

NEWHALL SCHOOL DISTRICT

BID NO. NSD 24.25-8

Project: Districtwide MPR Audio Visual Replacement

Bid Deadline: June 16, 2025, at 10:00 AM

Submit Bids To: Newhall School District
Attn: Bidding Administrator
25375 Orchard Village Road
Valencia, CA 91355

**DISTRICTWIDE MPR AUDIO VISUAL
REPLACEMENT BID NO. NSD 24.25-8**

TABLE OF CONTENTS

TABLE OF CONTENTS	i
<u>BIDDING REQUIREMENTS</u>	
Notice Inviting Bids	NIB-1
Instructions For Bidders	IFB-1
Description of Work	DOW-1
Master Schedule	MS-1
Bidder Clarification Request	BCR-1
<u>REQUIRED BID FORMS</u>	
Bid Proposal	RBF-2
Subcontractor Listing	RBF-5
Bid Bond	RBF-7
Certification Regarding DVBE Efforts	RBF-9
Non-Collusion Declaration	RBF-11
Certification Regarding Site Visit	RBF-12
Certification Regarding Contractor Registration	RBF-13
Notice and Certification Regarding Russia-Related Sanctions	RBF-15
<u>REQUIRED CONTRACT FORMS</u>	
Agreement for Construction Services	RCF-2
Certification Regarding Employee Background Checks	RCF-6
Certification Regarding Drug-Free Workplace	RCF-8
Certification Regarding Tobacco-Free Workplace	RCF-9
Certification Regarding Workers Compensation	RCF-10
Notice and Certification Regarding Lead-Free Materials	RCF-11
Certification Regarding Asbestos	RCF-13
Payment Bond	RCF-14
Performance Bond	RCF-17
Certification Regarding DVBE Participation	RCF-21
<u>PROVISIONS OF THE CONTRACT</u>	
Special Provisions	SP-1
General Provisions	GP-1
<u>DIVISION 11</u>	
11 52 13 ACCESS E FRONT PROJECTION SCREENS	
<u>DIVISION 26</u>	
26 05 00 COMMON WORK RESULTS FOR ELECTRICAL	
<u>DIVISION 27</u>	
27 05 00 COMMON WORK RESULTS FOR COMMUNICATIONS	
27 05 26 GROUNDING AND BONDING FOR COMMUNICATION SYSTEMS	
27 05 29 HANGERS AND SUPPORTS FOR COMMUNICATION SYSTEMS	
27 05 33 CONDUITS AND BACKBOXES FOR COMMUNICATION SYSTEMS	
27 05 53 IDENTIFICATION FOR COMMUNICATIONS SYSTEMS	
27 41 00 AUDIO/VISUAL SYSTEM	

NOTICE INVITING BIDS

NOTICE IS HEREBY GIVEN that the Newhall School District (“District”) is seeking sealed bids from qualified, experienced, and licensed contractors for construction/installation of the following public project (“Project”): Remove existing audio visual equipment and install new equipment, including all electrical in MPR’s throughout the District. The proposed Contractor must be an authorized reseller with the proposed A/V manufacturer. In addition, the Contractor must have at least two certified technicians/engineers with the proposed A/V manufacturer.

PLACE FOR SUBMITTING BIDS: Bids must be submitted to the District at the following location (“Place for Submitting Bids”):

Newhall School District
Attn: Bidding Administrator
25375 Orchard Village Road
Valencia, CA 91355

BID DEADLINE: Bids must be received at the Place for Submitting Bids not later than **10:00 AM on June 16, 2025** (“Bid Deadline”).

BID DOCUMENTS: The Bid Documents may be downloaded from www.qualitybidders.com by clicking on “Bids” and filtering “Newhall School District”.

REQUIRED BID SECURITY: Each bid must be submitted with bid security as described in the Instructions For Bidders.

CONTRACTOR LICENSE: For this project, which requires C-10 and C-7 licenses, the Newhall School District will accept bids from bidders holding B or C-10 licenses, utilizing subcontractors as permitted under California law.

PRE-BID CONFERENCE: The District will conduct a mandatory pre-bid conference and site visit starting at **1:00 PM on June 6, 2025**. The conference initially will commence at Dr. J. Michael McGrath Elementary School, 21501 Deputy Jake Dr, Newhall, CA 91321. The mandatory pre-bid walk will then move to Newhall Elementary School and then Meadows Elementary School. Please meet at the front office. Contractors will have the opportunity to visit all other sites that same day upon request. Attendance at the pre-bid conference and site visit is mandatory, and any bidder that does not attend shall be deemed non-responsive.

SURETY BONDS: As described in the General Provisions, the successful bidder must provide a Performance Bond and a separate Payment Bond, each in an amount equal to 100% of the total Contract Price, and each issued by a California-admitted surety as defined in Code of Civil Procedure Section 995.120.

LABOR LAW: The Project is a “public work” that is subject to, among other laws, Labor Code Sections 1720 through 1861, inclusive. As described in the Instructions For Bidders, each contractor (including subcontractors) must be registered with the California Department of Industrial Relations (“DIR”) in accordance with Labor Code Section 1725.5, and bidders must provide evidence of registration for themselves and their subcontractors. Each worker on the Project must be paid not less than the

applicable prevailing rates of per-diem wages in the locality in which the Work is to be performed for each craft or type of worker needed to execute the Contract (“Prevailing Wages”). A copy of the applicable rates of Prevailing Wages is on file and available for review at the Place for Submitting Bids, and a copy will be posted at the Project Site. The Project is subject to compliance monitoring and enforcement by the DIR. The successful bidder will be required to post all job-site notices required by DIR regulations and other applicable law. If so specified in the Special Provisions, the District will conduct a mandatory conference for the purpose of describing labor-law requirements.

PUBLICATION DATES: May 22, 2025; May 29, 2025.

INSTRUCTIONS FOR BIDDERS

Caution: Read these Instructions For Bidders and other Bid Documents carefully. Do not assume that the documents are the same as similar documents you previously may have obtained from the District.

1. Architect. The architect of record, if any, for the Project (“Architect”) is identified in the Special Provisions. The Architect may have prepared and/or approved graphic and pictorial illustrations in connection with the Project that show the design, location, and scope of certain portions of the Work and the Project, generally including plans, elevations, sections, details, schedules, and diagrams (“Plans”). The Architect also may have prepared and/or approved written requirements for materials, equipment, construction systems, quality, workmanship, services and other things to be furnished in connection with the Work and the Project (“Specifications”). If there is no Architect for the Project, the District may delegate to its staff and/or consultants any or all of the responsibilities specified in the Bid Documents as being the responsibility of the Architect.

2. Construction Manager. Notwithstanding that the District may intend to complete the Project using a single general contractor, the District may contract for the services of a project manager, construction manager, or other consultant in connection with the Project (“Construction Manager”). If the District has contracted with a Construction Manager prior to issuance of the Bid Documents, the Construction Manager is identified in the Special Provisions. Subject to its contract with the District, the Construction Manager will be the District’s representative during the bidding, construction and close-out of the Work and will assist the District in the administration of the Contract.

3. Requirements for Pre-Bid Conference and Site Visit. Prospective bidders in attendance at the pre-bid conference and site visit (regardless of whether conference/site visit is mandatory or optional) must be dressed appropriately and with safety in mind, including, at a minimum, by wearing: (i) closed-toe, closed-heel, and regular-heel shoes (such as tennis shoes or work boots); (ii) long pants; and (iii) a shirt with sleeves. Shorts, dresses, sleeveless shirts, high-heeled shoes, and open-toed shoes will not be permitted on the Project Site. Regardless of whether the pre-bid conference initially commences at the District’s main offices or at the Project Site, prospective bidders must not enter the Project Site unless and until a District representative is present and directs them to do so. Prospective bidders are responsible for their own transportation. NO CONFERENCES OR SITE VISITS WILL BE ARRANGED FOR BIDDERS THAT FAIL TO ATTEND THE SCHEDULED CONFERENCE AND SITE VISIT. PROSPECTIVE BIDDERS MUST NOT VISIT THE PROJECT SITE AT ANY TIME OTHER THAN THE DATE AND TIME FOR THE PRE-BID CONFERENCE AND SITE VISIT SET FORTH IN THE NOTICE INVITING BIDS.

4. Examination of Project Site and Contract Documents. During the pre-bid conference and site visit (regardless of whether conference/site visit is mandatory or optional), each bidder must inspect the Project Site and become fully acquainted with the conditions in and under which the Work will be performed, so that the bidder fully understands the facilities, difficulties, restrictions and requirements attendant to the performance of the Work on and at the Project Site. If so provided in the Special Provisions, each bidder must complete, execute and submit to the District the “Certification Regarding Site Visit” form included in the Required Bid Forms. In addition, each bidder must thoroughly examine and develop an understanding of all of the Contract Documents, including, without limitation, the Plans, Specifications, Agreement for Construction Services, General Provisions, Special Provisions, and required forms. Note that any capitalized terms used, but not defined, in any particular Bid

Document or Contract Document shall have the respective meanings as defined in the other Bid Documents or Contract Documents. The failure of a bidder to understand the conditions in and under which the Work is to be performed, or to examine and understand any of the Contract Documents, shall not relieve the bidder from any obligations pursuant to its bid or the Contract Documents.

5. Project is a Public Work. Except as otherwise provided or permitted by law, the Project is a “public work” and “public project” within the meaning of various provisions of the Public Contract Code, Labor Code, Civil Code, and other applicable legal requirements. Therefore, the performance of the Work shall be subject to such requirements. The Contract Documents include various provisions relating to public works and public projects as provided by law, and each bidder must thoroughly review and become familiar with the Contract Documents as described above in these Instructions For Bidders. However, the Contract Documents do not include comprehensive statements of all requirements of law applicable to public works and public projects, and each bidder shall be deemed and construed to have acknowledged that fact by submitting a bid for the Work. In addition, by submitting a bid for the Work, each bidder shall be deemed and construed to represent and warrant that it is familiar and knowledgeable with respect to all requirements of law applicable to public works and public projects generally and to the Work specifically.

6. Requests for Clarification of Bid Documents. If a prospective bidder is in doubt as to the true meaning of any part of the Contract Documents, or finds any conflict, omission or other discrepancy in any Plans, Specifications or other Contract Documents, the bidder must submit a written request, using the “Bidder Clarification Request” form included in the Bid Documents, for an interpretation or correction of the Contract Documents in question. Bidder Clarification Requests must be submitted to the District not later than the “Bidder Clarification Request Deadline” specified in the Master Schedule. The District will attempt to, but does not guarantee that it will, respond to each Bidder Clarification Request that is submitted by the Bidder Request Clarification Deadline. A response to a Bidder Clarification Request may be in the form of a clarification indicated on the applicable Bidder Clarification Request or an addendum to the Contract Documents, but each response will in any case be provided to all prospective bidders known to have obtained a copy of the Bid Documents from the District. Please submit all bid clarifications to bids@newhallsd.com.

7. Modification of Bid Documents. Prior to the opening of bids, the Architect will issue interpretations or corrections of the Bid Documents only by addendum or addenda to the Contract Documents. A copy of each addendum will be mailed or otherwise delivered to each prospective bidder that has obtained a copy of the Bid Documents by paying a deposit. Other prospective bidders shall be responsible for checking the District’s website to determine whether any such addenda have been issued. Any bidder that fails to acknowledge receipt of each and all addenda in its Bid Proposal shall be deemed non-responsive.

8. Listing of Subcontractors. In accordance with the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 *et seq.*), each bidder must submit with its bid the names and locations of the places of business of each subcontractor that will perform any portion of the Work, or that, under subcontract to the bidder, will specially fabricate and install a portion of the Work, in an amount in excess of one-half of one percent of the total amount of the bidder’s bid. A bidder may not list more than one subcontractor for any one portion of the Work. A bidder that fails to list a subcontractor for any portion of the Work thereby represents that it is fully qualified to, and agrees that it shall, perform such Work using its own forces. If the Bid Documents require the bidder to submit alternate bids and the bidder intends to use different or additional subcontractors for any of the

alternates, the bidder must submit a separate, complete list of subcontractors for each such alternate. The lists of subcontractors must be set forth on the "Subcontractor Listing" form that is included in the Required Bid Forms.

9. Registration With DIR. No contractor may submit a bid for any work on a public works project unless the contractor is, and no subcontractor may be listed in any bid for work on a public works project unless the subcontractor is, currently registered with the California Department of Industrial Relations ("DIR") and qualified to perform public work pursuant to Labor Code Section 1725.5. In addition, no contractor or subcontractor may be awarded a contract for work on a public works project, or may perform any work on a public works project, unless the contractor or subcontractor is currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5. It is not a violation of Labor Code Section 1725.5 for an unregistered contractor to submit a bid authorized by Business and Professions Code Section 7029.1 or Public Contract Code Section 20103.5, if the contractor is registered at the time the contract is awarded. Each bidder must complete, execute, and submit with its bid the "Certification Regarding Contractor Registration" form included in the Required Bidding Forms. See Section 11.10 of the General Provisions for additional information regarding registration with the DIR.

10. DVBE Efforts. BIDDERS MUST COMPLY WITH THE REQUIREMENTS OF THIS SECTION ONLY IF THE SPECIAL PROVISIONS REQUIRE SUCH COMPLIANCE. The District has adopted a goal for DVBE participation in the Project by Disabled Veteran Business Enterprises ("DVBE") of three percent of the overall amount expended for certain new-construction and modernization projects each year. Each bidder must make and document its reasonable efforts to obtain DVBE participation in connection with the Work. In order to be considered reasonable efforts, a bidder's efforts should include advertising in appropriate publications and contacting any responding DVBE. Alternatively, if so provided in the Special Provisions, the District will advertise for DVBE contractors for the Work, and bidders must contact the District to obtain information regarding any responding DVBE contractors. The bidder also should contact any DVBE contractors that the bidder knows and that could perform a portion of the Work or otherwise participate in the Contract. Each bidder must complete, execute and submit with its bid the "Certification Regarding DVBE Efforts" form included in the Required Bid Forms, and the District may reject as non-responsive any bid that does not comply with such requirement.

11. Substitution of Specified Items.

11.1 Requests for Substitution. Except as may be provided in the Special Provisions with respect to Sole Source Items, the requirement for any material, equipment, process, item or other thing specified in the Bid Documents (each a "Specified Item") shall be interpreted as if followed by the words "or equal," and a bidder may offer in place of a Specified Item any material, product, service, or other thing that the bidder can demonstrate is, in every respect, materially equal to or better than the Specified Item and that will completely accomplish the intended aesthetics, purposes and/or functions of the Specified Item. Each substitution request is subject to and must conform with the requirements of the General Provisions, including, without limitation, requirements for submitting documentation in support of the request.

11.2 Timing for Submission of Requests for Substitution. A SUBSTITUTION REQUEST MUST BE SUBMITTED TO THE DISTRICT NOT LATER THAN SEVEN DAYS PRIOR TO THE BID DEADLINE SPECIFIED IN THE NOTICE INVITING BIDS. The District will not consider any substitution request received thereafter, except to the extent provided in the General Provisions. Concurrently with submitting a

substitution request, the bidder must provide all information required pursuant to the General Provisions to substantiate the request.

11.3 Approval of Requests for Substitution. The bidder shall be responsible for establishing that a proposed substitution of a Specified Item satisfies all requirements of the Contract Documents, including, without limitation, that the proposed substitute item is, in every respect, materially equal to or better than the Specified Item. The District may at any time request that a bidder provide any additional information regarding a substitute item that the bidder has proposed. The District, in consultation with the Architect, will decide whether to approve a substitution based on the information provided by the bidder and, in the District's sole discretion, on information obtained by the District from other sources. The District has the sole discretion to determine whether a proposed substitute item is equal to or better than a Specified Item. Any request for substitution that is granted by the District shall be documented and processed by means of a Change Order after execution of the Contract. The District may condition its approval of any substitution upon delivery to the District of an extended warranty or other assurances of adequate performance of the substitute item. The District shall not be required to make a determination in regard to any substitution request and/or substantiating information prior to award of the Contract. If the District gives a Notice of Award to the successful bidder for the Contract, but subsequently disapproves a substitution proposed by the bidder, the bidder must provide the Specified Item in accordance with the Contract Documents and at no additional cost to the District.

11.4 Costs and Delays Arising from Substitution. The successful bidder for the Contract, if it has requested any substitutions of Specified Items, shall be responsible for and shall bear any and all risks, expenses and costs of delay arising from required review or approval of the substitutions by the California Department of General Services, Division of State Architect ("DSA") and/or other governmental agency with competent jurisdiction.

12. Use of Bid Proposal Form is Mandatory. Each bid must be submitted on the "Bid Proposal" form included in the Required Bid Forms. Unless expressly permitted by the Bid Documents, a bidder must not: (i) make any changes, additions or other modifications to the Bid Proposal form or other documents to be submitted with the Bid Proposal; (ii) restate or recharacterize the Work in the bid; or (iii) make any alternative proposals not permitted by the Bid Documents. The District may reject as non-responsive any bid that does not strictly comply with the foregoing.

13. Preparing the Bid. Bidders must fully and properly complete all information required to be included on the Bid Proposal form. A bid may contain an erasure, interlineation, or other correction only if the correction is made to the information entered by the bidder (not to the pre-printed text of the Bid Proposal form), does not result in any inconsistency or ambiguity, and is authenticated by affixing, in the margin immediately adjacent to the correction, the initials of the person or persons signing the bid. In the event of inconsistency between words and numbers, words shall govern over numbers and, for purposes of the bid, the District may rely on the words.

14. Bid Security. Each bid must be submitted with security in an amount equal to ten percent of the bidder's Total Bid Amount. For purposes of the Bid Documents, "Total Bid Amount" shall mean the total of a bidder's base bid plus all additive alternates. In the event a bidder's bid security does not equal at least ten percent of the Total Bid Amount, the District may reject that bid as non-responsive. The bid security must be in one of the following forms: (i) a cashier's or certified check payable to the District; or (ii) a bid bond. Personal and business checks are not acceptable as bid

security. If the bidder desires to submit bid security in the form of a bid bond, it must be an executed copy of the "Bid Bond" form included as one of the Required Bid Forms (without any interlineations or other modifications) and must be issued by a California-admitted surety as defined in Code of Civil Procedure Section 995.120. Unless forfeited, the District will return security to the bidders within a reasonable time, but not later than sixty days after award of the Contract for the Work.

15. Non-Collusion Declaration. Each bidder must complete, execute and submit to the District, with its bid, a copy of the "Non-Collusion Declaration" form included in the Required Bid Forms.

16. Signing the Bid and Other Required Documents. The Bid Proposal form and other Required Bid Forms, the Bid Bond, and all other documents to be submitted with the bid that require an original signature of the bidder must be signed in permanent ink, preferably blue in color, by a person or persons duly authorized to sign documents and contractually bind the bidder in connection with the Work. The District may reject as non-responsive any Bid Proposal form containing a stamped or mechanically printed signature.

17. Sealing and Labeling the Bid. The completed Bid Proposal form, other Required Bid Forms, and all additional documents and other materials to be submitted with the bid must be enclosed in a sealed envelope. No information must be apparent on the outside of the bid envelope other than the name/number of the Project, the Bid Deadline and the company name and address of the bidder, and the District may reject any bid if the outside of the bid envelope has additional information or identifying marks.

18. Extensions to Bid Deadline. For purposes of the Notice Inviting Bids and these Instructions For Bidders, any reference to the "Bid Deadline" shall mean the date and time specified as the Bid Deadline in the Notice Inviting Bids and any authorized extension(s) thereto. The Bid Deadline shall be extended by no less than seventy-two hours if the District issues any material changes, additions, or deletions to the Bid Documents within seventy-two hours of the Bid Deadline.

19. District Receipt of Bids. The District must receive any and all bids prior to the Bid Deadline and at the Place for Submitting Bids described in the Notice Inviting Bids. The clock, computer or other device located at the Place for Submitting Bids and designated as the official bid clock shall be used in determining whether bids have been timely received by the District, regardless of whether the time shown on the official bid clock is precisely accurate. Each bidder is solely responsible for ensuring that its bid is timely received by the District. A bidder must submit its bid to the District via personal or other delivery. The District will not accept any oral bid or bid sent via facsimile or electronic transmission. At no time will District telephones or facsimile machines be available for use by bidders. Each bid received by the District after the Bid Deadline will be returned to the bidder unopened.

20. Modifying or Superseding a Bid. Not later than the Bid Deadline, a bidder may modify or supersede its original bid by withdrawing its original bid as provided in these Instructions For Bidders and concurrently submitting a replacement bid for the Work in accordance with the Bid Documents. The District shall reject any replacement bid that is not received by the District prior to the Bid Deadline. The late receipt and rejection of a bidder's replacement bid shall not be deemed or construed to constitute a withdrawal of the original bid by the bidder, and the District still may accept the original bid if responsive and the bidder is a responsible contractor. Each replacement bid received by the District after the Bid Deadline will be returned to the bidder unopened.

21. *Withdrawing a Bid.* A bidder may withdraw its bid at any time prior to the Bid Deadline by submitting a written request to the District via personal or other delivery. The District will not accept any oral withdrawal request or any withdrawal request sent via facsimile or electronic transmission. A withdrawal request must be signed by an authorized representative of the bidder. A withdrawal request received by the District after the Bid Deadline shall in no event be deemed or construed to constitute a withdrawal of the bid, and the District still may accept the bid if it is responsive and the bidder is a responsible contractor. After receipt of a timely withdrawal request, the District shall return the bidder's bid security upon request. Except as provided in Public Contract Code Section 5100 *et seq.*, if a bidder has not withdrawn its bid prior to the Bid Deadline, the bidder thereafter may not withdraw its bid for a period of sixty days after the Bid Deadline.

22. *Bid Irregularities.* The District, in accordance with applicable law, may waive any minor irregularity or informality in any bid or in the bidding process. The District may, but is not required to, seek information from any bidder that might resolve an ambiguity in the bidder's bid.

23. *Bid Protests.* Any bidder that has duly submitted a bid for the Work may protest the process used to seek bids for the Work, another bid for the Work and/or the intended award of the Contract for the Work only by filing a written protest with the District in accordance with the procedures set forth in this Section (each a "Bid Protest"). The District will not accept or consider any oral Bid Protest (e.g., by telephone) or any Bid Protest sent via electronic transmission (e.g., email). In order for a Bid Protest to be valid and be considered by the District, the Bid Protest:

- (i) Must be received by the District not later than 4:00 p.m. on the fifth business day following the opening of bids;
- (ii) Must clearly identify the bidder that is filing the Bid Protest, together with the name, address and telephone number of the person representing the bidder for purposes of the Bid Protest;
- (iii) Must clearly identify the specific bid, bidding process, or other matter that is the subject of the Bid Protest;
- (iv) Must clearly identify the specific provisions of all documents relevant to the Bid Protest;
- (v) Must clearly identify and describe in detail the specific basis or bases for the Bid Protest and all facts relevant thereto;
- (vi) Must clearly identify and describe in detail all arguments by the protesting bidder in support of the Bid Protest, including, without limitation, citations to applicable statutory requirements; and
- (vii) Must be submitted with all documentation the protesting bidder desires to submit that is relevant to and supports the basis or bases underlying the Bid Protest.

If a Bid Protest does not comply with each and all of the foregoing requirements (provided that a protesting bidder will be deemed to have submitted all documentation that it desires in accordance with clause (vii) of the foregoing), the District will reject the Bid Protest as invalid. However, upon receipt of a valid Bid Protest, the District and/or its legal counsel will review the Bid Protest and provide a written response to the protesting bidder setting forth a recommendation for action by the Governing Board of the Newhall School District ("District Board") in response to the Bid Protest. Action

on a Bid Protest by the District Board shall be a condition precedent to the filing of any claim or demand and to the initiation of any action (legal or equitable) or other proceeding arising from the matter(s) protested.

CAUTION: COMPLIANCE WITH THE FOREGOING BID PROTEST REQUIREMENTS IS MANDATORY. EACH BIDDER THAT DESIRES TO PROTEST MUST FILE ITS OWN BID PROTEST IN ACCORDANCE WITH THE FOREGOING REQUIREMENTS, AND NO BIDDER MAY RELY ON A BID PROTEST BY ANOTHER BIDDER AS A MEANS OF SATISFYING SUCH REQUIREMENTS. COMPLIANCE WITH THE FOREGOING REQUIREMENTS IS THE SOLE AND EXCLUSIVE MEANS OF PROTESTING A BID, THE BIDDING PROCESS AND/OR THE INTENDED AWARD OF THE CONTRACT, AND FAILURE TO SO COMPLY SHALL BE DEEMED AND CONSTRUED AS A WAIVER OF ANY AND ALL RIGHTS THE BIDDER MAY HAVE TO PURSUE A CLAIM, DEMAND, OR ACTION ARISING FROM ANY SUCH MATTER.

24. District Award of Contract. The District Board in its sole discretion may reject all bids. If the District Board awards the Contract, the award will be to the responsible bidder with the lowest responsive bid from among all responsible and responsive bidders (“Successful Bidder”). If two or more responsive and responsible bidders have submitted the same low bid, the District shall determine the Successful Bidder by means of a coin toss or some other random method. The District will issue notice of the award of the Contract to the Successful Bidder (“Notice of Award”).

25. Bidder Execution of Contract. The Successful Bidder shall have seven calendar days after the date of the Notice of Award to execute the Contract and deliver it to the District with all other documents required in accordance with the Contract Documents. If the Successful Bidder fails to execute and provide all such documents within that seven-day period: (i) the Successful Bidder shall forfeit the bid security submitted with its bid; and (ii) the District may award the Contract to one of the other responsible and responsive bidders or release all bidders.

26. Time for Completion of Work and Liquidated Damages. The Successful Bidder must complete the Work in accordance with the Contract Documents and within the time period specified in the Master Schedule, as such time period may be adjusted in accordance with the Contract Documents. The failure of the Successful Bidder to fully complete the Work within such time period(s) may result in the District assessing Liquidated Damages as provided in the General Provisions.

27. Subcontractor Eligibility and Licensing. The Successful Bidder shall in no event permit a subcontractor to perform any of the Work if that subcontractor is ineligible to work on a public work or public project. Each subcontractor that the Successful Bidder intends shall perform any portion of the Work must be licensed in accordance with law by the Contractors State License Board prior to commencing its portion of the Work.

28. Prevailing Wages and Labor-Law Compliance Monitoring. The Successful Bidder and each of its subcontractors (regardless of tier) shall pay not less than the applicable Prevailing Wages for each craft or type of worker needed to execute the Contract. A copy of the per-diem rates of Prevailing Wages applicable to the Work is on file with the District and is available for review at the location specified in the Notice Inviting Bids as the Place for Submitting Bids, and a copy will be posted at the Project Site. The Work will be subject to monitoring by the DIR as to compliance with labor-law requirements, as described in more detail in the General Provisions.

29. Fingerprinting and Employee Background Checks. If so specified in the Special Provisions, the Successful Bidder, prior to entering in or upon the Project Site for purposes of commencing the Work, must comply with the requirements for employee background checks set forth in Section 3.7 of the General Provisions. The District reserves the right to subsequently alter such determination in appropriate circumstances, including, without limitation, in any case that the time for performance of the Work has been or will be extended beyond the time specified in the Master Schedule. The District may impose other requirements designed to protect students regardless of whether it requires such employee background checks. The Successful Bidder shall be responsible for compliance with any and all such requirements with respect to its own employees and the employees of its subcontractors.

30. Discrimination Prohibited. In connection with performance of the Work, neither the Successful Bidder nor any of its subcontractors of any tier shall illegally discriminate against any prospective or existing employee in violation of applicable law. The Successful Bidder must comply with applicable federal and California laws prohibiting such discrimination and must require like compliance by any and all subcontractors performing any of the Work.

31. Electronic Bidding and Video-Conference Bid Opening. If the District establishes a process for bidders to submit bids electronically: (i) the District shall liberally interpret the foregoing Instructions for Bidders to effectuate their intended purposes; (ii) documents that require an original signature on behalf of the bidder may be scanned and submitted electronically; (iii) bids may be withdrawn or superseded electronically; and (iv) the bidding process otherwise shall conform to instructions provided by the District. Regardless of whether the District implements an electronic bidding process, the District may open bids at any time subsequent to the Bid Deadline and may require that interested bidders view the bid opening through video conferencing, rather than being physically present for the bid opening.

DESCRIPTION OF WORK

A. The Work consists of any and all labor, materials, goods, supplies, equipment, tools, utilities, temporary facilities, transportation, delivery services, and other services and things of any nature whatsoever as are expressly and impliedly necessary to timely and satisfactorily complete the Project: (i) in strict accordance with the Contract Documents; and (ii) not later than the Required Completion Date specified in the Master Schedule. The Work consists generally of the following: Removal of existing audio and visual equipment and installation of new equipment, low voltage electrical, and electrical as outlined in the drawings in Multi-Purpose Rooms throughout the Districts ten school sites. All demolished equipment to be saved for the District. All work is to be completed as per the drawings and specification sections.

Additionally, the proposed Contractor must be an authorized reseller with the proposed A/V manufacturer. In addition, the Contractor must have at least two certified technicians/engineers with the proposed A/V manufacturer.

Please see the list of the drawings for this project below. Contractor is responsible for printing sets of drawings for the project.

ELECTRICAL DWGS	LOW VOLTAGE DWGS
<ul style="list-style-type: none"> ○ McGrath_E ○ Meadows_E ○ Newhall_E ○ Oak Hills_E ○ Old Orchard_E ○ Peachland_E ○ Pico Canyon_E ○ Stevenson Ranch_E ○ Valencia Valley_E ○ Wiley Canyon_E 	<ul style="list-style-type: none"> ○ McGrath_LV ○ Meadows_LV ○ Newhall_LV ○ Oak Hills_LV ○ Old Orchard_LV ○ Peachland_LV ○ Pico Canyon_LV ○ Stevenson Ranch_LV ○ Valencia Valley_LV ○ Wiley Canyon_LV

B. The Project Site:

<p>Site 1 McGRATH SCHOOL 21501 Deputy Jake Drive Newhall, CA 91321-4687 (661) 291-4090</p>	<p>Site 6 WILEY CANYON SCHOOL 24240 La Glorita Circle Newhall, CA 91321-2304 (661) 291-4030</p>
<p>Site 2 NEWHALL ELEMENTARY SCHOOL 24607 N. Walnut St. Newhall, CA 91321-1751 (661) 291-4010</p>	<p>Site 7 PICO CANYON SCHOOL 25255 Pico Canyon Rd. Stevenson Ranch, CA 91381-1658 (661) 291-4080</p>
<p>Site 3 MEADOWS SCHOOL 25577 N. Fedala Rd. Valencia, CA 91355-2536 (661) 291-4050</p>	<p>Site 8 STEVENSON RANCH SCHOOL 25820 N. Carroll Lane Stevenson Ranch, CA 91381-1100 (661) 291-4070</p>
<p>Site 4 OLD ORCHARD SCHOOL 25141 N. Avenida Rondel Valencia, CA 91355-3205 (661) 291-4040</p>	<p>Site 9 OAK HILLS SCHOOL 26730 Old Rock Road Valencia, CA 91381-0775 (661) 291-4100</p>
<p>Site 5 PEACHLAND AVENUE SCHOOL 24800 Peachland Ave. Newhall, CA 91321-3430 (661) 291-4020</p>	<p>Site 10 VALENCIA VALLEY SCHOOL 23601 Carrizo Dr. Valencia, CA 91355-2182 (661) 291-4060</p>

MASTER SCHEDULE

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Some or all of the dates and times set forth in this Master Schedule are anticipated dates and times as of the date the District issued the Notice Inviting Bids for the Project and are subject to change prior to award of the Contract. The Contractor must coordinate the schedule for completion of the Work with the District to ensure that the Work will not unreasonably interfere with District operations, and, to that end, the District may require that Contractor perform the Work during non-school hours, on weekends and/or during school holidays and other breaks; provided that the District and the Contractor shall endeavor to schedule reasonable blocks of time for performance of the Work as will be cost-efficient for the Contractor.

	<u>DATE</u>	<u>TIME</u>
Advertisement	May 22, 2025 May 29, 2025	N/A
Bid Documents Available	May 22, 2025	N/A
Pre-Bid Conference	June 6, 2025	1:00 PM
Bidder Clarification Request Deadline	June 10, 2025	9:00 AM
Deadline for Final Addendum	June 11, 2025	10:00 AM
Bid Opening	June 16, 2025	10:00 AM
Award of Contract	June 24, 2025	N/A
Notice of Award	June 25, 2025	N/A
Last Day for District to File DIR Form PWC-100	July 24, 2025	N/A
Notice to Proceed	TBD	N/A
Preconstruction Meeting	TBD	TBD
Work to Commence	June 30, 2025	N/A
Required Completion Date	August 15, 2025	N/A

BIDDER CLARIFICATION REQUEST

Please email this form to bids@newhallsd.com

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Bidder Submitting Request: _____

Identify issue (including, as applicable, drawing/specification number): _____

Clarification requested: _____

Print Name: _____ Signature: _____ Date: _____

(Note: Architect and/or District to complete the portion of this form below.)

Date Request Received: _____ Response No.: _____

Response to request for clarification: _____

Clarification issued by:

Architect:

District:

Name

Name

Signature

Signature

Date

Date

REQUIRED BID FORMS

The District shall deem to be non-responsive each bidder that fails to complete, duly execute and submit the following forms with its bid:

1. Bid Proposal
2. Subcontractor Listing
3. Bid Bond
4. Certification Regarding DVBE Efforts
5. Non-Collusion Declaration
6. Certification Regarding Site Visit
7. Certification Regarding Contractor Registration
8. Notice and Certification Regarding Russia-Related Sanctions

BID PROPOSAL

(Do not leave any information blank)

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Bidding Contractor ("Bidder"): _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

- A. The undersigned is a duly authorized representative of the Bidder and, in that capacity, has reviewed the information set forth in this Bid Proposal form and the Bid Documents, and has executed and submitted this Bid Proposal on behalf of the Bidder.
- B. The Bidder is duly licensed as a contractor by the Contractors State License Board of the State of California ("CSLB"), such license is in full force and effect as of the date the Bidder has submitted this bid to the District, and the classification(s) of such license is appropriate to allow the Bidder to perform all of the Work in accordance with California law. The number classification(s) of the license issued to the Bidder by the CSLB are:

License # _____;

Class(es): _____.

