer's standard limited wear warranty for a period of 15 years from the Date of Substantial Completion.
- B. Installer's Warranty: Installer shall provide warranty against defects in materials and workmanship for a period of 1 year from the Date of Substantial Completion.

PART 2 – PRODUCTS

2.01 GENERAL

2.02 TILE FLOORING

- A. Luxury Vinyl Tile Plank: (LVT-1) Surface-decorated, with wear layer, and:
 - 1. Minimum Requirements: Comply with ASTM F 1700, of Class III, Type B.
 - 2. Smoke Density: ASTM 662 - Class 1, < 450.
 - 3. VOC Content: Certified as Low Emission by one of the following:
 - a. GreenGuard Children and Schools; www.greenguard.org.
 - b. SCS Floorscore; www.scscertified.com.
 - c. Product listing in the CHPS Low-Emitting Materials Product List at: www.chps.net/manual/lem_table.htm.
 - 4. Size: .25 m x 1 m.
 - 5. Thickness: 4.5 mm
 - 6. Wear Layer: 22 mil
 - 7. Static Load: ASTM F970 - 1500 psi.
 - 8. Slip Resistance: ASTM D2047 >0.55 wet/dry, ADA Compliant.
 - 9. Color: As selected by Architect from manufacturer's full range of colors.
 - 11. Manufacturers:
 - a. Interface; Product – Studio Set; Level Set, Stones; or Stargazing Collection (basis of design) or approved equal.
 - b. Substitutions: See Section 01-6000 - Product Requirements.

2.05 ACCESSORIES

- A. Subfloor Filler for luxury vinyl tile: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Transition Strips, and Edge Strips: Same material as flooring, color as selected by Architect.
- D. Filler for Coved Base: Plastic.
- E. Sealer and Wax: Types recommended by flooring manufacturer.
- F. Grounding straps for Vinyl Electro-Static Dissipative Tile (SDT), installed per manufacturer's instructions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Material Inspection: In accordance with manufacturer's installation requirements, visually inspect materials prior to installation. Material with visual defects shall not be installed. Labor costs required to replace material installed with visual defects shall be the responsibility of the installation contractor.
- B. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
 - 1. Surface must be smooth, level, at the required finish elevation, without more than 1/8" in 10'-0" variation from level, as shown.

- C. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- D. Verify that concrete sub-floor surfaces are dry enough and ready for resilient flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F 710; obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
 - 1. Concrete Moisture Testing: Conduct moisture tests on all concrete floors regardless of the age, grade level or the presence of existing flooring. Conduct calcium chloride tests in accordance with ASTM F 1869. Measure the internal relative humidity of the concrete slab in accordance with ASTM F 2170. One test of each type should be conducted for every 1,000 sq. ft. of flooring. For projects less than 3,000 sq. ft., a minimum of three tests of each type should be conducted. The tests should be conducted around the perimeter of the room, at columns, and where moisture may be evident. Concrete moisture vapor emissions must not exceed 5.0 lbs. per 1,000 sq. ft. in 24 hrs. Concrete internal relative humidity must not exceed 75%. A diagram of the area showing the location and results of each test should be submitted to the Architect, General Contractor and Construction Manager. If any test result exceeds these limitations, the installation must not proceed until the problem has been corrected.
 - 2. Concrete pH Test: Perform pH tests on concrete floors regardless of the age or grade level. If the pH is greater than 10, it must be neutralized prior to beginning the installation.
- E. Do not proceed with installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.02 PREPARATION

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
- B. Prepare sub-floor surfaces as recommended by flooring and adhesive manufacturers.
- C. Clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install in accordance with manufacturer's instructions and approved shop drawings.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints tightly.
- E. Lay tile flooring so as to assure good contact and bond, close even joints and with finished surfaces in true planes. Maintain full size tiles in field varying if necessary in borders. Lay tiles square with room axis in pattern as selected unless otherwise shown on drawings.
- F. Tightly cement resilient flooring to subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections.
 - 1. Use adhesive applied to substrate in compliance with flooring manufacturer's recommendations, including those for trowel notching, adhesive mixing, and adhesive open and working times.
- G. Set flooring in place, press with heavy roller to attain full adhesion.
- H. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- I. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 - 1. Resilient Strips: Attach to substrate using adhesive.

- J. Scribe flooring to walls, columns, cabinets, permanent fixtures, built in furniture, floor outlets, and other appurtenances to produce tight joints.
- K. Install flooring in recessed floor access covers, maintaining floor pattern.
- L. Do not install resilient flooring over expansion joints. Use expansion joint covers manufactured for use with resilient flooring. Refer to other specification sections for expansion joint covers.
- M. Install flooring before installation of casework, furniture, equipment, movable partitions, etc. that will be moved in future.
- N. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.

3.04 TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless manufacturer's instructions say otherwise.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern unless otherwise shown on drawings.
- C. Broken, cracked, chipped, or deformed tiles are not acceptable.
- D. See drawings for tile patterns.

3.05 RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints. Install base in lengths as long as practical.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Fill voids with plastic filler along the top edge of the resilient wall base on masonry surfaces or other similar irregular substrates as recommended by base manufacturer.
- E. Scribe and fit to door frames and other interruptions.
- F. Apply wall base to walls, columns, casework, and other permanent fixtures in areas where base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces. Scribe base accurately to trim at doors.

3.07 ACCESSORIES

- A. Low-Emitting Materials: Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers" or other approved standard for VOC content.
- B. Place resilient edge strips tightly butted to flooring and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring which would otherwise be exposed or to transition from one floor type to another.

3.08 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

- B. Remove excess adhesive from floor, base, and wall surfaces without damage.
- C. Sweep and vacuum floor after installation.
- D. Do not wash floor until time period recommended by resilient flooring manufacturer has elapsed to allow resilient flooring to become well-sealed in adhesive.
- E. Clean in accordance with manufacturer's instructions.

3.09 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.
- B. Protect flooring against damage during construction period as recommended by the resilient flooring manufacturer's directions.
- C. Apply protective floor polish to resilient flooring surfaces free from soil, excess adhesive or surface blemishes. Use commercially available metal cross-linked acrylic product acceptable to resilient flooring manufacturer.
- D. Clean resilient flooring not more than 4 days prior to date of Substantial Completion by method recommended by resilient flooring manufacturer and strip protective floor polish, which was applied after completion of installation.

END OF SECTION

1.0 GENERAL

- 1.1 SCOPE: This section covers rubber flooring accessories complete. The extent of work is as Shown on drawings and in schedules or if not shown as required at termination of Other floor material and resilient flooring edges or transitions as required.

1.2 RELATED DOCUMENTS:

- A. Drawings and General Provisions of contract, including general and supplementary conditions and Division 1 Specification Sections, apply to work of this section.
- B. Resilient Tile Flooring - Section 09 6600

1.3 QUALITY ASSURANCE:

- A. Manufacturer: Provide each type of rubber flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds. All products shall be 100% asbestos free.
- B. Products as manufactured by one of the following and chosen by the Architect depending on color selections.
 - 1. Roppe Corporation
 - 2. Johnsonite

1.4 SUBMITTALS:

- A. Product Data: Submit two copies of manufacturer's technical data and installation instructions for each type of rubber accessory.
- B. Samples: Submit two sets of samples of each type, color and finish of flooring and accessory required. Provide full-size tile units and 6" long sample of accessory. Include full range of flooring color and pattern variation. Sample submittals will be for reviewed for color, texture and pattern only. Compliance with all other requirements is exclusive responsibility of Contractor.
- C. Replacement Material: After completion of work, deliver to project site replacement materials from same manufactured lot as materials installed, not less than one box for each 50 boxes or fraction thereof, for each type, size and color installed.

1.5 JOB CONDITIONS:

- A. Maintain minimum temperature of 65 degrees F (18 degrees C) in spaces to receive resilient flooring for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. Store flooring materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 degrees F (13 degrees C) in areas where work is completed.
- B. Install rubber flooring accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by manufacturer's recommended bond and moisture test.

2.0 PRODUCTS:

2.1 RUBBER MATERIALS:

- A. Flooring Accessories: As shown in the finish schedule or listed herein as Cove Base or Wall Base shall be 1/8" TYPE TS THERMOSET VULCANIZED RUBBER COVE BASE. It shall be constructed of first-quality materials properly vulcanized and shall be smooth and free from imperfections which distract from its appearance. The base shall conform fully to the requirements of ASTM F-1861 Type TS (Thermoset Vulcanized Rubber).

Basis of Design for All Cove Base in the TV Studio space shall be Roppe Pinnacle Plus Profile Invent #95 -3/8" thick with a height of 5 1/2". Provide pre molded inside corner units. Color shall be selected by Architect equally priced to Pinnacle Series by Roppe.

- B. Rubber Accessories: Shall be constructed of first quality materials properly vulcanized and shall be smooth and free from imperfections which distract from its appearance. These accessories shall conform full to the requirements of federal specifications SS-W-40A Type 1 rubber. Accessories shall include: Reducer strips, glue down carpet edges, carpet edge guards, custom carpet edging, reducer strips, tile/carpet jointers, and other shapes as required, unless otherwise stated in drawings. Sizes shall be as required. Colors shall be selected from manufacture standard color selections.
- C. Adhesives (Cements): Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.
- D. Concrete Slab Primer: Non-staining type as recommended by flooring manufacture.
- E. Leveling Compound: Type as recommended by manufacturer.

3.0 EXECUTION:

3.1 PREPARATION:

- A. Concrete Subfloors: Remove any existing resilient tile flooring and condition subfloors to provide smooth, clean, continuous surface. Use underlayment where required to provide level surfaces ready to receive tile. Fill holes and cracks in the concrete subfloors with crack filler. Remove grease, dirt, loose particles, and other foreign matter that would prevent adhesion. Then rinse subfloors and allow to dry thoroughly before applying adhesive.
- B. Moisture Test: After concrete floor surfaces have been cleaned, small patches of adhesive to be used shall be spread in several locations in each room and allowed to dry overnight. If the adhesive can be peeled easily from the floor surface, the floor is not sufficiently dry. The test shall be repeated until the adhesive adheres properly. When the adhesive adheres tightly to the floor surface, the resilient flooring shall be applied.
- C. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

1. Rubber Base: Remove any surface film on back of base due to mold release agents as recommended by base manufacturer, before applying base adhesive. Provide performed molded internal and external corners and end stops. Wherever rubber base is used in conjunction with vinyl wall covering, spread adhesive to within 1/4" below top of base. Immediately remove spots or smears of adhesive from exposed surface.
2. Rubber Accessories: Shall be installed in accordance with manufacturer's recommendation. Immediately remove spots or smears adhesive as installation proceeds.

END OF SECTION

1.0 GENERAL

1.01 Scope

- A. Furnish and install Stretched-Fabric Wall System produced from a PVC polymer. The product must be tested to be VOC and phthalate Free.
- B. Related Work Elsewhere
 - 1. Preparation of smooth, flat and plumb substrate.
 - a. Architectural Woodwork – New wood furring installed by GC over existing acoustically treated walls as noted on drawings.
 - b. All electrical outlets and switch boxes must be built out to final depth by others, before work is started.