- C. The Bidder has become familiar with the Project Site as certified in the Certification Regarding Site Visit submitted concurrently herewith, has become familiar with the Contract Documents, and hereby represents and warrants that it is sufficiently experienced and qualified, and that it has sufficient financial and other resources, to perform and complete the Work in strict accordance with the Contract Documents.
- D. Being sufficiently experienced and qualified to perform the Work, Bidder hereby proposes to (and, if awarded the Contract, the Bidder shall) furnish at its own cost and expense any and all labor, materials, tools, equipment, facilities, transportation, services and other things required for completion of the Project in strict conformity with the Bid Documents, in exchange for payment from the District of the total, all-inclusive amount(s):

Base Bid:

_____ Dollars (\$ _____).

- E. The Bidder acknowledges that it received, and that it fully considered when preparing this bid and determining the bid amount(s) proposed by the Contractor herein ("Bid Amounts"), each of the following Addenda to the Bid Documents (check all that apply; note, this Bid Proposal may be rejected as non-responsive if the Bidder checks any addendum that the District or Architect did not actually issue):

- | | | | |
|---|---|---|---|
| <input type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 4 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 6 | <input type="checkbox"/> Addendum No. 7 | <input type="checkbox"/> Addendum No. 8 |

- F. The Bidder acknowledges that the Bid Amounts shall constitute all-inclusive compensation in exchange for full and satisfactory completion of all of the Work, including, without limitation, compensation for any and all sales taxes, supervision, general conditions, fees, field-office and home-office overhead, and profit.
- G. The Bidder represents and warrants that it was responsible for preparing this bid and that it has carefully checked and confirmed the Bid Amounts and all other information set forth in this Bid Proposal. The Bidder acknowledges and agrees that the District may rely on such information and in no event shall the District Board or the District be responsible for any errors or omissions in this bid. The Bidder is aware and acknowledges that the District Board has the right to waive any minor irregularity in this bid, any other bid, or all bids for the Project.
- H. The Bidder has completed as applicable, executed, and submitted with this Bid Proposal all of the other Required Bid Forms. The Bidder acknowledges that the District shall deem this bid to be non-responsive if the Bidder fails to complete as applicable, execute, and submit any such other forms to the District concurrently with submitting this Bid Proposal.
- I. If awarded the Contract, the Bidder shall execute the Contract by causing its duly authorized representative to sign the Agreement for Construction Services, and thereby bind the Bidder to the Contract. The Bidder acknowledges that its bid security submitted concurrently herewith was given to guarantee that, if awarded the Contract, then, within seven calendar days of receipt of the Notice of Award, the Bidder shall complete as applicable, execute, and submit to the District: (i) the Agreement for Construction Services, Payment Bond, Performance Bond, and all other Required Contract Forms; and (ii) all Certificates of Insurance and endorsements required by the Contract Documents. The Bidder further acknowledges that it shall forfeit up to the whole amount of its bid security in the event Bidder fails to timely complete as applicable, execute, and submit any such documents to the District.
- J. The Bidder is, and if awarded the Contract, then at all times during the performance of Work must be, in full compliance with the provisions of the Immigration Reform and Control Act of 1986 (“IRCA”) relating to its employees, and the Bidder shall indemnify, hold harmless and defend the District against any and all claims, actions, other proceedings, penalties, costs and expenses (including, without limitation, attorneys’ fees), and other liabilities of any nature whatsoever that arise out of the Bidder's failure to strictly comply with the IRCA.
- K. The contact information set forth below is the current address and telephone number for the Bidder. The Bidder acknowledges that, if the District attempts to contact the Bidder for any purpose relating to this bid (including, without limitation, to request additional information or to provide a Notice of Award), but the District is unable to reach the Bidder because information set forth below is not correct, then the District may reject this bid and, in such event, the District shall have no liability to the Bidder whatsoever.

Bidder Street Address: _____

 Telephone Number: _____

- L. The Bidder is organized as a (check only one):
- Corporation Limited Liability Company General Partnership
- Sole Proprietorship Other (describe): _____

M. The Bidder is organized pursuant to the laws of the State of: _____

N. The Bidder acknowledges and agrees that, unless it withdraws this bid in accordance with the Instructions For Bidders prior to the Bid Deadline, the Bidder may not withdraw this bid for a period of sixty days after the Bid Deadline.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

SUBCONTRACTOR LISTING

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Bidding Contractor ("Bidder"): _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Bidder and, in that capacity, has executed this certification on behalf of the Bidder.
- (ii) The Bidder knows and understands the provisions of the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 *et seq.*), including, without limitation, the consequences of not listing any subcontractor, or listing more than one subcontractor, for any portion of the work on the Project.
- (iii) The Bidder is aware and acknowledges that, if bid alternates are required, and the Bidder intends to use different or additional subcontractors for any of the bid alternates, the Bidder must submit a separate, complete list of subcontractors for each such bid alternate.
- (iv) All subcontractors that the Bidder will use, if awarded a contract for work on the Project, are listed on the following Attachment Sheet(s), and the Bidder represents and warrants that each such subcontractor shall be duly and appropriately licensed by the Contractors State License Board of the State of California prior to commencing any of the Work.
- (v) The Bidder is aware and acknowledges that, not later than twenty-four hours following the bid deadline, the Bidder must submit to the District, in writing, the address, telephone number, and contact person's first and last name, for each listed subcontractor.
- (vi) The Bidder is aware and acknowledges that, if awarded a contract for work on the Project, the Bidder shall not, without the District's written consent: (i) substitute any subcontractor in place of a listed subcontractor; (ii) permit any subcontract for work on the Project to be assigned or transferred; (iii) allow any such work, labor or service to be performed by anyone other than the applicable listed subcontractor; or (iv) sublet or subcontract any of the work in excess of one-half of one percent of Bidder's total bid for which the Bidder did not list a subcontractor.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

Note: This certification page must be accompanied by the list of subcontractors on the following attachment sheet. Make and use copies of the attachment sheet, as necessary to list additional subcontractors.

SUBCONTRACTOR LISTING – ATTACHMENT SHEET

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Bidding Contractor: _____

Attachment Sheet _____ **of** _____

1. Subcontractor Name: _____ CSLB License No.: _____
Location of Business: _____
Portion of Work: _____

2. Subcontractor Name: _____ CSLB License No.: _____
Location of Business: _____
Portion of Work: _____

3. Subcontractor Name: _____ CSLB License No.: _____
Location of Business: _____
Portion of Work: _____

4. Subcontractor Name: _____ CSLB License No.: _____
Location of Business: _____
Portion of Work: _____

5. Subcontractor Name: _____ CSLB License No.: _____
Location of Business: _____
Portion of Work: _____

6. Subcontractor Name: _____ CSLB License No.: _____
Location of Business: _____
Portion of Work: _____

7. Subcontractor Name: _____ CSLB License No.: _____
Location of Business: _____
Portion of Work: _____

BID BOND

School District: Newhall School District of Los Angeles County, California

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor (insert full legal name): _____

Surety (insert full legal name): _____

Penal Sum: Ten percent (10%) of Contractor's Total Bid Amount

The Contractor (identified above and referred to herein as, the "Principal") has provided this bid bond in connection with the bid submitted by the Principal to the School District (identified above) for the construction of the public works project identified above ("Project").

In issuing this bid bond, the Surety (identified above) shall be deemed and construed to thereby certify to the School District that the Surety is "an admitted surety insurer" as defined in California Code of Civil Procedure Section 995.120.

We, the Principal and the Surety, as evidenced by the signatures of our respective duly authorized representatives set forth below, are hereby held and firmly bound unto the School District in the amount of the Penal Sum specified above, for the payment of which amount, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns as specified below.

The payment obligation described above shall become null and void if: (i) the School District awards the contract for construction of the Project ("Contract") to the Principal based on the bid described above and, within the required number of days after the notice of such award, the Principal enters into the Contract and provides to the School District the required payment and performance bonds, and other required documentation; (ii) the School District rejects all bids received for the Project; or (iii) the Principal withdraws its bid following expiration of the time period during which bids may not be withdrawn.

If, however, the School District awards the Contract to the Principal, but the Principal fails and/or refuses to enter into the Contract and/or to properly and duly execute and deliver the required payment bond, performance bond, and/or other required documentation, then, immediately upon request of the School District and without imposing any additional conditions on payment whatsoever, the Surety and/or the Principal shall forfeit and pay to the School District such amount as the School District states is the total of the costs reasonably incurred by the School District as a result of such failure or refusal by the Principal, including, without limitation, the difference between the Principal's bid and the bid for the Project subsequently accepted by the School District, rebidding of the Project if necessary, and administrative, publication, and other costs incurred by the School District. In no event, however, shall the liability pursuant to this bid bond exceed the Penal Sum specified above.

The Surety, for value received, hereby stipulates and agrees that this bid bond and the Surety's obligations hereunder shall be and remain in effect until such time as one or more of the conditions described herein for rendering this bid bond null and void have been satisfied. The Surety, for value received, further stipulates and agrees that this bid bond shall in no way be impaired or otherwise

affected by any extension of the time within which the School District may accept the Principal's bid for the Project or of the time within which the Principal must enter into the Contract and submit the required documentation, and Surety hereby waives any requirement for notice of any such extension.

Each person signing this bid bond on behalf of either the Principal or the Surety hereby represents and warrants that he or she has been duly authorized to sign, and thereby bind such party to, this bid bond.

IN WITNESS WHEREOF, the Principal and Surety, acting by and through their respective, duly authorized representatives, have executed this instrument on the date indicated below and affixed the name and, if applicable, corporate seal of each party.

Principal: _____
(Corporate or Individual Name)

Business Address: _____

Authorized Signature: _____ (Affix Corporate Seal)
(Must be Notarized)

Date Signed: _____

Surety: _____
(Corporate Name)

Business Address: _____

Authorized Signature: _____ (Affix Corporate Seal)
(Must be Notarized)

Date Signed: _____

(The following is to be completed by Surety.)

The rate of premium on this bond is: \$ _____ per thousand dollars.

Total amount of premium charged is: \$ _____.

Note: A certified copy of the Power of Attorney of the Surety's authorized signatory must be attached to this bid bond.

CERTIFICATION REGARDING DVBE EFFORTS

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that: (i) the undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor; and (ii) the Contractor made reasonable efforts, as required by the Contract, to secure participation in the Contract by Disabled Veteran Business Enterprises ("DVBE"), including participation by DVBE subcontractors, material suppliers, and others. The undersigned further certifies, on behalf of the Contractor, as follows:

CHECK ONLY ONE OF THE FOLLOWING:

- THE CONTRACTOR DID NOT SECURE DVBE PARTICIPATION IN THE CONTRACT. However, the Contractor will use DVBE services if the opportunity reasonably arises at any time during construction of the Project. Upon completion of the Project and as a condition precedent to final payment to the Contractor pursuant to the Contract, the Contractor will report to the District the total dollar amount of DVBE participation in the Contract, including, without limitation, any work performed pursuant to Change Orders applicable to the Project.

- THE CONTRACTOR DID SECURE DVBE PARTICIPATION IN THE CONTRACT, AS DESCRIBED ON THE ATTACHMENT SHEET(S) ATTACHED HERETO. The Contractor will use additional DVBE services if the opportunity reasonably arises at any time during construction of the Project. Upon completion of the Project and as a condition precedent to final payment to the Contractor pursuant to the Contract, the Contractor will report to the District the actual total dollar amount of DVBE participation in the Contract, including, without limitation, any work performed pursuant to Change Orders applicable to the Project.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING DVBE EFFORTS – ATTACHMENT SHEET

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

1. DVBE Entity Name: _____

State DVBE Certification No.: _____ Telephone No.: _____

Business Address: _____

Anticipated Participation in Contract: \$ _____

Type of Participation: _____

2. DVBE Entity Name: _____

State DVBE Certification No.: _____ Telephone No.: _____

Business Address: _____

Anticipated Participation in Contract: \$ _____

Type of Participation: _____

3. DVBE Entity Name: _____

State DVBE Certification No.: _____ Telephone No.: _____

Business Address: _____

Anticipated Participation in Contract: \$ _____

Type of Participation: _____

4. DVBE Entity Name: _____

State DVBE Certification No.: _____ Telephone No.: _____

Business Address: _____

Anticipated Participation in Contract: \$ _____

Type of Participation: _____

Note: Types of DVBE participation may include, but are not limited to: (i) construction; (ii) architectural and/or engineering; (iii) suppliers of materials, equipment and/or supplies; and (iv) information technology.

NON-COLLUSION DECLARATION

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby declares:

I am the _____ (insert position) of _____
_____ (insert Contractor name), the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true.

The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty for perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ (insert date), at _____ (insert city), _____ (insert state).

Representative Name: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING SITE VISIT

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

Site Visit Date(s): _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor.
- (ii) I have sufficient knowledge, experience and/or resources to have undertaken the activities and reached the conclusions described and set forth in this Certification Regarding Site Visit.
- (iii) On the Site Visit Date(s) specified above, I inspected the Project Site and all conditions at the Project Site that will or might affect the performance of the Work or the portion thereof to be performed by the Contractor if awarded the Contract, including, without limitation: (a) the general shape, layout, slope, crossfall and other features of the Project Site; (b) any right-of-way and access limitations affecting the Project Site; (c) any existing buildings, hardscape, paving and other improvements on, at or in the vicinity of the Project Site; (d) any encroachments on the Project Site; (e) any manholes, pullboxes, valves and valveboxes, backflow preventers, stormdrain inlets and outlets, and/or similar features on, at or in the vicinity of the Project Site that may indicate the presence of subsurface utilities or other improvements on the Project Site; (f) any reasonably apparent past or present uses of the Project Site, and reasonably apparent age or condition of any improvements on or at the Project Site, that may indicate presence of any asbestos, lead or other hazardous materials on or at the Project Site; and (g) any mature trees or other vegetation, natural drainage or watercourses, or other landscape features on or in the vicinity of the Project Site.
- (iv) I am fully acquainted with all conditions that will affect the Work or the portion thereof to be performed by the Contractor if awarded the Contract, and I fully understand the facilities, difficulties, and restrictions attending the execution of such Work; and such understanding is hereby attributed to and deemed to be the understanding of the Contractor.
- (v) In connection with the Work or the portion thereof to be performed by the Contractor if awarded the Contract, the Contractor accepts full responsibility for all conditions on, at or in the vicinity of the Project Site affecting such Work, including, without limitation, any as described herein, that reasonably could have been observed or identified during my visit to the Project Site.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING CONTRACTOR REGISTRATION

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, I have executed this certification on behalf of the Contractor.
- (ii) The Contractor is aware and acknowledges that, except as authorized by Business and Professions Code Section 7029.1 and Public Contract Code Section 20103.5, no contractor may submit a bid for any work on a public works project unless the contractor is, and no subcontractor may be listed in any bid for work on a public works project unless the subcontractor is, currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5.
- (iii) The Contractor is aware and acknowledges that, no contractor or subcontractor may be awarded a contract for work on a public works project, or may perform any work on a public works project, unless the contractor or subcontractor is currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5.
- (iv) The Contractor is aware and acknowledges that, notwithstanding anything to the contrary, if awarded the Contract and at any time during the performance of the Work, the Contractor or any of its subcontractors is not duly registered pursuant to Labor Code Section 1725.5 (including, without limitation, if the registration expires or the DIR revokes the registration), the District in its sole discretion may cancel the Contract and/or replace the Contractor or subcontractor with a contractor or subcontractor that is duly registered pursuant to Labor Code Section 1725.5, and the Contractor and/or its surety shall be responsible for any and all associated costs incurred by the District.
- (v) If awarded the Contract, and the Contractor at any time during the Project intends to use a subcontractor that was not listed in its bid (e.g., a subcontractor performing work costing less than one-half of one percent of the Contractor's total bid amount or a subcontractor needed for work added by change order), then, before the subcontractor performs any work on the Project, the Contractor must provide written notice to the District that identifies the subcontractor and includes the printout described at the bottom of this form as evidence that the subcontractor is properly registered with the DIR.
- (vi) The Contractor acknowledges that, if awarded the Contract, the Contractor must: (i) monitor the registration status of its subcontractors on a regular, ongoing basis; and (ii) inform the District in writing if any of its subcontractors is or becomes not duly registered.
- (vii) The Contractor and each subcontractor specified on the Subcontractor Listing accompanying the Contractor's bid are duly registered with the DIR pursuant to Labor Code Section 1725.5.

(viii) Evidence (in the form described in the note below) that the Contractor and each such subcontractor are duly registered with the DIR pursuant to Labor Code Section 1725.5 is attached to this certification.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

Note: This certification must be accompanied by printouts of the applicable screens on the DIR website evidencing that the Contractor and all listed subcontractors are currently registered pursuant to Labor Code Section 1725.5.

NOTICE AND CERTIFICATION REGARDING RUSSIA-RELATED SANCTIONS

(Executive Order N-6-22)

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

NOTICE TO BIDDER

On March 4, 2022, California Governor Gavin Newsom issued Executive Order No. N-6-22 (“Executive Order”) relating to sanctions imposed by the U.S. government and the State of California (“State”) in response to actions in Ukraine by the Russian Federation (“Russia”).

Among other things, the Executive Order “calls upon businesses, non-governmental organizations, and public entities in the State to review their investments and contracts to ensure their compliance with economic sanctions imposed by the U.S. government in response to Russia’s actions in Ukraine, as well as any sanctions imposed under state law (collectively economic sanctions), and to take actions to support the Ukrainian government and people, including by refraining from new investments in, and financial transactions with, Russian institutions or companies that are headquartered or have their principal place of business in Russia (Russian entities), not transferring technology to Russia or Russian entities, and directly providing support to the government and people of Ukraine.”

The Executive Order requires that all State agencies and departments subject to the Governor’s authority: (i) review contracts for commodities, services, and technology to determine compliance with such federal and State economic sanctions (“Economic Sanctions”); (ii) terminate contracts with entities or individuals that are a target of the Economic Sanctions; and (iii) not enter into any additional contracts with such entities or individuals.

The Executive Order further requires that each State agency and department: (i) notify all grantees of the agency or department (each a “Grantee”) and contractors with contracts of \$5 million or more (each, a “State Contractor”) of their obligations to comply with the Economic Sanctions; (ii) direct all Grantees and State Contractors to report to the agency or department regarding their compliance with the Economic Sanctions; and (iii) direct all Grantees and State Contractors to report on steps they have taken in response to Russia’s activities in Ukraine.

CERTIFICATION BY BIDDER

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

- (i) I am a duly authorized representative of the Contractor identified above in this form and, in that capacity, I have executed this certification on behalf of the Contractor.
- (ii) The Contractor acknowledges that, in connection with various programs, services, and activities undertaken by the District from time to time, the District receives grant funding provided through one or more State agencies or departments.

- (iii) The Contractor represents and warrants that neither the Contractor nor any of its directors, officers, or affiliates: (i) invests in, or has financial transactions with Russian institutions or companies that are headquartered or have their principal place of business in Russia (“Russian Entities”); or (ii) transfers technology to Russia or any Russian Entities.
- (iv) The Contractor represents and agrees that, in connection with the Project, and in connection with its activities pursuant to the contract awarded for the Bid identified above on this form (“Agreement”), neither the Contractor nor any of its directors, officers, or affiliates shall engage in any of the activities described in the foregoing Clause (iii) of this form, or otherwise violate any of the Economic Sanctions.
- (v) The Contractor acknowledges and agrees that, while the Agreement is in effect, if the Contractor or any of its directors, officers, or affiliates engages in any of the activities described in the foregoing Clause (iii) of this form, or otherwise violates any of the Economic Sanctions, then, following notice and a thirty-day opportunity for the Contractor to submit a written response, and in the District’s sole discretion or as may be required by the State, the District may terminate the Agreement and, in addition, the District and/or State may take any and all other actions as permitted by applicable law.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

REQUIRED CONTRACT FORMS

The Contractor must complete, duly execute, and submit the following forms to the District when required after award of the Contract:

1. Agreement for Construction Services
2. Certification Regarding Employee Background Checks
3. Certification Regarding Drug-Free Workplace
4. Certification Regarding Tobacco-Free Workplace
5. Certification Regarding Workers Compensation
6. Notice and Certification Regarding Lead-Free Materials
7. Certification Regarding Asbestos
8. Payment Bond
9. Performance Bond
10. Certification Regarding DVBE Participation

AGREEMENT FOR CONSTRUCTION SERVICES

This Agreement for Construction Services is made effective as of June 24, 2025, by and between the Newhall School District (“District”), a public school district organized and existing pursuant to the laws of the State of California, and [Click here to enter Contractor’s full legal name](#) (“Contractor”), a [Click here to enter state in which Contractor organized and type of entity](#). The District and the Contractor may be referred to individually as “Party” and collectively as the “Parties.”

Section 1. Project. The Parties have entered into the Contract with respect to the following public works construction project of the District (“Project”): Districtwide MPR Audio Visual Replacement Project, NSD 24.25-8

Section 2. Component Parts of Contract. The entire understanding and agreement between the District and the Contractor relating to the Project (the “Contract”) includes and by this reference incorporates in full all of the documents described in this Section (collectively, the “Contract Documents”). The Contract Documents are intended to be complementary and form an integrated and binding whole. Contractor shall perform the work required by any one of the Contract Documents, even if that work is not referenced in any other Contract Document, as if that work is required by each and every Contract Document. The Contract Documents include:

- (i) Notice Inviting Bids
- (ii) Instructions For Bidders
- (iii) Description of Work
- (iv) Master Schedule
- (v) All Required Bidding Forms, including, without limitation, Contractor’s completed and executed Bid Proposal form
- (vi) Notice of Award
- (vii) All plans, drawings, and specifications for the Project, including, without limitation, attachments thereto and any and all approved shop-drawing submittals (“Plans and Specifications”)
- (viii) All Required Contract Forms, including, without limitation, Contractor’s completed and executed Agreement for Construction Services
- (ix) Special Provisions
- (x) General Provisions
- (xi) Any and all Change Orders and other duly approved modifications to the Contract Documents
- (xii) Each addendum to the Plans and Specifications
- (xiii) Each response to Bidder Clarification Request

Section 3. Scope of Work. The Contractor shall, at its own cost and expense, furnish all construction and other services (including, but not limited to, all labor, materials, tools, equipment, services, administration, supervision, and incidental and customary work) necessary and appropriate to fully and adequately complete the Project in strict accordance with the Contract Documents (“Work”). Should any detail or dimension be inadvertently omitted from the Plans and Specifications, it shall be the Contractor’s responsibility to request from the Architect the required details or information and to perform the Work in conformance therewith so that, upon completion of the Work, it will be acceptable and ready for use by the District.

Section 4. Completion of Work. Time is of the essence with respect to completion of the Project. The Contract requires the exact and full performance of the Work by the Contractor. The District shall provide notice to the Contractor specifying the date upon which the Contractor is to commence the Work (“Notice to Proceed”). Unless the time for performance is extended pursuant to the terms of the Contract, the Contractor shall complete all of the Work by the date specified in the Master Schedule. The Contractor acknowledges and agrees that: (i) it shall perform the Work in strict conformance with all schedule(s) or project milestone(s) set forth in the Master Schedule; and (ii) the Master Schedule is subject to revision depending on actual conditions in the field and other factors, and as otherwise provided by the Contract. The Contractor must perform the Work in full compliance with the Master Schedule, including, without limitation, as it may be revised in accordance with the Contract, without additional compensation except as may be permitted pursuant to the Contract Documents. The legal doctrine that a contractor may recover for a substantial performance of a building contract (i.e., “Doctrine of Substantial Performance”) shall not be deemed or construed to apply to the Contract.

Section 5. Certification of Contractor’s License. In entering into the Contract, the Contractor hereby certifies that as of the date of execution of the Contract, the Contractor possesses a current and valid contractor’s license issued by the Contractors State License Board of the State of California, license number [Click here to enter license number](#), classification(s) [Click here to enter classification number](#), which license the Contractor represents and warrants is appropriate for the Contractor, in conjunction with any subcontractors listed in the Bid Proposal, to perform the Work in accordance with California law.

Section 6. Payment to Contractor. In exchange for the full and satisfactory performance of the Work, the District shall pay to the Contractor the total, all-inclusive amount of [Click here to enter Contract Amount in words](#) ([\\$Click here to enter Contract Amount in numbers](#)) (“Contract Amount”). The Contract Amount shall be subject to adjustment as provided in the Contract Documents through authorized Change Orders approved by the District. Payments to the Contractor shall be made as the Work progresses (each a “Progress Payment”) based on Progress Payment Applications submitted by the Contractor and subject to Retention, as set forth in the General Provisions.

Section 7. District Representative. The authorized representative of the District for purposes of the administration of the Contract (“District Representative”) shall be Kenneth McGaffee, Director of Technology Services, who may be reached at kmcgaffee@newhallsd.com. With respect to the matters within the authority of the District Representative, the Contractor shall not accept any instruction or direction from any person purporting to represent the District other than the District Representative or his or her designee. Notwithstanding the foregoing, the District’s Superintendent shall have the authority to act on behalf of the District for all purposes of the Contract, including, among other situations, if the District Representative is not available on a timely basis.

Section 8. Notices. Each notice, demand, and other communication required or given pursuant to the Contract must be in writing, duly addressed as indicated below, and given by: (i) personal delivery (signature on delivery receipt requested); (ii) registered or certified mail (postage prepaid and return receipt requested); or (iii) UPS, FedEx or other reliable private express delivery (delivery charge prepaid and signature on electronic or other delivery receipt requested). Such notices, demands or communications shall be deemed given, served, or received only upon actual receipt. This section shall not be deemed or construed to apply to day-to-day communications between the Parties for purposes of administering the Contract or performance of the Work, or to service of process in accordance with any applicable law or rule of court. Any Party to the Contract may change its below-

specified name, address, or person to whom attention should be directed by giving notice as specified in this Section. Notices, demands, and other communications, as applicable, shall be duly addressed as follows:

To the District:

Newhall School District
Attn: Arik Avanesyans, Assistant Superintendent,
Business Services
25375 Orchard Village Road
Valencia, CA 91355

With Copy to:

Newhall School District
Attn: Kenneth McGaffee, Director of Technology
Services
25375 Orchard Village Road
Valencia, CA 91355

To the Contractor:

[Click here to enter Contractor](#)

Attn: [Click here to enter Representative name](#)
and title for purposes of Notices

[Click here to enter street](#)

[Click here to enter city, state and zip](#)

Notwithstanding anything in the Contract to the contrary, in the event of any emergency or urgent situation, the Contractor must make reasonable attempts to contact the District Representative by telephone and shall follow up such telephone contact with written confirmation. Telephone numbers for "after hours" communications are:

District Representative: Dennys Cardona, night custodial supervisor, 661-644-8151

Contractor Representative: [Click here to enter telephone number](#)

The Contractor shall notify the District within five business days of any change in its address, facsimile number, or telephone number(s), and failure of Contractor to provide such notice shall be deemed a material breach of the Contract.

Pursuant to Public Contract Code Section 9201, the District will timely notify the Contractor of any third-party claim relating to the Contract by mailing notice of receipt of such claim within ten calendar days. Public Contract Code Section 9201 provides that the District shall be entitled to its reasonable costs incurred in providing this notice to the Contractor.

Section 9. Attorneys' Fees. In the event of any action or other proceeding to enforce the Contract and/or to resolve any dispute between the Parties related thereto, each Party shall be responsible for paying its own costs and expenses incurred in connection with such action or proceeding, including, without limitation, attorneys' fees and expenses.

Section 10. Entire Agreement. The Contract constitutes the entire agreement of the Parties with respect to the performance of the Work by the Contractor and supersedes any and all prior and contemporaneous communications, negotiations, understandings, and agreements related to the Work, whether oral or written. The Contract may be modified only by written instrument duly approved and signed by both Parties. Any provision, printed or otherwise, contained in any acknowledgment of the Contract or purchase order or invoice related to the Contract that is inconsistent with, different

from, or in addition to the terms and conditions contained in the Contract or any documents specifically referenced and incorporated herein, shall have no force or effect whatsoever.

Section 11. Assignment. Contractor shall not assign, sublet or by any other means transfer the Contract or any obligation, right, title or interest herein, including right to payments hereunder, without the prior written consent of District. The Contract shall be binding on any authorized assignee, sublessee, transferee, or other successor to the Contractor. If Contractor attempts, without District permission, to assign, sublet or by any other means transfer the Contract or any obligation, right, title or interest herein, the District may, at its option, terminate the Contract and shall thereafter be relieved from any and all obligations to Contractor and any purported assignee, sublessee, or transferee.

Section 12. Counterparts. The Contract may be executed in counterparts, each of which shall constitute an original and all of which shall constitute but one and the same instrument.

Section 13. Due Authority. Each individual that signs the Contract on behalf of a Party thereby represents and warrants that he or she has been authorized by appropriate action of such Party to sign, and thereby bind such Party to, the Contract.

In Witness Whereof, the duly authorized representatives of the Parties have executed the Contract, as evidenced by their signatures below.

Newhall School District

[Click here to enter Contractor](#)

By: _____

By: _____

Print Name: Arik Avanesyans

Print Name: _____

Title: Assistant Superintendent, Business Services

Title: _____

Dated: _____

Dated: _____

CERTIFICATION REGARDING EMPLOYEE BACKGROUND CHECKS

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor;
- (ii) The Contractor has fully complied with the requirements of Section 3.7 of the General Provisions for employee background checks, including, without limitation, with respect to employees of any subcontractors that the Contractor intends to use on the Project;
- (iii) All of the employees of the Contractor and its subcontractors who will enter in or upon the Project Site, or be in the vicinity of the Project Site, in connection with the Project are identified on the Attachment Sheet(s) attached hereto;
- (iv) None of the employees of the Contractor or its subcontractors who are identified on the Attachment Sheet(s) attached hereto have been convicted of a violent or serious felony as defined in Subdivision (c) of Education Code Section 45125.2; and
- (v) Except for the employees identified on the Attachment Sheet(s) attached hereto (and except for the employees identified on attachment(s) to other certifications using this form that the Contractor has submitted to the District in connection with the Project), the Contractor shall not suffer or permit any employees of the Contractor or any of its subcontractors to enter in or upon the Project Site, or to be in the vicinity of the Project Site, in connection with the Project.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

Note: The Contractor must attach this certification to the list(s) of employees prepared using the following Attachment Sheet.

CERTIFICATION REGARDING EMPLOYEE BACKGROUND CHECKS – ATTACHMENT SHEET

Contractor: _____

Instructions

- (1) For each employee, insert all required information (as specified in the table below) in one row of the table.
- (2) In the “Driver License/Identification” column in the table below: (i) specify the number of the employee’s driver’s license or, if the employee does not have a driver’s license, the number of the employee’s state-issued identification; and (ii) specify the state that issued the driver’s license or identification.
- (3) If identifying more than ten employees: (i) use copies of this Attachment Sheet to identify the additional employees; and (ii) on each such copy, specify the sheet number and total number of sheets where indicated at the bottom of this Attachment Sheet.

	Employer (Company)	Employee Name and Position	Sex	Date of Birth	Height	Weight	Hair Color	Eye Color	Driver License/ Identification #
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Attachment Sheet _____ **of** _____

CERTIFICATION REGARDING DRUG-FREE WORKPLACE

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor;
- (ii) The Contractor, in accordance with Government Code Section 8350 *et seq.*, the Drug-Free Workplace Act of 1990, shall provide a drug-free workplace by doing all of the following:
 - (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition.
 - (b) Establishing a drug-free awareness program to inform employees about all of the following:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The person's or organization's policy of maintaining a drug-free workplace;
 - (3) The availability of drug counseling, rehabilitation and employee-assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations.
 - (c) Requiring that each employee engaged in the performance of the Contract be given a copy of the statement required by clause (ii)(a) above, and that, as a condition of employment on the Project, the employee agrees to abide by the terms of the statement.
- (iii) The Contractor hereby acknowledges and agrees that, if the District determines that the certification given herein is false, or the Contractor violated this certification by failing to implement the requirements of Government Code Section 8355, then the Contract shall be subject to termination, suspension of payments, or both, and the Contractor shall be subject to debarment in accordance with the requirements of Government Code Section 8350 *et seq.*

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING TOBACCO-FREE WORKPLACE

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor.

- (ii) The Contractor shall ensure a tobacco-free workplace by doing both of the following:
 - (a) Providing the following statement, in writing, to each person providing any labor or services on or at the Project Site, including, without limitation, any delivery personnel:

All properties and facilities operated by the Newhall School District, including, without limitation, the Project Site, are tobacco-free work places. It is strictly forbidden while in, on or at any District property or facility (whether owned or leased) to smoke, chew or otherwise use tobacco products. The Contractor shall require each person (including, without limitation, any employee of the Contractor or any subcontractor or supplier) found in violation of these requirements to permanently leave the Project Site, and the Contractor shall not thereafter permit such person to be present in, on, or at the Project Site.

- (b) Enforcing the requirements specified in the foregoing provision.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING WORKERS COMPENSATION

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor; and
- (ii) The Contractor is aware of the provisions of Labor Code Section 3700 *et seq.*, which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of the Labor Code, and the Contractor shall comply with such provisions prior to commencing and throughout the entirety of performance of the Work on the Project.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

NOTICE AND CERTIFICATION REGARDING LEAD-FREE MATERIALS

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

NOTICE:

If the Work involves or relates to other than entirely new construction, the Work may disturb lead-containing or lead-based paint and other building materials that may be incorporated into existing buildings or other improvements located on the site for construction of the Project ("Project Site"). Until sampling and testing confirms otherwise, it shall be presumed that all school buildings and improvements built in 1992 or earlier contain lead-based or lead-containing paint. The Contractor must complete, sign and submit a copy of this Notice and Certification Regarding Lead-Free Materials to the District prior to commencing the Work.

The Contractor shall be responsible for ensuring that its employees and subcontractors fully and adequately comply with, and that the Work is performed in conformance with, all applicable laws, ordinances, rules and regulations governing lead-based or lead-containing paint and other materials, including, but not limited to: (i) Education Code Section 32240 *et seq.*; (ii) Title 8, California Code of Regulations, Section 1532.1; and (iii) Title 17, California Code of Regulations, Section 35001 *et seq.*

If the Work involves renovation, modernization or other disturbance of any existing school buildings or improvements, the Contractor shall sample and test all materials as appropriate to determine whether lead-based paint or other materials are present and may present a hazard or threat during any such renovation or modernization. The Contractor shall provide the District with the results of any and all such testing, whether conducted prior to commencement of the Work, during the Work, or after completion of the Work.

Any and all Work that may result in the disturbance of lead-containing building materials must be coordinated through the District. Consistent with applicable law, when a lead-based hazard is identified, the Contractor shall utilize personnel certified by the California Department of Health Services to perform lead-related services. The District may at any time request that Contractor provide the training and certification records of each employee of the Contractor or subcontractor who provides lead-related services. The Contractor shall be solely responsible for proper disposal, in conformance with all applicable laws, of any and all lead-containing, lead-based or hazardous waste products including, but not limited to, paint chips, residue, and any other material that may be exposed or disturbed during the course of the Work.

California law prohibits, in the construction of any new school facility or in the modernization or renovation of any existing school facility, the use of lead-containing or lead-based paint, plumbing, solders, and other materials that may constitute a potential source of lead contamination.

In the event the Contractor or its employees or subcontractors fail to comply with all applicable laws, rules and regulations related to lead-containing or lead-based paints and other materials, or fail to comply with any other requirements set forth in this Notice and Certification Regarding Lead-Free

Materials, the Contractor shall be held solely responsible for any and all costs associated with any investigative and/or corrective actions deemed necessary by the District, and shall indemnify, defend and hold harmless the District, pursuant to the indemnification provisions of the Contract for the Work, with respect to any and all claims, demands, actions, damages, costs, expenses, and other liabilities arising therefrom.

CERTIFICATION BY CONTRACTOR:

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor;
- (ii) The Contractor has received notice that, in circumstances described in this Notice and Certification Regarding Lead-Free Materials, lead-based paint and/or other lead-containing materials may be located on the Project Site;
- (iii) The Contractor has received notice that it must comply with all applicable laws, rules and regulations governing work with, and disposal of, such materials; and
- (iv) In connection with the performance of the Work, the Contractor shall comply with all laws, rules and regulations applicable to work with, and disposal of, lead-based paint and/or other lead-containing materials, as well as the other requirements of this Notice and Certification Regarding Lead-Free Materials.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING ASBESTOS

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California that all of the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor.
- (ii) The Contractor is aware and acknowledges that, for purposes of this certification: (a) asbestos is any of chrysotile, crocidolite, amosite, anthophyllite, tremolite, actinolite or other minerals generally known as asbestos; and (b) an asbestos-containing material is any material or thing, or any component thereof, that contains, consists of, or is made up of greater than one-tenth of one percent (0.1%) asbestos.
- (iii) The Contractor shall not use on, or incorporate into, the Project any asbestos or asbestos-containing materials, including, without limitation, in any tools, devices, clothing, or equipment used in the construction of any portion of the Project.
- (iv) The Contractor has instructed its employees and subcontractors in regard to such prohibition against asbestos and asbestos-containing materials, and in regard to the hazards, risks and liabilities involved in the use of asbestos and asbestos-containing materials.
- (v) The Contractor acknowledges and agrees that:
 - (a) Each dispute as to whether any material, equipment or other thing used on, or incorporated into, the Work contains asbestos or is an asbestos-containing material shall be settled by electron microscopy;
 - (b) The costs of any such tests shall be paid by the Contractor if the material is found to contain asbestos at a level greater than as specified herein; and
 - (c) The District shall reject any and all materials or other things incorporated into the Work that are determined to contain asbestos or asbestos-containing materials, and the Contractor, at no cost to the District, must remove, replace and/or repair as necessary any and all affected portions of the Work.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PAYMENT BOND

School District: Newhall School District of Los Angeles County, California

Project: Districtwide MPR Audio Visual Replacement

Contractor: _____

Surety: _____

Bond #: _____

Penal Sum: _____ (\$ _____)

WHEREAS, the Project identified above is a public project and a public work in accordance with applicable law, and the School District identified above awarded to the Contractor identified above (herein, the "Principal") a contract providing for completion of the Project identified above ("Contract");

WHEREAS, the Contract and/or California Civil Code Section 9550 *et seq.* require that the Principal furnish a labor and materials payment bond to the School District that ensures the faithful performance of the Principal's obligations pursuant to the Contract to pay for materials, labor and other things as required by applicable law, which bond must have a penal sum equal to one hundred percent of the total amount payable by the School District to the Principal pursuant to the Contract; and

WHEREAS, the Surety identified above hereby represents to the School District that the Surety is an "admitted surety insurer" in accordance with Section 995.120 of the California Code of Civil Procedure;

NOW, THEREFORE, we, the Principal and Surety, are hereby held and firmly bound to the School District in an amount of lawful money of the United States of America equal to the Penal Sum specified above, the payment of which well and truly to be made, we hereby bind, jointly and severally, ourselves and our heirs, executors, administrators, and successors.

The condition of this obligation is that, if the Principal, or any of its heirs, executors, administrators, successors or assigns, or any of its subcontractors, fail in connection with the Project to pay as and when required (1) any of the persons authorized by California Civil Code Section 9100 to assert a claim against the Payment Bond, (2) amounts due under the Unemployment Insurance Code with respect to work or labor performed pursuant to the Contract, or (3) any amounts required to be deducted, withheld and paid over to the Employment Development Department from wages of employees of the Principal or any of its subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work and labor, then the Surety shall pay, in full, any and all claims for such amounts, in a total amount not in excess of the penal sum set forth herein, and also, in case suit is brought upon this Payment Bond, such reasonable attorneys' fees as fixed by the court.

This Payment Bond shall inure to the benefit of any and all of the persons named in California Civil Code Section 9100, so as to give a right of action to those persons or their assigns in any suit brought upon this Payment Bond.

The Surety hereby stipulates and agrees that this Payment Bond shall not be exonerated and the Surety shall not be released from its obligations pursuant to this Payment Bond on account of: (1) any extension of time, change, amendment or other modification of the Contract or other Project documents, or of the Principal's rights and/or obligations pursuant thereto, and Surety hereby waives notice of any and all such modifications; (2) any rescission or attempted rescission of the Contract or this

BWS/05-30-23

Payment Bond; (3) any fraud of any person or entity other than fraud of a claimant in connection with making a claim on this Payment Bond; or (4) any breach of any contract by the School District, the Principal or any person or entity for whose benefit Surety has issued this Payment Bond. The Surety further stipulates and agrees that this Payment Bond shall be construed most strongly against the Surety and in favor of the persons and entities for whose benefit Surety has issued this Payment Bond.

The Surety shall not be deemed to have fully and appropriately executed this Payment Bond unless Surety has provided all of the following information:

SURETY'S SOUTHERN CALIFORNIA/LOCAL REPRESENTATIVE

SURETY'S REPRESENTATIVE FOR FILING CLAIMS

Company Name

Company Name

Street Address

Street Address

City, State, Zip Code

City, State, Zip Code

Representative Name

Representative Name

Representative Telephone Number

Representative Telephone Number

(The remainder of this page intentionally left blank.)

Each person that signs this Payment Bond on behalf of the Principal or the Surety thereby represents and warrants that the party he or she represents has duly authorized him or her to sign, and thereby bind such party to, this Payment Bond.

IN WITNESS WHEREOF, the Principal and Surety have executed this Payment Bond as evidenced by the signatures below of their respective, duly authorized representatives.

PRINCIPAL

SURETY

Company Name

Company Name

Representative Signature

Representative Signature

Representative Name

Representative Name

Representative Title

Representative Title

Date Signed

Date Signed

Principal: Attach Notary acknowledgment to this Payment Bond and, if applicable, imprint corporate seal in the space below this line.

Surety: Attach Notary acknowledgment and power of attorney to this Payment Bond and imprint corporate seal in the space below this line.

PERFORMANCE BOND

School District: Newhall School District of Los Angeles County, California

Project: Districtwide MPR Audio Visual Replacement

Contractor: _____

Surety: _____

Bond #: _____

Penal Sum: _____ (\$ _____)

WHEREAS, the Project identified above is a public project and a public work in accordance with applicable law, and the School District identified above awarded to the Contractor identified above (herein, the “Principal”) a contract providing for completion of the Project identified above (“Contract”);

WHEREAS, the Contract requires that the Principal furnish a bond to the School District that ensures the faithful performance of the Principal’s obligations pursuant to the Contract to fully and satisfactorily perform the work and services required by the Contract (collectively, the “Work”), which bond must have a penal sum equal to one hundred percent of the total amount payable by the School District to the Principal pursuant to the Contract; and

WHEREAS, the Surety identified above hereby represents and warrants to the School District that the Surety is an “admitted surety insurer” in accordance with Section 995.120 of the California Code of Civil Procedure;

NOW, THEREFORE, we, the Principal and Surety, are hereby held and firmly bound to the School District in an amount of lawful money of the United States of America equal to the Penal Sum specified above, the payment of which well and truly to be made, we hereby bind, jointly and severally, ourselves and our heirs, executors, administrators, and successors.

The condition of the foregoing payment obligation is that, if the Principal (or, to the extent permitted by the Contract, its heirs, executors, administrators, successors or assigns) shall fully perform all of the undertakings, terms, covenants, conditions, agreements and other obligations required of the Principal pursuant to the Contract and any amendments or changes thereto, and shall complete the Work in full and strict conformance with the requirements thereof, all within the time and in the manner designated therein, in all respects according to their true intent and meaning, then such obligation shall become null and void; otherwise, it shall remain in full force and effect.

A condition precedent to the satisfactory completion of the Contract is that, after the acceptance of the Project by the School District, the payment obligation of this Performance Bond shall remain in full force and effect, in the penal sum set forth herein, during all periods in which the Principal has any obligations pursuant to the Contract (including, without limitation, the obligations to make full, complete, and satisfactory repair and replacements of any defective materials and/or faulty workmanship, to pay liquidated damages and/or to indemnify the School District or any other party), and the obligation of Surety hereunder shall continue so long as any such obligation of Principal continues to exist. The obligations of Surety pursuant to this Performance Bond are exclusive of and distinct from any obligations Surety may have pursuant to any labor and materials payment bond applicable to the Work.

Whenever the School District declares the Principal to be in default of its obligations pursuant to the Contract, the School District having performed its obligations thereunder, the Surety, promptly within the time required by the Contract, shall remedy the default or, at the School District's discretion, shall:

- (i) Complete the Work in strict accordance with the terms and conditions of the Contract, including, without limitation, provisions for the time(s) within which the Surety must act; or
- (ii) Obtain, or permit the School District to obtain, one or more bids or proposals for any and all work required to complete the Work in strict accordance with the terms and conditions of the Contract, and upon determination of each lowest responsive and responsible bidder or proposer, arrange for such bidder or proposer and the School District to enter into a contract (which, without limitation, may be in accordance with Education Code Section 17406), and make available as the work progresses sufficient funds, up to and including a total amount equal to the Penal Sum set forth above, to pay the cost of completing the Work.

In performing its obligations pursuant to this Performance Bond, the Surety expressly agrees that: (i) absent the express written consent of the School District, the Surety shall neither use the Principal nor accept a bid or proposal from the Principal for purposes of completing the Work; and (ii) the School District shall have the right, in its reasonable discretion, to reject any contractor or subcontractor that the Surety may propose to fulfill such obligations. In the event the School District provides notice to the Surety that the Principal is in default of its obligations pursuant to the Contract and, therefore, the Surety is required, as provided herein, to complete the Work or to arrange for the School District to contract for completion of the Work, and, through no fault of the School District, the Surety has exceeded the time permitted pursuant to the Contract for doing so, the School District may arrange to use replacement contractor(s) selected and contracted for by the School District to complete the Work and, in such event, the Surety's payment and other obligations pursuant to this Performance Bond shall not be thereby diminished or otherwise limited or modified.

Notwithstanding anything to the contrary, in the event the School District determines that the Principal has not met, or likely will be unable to meet, any deadline required pursuant to the Contract, or that Principal's performance otherwise does not conform with the requirements of the Contract, the School District may notify the Surety. In such event, the Surety must make reasonable attempts to assist the Principal to resolve or avoid the default by the Principal. The Surety and Principal expressly agree that neither the giving of such notice by the School District nor the giving of such assistance by the Surety shall be deemed or construed to constitute interference by the School District or the Surety with the Contract or the ability of the Principal to obtain any bond(s) in any amount(s) from any surety insurer(s).

For value received, the Surety hereby stipulates and agrees that this Performance Bond shall not be exonerated and the Surety shall not be released from its obligations pursuant to this Performance Bond by any change, amendment or other modification of the Contract or other Project documents, or of the Principal's rights and/or obligations pursuant thereto, and Surety hereby waives notice of any and all such modifications.

(The remainder of this page intentionally left blank.)

The Surety shall not be deemed to have fully and appropriately executed this Performance Bond unless Surety has provided all of the following information:

SURETY'S SOUTHERN CALIFORNIA/LOCAL REPRESENTATIVE

Company Name

Street Address

City, State, Zip Code

Representative Name

Representative Telephone Number

SURETY'S REPRESENTATIVE FOR FILING CLAIMS

Company Name

Street Address

City, State, Zip Code

Representative Name

Representative Telephone Number

(The remainder of this page intentionally left blank.)

Each person that signs this Performance Bond on behalf of the Principal or the Surety thereby represents and warrants that the party he or she represents has duly authorized him or her to sign, and thereby bind such party to, this Performance Bond.

IN WITNESS WHEREOF, the Principal and Surety have executed this Performance Bond as evidenced by the signatures below of their respective, duly authorized representatives.

PRINCIPAL

SURETY

Company Name

Company Name

Representative Signature

Representative Signature

Representative Name

Representative Name

Representative Title

Representative Title

Date Signed

Date Signed

Principal: Attach Notary acknowledgment to this Performance Bond and, if applicable, imprint corporate seal in the space below this line.

Surety: Attach Notary acknowledgment and power of attorney to this Performance Bond and imprint corporate seal in the space below this line.

CERTIFICATION REGARDING DVBE PARTICIPATION

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

- (i) The undersigned is a duly authorized representative of the Contractor and, in that capacity, has executed this certification on behalf of the Contractor;
- (ii) The California-certified DVBE entities listed on the Attachment Sheet(s) attached hereto participated in the Contract for the above-referenced Project/Bid(s) to the extent described on such Attachment Sheet(s); and
- (iii) The dollar amount of the DVBE participation in the Contract totaled: _____ dollars (\$ _____), which represents approximately _____ percent (____ %) of the total Contract Amount, including any Change Orders, for the Project/Bid(s).

Contractor Name: _____

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

Note: This certification page must be accompanied by the list(s) of DVBE entities prepared using the following Attachment Sheet. Make and use copies of the Attachment Sheet, as necessary to list additional DVBE entities.

CERTIFICATION REGARDING DVBE PARTICIPATION – ATTACHMENT SHEET

District: Newhall School District

Project: Districtwide MPR Audio Visual Replacement

Bid No.: NSD 24.25-8

Contractor: _____

1. DVBE Entity Name: _____
State DVBE Certification No.: _____ Telephone No.: _____
Business Address: _____
Participation in Contract: \$ _____
Type of Participation: _____

2. DVBE Entity Name: _____
State DVBE Certification No.: _____ Telephone No.: _____
Business Address: _____
Participation in Contract: \$ _____
Type of Participation: _____

3. DVBE Entity Name: _____
State DVBE Certification No.: _____ Telephone No.: _____
Business Address: _____
Participation in Contract: \$ _____
Type of Participation: _____

4. DVBE Entity Name: _____
State DVBE Certification No.: _____ Telephone No.: _____
Business Address: _____
Participation in Contract: \$ _____
Type of Participation: _____

Note: Types of DVBE participation may include, but are not limited to: (i) construction; (ii) architectural and/or engineering; (iii) suppliers of materials, equipment and/or supplies; and (iv) information technology.

SPECIAL PROVISIONS

1. **Effect of Special Provisions.** These Special Provisions establish specific requirements applicable to the Work, the Project and/or the Project Site. To the extent these Special Provisions conflict with any provisions of the other Contract Documents, expressly modify the other Contract Documents, or establish requirements in addition to those set forth in the other Contract Documents, the Special Provisions shall to that extent govern over the other Contract Documents; however, the unaffected provisions of the other Contract Documents shall remain in full force and effect.
2. **Engineer.** The Engineer for the Project is Budlong and Sergio Montes, Director of Low Voltage Design Operations is the Engineer of Record and primary contact for the Engineer.
3. **Construction Manager.** There is no Construction Manager for the Project.
4. **Copies of Plans and Specifications.** Contractor shall be responsible for printing the sets of the Plans and Specifications that it needs for construction of the Project using the electronic copy available from the District upon request.
5. **Applicable Laws, Regulations, Ordinances, or Other Requirements.** In addition to other requirements described in the Contract Documents, the Contractor must obtain or otherwise comply with the requirements described below in this Section. For each, the Contractor must maintain on the Project Site a current copy of documentation that evidences satisfaction of such requirements. Such requirements are as follows:
 - (i) Business license issued by city or county (whichever is applicable) in which the Project Site is located.
 - (ii) The proposed Contractor must be an authorized reseller with the proposed A/V manufacturer. In addition, the Contractor must have at least two certified technicians/engineers with the proposed A/V manufacturer.
6. **Field Office and Restroom Requirements.** The Contractor must furnish any and all necessary field offices and restrooms for the Project. The District will NOT provide field restrooms for the Project, and the Contractor's workforces will not have access to any existing restrooms at the Project Site.
7. **Dust Control.** The Contractor, at its own expense, shall undertake reasonable dust-control measures to prevent dust and other particulates attributable to the Work from leaving the Project Site, which measures shall include, but not be limited to, appropriate application of water or other approved dust palliative.
8. **Liquidated Damages.** As noted in Section 5.5 of the General Provisions, time is of the essence with respect to the Contract and Completion of the Work. The Liquidated Damages payable by the Contractor pursuant to Section 5.5 of the General Provisions shall be \$1,500.00 per day or portion thereof.

9. **Access to Project Site.**

- 9.1 The failure of the Contractor or any of its employees, subcontractors, materials suppliers or others connected with the Work to comply with the provisions of this Section shall be deemed a material breach of the Contract by the Contractor.
- 9.2 If the Project Site is an existing school of the District ("School"), then, except as expressly authorized by the District, none of the Contractor, its subcontractors, materials suppliers or others providing any work or services in connection with the Project shall arrive at, enter or be present on or in the vicinity of the School, and no portion of the Work shall be performed on or at the School, between the hours of 7:30 a.m. and 3:30 p.m. on any weekday (Monday through Friday, inclusive) when School is in session.
- 9.3 If the Project Site is a School, and the District has authorized exceptions to the prohibitions set forth in Subsection 9.2, above, the Contractor shall be responsible for ensuring that each of its employees, and any employees of its subcontractors, materials suppliers and others providing any work or services in connection with the Project, who arrive at the Project Site during hours when the School is in session, shall check in at the School's administrative office before otherwise entering in and upon the Project Site. School staff shall escort all such persons to the locations on the Project Site where they are required and/or permitted to be in connection with the Work.
- 9.4 The employees of the Contractor, its subcontractors, materials suppliers and others providing any work or services in connection with the Project must enter the School grounds and travel to the Project Site using only the designated entry gate and path of travel as directed by the District. If applicable, the Contractor must sign for and obtain from the District a key for such designated gate. The Contractor must return such key (and all copies of such key) to the District upon completion of the Project.
- 9.5 At no time shall the employees or other personnel of the Contractor, its subcontractors, materials suppliers or others providing any work or services in connection with the Project be in the vicinity or in the presence of any student or students at the School unless a member of the School or District staff is also present.

10. **Employee Background Checks.** If this Section INITIALLY DOES NOT require that the Contractor comply with Section 3.7 of the General Provisions, the District reserves the right in appropriate circumstances to subsequently require that the Contractor comply with Section 3.7 of the General Provisions, including, without limitation, if the time for performance of the Work is, for any reason, extended beyond the time initially permitted pursuant to the Contract. Section 3.7 of the General Provisions initially shall (check only one of the following):

- Be in effect or apply to the Contract.
- NOT be in effect or apply to the Contract.

11. **Contractor General Liability Insurance.** The General Liability Policy described in Section 8.1 of the General Provisions must have coverage limits of not less than \$1,000,000 combined single limit per occurrence and \$2,000,000 aggregate.
12. **Contractor Vehicle Liability Insurance.** The Vehicle Liability Policy described in Section 8.2 of the General Provisions must have coverage limits of not less than \$1,000,000 combined single limit per occurrence and \$1,000,000 aggregate.
13. **Contractor Builder's All-Risk Insurance.** Section 8.4 of the General Provisions shall (check only one of the following):
- Be in effect or apply to the Contract.
 - NOT be in effect or apply to the Contract.
14. **Subcontractor General Liability Insurance.** Each subcontractor must have general liability insurance in effect as provided in Part 8 of the General Provisions, with coverage limits of not less than \$1,000,000 combined single limit per occurrence and \$1,000,000 aggregate.
15. **Subcontractor Vehicle Liability Insurance.** Each subcontractor must have vehicle liability insurance in effect as provided in Part 8 of the General Provisions, with coverage limits of not less than \$1,000,000 combined single limit per occurrence and \$1,000,000 aggregate.
16. **Preconstruction Conference.** The District will (check only one of the following):
- Schedule and conduct a mandatory preconstruction conference for purposes of describing labor-law requirements.
 - NOT schedule and conduct a mandatory preconstruction conference for purposes of describing labor-law requirements.
17. **DVBE Participation.** With respect to the DVBE requirements set forth in Section 10 of the Instructions for Bidders and Section 11.5 of the General Provisions, the Contractor is (check only one of the following):
- Required to comply with such requirements.
 - NOT required to comply with such requirements.
- DVBE Advertising.** If the foregoing paragraph indicates that compliance with DVBE requirements is required, the advertisements for DVBE shall be placed by (check only one of the following):
- the District
 - the Contractor

GENERAL PROVISIONS

PART 1. ADMINISTRATIVE.

Section 1.1 Definitions. Each capitalized term that is defined in any of the Contract Documents shall have such meaning for purposes of all of the Contract Documents, despite not being defined in any other of the Contract Documents.

Section 1.2 Authority of District Representative. The District Representative shall have the authority for general supervision and control of the Work and the Project. The District Representative has the authority to determine the amount, quality, acceptability and fitness of all parts of the Work, and to decide all questions pertaining to the Work, except to the extent that the Architect is responsible for answering such questions. The District Representative shall have authority to stop any or all of the Work whenever, in the District Representative's opinion, the Project or the Work is not being executed in accordance with applicable requirements or in a proper manner.

Section 1.3 District's Inspector. The District may contract with a DSA-approved inspector and one or more specialty inspectors (each an "Inspector") to observe and review some or all of the Work, and who will act as representatives of the District. Such observation and review by any Inspector shall not, in any way, relieve the Contractor from responsibility for full compliance with all of the terms and conditions of the Contract, nor be construed to lessen to any degree the Contractor's responsibility for providing efficient and capable supervision as required herein. The Inspectors are not authorized to make changes to the Plans, Specifications, or other Contract Documents, and no observation, review, or approval of work and/or methods by any Inspector shall be deemed or construed to relieve the Contractor of responsibility for the correction of any subsequently discovered defects.

Section 1.4 Extra Services of District Representative or Inspector. The Contractor and/or its surety, if applicable, shall reimburse the District in the event the District incurs any costs or expenses for services of the District Representative, an Inspector and/or the Architect in connection with: (i) enforcement of any guarantee or warranty for any portion of the Work; (ii) litigation related to or arising out of the Contract or the Work; (iii) correction of defects or poor quality workmanship in the Work; and/or (iv) completion of the Work by the surety or, if applicable, the District. The Contractor or its surety, if applicable, shall reimburse any such amounts to the District with reasonable promptness, but in no event later than sixty days after request from the District.

Section 1.5 Separate Contracts. The District reserves the right to award any other contract(s) in connection with the Project for work and/or services not included in the Contractor's scope of work, and the work to be completed pursuant to such contract(s) may proceed simultaneously with the execution of the Work by the Contractor. The Contractor shall coordinate its operations with those of all other contractors on the Project. The Contractor shall cooperate with the District and other contractors with respect to all aspects of the overall work necessary to complete the Project, including storage of equipment and materials. The Contractor and its subcontractors shall remain informed of the progress and the detail work of other contractors and shall immediately notify the District Representative of any reasonably apparent lack of progress or defective workmanship on the part of other contractors, as such delay or such defective workmanship may interfere with the completion of the Work. Failure of the Contractor to remain informed of the progress of work on the Project and/or failure to give notice of any reasonably apparent lack of progress or defective workmanship by others shall be deemed to be acceptance by the Contractor of that work as being satisfactory for proper coordination with the Work and to be a waiver by the Contractor of any delays arising from that work by others.

Section 1.6 Ownership of Contract Documents. All copies of any Contract Documents, including Plans and Specifications, for the Work and the Project are and shall remain the property of the District. The Contractor shall not use or allow the use of the Contract Documents or any portion or provision thereof in connection with any work other than the Work. With the exception of one set of the signed Contract and other Contract Documents to be retained in the Contractor's records if desired by the Contractor, all copies of all Contract Documents are to be returned to the District upon completion and acceptance of the Work.

PART 2. CONTRACTOR'S PERFORMANCE.

Section 2.1 Independent Contractor Status. The Contractor shall, for all purposes of the Contract, be deemed to be an independent contractor. The Contractor shall not be deemed or construed to be an officer, employee, agent, consultant or representative of the District for any purpose related to the Work or the Project, except to the extent expressly authorized in writing by the District.

Section 2.2 Standard of Performance. The Contractor represents and warrants that it has the professional skill, knowledge, and experience necessary to perform and complete the Work within the time required pursuant to the Contract. The Contractor shall apply such skill, knowledge and experience in the completion of the Project, at a minimum level at least equal to that expected generally of professionals employed in construction of public schools within the State. The Contractor shall perform and complete the Work in accordance with standards not less than established by applicable laws, rules and regulations, industry and trade association standards, manufacturers' recommendations, and, if any, community or area standards. The Contractor represents and warrants that all of its employees and subcontractors shall have sufficient skill, knowledge, and experience to perform the Work that will be assigned to them.

Section 2.3 Licenses. The Contractor represents and warrants that it currently has, and that it shall maintain until completion and acceptance of the Project, any and all contractor licenses, permits, qualifications, and other approvals of whatever nature as are legally required for the Contractor to perform the Work required pursuant to the Contract and to complete the Project. The Contractor further represents and warrants that it currently has, or that, prior to commencing the Work it will obtain, any and all business licenses that must be obtained from any local governmental entities. This Section shall be deemed and construed to relate to authorizations of the Contractor, and not authorizations of the Work, which are covered by Sections 5.1 and 5.2 of these General Provisions.

Section 2.4 Solicitation of Contract. The Contractor hereby represents and warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor or its subcontractor(s), to solicit or secure the Contract on behalf of the Contractor. The Contractor also hereby represents and warrants that it has not paid, and has not agreed to pay, any company or person, other than a bona fide employee working solely for the Contractor or its subcontractor(s), any fee, commission, percentage, brokerage fee, gift or other consideration that is or was contingent upon the award of the Contract to the Contractor. Breach or violation of these representations and warranties shall result in the District having the right to terminate the Contract without further obligation or liability to the Contractor.

Section 2.5 Conflicts of Interest. The Contractor represents and warrants that, except as provided by the Contract, it shall not give, accept, encourage or solicit any payment or other thing to or

from any District Board member, officer or employee of the District, or otherwise do any act(s) that may result in any such person having a conflict of interests contrary to applicable federal, state, or local law.

Section 2.6 Project Records. The Contractor shall maintain all documents, books, papers, accounting records, computer files, and other information related to the Project and performance of the Work (“Project Records”), including, but not limited to, the Contract, the Plans and Specifications, Change Orders, submittals, cut-sheets, requests for information, daily reports, correspondence, permits, insurance policies, Certificates of Insurance, testing and inspection reports, the costs of administering the Contract, and safety records. The Contractor shall keep such accurate and comprehensive Project Records as are: (i) necessary for proper administration and performance of the Work; and (ii) required by law or the Contract. All Project Records, as applicable, shall be maintained in accordance with generally accepted accounting principles. In accordance with Government Code Section 8546.7, the State has the right to examine, review, audit and/or copy the Project Records during the three-year period following final payment to the Contractor pursuant to the Contract. In addition, the District, DSA, SAB and OPSC each hereby has the right to examine, review, audit and/or copy the Project Records during the four-year period following final payment to the Contractor pursuant to the Contract. Therefore, the Contractor shall make the Project Records available at its offices at all reasonable times during the performance of the Work and for four years from the date of final completion or filing of a Notice of Completion for the Project, whichever is later. However, if any audit is commenced within such four-year period, the Contractor shall make the Project Records available at all reasonable times until proceedings related to such audit are complete and all statutes of limitation related thereto have expired. In the event the District notifies the Contractor that federal funds have been used in connection with the Project, the Contractor shall retain and make available the Project Records for such longer period as may be required by federal law.

Section 2.7 Damages Incurred by District Pursuant to Other Contracts. Notwithstanding anything to the contrary, if the District is required, pursuant to any other contract entered into by the District in connection with the Project, to pay any damages (whether liquidated pursuant to such other contract or otherwise) and/or costs (whether fixed by a court of competent jurisdiction or otherwise), and the District would not have been responsible for such damages and/or costs but for an act or omission for which the Contractor is responsible, then the District may seek indemnification from the Contractor pursuant to Part 8 of these General Provisions and/or may pursue such other remedies as are permitted by law and/or the Contract.

PART 3. EMPLOYEES AND SUBCONTRACTORS.

Section 3.1 Job Superintendent. The Contractor shall have present on the Project Site at all times during the course of the Work an experienced and competent superintendent and any necessary assistants, all satisfactory to the District, who shall supervise the Work and the Contractor’s employees and subcontractors on the Project. The job superintendent shall not be changed except with the written consent of the District, unless the Contractor determines that the job superintendent’s performance is unsatisfactory or in the event the job superintendent is no longer employed by the Contractor. If the District determines that the performance of any job superintendent or assistant is, for any reason, not satisfactory, the Contractor must promptly replace the job superintendent or assistant with someone reasonably acceptable to the District. The Contractor shall not thereafter suffer or permit any such person to perform any of the Work or to be present on or at the Project Site. The job superintendent shall represent the Contractor and all instructions given to the job superintendent shall be as binding on the Contractor as if given to the owner(s) or other primary representative(s) of the Contractor. Upon

request of the District, the Contractor shall confirm in writing to the District any oral instructions given to the Contractor through its job superintendent.

Section 3.2 Contractor's Employees. The employees of the Contractor shall at all times be under the Contractor's exclusive direction and control with respect to the Project. The Contractor shall pay all wages, salaries, and other amounts due to such personnel in connection with their performance of the Work, as required by law. Contractor shall be responsible for all reports and obligations respecting such personnel, including, but not limited to: social security taxes, federal and state income tax withholdings, unemployment insurance, and workers' compensation insurance. The Contractor shall employ only competent workers for execution of the Work and shall not employ any person who is unfit or unskilled in the work assigned to him or her. The Contractor shall at all times enforce strict discipline and good order among its employees and any and all subcontractors' employees performing any portions of the Work. The Contractor shall supervise and control its employees and all subcontractors' employees performing any portions of the Work to ensure adequate performance and discipline. The Contractor shall immediately remove from the Project and Project Site any person, regardless of whether employed by the Contractor or any subcontractor, who is determined by the District to be uncooperative, incompetent, or a threat to the safety of persons or the Work, or who fails or refuses to perform the Work in a manner consistent with the requirements of the Contract Documents. The Contractor shall not thereafter suffer or permit any such person to perform any of the Work or to be present on or at the Project Site.

Section 3.3 Prohibition Against Unlawful Discrimination. The Contractor represents and warrants that it is an equal opportunity employer and it shall not discriminate in violation of any applicable federal, State, or other law, rule, regulation, or governmental requirement, including, but not limited to discrimination against any employee or applicant for employment on account of such person's race, religion, color, national origin, ancestry, sex, or age. The Contractor must apply such policy of non-discrimination in connection with all activities related to initial employment, promotion, demotion, transfer, recruitment or recruitment advertising, layoff or termination of Contractor's employees or any subcontractors.

Section 3.4 Subletting and Subcontracting Fair Practices Act. The Contractor shall comply with all provisions of the "Subletting and Subcontracting Fair Practices Act" set forth at Public Contract Code Section 4100 *et seq.* The Contractor shall not subcontract any portion of the Work except as indicated in its Bid Proposal. If the Contractor failed to identify in its Bid Proposal a subcontractor for any portion of the Work in excess of one-half of one percent of its total bid, or if the Contractor identified more than one subcontractor for the same portion of work to be performed pursuant to the Contract, the Contractor agrees that it is fully qualified to perform, and the Contractor shall perform, that portion of the Work with its own forces, not by using any subcontractor(s).

Section 3.5 Responsibility for Subcontractors. The Contractor shall be responsible for any and all acts, errors, and omissions of its subcontractors performing any work or services in connection with the Project. The Contractor shall also be responsible for ensuring that all portions of the Work performed by its subcontractors conform with all requirements of the Contract Documents and applicable law. The Contractor shall immediately remove from the Project and Project Site any subcontractor that the District determines is uncooperative, incompetent, or a threat to the safety of persons or the Work, or that fails or refuses to perform the Work in a manner consistent with the requirements of the Contract Documents. The Contractor shall not thereafter suffer or permit any such subcontractor or any of its employees to perform any of the Work or to be present on or at the Project Site.

Section 3.6 Subcontractor Insurance. The Contractor shall ensure and verify that its subcontractors obtain and maintain all necessary liability and other insurance as required pursuant to the Contract Documents and/or by law.

Section 3.7 Background Checks.

Subsection 3.7.1 Applicability. This Section shall be applicable to the Contract only if so specified in the Special Provisions.

Subsection 3.7.2 Statutory Requirement. Effective as of January 1, 2022, Education Code Section 45125.1 (“Section 45125.1”) requires that each entity having a contract with a local educational agency (“LEA”) shall ensure that each of the personnel interacting with students outside of the immediate supervision and control of the student’s parent or guardian or a school employee, has a valid criminal records summary as described in Education Code Section 44237. In addition, the contracting entity shall immediately provide any and all subsequent arrest and conviction information it receives to the LEA. Section 45125.1 authorizes LEA’s to require compliance with the requirements for personnel other than those directly employed by the contracting entity. Because students may be present during activities undertaken by the Contractor in connection with the Project, and because there will in some instances be no corresponding “immediate supervision,” the Contractor, in connection with such activities, shall comply in all respects with Section 45125.1. Without limiting the foregoing, Contractor, at its sole cost and expense, and without additional compensation from the District, must comply with all California Department of Justice guidelines and requirements with respect to fingerprinting of the officers, employees, agents, or other representatives of the Contractor and its subcontractors who will or might be present on or at any District school outside the immediate supervision of a Designated District Representative.

Subsection 3.7.3 Certification of Compliance. The Contractor shall certify in writing to the District, using the “Certification Regarding Employee Background Checks” form, which is one of the Required Contract Forms, that no person assigned to the Architectural Services or who otherwise will be present at, on, or in the vicinity of any District school in connection with the Architectural Services has been convicted of any serious or violent felony as described in Education Code Section 45122.1. Education Code Section 45122.1 defines a violent felony as any felony listed in subdivision (c) of Penal Code Section 667.5, and a serious felony as any felony listed in subdivision (c) of Penal Code Section 1192.7. The Contractor must attach to the written certification a list of all persons to whom the certification applies.

Subsection 3.7.4 Presence Prohibited Unless Certified. The Contractor shall prohibit and prevent each and every person who will be at, on, or in the vicinity of any District school in connection with the Work (including, without limitation, employees of each subcontractor) from being present at, on, or in the vicinity of the District’s schools unless and until the Contractor provides to the District the required certification that applies to such person.