1.02 Fire Performance Standards

- A. The stretched fabric wall acoustical panels furnished and installed shall meet the following conditions:
 - a. **Fire Test Standard Requirement: Must have a Fire Hazard Classification of Class A (0-25 Flame Spread Index, 0-450 Smoke Developed Value) as tested by an accredited fire testing laboratory in accordance with ASTM E 84-08 (or the latest version thereof),**
 - b. **Standard Test Method for Surface Burning Characteristics of Building Materials, incorporating ASTM E 2573 (or the latest version thereof),**
 - c. **Standard Practice for Specimen Preparation and Mounting of Site-Fabricated Stretchwall Systems to Assess Surface Burning Characteristics (which includes a longitudinal midseam running the entire length of the test specimen to ensure that all components of the system are exposed to the flame front for the duration of the test) .**

1.03 Qualifications

- A. The installation work of this Section shall be performed by an authorized dealer, licensed by the manufacturer, and shall be a member of the Wall Upholstery Guild of America (W.U.G.A.) and shall be certified as such. Certification to be submitted for verification at the time of submittals.
- B. Dealer's installers must have completed a formal training program.
- C. **Fabri Trak** profiles in sizes ½ inch must be able to be installed in configuration as shown on drawings.

1.04 Quality Assurance

- A. The fabric shall be stretched tautly over the subsurface and the **Fabri Trak** System framework without the use of glues or staples.
- B. The fabric border shall be inserted completely into the clamping inlet jaws of the framework creating a clean crisp appearance devoid of raw edges or loose threads.
- C. The fabric shall be installed from the face side after framework is securely fastened to insure perfect horizontal and vertical grain alignment.
- D. The fabric pattern shall be matched and true.
- E. The fabric shall be removable and replaceable for changeability and to provide access to the surface behind the fabric.
- F. The framework shall not "read through" the fabric.
- G. An interlining shall be installed beneath the face fabric in the event a translucent fabric has been specified.
- H. Sewn seams shall not be permitted.
- I. Pre-manufactured panels do not meet the intent of this specification

1.05 Submittal

- A. Submit manufacturer's product specifications and such other data as may be required to show compliance with the Contract Documents.
- B. Submit in writing to the Owner, through the Architect, the manufacturer's dealer certification.
- C. Submit installation Dealer's (5) Year Limited Warranty against defects in materials and workmanship.
- D. Installation dealer shall submit a list with a minimum of five (5) comparable installations as references, with appropriate reference-contact information to attest to Dealer's Quality and Integrity.

1.06 Product Handling

- A. Store all materials off the ground and protected from dirt and dust of construction operations.
- B. Handle materials in a manner that will protect them from damage and soiling.

2.0 PRODUCTS

1. Acoustical Wall Treatment System

- A. The system shall consist of site installed and fabricated, **concealed Fabri Trak System as manufactured by Fabri Trak System, Inc. or APPROVED (PRIOR TO BIDDING) EQUAL.** Furnish materials and Installation to be provided by:
 - 1. Basis of Design - Manufacturer: FabriTRAK® Systems Inc, www.fabritrak.com.
 - 2. Approved installer as listed by Manufacturer.
- B. The System Components shall consist of the following:
 - 1. Rigid framework with clamping jaws, one-piece section:
 - a. 1/2" thick, fire retardant track
 - b. S – Square
 - 2. Sub-surfaces infill:
 - A. ACOUSTICAL:
 - 1. TERRACORE POLY™ | 85% Recycled, DECLARE APPROVED
 - a. 1/2" "BLACK".
 - b. Acoustical Performance (ASTM C423):
 - c. No Substitutions Allowed, unless alternative product Fire-Rating and recycled and recyclability documentation is submitted 15 days prior to bid-date.
 - d. ASTM E-84, Class A fire-rated
 - B. Fabric(s): Shall be approved by the Installation Dealer as to suitability in its usage with the Stretch Wall System.
 - 1. Fabric Manufacturer FabriSpan or APPROVED EQUAL
 - 3. Width of Fabric: 10' MIN WIDTH for this installation
 - 4. Fabric Direction
 - 5. Color: custom
 - 6. Flame Retardant: Per ASTM E-84 CLASS A
 - 7. Provide 3 color match Sample of fabric(s) (at least 12" x 12")
 - C. The fabric is to be supplied by the Installation Dealer.

3.0 EXECUTION

3.01 Existing Conditions

- A. Examine the condition of the substrate and the conditions under which the work of the Section is to be performed. Notify the Contractor in writing of any unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner satisfactory to the installer.
- B. Do not install acoustical wall panel fabric in any space until:
 - 1. The space is enclosed and is weather tight.
 - 2. All wet work has been completed and is dry.

3. Painting is completed and wall base, chair-rails and floor covering installed.
4. All adjacent and related work of other trades has been completed including, in part Architectural Woodwork, Masonry, Doors and Frames, Hardware, Gypsum Drywall, Plastering, Wall Covering, Painting, Ceiling Grid, and Electrical Work.
5. Ambient temperature and humidity are continuously maintained at values indicated for final acceptance of the building or occupancy of the space.
6. Permanent lighting shall be in place and operational before the fabric panels are installed. General Contractor assumes responsibility for fabric panel installation if permanent lighting is not furnished at the time of dealer installation.

3.02 Installation

- A. Field measure each wall area, which is to receive the acoustical treatment to establish the exact layout of the units as shown on elevations.
- B. Apply the framework in the areas to receive the acoustical wall treatment as shown on the drawings. Secure the framework with suitable mastic and special, heavy duty; one-inch diverging staples located not more than 2" on center. Other fasteners may be used as required for specific substrates, providing they are strict accordance with the manufacturer's printed instructions and comply with governing regulations and fire resistance rating requirements specified.
- C. Install the framework plumb and straight, flush in proper alignment.
- D. Install the sub-surface material, continuous and flush, to the shoulder of the track.
- E. Cut the fabric from each roll marking and maintaining sequence of drops and matching direction of weave for sequential and uniform installation.
- F. Install the fabric from the face side after the framework is securely fastened to insure perfect horizontal and vertical grain alignment.
- G. The fabric shall be stretched tautly, evenly and smoothly and be free of defects and flaws.
- H. No stapling or gluing of fabric to core or channels will be permitted.
- I. Penetrations through the face of fabric of any kind (i.e. staples, nails, etc.) will be prohibited.
- J. Prewrapped, prefabricated, or wood ground systems do not meet the intent of this specification.
- K. Z-Clip, Velcro or Glued installation techniques do not meet the intent of this specification.
- L. Sewn seams of any type (thread or ultrasonic welds) do not meet the intent of this specification unless specifically called for in the drawings or specification.
- M. ABS based stretched-fabric panel systems are not permitted.
- N. **No substitution of FabriTRAK® shall be permitted unless PRIOR APPROVAL is documented in addendum during bidding.**

3.03 Cleaning and Protection

- A. Clean exposed surfaces of acoustical wall panels. Trim and remove all loose threads.
- B. Remove surplus materials, rubbish and debris resulting from the installation and leave areas of installation in a neat, clean condition.
- C. If site conditions require, cover fabric panels with vinyl drop cloths.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following interior substrates:
 - 1. Steel.
 - 2. Wood.
 - 3. Acoustical Insulation at ceiling level
- B. Field application of paints and other coatings.
- C. Materials for back-priming woodwork.
- D. Scope: Finish all interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. All new work and existing surfaces where construction operations damage existing finish.
 - 2. Prime surfaces as required for painting
 - 3. Mechanical and Electrical:
 - a. In finished areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, and hangers, brackets, collars and supports, unless otherwise indicated. Finish shall match adjacent surface.
 - b. In finished areas, paint shop-primed items.
- E. Scope: Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
 - a. Wood doors are factory pre-finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Non-metallic roofing and flashing.
 - 6. Stainless steel, chrome, copper, bronze, and anodized aluminum and similar finished materials.
 - 7. Factory-finished metal work.
 - 8. Marble, granite, slate, and other natural stones.
 - 9. Floors, unless specifically so indicated.
 - 10. Ceramic and other tiles.
 - 11. Brick, architectural concrete, cast stone, integrally colored plaster and stucco.
 - 12. Brick and integrally colored block.

13. Glass.
14. Acoustical materials, unless specifically so indicated.
15. Concealed pipes, ducts, and conduits.

1.2 RELATED WORK SPECIFIED IN OTHER SECTIONS:

The following categories of work are not included as part of the painter-applied finish work or are included in other sections of the specifications except as otherwise shown on drawings or specified herein.

1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under the various sections for structural steel, miscellaneous metal items, hollow metal work and shop-fabricated or factory built metal mechanical and electrical equipment or accessories.
2. Pre-Finish Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, acoustic materials, architectural woodwork and casework, finished mechanical and electrical equipment including light fixtures, switches, gear and distribution cabinets. Mechanical equipment that does not have finish paint will be painted under this section.
3. Concealed Surfaces: Unless otherwise indicated, painting is not required on wall or ceiling surfaces in concealed areas and inaccessible areas, such as foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts, and elevator shafts, as applicable to this project. Paint all piping, equipment and other items in these spaces as required.
4. Finish Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials shall not be painted, except as otherwise specified.
5. Operating Parts and Labels: Do not paint any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts, unless otherwise indicated. Do not paint over any code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.
6. Colors: Paint colors will be as selected by the Architect. Before any painting is done the Architect will furnish the Contractor with the selected color chips and schedule showing where the various colors will be applied. Finish colors shall exactly match the color chips. For bidding purposes, there will be a minimum of 2 colors used in this project.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each finish and for each color and texture required.
- C. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.4 LIST OF PROPOSED MATERIALS

- A. List of Proposed Materials: Verify, in writing, that products proposed are from products listed herein. This submittal shall include full identifying product names and catalog numbers. Materials for prime coats, undercoats, finish coats and thinning applied to same surface shall be produced by the same manufacturer.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience.
- C. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

D. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

- 1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - a. Vertical and Horizontal Surfaces: Provide Color Card samples of at least 100 sq. ft. (9 sq. m).
 - b. Other Items: Architect will designate items or areas required.

1.6 DELIVERY AND STORAGE

- A. Deliver materials to job in original containers with labels intact and seals unbroken.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.
- D. Store materials and painter's tools in a single room assigned for this use only. Keep storage place clean and neat and damage to it shall be corrected.
- E. Keep paint and other volatile material tightly covered at all times when not in actual use.
- F. Remove soiled and oily rags and waste from building every night and take every precaution to prevent spontaneous combustion.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
- B. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Coatings: 1 gallon of each color and type; store where directed.
 - 3. Label each container with color and finish color schedule designation in addition to the manufacturer's label.

1.8 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
- F. Interior Painting: Once painting has commenced, provide constant temperature of 65 degrees F. or above, and prevent wide variations in temperature which might result in condensation on freshly painted surfaces.
- G. Provide lighting level of 80 ft candles measured mid-height at substrate surface.
- H. Protection of Other Work: Painting Contractor shall furnish drop cloths and lay cloths in areas where painting is being done to protect floors and other adjoining work from damage during painting. Paint droppings shall be removed, and any damaged surfaces shall be restored to a condition satisfactory to the Owner.

- 1.9 COOPERATION WITH OTHER TRADES: Schedule this work and coordinate it with other trades and do not proceed until other work and/or job conditions are as required to achieve satisfactory results. Examine drawings and specifications for the work of various other trades and become familiar with all their provisions regarding painting. Surfaces that are left unfinished by requirement of other sections shall be painted or finished as part of the work covered by this section.

1.10 INSPECTION OF SURFACES:

- A. Examine surfaces to receive paint finishes, in accord with Contract Conditions, for defects which cannot be corrected by procedures specified herein under "Preparation of Surfaces" and which might prevent satisfactory painting results. Do not proceed with work until such defects are

corrected. Commencing of work constitutes acceptance of surfaces and thereafter, Contractor shall be responsible for satisfactory results as required herein.

- B. Painting of Previously Painted Surfaces: The painter shall determine paint compatibility with specified products and surfaces previously painted. Should paints be non-compatible, notify the architect. Otherwise, lightly sand or treat surfaces as recommended by the manufacturer prior to installation of paint.

PART 2 - PRODUCTS

2.1 Approved Manufacturers:

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Colors: As selected by Architect from manufacturer's full range.
- C. Paints: The following manufacturers are acceptable provided that their products are equivalent or better in quality, appearance, sheen, durability and VOC content to specified system.
 - 1. Sherwin-Williams: www.sherwin-williams.com.
Is the standard for the District. No other manufacturer will be accepted.

2.2 PAINTS AND COATINGS - GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
 - 1. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
 - 2. Nonflat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
 - 3. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
 - 4. Floor Coatings: VOC not more than 100 g/L.
 - 5. Shellacs, Clear: VOC not more than 730 g/L.
 - 6. Shellacs, Pigmented: VOC not more than 550 g/L.
 - 7. Flat Topcoat Paints: VOC content of not more than 50 g/L.
 - 8. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
 - 9. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
 - 10. Floor Coatings: VOC not more than 100 g/L.
 - 11. Shellacs, Clear: VOC not more than 730 g/L.
 - 12. Shellacs, Pigmented: VOC not more than 550 g/L.
 - 13. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
 - 14. Dry-Fog Coatings: VOC content of not more than 400 g/L.
 - 15. Zinc-Rich Industrial Maintenance Primers: VOC content of not more than 340 g/L.

16. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.

C. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
2. Restricted Components: Paints and coatings shall not contain any of the following:
 - a. Acrolein.
 - b. Acrylonitrile.
 - c. Antimony.
 - d. Benzene.
 - e. Butyl benzyl phthalate.
 - f. Cadmium.
 - g. Di (2-ethylhexyl) phthalate.
 - h. Di-n-butyl phthalate.
 - i. Di-n-octyl phthalate.
 - j. 1,2-dichlorobenzene.
 - k. Diethyl phthalate.
 - l. Dimethyl phthalate.
 - m. Ethylbenzene.
 - n. Formaldehyde.
 - o. Hexavalent chromium.
 - p. Isophorone.
 - q. Lead.
 - r. Mercury.
 - s. Methyl ethyl ketone.
 - t. Methyl isobutyl ketone.
 - u. Methylene chloride.
 - v. Naphthalene.
 - w. Toluene (methylbenzene).
 - x. 1,1,1-trichloroethane.
 - y. Vinyl chloride.

D. Flammability: Comply with applicable code for surface burning characteristics.

E. Colors: As selected by Architect from manufacturer's full range.

1. Selection to be made by Architect after award of contract.
2. Extend colors to surface edges; colors may change at any edge as directed by Architect.
3. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

2.3 PREPARATION AND APPLICATION CLEANING: The Painting Contractor will not only protect his work at all times, but will also protect all adjacent work and materials by suitable covering or other method during the progress of his work. Upon completion of the work, he is to remove all

paint and varnish spots from the premises, all rubbish and accumulated materials and he is to leave the work in a clean, orderly and acceptable conditions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Masonry (CMU): 12 percent.
 - 3. Wood: 15 percent.
 - 4. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION AND APPLICATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and re-prime substrate with compatible primers as required to produce paint systems indicated.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- D. Painting Mechanical and Electrical Work: Paint items exposed in spaces (when indicated) and occupied spaces including, but not limited to, the following:
 - 1. Mechanical Work:
 - a. Uninsulated metal piping.
 - b. Pipe hangers and supports.
 - 2. Electrical Work: Exposed conduit

- E. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.3 INTERIOR PAINTING SCHEDULE-Sherwin-Williams Basis of Design or as noted below:

A. Concrete Substrates, Light Traffic Surfaces (Sealed Concrete): Not in scope of work

- 1. Water-Based Clear Waterproofing Sealer System (Non-film Forming/clear) for use at Main Mechanical, Main Electrical and Sprinkler Rooms with entrances on the building exterior and interior Data and Electrical Rooms as noted in Finish Schedule:
 - a. First & Second Coats: SpecChem: Cure & Seal 25, 25% solids solvent-based cure and seal or approved equal.
 - b. Apply topcoat after 24 hours and before 36 hours has passed since applying the sealer.

B. CMU Substrates: NOT IN SCOPE OF WORK

- 1. Masonry/Concrete (at toilets and locker rooms), Opaque, 2-part water-base Gloss Epoxy, 4 coat:
 - a. Prime Coat: 2 coats Loxon Block Surfacer A24W200 - Architect must inspect walls for smoothness after filler and before any epoxy paint is applied.
 - b. Finish: 2 coats S-W Pro Industrial Water Based Catalyzed Epoxy; B73-300 Series/B73V300 Hardener
- 2. High-Performance Industrial Finish Coat Systems (except toilets and locker rooms):
 - a. Prime Coat: S-W Loxon Block Surfacer A24W200
 - Intermediate: S-W Pro Industrial Acrylic B66-650 Series(S/G) or S-W Pro Industrial Acrylic B66-600 Series(Gloss)
 - Finish Coat: S-W Pro Industrial Acrylic B66-650 Series(S/G) or S-W Pro Industrial Acrylic B66-600 Series(Gloss)

C. Steel Substrates:

- 1. Fast-Drying Water-based Enamel System:
 - a. Prime Coat: Pro-Industrial ProCryl Universal Metal Primer B66W310.
 - Intermediate Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel B53-1150 Series(S/G) (semi-gloss).
 - Topcoat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel B53-1150 Series(S/G) (semi-gloss).
- 2. Fast-Drying Water-Based Dry-Fall System (shop primed or previously painted substrates – interior metal exposed, except aluminum; Color of mechanical duct work and any other items as indicated on the drawings will match deck color):

- a. Full Prime: S-W Pro Industrial Pro Industrial Pro-Cryl Primer B66W310 or S-W DTM Acrylic Primer/Finish B66W1. Allow 72 hours cure time before top coating.
 - b. First Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Semi-Gloss B42W83
 - c. Finish Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Semi-Gloss B42W83
3. High-Performance Industrial Finish Coat Systems / Water-Based Dry-Fall System (underside of roof decking used as ceilings – non-ferrous):
- a. Prime Coat: Not needed. Intermediate and Finish Coat Product Self Priming
Intermediate: S-W Pro Industrial Waterborne Acrylic Dryfall B42W181(Flat white finish).
Finish Coat: S-W Pro Industrial Waterborne Acrylic Dryfall B42W181(Flat white finish).

D. Wood Panel Substrates: Exposed wood trim at window and door openings

1. Latex System:

Prime Coat: S-W Premium Interior Wall and Wood Primer B28W8111
Intermediate Coat: S-W ProMar 200 Zero VOC Interior Latex Flat B30-2600 Series
Topcoat: S-W ProMar 200 Zero VOC Interior Latex Flat B30-2600 Series

END OF SECTION

SECTION 274116 – INTEGRATED AV COMMUNICATIONS

PART 1 - GENERAL

1.1 GENERAL

- A. This specification outlines Presentation Systems Contractor (PSC) requirements to furnish and install presentation systems and all low-voltage wiring required for completely operational systems in the Richland County School District One TV Studio project. All necessary infrastructure shall be required and provided by the PSC for a completely operational audio-visual presentation system inclusive of sound, display, distribution, control, lighting, and rigging. A separate bid for all work required in conjunction with the stated A/V package for a complete and functioning electrical packing will be required.
- B. The systems shall not be considered complete until as-built documentation, final system commissioning, and facility personnel training are completed. This facet of the services to be provided by the PSC is deemed very important to the satisfactory completion of the contract. To that end, a final payment reserve of 10% of the system purchase price shall be held from payment until the documentation package and training described in Part III are delivered.
- C. Systems are described by the drawings and equipment product list.

1.2 RELATED SECTIONS

- A. Architectural
- B. Electrical
- C. Fire Protection
- D. Mechanical

1.3 INTENT AND INTERPRETATIONS

- A. It is the intent of the Construction Documents that the PSC shall include all items necessary for the proper execution and completion of the project, resulting in the complete and fully operational system(s) ready for the Owner's use, in full compliance with all applicable standards, codes, and ordinances.
 - 1. Work or products not specifically indicated in the Construction Documents but which are necessary to result in complete and fully operational system(s) ready for the Owner's use shall be provided by the PSC.
 - 2. The specification of certain products in the Construction Documents shall not be construed as a release from furnishing such additional products and materials necessary to furnish complete and fully operational system(s) ready for the Owner's use.
- B. In the event that discrepancies exist or required items or details have been omitted in the Construction Documents, the PSC shall notify the Owner/Consultant in writing ten (10) days prior to the bid date. Failure to do so shall be construed as a willingness to provide a complete and fully operational system within the amount bid by the PSC. Where such discrepancies are not brought to the attention of the Owner/Consultant, the most stringent (costly) requirements shall be construed to be the basis for the PSC's bid.
- C. Drawings and Specifications are complementary. Items required by either are binding as though they are required by both. In the event of a conflict between the requirements of the Drawings and the Specifications:
 - 1. The specifications and drawings provide an intent of the type of systems required. Any item not addressed by these documents but are typically required shall be part of the PSC's work.
 - 2. With regards to the preparation of proposals and/or bids, the PSC shall assume the more stringent (costly) condition shall prevail. The PSC shall notify the Owner/Consultant of such a minimum of ten (10) days prior to the bid date.

3. With regards to actual construction, the PSC shall notify the Owner/Consultant and await the Owner's/Consultant's instruction prior to proceeding with procurement and installation.

D. Drawings:

1. Drawings are diagrammatic and approximate in character, are not intended to show all features of required work, and do not necessarily indicate every required component.
2. Symbols used on the Drawings are defined in the legend on the Drawings. Symbols indicated on the legend may not necessarily be required.