Subsection 3.7.5 Responsibility for Subcontractor Compliance. The Contractor shall require in each of its subcontracts that, if the subcontractor will assign any person to the Work or otherwise will cause or permit any person to be present at or on the Project Site, the subcontractor must cooperate in regard to, and fully comply with, the requirements of this Section 3.7. The Contractor may on that basis delegate responsibility for compliance with this Section 3.7 to any such subcontractor; however, the Contractor at all times retains full responsibility and/or liability for such compliance or lack thereof.

Subsection 3.7.6 Alternatives to Background Checks. Upon request of the Contractor with respect to any particular situation and/or duration of time, the District in its sole discretion may consent to the Contractor implementing measures intended to protect the District's minor-aged students, which measures would be in lieu of the Contractor complying with the foregoing provisions of this Section 3.7. Subject to District approval, such alternative measures might include, but are not necessarily limited to: (i) installing a physical barrier to limit contact between students and the employees and other representatives of the Contractor, subcontractors, and others present on or at the Project Site on account of the Work; (ii) providing for the continuous supervision and monitoring of such employees, representatives and others by an employee of the Contractor who has received fingerprint clearance from the California Department of Justice; or (iii) providing for the surveillance of such employees, representatives and others by a District employee. The Contractor must implement any such approved alternative measures at no additional cost to the District, and the Contractor shall be responsible for ensuring compliance with such alternative measures by or with respect to all persons assigned to the Work or who otherwise will be present at, on or in the vicinity of the Project Site on account of the Work.

Subsection 3.7.7 Consequences of Non-Compliance with Requirements. Due to the possible adverse consequences of contact with students and other minor-aged individuals, any failure by the Contractor to ensure compliance with the requirements of this Section 3.7 shall be deemed and construed to constitute a material breach of the Contract, upon which the District, in its sole discretion, may immediately terminate the Contract without any further compensation to Contractor and/or pursue all other rights and remedies it may have against the Contractor pursuant to law or the Contract.

PART 4. PLANS AND SPECIFICATIONS.

Section 4.1 Errors, Inconsistencies, and/or Omissions in Contract Documents. The Contractor shall carefully study and compare all of the Contract Documents and requirements therein, and be adequately familiar with the same as the Work commences and progresses. The Contractor shall immediately, upon discovery, inform the District Representative in writing of any error, inconsistency, omission, or other discrepancy in the Contract Documents. The District will notify the Architect of any such error, inconsistency, omission, or discrepancy. The Architect shall promptly investigate and/or verify the same. Unless and until authorized by the District, any of the Work affected by any such error, inconsistency, or omission that is performed by Contractor shall be at the Contractor's risk and/or cost.

Section 4.2 Conflict Between Plans and Specifications. In the event of any conflict between the requirements of the Plans and the requirements of the Specifications, the Plans shall govern with respect to matters of quantity, and the Specifications shall govern with respect to matters of quality. In the event of any conflict within such Plans involving quantities, or within such Specifications involving qualities, the Contractor shall furnish the greater quantity and/or the higher quality, unless otherwise directed by the District Representative and/or Architect.

Section 4.3 Titles and Headings in Contract Documents. The titles and/or headings of the sections, divisions and paragraphs set forth in the technical specifications, if any, are provided for convenience only and shall not be deemed or construed as a correct or complete segregation of the several units of material and labor. No responsibility, either direct or implied, will be assumed by the District for errors, omissions or duplications by the Contractor or its subcontractors, resulting from actual or alleged error in the arrangement or order of the provisions set forth in the Contract Documents.

Section 4.4 Shop Drawings.

Subsection 4.4.1 Advance Approval Required. The Contractor must, in accordance with the procedures set forth in this Section, submit for the approval of the Architect all shop and setting drawings, samples, and other submittals (each a "Shop Drawing") required pursuant to the Contract Documents or that are requested by the Architect. If the Contractor completes any portion of the Work included in or affected by the subject matter of any Shop Drawing prior to receipt of the Architect's approval of such Shop Drawing, all such Work shall be at Contractor's own risk.

Subsection 4.4.2 Copies Required. Unless otherwise specified in the Contract Documents or by the Architect, the Contractor must submit six sets of all Shop Drawings, together with a letter of transmittal listing the numbers and dates of the Shop Drawings and/or other information submitted to the Architect. Any such Shop Drawings shall be complete in every respect and, where more than a single page, bound in sets.

Subsection 4.4.3 Timely Submittal. The Contractor must submit each and all Shop Drawings in a timely manner, with adequate consideration given to construction scheduling requirements so as to allow ample time for checking, correcting, resubmitting, and rechecking of any Shop Drawing by the Architect.

Subsection 4.4.4 Review and Approval in Advance by the Contractor. The Contractor must review each Shop Drawing prior to submittal to the Architect, including, without limitation, for conformance with all requirements of the Contract Documents. All Shop Drawings submitted for approval by the Architect must be marked with the name of the Project, numbered consecutively, and bear the stamp of approval or signature of the Contractor as evidence that the Contractor has reviewed and approved the Shop Drawings. The Architect will not accept or review Shop Drawings that do not bear the Contractor's stamp of approval or signature, and shall return such Shop Drawings to the Contractor for re-submission.

Subsection 4.4.5 Identifying Variations from Contract Requirements. If, for any reason, any Shop Drawing varies from the requirements of the Contract Documents, the Contractor must specifically identify the variation, by "clouding" or other method that makes the variation apparent, and the Contractor must explain such variation in the letter of transmittal. Absent the Contractor so identifying and explaining a variation from the requirements of the Contract Documents, the Contractor shall not be relieved of the responsibility for performance of the Work in accordance with the Contract Documents, regardless of the fact that the Architect may have approved the applicable Shop Drawing.

Subsection 4.4.6 Approval of Variations from Contract Requirements. Subject to the Contractor's compliance with Subsection 4.4.5, above, the Architect may approve any Shop Drawing that varies from the requirements of the Contract Documents if such variation: (i) does not require a change in the Contract Amount or time for performance of the Work; (ii) does not affect the longevity, use or maintenance of the completed Work; and (iii) approval would be in the District's best interests.

Subsection 4.4.7 Interpretation of Architect Approval. Architect approval of Shop Drawings shall be deemed a "general" approval and, except as otherwise provided in Subsection 4.4.6, above, shall not be construed: (i) to permit any variation between the Work as performed and the requirements of the Contract Documents; (ii) to relieve the Contractor of responsibility for any error(s) that may exist in the details, dimensions, or other information set forth in any Shop Drawing; or (iii) as

approval of variations between the Work as performed and details or instructions for the Work previously provided to the Contractor by the District Representative.

Section 4.5 Interpretation of Documents. The District Representative or Architect shall resolve all questions related to the interpretation of the Contract Documents or the workmanship, scope, value or other matters related to the Work performed or to be performed thereunder, and the adjustment determined by Architect, if any, shall be conclusive subject to the approval of the District.

PART 5. WORK AND SITE CONDITIONS.

Section 5.1 Work Permits and Licenses. Except as provided in Section 5.2 of these General Provisions, the Contractor shall obtain, at its own expense, any and all permits, licenses and other authorizations necessary for the performance of the Work, including, but not limited to, any required construction permits, Cal-OSHA safety-related permits, storm water permits, and utility-connection permits.

Section 5.2 Building Permits and Permanent Utility Connections. Notwithstanding Section 5.1 of these General Provisions, the District shall procure and pay for any and all building permits and permits for permanent utility connections that must be obtained from the DSA, local building officials or utility company, to the extent required by law or obtained by the District in its discretion. Except for the initial building permit, the Contractor must give written notice to the District a reasonable amount of time in advance of when any such permit will be required, to prevent any associated delays in the performance of the Work or completion of the Project.

Section 5.3 Construction Schedule. During the preconstruction meeting shown on the Master Schedule, the Contractor shall submit to the District Representative for review a schedule for completion of the Work and all major components thereof, which shall include the “critical path” for such Work and shall be consistent with the Work of any other contractors on the Project and the Master Schedule. The District Representative may reject the construction schedule as unreasonable or inconsistent with the Master Schedule, in which case the Contractor shall revise and resubmit the construction schedule. Upon acceptance of the construction schedule by the District Representative, the construction schedule shall be incorporated into the Master Schedule. The Contractor shall ensure that its employees and subcontractors are aware of and comply with the approved Master Schedule. Acceptance of a construction schedule by the District Representative shall not be construed as verifying or approving the logic or feasibility of the schedule. The Contractor shall at all times comply with the Master Schedule. In the event the Work falls behind schedule, the Contractor shall, within twenty-four hours of any request by the District, prepare and provide to the District a recovery schedule indicating the actions to be taken and the Work to be performed in order to bring the actual work performed into compliance with schedule requirements. Upon approval of the recovery schedule by the District, the Contractor must perform the Work in accordance with the recovery schedule to ensure conformance with the Master Schedule. Any float in the Master Schedule shall be for the benefit of the Project, as determined by the District Representative, not for the benefit of the Contractor, any other prime contractor, or any of their subcontractors.

Section 5.4 Manpower Requirements. At any time during the period for completion of the Work, the District may determine in its reasonable discretion that the Contractor or any of its subcontractors is not employing sufficient manpower on the Work to reasonably complete the Work or any component thereof within the scheduled amount of time. In such event, within forty-eight hours of any request by the District, the Contractor shall provide such additional manpower, or shall ensure that

the subcontractor provides such additional manpower, as the District determines is necessary to ensure completion of the Work in a timely manner. Any failure by the Contractor or subcontractor upon the District's request to provide such additional manpower as is required by the District shall constitute grounds for termination of the Contractor and/or the subcontractor. As an alternative to termination, the District, in its sole discretion, may determine to supplement the workforce of the Contractor or the subcontractor in order to ensure timely completion of the Work, and the cost thereof shall be deducted from amounts due to the Contractor pursuant to the Contract, and no such action by the District shall be deemed or construed to constitute interference by the District with the Contract or the Contractor's right to perform the Work.

Section 5.5 Liquidated Damages. Time is of the essence with respect to the Contract and completion of the Work. The Parties acknowledge and agree that the District will suffer damages if Contractor does not complete the Work within the time provided pursuant to the Contract. Because it is impractical and infeasible to determine the actual amount of damages the District will incur, in accordance with Government Code Section 53069.85, the Contractor shall pay to the District liquidated damages at the rate specified in the Special Provisions for each and every calendar day, or portion thereof if not a full day, that the Work remains uncompleted and not accepted by the District after the time provided pursuant to the Contract, as such time may be modified in accordance with the Contract ("Liquidated Damages"). Liquidated Damages shall constitute compensation to the District for Contractor's delay or delay caused by its subcontractors, suppliers, *et cetera*, in completion of the Work and shall not be construed as a penalty or forfeiture of any other right or remedy under the Contract or law. In the event the Contractor fails to pay any such Liquidated Damages, the District may deduct such amount(s) from any payments due (or that may become due) to Contractor pursuant to the Contract. Nothing in this Section shall be deemed or construed to preclude the District from recovering other or additional damages, as provided by the Contract or applicable law, attributable to any breach or default by the Contractor of its obligations pursuant to the Contract.

Section 5.6 Extension of Time. Subject to the other provisions of this Section, District shall extend the time for completion of the Work, by such number of days determined by the District in its reasonable discretion, in the event Contractor's progress on the Work is delayed as a result of: (i) an unreasonable act or omission of the District, not contemplated by the District and the Contractor; (ii) an act or omission of any other prime contractor on the Project not consistent with the Contract Documents; (iii) Changes in the Work required by the District for reasons other than those caused by, or the fault of, the Contractor; (iv) strike or lockout not instigated by the Contractor or an affected subcontractor; (v) unusual and severe interruption in interstate or intrastate, but not local or regional, transportation; (vi) earthquake, flood, or other unavoidable casualty that is not the fault of Contractor or a result of Contractor's actions or work; or (vii) any other cause determined by the District to justify an extension of time. As a condition precedent to the District's obligation to grant any such extension of time, the Contractor must provide written notice of the delay to the District within five calendar days of when the delay commenced. No extension of time shall be granted for delay occurring more than five days prior to when the notice of delay is submitted in writing to the District. In the case of a continuing cause of delay, only one notice shall be necessary, but the Contractor must apprise the District on a regular basis (not less than once per week) as to the status of the delay and, also, at such time as the cause of the delay has been resolved and the affected portion of the Work has resumed. The purpose of the notice requirements of this Section is to ensure that the District has an opportunity at the earliest possible time to mitigate and resolve delays in the Project.

Section 5.7 Workmanship and Materials. The Contractor shall employ nothing less than good quality workmanship in performing the Work. All materials, equipment and other items incorporated into the Work shall be of good quality and, unless specified otherwise, shall be new. The

Contractor shall, upon request, provide satisfactory evidence as to the type and quality of materials used in connection with the Work. If the Contractor determines that the materials delivered to the Project Site do not represent a good quality product, it shall advise the District Representative, and shall remedy the deficient quality as quickly as possible with the shortest delay, if any, to the Work on the Project, unless otherwise instructed by the District Representative.

Section 5.8 Substitutions of Materials and Equipment. The Contractor shall use and/or incorporate into the Work on the Project all materials and equipment as are specified in the Contract Documents, except upon approval by the District Representative or Architect of the substitution of “equal” materials or equipment. No substitutions shall be accepted unless and until the Contractor requests and receives permission in writing from the District Representative or Architect. All requests for substitution shall be made concurrently to the District, the District Representative and the Architect. The Contractor must have submitted any requests for substitution and all information in substantiation of such request not later than twenty-four hours after the date and time scheduled for opening of bids. Notwithstanding the foregoing, the Contractor may submit a request for substitution after such deadline in the event a Specified Item has become commercially unavailable, i.e., is no longer manufactured or is available only for a manifestly unreasonable price. In connection with any such request, the Contractor shall present complete details of the “equal” item, with specific explanations of the characteristics of the details that differ from the specifications. The Contractor must expressly describe how a substitute item will differ from the Specified Item, including without limitation, compliance with applicable building and other codes, and the Contractor shall to that extent be responsible for compliance with all specifications, codes, *et cetera*, regardless of any District or Architect approval of the substitution request. The District Representative and/or Architect for the Project shall investigate the characteristics of the proposed “equal” item and the merits of the proposed substitution, and shall notify the Contractor of the determination. The determination of the District Representative or Architect as to whether a proposed substitute material, equipment, or other item is “equal” shall be final.

Section 5.9 Contractor’s Title to Materials. Neither the Contractor nor any subcontractor on the Project shall purchase materials, equipment, supplies or other items for use on, or incorporation into, the Work subject to any chattel mortgage or under a conditional sale or other agreement pursuant to which an interest is retained by the seller. The Contractor represents and warrants that it shall have good, free and clear title to all materials, equipment, supplies, or other items for which the Contractor accepts any payment from the District.

Section 5.10 Tests and Inspections. Materials, fabrication, and erection shall be tested and inspected as required by Title 21 of the California Code of Regulations and when required by the District Representative or Inspector. The cost of all such tests and inspections shall be paid by the District, except that the Contractor shall reimburse the District for (or compensation to the Contractor shall be reduced by an amount equal to) the costs of retests or re-inspections of Construction, materials, equipment and other components of the Work that prove to be defective, inadequate, or inconsistent with the requirements of the Contract Documents.

Section 5.11 Materials Testing. The Contractor shall deliver to the District Representative upon request, without charge to the District, and properly marked for identification purposes, all material test samples or specimens that are required pursuant to the Contract Documents. The Contractor shall pay all costs incurred in preparing, wrapping, protecting, transporting and/or mailing of required samples or specimens.

Section 5.12 Inspection of Manufactured Items. The Contractor must ensure that the District shall at all reasonable times have access to all places where materials, equipment, machinery, or

other items for incorporation into the Work are being manufactured, produced, or fabricated for use on or incorporation into the Project. The District shall be permitted such access as will allow a determination regarding whether such materials, equipment, machinery or other items are being manufactured in strict accordance with the Contract Documents. The Contractor shall, upon request, provide the District Representative with access to all invoices, bills of lading, *et cetera*, and shall provide scales for, and/or other equipment and assistance with, weighing, measuring, or otherwise evaluating any of the materials.

Section 5.13 Surveys. The District, if reasonably required, will establish the boundary lines of the Project Site and all easements thereon. The Contractor shall preserve all existing bench marks and property or survey stakes, markers, or monuments as they exist in the field. The Contractor shall be responsible for each disturbance, removal or covering of any such bench marks, stakes, markers or monuments, and shall reimburse to the District (or compensation to the Contractor shall be reduced by the amount of) the actual cost and expenses incurred in restoring or replacing the same.

Section 5.14 Access to Work. The District, including, without limitation, the Architect, District Representative and Inspector, shall at all times and for any purpose have unrestricted access to the Work on the Project, including any areas used by the Contractor or its subcontractor(s). Each public authority with jurisdiction over the Project shall at all times have unrestricted access to the Work on the Project, including any areas used by the Contractor or its subcontractor(s), for purposes within that public authority's jurisdiction. The Contractor shall not impede or frustrate any access to or inspection of the Work, including inspection of the materials and the workmanship used in connection with the Work. The Contractor shall take all reasonable steps to facilitate any such access or inspection of the Work, including providing any equipment or other accommodations necessary or convenient for such access or inspection.

Section 5.15 Testing and Inspection of Work. Testing and inspection of portions or elements of the Work, or of materials, equipment or other items to be incorporated into the Work, will be required pursuant to the Contract Documents, Inspector's instructions, applicable laws, ordinances and regulations, or by public authorities. The Contractor shall give the Inspector written notice of its readiness for any such testing or inspection at least forty-eight hours prior to when the inspection is scheduled to occur. If the inspection is to be conducted by a public authority or person other than the Inspector, the notice to the Inspector shall also specify the date and time at which such inspection is to occur. If the Contractor, without prior approval, covers or renders inaccessible the portion or element of the Work, or the material, equipment or other item, that is to be tested or inspected, the Contractor, at its own expense and upon request of the Inspector, shall remove or demolish all portions of the Work as are necessary to facilitate such testing or inspection. The Contractor must give notice of any cancellation of a scheduled inspection at least twenty-four hours prior to when the inspection is scheduled to occur.

Section 5.16 Protection of Work. The Contractor and its subcontractor(s) shall protect the Work and any portions of the Project affected thereby from harm and are responsible under all circumstances for the conditions thereof until final acceptance of the Project by the District. The Contractor and its subcontractor(s) shall protect adjacent property from injury or damage arising out of Contractor's performance of the Work on the Project and shall repair or pay the cost of repairing any such damage or injury that occurs.

Section 5.17 Protection of Project Site. The Contractor shall protect all structures, walks, pipelines, utilities, trees, shrubbery, furniture, and all other items on and in the vicinity of the Project Site that may possibly be damaged or otherwise adversely affected during the performance of the Work.

Section 5.18 Damages to Other Contractors. In the event any other contractor or subcontractor working on the Project incurs damage(s) as a result of any act or omission of the Contractor or its subcontractor(s) that is unreasonable or not consistent with the Contract Documents, the Contractor shall make good-faith efforts to effect a settlement with the other contractor. If no such settlement is reached, and if any party commences an action or other proceeding against the District related thereto, the Contractor shall indemnify, defend and hold-harmless the District in accordance with Section 8.15 of these General Provisions.

Section 5.19 Cleanup and Storage. The Contractor shall ensure that the area of the Project Site in which the Work occurs is at all times, including nights and weekends, free of loose or accessible waste, materials, tools, and equipment. The Contractor shall maintain the area of the Work and the Project, including grounds and sidewalks, in a safe, neat, and clean manner that will cause the least inconvenience to the District and, as applicable, the general public, school staff, and students. The Contractor shall comply with all instructions from the District Representative with respect to conditions at the Project Site, including, without limitation, instructions regarding removal of rubbish and debris generated by, and any unnecessary materials, tools, equipment or temporary structures owned or used by, the Contractor or its subcontractors. In the event the Contractor fails to comply with any such instruction, the District Representative may arrange for removal and the Contractor shall pay to the District (or the Contractor's compensation shall be reduced by the amount of) the actual costs of such removal. Storage of materials on the Project Site shall be under the supervision of the District Representative, but at the expense, if any, of the Contractor.

Section 5.20 Safety. Contractor shall perform and maintain the Work so as to avoid injury or damage to any person, including, without limitation, District employees, students, visitors and others, or to any property. In carrying out the Work, the Contractor and its employees and subcontractors shall at all times be in compliance with all applicable local, State and federal laws, rules and regulations, and shall exercise all necessary precautions for the safety of employees appropriate to the nature of the Work and the conditions under which the Work is to be performed. Required safety precautions may include, but are not necessarily limited to: (i) adequate life protection and lifesaving equipment; (ii) adequate illumination for underground and night operations; (iii) instructions in accident prevention for all employees, such as machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, fall protection and other safety devices; (iv) equipment and wearing apparel as are necessary or lawfully required to prevent accidents or injuries; and (v) adequate facilities for the proper inspection and maintenance of all safety measures. The Contractor shall take steps to ensure compliance with all safety measures applicable in particular operations or kinds of work, including sufficient safeguards, such as railings, temporary walks, lights, *et cetera*, as are necessary to prevent injuries or damage to any person or property. The Contractor shall be responsible in the event of any such injury or damage resulted from any unsafe or unprotected condition on the Project that the Contractor is hereby required to protect against. The Contractor shall conduct such clean-ups of the area of the Work, including grounds and sidewalks, as are necessary to maintain the safety of the area of the Work, but in any event not less than once daily. In the event of an emergency in which life or property are endangered, the Contractor shall take all reasonable actions to safeguard such life or property. The Contractor shall require that the job superintendent or others immediately call "911" each time a medical or other emergency occurs on or at the Project Site.

Section 5.21 Loss and Damage. Until such time as the Work is fully complete and accepted by the District, the Contractor shall be responsible for all losses and/or repair of all damages that may arise from or be a result of: (i) the nature of the Work agreed to herein; (ii) the action of the elements or environment; or (iii) any unforeseen difficulties that may arise or be encountered during the process of

completing the Work. However, provided that the Work has been constructed in strict accordance with the Contract Documents, the Contractor shall only be responsible for damage proximately caused by Acts of God (as defined in Public Contract Code Section 7105) up to a maximum of five percent of the Contract Amount. In the event any such Act of God proximately causes damages in excess of five percent of the Contract Amount, the District may, in its sole discretion, terminate the Contract effective three days following written notice to Contractor.

Section 5.22 Regional Notification Center. If the Work involves any trenching, boring, tunneling, digging or other excavation, the Contractor shall be solely responsible and liable for compliance with all applicable requirements of Government Code Sections 4216 through 4216.9, and with all requirements of the Contractors State License Board relating to such Government Code provisions. The Contractor must, as required, obtain from the Regional Notification Center an Underground Service Alert identification number and must provide such identification number to the District. Prior to it expiring, the Contractor must contact the Regional Notification Center for any necessary revalidation of the identification number.

Section 5.23 Utility Removal, Relocation and Protection. In accordance with Government Code Section 4215, the District shall compensate the Contractor if the Plans and Specifications fail to identify any utility main- and trunk-lines on the Project Site and such failure results in additional costs to the Contractor related to: (i) locating and repairing damage to underground utility facilities not caused by the failure of the Contractor to exercise reasonable care; (ii) removing or relocating underground utility facilities not indicated in the Plans and Specifications with reasonable accuracy; and (iii) equipment necessarily idled during such work. The Contractor shall not be assessed Liquidated Damages for the delay caused by the failure of District or the owner of the utility to provide for removal or relocation of such utility facilities. The Contractor shall immediately provide written notice to the District if, during the course of the Work, the Contractor discovers utility facilities not identified in the Plans and Specifications.

Section 5.24 Trench Excavation. This Section shall apply to the Contract only if the Contract Amount exceeds \$25,000 and the Work requires or involves excavation of any trench or trenches five feet or more in depth. The Contractor, in conformance with Labor Code Section 6705 and other applicable law, and prior to any such excavation, shall submit to the District for review and approval a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. The plan must be prepared by a registered civil or structural engineer and if the plan varies from the requirements of applicable Cal-OSHA Construction Safety Orders, the Contractor must obtain Cal-OSHA approval of the plan. Nothing in this Section, and no District or other approval of any plan prepared pursuant to this Section, shall relieve the Contractor of any responsibility, or result in District liability for hazards resulting from excavations performed by the Contractor.

Section 5.25 Subsurface Conditions. In accordance with Public Contract Code Section 7104, if the Work involves digging trenches or other excavations that extend deeper than four feet below the surface, the Contractor shall promptly, and before the following conditions are disturbed, provide written notice to the District of any: (i) material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law; (ii) subsurface or latent physical conditions at the Project Site differing from those indicated by information about the Project Site made available to bidders prior to the deadline for submitting bids; or (iii) unknown physical conditions at the Project Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided

for in the Contract. The District shall promptly investigate any such reported condition and, if warranted, shall issue a Change Order to the Contractor for any extra work or cost not covered by the Contract. In the event of any dispute between the District and the Contractor related to any such condition, the Contractor shall continue with the Work and shall not be excused from completing the Work within the time required pursuant to the Contract Documents; however, the Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the Parties.

Section 5.26 Asbestos or Other Hazardous Materials. In the event the Contractor encounters on the Project Site any material that Contractor reasonably believes to be asbestos, polychlorinated biphenyl (PCB), any material listed by the federal or State EPA or federal or State health agencies as a hazardous material, or any other material defined as being hazardous under federal or State laws, rules or regulations (“Hazardous Material”) that has not been rendered harmless, Contractor shall immediately stop all Work in the area affected and report the condition to the District in writing. The Contractor shall resume the Work only if it is determined that no Hazardous Material is present or that such Hazardous Material has been rendered harmless. The District shall not require that the Contractor perform any Work relating to Hazardous Material without the Contractor’s consent.

Section 5.27 Certification Regarding Asbestos. Prior to commencing the Work, the Contractor shall execute and submit to the District the “Certification Regarding Asbestos” form included in the Required Contract Forms.

Section 5.28 Notice and Certification Regarding Lead-Containing Materials. Pursuant to the Lead-Safe Schools Protection Act (Education Code Section 32240 *et seq.*) and other applicable law, no lead-containing or lead-based paint, plumbing or solders, or other potential sources of lead contamination, shall be used in connection with the construction of the Project, and only trained and State-certified inspectors/assessors, monitors, designers, supervisors, and workers may provide lead-related construction services. Prior to commencing the Work, the Contractor shall execute and submit to the District the “Notice and Certification Regarding Lead-Free Materials” form included in the Required Contract Forms for purposes of acknowledging Contractor’s awareness and understanding of these requirements.

Section 5.29 Inspection of Completed Work. In addition to any testing and inspection required by the Contract Documents, the Inspector may require special inspection of any portion of the Work already completed as to which there is a reasonable question as to whether it was completed in accordance with the requirements of the Contract Documents. In such event, the Contractor shall remove or undo all portions of the Work as are necessary to facilitate inspection of the questioned portion of the Work. If the questioned portion of the Work is found not to conform with the Contract Documents, the Contractor shall pay all costs of the re-examination and correction of the Work, including repair or replacement of previously completed Work that was removed or undone to permit the inspection. If the questioned Work is found to conform with the Contract Documents, the District shall pay the cost of the re-examination and any repair or replacement of previously completed Work that was removed or undone to permit the inspection.

Section 5.30 Correction of Work Before Final Payment. The Contractor shall promptly remove from the Project and the Project Site all materials, equipment or other items that, as determined by the Inspector, fail to conform to the requirements of the Contract Documents, regardless of whether such materials have already been incorporated into the Work. The Contractor shall, at its own expense, promptly replace any such materials, equipment, or items with conforming materials, equipment or items, and shall thereafter repair the Work and/or execute the remaining Work in

conformance with the Contract Documents. In addition, the Contractor shall bear all costs and expenses of replacing or repairing the work of other contractors or subcontractor(s) that is destroyed or damaged in the course of removing or replacing any non-conforming materials, equipment or other items that were incorporated into the Work. The District shall have no obligation to issue the final payment to the Contractor pursuant to the Contract ("Final Payment") unless and until the Contractor satisfies the requirements of this Section.

Section 5.31 Use of Completed Portions. The District shall have the right at any time to take possession of and use any completed or partially completed portions of the Work, regardless of whether the entire Work is complete. In no event shall such possession and use by the District be construed as, or deemed to be, acceptance by the District of portions of the Work that is not complete or that has not been completed in accordance with the Contract Documents. In the event such possession and use delays or increases the cost to the Contractor of completing the remaining Work, the Contractor may submit a claim to the District Representative for additional compensation and/or extension of time.

Section 5.32 Contractor Warranty.

Subsection 5.32.1 General. In addition to any manufacturer or other warranties and/or guarantees required by the Contract Documents, the Contractor hereby warrants that all Work performed pursuant to the Contract shall be of good quality and conform to all requirements of the Contract Documents, and that the Work shall be free from defective, faulty and/or non-conforming workmanship, materials, equipment, and other items. The Contractor shall repair, replace or correct any and all such defective, faulty, or non-conforming Work as appears or is discovered during the one year period after the date of final acceptance of the Project by the District (or the period of time specified elsewhere in the Contract Documents or in any guarantee or warranty provided by any manufacturer or supplier of equipment or materials incorporated into the Work, whichever is later). The provisions of this Section shall not be construed to limit the warranty on items for which the Contract Documents specify a longer warranty or on items for which the manufacturer provides a longer warranty period, and the Contractor shall be responsible for any latent defects in the Work for the period applicable to latent acts or omissions specified in Section 7030 of the Business and Professions Code.

Subsection 5.32.2 Performance of Warranty Work. Within seven days after written notice from the District of any such defect, fault and/or non-conformance, the Contractor shall, at its sole cost and expense, commence and perform with due diligence all Work necessary to repair, replace or correct such defect, fault and/or non-conformance so that the requirements of the Contract Documents are met. Notwithstanding the foregoing, the Contractor shall immediately upon notice from the District undertake any necessary repair, replacement or correction in the event of an emergency or a dangerous condition, when necessary to prevent an interruption in the District's operations, or when necessary to prevent injuries to persons and/or damage to property.

Subsection 5.32.3 Collateral Damage. In complying with its warranty obligation, the Contractor shall, at its sole cost and expense, repair, replace or correct any portions of the Project (including work of other contractors and subcontractor(s)) damaged by any defect, fault or non-conformance in the Work, or that become damaged in the course of repair, replacement or correction of defective, faulty, or non-conforming Work.

Subsection 5.32.4 Extension of Warranty Period. With respect to any of the Work that is repaired, replaced or corrected during the applicable term of this warranty, the warranty and the

Contractor's obligation hereunder shall be extended for an additional one-year period, commencing with the date of acceptance of the repaired, replaced, or corrected Work.

Subsection 5.32.5 Confirmation of Warranty Work. The Contractor shall, at its sole cost and expense, perform such tests as the District may require to confirm that any repair, replacement or correction pursuant to this Section complies with the requirements of the Contract Documents.

Subsection 5.32.6 Warranties for Benefit of District. Any and all warranties and guarantees of subcontractors, suppliers and manufacturers with respect to any portion of the Work, whether express or implied, are deemed to be obtained by the Contractor for the benefit of the District, regardless of whether or not such warranties and guaranties have been transferred or assigned to the District by separate agreement, and the Contractor agrees to enforce such warranties and guaranties, if necessary, on behalf of the District.

Subsection 5.32.7 Contractor Failure to Perform. In the event the Contractor fails to perform, or fails to timely perform, any necessary repair, replacement or correction to the reasonable satisfaction of the District, the District shall have the right, at the Contractor's sole cost and expense, to repair, replace or correct any defective, faulty or non-conforming Work together with any portion of the Project damaged thereby or by the repair, replacement, or correction thereof. The Contractor or, if applicable, its surety, shall reimburse the District for all costs and expenses that the District incurs in connection with any such repair, replacement or correction by the District, or in connection with enforcing the provisions of this Section.

PART 6. CHANGES IN THE WORK.

Section 6.1 District Instructions. In giving instructions related to performance of the Work, the Contractor shall comply with instructions of the District Representative related to minor changes in the Work not involving extra cost and not inconsistent with the purpose of the Work, and there shall be no additional compensation to the Contractor on account of such minor changes.

Section 6.2 District Authority. For purposes of the Contract, any significant alteration, deviation, or change in the scope, method of performance, nature of materials or price of the Work or the Project, or any other matter materially affecting the performance or nature of the Work or the Project shall be referred to as a "Change in the Work." The District shall have the right to require a Change in the Work, without thereby invalidating the Contract.

Section 6.3 Change Orders. Any request for a Change in the Work that involves an adjustment of the Contract Amount or a modification of the time for performance of the Work or portion thereof shall be set forth in a written order for the Change in the Work (each a "Change Order"). Each Party shall propose Change Orders for Changes in the Work that it requests. Any and all modifications of the time for performance of the Work attributable to a Change in the Work must be set forth in the associated Change Order and not left for later determination. No Change Order shall become effective, and the District shall have no liability related thereto for payment or otherwise, unless and until approved and signed by the District and the Contractor and approved by the District Board. Except as expressly provided in the Change Order, all work pursuant to a Change Order shall be performed in accordance with the terms and conditions of the Contract. Notwithstanding the foregoing, in the event of an emergency endangering life or property, the Contractor may rely on the District's oral requests for additional work, which if affecting the Contract Amount and/or time for performance of the

Work will be adjusted accordingly by the District. The District will provide oral requests for additional work only to the extent the District Board has expressly delegated such authority.

Section 6.4 Valuation of Change Orders. The Parties shall determine and set forth in an applicable Change Order the fair and reasonable value of each Change in the Work, which will be added to or deducted from the amount of the Contract Amount. The Contractor shall, upon request of the District, provide all information required by the District to substantiate the value of a Change in the Work. No time extension shall be granted in conjunction with any Change Order unless the approved Change Order expressly sets forth such adjustment. The valuation of a Change Order shall be determined in one or more of the following ways: (i) by estimate and agreement on a fixed lump-sum amount; (ii) by unit prices specified in the Contract or as agreed to by the Parties; or (iii) by a percentage of Contractor's cost and a fixed fee, in which case the Contractor shall keep detailed records of the net cost of labor and materials. The valuation of each Change Order may as agreed by the Parties include a reasonable amount for overhead and profit, but in no event shall such overhead and profit exceed an amount equal to ten percent of the total valuation. The District Representative shall certify the amount of each Change Order that does not provide for a fixed lump-sum amount. In the event the Parties are unable to agree on a Change Order valuation method or amount, the Contractor nonetheless shall proceed with any Change in the Work required by the District. In such event, the Contractor shall keep detailed records of the net cost of labor and materials, including, without limitation, any and all vouchers issued in connection with such Change in the Work. Pending final determination of value, payment on account of a Change in the Work shall be made based upon the District Representative's estimate of the value of the Change in the Work, including, if applicable, a reasonable allowance for overhead and profit due to the Contractor.