1.4 DEFINITIONS

- A. The term "Contractor", "Supplier", or "Presentation Systems Contractor (PSC)" as used herein refers to the party responsible for supplying all services and equipment covered herein and on related drawings.
- B. The term "Owner" shall refer to Richland County.
- C. The term "Consultant" shall refer to the consultant who is responsible for the design of the audio, video, and control systems.
- D. The term "Electrical Contractor" shall refer to the Division 26 contractor.
- E. The term "provide" will mean to supply, install, verify performance, and coordinate interconnection and power.
- F. Specialized terms particular to technical systems and related work shall be used in the following manner, in accordance with:
 1. Captions on related drawings.
 2. Generally recognized audio engineering and production usage.
 3. Relevant usage and definitions of handbooks, guidebooks, or trade group recommendations by manufacturers' associations or professional and engineering societies such as SMPTE, ICIA, UL, and NEMA.

1.5 RELATED DOCUMENTS

- A. The PSC shall read, review, and understand all documents listed below prior to bidding or proceeding with work. The PSC shall also refer to and understand all other related documents indicated herein. Failure to familiarize itself with the construction documents will not relieve the PSC of its responsibility to complete the work in accordance with the construction documents.
- B. Division 1: Applicable provisions of Division 1 shall govern all work under this section.
- C. Contract: In addition to the conditions and work described herein, all conditions of the Contract shall apply.
- D. Presentation System Drawings:
 1. AV001 LEGEND
 2. AV101 FLOOR PLAN
 3. AV201 REFLECTED CEILING PLAN
 4. AV301 PLATE DETAILS
 5. AV302 RACK DETAILS
 6. AV701 AUDIO FLOW
 7. AV702 VIDEO FLOW 1
 8. AV703 VIDEO FLOW 2
 9. AV704 LIGHTING FLOW

1.6 DESCRIPTION OF SYSTEM

A. TV STUDIO

1. The TV Studio consists of three distinct sets: News, Interviews, and Green Screen. The primary goal of this project is to modernize the studio and update existing technology while keeping all control room equipment in its current configuration.

1.7 ALTERNATES

- A. No Add Alts

1.8 SCOPE OF WORK

A. Work Included

1. Provide all labor and material for the complete installation of the presentation systems as hereafter specified and shown.
2. PSC shall review the entire project package, including drawings and notes for other trades that may impact the Presentation Systems work, and make provision for such.
3. Equipment shall be new, current production, with original warranty. Demo, refurbished, used, or B-stock equipment shall not be acceptable.
4. Quantities are listed for reference only. It is the PSC's responsibility to verify the quantities of all components.
5. All equipment must be installed in a neat and orderly fashion by competent workmen according to the manufacturer's instructions.
6. All system components shall be completely prewired, with all field connections clearly labeled. All equipment shall be UL and/or CE listed and comply with the National Electrical Code or equivalent authority and all applicable regulations of serving utilities and governmental bodies having jurisdiction.
7. Presentation equipment shall not be stored at the job site. Equipment shall be moved to the job site from a conditioned space only when scheduled for installation.

B. Work Specified Elsewhere

1. Installation of raceways, pull-boxes, floor boxes, and conduit (provided under electrical work).
2. Installation and termination of house network systems.
3. Cutting, patching, and painting walls, unless damaged, performing the work described within.

C. Coordinated Work

1. Coordinate with related trades to schedule the work and ensure a complete installation in accordance with the schedule outlined by the owner.

1.9 CONTRACTOR'S QUALIFICATIONS

A. General

1. The PSC shall be a company that regularly engages in the furnishing and installation of systems similar in complexity to those required for this project and in this section and must meet the following requirements in each discipline listed here to include Audio, Video/Control, Lighting, and Rigging.
2. A subcontractor employed as the "Presentation Systems Contractor" must be accepted and/or pre-approved by virtue of their standing and agreements with all equipment manufacturers to be installed and commissioned in this section. The PSC must be acceptable to the Architect and the Consultant and shall be identified on the Bid Proposal Form.

3. The primary business of the PSC shall be the sale and installation of professional performance-related sound, video, control, lighting, and rigging systems.
 4. The PSC shall have no less than five years of experience with equipment and systems of the specified types of systems that follow.
 5. Proof of successful completion with present key staff of five projects of the type or magnitude specified here in this project.
 6. Regular business under the same name and/or address for a period of five years.
 7. Have technicians trained in the specific installation and maintenance of the equipment supplied.
 8. Have suitable service facilities and test equipment for providing competent service for all types of professional dimming, rigging, sound, video, and control system equipment.
 9. Maintain shop and office facilities within a 150-mile radius of the project site.
 10. Employ a minimum of 1 full-time engineer with InfoComm International Certified Technology Specialist - Design (CTS-D) certification.
 11. Employ a minimum of 1 full-time installer with InfoComm International Certified Technology Specialist - Installation (CTS-I) certification.
 12. At the request of the Owner, the PSC shall demonstrate to the satisfaction of the Architect and Consultant that the PSC has:
 - a. Adequate facilities and equipment to complete the work.
 - b. Adequate staff with commensurate technical experience.
 - c. Suitable financial status to meet the obligations of the work.
- B. Audio
1. Personnel engaged in the audio portion of this project shall have the following certifications:
 - a. Biamp, Q-Sys, & BSS Audio senior-level programming
 - b. Dante Level 3 Master Certification
 - c. InfoComm International Certified Technology Specialist - Design (CTS-D)
 - d. InfoComm International Certified Technology Specialist - Installation (CTS-I)
 - e. EASE Training
 - f. Syn-Aud-Con certification
 2. Employ a qualified "sound system and A/V production expert" with sufficient experience in production to provide training and assistance to the Owner during the initial system use period.
- C. Lighting
1. The PSC shall be pre-approved as an ETC lighting provider for all stage lighting fixtures, stage/house dimming and dimming controls with various interfaces.
 2. Lighting system equipment in this section shall be provided, installed, and commissioned by a pre-approved ETC dealer.
 3. If the system design requires, the PSC shall be responsible for the convergence of the house and theatrical lighting system with the AV remote control system. This will enable lighting presets to be recalled from the AV control system.
- D. Rigging
1. The General Contractor shall provide and install structural steel to support the following:
 - a. All main and delay loudspeaker hanging locations. Typical load of 500-750 lbs.
 - b. All hoist and lighting batten locations. Loads vary
 - c. All dead hung batten locations. Loads vary
 2. The PSC shall employ only fully trained permanent stage riggers and mechanics who can be assisted by common laborers for the erection and installation of the stage rigging equipment. The riggers shall be completely familiar with the types of equipment being installed.

3. A competent Job Supervisor shall be on the job site at all times while work is in progress. The Job Supervisor of rigging shall represent the PSC, and all directions given by him/her shall be as binding as if given by the PSC directly. The PSC shall have on-site an installer with the rigging manufacturer certification.

E. Subcontracting

1. Any other Contractor/Supplier who intends to bid this work as the prime Contractor/Supplier and does not meet the required qualifications shall employ the services of a single "Presentation Systems Contractor" who does meet the requirements noted above and is approved by the Owner, Architect and Consultant as well. This "Presentation Systems Contractor" shall:
 - a. Furnish the equipment.
 - b. Meet all qualifications stated earlier in this section.
 - c. Shop fabricates the equipment racks and subassemblies.
 - d. Make all audio, video, and control connections to equipment racks, each piece of equipment, and connection panels.
 - e. Continuously supervise the installation and connections of cable and equipment.
 - f. Program the digital signal processor, video processing, and control systems.

1.10 BID SUBMITTALS

- A. Along with the bid price, the PSC shall include the following:
1. Proposed team member names, certifications, and biographies for each. Include names and biographies of service and technical support personnel who will be responsible for this project after completion.
 2. Equipment list noting equipment quantities, manufacturer, brief description and specification number.
 3. Statement that the bid is based on specified products.
 4. Address of staffed office within 150 miles of the job site.
 5. Statement that the Contractor has an established toll-free hotline and will provide 24-hour/7-day-a-week phone support and on-site emergency service as necessary to correct technical failures.
 6. List of five installations completed within the last three years, which are similar in size, type, and scope to the work specified in this Section. Include the project name, installation date, contact name, and phone number.
 7. Examples of typical design drawings (elevations, mounting details, millwork details, etc.)
 8. A minimum of five touch panel menu templates from projects completed by the PSC.
 9. Examples of training materials (PowerPoint slides, quick-start guide).
 10. Target project schedule with timeline, skills, and labor requirements.
 11. Client reference letters.
 12. Any proposed subcontractors, their qualifications, and scope of work.

1.11 PROJECT SUBMITTALS

- A. Upon award of the contract, PSC shall provide:
1. Preliminary project schedule with timeline, skills, and labor requirements.
 2. Name and qualifications of PSC personnel who shall be supervising the installation of the system. This person shall be a full-time employee of the PSC. The PSC shall submit a minimum of three (3) suitable bound sets, or electronic documents, of the following for review by the Architect and the Consultant. Refer to the General and Special Conditions for

additional set(s) which may be required. All documents shall be submitted prior to ordering any materials.

3. A complete list of all equipment and materials which are to be furnished. Accompanying the list shall be manufacturers' specifications or cut sheets for all equipment.
4. Shop drawings generated by the Contractor. The Contractor shall be provided with electronic copies of the floor plans, device layouts, and room sections only for use in preparing their shop drawings. The Contractor is responsible for editing these sheets as required by these submittal requirements. The Contractor is required to generate all other sheets as required by these submittal requirements.
 - a. Detailed wiring diagrams showing the interconnection of components and products, wiring and cabling diagrams depicting cable types and wire numbers, and device designators.
 - b. Plan view showing locations of all equipment. Plan(s) shall be properly dimensioned, and all equipment labeled.
 - c. Wall elevations and room sections showing all installed equipment. Elevations and sections shall be properly dimensioned, and all equipment labeled.
 - d. Equipment rack layout details, including power, grounding, ventilation, and conduit/cable entry as applicable.
 - e. Loudspeaker system suspension schematic, including hardware types and load capacity.
 - f. Complete drawings of custom-fabricated plates or panels. Drawings shall include dimensioned locations of components, component types, engraving information, plate material, and color, and bill of material.
 - g. Power requirements, one-line riser diagrams, and installation circuit diagrams for electrical equipment. Show all required wire sizes and counts between all components.
 - h. Manufacturer's detailed shop drawings of all dimming, control, and distribution equipment and published literature for all equipment.

1.12 FINAL INSPECTION AND TESTING

- A. In addition to supplying and installing the equipment as part of this contract, the PSC is to aid the owner's consultant during on-site observations, systems commission/performance verification, video system proof, and owner training and production assistance.
- B. The process of testing the system may necessitate moving and adjusting certain components, such as loudspeakers and video projectors. Movement and replacement, as required, are to be performed at no additional expense to the Owner.
- C. In the event further adjustment or Work becomes evident during testing, the Contractor shall continue his work until the system is acceptable at no additional expense to the Owner. If approval is delayed because of defective equipment or failure of equipment or installation to meet the requirements of these specifications, the Contractor shall pay for additional time and expenses of the Consultant and Owner at the standard rate in effect at that time.