Section 6.5 Change Orders Specify Full and Final Compensation. Except as expressly set forth in any particular Change Order, each Change Order shall be deemed and construed to include all change(s) required pursuant to the Change Order, including, without limitation, any and all extensions of time and overhead, acceleration costs, profit, general conditions costs, expenses, and other direct and indirect costs and expenses of such work and/or changes. In addition, each Change Order shall be deemed and construed to include all necessary adjustments attributable to cumulative impacts of that and any and all preceding Change Orders, whether such impacts relate to scheduling, productivity, or other matters. By signing a Change Order, the Contractor shall be deemed and construed to have waived any and all claims and rights to any adjustments to the Contract Amount and/or time for performance of the Work other than as are set forth in the Change Order, and the Contractor may not thereafter attempt to hold the District responsible for any interference, delay, acceleration, or other effect on the Work and/or additional costs attributable to the change(s) required pursuant to the Change Order. To the extent provided in Section 8.15 of these General Provisions, the Contractor shall defend, indemnify, and hold the District harmless from any and all claims by any subcontractor, vendor, or consultant of the Contractor that are alleged to arise in whole or in part from any Change Order(s), including without limitation, any and all claims for extensions of time and overhead, delays, delay damages, acceleration costs, profit, general conditions costs, expenses, and other direct and indirect costs.

PART 7. CONTRACTOR COMPENSATION.

Section 7.1 Application for Payment. The Contractor shall submit to the District Representative, on or before the fifth day of each month, an itemized application for payment for the portion of the Work completed during the prior month ("Progress Payment Application"). The Progress Payment Application shall be in a format approved by the District. The Contractor may call upon the

Inspector for assistance in preparing any Progress Payment Application and, prior to submittal to the District Representative, shall permit the Inspector to review the Progress Payment Application. The Contractor shall certify in the Progress Payment Application that the portion of the Work for which payment is requested has been satisfactorily completed and/or that any materials specified in the Progress Payment Application not already incorporated into the Project are stored where indicated. Each Progress Payment Application must identify: (i) the portion and amount of Work completed since the last Progress Payment Application; and (ii) the portion of the requested payment amount attributable to each subcontractor, material supplier, and other entity that is entitled to a portion of the payment amount. Each Progress Payment Application shall be accompanied by an updated construction schedule illustrating the actual Work completed to date in relation to the approved construction schedule. If there is a discrepancy between the actual Work completed and the Work required pursuant to the construction schedule (i.e., the Work is either ahead of schedule or behind schedule), the Contractor shall include a detailed explanation of such discrepancy with the Progress Payment Application. Payment to the Contractor shall not be deemed to be acceptance, acquiescence, or waiver by the District of any of its rights with respect to any such discrepancy or any deficiency in the Work. The Contractor shall support each Progress Payment Application with such information as reasonably will be necessary for the District Representative to verify the requested payment amount. Payment to the Contractor may be delayed if the Contractor fails to submit complete and accurate information in support of its Progress Payment Applications.

Section 7.2 Verification of Payment Application. The District Representative and/or Architect shall review each Progress Payment Application and, as soon as practicable, but not later than seven days after receipt of a Progress Payment Application, shall: (i) certify that the Progress Payment Application is correct in all aspects and should be paid by the District; (ii) recommend to the District that it reject the Progress Payment Application, stating the reason(s) why rejection is appropriate; or (iii) require that the Contractor provide additional information that the District Representative reasonably determines is necessary to verify any requested payment amount. In the event the District rejects the Progress Payment Application, the Contractor may resubmit the Progress Payment Application with additional or new information establishing why payment should be made despite the reason(s) set forth in the District's initial rejection.

Section 7.3 Progress Payments. The District shall pay the undisputed amount of any Progress Payment Application, less any amounts that may be withheld or retained pursuant to the Contract or law, within thirty days of receipt thereof and in accordance with Public Contract Code Section 20104.50. If the District has requested additional information in support of a Progress Payment Application, the time for payment pursuant to that Progress Payment Application shall be extended by the number of days required for the Contractor to provide the requested information but reduced by the number of days the District exceeds the seven-day return requirement described in Section 7.2 of these General Provisions. The District shall pay interest, at the rate set forth in Code of Civil Procedure Section 685.010(a), on any amount not paid within the time required by Public Contract Code Section 20104.50 and the Contract, provided that such amount is not subject to dispute or a request for additional information.

Section 7.4 Retention. Unless provided otherwise in the Special Provisions, the District shall retain five percent of the amount to be paid to the Contractor pursuant to each approved Progress Payment Application ("Retention"), and the total amount of Retention shall not exceed five percent of the Contract Amount. However, if the Special Provisions provide for Retention in excess of five percent, the District shall withhold such greater percentage of each approved Progress Payment as Retention, and, in such event, the total amount of Retention shall not exceed an amount equal to that percentage of the total Contract Amount. The District shall release the Retention to the Contractor with the Final

Payment made pursuant to Section 7.9 of these General Provisions. In the event of any dispute between the District and the Contractor, the District, as provided by Public Contract Code Section 7107, may withhold from the Final Payment an amount not exceeding one hundred and fifty percent of the amount in dispute.

Section 7.5 Ownership of Work. As security for partial, progress or other payments, title to the portion of the Work for which such payments are made shall pass to the District at the time of payment. The Contractor shall retain title to all new materials and equipment until incorporated into the Work. However, all Work shall be at the Contractor's risk exclusively until final completion and acceptance of the Project by the District. To the extent that title has not previously been vested in the District by reason of any such payments, full title shall pass to the District upon delivery of the completed Work as specified in the Contract. Such transferred title shall in each case be good, free and clear from any and all security interests, liens, and other encumbrances. The Contractor promises and agrees that it shall not pledge, hypothecate or otherwise encumber the Work, materials or other items hereby subject to transfer of title in any manner that would result in any lien, security interest, charge, or claim upon or against said items. Any such transfer of title shall not imply acceptance by the District, shall not relieve the Contractor from the responsibility to strictly comply with the Contract, and shall not relieve Contractor of responsibility for, any loss of or damage to the Work, materials, or other items on the Project.

Section 7.6 Securities In Lieu of Retention. Upon request to the District, the Contractor shall be permitted, in accordance with Public Contract Code Section 22300, to substitute securities in lieu of the Retention withheld by the District in order to ensure Contractor's performance under the Contract. Alternatively, the Contractor may request that the District pay any Retention earned by Contractor directly to an escrow agent who shall, as directed by the Contractor, invest the Retention in securities. Any escrow agreement shall be substantially in the form set forth in, and any securities invested or substituted in lieu of Retention shall be of the type permitted pursuant to, Public Contract Code Section 22300. The Contractor shall be responsible for all costs (including, without limitation, the District's costs) attributable to any investment or substitution of securities in lieu of Retention and/or any costs incurred in connection with establishing and maintaining an escrow account.

Section 7.7 Deductions for Uncorrected Work. The District may determine, in its sole discretion, not to correct all or any portion of the Work or Project that is damaged or that was not completed in accordance with the Contract and, in such event, if applicable, an equitable deduction from the Contract Amount shall be made on account of such damaged or incomplete work.

Section 7.8 Other Withholdings. In addition to the Retention, the District may withhold from the Final Payment or from amounts payable pursuant to any approved Progress Payment Application all amounts necessary to protect District from any loss or liability that has or might result from: (i) Liquidated Damages; (ii) the costs to the District of performing any obligation of the Contractor related to the Work that the Contractor has failed to timely perform or has performed inadequately; (iii) failure of the Contractor to timely correct defective Work; (iv) any stop payment notice(s) related to the Work; (v) reasonable doubt that the Work can be completed for the unpaid balance of the Contract Amount or prior to any scheduled completion date; (vi) unsatisfactory progress, execution or performance of the Work; (vii) unauthorized deviations from the Contract; (viii) failure of the Contractor to maintain or timely submit proper and sufficient documentation as required by the Contract or by the District during performance of the Work; (ix) erroneous or false estimates by the Contractor of the value of the Work performed; (x) expenses, losses, or damages incurred by the District for which Contractor is liable pursuant to the Contract; (xi) damage caused by the Contractor or its Work to the Project or to the work of any other prime contractor or subcontractor performing work on the Project; and (xii) any other

sums that the District is entitled to withhold or recover from the Contractor pursuant to law or the Contract. The failure by the District to withhold any such amount from any payment, or from a particular payment, to the Contractor shall not constitute a waiver of the District's right to such amount.

Section 7.9 Final Payment. The Inspector shall provide written certification to the District when, as determined by the Inspector, the Contractor has satisfactorily completed the Work and all other obligations pursuant to the Contract Documents. The Inspector shall indicate in the certificate, based on actual measurements, the whole amount and value of the Work accomplished by the Contractor and that all "punch list" items have been satisfactorily completed. The District shall thereafter inspect the Work and determine whether all of the Work has been completed in accordance with the terms of the Contract Documents and should be accepted by the District Board. Not sooner than thirty-five days, and not later than sixty days, after acceptance of the Work by the District Board, the District shall issue the Final Payment and accumulated Retention to the Contractor, subject to withholding of disputed or other amounts as permitted by applicable law and/or the Contract Documents. The District, within fifteen days after acceptance of the Work by the District Board, may cause a Notice of Completion for the Work to be filed in the office of the Assessor - County Clerk - Recorder for the County of Los Angeles ("County Recorder").

Section 7.10 Waiver and Release. Notwithstanding any other provision of the Contract, as a condition precedent for each payment to the Contractor hereunder: (i) the Contractor must complete, sign and submit to the District a conditional waiver and release in accordance with, and in substantially the form set forth in, Civil Code Section 8132, for the full amount of the payment; (ii) the Contractor must complete, sign and submit to the District an unconditional waiver and release, in substantially the form set forth in Civil Code Section 8134, for all amounts previously paid to the Contractor and for which the Contractor has not already submitted an unconditional waiver; and (iii) a completed and signed unconditional waiver and release, in substantially the form set forth in Civil Code Section 8134, for each subcontractor, materials supplier and other entity that has been paid by the Contractor, but that has not already submitted an unconditional waiver and release for all such payment amounts. Upon completion of all of the Work, and issuance of Final Payment and Retention to Contractor in connection with the Project, the District may require that Contractor complete, sign and submit to the District an unconditional waiver and release upon Final Payment in accordance with, and in substantially the form set forth in, Civil Code Section 8138. In addition, the District may require that the Contractor submit to the District an affidavit to the effect that such releases account for all the labor and material used in connection with the Work for which a stop payment notice could be filed. In the event any subcontractor, materials supplier, or other entity or person refuses to provide a release in full, the Contractor may provide the District with a bond satisfactory to the District to indemnify the District against any stop payment notice that may be filed by such entity or person. If any stop payment notice remains unsatisfied after the District has made the Final Payment to the Contractor, the Contractor shall pay to the District all amounts, if any, that the District may be compelled to pay in discharging such stop payment notice, together with the District's costs and expenses related thereto, including attorneys' fees and costs.

Section 7.11 Claims for Extra Cost. If the Contractor claims that instructions related to the Work resulted in costs to the Contractor that were not contemplated and are not included within the Contract Amount, the Contractor shall give written notice thereof to the District Representative within a reasonable time, but not in excess of five days after the receipt of such instructions. In the event of any such claim, except in an emergency in which life or property is endangered, the Contractor shall not commence execution of the portion of the Work that is affected by such claim unless and until directed to do so by the District. In the event the District Representative determines that any such claim is valid,

the Contract Amount shall be adjusted as provided for a Change in the Work. The Contractor shall bear the risk, cost, and expense of any Change in the Work undertaken without prior approval of the District.

Section 7.12 Delay Damages. The Contractor shall not claim or be entitled to receive any compensation or damages because any portion of the Project at any time has not progressed or is not sufficiently complete for Contractor to timely proceed or continue with any portion of the Work, except if and to the extent such delay is the result of an unreasonable act of the District not within the contemplation of the Parties. Notwithstanding the foregoing, the Contractor shall not claim or be entitled to compensation for any such otherwise compensable delay in the event of a concurrent delay resulting from acts or omissions of the Contractor or its subcontractors or suppliers. IN THE EVENT OF A PERCEIVED DELAY, A CONDITION PRECEDENT FOR ANY CLAIM BY CONTRACTOR SHALL BE COMPLIANCE WITH THE NOTICE REQUIREMENTS SET FORTH IN SECTION 5.6 OF THESE GENERAL PROVISIONS. If the Contractor fails to give timely notice of a delay in accordance with Section 5.6 of these General Provisions, the Contractor shall have no right or entitlement to any compensation or extension of time in connection with such delay.

PART 8. INSURANCE AND INDEMNIFICATION.

Section 8.1 General Liability Insurance. Prior to commencing the Work, the Contractor must have in effect, and the Contractor must maintain in effect at all times as required by this Section, a policy of broad-form commercial general liability insurance (“General Liability Policy”), written on an “occurrence” basis, covering claims for bodily injury, including death, property damage, and consequential damages that may arise out of or result from the Contractor’s performance of the Contract or from actions taken in connection with the Work, whether such actions are taken by the Contractor, by any subcontractor of the Contractor, or any person directly or indirectly employed by any of them. Not as a limitation on the foregoing, the General Liability Policy must provide coverage for both the ongoing and completed operations of the Contractor, and for the indemnification obligations assumed by the Contractor pursuant to the Contract Documents. The General Liability Policy must provide coverage with minimum coverage limits as specified in the Special Provisions. If an aggregate limit applies to the General Liability Policy, not less than the minimum aggregate coverage limit specified in the Special Provisions must apply specifically to the Project and the Contract, by means of either an endorsement or a separate “following form” excess policy. The Contractor must keep the General Liability Policy in full force and effect for at least one year after the date of Final Payment to the Contractor to ensure that coverage for products-completed operations remains in effect at least for such one-year period.

Section 8.2 Vehicle Liability Insurance. Prior to commencing the Work, the Contractor must have in effect, and the Contractor must maintain in effect at all times prior to final completion and acceptance of the Work, a policy of vehicle liability insurance, written on an occurrence basis, providing coverage for all motor vehicles (whether owned, leased, rented, or borrowed) that are driven or used in connection with the Work (“Vehicle Liability Policy”). The Vehicle Liability Policy must, by separate endorsement, name the District as an additional insured and must include a standard waiver of the insurer’s rights of subrogation against the District. The Vehicle Liability Policy must provide coverage with minimum coverage limits as specified in the Special Provisions. If an aggregate limit applies, not less than the minimum aggregate coverage limit specified in the Special Provisions must apply specifically to the Project and the Contract, by means of endorsement or separate “following form” excess policy.

Section 8.3 Workers Compensation Insurance. In accordance with Labor Code Sections 1860 and 1861, and concurrently with execution and delivery of the Contract, the Contractor shall

execute and deliver to the District the “Certification Regarding Workers Compensation” form included in the Required Contract Forms to thereby acknowledge its responsibility to secure workers’ compensation insurance in compliance with Labor Code Section 3700 *et seq.* Prior to commencing the Work, the Contractor must have in effect, and the Contractor must maintain in effect at all times prior to full and final completion of the Work, a policy of workers’ compensation insurance in compliance with Section 3700 of the Labor Code and other applicable provisions of law (“Workers Compensation Policy”). Within seven days following receipt of the Notice of Award, the Contractor must provide to the District such Certificates of Insurance as evidence that the Contractor has such insurance coverage in effect.

Section 8.4 Builder's All-Risk Insurance.

Subsection 8.4.1 General Requirement. If so specified in the Special Provisions, the Contractor must procure a policy of builder’s all-risk insurance, written on a non-reporting, completed value basis, providing coverage in an amount not less than the greater of: (i) the full estimated replacement cost of the Project assuming the Work has been completed; or (ii) the Contract Amount (“Builder’s All-Risk Policy”). The Builder’s All-Risk Policy must apply, at a minimum, to: (i) completed Work and the Project as improved by the Work; (ii) Work in progress; (iii) temporary structures and improvements; (iv) materials, supplies, and equipment stored on the Project Site; (v) materials, supplies, and equipment stored at off-site locations or in transit; and (vi) operational and performance testing, commissioning, and start-up.

Subsection 8.4.2 All-Risk Coverage. The Builder’s All-Risk Policy must cover: (i) losses arising from causes that include, without limitation, fires, windstorms, lightening, explosions, theft, earth movement, collapse, and water damage; (ii) costs associated with clean-up, demolition, repair or other correction of covered losses, including, without limitation, fees for necessary architectural, engineering and other professional services; and (iii) all ensuing or consequential losses attributable to causes of loss excluded under the Builder’s All-Risk Policy, including, without limitation, faulty design or workmanship. The Builder’s All-Risk Policy must be endorsed for extended coverage, vandalism, malicious mischief, and theft, including theft of materials not then incorporated into the Work. Any exclusion of losses attributable to faulty design or workmanship shall not exceed the total costs the District would have incurred to repair or otherwise correct the fault if it had been discovered prior to the loss having occurred.

Subsection 8.4.3 Earthquake and Flood Coverage. The foregoing provisions of this Section 8.4 shall not be deemed or construed to require that the Builder’s All-Risk Policy include coverage for earthquakes and/or flooding attributable to natural causes. However, the District may require that the Contractor obtain an endorsement to the Builder’s All-Risk Policy to provide earthquake and/or flood insurance for the Project, in which event the District shall be responsible for the cost of the endorsement.

Subsection 8.4.4 Loss Payees and Additional Insureds. The Builder’s All-Risk Policy must name or be endorsed to name the District and the Contractor as loss payees (or, if applicable, additional insureds), including, without limitation, for the purposes of any tax-exempt bond proceeds used to fund the Project, and the District shall for such purposes be deemed the owner of all work and materials on the Project Site or stored for use on the Project Site. The payment by the District of any Progress Payment, in and of itself, shall not be deemed or construed to: (i) create an insurable interest for the District; or (ii) relieve the Contractor of responsibility it otherwise may have for losses arising from any direct physical loss, damage, or destruction incurred prior to final completion and acceptance of the Work.

Section 8.5 Contractor Insurance is Primary. The coverages provided by each of the General Liability Policy, the Vehicle Liability Policy, and, if applicable, the Builder's All-Risk Policy shall be primary and not contributing with respect to any insurance or self-insurance programs covering the District and/or any of the District Agents (defined in Section 8.15 of these General Provisions).

Section 8.6 Insurer Standards. Each of the General Liability Policy, the Vehicle Liability Policy and, if applicable, the Builder's All-Risk Policy must be issued by an insurer that is licensed to do business in this State and that has, as determined by the A.M. Best Company, a "Financial Strength Rating" of not less than "B+" (B plus), a "Ratings Outlook," if assigned, of either stable or positive, and a "Financial Size Category" of not less than "VIII." If a "Ratings Outlook" has been assigned to any such insurer that is not either stable or positive, the District may consider the insurer's Rating's Outlook and all other relevant factors in determining whether the insurer is satisfactory, and, if the District reasonably determines that there may be a significant risk in accepting any insurance policy issued or to be issued by such insurer, then, upon request of the District, the Contractor must obtain such insurance policy through another insurer that satisfies the standards set forth in this Section.

Section 8.7 Additional Insureds. The General Liability Policy and the Vehicle Liability Policy each must name or be endorsed to name the District as an additional insured. Each endorsement specifying any additional insured must be ISO Form CG 20 10 11 85 or an equivalent endorsement reasonably acceptable to the District. Each additional insured endorsement shall include a "primary insurance clause" stating to the effect that: "The insurance afforded by this policy for the benefit of the additional insureds shall be primary insurance, and any insurance maintained by the additional insureds shall be excess and non-contributory with the insurance provided hereunder." The coverage provided to the additional insureds must be at least as broad as the coverage provided to the Contractor and may not contain any additional exclusionary language or limitations applicable only to the additional insureds.

Section 8.8 Cross-Liability and Waivers of Subrogation. Each of the General Liability Policy, the Vehicle Liability Policy, and, if applicable, the Builder's All-Risk Policy must be endorsed with a cross-liability endorsement (separation of insureds) and include a waiver of the insurer's rights of subrogation against each person or entity that is an additional insured or loss payee. The Workers Compensation Policy must be endorsed to include a waiver of the insurer's rights of subrogation against the District. A waiver of subrogation shall be effective with respect to each applicable person or entity regardless of whether the person or entity: (i) has a right to indemnification; (ii) has an obligation to indemnify any other person or entity; (iii) paid any premium for the applicable insurance; or (iv) has an insurable interest in any property. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 8.15 of these General Provisions, with respect to any and all subrogation claims arising from any of the General Liability Policy, the Vehicle Liability Policy, the Builder's All-Risk Policy (if applicable), or the Workers Compensation Policy.

Section 8.9 Premiums, Deductibles and Self-Insured Retentions. Except as provided in Subsection 8.4.3 of these General Provisions, the Contractor shall be solely responsible and liable for paying any and all premiums and other costs incurred in obtaining and maintaining the General Liability Policy, the Vehicle Liability Policy, the Builder's All-Risk Policy (if applicable), and the Workers Compensation Policy, including, without limitation, any and all renewal premiums. Subject to written approval by the District, which the District may grant or withhold in its reasonable discretion, one or more of such insurance policies may be subject to a deductible or self-insured retention. Upon reasonable request of the District, the Contractor shall either: (i) cause any such deductible or self-insured retention to be reduced or eliminated; or (ii) obtain and provide to the District a bond or bonds guaranteeing payment of the deductible or self-insured retention, together with any losses and related

investigations, claims, administrative and legal costs and expenses. Each Certificate of Insurance (defined in Section 8.10 of these General Provisions) that evidences any such insurance policy must specify any and all deductibles applicable to the policy. The Contractor shall be solely responsible and liable for any and all such deductibles and self-insured retentions. However, each insurance policy subject to any deductible or self-insured retention shall provide, or be endorsed to provide, for payment or satisfaction of the deductible or self-insured retention by the District in the event of Contractor's insolvency or inability to otherwise pay or satisfy the deductible or self-insured retention. Contractor's indemnification and other obligations pursuant to Section 8.15 of these General Provisions shall apply with respect to any and all claims arising from such premiums, deductibles and/or self-insured retentions.

Section 8.10 Evidence of Coverage. Within seven days following receipt of the Notice of Award, the Contractor must provide to the District, for each of the General Liability Policy, the Vehicle Liability Policy, the Builder's All-Risk Policy (if applicable), and the Workers Compensation Policy, a certificate of insurance evidencing that such insurance is in effect (each a "Certificate of Insurance"), together with any and all endorsements to such policies required pursuant to this Part 8 of these General Provisions. Each Certificate of Insurance must: (i) be executed by a duly authorized officer, agent, or other representative of the insurer; (ii) include an original handwritten signature of the insurer's representative, not a stamped or printed signature; and (iii) must certify the names of the insured, any additional insureds, the type and amount of the insurance, the location and operations to which the insurance applies, and the expiration date of such insurance. The Contractor must provide to the District an updated Certificate of Insurance for each renewal of any such insurance policy not less than thirty days prior to any expiration of the policy. Each renewal and replacement of any such policy that, as permitted by this Part 8 of these General Provisions, is written on a "claims made" basis must have a retroactive date that is prior to the date the Contractor was initially required to have such insurance policy in effect pursuant to this Part 8. If any Certificate of Insurance associated with any of the General Liability Policy, the Vehicle Liability Policy, the Builder's All-Risk Policy (if applicable), or the Workers Compensation Policy sets forth language to the effect that it "does not amend, extend or alter the coverage" of the insurance policy, or that the coverage available pursuant to the policy "is subject to all of the terms, exclusions, and conditions of the policy," then, notwithstanding Section 8.12 of these General Provisions, the Contractor, prior to commencing the Work, must provide to the District a certified copy of such insurance policy and all associated endorsements, riders, *et cetera*.

Section 8.11 Mandatory Notice from Insurer of Change in Coverage. Each of the General Liability Policy, the Vehicle Liability Policy, the Builder's All-Risk Policy (if applicable), and Workers Compensation Policy, and each associated Certificate of Insurance, must require or be endorsed to require that the insurer notify the District not less than thirty days prior to any cancellation, termination, reduction in coverage, or expiration without renewal of such policy, or, in the case of any cancellation for non-payment of premium, not less than ten days prior to cancellation. Language in any such insurance policy or Certificate of Insurance to the effect that the insurer shall "endeavor" to provide such notice, or to the effect "that failure to mail such notice shall impose no obligation and liability upon the company, its agents or representatives," shall not be acceptable.

Section 8.12 District Review and Approval of Insurance Policies. Within ten days of a request from the District, the Contractor must provide to the District a certified copy of any of the General Liability Policy, the Vehicle Liability Policy, the Builder's All-Risk Policy (if applicable) and/or the Workers Compensation Policy as requested by the District, together with any and all associated Certificates of Insurance, endorsements, riders, *et cetera*. Each of such insurance policies and associated other documents shall be subject to review and approval by the District in regard to compliance with the requirements of this Part 8 of these General Provisions. No such review by the

District, and no failure by the District to undertake any such review, shall be deemed or construed to be an assumption of liability by the District or to constitute a waiver of any non-compliance by the Contractor with the requirements of this Part 8 of these General Provisions.

Section 8.13 Subcontractor Insurance. The Contractor must require in its subcontracts applicable to the Work that each subcontractor obtain and maintain insurance coverage in compliance with all of the preceding requirements of this Part 8 of these General Provisions, except that: (i) no subcontractor need carry a Builder's All-Risk Policy; and (ii) coverage limits for subcontractor General Liability Policy and Vehicle Liability Policy shall be as specified in the Special Provisions. The Contractor shall be responsible for ensuring that any and all subcontractors have such insurance in effect and for providing all documentation of the subcontractors' insurance coverage (i.e., copies of insurance policies and Certificates of Insurance) to the District within the time(s) required by this Part 8 of these General Provisions. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 8.15 of these General Provisions, with respect to any and all claims, demands, actions, costs, expenses, and other liabilities arising from the failure of any subcontractor to have in effect the insurance required pursuant to this Part 8 of these General Provisions.

Section 8.14 Waiver of Claims. Each of the District and the Contractor hereby waives any and all rights it may have against the other pursuant to the Contract to the extent the waiving Party is compensated for claims, damages, or other liabilities by any of the insurance required pursuant to this Part 8 of these General Provisions. The Contractor shall require that in its subcontracts applicable to the Work that each subcontractor waive any and all rights it may have against the District in connection with the Work to the extent the subcontractor is compensated for claims, damages, or other liabilities by any of the insurance required pursuant to this Part 8 of these General Provisions. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 8.15 of these General Provisions, with respect to any and all claims, demands, actions, costs, expenses, and other liabilities arising from the failure of any subcontractor to provide the waiver as required pursuant to this Section.

Section 8.15 Indemnification. The Contractor shall indemnify, defend and hold-harmless the District, the District Board and each individual member thereof, and the District's other officers, employees and agents (collectively, not including the District, the "District Agents"), and each of them, against and from any and all claims, demands, actions, damages, losses, costs, expenses (including, without limitation, reasonable attorneys' fees and expenses), and other liabilities of whatever nature that arise from or in connection with the performance of the Contract or of the Work by Contractor or its officers, agents, employees, or subcontractors. The Contractor shall reimburse the District for all damages, expenses and losses incurred by the District as a consequence of any claim, demand, action or other proceeding that is within the scope of the foregoing provision of this Section, including, without limitation, any and all disputes between Contractor and any of its subcontractors. However, the Contractor shall not be liable or responsible pursuant to this Section to the extent any claim, demand, action, damage, loss, cost, expense or other liability is attributable to the active negligence, sole negligence or willful misconduct of the District or any of the District Agents, in which event the District and the Contractor shall be liable on a comparative basis. The requirements of this Section shall be in addition to any other indemnification provisions contained in the Contract Documents and shall survive termination of the Contract. Any and all obligations set forth in the Contract Documents requiring that the Contractor indemnify, defend and hold-harmless the District (including, without limitation, this Section) shall be deemed and construed as an obligation to indemnify, defend and hold-harmless the District, the District Agents, and each of them.

Section 8.16 Subcontractor Indemnification. The Contractor shall require that in its subcontracts applicable to the Work that each subcontractor indemnify, defend and hold-harmless the

District in connection with the Work to the extent provided in Section 8.15 of these General Provisions. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 8.15 of these General Provisions, with respect to any failure of any subcontractor to indemnify, defend, and hold-harmless the District as required pursuant to this Section.

PART 9. BOND REQUIREMENTS.

Section 9.1 Payment Bond. Concurrent with execution and delivery of the Contract, the Contractor must deliver to the District a "Payment Bond" in the form included in the Required Contract Forms, which shall have been duly executed by the Contractor and a Qualified Surety (defined in Section 9.3 of these General Provisions). The payment bond must have a penal sum equal to one hundred percent of the Contract Amount, and shall be exclusive of any obligation under the performance bond required pursuant to Section 9.2 of these General Provisions. The District shall not be required to issue any payment whatsoever to the Contractor pursuant to the Contract unless and until the District has received and approved such payment bond.

Section 9.2 Performance Bond. Concurrent with execution and delivery of the Contract, the Contractor shall deliver to the District a "Performance Bond" in the form included in the Required Contract Forms, which shall have been duly executed by the Contractor and a Qualified Surety. The performance bond must have a penal sum equal to one hundred percent of the Contract Amount, and shall be exclusive of any obligation under the payment bond required pursuant to Section 9.1 of these General Provisions. The District shall not be required to issue any payment whatsoever to the Contractor pursuant to the Contract unless and until the District has received and approved such performance bond.

Section 9.3 Surety Qualifications. The payment and performance bonds required pursuant to Sections 9.1 and 9.2, respectively, of these General Provisions each must have been executed and issued by a surety that satisfies the requirements of this Section. The surety must be an "admitted surety insurer" as defined in California Code of Civil Procedure Section 995.120. In order to ensure that the surety is an "admitted surety insurer," the bidder or Contractor must attach to such bonds either of the following documents as required by California Code of Civil Procedure Section 995.311: (i) a copy of information printed from the website of the California Department of Insurance confirming that the surety is an admitted surety insurer; or (ii) a certificate from the County Recorder confirming that the surety is an admitted surety insurer. The surety that issues the performance bond must have a current A.M. Best Company "financial strength rating" of not less than "A-" (A minus) and a "financial size category" of not less than "VIII." A surety that meets the requirements of this Section shall be deemed to be a "Qualified Surety" for purposes of the Contract. If either or both of the payment bond or performance bond submitted by the Contractor was not executed and issued by a Qualified Surety, the Contractor, within forty-eight hours of notice from the District Representative and prior to commencing the Work, must submit a replacement bond or bonds that satisfy the requirements of this Section, and if the Contractor fails to submit such replacement bond(s), the Contractor shall be deemed in material breach of the Contract. The foregoing requirement to provide a replacement payment or performance bond shall also be applicable in the event the surety, during the course of construction of the Project, loses its status as an "admitted surety insurer" as defined in Code of Civil Procedure Section 995.120.

Section 9.4 Increase in Bond Penal Sum. In the event the Contract Amount is increased in accordance with the Contract, the Contractor, upon request of the District, shall promptly cause the amount of the payment and performance bonds to be correspondingly increased and shall promptly deliver satisfactory evidence thereof to the District. If the Contractor fails to provide to the District any

bond required pursuant to the Contract, the District, in its sole discretion, may terminate the Contract for cause.

Section 9.5 Sufficiency of Bonds. If, in the reasonable opinion of the District, either or both of the payment bond or performance bond required pursuant to this Part 9 of these General Provisions, or the surety issuing either or both of such bonds, is or becomes insufficient or unsatisfactory, the Contractor shall renew or replace such bond within forty-eight hours of notice from the District Representative, and any failure by the Contractor to do so shall be deemed a material breach of the Contract.

PART 10. SUSPENSION OR TERMINATION.

Section 10.1 Suspension of Work by District. The District, in its sole discretion, may at any time suspend performance of the Work and/or the Project by giving written notice to Contractor, and the suspension shall be effective upon receipt of such notice by the Contractor. Upon receipt of such notice, the Contractor shall immediately commence the process of suspending the Work, making safe any work in progress but otherwise taking steps to cease further progress on the Project. The District, consistent with the provisions of the Contract, shall pay the Contractor for all Work adequately performed up to the effective date of such suspension and for work reasonably required to eliminate safety hazards. Contractor shall resume its Work on the Project within twenty calendar days following written notice from the District to further proceed with Work on the Project.

Section 10.2 Termination for Convenience. The District, in its sole discretion, and without need for cause, may at any time terminate the Contract, or any portion thereof, by giving written notice to the Contractor, and such termination shall be effective upon receipt of such notice by the Contractor. Upon receipt of such notice, the Contractor shall immediately commence the process of terminating the Work, making safe any work in progress but otherwise taking reasonable steps to cease further progress on the Project. The District, consistent with the provisions of the Contract, shall pay Contractor for all Work adequately performed up to the effective date of the termination for convenience as for work reasonably required to eliminate safety hazards. In the event of a termination for convenience, the Contractor shall not be entitled to any profits, overhead or general conditions costs for any portion of the Work that was not performed prior to termination or to compensation for costs related to discontinuing the Work. Notwithstanding a termination pursuant to this Section, the Contractor and its surety shall continue to be responsible and liable in accordance with the Contract Documents and applicable law for any and all defects in quality, damage to property, injury to any person, and other matters arising from the Work performed prior to the termination.

Section 10.3 Termination for Cause.

Subsection 10.3.1 Events of Default. Each of the following events shall be deemed a default by the Contractor of its obligations pursuant to the Contract (each an "Event of Default"):

- (i) Contractor is adjudged bankrupt, makes a general assignment for the benefit of creditors, or a receiver is appointed on account of Contractor's insolvency;
- (ii) as reasonably determined by the District, the Contractor refuses or fails to provide a sufficient number of properly skilled workmen or the proper materials or supplies as are necessary for timely and/or proper completion of the Work;
- (iii) Contractor fails to promptly pay subcontractors for material or labor;

- (iv) Contractor fails to comply with any laws, ordinances, or instructions of the District applicable to the District; and
- (v) Contractor or any of its subcontractors otherwise fail to comply with any material provision of the Contract.

Subsection 10.3.2 Opportunity to Cure. If an Event of Default occurs, the District may serve notice on the Contractor and its surety(ies) describing the unsatisfactory condition or violation that constitutes a default by the Contractor (“Notice of Default”). The Contractor shall have forty-eight hours after service of any such Notice of Default to cure the Event of Default specified in the Notice of Default or to make arrangements satisfactory to the District for cure of the Event of Default. Notwithstanding the foregoing, in the case of an Event of Default pursuant to clause (i) of Subsection 10.3.1 of these General Provisions, the Contractor shall have thirty days to cure or make arrangements satisfactory to the District for cure of the Event of Default.