1.13 WARRANTY

- A. All equipment is to be new and warranted, free of faulty workmanship and damage.
- B. The total system (parts and labor) is to be warranted free of defects for a period of one year from the date of final acceptance.
- C. The entire system (excluding lamps and fuses) shall be fully factory tested prior to shipment and shall be guaranteed against defects in material and workmanship for one year from the date of

acceptance by the Owner or (18) eighteen months from the date of shipment, whichever occurs first.

- D. No equipment having a shorter warranty shall be considered, and the equipment purchased shall be covered by this warranty. Unspecified length of warranties shall not be acceptable.
- E. Contractor shall provide for replacement of defective materials and repair of faulty workmanship within (48) forty-eight hours of notification by the owner, guaranteed at no cost to the owner during the warranty period.
- F. Contractor shall provide emergency service and support 24 hours a day and 7 days a week. This service is intended as an emergency response to failures that require immediate help from a qualified systems technician. The Contractor shall provide this service through an established toll-free line. This emergency service must include a return call from a qualified systems technician within 2 hours. This emergency service must also provide an on-site visit from a qualified systems technician within 12 hours of the initial phone call, should it be deemed necessary by both parties to resolve the service issue. This emergency service and support shall be made available throughout the warranty period at no additional charge to the owner.
- G. Paint and exterior finishes, fuses, and lamps are excluded from the above warranties except when damage or failure results from defective materials or workmanship covered by warranty.
- H. The minimum warranty provisions specified above shall not diminish the terms of individual equipment manufacturer warranties.

1.14 INSTRUCTION OF OWNER PERSONNEL

- A. PSC is to provide at least fourteen hours (2 each six to eight-hour session) of training to person(s) selected by the Owner on the operation and basic maintenance of all systems and equipment. In addition to training, a representative of the Contractor knowledgeable of the system installation and operation is to be present for the first special events selected by the Owner where all or any part of the sound and video systems is used. The training and event attendance is to take place during the 30-day period after system completion.

PART 2 - PRODUCTS

2.1 GENERAL

- A. It is the intention of these specifications to provide a complete and properly operating system. The major items of equipment shall be furnished in the quantity indicated by the project drawings or in the quantity specified herein. In the event of a quantity discrepancy between the drawings and specifications for an item, the PSC shall provide the greater. PSC is responsible for providing all accessories and miscellaneous equipment required to form a complete and operational system, including, but not limited to, power supplies, cabling, mounts, attachment hardware, and software licenses.
- B. Provide only new products and include the manufacturer's original factory warranty, product documentation, and the latest version of any software required for configuration and/or operation.
- C. The Manufacturer / Models listed in Part 2 - Products section, are representative of the equipment's capabilities and specifications that was used to determine the overall design of the various systems. If a PSC bidder chooses to bid a different manufacturer/model than what is listed, it is their responsibility to ensure the equipment that is bid is equal to, or better than the equipment listed in these specifications.
- D. Where the specifications list several manufacturers for a particular major item of equipment, such as power amplifiers, the PSC shall supply all of that item of equipment from one manufacturer.

2.2 TV STUDIO– AUDIO PRODUCTS

- A. AUDIO SPEAKERS – BOOTH MONITORS
 - 1. 1-6.5" LF Speaker and 1-1" VC HF drivers
 - 2. Frequency Range: 47Hz – 20kHz (± 3 dB)
 - 3. Coverage Pattern: 120° x 90° (horizontal x vertical)
 - 4. Maximum continuous/peak SPL: 92dB/110dB
 - 5. Acceptable manufacturer/model, or better than:
 - a. JBL 306P MKII
- B. AUDIO MICROPHONES – WIRELESS MICROPHONE SYSTEM
 - 1. Four channels in one rack space
 - 2. 118 dB dynamic range
 - 3. Wide 138 MHz tuning range
 - 4. 4 XLR and 4 1/4" outputs and 2 local ethernet connections
 - 5. Dante Audio Networking, carried on single Ethernet cable
 - 6. Acceptable manufacturer/model, or better than:
 - a. Shure SLXD4QDAN+=G57
- C. AUDIO MICROPHONES – PODCAST MICROPHONE
 - 1. Providing up to +28 dB of low-noise
 - 2. Frequency response: 50Hz to 20kHz
 - 3. Output impedance: 150 ohms in Bypass Mode, 27 ohms in Preamp Mode
 - 4. Clamps easily to any desk, table or similar-sized surface up to 2.17" (55mm) thick
 - 5. Rotates full 360 degrees & provides up to 32.25" of mic arm extension
 - 6. Acceptable manufacturer/model, or better than:
 - a. Shure SM7DB+GATOR+XLR

- D. AUDIO MICROPHONES – ANTENNA DISTRIBUTION SYSTEM
 - 1. Hybrid antenna design combines 1 LPDA and 1 cross-polarized antenna
 - 2. Includes wall mounting bracket
 - 3. Connectivity: 2 x BNC Female
 - 4. Frequency Range: 470-698 MHz
 - 5. Average Return Loss: -9.4 Db
 - 6. Acceptable manufacturer/model, or better than:
 - a. RF Venue DFINB
- E. AUDIO MICROPHONES – IN-LINE POWER SUPPLY
 - 1. Powers any combination of up to 3 connected compatible devices
 - 2. Passes through RF signal between antenna and receiver
 - 3. Frequency Range: 400 to 1000 MHz
 - 4. Max Input Power: 12.4 V DC, 400 mA (maximum)
 - 5. LED Power Indicator
 - 6. Acceptable manufacturer/model, or better than:
 - a. Shure UABIAST
- F. AUDIO INTERCOM – DIGITAL WIRELESS BASE STATION
 - 1. Connectivity for up to 5x 1.9GHz or 2.4GHz beltacks
 - 2. Native support for 2 transceivers; up to 10 transceivers with an FSII splitter
 - 3. Partyline support via 4x 2-wire connections
 - 4. Connectivity: 4 x 2-wire ports, 1 x GPIO, 2 x LAN
 - 5. Base-to-Beltack Frequency Response: 100Hz - 7.1kHz
 - 6. Output Voltage: 26 - 28V DC, 400mA per pair (A/B or C/D)
 - 7. Acceptable manufacturer/model, or better than:
 - a. Clear-Com FSII-Base-II-5
- G. AUDIO INTERCOM – WALL SPEAKER STATION
 - 1. The speaker station shall mount in a 4-gang wall box or a V-box for desktop.
 - 2. The speaker station shall be a 1-channel unit
 - 3. Microphone connections shall be a 4 pin XLR for a headset.
 - 4. The station shall have an internal speaker as well
 - 5. See associated schematic drawing to identify the type of user stations and locations
 - 6. Provide lightweight single muff 4 pin headsets with all speaker stations and belt packs.
 - 7. Acceptable manufacturer/model, or better than:
 - a. Clear-Com KB-701
- H. AUDIO INTERCOM – TRANSCEIVER ANTENNA
 - 1. Up to 10 Active Antennas can be connected to one system
 - 2. Up to 1,475 ft of coverage area per antenna
 - 3. 1.9GHz and 2.4GHz antennas can co-operate on the same system
 - 4. IP65 rated for water and dust resistance
 - 5. Acceptable manufacturer/model, or better than:
 - a. Clear-Com FSII-TCVR-19-US
- I. AUDIO INTERCOM – WIRELESS BODYPACK TRANSMITTER
 - 1. Headset connections shall be a 4 pin XLR.
 - 2. Typical indoor range: 300 ft (90 m), outdoor range: 800 ft (240 m)
 - 3. 1.9 and 2.4 GHz beltacks operate interchangeably on a single system
 - 4. 18+ hour battery life or USB port for continuous operation
 - 5. IP53 rating for wet and dusty conditions
 - 6. Acceptable manufacturer/model, or better than:

- a. Clear-Com FSII-BP19-X4-US
- J. AUDIO INTERCOM – HEADSETS
 - 1. The headset shall be a lightweight single muff.
 - 2. The headset shall come with a 4 pin female XLR
 - 3. 300-degrees boom mic rotation for ON/OFF mic-mute switch
 - 4. 20Hz -20KHz frequency response
 - 5. Interchangeable cabling for easy connector change and repair
 - 6. Acceptable manufacturer/model, or better than:
 - a. Clear-Com CC-110
- K. AUDIO INTERCOM – BATTERY CHARGER
 - 1. Up Fits up to 5 batteries for simultaneous charging
 - 2. Charge the battery by itself or via the beltpack
 - 3. Acceptable manufacturer/model, or better than:
 - a. Clear-Com AC60
- L. AUDIO DIGITAL – MIXER CONSOLE
 - 1. 25 motor faders (24 channels + 1 master)
 - 2. 48 input mixing channels (40 mono + 2 stereo + 2 return)
 - 3. 20 Aux (8 mono + 6 stereo) + Stereo + Sub buses
 - 4. 8 DCA groups with Roll-out
 - 5. 24 analog XLR/TRS combo mic/line inputs + 2 analog RCA pin stereo line inputs
 - 6. 34 x 34 digital record/playback channels via USB 2.0 + 2 x 2 via a USB storage device
 - 7. Acceptable manufacturer/model, or better than:
 - a. Yamaha TF3
- M. AUDIO DIGITAL – MIXER STAGE BOXES
 - 1. The stage box shall be a 2RU rack mountable device
 - 2. The stage box shall connect to mixer by way of a Primary and Secondary DANTE connections
 - 3. The stage box shall have (16) mono analog inputs and (8) analog outputs
 - 4. The stage box shall have Data I/O: 2 x EtherCon (primary, secondary)
 - 5. Acceptable manufacturer/model, or better than:
 - a. Yamaha TIO1608

2.3 TV STUDIO – VIDEO PRODUCTS

- A. VIDEO CAMERA – BROADCAST CAMERA
 - 1. 2/3" B4 Lens Mount & Active EF Mount
 - 2. Records to ProRes, H.265/264
 - 3. 6K CMOS Sensor, Dual Native ISO
 - 4. 12G-SDI Input & Output, Genlock/Timecode
 - 5. 13 x Stops of Dynamic Range
 - 6. 2 x UHS-II SD, 2 x CFast 2.0 Slots
 - 7. Acceptable manufacturer/model, or better than:
 - a. Blackmagic Design URSA Broadcast G2 Camera (CINEURSAMWC6KG2)
- B. VIDEO CAMERA – PROFESSIONAL LEN
 - 1. 8-128mm Lens for URSA Broadcast Camera
 - 2. T1.9 (8mm) to T2.8 (128mm) Max Aperture
 - 3. B4 Lens Mount, 16x Zoom Ratio