Subsection 10.3.3 District Remedies for Failure to Cure. Upon failure of the Contractor to cure or make satisfactory arrangements for cure of an Event of Default in accordance with Subsection 10.3.2 of these General Provisions, the District may, at its option: (i) take such action as, in the District’s opinion, is necessary to correct or cure the Event of Default and deduct the cost thereof from any amounts due or to become due to Contractor pursuant to the Contract; (ii) proceed to terminate the Contractor’s right to perform the Work; or (iii) take such other action as is permitted by the Contract or applicable law. In the event the District elects to terminate the Contractor’s right to perform the Work, the District shall schedule and conduct a hearing on the matter, and the Contractor shall be permitted to attend and present evidence at such hearing to support a determination by the District that it should NOT terminate the Contractor’s right to perform the Work. The hearing shall be conducted by the District’s Superintendent or designee, who shall make a recommendation to the District Board. Unless specified otherwise therein, a decision by the District Board shall be effective immediately. Notwithstanding a termination pursuant to this Section, the Contractor and its surety shall continue to be responsible and liable, in accordance with the Contract Documents and applicable law for any and all defects in quality, damage to property, injury to any person, and other matters arising from the Work performed prior to the termination.

Subsection 10.3.4 Effect of Termination for Cause. In the event of any termination for cause pursuant to this Section 10.3, the District shall be entitled to withhold and retain from any payment due to the Contractor all amounts necessary to offset any costs, expenses (including, but not limited to, attorneys’ fees), losses and/or damages incurred by the District as a result of the termination for cause. If the remaining amounts potentially payable to the Contractor pursuant to the Contract are insufficient to offset such costs, expenses, losses and/or damages, the Contractor and/or its performance bond surety shall reimburse the District for the uncompensated balance of such costs, expenses, losses and/or damages, including, without limitation, any uncompensated costs to complete the Work. The District’s rights pursuant to the Contract are in addition to, and not in lieu of, any other rights or remedies available to the District in the event of a termination for cause. In addition, the following provisions shall also apply in the event of any termination for cause pursuant to this Section 10.3:

- (i) The Contractor shall not be entitled to further compensation until satisfactory completion and acceptance by the District of all of the Work.

- (ii) The District shall give written notice of a termination pursuant to this Section 10.3 to both the Contractor and the Contractor's performance-bond surety. The surety shall thereafter have the right to take over and perform the Contract, provided, however, that, if the surety does not, within seven calendar days after service of the notice of termination, notify the District that the surety intends to take over and perform the Contract, or if the surety does not commence performance of the Contract within twenty days after providing such notice to the District, the District may take over and complete the Work by any means the District may deem appropriate, for the account of and at the expense of the Contractor, and the Contractor and its surety shall be liable to the District for costs thereby incurred by the District in excess of any remaining portion of the Contract Amount that otherwise would be payable to the Contractor.
- (iii) In the event the District takes over the Work, the District may, without liability for doing so: (1) take possession of the Work and the Project Site; (2) take possession of all materials, tools, equipment and appliances located at the Project Site and use them in connection with completion of the Project; (3) procure, upon such terms and in such manner as it may determine appropriate, services required to complete the Work; (4) require that the Contractor provide to the District any and all finished or unfinished documents, data, diagrams, drawings, materials or other matter prepared or built by Contractor in connection with its performance of the Contract; and (5) complete the affected portion(s) of the Project by whatever means and methods the District may deem to be in its best interests, including, but not limited to, calling upon Contractor's surety to complete the Work or to issue payment(s) to the District and/or its contractor(s).
- (iv) In the event the District takes over and satisfactorily completes the Work, if the unpaid balance of the Contract Amount exceeds the cost to the District of satisfactorily completing the Work, including, without limitation, compensation for any additional architectural, managerial or administrative services needed as a result of the Contractor's default, such excess shall be paid to the Contractor after satisfactory completion and acceptance of the Work by the District less any amounts attributable to any stop payment notices and amounts withheld by the District in accordance with applicable law or the Contract. If the cost to the District of satisfactorily completing the Work is greater than the unpaid balance of the Contract Amount, the Contractor, or its surety, shall pay the difference to the District within thirty days of notice from the District. In addition, the District may pursue any other recourse or remedies against the Contractor and/or its surety as may be available pursuant to law or the Contract.

Section 10.4 Termination By Contractor. Subject to the other provisions of this Section, the Contractor may stop the Work or initiate termination of the Contract by giving written notice to the District Representative if, through no fault of the Contractor or its employees, subcontractors or suppliers: (i) all work on the Project ceases for a period exceeding sixty days pursuant to an order or direction of any court or government entity, other than the District, with jurisdiction over any portion of the Project; (ii) the District Representative arbitrarily fails, within thirty days of receipt from Contractor of an applicable Progress Payment Application, to issue a certificate for payment for any undisputed amount(s) due to Contractor; or (iii) the District fails, within sixty days of receipt from the District Representative of a certificate of payment therefor, to pay to the Contractor any undisputed amount specified in such certificate of payment. Upon receipt of any such notice from the Contractor, the District shall have fifteen days to cure or make other arrangements for cure of the matter as are acceptable to the Contractor. If the District fails within the required time period to cure or make such acceptable arrangements for cure of the matter, the Contractor may stop the Work or terminate the Contract by giving additional written notice to the District, which notice shall be effective immediately upon receipt by the District. In the event the Contractor stops the Work or terminates the Contract

pursuant to either subdivision (ii) or (iii) of the first sentence of this Section, the District shall be liable to the Contractor for any losses thereby reasonably incurred by the Contractor; provided that the Contractor shall not be entitled to recover any lost or foregone profits attributable to the portions of the Work not satisfactorily completed by the Contractor prior to stoppage of the Work or termination of the Contract.

PART 11. LAWS AND OTHER REQUIREMENTS.

Section 11.1 Liability for Non-Compliance with Laws. The Contractor at all times during the execution of the Work shall be and shall remain fully informed of all local, State and federal laws, ordinances, rules, regulations or other requirements that may in any manner affect those engaged or employed to perform any of the Work or the materials used in performing the Work, or that may in any way affect the performance of the Work. In addition, the Contractor at all times during the execution of the Work shall be and shall remain fully informed of all rules, regulations, orders, and other requirements of any public or private entity with jurisdiction over the Work. In performing the Work, the Contractor shall comply with, and give notices required pursuant to, all laws, ordinances, rules, regulations, and other requirements applicable to the Work as drawn and specified. The Contractor shall be liable for any violation of a law, ordinance, rule, regulation, or other requirement in connection with performance of the Work. If the Contractor observes that the Plans and Specifications in any respect do not conform with any applicable law, ordinance, rule, regulation or other requirement, the Contractor shall promptly notify the District Representative in writing. The Contractor shall bear all liability and costs, including any fines, arising from performance of any Work that the Contractor knew or reasonably should have known was contrary to any applicable law, ordinance, rule, regulation or other requirement, and the Contractor failed to notify the District Representative of the same a sufficient time in advance of performing the Work to permit the District to investigate and resolve the discrepancy.

Section 11.2 Applicable Regulations. The performance of the Work, including all construction and the materials and equipment used in connection with or incorporated into the Work, shall, not as a limitation, conform to all applicable requirements of the regulatory provisions specified in this Section. Each of such specified regulatory provisions, as those may be amended from time to time, is hereby incorporated as an operative part of the Plans and Specifications, and Contractor shall maintain a current copy of each at the Project Site. In the event of any conflict between the requirements of the various specified regulatory provisions, or in the event of any conflict between the requirements of the specified regulatory provisions and the requirements of any other applicable provision of law, the most authoritative requirements shall govern and nothing in the Contract Documents shall be construed to permit work that does not conform with such requirements. The Contractor shall not be entitled to additional compensation for any Changes in the Work necessary to ensure compliance with the requirements of the specified regulatory provisions, and the cost of any such Changes in the Work shall be deemed to be encompassed within the Contract Amount. The specified regulations are as follows:

- (i) Title 8 California Code of Regulations (Industrial Relations), Chapter 4 (Division of Industrial Safety), Subchapter 4 (Construction Safety Orders), commencing with Section 1500.
- (ii) Title 19 California Code of Regulations (Public Safety), Division 1 (State Fire Marshal), commencing with Section 1.00.

- (iii) Title 21 California Code of Regulations (Public Works), Division 1 (Department of General Services), Chapter 1 (Office of the State Architect), Subchapter 1 (Safety of Construction of Public Schools), commencing with Section 1.
- (iv) Title 24 California Code of Regulations (the California Building Standards Code).

Section 11.3 Provisions Deemed Inserted. Each and every provision or clause required by law to be inserted in the Contract are hereby deemed to have been inserted, and the Contract shall be interpreted and enforced as though such provisions and clauses are expressly set forth herein. If, through mistake or otherwise, any required provision is not inserted or is not correctly inserted, then upon written request of either the District or the Contractor, the Contract shall be amended to make the insertion or correction. Any and all references in the Contract to laws, ordinances, rules, regulations or other requirements shall be deemed and construed to include all amendments, replacements and enactments thereto that are in effect as of the date of the Contract, as well as any later amendments thereto that do not materially alter the rights or obligations of the Parties.

Section 11.4 Equal Opportunity Employer. The Contractor represents and warrants that it is an equal opportunity employer and that it shall not, in connection with the Work, discriminate against any employee or applicant for employment in violation of any applicable federal, State, or local law, including, without limitation, on the basis of such person's race, religion, color, national origin, ancestry, sex, or age. Such policy of non-discrimination shall apply to all activities related to recruitment advertising, recruitment, initial employment, promotion, demotion, transfer, and layoff or termination.

Section 11.5 DVBE Participation. If the Special Provisions provide that the Contractor must comply with the provisions of this Section, then the Contractor must, following completion of the Work and as a condition to Final Payment, complete, execute, and submit to the District the "Certification Regarding DVBE Participation" form included in the Required Contract Forms.

Section 11.6 Tobacco-Free Facility. All properties and facilities owned, leased or operated by the District, including the Project, are tobacco-free work places. It is strictly forbidden while on or in any District -controlled property or facility, including the Project, to smoke, chew, or otherwise use tobacco products. Any employee of the Contractor or its subcontractors found in violation of these requirements will be required to permanently leave District premises and the Contractor shall not thereafter re-employ such person on the Project or permit such person on the Project Site. The Contractor shall include this provision in all contracts with subcontractors and others performing any of the Work or providing labor, materials or services related to the Work, and each shall provide a copy of this provision to its employees on the Project.

Section 11.7 Drug-Free Facility. All properties and facilities owned, leased or operated by the District, including the Project, are drug-free work places. It is strictly forbidden while on or in any District -controlled property or facility to: (i) engage in the unlawful manufacture, dispensation, possession or use, including being under the influence, of any controlled substance; (ii) possess or use any alcoholic beverage; or (iii) use any illegal substance which may cause significant impairment of normal abilities. Any employee of the Contractor or its subcontractors found in violation of these requirements will be required to permanently leave District premises and the Contractor shall not thereafter re-employ such person on the Project or permit such person on the Project Site. The Contractor shall include this provision in all contracts with subcontractors and others performing any of the Work or providing labor, materials or services related to the Work, and each, as well as the Contractor, shall provide a copy of this provision to its employees on the Project.

Section 11.8 Compliance with Labor Code Requirements. The Project is a “public works project” as defined in Section 1720 of the California Labor Code (“Labor Code”) and, therefore, Part 7, Chapter 1, of the Labor Code is applicable to the Project. The Contractor must be, and shall be deemed and construed to be, aware of and understand the requirements of Labor Code Sections 1720 *et seq.* and 1770 *et seq.*, and Title 8 of the California Code of Regulations, Section 16000 *et seq.* (collectively, “Labor Laws”), which require the payment of prevailing wage rates and the performance of other acts in connection with public works projects. The Contractor acknowledges that the Project is subject to compliance monitoring and enforcement by the DIR. In any event, the Contractor, at no additional cost to the District, must comply with any and all applicable Labor Law requirements, including, without limitation, requirements for payment of Prevailing Wages, maintenance, inspection and submittal of payroll records, notice and posting requirements, *et cetera*. The Contractor must ensure that any and all subcontractors working under the Contractor comply with the Labor Laws and other public works requirements. The Contractor, at no additional cost to the District, must cooperate with the DIR, and the District in connection with Labor Law compliance matters. A contractor or subcontractor that has been debarred in accordance with the Labor Code, including, without limitation, pursuant to Sections 1777.1 or 1777.7, is not eligible to bid on, perform, or contract to perform any portion of the Work. Wage rates for the Work shall be in accordance with the general prevailing rates of per-diem wages determined by the Director of Industrial Relations pursuant to Labor Code Section 1770. Wage rates shall conform to those on file at the District’s principal office, which are available for review upon request, and posted at the Project Site. The District will withhold payment to the Contractor necessary to satisfy civil wage and penalty assessment issued by the Labor Commissioner. The following Labor Code sections are by this reference incorporated into and are a fully operative part of the Contract, and Contractor shall be solely responsible for compliance therewith:

- (i) Section 1735: Anti-Discrimination Requirements;
- (ii) Section 1775: Penalty for Prevailing Wage Rate Violations;
- (iii) Section 1776: Payroll Records;
- (iv) Sections 1777.5, 1777.6 and 1777.7: Apprenticeship Requirements;
- (v) Sections 1810 through 1812: Working Hour Restrictions;
- (vi) Sections 1813 and 1814: Penalty for Failure to Pay Overtime; and
- (vii) Section 1815: Overtime Pay.

Section 11.9 Requirements for Payroll Records. The Contractor must comply with all applicable provisions of Labor Code Section 1776, which relates to preparing and maintaining accurate payroll records, and submitting or making such payroll records available for review and copying by the District, the DIR’s Division of Labor Standards Enforcement, and Division of Apprenticeship Standards. The payroll records must be certified, maintained at the principal offices of the Contractor, and submitted or made available as required by Labor Code Section 1776. The Contractor must inform the District of the location at which the payroll records are kept, including the street address, city and county, and must, within five working days, provide notice to the District of any change in such location. If the Contractor or any subcontractor fails to timely comply with requests for certified payroll records, it shall forfeit, as a penalty to the District, \$100 for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated, and, in addition to penalties as provided by law, may be subject to debarment pursuant to Labor Code Section 1771.1. Timely provision by the Contractor of certified payroll records also shall be a condition precedent to the District’s obligation to make any subsequent progress, final, Retention, or other payments to the Contractor pursuant to the Contract.

Section 11.10 Registration with DIR. If, at any time during the Project, the Contractor intends to use a subcontractor that was not listed in its bid (e.g., a subcontractor performing work costing less than one-half of one percent of the Contractor’s total bid amount), then, before the subcontractor

performs any work on the Project, the Contractor must provide written notice to the District that identifies the subcontractor and includes evidence that the subcontractor is properly registered with the DIR. The Contractor shall be responsible for monitoring the registration status of its subcontractors at all times during the course of the Project, and in the event any subcontractor is or becomes not duly registered, the Contractor shall: (i) prohibit the subcontractor from working on the Project; and (ii) provide written notice to the District informing the District of the subcontractor's registration status. Notwithstanding anything to the contrary, if at any time during the performance of the Work, the Contractor or any of its subcontractors is not duly registered pursuant to Labor Code Section 1725.5 (including, without limitation, if the registration expires or the DIR revokes the registration), then: (i) the District in its sole discretion may cancel the Contract and/or replace the Contractor or subcontractor with a contractor or subcontractor that is duly registered pursuant to Labor Code Section 1725.5; and (ii) the Contractor and/or subcontractor may be subject to penalties imposed by the DIR.

Section 11.12 Penalties for Violations of Labor Laws. In accordance with Labor Code Section 1775, the Contractor shall forfeit, as a penalty to the District, not more than \$200 and, subject to limited exceptions, not less than certain amounts specified by law, for each calendar day, or portion thereof, for each worker paid less than prevailing wage rates as determined by the director of the DIR. The Contractor shall pay to each worker the difference between such stipulated prevailing wage rate and the amount paid to the worker for each calendar day or portion thereof for which the worker was paid less than the applicable prevailing wage rates.

Section 11.13 Assignment of Anti-Trust Claims. In accordance with Public Contract Code Section 7103.5, the Contractor, in entering into the Contract, hereby offers and agrees to assign to the District all rights, title, and interest in and to all causes of action Contractor may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code) arising from purchases of goods, services, or materials pursuant to the Contract. Such assignment shall be made and become effective at the time the District tenders Final Payment to the Contractor, without further acknowledgment by the Parties.

PART 12. DISPUTE RESOLUTION.

Section 12.1 Governing Law and Venue. The Contract and all rights and obligations arising out of it shall be construed in accordance with the laws of the State. Any arbitration, litigation or other proceeding arising out of the Contract shall be commenced and conducted only in the County of Los Angeles, California.

Section 12.2 Mediation and Arbitration. The provisions of Public Contract Code Section 9204, and, to the extent applicable, Public Contract Code Section 20104 *et seq.* (collectively, the "Dispute Resolution Provisions") shall apply to Contractor claims arising or resulting from the Contract (each a "Claim"). The Dispute Resolution Provisions are incorporated herein by this reference. The Dispute Resolution Provisions require that any such Claim be in writing, served by registered mail or certified mail with return receipt requested, and supported by reasonable documentation of the basis for the Claim. To the extent provided in Public Contract Code Section 9204, the Contractor may file Claims on behalf of its subcontractors of any tier. The Contractor must file any and all claims prior to submitting to the District an invoice for Final Payment for the Work. The District shall respond in writing to each Claim within forty-five days and shall pay any undisputed portion of the Claim as required pursuant to the Dispute Resolution Provisions. If the Contractor disputes the District's response to a Claim, or the District does not timely respond to a Claim, the Contractor may submit to the District a

written demand to meet and informally confer regarding settlement of the Claim. In such event, the District shall schedule such meeting to occur within thirty days following receipt by the District of the written demand. If, following such meeting, any portion of the Claim remains in dispute, the Parties shall submit the Claim to non-binding mediation as required by the Dispute Resolution Provisions. If a claim for \$375,000 or less remains in dispute following such mediation, and a civil action is commenced to resolve the Claim, judicial arbitration shall be required pursuant to Public Contract Code Section 20104.4. The Contractor should review Public Contract Code Sections 9204 and 20104 *et seq.* if the Contractor desires additional details regarding the Dispute Resolution Provisions.

Section 12.3 Costs and Expenses. With respect to any applicable mediation or arbitration, the Parties shall initially pay equal shares of any and all associated mediator or arbitrator fees; however, the prevailing Party in any such proceeding shall be entitled to recover such initial costs, in addition to other costs as specified herein, as an item of damage and/or recoverable cost. Notwithstanding the foregoing or anything else, each Party shall in all cases be responsible for paying its own attorneys' fees and other legal costs, including, without limitation, in connection with any mediation, arbitration, and/or litigation arising from the Contract.

Section 12.4 Continuation of Work. Notwithstanding anything in the Contract Documents to the contrary, in the event of any dispute between the District and the Contractor, or any dispute between the Contractor and any subcontractor or other third party, the Contractor shall not be permitted to cease performance of the Work, but the Contractor shall have the right to pursue all other remedies permitted pursuant to the Contract and applicable law. A violation of this provision by the Contractor shall constitute a material breach of the Contract.

SECTION 115213

ACCESS E FRONT PROJECTION SCREENS

PART 1 GENERAL

1.01 MANUFACTURERS
SECTION INCLUDES

- A. Electrically operated, ceiling recessed, front projection screens.
- B. Electrically operated, surface mounted, front projection screens.
- C. Front projection screen controls.

1.02 RELATED SECTIONS

- A. Division 16 [26] for electrical wiring, connections, and installation of remote-control switches for electrically operated projection screens.

1.03 RELATED REFERENCES

- A. NFPA 70 - National Electrical Code.
- B. NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.
- C. GREENGUARD Gold®.
- D. US Green Building Council.

1.04 RELATED SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Wiring diagram for electrically operated units.
- D. Shop Drawings: Shop drawings showing layout and types of projection screens. Show the following:
 - 1. Location of screen centerline.
 - 2. Location of wiring connections.
 - 3. Seams in viewing surfaces.
 - 4. Detailed drawings for concealed mounting.
 - 5. Connections to suspension systems.
 - 6. Anchorage details.
 - 7. Accessories.
- E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

- F. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.05 QUALITY ASSURANCE

- A. Single Source Responsibility: Obtain each type of projection screen required from a single manufacturer as a complete unit, including necessary mounting hardware and accessories.
- B. Coordination of Work: Coordinate layout and installation of projection screens with other construction supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system, and partitions.

1.06 RELATED DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver projection screens until building is enclosed and other construction where screens will be installed is substantially complete.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Protect screens from damage during delivery, handling, storage, and installation.

1.07 RELATED COORDINATION

- A. Coordinate work with installation of ceilings, walls, electric service power characteristics, and location.

1.08 RELATED WARRANTY

- A. Manufacturer limited warranty: 7 years from date of purchase.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Draper®, Inc., which is located at: 411 S. Pearl P. O. Box 425; Spiceland, IN 47385-0425. ASD. Toll Free Tel: 800-238-7999; Tel: 765-987-7999; Fax: 866-637-5611; Web: www.draperinc.com.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.02 MOTORIZED, CEILING RECESSED, FRONT PROJECTION SCREENS

- A. McGraph, Pico Canyon, Stevenson Ranch and Oak Hills
 1. Access E: Electric motor operated, steel case. Ceiling-recessed, 18-gauge steel headbox, 7-3/8 inches high x 8-1/16 inches deep (188 mm high x 205 mm wide) including trim flanges with white paint finish and stamped 13-gauge steel end caps. UL approved "Suitable for use in environmental air space." Bottom closure panel forms slot for passage of viewing surface and can be released to hang down or be removed for access to operating mechanism and viewing surface. Bottom perimeter flange provides support and trim for acoustical ceiling panels and trim for gypsum board ceiling. Access case may be ordered in advance and the screen installed later to eliminate field damage.

Housing is symmetrical allowing for left (Standard) and right (optional) hand motor locations and for viewing surface to unroll off front or back of roller. Steel mounting brackets slide in extruded aluminum mounting system along top of case. Brackets supporting roller/fabric assembly slide in tracks inside top of case, allowing viewing surface to be centered in case. Steel leveling brackets are attached to case to prevent deflection. Housing designed with internal junction box and plug-in wiring connections to allow housing to be installed and connected to building power supply separately from motor and viewing surface.

- a. Motor mounted inside screen roller on rubber isolation insulators. Motor UL certified, rated 110-120V AC, 60 Hz, three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches.
- b. Projection Viewing Surface
 - 1) Matt White XT1000E - On Axis gain of 1.0. 180 degree viewing cone. Washable surface. GREENGUARD Gold certified. 4K ready.
- c. Viewing Area H x W.
 - 1) 16:10 Format. Black masking borders standard.
 - (a) 165 inch (4191 mm) diagonal, 87-1/2 inches x 140 inches (2223 mm by 3556 mm).
- d. Provide an extra screen drop with an overall screen drop of 24 inches (609.6mm) with a black masking top border.
- e.

2.03 MOTORIZED, SURFACE MOUNTED, FRONT PROJECTION SCREENS

A. Meadows and Valencia Valley

1. Acumen® E: Electric motor operated, wall mounted projection screen. Contoured case of 0.156" (3.9624 mm) thick, 9-gauge extruded aluminum. Removable front fascia conceals viewing surface that retracts completely inside the case. Case dimensions are 7-1/8 inches h x 5-7/8 inches d (181 mm x 149 mm).
 - a. Motor mounted inside screen roller on rubber isolation insulators. Motor UL certified, rated 110-120V AC, 60 Hz, three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches. Motor shall be left mounted. Low voltage control built into endcap.
 - b. System Options:
 - 1) Contoured aluminum case finished in a white color (standard).
 - 2) Wall Mount Brackets (standard): "Floating" steel brackets, finished to match screen case.
 - c. Projection Viewing Surface:
 - 1) Matt White XT1000E – On Axis gain of 1.0. 180 degree viewing cone. Washable surface. GREENGUARD Gold certified. 4K ready.
 - d. Viewing Area H x W.
 - 1) 16:10 Format. Black masking borders standard.
 - (a) 137 inch (3480) diagonal, 72-1/2 inches x 116 inches (1842 mm by 2946 mm).
2. Provide an extra screen drop with an overall screen drop of 12inches (304.8mm) with a black masking top border.

B. Newhall

1. Targa: Electric motor operated, steel case. Cases are one piece 22 gauge steel with end caps forming universal wall hanging bracket. Case size 5-7/8 inches high. x 5-1/4 inches deep (150 mm high x 134 mm deep). White scratch resistant textured finish.

- a. Motor mounted inside screen roller on rubber isolation insulators. Motor UL certified, rated 110-120V AC, 60 Hz, 1.1 Amp current draw, three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches. Motor shall be left mounted.
 - b. System Options:
 - 1) Case finished white (standard)..
 - 2) Projected Mounting Brackets with a 6 inch (152 mm) clearance from wall. Finished white or black.
 - c. Projection Viewing Surface:
 - 1) Matt White XT1000E – On Axis gain of 1.0. 180 degree viewing cone. Washable surface. GREENGUARD Gold certified. 4K ready.
 - d. Viewing Area H x W.
 - 1) 16:10 Format. Black masking borders standard.
 - (a) 137 inch (3480) diagonal, 72-1/2 inches x 116 inches (1842 mm by 2946 mm).
 - e. Provide an extra screen drop with an overall screen drop of 12inches (304.8mm) with a black masking top border.
- C. Old Orchard
- 1. Acumen® XL E: Electric motor operated, surface ceiling mounted projection screen. Contoured case of 0.156" (3.9624 mm) thick, 9-gauge extruded aluminum. 5-inch (127 mm) diameter metal roller mounted on rubber insulated supports. Removable front fascia conceals viewing surface that retracts completely inside the case. Case dimensions are 9-1/4 inches h x 8-1/8 inches d (235 mm x 206 mm).
 - a. Motor mounted inside screen roller on rubber isolation insulators. Motor UL certified, rated 110-120V AC, 60 Hz, three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches. Motor shall be left mounted.
 - b. System Options:
 - 1) Contoured aluminum case finished in a white color (standard).
 - 2) Ceiling Mount Brackets: "Floating" steel brackets, finished to match screen case.
 - c. Projection Viewing Surface:
 - 1) Matt White XT1000E – On Axis gain of 1.0. 180 degree viewing cone. Washable surface. GREENGUARD Gold certified. 4K ready.
 - d. Viewing Area H x W.
 - 1) 16:10 Format. Black masking borders standard.
 - (a) 165 inch (419 cm) diagonal, 87-1/2 inches x 140 inches (222 cm x 356 cm).
 - e. Provide an extra screen drop with an overall screen drop of 24inches (609.6mm) with a black masking top border.
- D. Peachland
- 1. Acumen® E: Electric motor operated, surface ceiling mounted projection screen. Contoured case of 0.156" (3.9624 mm) thick, 9-gauge extruded aluminum. Removable front fascia conceals viewing surface that retracts completely inside the case. Case dimensions are 7-1/8 inches h x 5-7/8 inches d (181 mm x 149 mm).
 - a. Motor mounted inside screen roller on rubber isolation insulators. Motor UL certified, rated 110-120V AC, 60 Hz, three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches. Motor shall be left mounted. Low voltage control built into endcap.
 - b. Low Voltage 24V control unit with handheld IR remote to stop or reverse.
 - c. System Options:

- 1) Contoured aluminum case finished in a white color (standard).
 - 2) Ceiling Mount Brackets: "Floating" steel brackets, finished to match screen case.
 - d. Projection Viewing Surface:
 - 1) Matt White XT1000E – On Axis gain of 1.0. 180 degree viewing cone. Washable surface. GREENGUARD Gold certified. 4K ready.
 - e. Viewing Area H x W.
 - 1) 16:10 Format. Black masking borders standard.
 - (a) 137 inch (3480) diagonal, 72-1/2 inches x 116 inches (1842 mm by 2946 mm).
 - f. Provide an extra screen drop with an overall screen drop of 12 inches (304.8mm) with a black masking top border.
- E. Wiley Caynon
1. Acumen® XL E: Electric motor operated, wall mounted projection screen. Contoured case of 0.156" (3.9624 mm) thick, 9-gauge extruded aluminum. 5-inch (127 mm) diameter metal roller mounted on rubber insulated supports. Removable front fascia conceals viewing surface that retracts completely inside the case. Case dimensions are 9-1/4 inches h x 8-1/8 inches d (235 mm x 206 mm).
 - a. Motor mounted inside screen roller on rubber isolation insulators. Motor UL certified, rated 110-120V AC, 60 Hz, three wire, instantly reversible, lifetime lubricated with pre-set accessible limit switches. Motor shall be left mounted.
 - b. System Options:
 - 1) Contoured aluminum case finished in a white color (standard).
 - 2) Wall Mount Brackets (standard): "Floating" steel brackets, finished to match screen case.
 - c. Projection Viewing Surface:
 - 1) Matt White XT1000E – On Axis gain of 1.0. 180 degree viewing cone. Washable surface. GREENGUARD Gold certified. 4K ready.
 - d. Viewing Area H x W.
 - 1) 16:10 Format. Black masking borders standard.
 - (a) 165 inch (419 cm) diagonal, 87-1/2 inches x 140 inches (222 cm x 356 cm).
 - e. Provide an extra screen drop with an overall screen drop of 24 inches (609.6mm) with a black masking top border.

FRONT PROJECTION SCREEN CONTROLS

- F. General: All controls are UL Certified.
1. Low voltage control unit with three button 24V switches and cover plate to stop or reverse screen at any point, built-in RF receiver, built-in Video Interface Control trigger for 3V-28V, RS232, and dry contact relays.
 2. Motor shall be left mounted (standard).
 3. Where this option is required per district standard, provide Low Voltage 24V control unit with handheld IR remote to stop or reverse (Peachland only).
 - 4.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify rough-in openings are properly prepared.

- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
 - D.
- 3.02 PREPARATION
- A. Clean surfaces thoroughly prior to installation.
 - B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- 3.03 INSTALLATION
- A. Install in accordance with manufacturer's instructions.
 - B. Install front projection screens with screen cases in position and relationship to adjoining construction as indicated, securely anchored to supporting substrate, and in manner that produces a smoothly operating screen with plumb and straight vertical edges and plumb and flat viewing surfaces when screen is lowered.
 - C. Test electrically operated units to verify that screen, controls, limit switches, closure and other operating components are in optimum functioning condition.
- 3.04 PROTECTION
- A. Protect installed products until completion of project.
 - B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 26 0500 COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.01 SUMMARY

A. This Section specifies the basic requirements for electrical installations and includes requirements common to more than one section of Division 26. It expands and supplements the requirements specified in sections of Division 01. B. Related Requirements:

1. Division 26 – Electrical.
2. Division 27 – Communications.

C. Related Industry Standards: The most current version of the following industry standards.

1. ASTM D 709 – Laminated Thermosetting materials.
2. ANSI/NEMA FB-1 – Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable.
3. ANSI/NEMA 250 – Enclosures for Electrical Equipment (1000 Volts Maximum).
4. California Electrical Code (CEC).
5. IEEE C57.12.28 – Standard for Pad-Mounted equipment Enclosure Integrity.
6. IEEE 1584 – Performing Arc-Flash Hazard Calculations.
7. UL/ANSI 1 – Standard for Flexible Metal Conduit.
8. UL/ANSI 1242 – Standard for Electrical Intermediate Metal Conduit.
9. UL/ANSI 506 – Standard for Specialty Transformers.
10. UL/ANSI 6 – Electrical Rigid Metal Conduit-Steel.
11. UL/ANSI 6A – Electrical Rigid Metal Conduit-Aluminum, Red Brass, and Stainless Steel.
12. UL 797 – Electrical Metallic Tubing-Steel.
13. UL/ANSI 870 – Standard for Wireways, Auxiliary Gutters, and Associated Fittings.

14. UL/ANSI 891 – Standard for Safety Switchboards.

1.02 BASIC ELECTRICAL REQUIREMENTS

A. Quality Assurance:

1. Work shall be performed by CONTRACTOR'S personnel possessing the skills and experience obtained in performing work of similar scope and complexity.
2. Refer to related division(s) specifications for other requirements.

Drawings and Specifications Coordination:

1. For purposes of clearness and legibility, Drawings are essentially diagrammatic, and the size and location of equipment is indicated to scale whenever possible. Verify conditions, dimensions, indicated equipment sizes, and manufacturer's data and information as necessary to install the Work of this Division. Coordinate location and layout with other Work.
2. Verify final locations for rough ins with field measurements and with the requirements of the equipment to be connected.
3. Drawings indicate required size and points of termination of conduits, number and size of conductors, and diagrammatic routing of conduits. Install conduits with minimum number of bends to conform to structure, avoid obstructions, preserve headroom, keep openings and passageways clear, and comply with applicable code requirements.
4. Routing of conduits may be changed provided that the length of any conduit run is not increased more than 10 percent of length indicated on the Drawings.
5. Outlet locations shall be coordinated with architectural elements prior to start of construction. Locations indicated on the Drawings may be distorted for clarity; CONTRACTOR shall coordinate in the field prior to rough-in work.
6. Coordinate electrical equipment and materials installation with building components and the Work of other trades.
7. Equipment disconnects shall be readily accessible and free of obstructions.

8. When extending or intercepting existing electrical facilities, CONTRACTOR shall Coordinate and verify existing conditions.

C. Terminology:

1. Signal Systems: Applies to clock, bell, fire alarm, annunciator, sound, public address, buzzer, telephone, television, inter-communication, elevator access controls, lighting control systems and security systems.
2. Low Voltage: Applies to signal systems operating at 120 volts and less, and power systems operating at less than 600 volts. Medium voltage: Applies to power systems operating at more than 600 volts.
3. UL: Underwriter's Laboratories Inc, Nationally Recognized Testing Laboratory (NRTL), or equal.

D. Regulations: Work shall comply with the requirements of authorities having jurisdiction and the California Electrical and Building Codes. Material shall conform to regulations of the National Board of Fire Underwriters for electrical wiring and apparatus. Materials shall be new and listed by UL, or another NRTL. E. Structural Considerations for Conduit Routing:

1. CONTRACTOR shall provide DSA approved calculations and drawings as necessary for any construction and/or alterations requiring conduits to pass through or interfere with any structural members, or where notching, boring or cutting of the structure is necessary, or where special openings through walls, floors, footings, or other buildings elements, or where notches and bored holes in wood or steel are required. All work shall conform to CBC, Part 2, Title 24 requirements.
2. Concrete encasement for underground conduits that abuts a foundation wall or underground structure shall rest on a haunch integral with wall or structure, or shall extend down to footing projection, or shall be doweled into structure unless otherwise indicated. Underground structures shall include maintenance holes; pull boxes, vaults, and buildings. F. Electrically Operated Equipment and Appliances:

1. Furnished Equipment and Appliances:
 - a. Work shall include furnishing and installing wiring enclosures and complete connections of electrically operated equipment, appliances and electrical control devices, which are specified to be furnished and installed in this or other sections of the Specifications. Wiring enclosures shall be concealed except where exposed work is indicated on the drawings.
 - b. Provide all connections necessary for installation of equipment.