4. Digital Servo for Focus & Zoom
 5. Macro Focus Function
 6. 2.6' Minimum Object Distance from Front
 7. Acceptable manufacturer/model, or better than:
 - a. Fujinon LA16X8BRM-XB1A 2/3" 4K Lens with Servo (LA16X8BRM-XB1A)
- C. VIDEO CAMERA – STUDIO VIEWFINDER
1. 7" 1920 x 1200 TFT LCD Screen
 2. 2000 cd/m² Brightness
 3. 3G-SDI Connector to Camera
 4. 4-Pin XLR Power, V-Lock Mount
 5. Rotary Dials, Customizable Buttons
 6. For URSA G2/URSA Mini Cameras
 7. Acceptable manufacturer/model, or better than:
 - a. Blackmagic Design URSA Studio Viewfinder G2 (CINEURSANSVF2)
- D. VIDEO CAMERA – FOCUS CONTROL
1. Type: Focus Control Dial
 2. Inputs/Outputs: 2x USB-C Input
 3. Attachment Method: ARRI/Hirth Rosette
 4. Acceptable manufacturer/model, or better than:
 - a. Blackmagic Design Focus Demand (CINSTUDMFT/H/FD)
- E. VIDEO CAMERA – ZOOM CONTROL
1. Type: Zoom Demand Control Handle
 2. Features: Speed Selector, Start/Stop Record Button
 3. Inputs/Outputs: 2x USB-C Input
 4. Attachment Method: ARRI/Hirth Rosette
 5. Acceptable manufacturer/model, or better than:
 - a. Blackmagic Design Zoom Demand (CINSTUDMFT/H/FZD)
- F. VIDEO CAMERA – PROMPTER KIT
1. 19" LCD monitor with HDMI, DVI, VGA, and Composite inputs and HDMI output
 2. 60/40 Beamsplitter Glass
 3. 5.9" Lens Opening
 4. 17 ft Reading Range
 5. Supports Cameras from Mini DV to ENG
 6. Black Duveltyne Anti-Reflection Hood
 7. Acceptable manufacturer/model, or better than:
 - a. Draco Magicue Studio 19" Prompter Kit (MAQ-STUDIO19)
- G. VIDEO DISPLAY – MONITOR
1. 22" diagonal viewing area
 2. Brightness: 250 nits
 3. Viewing angle: 178° (H)/ 178° (V)
 4. Resolution: 1920 x 1080
 5. Contrast Ratio: 3,000:1
 6. Acceptable manufacturer/model, or better than:
 - a. Samsung S22A338NHN
- H. VIDEO TRANSMITTER – SDI TO HDMI VIDEO CONVERTER
1. Up to 4K HDMI & 12G-SDI Input
 2. 1 x HDMI Input, 1 x HDMI Output

3. 2 x SDI Loop Through & 2 x SDI Outputs
4. 1 x SDI Genlock Input
5. Upscales/Downscales, Converts Frame Rate
6. Acceptable manufacturer/model, or better than:
 - a. DECIMATOR 12G-CROSS

2.4 TV STUDIO – CONTROL SYSTEM PRODUCTS

A. CONTROL SYSTEM – DISTRIBUTION AMPLIFIER

1. Dual 1x4 12G-SDI openGear Distribution Amplifiers
2. 2x 12G-SDI BNC inputs
3. 8x noninverting 12G-SDI BNC outputs
4. Format agnostic 270 Mbps – 12 Gbps video formats
5. 10x 12G-BNC rear connector module included
6. Acceptable manufacturer/model, or better than:
 - a. AJA openGear Dual 1x4 12G-SDI (OG-12GDA-2X4)

B. CONTROL SYSTEM – RACKMOUNT FRAME

1. 2 RU frame with capacity for up to 20 openGear cards
2. 600W power supply with integral cooling
3. Front LCD display for name, IP address, and fault identification
4. Support for analog, digital, video, audio, SDI, and IP modules in the same frame
5. Includes preinstalled standard network card (MFC-8322-S)
6. Acceptable manufacturer/model, or better than:
 - a. AJA openGear Rackmount Frame (OG-X-FR)

C. CONTROL SYSTEM – PRODUCTION SWITCHER

1. 8-Input 12G-SDI UHD 4K60 Live Switcher
2. 12G-SDI & HDMI Multiview Outputs
3. Streaming Support, USB & M.2 Recording
4. Audio Mixing, Transitions, T-Bar, AUX
5. Timecode, MADI, Talkback
6. Acceptable manufacturer/model, or better than:
 - a. Blackmagic Design ATEM Television Studio 4K8 (SWATEMTVSTC/K4K8)

D. CONTROL SYSTEM – RECORDING DEVICE

1. 1 x 12G-SDI Input, 2 x 12G-SDI Outputs
2. 2 x 2.5" SSD Slots & 2 x SD Card Slots
3. 1 x HDMI Input, 1 HDMI Output
4. 1 x SDI Loop Output, 1 x USB-C Out
5. Timecode, Reference & RS-422 In/Out
6. Acceptable manufacturer/model, or better than:
 - a. Blackmagic Design HyperDeck Studio 4K Pro (HYPERD/ST/DG4P)

E. CONTROL SYSTEM – FIBER PATCH PANEL

1. Duplex LC to LC for efficient fiber connectivity
2. Compatible with high-density (HD) keystone inserts up to 17 mm width
3. 1 x DS430-10 designation strip on the front (bar and cap design)
4. 6" (15.24 cm) deep removable rear lacing bar for cable dressing
5. ANSI/TIA-568-C and UL 1863 compliant
6. Acceptable manufacturer/model, or better than:
 - a. Bittree DSKP124B-LCA

F. CONTROL SYSTEM – VERTICAL POWER STRIP

1. 120V AC, 50/60Hz electrical compatibility
2. Receptacles: 8 x NEMA 5-15R
3. Cord Length: 15 ft
4. Acceptable manufacturer/model, or better than:
 - a. TRIPP LITE PS2408

G. CONTROL SYSTEM – UPS #1

1. Capacity: 1500 VA / 900 W
2. Outlet types: 6 x NEMA 5-15R
3. Plug type & cord: NEMA 5-15P, 10 ft. cord
4. Acceptable manufacturer/model, or better than:
 - a. CyberPower OR1500LCDRM1U

H. CONTROL SYSTEM – UPS #2

1. Capacity: 700 VA / 400 W
2. Outlet types: 6 x NEMA 5-15R
3. Plug type & cord: NEMA 5-15P, 10 ft. cord
4. Acceptable manufacturer/model, or better than:
 - a. CyberPower OR700LCDRM1U

I. NETWORK SWITCH – CONTROL

1. 24 x Gigabit Ethernet PoE+ Ports
2. 2 x Gigabit SFP
3. 41.66 Gb/s Switching Capacity
4. 56 Mpps Forwarding Rate
5. Acceptable manufacturer/model, or better than:
 - a. Cisco C1200-24FP-4G

2.5 TV STUDIO – LIGHTING PRODUCTS

A. PERFORMANCE LIGHTING – LED ELLIPSOIDAL FIXTURES

1. Max lumens: 10,889
2. L70 rating (hours to 70% output): >54,000
3. Colors used: Deep Red, Red, Amber, Lime, Green, Cyan, Blue, Indigo
4. Color temperature range: 1900–10450 K
5. Beam angle range: Swappable lens tubes between 5°–90°
6. Voltage range: 100–240 VAC 50/60 Hz
7. Acceptable manufacturer/model, or better than:
 - a. ETC Colorscape Source Four LED Series 3 (7462A1051)

B. PERFORMANCE LIGHTING – LED CYC FIXTURES

1. Over 13,500 hot lumens will easily wash a 12m / 39 ft. cyc
2. Pixel control to 76mm/3in increments
3. Power Input Rating: 100-240V AC, 50-60 Hz, 550VA
4. Power Connectors In/Out: Neutrik powerCON TRUE1
5. Data Connectors In/Out: Neutrik XLR 5-pin
6. IP Rating: IP20
7. Acceptable manufacturer/model, or better than:
 - a. CHROMA-Q Color Force II Plus 48 LED Fixture with Trunnion (CQ1641-2000)

C. PERFORMANCE LIGHTING – LED SKYPANEL FIXTURES

1. White Light: 2,800 K to 10,000 K (Continuously Variable CCT with Full +/- Green)

2. CCT range between 2,800 - 10,000K
3. Beam Angle: 103° (Standard Diffusion)
4. Power Consumption: 500W Maximum
5. Optical System: Swappable Diffusion Panels
6. AC Voltage Range: 110V - 240V~, 50/60Hz
7. Acceptable manufacturer/model, or better than:
 - a. ARRI SkyPanel S60 Pro MAN Set (L0.0052504)

D. PERFORMANCE LIGHTING – SPOTLIGHTS

1. LED details: Lumileds LUXEON C
2. Max lumens (10 inch): 9,974 (Lustr X8)
3. Lumens per watt (10 inch): 35.5 (Lustr X8)
4. L70 rating (hours to 70% output) : >54,000 hours
5. Beam angle range (10 inch): 14–58°
6. Voltage range: 100–240 VAC 50/60 Hz
7. Acceptable manufacturer/model, or better than:
 - a. ETC Colorsource FOS4FL10 (7470A1020)

E. PERFORMANCE LIGHTING – CONSOLE

1. 40 Channels
2. 20 Faders with Bump Buttons
3. One Cue List with 999 Cues
4. Four Configurable Function Faders
5. 10 Pages with 20 Playbacks
6. Acceptable manufacturer/model, or better than:
 - a. ETC 20-Fader (7225A1100-US)

F. LIGHTING – TOUCH PANEL

1. 7" LCD touchscreen
2. Supports 80 channels
3. Local program and control channels, presets, and sequences
4. With Rackmount Kit
5. Acceptable manufacturer/model, or better than:
 - a. ETC EchoTouch MKII (7186A1119) - Confirm finish prior to ordering

G. LIGHTING – DMX / RDM ETHERNET GATEWAY

1. Four DMX512 ports, individually configurable
2. Convert DMX512 to Ethernet protocol for distribution
3. 10/100 Mbps Ethernet network port
4. Auxiliary input voltage 24-48VDC
5. Supports the following Ethernet protocols
6. Pathway ssACN (Secure sACN)
 - a. E1.31 streaming ACN (sACN)
 - b. Art-Net
 - c. Pathport Protocol
 - d. ShowNet
7. Acceptable manufacturer/model, or better than:
 - a. Pathway PWPP RM P4 TERM REAR

H. LIGHTING – PORTABLE 1-PORT GATEWAY

1. Single DMX512 port
2. DMX routing on a universe or channel-by-channel basis
3. Multiple source merging or prioritizing using powerful softpatch engine

4. DMX output speed and signal loss behavior user-set
 5. LED indicators for network status and DMX status
 6. 2.5mm DC input port included
 7. E1.20 RDM compliant as proxy device
 8. Manage up to 256 RDM responders per port
 9. Acceptable manufacturer/model, or better than:
 - a. Pathway PWPP TM P1 XLR5F
- I. LIGHTING – DMX RELAY
1. Wired via 5-Pin XLR In & Thru
 2. Switches Power & Distributes DMX
 3. Two-Way RDM
 4. PowerCON In & Thru
 5. DMX512A and RDM compatible
 6. CE Compliant; FCC approved
 7. Acceptable manufacturer/model, or better than:
 - a. ETC DMX RELAY (4410A1030)
- J. NETWORK SWITCH – LIGHTING
1. 16 x Gigabit Ethernet PoE+ Ports
 2. 2 x Gigabit SFP
 3. 36 Gb/s Switching Capacity
 4. 26.78 Mpps Forwarding Rate
 5. Acceptable manufacturer/model, or better than:
 - a. Cisco C1200-16P-2G