- 1) Equipment shall be tested for proper operation, including proper rotation of motorized equipment.
 - 2) If outlets are of incorrect electrical characteristics, or any specified equipment fails to operate properly, CONTRACTOR shall repair and/or replace the outlet and/or equipment.
 - 3) Utility connections (electrical, controls, gas, etc.) to roof mounted mechanical equipment shall be made through the side of the equipment and not from beneath the unit to facilitate future replacement.
2. Equipment and Appliances Furnished by Others:
- a. Equipment and appliances indicated on Drawings as "not in contract" (NIC), "furnished by others," or "furnished by the OWNER," will be delivered to the Project site. Required electrical connections shall be performed for such equipment and appliances. Motorized equipment will be furnished factory-wired to a control panel or junction box unless otherwise indicated. Appliances will be furnished equipped with portable cord and cap. Provide disconnect switches where required.
 - b. Connections to equipment furnished under this Division shall be part of the Work of this section. Work shall include internal wiring, installation, connection and adjustment of bolted drive motors in which the motor is supplied as a separate unit, and connections only for equipment furnished with factory installed internal wiring, except as further limited by Drawings and this Specification. Work shall include furnishing and installing suitable outlets, disconnecting devices, starters, push-button stations, selector switches, conduit, junction boxes, and wiring necessary for a complete electrical installation.
 - c. Electrical equipment furnished under other sections, for installation and connection under Work of this section, will be delivered to the Project site ready for installation.
 - d. Mechanical equipment furnished under other sections, and requiring electrical connection under this section, will be set in place as part of the Work of the section furnishing such equipment unless noted otherwise.
 - e. Suitability and condition of equipment furnished under other sections shall be determined in advance of installation. Immediate notice of damage, unsuitability, or lack of parts shall be given to the entity providing such equipment.

G. Power Distribution System Reports: For fault current, coordinatization and ArcFlash system report requirements refer to applicable electrical distribution equipment sections. for specific requirements. H. Protection of Materials:

1. Protect materials and equipment from damage and provide adequate and proper storage facilities during progress of the Work. Damaged materials and/or equipment shall be replaced. I. Cleaning:

1. Exposed parts of Work shall be left in a neat, clean, usable condition. Finished painted surfaces shall be unblemished and metal surfaces shall be polished.
2. Thoroughly clean parts of apparatus and equipment. Exposed parts to be painted shall be thoroughly cleaned of cement, plaster, and other materials. Remove grease and oil spots with solvent. Such surfaces shall be wiped, and corners and cracks scraped out. Exposed rough metal shall be smooth, free of sharp edges, carefully steel brushed to remove rust and other spots, and left in proper condition to receive finish painting.
3. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

J. WARRANTIES

1. Provide one-year warranty on all material and labor performed, unless noted otherwise in specific sections.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Advise the Inspector before starting the Work of this Division.
- B. Exposed conduits shall be painted to match the surfaces adjacent to installation.
- C. Salvaged materials removed from buildings shall be removed from the Project site as required by the OAR.
- D. Trenches outside of barricade limits shall be backfilled and paved within 24 hours after being inspected by the Inspector. Provide traffic plates during the time that trenches are open in traffic areas and in areas accessible to students and staff.

- E. Where existing structural walls are cored for new conduit runs, separation between cored holes shall be three inches edge to edge from new or existing holes, unless otherwise required by the Architect. All coring to be laid out and reviewed by Architect prior to drilling. CONTRACTOR to verify location of structural steel, rebar, stress cabling or similar prior to lay out.
- F. Electrical equipment shall be braced and anchored for CBC Seismic Design requirements, or as otherwise indicated on the Drawings.

3.02 DELIVERY STORAGE AND HANDLING

- A. Deliver products to project site with proper identification, which shall include names, model numbers, types, grades, compliance labels, and similar information needed for District identification; all products and materials shall be adequately packaged and protected to prevent damage during shipment, storage, and handling.
- B. Coordinate deliveries of electrical materials and equipment to minimize construction site congestion.

3.03 CUTTING AND PATCHING

- A. Cutting and patching of electrical equipment, components, and materials shall include the removal and legal disposal of selected materials, components, and equipment.
- B. Do not endanger or damage installed Work through procedures and processes of cutting and patching.
- C. Repair or restore other work or surfaces damaged as a result of the work performed under this contract.

3.04 CLEANUP

- A. Remove rubbish, debris and waste materials and legally dispose off the Project site.
- B. Remove equipment and implements of service, and leave entire work area neat and clean, to the satisfaction of the OWNER Authorized Representative.

3.05 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 270500
COMMON WORK RESULTS FOR COMMUNICATIONS

PART 1 GENERAL**1.01 SUMMARY**

- A. Section includes, but is not necessarily limited to:
1. Common standards and procedures for the Communications Work.
 - a. Design, engineer and provide complete, all means of support, suspension, attachment, fastening, bracing, and restraint (hereinafter "support") of the Work of this Division. Provide engineering of such support by parties licensed to perform work of this type in the Project jurisdiction.
- B. Where applies, Provisions of this Section apply to Communications Work, including the following Sections:
1. Section 27 05 26 - Grounding and Bonding for Communications Systems
 2. Section 27 05 29 - Hangers and Supports for Communications Systems
 3. Section 27 05 33 - Conduits and Backboxes for Communications Systems
 4. Section 27 05 53 - Identification for Communications Systems
 5. Section 27 41 00 – Audio Visual System
 6. Section 11 52 13 - Projection Screens
- C. Bidding Contractor shall hold a C-7, C-10 license in order to meet the requirements of the project per Specifications listed above under Section B and plans as part of this project. Contractors with Class B California general contractor's license working under a C-7 or C-10 license holder may be subject for Bid approval

1.02 REFERENCES

- A. Usage: In accordance with Division 1.
- B. American National Standards Institute (ANSI)
1. ANSI/TIA-568-C.0, Generic Telecommunications Cabling for Customer Premises, 2009
 2. ANSI/TIA-568-C.1, Commercial Building Telecommunications Cabling Standard, 2009
 3. ANSI/TIA-568-C.2, Balanced Twisted-Pair Telecommunication Cabling and Components Standard, published 2009
 4. ANSI/TIA-568-C.3, Optical Fiber Cabling Components Standard, published 2018, plus errata issued in October, 2008.
 5. TIA-569-C (2012) Telecommunications Pathways and Spaces
 6. ANSI/TIA-606-B-2012, Administration Standard Telecommunications Infrastructure.
 7. ANSI-J-STD-607-B, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises.
 8. ANSI/TIA-758-A, Customer-Owned Outside Plant Telecommunications Infrastructure Standard.
- C. BICSI
1. Telecommunications Distribution Methods Manual (TDMM) - 12th edition.
 2. BICSI - Outside Plant Design Reference Manual (OSPDRM) - 4th edition.
 3. BICSI - Wireless Design Reference Manual (WDRM) - 3rd edition.

1.03 DEFINITIONS

- A. General Abbreviations used in these specifications. Refer additionally to the abbreviations list appearing on the Drawings.
1. ADA Americans With Disabilities Act.
 2. AFC Above Finished Ceiling.
 3. AFF Above the Finished Floor.

4.	BLDG	Building
5.	CAT	Category
6.	CL	Centerline
7.	DIV	Division
8.	(E)	Existing
9.	FBD	Furnished By District
10.	HR	Home Run
11.	ID	Inside Diameter
12.	LAN	Local Area Network
13.	MAX	Maximum
14.	NIC	Not In Contract.
15.	OD	Outside Diameter
16.	PSRH	Project Standard Receptacle Height.
17.	PSSH	Project Standard Switch Height.
18.	TYP	Typical
19.	OFE	District Furnished Equipment.
20.	UON	Unless Otherwise Noted.

- B. Electrical and electronics terms used in the Communications Sections shall be as defined in:
1. ANSI/TIA-568-C.0
 2. ANSI/TIA-568-C.1
 3. ANSI/TIA-568-C.2
 4. ANSI/TIA-568-C.3
 5. ANSI/TIA-569-C
 6. ANSI/TIA-606-B
 7. IEEE Std 100
 8. This Section.
- C. Main Distribution Facility (MDF): Is a campus serving facility. The MDF is the room within a building for telecommunications equipment that meets the voice, data, video, radio, and wireless needs of its building and also serves other buildings on campus. It generally acts as an EF and BDF but can also act as an IDF serving the floor it occupies.
- D. Intermediate Distribution Facility (IDF) - A distributor used to connect horizontal cable and cabling subsystems or equipment.
- E. Telecommunications Room (TR) - The term TR refers to space allocated within a building to provide a secure operating environment for telecommunications cabling and termination facilities and/or network equipment. TRs shall be designed and provisioned per ANSI/TIA-569-C 5. Telecommunications Pathways and Spaces and per the BICSI Telecommunications Distribution Methods Manual (TDMM), most recent edition. Depending on the building size, design, and network requirements, one or more of the functions of a TR may be combined into one space. The primary functions housed in TR's are:
1. Entrance Facility (EF).
 2. Intermediate Distribution Frame (IDF).
 3. Main Distribution Frame (MDF).
- F. Entrance Facility (EF) (Telecommunications) Is a room that houses the termination and grounding point of OSP network service cables that enter or exit a building. It enables the joining of intra-building and inter-building backbone cabling. The EF is generally co-located in a BDF or MDF rather than being a separate room
- G. Entrance Room (ER) (Telecommunications) - A centralized space for telecommunications equipment that serves the occupants of a building. Equipment housed therein is considered distinct from a telecommunications room because of the nature of its complexity.
- H. Open Cable - Cabling that is not run in a raceway as defined by NFPA 70. This refers to cabling that is open to the space in which the cable has been installed and is therefore exposed to the environmental conditions associated with that space.

- I. Open Office - A floor space division provided by furniture, moveable partitions, or other means instead of by building walls.
- J. Pathway - A physical infrastructure utilized for the placement and routing of telecommunications cable.
- K. Reference to Named Products
 - 1. Selected Item: Item so noted was selected based on comparative testing of similar products. Procedure for determination of equivalence is noted in the specification for the item(s).
 - 2. System Design Basis: Item so noted interacts with other system items to produce total system function. Substitution of this item may require coordinated substitution of other system items.
 - 3. Design Basis: Item so noted was used as basis for system drawings to establish features, size, etc. Use of specified equivalents may require adjustment of physical layout or wiring, but does not affect system function. No preference is implied.

1.04 SUBMITTALS

- A. Comply with the following.
 - 1. Submit all materials for review arranged in same order as Specifications, individually referenced to Specification Section, Paragraph and Contract Drawing number. Conform in every detail as applies to each referencing Section.
 - 2. Submit 8 ½"x 11" items bound in volumes and drawings in edge bound sets. Submit all drawings on sheets of the same size.
 - 3. Make each specified submittal as a coordinated package complete with all information specified herein. Incomplete or uncoordinated submittals will be returned with no review action.
 - 4. Progress Schedule: Comply with Division 1.
- B. Contractor and Key Personnel Experience.
 - 1. A minimum of 30 days prior to installation, submit documentation of the experience of the low voltage systems, equipment and infrastructure contractor(s) and of their key personnel.
 - 2. Qualifications shall be provided for:
 - a. the low voltage systems, equipment and infrastructure contractor(s),
 - b. the low voltage systems, equipment and infrastructure installers,
 - c. and the supervisor(s) (if different from the installers).
 - 3. A copy of the Class B California general contractor's license, Contractor's C-7 license and/or C-10 licenses - both if Contractor has both.
 - 4. A copy of testing personnel certification(s) that demonstrates that the proposed personnel have the necessary training and certifications to conform with the proof of performance testing requirements of this Division and that they are properly trained in the use of the testing equipment that will be employed by the contractor.
 - 5. Copies of Contractor's Structured Cabling System (SCS) manufacturer's authorized vendor/installer Certification document(s).
 - 6. Refer to Quality Assurance paragraph in this section for complete requirements.
- C. Manufacturer's Product Data:
 - 1. Manufacturer's Product Data Sheets. Collate in sequence of List of Materials:
 - 2. Data sheet for each item in each Communications Section, including all accessories, clearly marked for proposed product.
 - 3. Material Safety Data Sheet, where applies.
 - 4. List of Materials Schedule. For each item, include:
 - a. Referencing Specification Section
 - b. Referencing Paragraph
 - c. Referencing Drawing, if specified only on plan
 - d. Manufacturer.
 - e. Model number.

- f. Listing, including name of Nationally Recognized Testing Laboratory.
- g. Precede each submittal book with a summary schedule, with columns for each item above and rows for each item submitted, per the example schedule below:

D. Field (Installation) Drawings:

1. General
 - a. Provide Contractor shop drawings Not to be copied from Consultant plans as contractor shall be responsible to provide complete drawings to meet project requirements.
 - b. Drawings shall present the proposed installation using the makes and models of devices proposed for use in this project; replace vendor neutral nomenclature used in bid set with the actual part numbers to be installed or provide a lookup table in the drawings to permit determining the actual part number.
 - c. Where the existing systems and/or infrastructure may be used and/or integrated into the work of the project, indicate them on drawings, including points of interface and demarcation of existing and new work.
 - d. Collate, in sequence, at least the following minimum drawings, for each infrastructure and system to be installed under the work of this contract:
2. Drawing cover sheet to include index/symbol list and notations to meet project requirements.
3. Site plans, floor plans and reflected ceiling plans.
 - a. General
 - 1) The identifier for each termination and cable shall appear on the drawings, either directly on the floor plans, through an associated schedule or a unique identifier associated with a fully annotated single line diagram.
 - 2) Include wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices.
 - 3) At scale of Contract Documents, show:
 - (a) Device locations and type
 - (b) Rough-in.
 - (c) Mounting height.
 - (d) Conduit size.
 - (e) J-hook routes
 - (f) Wire type.
 - (g) Wire fill.
 - 4) On the floor plans, indicate floor and wall mounted devices and pathway below a height of 7 feet above finish floor. Indicate the locations of the communications rooms and provide reference to the enlarged communications rooms plans.
 - 5) On the reflected ceiling plan, indicate ceiling and wall mounted devices and pathway above a height of 7 feet above finish floor. Indicate the locations of the communications rooms and provide reference to the enlarged communications rooms plans.
 - b. Communications Infrastructure
 - 1) Provide registered communications distribution designer (RCDD) approved, drawings depicting a complete communication infrastructure in accordance with ANSI/TIA-606-B. The drawings should provide details required to prove that the distribution system shall properly support connectivity from the communications rooms including IDF/MDF LOCAL area network panels to the telecommunications cabling work area outlets and/or connections.
 - 2) The following drawings shall be provided as a minimum:
 - (a) Layout of complete building per floor - Building Area/Serving Zone Boundaries, Backbone Systems, and Horizontal Pathways. Layout of

complete building per floor. The drawing indicates location of building areas, serving zones, vertical backbone diagrams, telecommunications rooms, access points, pathways, grounding system, and other systems that need to be viewed from the complete building perspective.

- (b) Serving Zones/Building Area Drawings - Drop Locations and Cable Identification (ID'S). Shows a building area or serving zone. These drawings show drop locations, telecommunications rooms, access points and detail call outs for common equipment rooms and other congested areas.
 - (c) A complete jack numbered plan set in Newhall School District jack numbering format in printed (and PDF) and AutoCAD format. Number plans with all jacks for each floor indicated on a single drawing sheet. Data, voice, wireless and security jacks shall appear on the same page. Symbols shall be indicated for the data, wall phone, wireless, inside camera, outside camera, as applies. A four-digit jack numbers shall be printed by each jack symbol. Jack plan shall be approved by the district before the cabling begins.
4. Enlarged Plans
- a. General
 - 1) Indicate at least as much information as is provided in the Contract Documents, supplemented by the dimensions and arrangement of the proposed equipment, trade coordination and field conditions.
 - b. Communications Infrastructure.
 - 1) Communications Rooms Drawings
 - (a) Provide drawings in accordance with ANSI/TIA-606-B that include telecommunications rooms plan views to include existing pathway layout (cable tray, racks, ladder-racks, etc.), cabinet, rack, backboard and wall elevations. Include rack details and equipment relationship to other parts of the work including clearance for maintenance and operation.
 - (b) At scale of Contract Documents, where used, the Contractor shall submit scaled drawing elevations (showing dimensions, mounting locations and associated frames & equipment) for all required assemblies, including but not limited to:
 - (1) Rack locations
 - (2) Wall mounted plywood backboards
 - (3) Wall mounted backbone cabling and major station cable bundles.
 - (4) Wall mounted and tray mounted splice cases
 - (5) Wall mounted copper cable protectors and terminal blocks.
 - (6) Wall mounted fiber optic cable terminations.
 - (7) Clearances
 - (8) Backboard Wire and Cable Management
 - (9) Rack elevations, including
 - (10) Copper cable patch panels.
 - (11) Rack mounted wire managers
 - (12) Hold clears for equipment provided by Others.
 - (13) Reference to mounting details.
 - (14) Power strips
 - (15) UPS
5. System Conduit and Riser Diagrams,
- a. General:
 - 1) Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment.
 - 2) Single line diagram of structured wiring

- 3) Grounding and bonding scheme
 - 4) Terminal cabinets.
 - 5) Coordination with floor plans.
 - 6) Wire runs not shown on floor plans.
 - 7) Wire type.
 - 8) Wire fill.
 - 9) Interface to work provided by work of other Sections, District Furnished Equipment, existing equipment and/or future equipment.
6. Detail Drawings
- a. Faceplate and Receptacles
 - 1) Receptacle and jack arrangement for each condition.
 - 2) Labeling of receptacle/jacks and plate
 - 3) Plate material.
 - 4) Plate finish.
 - 5) Connector types.
 - 6) Connector dimensioned layout.
 - b. Pathway
 - 1) Firestopping. Listed fire stop system documentation supporting proposed systems ability to conform with the project requirements.
 - 2) Penetrations. All conduit and piping wall, ceiling, floor, and roof penetrations, including both fire rated or non-rated, should be submitted for review prior to installation.
 - (a) For cored penetrations through concrete partitions, submit proposed work plan in the form of Coring/Sawcutting Summary Description as described in Section 27 05 33 - Conduits and Backboxes for Communications Systems.
 - 3) Details of flexible raceway connections to be made to vibrating equipment
 - 4) Details of J-Box and sealant application for the typical conditions - Noise and Vibration Controls for Communications System, and a schedule of rooms to receive application of mastic and sealant at J-Boxes
 - 5) An itemized list of all items of equipment to be fitted with flexible electrical connections.
 - 6) Conduit racking details.
 - c. California Access Compliance Manual and Americans with Disabilities Act (ADA) compliance.
 - d. Terminal cabinets: Terminations.
- E. Schedule Submittals.
1. An Excel spreadsheet listing jack number, floor number, room number and jacktype (workstation, wireless, camera, emergency phone, etc.)
- F. Cabling and Equipment Test Plan
1. Submit complete documentation of the proposed test plan and equipment to be used to document that the performance of the cabling, equipment, sub-systems and complete systems installed under the work of this project conform with the performance standards outlined in each specification section.
 2. Submit not less than 30 days prior to the proposed test date. Include procedures for certification, validation, and testing.
 3. Submit manufacturer's or recognized national test laboratory's calibration certificate one (1) month before any post-installation testing begins. Date on test unit calibration certificate shall be no longer than one (1) year prior to the date that post-installation testing is scheduled to begin.
 4. Submit a copy of the Test Equipment manufacturer's recommended testing procedure for each of the structured cabling system elements listed above in this section.
- G. Test Reports
1. Manufacturer's Field Reports

- a. Factory reel tests
2. Project Site Test Reports:
 - a. Submit following system completion and prior to and as condition precedent to Acceptance Review and Testing of the Work of this Section.
 - b. Schedule: Submit test reports in timely manner relative to Project schedule such that the District's Representative may conduct verification of submitted test data without delay of scheduled progress.
 - c. Provide test reports as specified within each section of Division 27 requiring performance testing.
 - d. Content: Include at least:
 - 1) Time and date of test.
 - 2) Personnel conducting test.
 - 3) Test equipment, including serial and date of calibration.
 - 4) Test object.
 - 5) Procedure used.
 - 6) Results of test
 - 7) Numerical or graphical presentation.
 - e. Submit copy of final results on paper and in electronic form, organized by circuit number, consistent with circuit numbering scheme used in preparing submittal drawings and in labeling receptacles and terminations.
 - 1) Submit machine-generated documentation and raw data of all test results in electronic form on USB or CD-R media (coordinate with District)
 - 2) Where the electronic documentation requires use of a proprietary computer program to view the data, provide the District with 1 licensed copy of the software.

1.05 QUALITY ASSURANCE

- A. Procedures: In accordance with current Industry standards - Quality Assurance.
- B. Designated Supervisor: Provide a designated supervisor present and in responsible charge in the fabrication shop and on the Project Site during all phases of installation and testing of the Work of this Section. This supervisor shall be the same individual through the execution of the Work unless illness, loss of personnel, or other circumstances reasonably beyond the control of the Contractor intervene.
- C. Reference Documents: At all times when the work is in progress, maintain at the workplace, fabrication shop or Project Site as applies.
 1. A complete set of the latest stamped, actioned submittals of record.
 2. A complete set of manufacturer's original operation, instruction and service manuals for each equipment item.
- D. Standard Products
 1. Telecommunications Equipment and cabling. Provide telecommunications cabling and materials that are products of the districts standards Siemons manufacturers which are regularly engaged in the production of such products, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 1 year prior to bid opening. The 1-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 1-year period.
 - a. Alternative Qualifications. Products having less than a 1-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 4000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.
 2. Material and Equipment Manufacturing Date
 - a. Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

E. Test Equipment

1. Requirements:

- a. Maintain and operate test equipment at the fabrication shop and the job site for both routine and Acceptance Testing of the Work of this Section.
- b. Maintain test equipment at the job site while work is in progress from installation of equipment racks until District's Acceptance of this Work; thereafter remove all of this test equipment from the job site.
- c. Unless otherwise indicated, test equipment shall remain property of the Contractor.
- d. Provide all required test cables, jigs and adapters.
- e. Provide equipment with traceable calibration, with calibration date not greater than one year prior to the date of the use of the equipment to perform the specified testing.

F. Qualifications

1. Key Personnel, General

- a. Indicate the proposed key people that are currently employed by the telecommunications contractor or who have a commitment to the low voltage systems and infrastructure contractor for the work of this project. All key persons shall be employed by the low voltage systems and infrastructure contractor at the date of issuance of this project, or if not, have a commitment to the low voltage systems and infrastructure contractor to work on this project by the date that the bid was due to the District's Representative.
- b. Note that only the key personnel approved by the District's Representative in the successful proposal shall perform work on this project's low voltage systems and infrastructure systems. Key personnel shall function in the same roles in this contract, as they functioned in the offered successful experience. Any substitutions for the low voltage systems and infrastructure contractor's key personnel requires approval from the District's Representative.

2. Telecommunications Contractor

- a. The telecommunications contractor shall be a firm which is regularly and professionally engaged in the business of the applications, installation, and testing of the specified telecommunications systems and equipment.
 - 1) The telecommunications contractor shall demonstrate experience in providing successful telecommunications systems within the past 3 years.
 - 2) Submit documentation for a minimum of three and a maximum of five successful telecommunication system installations for the telecommunications contractor.
- b. Key Personnel
 - 1) Provide key personnel who are regularly and professionally engaged in the business of the application, installation and testing of the specified telecommunications systems and equipment. There may be one key person or more key persons proposed for this project depending upon how many of the key roles each has successfully provided. Each of the key personnel shall demonstrate experience in providing successful telecommunications systems within the past 3 years.
 - 2) Supervisors and installers assigned to the installation of this system or any of its components shall be Building Industry Consulting Services International (BICSI) Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification for each of the key personnel.
 - 3) In lieu of BICSI certification, supervisors and installers assigned to the installation of this system or any of its components shall have a minimum of 3 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products. Submit documentation for a minimum of three and a maximum of five successful telecommunication system installations for each of the key personnel. Documentation for each key person shall include at least two

successful system installations provided that are equivalent in system size and in construction complexity to the telecommunications system proposed for this project. Include specific experience in installing and testing telecommunications systems and provide the names and locations of at least two project installations successfully completed using optical fiber and copper telecommunications cabling systems. All of the existing telecommunications system installations offered by the key persons as successful experience shall have been in successful full-time service for at least 18 months prior to the issuance date for this project. Provide the name and role of the key person, the title, location, and completed installation date of the referenced project, the referenced project owner point of contact information including name, organization, title, and telephone number, and generally, the referenced project description including system size and construction complexity

3. Minimum Communications Infrastructure Manufacturer Qualifications
 - a. Cabling, equipment and hardware manufacturers shall have a minimum of 3 years' experience in the manufacturing, assembly, and factory testing of components which comply with district requirements as well as ANSI/TIA-568-C.1, ANSI/TIA-568-C.2 and ANSI/TIA-568-C.3.

1.06 REGULATORY REQUIREMENTS

- A. Regulations Applicable: Including but not limited to those defined in Division 1.
 1. Nothing in the Contract Documents shall be construed to permit Work not conforming to applicable laws, ordinances, rules, or regulations.
 2. Safety Agency Listing: All devices provided under the Work of this Section which are connected to the Project electrical system shall be listed by a Nationally Recognized Testing Laboratory and shall be so labeled.
 3. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the District's Representative. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Procedures:
 1. In accordance with industry standards, as specified in the individual sections of Division 27 and the following.
- B. General
 1. Protect materials and equipment from damage during delivery, storage, handling and throughout the staging and construction periods. Equipment and materials shall be protected against physical damage, dirt, theft, sun, moisture (including surface water and precipitation) and extreme temperature.
 2. The top and bottom ends of all cables shall be available for testing. When not being prepared for testing, both ends of each cable shall be sealed to prevent the ingress of moisture.
 3. Provide protection from weather, moisture, extreme heat and cold, dirt, dust, and other contaminants for telecommunications cabling and equipment placed in storage.
 4. Do not deliver or install equipment frames and cable trays until spaces are enclosed and weather-tight, wet work in spaces is complete and dry, and work above ceilings is complete.
 5. During installation, equipment shall be protected against entry of foreign matter on the inside and be vacuum cleaned both inside (as appropriate) and outside before testing, operating or painting.
 6. As determined by the District's Representative, damaged equipment shall be fully repaired or shall be removed and replaced with new equipment to fully comply with the requirements

- of the Contract Documents. The decision of the District's Representative shall be final.
7. Painted surfaces shall be protected with removable heavy kraft paper, sheet vinyl or equal, installed at the factory and removed prior to final inspection.
 8. Damaged paint on equipment and materials shall be repainted with painting equipment and finished with the same quality of paint and workmanship as used by manufacturer.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Connecting hardware shall be rated for operation under ambient conditions of 32 to 140 degrees F and in the range of 0 to 95 percent relative humidity, non-condensing.

1.10 OPERATING AND MAINTENANCE DATA

- A. Commercial off the shelf manuals shall be furnished for operation, installation, configuration, and maintenance of products provided as a part of the communications cabling and systems. Precede the manuals with a systems narrative specific to this Project, outlining the major systems functionality, the major systems components, and identifying which manuals document the performance of which subsystems.
 1. Submit operations and maintenance data in accordance with Section 01 77 00 - Closeout Procedures and 01 78 00 - Closeout Submittals and as specified herein not later than 2 weeks prior to the date of beneficial occupancy or as specified in Division 1, whichever is sooner.

1.11 PROJECT RECORD DOCUMENTS

- A. Comply with industry standards and provide PDF Closeouts as follows:

Closeout Submittals. The following. Include at least as much information as required for the submittal drawings.

1. Record Drawings
 - a. CAD and PDF format to be provided.
 - 1) Use a computer aided drafting (CAD) system in the preparation of record drawings for this Project. CAD system shall produce files in AutoCAD® .DWG format, version 2004 or later.
 - b. Except where prohibited by Contract, District will furnish CAD backgrounds in AutoCAD® .DWG format, for use by the Contractor in preparing Record Drawings.
 - c. The contractor shall be responsible for updating the building and communications plans to reflect as-built conditions.
 - 1) Indicate actual work on Drawings; indicate actual products used, replace vendor neutral nomenclature used in bid set with makes and models of actual installed devices.
 - d. Disk/USB copy of Record Drawings: Two (2) sets of USB, CD or DVD of the as-built drawings (coordinate with district for Record drawings type).
 - e. Reproduceable as-builts as required per district.
2. Provide T5 drawings including documentation on cables and termination hardware in accordance with ANSI/TIA-606-B. T5 drawings shall include schedules to show information for cut-overs and cable plant management, patch panel layouts and cover plate assignments, cross-connect information and connecting terminal layout as a minimum. Provide the following T5 drawing documentation as a minimum:
 - a. Cables - A record of installed cable shall be provided in accordance with ANSI/TIA-606-B. The cable records shall include the required data fields for each cable and complete end-to-end circuit report for each complete circuit from the assigned outlet to the entry facility in accordance with ANSI/TIA-606-B. Include manufacture date of cable with submittal.
 - b. Termination Hardware – where used, A record of installed patch panels, cross-connect points, distribution frames, terminating block arrangements and type, and outlets shall be provided in accordance with ANSI/TIA-606-B. Documentation shall include the required data fields as a minimum in accordance with ANSI/TIA-606-B.

- c. The list of minimum required Project Record drawings is as follows:
 - 1) All cabling outlets with IDs for each connector on the faceplate;
 - (a) Two inch (2") and larger conduit pathways to include conduit size label;
 - (b) Pull box locations;
 - (c) Two inch (2") & four inch (4") J hook runs indicated by a line series of "x"s;
 - (d) Telecom room layout labeled per current construction drawing field mark-ups;
 - (e) Rack elevation labeled per current construction drawing field mark-ups;
 - (f) Backbone copper and fiber schematic drawings with labeling information
- 3. Record of Cable Plant Test
 - a. Two (2) sets of USB, CD or DVD of final District accepted cable plant testing results documentation (to be coordinated with District for type required).
 - b. Provide at least a copy of software with at least 1 user license if required to view submitted test data.
- 4. Penetrations
 - a. All penetrations provided under the work of the project, including fire rated and non fire rated.
- 5. Fire stopping
 - a. Two (2) sets of USB, CD or DVD of all fire stop graphical UL fire resistance manual reference drawings and supporting text (to be coordinated with District for type required).
- 6. Spare Parts
 - a. see plans and individual specifications sections for requirements.

1.12 WARRANTY SERVICE

- A. In addition to other provisions of the project, provide the following.
 - 1. Response Time: Provide a qualified technician familiar with the work at the Project Site within 24 hours after receipt of a notice of malfunction. Provide the District's Representative with telephone number attended 8 hours a day, 5 days a week, to be called in the event of a malfunction.
- B. The Contractor shall provide a one (1) year material and labor warranty on all the work the Contractor has performed.
- C. The Contractor shall provide the Structured Cabling System (SCS) manufacturer's materials and link performance certification warranty for all new cable installed by the Contractor in his execution of the work of this specification.
- D. Provide all additional Warranties as defined in each Communication Systems Section.

1.13 ACCEPTANCE REVIEW AND TESTING PROCEDURES

- A. Complete all Work of this Section. Submit Test Report. Submit review copies of Operating and Maintenance Manuals, less reduced set of Record Drawings. Notify the District's Representative in writing that the Work of these Sections is complete and fully complies with the Contract Documents. Request Acceptance Review and Testing. The District's Representative will conduct Verification of Submitted Test Data, and otherwise direct testing and adjustment of this Work. These procedures may be performed at any hour of the day or night as required by the District's Representative to comply with the Project Schedule and avoid conflict with Residents. Provide all specified personnel and equipment at any time without claim for additional cost or time.
- B. Personnel: Provide services of the designated supervisor and additional technicians familiar with work of this Section. Provide quantity of technicians as required to comply with Project Schedule.
- C. In Addition, Provide:
 - 1. All tools appropriate for performance of adjustment of and corrections to this Work. Include spare wire and connectors and specified tooling for application.

2. Ladders, scaffolding and/or lifts as required to access high devices.
 3. All test equipment.
 4. Complete set of latest stamped, actioned submittals of record for reference.
 5. Complete set of Test Reports.
 6. Complete set of manufacturer's original operation, instruction and service manuals for each equipment item for reference.
 7. Demonstrate: Complete operation of all systems and equipment, including Portable Equipment.
 8. Adjust: As directed by the District's Representative.
 9. Correct: In timely manner, failure to comply with the Contract Documents, as reasonably determined by the District's Representative.
- D. Temporary Equipment: Provide and operate, without claim for additional cost or time, temporary equipment and/or systems to provide reasonably equivalent function, as determined by the District's Representative, in place of the Work of this Section which is incomplete or found not in conformance with the Contract Documents as of seven (7) days prior to the scheduled completion date. Provide such temporary equipment until Acceptance of the Work of this Section. Thereafter, remove such temporary equipment.

1.14 CLOSEOUT

- A. Punch List: Perform any and all remedial work, at no claim for additional cost or time. Where required, retest and submit Test Report. Notify the District's Representative of completion of Punch List.
- B. Portable Equipment: Furnish all portable equipment and spares to the District's Representative, along with complete documentation of the materials presented. Where applicable, furnish portable equipment in the original manufacturer's packaging.
- C. Operating and Maintenance Data: Install framed operating and maintenance instructions. Submit Manuals.
- D. Project Record Documents: Submit print and digital copies on Min. (2) USB's. Digital files shall be in AutoCAD .dwg and PDF format.
- E. Keys: If applicable, replace construction locks with permanent locks. Provide 5 sets of keys to the District's Representative of any equipment that uses keys.
- F. Instruction: Conduct specified instruction (4 hours training) to school districts end user. Contractor to coordinate with district for requirements.
- G. Warranty: Submit Warranty dated to run from date of Acceptance of the Work of this Section.

PART 2 PRODUCTS

201 GENERAL

- A. Where a particular material, device, piece of equipment or system is specified directly, the current manufacturer's specification for the same shall be considered to be a part of these specifications, as if completely contained herein in every detail.
- B. Each material, device or piece of equipment shall comply with all of the manufacturer's current published specifications for that item.
- C. Products shall be made by manufacturers regularly engaged in the production of such products.
- D. Provide quantity as shown on Contract Drawings, or as otherwise indicated.
- E. Provide all auxiliary and incidental materials and equipment necessary for the operation and protection of the Work of this Section as if specified in full herein.
- F. Unless recycled content is specified, provide new materials.
- G. Provide the manufacturer's latest design/model, permanently labeled with the manufacturer's name, model number and serial number.