2.6 EQUIPMENT RACKS

A. EQUIPMENT RACKS – TYPE A

1. This equipment rack spec shall be used in along with the rack elevation details on the drawings.
2. The rack shall be the 18-rack unit and 25" deep, with a standard 19" width for equipment mounting.
3. Each rack shall have a logo panel of the system designer and integrator's name and contact info.
4. The racks shall be equipped and priced with the following rack panel options
 - a. 1RU LOGO panels
 - b. 1RU solid blank panels
 - c. 2RU solid blank panels
 - d. 1RU brush grommet
 - e. Vertical power distribution strip
 - f. Horizontal lacing bars
 - g. Rack light(s)
 - h. Model UPS-1500RM2U
5. Acceptable manufacturer/model, or better than:
 - a. Middle Atlantic ERK-1825LRD

B. EQUIPMENT RACKS – TYPE B

1. This equipment rack spec shall be used in along with the rack elevation data on the drawings.
2. The equipment racks shall be free-standing communications racks for the control booth
3. The rack shall be the 4-rack unit and 6" deep, with a standard 19" width for equipment mounting.
4. The rack shall be equipped and priced with the following rack panel options. See drawing details for placement of these accessories
 - a. 1RU solid blank panels
 - b. Model UPS-700RM2U
5. Acceptable manufacturer/model, or better than:
 - a. Middle Atlantic VPM-4

2.7 MISC LOOSE/SUPPORT EQUIPMENT & INFRASTRUCTURE

- A. CABLE – ANALOG AUDIO
 - 1. Mic, line, speaker, intercom
 - 2. Acceptable manufacturer/model, or better than:
 - a. Belden
 - b. West Penn
 - c. Clark
- B. CABLE – VIDEO BASEBAND & BROADBAND
 - 1. HD-SDI, analog video, RF
 - 2. Acceptable manufacturer/model, or better than:
 - a. Belden
 - b. West Penn
 - c. Clark
- C. CABLE – CAT5E / CAT6
 - 1. Network, twisted pair video transmission (HDBaseT, DM, TP)
 - 2. Acceptable manufacturer/model, or better than:
 - a. Belden
 - b. West Penn
- D. CONNECTORS – AUDIO
 - 1. Audio - XLRs, 1/4", Speakon
 - 2. Acceptable manufacturer/model, or better than:
 - a. Neutrik
- E. CONNECTORS – VIDEO
 - 1. Video - BNC, RF for coax
 - 2. Acceptable manufacturer/model, or better than:
 - a. Liberty
 - b. Canare
- F. UNINTERRUPTED POWER SUPPLY
 - 1. Acceptable manufacturer/model, or better than:
 - a. Trip Lite Smart 1500RM2U or approved equal

2.8 BASIS OF DESIGN

- A. Contractor shall be responsible for including all devices necessary to ensure a fully operational and complete A/V/L system.
- B. Basis of Design equipment used to create signal flows and other documentation.

2.9 TV STUDIO

A. AUDIO SYSTEM

Qty	Manufacturer	Model	Description
2	JBL	306P MKII	Booth Monitors
2	Shure	SLXD4QDAN+=G57	Wireless Microphone System
3	Shure	SM7DB+GATOR+XLR	Podcast Microphone
2	Shure	UABIAST	In-Line Power Supply
2	RF Venue	DFINB	Antenna Distribution System
1	Clear-Com	FSII-Base-II-5	Digital Wireless Base Station
2	Clear-Com	KB-701	Wall Speaker Station
2	Clear-Com	FSII-TCVR-19-US	Transceiver Antenna
2	Clear-Com	FSII-TCVR-19-X4-US	Wireless Bodypack Transmitter
2	Clear-Com	CC-110-X4	Headset
2	Clear-Com	AC60	5-Bay Charger
1	Yamaha	TF3	Mixer Console
1	Yamaha	TF3 Cover	Dust Cover
1	Yamaha	NY64-D	DANTE Card
1	Yamaha	Tio1608	Mixer Stage Box
Lot	Custom	Custom	I/O Plates and panels for Mic, Line, Network Signal Patching, etc.

B. AUDIO DELIVERABLES

Qty	Manufacturer	Model	Description
4	Shure	MX391/C	Boundary Mic
4	ProCo	AQ-25	25ft F/M XLR Mic Cable

C. VIDEO SYSTEM

Qty	Manufacturer	Model	Description
3	Blackmagic Design	URSA Broadcast G2 Camera (CINEURSAMWC6KG2)	Broadcast Camera
3	Blackmagic Design	URSA Studio Viewfinder G2 (CINEURSANSVF2)	Studio Viewfinder
3	Blackmagic Design	Focus Demand (CINSTUDMFT/H/FD)	Focus Control
3	Blackmagic Design	Zoom Demand (CINSTUDMFT/H/FZD)	Zoom Control
3	Fujinon	LA16X8BRM-XB1A 2/3" 4K Lens with Servo (LA16X8BRM-XB1A)	Professional Len
1	Draco	Magique Studio 19" Prompter Kit (MAQ-STUDIO19)	Prompter Kit
1	Draco	MAQ-TRP-STU-C	Prompter Tripod
2	Samsung	S22A338NHN	22" Display
1	DECIMATOR	12G-CROSS	SDI To HDMI Video Converter

Lot	Custom	Custom	Plates & Panels as Required
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D. CONTROL SYSTEM

Qty	Manufacturer	Model	Description
2	AJA openGear	Dual 1x4 12G-SDI (OG-12GDA-2X4)	Distribution Amplifier
1	AJA openGear	Rackmount Frame (OG-X-FR)	Rackmount Frame
1	Blackmagic Design	ATEM Television Studio 4K8 (SWATEMTVSTC/K4K8)	Production Switcher
1	Blackmagic Design	HyperDeck Studio 4K Pro (HY- PERD/ST/DG4P)	Recording Device
1	Bittree	DSKP124B-LCA	Fiber Patch Panel
1	TRIPP LITE	PS2408	Vertical Power Strip
1	CyberPower	OR1500LCDRM1U	UPS #1
1	CyberPower	OR700LCDRM1U	UPS #2
1	Cisco	C1200-24FP-4G	Network Switch
Lot	PSC	Miscellaneous	Cables, Connectors, Hardware, & Accessories Required for Complete Installation

E. LIGHTING SYSTEM

Qty	Manufacturer	Model	Description
2	ETC	Source Four LED Se- ries 3 (7462A1051)	Performance Lighting Ellipsoidal Fixtures
4	ETC	Colorsourc FOS4FL10 (7470A1020)	Performance Lighting Spot Fixtures
2	CHROMA-Q	Color Force II Plus 48 LED Fixture with Trun- nion (CQ1641-2000)	Performance Lighting CYC Fixtures
2	ARRI	SkyPanel S60 Pro MAN Set (L0.0052504)	Performance Lighting SkyPanel Fixtures
2	ARRI	4-Leaf Barndoors (L2.0007530)	Barndoors for SkyPanel
4	Matthews	B429744	Fixture Hanger
1	ETC	ETC 20-Fader (7225A1100-US)	Lighting Console
1	ETC	EchoTouch MKII (7186A1119-4)	Touch Panel
4	ETC	DMX RELAY (4410A1030)	DMX Relay
2	Pathway Connectivity	PWPP RM P4 TERM REAR	DMX/RDM Ethernet Gateway
3	Pathway Connectivity	PWPP TM P1 XLR5F	Portable 1-Port Gateway
1	Cisco	C1200-12P-2G	Network Switch
Lot	Miscellaneous	As Required	Cables, Connectors, Hardware, & Accessories Required for Complete Installation

F. EQUIPMENT RACKS

Qty	Manufacturer	Model	Description
1	Middle Atlantic	Custom	18RU-Equipment Rack
1	Middle Atlantic	Custom	4RU-Wall Rack
2	Middle Atlantic	Custom	1RU Logo Panel
2	Middle Atlantic	Custom	Vertical High-Density 20A Power Distance
10	Middle Atlantic	Custom	Horizontal Lacing Bars
2	Middle Atlantic	Custom	Rack Work Lights
6	Middle Atlantic	Custom	1RU Blank Rack Filler Panels
2	Middle Atlantic	Custom	2RU Blank Rack Filler Panels
1	Middle Atlantic	Various	Rack Blank Panels, Vent Panels, Cable Management, Power Distribution & Accessories as Required

PART 3 - EXECUTION

3.1 ACCURACY OF DATA

- A. It shall be the sole responsibility of the Contractor to verify all dimensions, take his own field measurements, and install all work to suit conditions encountered on the job site.
- B. The drawings are generally diagrammatic and except where dimensions are indicated are not intended to show exact locations of outlets, conduits, etc. All work shall be installed as nearly as possible in the locations indicated, with minor adjustments as required to avoid interferences with structure or the work of other trades.
- C. Prior to beginning work, the Contractor shall carefully examine all construction drawings and the job site and report to the Owner any discrepancies or interference that may be discovered. If, during the course of construction, any such discrepancies or interferences are noted, the Contractor shall promptly report them to the Owner. Failure to report such discrepancies or interferences shall result in the correction of the same at the Contractor's expense. All work under this specification, which either interferes with the architectural or any other work or deviates from the drawings and specifications without prior approval of the Owner, shall be altered by the Contractor at his expense. These alterations shall clear such interferences or shall comply with the drawings and specifications as directed by the Owner.

3.2 MECHANICAL

- A. Except for portable equipment, all other equipment must be permanently installed. This shall include equipment racks, speakers, cables, etc. Fastenings and supports must provide a safety factor of at least three times that is required for safe support. Precautions must be taken to prevent electrostatic and electromagnetic hum and radio frequency interference. All electronic equipment must be easily accessible and have adequate ventilation.

3.3 CONNECTIONS

- A. All low-voltage wiring connections must be made with rosin core solder or mechanical connectors as specified. Terminations on all cable must be dressed properly with shrink tubing. All low voltage control level connections to terminal blocks are to be made with crimp-on spade lugs. All crimp-on connectors must be fastened with the proper tool as specified by the manufacturer. Improper crimping will be cause for rejection. All "drain" wires on microphone and line level terminations are to be properly dressed using transparent shrink tubing to avoid the possibility of shorting "whiskers".

3.4 LABELS

- A. All wiring is to be numbered on both ends with "EZ Code" type markers. Wire numbers are to be secured with transparent shrink-tubing. Wire numbers are to follow a logical sequence and are to be listed on the proper document. "Brady" type labels are acceptable.

3.5 INSTALLATION

- A. General
 - 1. Installation shall include the delivery to the installation site, unloading, setting in place, mounting, and securing equipment to walls, floors, ceilings, cabinetry, or other structures. Also, interconnection of any cables, wires, fiber optics, or other infrastructure. Any equipment alignment, adjustments, menu settings, or other requirements to ensure the appropriate operation of the system.
 - 2. All installation practices shall be in accordance with, but not limited to, these specifications, drawings, and intended system performance. Installation shall be in accordance with the AV industries best practices as outlined in Infocom CTS-I criteria. Local and National authorities having jurisdiction.

3. If in the opinion of the AV System Contractor, an installation, an installation practice is desired or required, which is contrary to these specifications and/or drawings, a written request for modification shall be made to the Consultant. Modifications shall not commence without written approval from the Consultant. Every effort will be made to respond to all written requests in a timely manner so as to not delay the installation or completion of the project.
4. During the installation, and up to the date of final acceptance, the AV Systems Contractor shall be responsible and under obligation to protect finished and unfinished work against damage and loss. In the event of damage or loss, those items shall be replaced at no cost to the Owner.

3.6 SOUND SYSTEM TEST AND MEASUREMENT

- A. The contractor is to conduct a performance verification test for the Owner. The contractor must complete the installation and verify that it is in working order and conforms to the following performance criteria. These performance standards are set forth as an indication of a properly installed and functioning sound system. It is implied through his action of submitting a bid that the contractor has reviewed these documents and is in agreement with the concept and execution of the design of the specified sound system. No financial adjustments will be allowed for discrepancies discovered after bid is accepted.
 1. In rooms where voice lift or voice reinforcement is required, there is a programmable DSP in the system. The contractor is expected to tune the system to eliminate any hot frequencies in the room that would cause premature feedback as well as blemish the sound quality of the microphones.
 2. Microphone line resistance: Less than 1.7 Ohms with short at input jack. Measured from mixer end of microphone cable. Measure with Ohm meter.
 3. Maximum amp output: 100% of rated power at less than 0.25% THD. Measure with a distortion analyzer.
 4. Signal-to-noise ratio: Better than 80 dB or an absolute noise level less than 62 dBm for systems with +18 dBm maximum line operating level. Measured at amplifier input with RMS voltmeter with dB scale.
 5. Audio frequency response: +/- 1 dB 50 Hz to 15 kHz control equalizer set flat and room equalizers switched out – Microphone input to amplifier output. Measure with RTA.
 6. Polarity: All microphones and source equipment are to be wired so as to be in absolute polarity with the loudspeaker systems. Measure with polarity checker.
 7. Synchronize delay and fill systems to within 15 milliseconds of the first arrival of the primary loudspeaker system as measured on Smaart or TEF measurement systems.
 8. Acoustic coverage: Maximum +/- 3 dB SPL variance front to rear / side-to-side in the audience area through the 4 kHz full octave band. Measure with octave band Sound Level Meter.
 9. Acoustic amplitude response: With the room, equalizers switched in +/- 3 dB, the maximum deviation from the following curve averaged from three test positions in the audience area flat at 60 Hz to 2 kHz, 10 dB at 50 Hz, and 12 kHz. Measure with RTA.
 10. Electroacoustic gain: No less than 15 dB from 500 Hz to 4 kHz with one microphone and 12-inch source to microphone distance. Gain is to be measured 50 feet from the source. Measure with a Sound Level Meter.
 11. Maximum sound level: Greater than 85 dB-C for large conference spaces when the amplifier occasionally clips on program peaks. Measure with a Sound Level Meter.
 12. Acoustic noise floor: No audible hum, hiss, or R.F. interference shall be audible under normal room conditions in the audience seating area and stage or platform areas.
 13. All loudspeakers are to exhibit the same acoustic polarity. Measure with Polarity Checker (Galaxy Cricket).

3.7 VIDEO SYSTEM PROOF OF PERFORMANCE

- A. Verify all devices and cables match the information on the final drawings
- B. Test all inputs on the video switcher/scaler.
- C. Adjust Color Temperatures on projectors to accurately reproduce NTSC and RGBHV Data Color Bars.
- D. Adjust projector images to match the screen size, eliminating any over-scan, under-scan, or keystone.
- E. Adjust all switching functions to eliminate sync roll or glitches upon switching.
- F. Test all video sources for full operation. Test all data sources up to maximum resolution of the display (projector, LED display, or video wall).
- G. Test audio output of switcher scaler. Verify that all input audio levels are equal. Verify maximum audio output does not exceed +4dB.
- H. Verify there's no 60hz grounding interference aka "humbars" existing in displayed images. If so, thoroughly go through and verify that grounding procedures are implemented.
- I. Optimize projector contrast, sharpness, and brightness to avoid blooming and achieve optimal black level.

3.8 AV SYSTEMS CONTRACTOR CHECKOUT

- A. Before the Consultants Acceptance Tests are scheduled, the AV Systems Contractor shall perform his own system check-out. The Systems Contractor shall furnish all required test and measurement equipment needed to perform all work necessary to adjust, modify, and document the systems as it is specified to perform.
 - 1. Provide documentation that all digital and analog audio signal paths have been tested and verified.
 - 2. Provide documentation of sound system performance as outlined above.
 - 3. Provide documentation that all digital and analog video signal paths have been tested and verified. This includes all SDI, HDBaseT, DVI, HDMI, and other digital video transports.
 - 4. Test all systems for compliance and performance using the following equipment or equipment that provides the same testing for more current state-of-the-art systems.
 - a. Audio testing:
 - 1) Signal generator
 - 2) AC millivolt meter
 - 3) Audio test set
 - 4) Source media (MP3, CD's, 1/8" stereo source)
 - 5) Any needed adapters
 - b. Video checks:
 - 1) Analog video generator (if applicable)
 - 2) Digital video signal generator
 - 3) Waveform / Vectorscope (if applicable)
 - 4) Prerecorded DVD or Blu-ray test disc
 - 5) Video cables and adapters
 - 5. Ensure all gain settings, noise floor, gain before feedback, and signal-to-noise measurements are acceptable and in accordance with industry best practices.
 - a. Provide written documentation to support all audio adjustments and settings.
 - b. DSP
 - 1) In accordance to the specification and drawings, ensure that the DSP is programmed accordingly to deliver the intended operation. Verify all settings and programming for the proper operation of the following:
 - a) All communication and IP settings
 - b) Proper or current software version
 - c) Matrix routing / presets
 - d) Correct input and output names, gain settings, phantom power, and phasing

- e) Correct NOM (number of open mics) and/or mix-minus settings
 - f) Automatic gain control (AGC) settings
 - g) Automatic mixer settings, if applicable
 - h) Limiters, filters, and compressor settings
 - i) Equalization – Room tuning
 - j) AEC settings
 - k) Delay setting (if applicable)
 - l) Audio teleconference settings such as Auto-Answer and disconnect, VoIP settings, and Control system phone number availability (speed dial list) for phone calls.
 - m) Programmer to document that all DSP functions are working properly in accordance with the specifications and drawings.
- c. Video switchers:
- 1) Ensure buttons are labeled as to the input source and output destination.
 - 2) Make sure all resolutions are correct.
 - 3) Verify HDCP keys are handled correctly
6. All optical fiber runs are to be certified using industry-accepted test equipment. Fiber connections to have documentation supporting the following tests:
- a. Measuring insertion loss
 - b. Measurements from the OTDR
7. Adjust, balance, and align all equipment for optimum quality and to meet the manufacturer's published specifications. Record all "normal" settings in the "System Operation Manual"

3.9 SYSTEM ACCEPTANCE TESTS

- A. System acceptance tests shall not be performed until the AV Systems Contractor Checkout has been completed and the test results have been reviewed. The System Acceptance Test will be supervised by the consultant and will consist of the following:
- 1. A physical inventory of all equipment on-site will be taken and compared to the equipment list in the contract documents.
 - 2. The operation of all system equipment shall be demonstrated by the AV Systems Contractor.
 - 3. The AV Systems Contractor shall provide the necessary equipment for the Consultant to perform the AV tests.
 - 4. The AV System Contractor shall have on-site and available the latest as-built drawings, equipment inventory list, and manuals. One set of these documents is to have been sent to the Consultant prior to the Acceptance Test.
- B. Additional work by Consultant:
- 1. In the event of defective equipment, or other adjustments that need to be made, the test may be postponed or continued later at the option of the Consultant.
 - 2. However, if there is a return trip necessary by the consultant and/or a member of the consultant's team as a result of improper installation or a failed system for performance standards, the consultant may charge the AV System Contractor directly or be deducted directly from payments (or the final payment) to the contractor. Hourly rates for the Consultant and various team members are as follows:
 - a. Consultant \$125
 - b. Project Engineer \$95
 - c. Programmer \$110
 - d. Network Engineer \$125
 - 3. Additional travel expenses such as a rental car or mileage will be billed as a cost plus a 10% markup and will be charged along with the labor.

3.10 THIRD-PARTY TESTING AND COMMISSIONING

- A. In addition to the standard system testing and commissioning as stated in this section, the owner has authorized an additional allowance for a 3rd party to perform, but not limited to, final system tests, sound system tuning, level calibrations, control settings, and commissioning.
- B. See Section 012100 for more information on this allowance.

3.11 DOCUMENTATION

- A. Upon final completion of the system a documentation package/manual is to be turned over to the Owner and include the following items:
 - 1. System signal flow diagrams (for audio, video, and control) showing all components, interconnections, connector types, and wire numbers. As-built revisions are to be noted on the submittal drawings.
 - 2. Manufacturer instruction manuals for all electronics.
 - 3. Product specification sheets for all equipment without instruction manuals, such as microphones, loudspeakers, and lighting instruments.
 - 4. Copies of the proof of performance data. Provide one original (no photocopies) and one copy (photocopies are acceptable) of the total documentation package.
 - 5. A single copy of the system signal flow diagram with wire numbers indicated is to be laminated and posted in the door of the sound equipment rack.
 - 6. Special documentation is required as part of the Owner training and operation of the systems. This documentation is to consist of instruction sheets that describe the operation of the system from the stage. Each instruction sheet is to be a step-by-step "cookbook" with touchscreen panel screenshots with arrow indicators that describe the steps and functions. A laminated poster version of this instruction sheet is to be mounted on the side of each equipment rack. The bullet points detailed on this sheet include:
 - a. Turning on system power
 - b. Select the desired source
 - c. Adjust volume levels
 - d. Select lighting presets (where applicable)
 - e. Recording stop/start functions (where applicable)
 - f. VTC calling functions (where applicable)
 - g. Other functions of the Owner control panel

3.12 CLEAN UP

- A. During construction, periodically remove discarded containers and refuse from the job site. At the completion of the job, the sound system components and equipment areas are to be left clean and neat, and all refuse removed from the site.

3.13 TRAINING

- A. The AV System Contractor is to provide at least fourteen hours (2 each six to eight-hour sessions) of training to person(s) selected by the Owner on operation and basic maintenance of all systems and equipment. In addition to training, a representative of the AV System Contractor knowledgeable of the system installation and operation is to be present for the first special events selected by the Owner that all or any part of the sound and video systems is used. The training and event attendance is to take place during the 30-day period after system completion.

END OF SECTION 274100

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