- H. Where products are of similar type or use, provide products of the same manufacturer, unless otherwise indicated. When more than one unit of the same type of equipment or material is required, such units shall be the products of a single manufacturer and part number.
- I. Components
1. UL or third party certified. Cabling and interconnecting hardware and components for telecommunications systems shall be UL listed or third-party independent testing laboratory certified and shall comply with NFPA 70 and conform to the requirements specified herein.
 2. Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations, submit proof of such compliance.
 - a. The label or listing by the specified organization will be acceptable evidence of compliance.
 - b. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the District's Representative.
 - c. The certificate shall state that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.
- J. Enclosures:
1. Provide steel frames and enclosures designed and wired to eliminate all induced currents.
 2. Make bolted connections with self-locking devices.
- K. Finishes: Any item or component of the Work of this Section which is visible shall comply with the following.
1. Finishes noted or scheduled on the Contract Drawings take precedence.
 2. Where design location requires that products, materials or equipment are visible to the public, no manufacturer's logos larger than 1/2 inch shall be visible. Unless otherwise noted or directed, neatly remove or permanently paint out such logos.
 3. Where finishes are not noted or otherwise defined in the Contract Documents, submit manufacturer's standard finish samples for selection by the District's Representative.
- L. Copper Cable
1. Category 6A Data/Voice Unshielded Twisted Pair (UTP) Cable
 - a. Cable will meet or exceed the proposed requirements of ANSI/TIA/EIA 568-B.2, 568-B.2 Addendum #1 and ISO/IEC 11801 Category 6A Cable Standard for: NEXT and ELFEXT (Pair-To-Pair and Power Sum), Insertion Loss (Attenuation), Return Loss, and Delay Skew.
 - b. Cable shall be proven to support Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, IEEE 802.3af Power Over Ethernet for VoIP, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps, 1.2 and 2.4 Gbps.
 - c. The cable shall consist of four unshielded twisted pairs of thermoplastic insulated bare copper enclosed in a thermoplastic jacket.
 - d. All cable shall conform to the requirements for communications circuits defined by the National Electrical Code (Article 800) and the Canadian Building Code. Cable listed to NEC Article 800-51(a) will be used for "Plenum" installations. Cable listed to NEC Article 800-51(b) shall be installed in vertical runs penetrating more than one floor.
 - e. Cable shall have been certified with the UL 1666 Vertical Tray Flame Test.
 - f. Cable shall be available in a Plenum, Riser and Indoor/Outdoor rated jackets.
 - g. Contractor will use the indoor/outdoor rated cable for all locations where the cable pathway goes underground and/or run in exterior conduit.
 - h. The listed Category 6A cables in this specification are manufactured by Siemon. No other manufactures eligible for a Siemon Certified Installation have been

- pre-approved.
- M. - Color:
- a. Data cable jacket will be BLUE
 - b. Quantity: See Drawing for quantity and installation details. Contractor to use best practice as to Conceal cabling at all times as No Exposed cabling shall be permitted per project unless otherwise per-approved by district Only.
 - c. Part#: Siemon
For Riser Application:
Siemon, PN# 9A6R4-A5-06-R1A
 - d. For Plenum Application:
Siemon, PN# 9A6P4-A5-06-R1A

PART 3 EXECUTION

301 INTENT OF DRAWINGS AND SPECIFICATIONS

- A. Contractor shall keep on the Project site a copy of the Specifications and Drawings, and the same shall be available at all reasonable times for inspection and use by The District's Representative and by any other person authorized by The District's Representative. Any Drawings listed in the detail Specifications shall be regarded as a part thereof and of the Contract. Anything mentioned in these Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in these Specifications, shall be of like effect as though shown or mentioned in both.
- B. It shall be the duty of Contractor to see that the provisions of these Specifications are complied with in detail irrespective of the inspection given the work during its progress by The District's Representative. Any failure on the part of Contractor to observe the Specifications will be sufficient cause for the rejection of the work at any time before its acceptance.
- C. The drawings use symbols and schematic diagrams to indicate the scope of work. These symbols and diagrams will not typically identify dimensions nor will they identify inclusion of specific accessories, appurtenances and related items necessary and appropriate for a complete and proper installation and operation. The Contractor shall install work complete and ready for proper operation, including related items not specifically identified, shown, indicated or specified. The work shall be installed in accordance with the intent diagrammatically expressed on the drawings and in conformity with the dimensions indicated on architectural drawings and on shop drawings approved by the District's Representative.
- D. The drawings include some details for various items, which are specific with regard to the dimensions and positioning of the work. These details are intended only for the purpose of establishing general feasibility. They do not obviate field coordination for the indicated work. Work shall not proceed until actual field conditions and requirements are verified by the Contractor.
- E. The District's Representative will furnish from time to time, such detail drawings, drawings, profiles, and information as The District's Representative may consider necessary for Contractor's guidance to insure the proper and adequate execution of the Contract. Contractor shall comply with such detail drawings, drawings, profiles and information.
- F. In accordance with the requirements of Division 1, only shop drawings and submittals have been received a review of "No Exceptions Taken" or "Make Corrections As Noted" shall be used in construction.
- G. Contractor shall not scale the Contract Document set to determine exact dimensions or exact location. Scaled drawings are to be considered diagrammatic. If exact lengths or location placement dimensions are required, the drawings will specifically show those dimensions or placement coordinates.

302 INSTALLATION

- A. The Contractor shall furnish all required materials, equipment, and tools necessary to properly complete the work of these specifications including, but not limited to, tools for pulling and terminating the cables, mounting hardware, cable ties, bolts, anchors, clamps, hangers, kits of consumables, lubricants, technician communication devices, cable testing equipment, stands for cable reels, cable wenchers, etc.

303 EXAMINATION

- A. The Contractor is responsible for examining existing conditions and comparing them with drawings and specifications and notifying the District Representative or his/her designate of any discrepancies.
- B. The Contractor is responsible for coordinating with the District Representative or his/her designate to address, adjust, and resolve any discrepancies found before commencing work.
- C. If a discrepancy between existing conditions and the Contract drawings and specifications are found after commencing work, stop any work that in the Contractor's opinion is affected by the found discrepancy. The contractor shall submit an RFI requesting information on how to resolve the discrepancy. The RFI shall also contain a possible solution, before commencing work in work areas affected by the discrepancy.

304 PREPARATION

- A. Prepare and sequence the work to minimize disruption to each room environment and existing communications systems.
- B. The Contractor shall follow all rules, regulations, and instructions in this specification, general provisions of the Contract, including General and Supplementary Conditions, and Division 1 specification sections, if issued in conjunction with these Division 27 specifications with regard to the following:
 - 1. Delivery hours.
 - 2. Delivery locations.
 - 3. Storage.
 - 4. Hazardous Material.
 - 5. Security
 - 6. Safety.
 - 7. Logistics.
- C. The Contractor shall coordinate their work so there shall be no disruption to any occupants of a NSD campuses unless coordinated and approved by the District's Representative. Any necessary disruption shall be scheduled a minimum of 2 weeks in advance of its occurrence and affected parties shall be notified in writing of date, time, and planned duration of the disruption.
- D. Protection:
 - 1. When work is being done in or adjacent to occupied spaces, the Contractor shall protect the occupied spaces from dust, trash and debris through the use of barriers and/or other devices
 - 2. When working in occupied spaces, cover all computers, electronic equipment, desks, chairs, furniture and other articles when working at ceiling level and/or performing dust producing tasks.
 - 3. At no time shall the Contractor use District property including but not limited to the District's furniture, loose equipment or supplies located in occupied spaces in the course of installing the work of this project.

305 CLEANING

- A. When working in spaces not currently occupied by the District's personnel during ordinary work week:
 - 1. Work areas shall be left broom clean at the end of each work day. This includes the removal of packing material, trash and debris caused by the work.

- B. Where working in spaces occupied by the District:
 - 1. Immediately after completing work within each space, clean up and remove all materials, scrap and dust.
 - 2. Surfaces exposed to dust either during the installation or following removal of protection systems as specified herein above shall be cleaned to their original state daily prior to the return of the occupants to the space.
 - 3. All dust resulting from work performed shall be vacuumed up daily prior to the return of the occupants to the space.
- C. Disposal
 - 1. All scrap material in work area shall be picked up and removed from the building at the end of each day..
 - 2. See Division 1 for additional requirements and project procedures for waste disposal and recycling requirements that apply to this project.

3.06 REPAIR AND RESTORATION

- A. Where working in spaces occupied by the District, return to their original positions any furniture or articles relocated to perform the work.

3.07 VERIFICATION

- A. The Contractor shall verify that the installation and materials used have been inspected before they are enclosed within building features, or otherwise hidden from view. The Contractor shall bear costs associated with uncovering or exposing installations or features that have not been inspected and approved.
- B. The Contractor shall verify that requirements of this specification are met. Verification shall be through a combination of analyses, inspections, demonstrations and tests, as described below.
 - 1. Verification by Inspection. Verification by inspection includes the examination of items and comparison of pertinent characteristics against the qualitative or quantitative standard set forth in the specifications. Inspection may require moving or partially disassembling the item to accomplish the verification, included as part of the work at no additional cost to the District.
- C. Verification by Test and Demonstration. The Contractor shall verify by formal demonstrations or tests that the requirements of this specification have been met. The Contractor shall demonstrate that the communications systems components and subsystems meet specification requirements in the "as-installed" operating environment during the System Operation Test. Even though no formal environmental testing is required, the Contractor shall measure and record temperature, humidity and other environmental parameters and the environmental conditions, which were encountered during the System Operation Test.

3.08 COMMISSIONING AND ACCEPTANCE

- A. General:
 - 1. Upon completion of the work, remove excess debris, materials, equipment, apparatus, tools and similar items. Leave the premises clean, neat and orderly.
- B. Results Expected:
 - 1. Communications Infrastructure Systems shall be complete and ready for use.
 - 2. Testing, start-up and cleaning work shall be complete.
 - 3. Maintenance Materials: Special tools for proper operation and maintenance of the equipment provided under this Specification shall be delivered to the District.
- C. Inspections
 - 1. There shall be three phases of commissioning inspections:
 - a. Rough-in inspection
 - b. Above-ceiling inspection (after cables are placed)
 - c. Final inspection and testing
 - 2. The Contractor shall verify that the installation and materials used have been inspected

before they are enclosed within building features, or otherwise hidden from view. The Contractor shall bear costs associated with uncovering or exposing installations or features that have not been inspected and approved.

- D. Rough-in inspection. Once electrical rough-in and pathways have been installed, but prior to walls and ceilings being installed, the Contractor shall request the design team, in writing, for the official rough-in inspection to take place. The District's Representative will then schedule a time to be on-site to conduct this inspection.
1. At a minimum, the District's Representative will evaluate the following items:
 - a. Accurate location and height above finished floor for all outlet boxes.
 - b. Accurate dimensions (particularly depth) of all outlet boxes and diameter of in-wall conduit serving outlet boxes.
 - c. Cable tray size, location, and clearance.
 - d. Location and size of all other communications conduits or pathways.
 - e. Location, spacing and clearance of and around racks and wall-mounted equipment.
 - f. That communications room power receptacles, where installed under the work of this project, meet the design requirements.
 2. The District's Representative is then to issue a written report to the Contractor identifying all items which currently do not meet the construction document requirements. All items are to be resolved prior to walls and ceilings being closed up. This report is not necessarily all-inclusive; should issues be discovered later in the project, the Contractor is still responsible for corrections/repairs.
- E. Above-ceiling inspection
1. Once all communication cabling has been installed and properly supported and walls have been painted, but prior to the installation of ceiling tiles/material, contractor shall request of the design team, in writing, for the official above-ceiling inspection. The District's Representative will then schedule a time to be on-site to conduct this inspection
 2. At a minimum, the District's Representative will evaluate the following items:
 - a. That all items from the previous inspection have been corrected.
 - b. That communications cabling is routed correctly and adequately supported.
 - c. That communications cabling is not painted or over-sprayed.
 - d. That the installed communications cabling matches what was specified/submitted.
 - e. That there are no kinks, splices, or other damage to the installed communications cabling.
 - f. That all cables and WAOs are properly labeled.
 - g. That all penetrations through fire-rated walls are properly firestopped, including fire blocking materials installed in the annular spaces; and that the firestops are properly labeled.
 3. The District's Representative is then to issue a written report to the Contractor identifying all items which currently do not meet the construction document requirements. This report is not necessarily all- inclusive; should issues be discovered later in the project, the appropriate communications subcontractor is still responsible for corrections/repairs.
- F. Final inspection.
1. Once all communications work has been completed, contractor shall request of the District's Representative, in writing, the official final inspection. This request shall be made 3 weeks before substantial completion. The District's Representative will then schedule a time to be on-site to conduct this inspection.
 2. At a minimum, the District's Representative will check the following items:
 - a. That all items from the previous inspections have been corrected.
 - b. That all faceplates are installed, with the correct modules, quantity of modules, and approved labeling scheme.
 - c. That all equipment and cabling within communications rooms is installed per the contract documents, including all patch panels and wall blocks (with specified spare capacity), horizontal and backbone cabling labeling, and telecommunications

- grounding.
- d. And all other items necessary to guarantee contract documents are met and complete and functioning communications systems are installed.
- e. That all penetrations through fire-rated walls are properly fire stopped, including fire blocking materials installed in the annular spaces; and that the firestops are properly labeled.
- 3. The Contractor shall provide the following for the acceptance testing.
 - a. All personnel required for perform the tests. This shall include the site supervisor.
 - b. Complete set of Test Reports.
 - c. (2) Complete sets of manufacturer's original operation, instruction and service manuals for each equipment item for reference.
 - d. keep and turn over all additional documentation that comes with any of the AV equipment to the Newhall School District
- 4. The Contractor shall execute the test plan required in the above Submittals section and as approved and/or modified by the District's Representative. The testing must demonstrate complete operation of all systems and equipment, including any portable equipment.
- 5. These procedures may be performed at any hour of the day or night as required by the District's Representative to comply with the Project Schedule and avoid conflict with Residents. Provide all specified personnel and equipment at any time without claim for additional cost or time.
- 6. After installation, the Contractor shall test, certify and provide required warranties for the Structured Cabling System (SCS) installed per the requirements of this specification.

3.09 ADJUSTMENTS

- A. The Contractor is responsible for coordinating and documenting the properly installed and operational system with the District Representative to fully comply with requirements of the project.

3.10 ACCEPTANCE

- A. The project specified by this specification shall be considered completed and signed off as completed by the District Representative or his/her designate contingent upon the following:
 - 1. All punch lists have been completed and signed as complete by the District's Representative.
 - 2. Abandoned cabling has been removed.
 - 3. Cleaning is complete.
 - 4. Required cable plant testing has been executed and required test result documentation has been submitted and approved by the District Representative or his/her designate - refer to Section 27 10 00 - Structured Cabling, Basic Materials & Methods
 - 5. Any required adjustments to as-built drawings have been completed, submitted, and approved as complete by the District Representative or his/her designate.
 - 6. Required warranty documentation has been submitted and approved as complete by the District Representative or his/her designate.

END OF SECTION

SECTION 270526

GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Section includes grounding and bonding of Communications Work, including but not limited to:
 - 1. Communications Raceways
 - 2. Cable Runway
 - 3. Cable Shields
 - 4. Protector Fields
 - 5. Communications cabinets and enclosures.
 - 6. Outside Plant Grounding and Bonding
- B. Related Work Under Other Sections
 - 1. Related Sections:
 - a. Section 27 05 00 - Common Work Results for Communications
 - b. Section 27 05 29 - Hangers and Supports for Communications Systems
 - c. Section 27 05 33 - Conduits and Backboxes for Communications Systems

1.02 SYSTEM DESCRIPTION

- A. Provide telecommunications system grounding conductor as described herein and indicate on drawings.
- B. Except as otherwise indicated, the complete communications installation including the metallic conduits and raceways, cable trays, boxes, cabinets, racks, panels, cable shields and lightning protectors shall be completely and effectively grounded in accordance with all code requirements, whether or not such connections are specifically shown or specified.
- C. Resistance:
 - 1. Resistance from the farthest ground bus through the ground electrode to earth shall not exceed 5 Ohms or the requirements of ANSI-J-STD-607-B-2011, whichever is more restrictive.
 - 2. Resistance from Communications racks buss ground to Ufer ground must remain less than or equal to the electrical ground presented at A/C outlet for electronic equipment in the communications rack

1.03 REFERENCES

- A. American National Standards Institute (ANSI)
 - 1. ANSI-J-STD-607-B-2011 Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises
 - 2. ANSI/TIA/EIA-606-A-2002 Administration Standard for Commercial Telecommunications Infrastructure
- B. IEEE
 - 1. IEEE C135.30 (1988) Standard for Zinc-Coated Ferrous Ground Rods for Overhead or Underground Line Construction
- C. Underwriters Laboratories (UL)
 - 1. UL 467 (1993); R 2004 Grounding and Bonding Equipment

1.04 SUBMITTALS

- A. Conform with the requirements of Division 1 and Section 27 05 00 Common Work Results for Communications.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Equal products by the following manufacturers will be considered providing that all features of the specified product are provided:

1. Ground Rod:
 - a. High strength high carbon steel, with electrolytically bonded jacket of copper on surface
 - b. 5/8" diameter minimum.
 - c. 5' long minimum.
 - d. UL spec. 467
 - e. ANSI C-33.8-1072.
 - f. Manufacturer:
 - 1) Allied Bolt
 - 2) Inwesco 12A60
 - 3) Blackburn
 - 4) Cooper Power Systems
 - 5) Weaver.
 - 6) Erico "Cadweld" Products, Inc.
 - 7) ITT Blackburn.
 - 8) Or equal.
2. Ground Wells:
 - a. Christy Concrete Products, Inc.
 - b. Forni Corp.
 - c. Or equal.
3. Ground Bushings, Connectors, Jumpers and Bus:
 - a. O-Z/Gedney.
 - b. Thomas & Betts Corp.
 - c. Or equal.
4. Compression Connector Lug
 - a. Panduit
 - b. B-Line SB-479 Series
 - c. Thomas & Betts
 - d. Or equal.
5. Telecommunications Ground Bus Bar
 - a. CPI Telecommunications Grounding BusBars
 - b. B-Line
 - c. Panduit
 - d. or equal.
6. Rack and Cabinet Grounding
 - a. Middle Atlantic
 - b. Panduit Structured Ground Kit
 - c. Chatsworth Products Inc.
 - d. or equal.
7. Bonding Ribbon:
 - a. Annealed solid copper 3/8 inch wide x 1/16 inch thick, tin plated.
 - b. Manufacturer:
 - 1) Inwesco 12A55
 - 2) Corning Cable Systems
 - 3) Preformed Line Products.
 - 4) or equal.
8. Bonding Ribbon Clamp:
 - a. Soft lead
 - b. 1/16 inch thick
 - c. Bolt hole for attachment
 - d. Manufacturer:
 - 1) Inwesco 12A56
 - 2) Corning Cable Systems

- 3) Preformed Line Products.
- 4) Or equal.
- 9. Fargo Clamp:
 - a. Cast copper, silver plated, furnished with copper bolt.
 - b. RUS Listed
 - c. Manufacturer:
 - 1) Allied Bolt
 - 2) Inwesco 12A57
 - 3) Corning Cable Systems
 - 4) or equal.
- 10. Ground Inserts:
 - a. Cast Bronze with 1/4 copper Rod.
 - b. Provide minimum one each vault.
 - c. Provide minimum two each maintenance hole.
 - d. Manufacturer:
 - 1) Inwesco 12H69
 - 2) or equal by vault or manhole manufacturer.
 - 3) or equal.

2.02 GROUND CONDUCTORS

- A. General purpose insulated:
 - 1. NRTL listed and code sized copper conductor, with dual rated THHN/THWN insulation, color solid green. The jacket may have a yellow stripe.
 - 2. The jacket shall include markings that indicate conductor, manufacturer, and NRTL listing.
 - 3. Minimum wire size is #6 AWG UON. Grounding conductors larger than 4 AWG (5 mm) shall be stranded. Use solid conductors for 4 AWG (5 mm) and smaller.
 - 4. Use stranded grounding conductors at locations subject to vibration or repeated flexing, regardless of size.
 - 5. Where continuous color-coded conductors are not commercially available, provide a minimum 4 in. long color band with green, non-aging, plastic tape in accordance with NEC. The band shall be located within 152 mm (6 in.) of each termination and splice and at 1.2 m (4 ft.) intervals along its run.
 - 6. Plenum rated, if run in plenum spaces.
- B. Telecommunications Bonding Backbone (TBB)
 - 1. A TBB shall be provided between the TMGB and each TGB.
 - 2. The TBB shall be sized at 2 kcmil per linear foot of conductor length up to a maximum size of 168 kcmil (No. 3/0 AWG; 12 mm).
- C. Bonding Conductor for Telecommunications (BCT)
 - 1. A BCT shall be provided between each TMGB and the building's service equipment (power) ground.
 - 2. The BCT shall be the same size as, or larger than, the largest TBB.
- D. Rack Bonding Conductor (RBC)
 - 1. A separate RBC shall be provided between each cabinet or rack and the TGB or TMGB in the room.
 - 2. Each RBC shall be sized as a 6 AWG (4 mm).
- E. Bonding Jumpers
 - 1. Bonding jumpers shall be used wherever two metallic parts meet in an electrically insecure connection. Examples include, without limitation, cable tray sections and cabinet or rack components and doors.
 - 2. Bonding jumpers shall be factory pre-terminated.
 - 3. Outside Plant Applications Grounding conductors shall be bare copper, meeting ASTM B 8 soft-drawn unless otherwise indicated. Aluminum is not acceptable.

- F. Bonding pigtails: Insulated copper conductor, identified green, sized per code, and provided with termination screw or lug. Provide solid conductors for #10 AWG or smaller and stranded conductors for #8 AWG or larger.

2.03 COMPRESSION CONNECTOR LUG

- A. Description
 - 1. Connector lug with compression connection to conductor.
 - 2. Copper alloy body.
 - 3. Provide lug size to match conductor being terminated.
 - 4. Provide 2 hole pattern lugs.
 - 5. Provide each lug with silicon bronze hardware, including 2 bolts, 2 split lock washers and 2 nuts.

2.04 INSULATED GROUNDING BUSHINGS

- A. Plated malleable iron or steel body with 150 degree Centigrade molded plastic insulating throat and lay-in grounding lug.

2.05 CONNECTIONS TO PIPE

- A. For cable to pipe: UL listed bolted connection complying with CEC requirements.

2.06 CONNECTIONS TO STRUCTURAL STEEL, GROUND RODS, OR SPLICES

- A. Where required by the Drawings or Specifications, grounding conductors shall be spliced together, connected to ground rods or connected to structural steel using exothermic welds or high pressure compression type connectors.
 - 1. Exothermic welds shall be used for cable-to-cable and cable-to-ground rod and for cable to structural steel surfaces. Exothermic weld kits shall be as manufactured by Cadweld, Thermoweld or equal. Each particular type of weld shall use a kit unique to that type of weld.
 - 2. High-pressure compression type connectors shall be used for cable-to-cable and cable-to-ground rod connections. Connections shall be as manufactured by Thomas & Betts #53000 series, Burndy "Hy-Ground" or equal.

2.07 EXTRA FLEXIBLE, FLAT BONDING JUMPERS

- A. Where required by the drawing or specified herein.

PART 3 EXECUTION

3.01 GENERAL

- A. Provide Grounding and Bonding according to the most restrictive requirements of:
 - 1. ANSI-J-STD-607-B-2011.
 - 2. California Electrical Code Article 250 and references therein.
 - 3. California Electrical Code Article 800.
- B. In the event of conflicting requirements, California Electrical Code requirements shall prevail.

3.02 GENERAL

- A. Provide Grounding and Bonding according to the most restrictive requirements of:
 - 1. ANSI-J-STD-607-B.
 - 2. California Electrical Code Article 250 and references therein.
 - 3. California Electrical Code Article 800.
- B. In the event of conflicting requirements, California Electrical Code requirements shall prevail.
- C. Point of Connection
 - 1. Under Work of this Section, make connections to Communications Ground Busbars provided under Work of Division 26, , as applies.
 - 2. Install busbars per manufacturer's instructions and at locations shown on the plans. If locations are unclear, apply for and conform to direction from the University's Representative.

- D. Routing
 - 1. Bonding conductors shall be continuous and routed in as direct a route as possible to the point of termination while adhering to the following: No bonding conductor shall vertically traverse a wall except at wall corners.
- E. Mechanical Connections
 - 1. Make connections bare metal to bare metal.
 - 2. At point of connection if device to be connected to does not provide dedicated unpainted grounding lug, remove paint to bare metal, make grounding or bonding connection, and apply touch up paint.
 - 3. Clean ground bars prior to terminating bonding conductors
 - 4. Torque threaded fasteners to manufacturer's recommended values.
- F. Compression Connections
 - 1. Make compression connections with the lug or fitting manufacturer's recommended tooling, with the tooling set to the recommended force and stroke.
- G. Communications Raceways and Sleeves
 - 1. Bond metallic raceway and sleeves to the Communications Ground Busbar at the Communications Room that serves the related Communications Receptacle.
 - 2. Where a metallic raceway connects 2 or more Communications Rooms, bond to the Communications Ground Busbar at each.
- H. Cable Tray and Cable Runway
 - 1. Coordinate with the Work of Section 27 05 36 - Cable Trays for Communications Systems
 - 2. Provide manufacturer's bonding clips, plates or jumpers as required to comply with the UL Classified conditions for use as an equipment grounding conductor.
 - 3. Bond the Cable Runway to the Communications Ground Busbar at the Communications Room served.
- I. Cable Shields
 - 1. Comply with National Electrical Code Article 800.
- J. Protector Fields
 - 1. Comply with National Electrical Code Article 800.
- K. Communications cabinets and enclosures
 - 1. Bond each cabinet to the Communications Ground Busbar at the Telecommunications Room.
- L. Emergency/Information Telephone enclosures
 - 1. Bond as detailed on Communications Drawings.
- M. Communications Broadband Systems
 - 1. Comply with National Electrical Code Article 820.
 - 2. Ground Broadband passives as shown on Communications Drawings.

3.03 LABELING

- A. All labels shall be permanent, computer-generated and nonmetallic, printed with wording in high contrast to the background. Comply with Section 27 05 53 - Identification for Communications Systems.
- B. Each telecommunications bonding conductor shall be labeled as close as practicable to its point of termination in a readable position. Labels shall have:
 - 1. The statement, "If this connector or cable is loose or must be removed, please call the building telecommunications manager".
 - 2. An identification label providing the source and destination of the grounding conductor.
 - 3. Conductors contained completely within one room need not have the source and destination label.
 - 4. Instead, label the busbar at each connection with the name of bonded equipment (rack, tray, etc.) connected at that point.

- C. The BCT, or the conduit containing it, shall be labeled:
 - 1. At the TMGB with tag or adhesive label that states "Building Conductor for Telecommunications (BCT) to Main Electrical Service Ground Connection".
 - 2. At the main electrical service ground connection with tag or adhesive label that states "Building Conductor for Telecommunications (BCT) to Telecommunications Main Grounding Busbar (TMGB)".

3.04 TESTING

- A. All grounding connections shall be tested for continuity and resistance after installation but prior to substantial completion. The telecommunications contractor is to invite the District's Representative to witness a portion of this testing while it is being performed.
- B. The test performed shall use an earth ground resistance tester that is configured for a continuity test, otherwise known as a two-point test or a "dead earth" test. Tests shall be conducted between the electrical entrance ground and the TMGB as well as at each TGB. This resistance shall be less than 0.05 Ohms.

3.05 GROUNDING AND BONDING OUTSIDE CABLE PLANT (OSP)

- A. Underground Communications Structure Ground Rods
 - 1. Ground rods shall be installed at new communications handholes, vaults and pullboxes installed by the work of this Project. A ground rod shall be installed at new communications handholes, vaults, manholes and pullboxes installed by the work of this Project, or at existing underground structures used by the work of this Project lacking a ground rod.
 - a. Provide two ground rods at maintenance holes.
 - b. Elsewhere provide one ground rod.
 - 2. Ground rods shall be driven into the earth before the manhole floor is poured so that approximately 4 inches of the ground rod will extend above the manhole floor. When precast concrete manholes are used, the top of the ground rod may be below the manhole floor and a No. 1/0 AWG ground conductor brought into the manhole through a watertight sleeve in the manhole wall.
 - 3. Ground rods installed in manholes, handholes, or concrete pullboxes shall be connected to cable racks, cable-pulling irons, the cable shielding, metallic sheath, and armor at each cable joint or splice by means of a No. 4 AWG braided tinned copper wire. Connections to metallic cable sheaths shall be by means of tinned terminals soldered to ground wires and to cable sheaths.
 - a. Care shall be taken in soldering not to damage metallic cable sheaths or shields. Ground rods shall be protected with a double wrapping of pressure-sensitive plastic tape for a distance of 2 inches above and 6 inches below concrete penetrations.
 - b. Grounding electrode conductors shall be neatly and firmly attached to manhole or handhole walls and the amount of exposed bare wire shall be held to a minimum.
- B. Underground Cable Bonding
 - 1. Cables used in underground conduit systems have either an outer metallic sheath or a plastic sheath. Cables with an outer metallic sheath shall be bonded at each Maintenance Hole (MH). Cables with an outer plastic sheath shall be bonded at MHs where a splice is made. When using OSP cable for a LAN drop, splices should not be made.

END OF SECTION

SECTION 270529

HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, and services to completely execute the provision of communications supports and cable hook system as described in this specification, including but not limited to:
 - 1. Strut supports
 - 2. Cable Hooks (J-hooks)
 - 3. Beam clamps
 - 4. Concrete Fasteners
 - 5. Touch-Up Materials
 - 6. Conduit supports.
 - 7. Equipment supports.
 - 8. Fastening hardware.
- B. Related work: Consult all other Sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.
 - 1. Section 27 05 00 - Common Work Results for Communications
 - 2. Section 27 05 26 - Grounding and Bonding for Communications Systems
 - 3. Section 27 05 33 - Conduits and Backboxes for Communications Systems

1.02 SYSTEM DESCRIPTION

- A. Provide devices specified in this Section and related Sections for support of communications equipment specified for this Project.
- B. Provide support systems that are adequate for the weight of equipment, conduit and wiring to be supported.

1.03 REFERENCES

- A. American Society For Testing and Materials (ASTM)
 - 1. ASTM A123/A123M-02 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - 2. ASTM A153/A153M-04 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - 3. ASTM B633-98e1 Specification for Electro-deposited Coatings of Zinc on Iron and Steel.
 - 4. ASTM A653/A653M-04a Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. American National Standards Institute (ANSI)
 - 1. ANSI/TIA-568-C.0, Generic Telecommunications Cabling for Customer Premises, 2009
 - 2. ANSI/TIA-568-C.1, Commercial Building Telecommunications Cabling Standard, 2009
 - 3. ANSI/TIA-568-C.2, Balanced Twisted-Pair Telecommunication Cabling and Components Standard, published 2009
 - 4. ANSI/TIA-568-C.3, Optical Fiber Cabling Components Standard, published 2008, plus errata issued in October 2008.
 - 5. ANSI/ TIA 569-C (2012) Telecommunications Pathways and Spaces
- C. National Fire Protection Association
 - 1. NFPA 70, National Electrical Code

1.04 SUBMITTALS

- A. Conform with the requirements of Section 01 33 00 - Submittal Procedures and Section 27 05 00 - Common Work Results for Communications and the following:

1.05 QUALITY ASSURANCE

- A. All materials, equipment and parts comprising the units specified herein shall be new and unused, and of current manufacturer.
- B. Cable hooks shall be listed and labeled by Underwriters Laboratories (UL) as required.
- C. Cable hooks shall have the manufacturers name and part number stamped in the part itself for identification.

PART 2 PRODUCTS

2.01 SUPPORTING DEVICES

- A. General
 - 1. Supports to be sized to suit load and selected to match mounting conditions
- B. Manufacturers
 - 1. Equal products by the following manufacturers will be considered providing that all features of the specified product are provided:
 - a. Concrete fasteners:
 - 1) Phillips "Red-Head".
 - 2) Remington.
 - 3) Ramset.
 - 4) Hilti
 - 5) Simpson Strong-Tie
 - 6) or equal.
 - b. Concrete inserts and construction channel:
 - 1) Unistrut Corp.
 - 2) GS Metals "Globe Strut."
 - 3) Thomas & Betts "Kindorf" Corp.
 - 4) Or equal.
 - c. Conduit straps:
 - 1) O-Z/Gedney.
 - 2) Erico "Caddy" Fastening Products.
 - 3) Thomas & Betts "Kindorf" Corp.
 - 4) Or equal.
 - d. Beam Clamps
 - 1) Cooper B-Line
 - 2) SuperStrut
 - 3) Unistrut
 - 4) or equal
 - e. Aircraft Cable Sway Braces
 - 1) Mason Industries
 - 2) M.W. Sausse/Vibrex
 - 3) Loos & Company, Inc.
 - 4) or equal.
- C. Concrete Fasteners
 - 1. Furnish post-installed concrete anchors as required. Each post-installed anchor shall have an ICC-ES evaluation report stating that the product is compliant with the current edition of the CBC and the intended conditions of use.
 - 2. Provide expansion-shield type concrete anchors.
 - 3. Provide powder driven concrete fasteners with washers. Obtain approval from District's Representative prior to use.
- D. Concrete Inserts
 - 1. Provide pressed galvanized steel, concrete spot insert, with oval slot capable of accepting square or rectangular support nuts of ¼ inch to ½ inch diameter thread for rod support.

- E. Aircraft cable sway braces
 - 1. Steel rope sized to meet load.
- F. Construction Channel:
 - 1. Construction:
 - a. 1-5/8" square galvanized channel formed from U.S.S.G No. 12 or 0.109 inch cold formed steel with 17/32-inch diameter bolt holes, and 1-1/2 inch on center in the base of the channel.
 - b. 10 foot sections.
 - 2. All supporting materials by same manufacturer.
- G. Beam Clamps
 - 1. Malleable iron electro-galvanized steel beam clamps selected to match building structural steel members.
- H. Conduit Straps
 - 1. One hole strap, steel or malleable iron, with malleable iron clamp-back spacer for surface mounted wall and ceiling applications.
 - a. Use malleable strap with spacers for exterior and wet locations.
 - b. Use steel strap without spacers for interior locations.
 - 2. Steel channel conduit strap for support from construction channel.
 - 3. Steel conduit hanger for pendant support with threaded rod
 - 4. Steel wire conduit support strap for support from independent #12 gauge hanger wires.
- I. Threaded rods, couplings, screws and nuts:
 - 1. Electrolytically coated with zinc, 2 oz. zinc per square foot of surface, ASTM A123 or A153.
- J. Miscellaneous Parts
 - 1. Hot dipped galvanized after fabrication; after cutting, de-burring and hole drilling. Coated with zinc, 2 oz. zinc per square foot of surface, ASTM A123 or A153.
- K. Paint/Tape for Touch-up:
 - 1. Zinc: CRC "Zinc-It", Glyptal, Enterprise Galvanizing "Galambra", or equal.

2.02 CABLE HANGERS

- A. Ceiling Hung J-Hooks
 - 1. Drawing Reference(s):
 - a. WMJ
 - b. ACJ
 - 2. Features/Functions/Construction
 - a. Specifically intended to carry the load of up to 50 communications cables without applying excess forces to cables at bottom of bundle.
 - b. Integral broad bottom edge to spread cable load with flat bottom and provide a minimum of 1-5/8 inch cable bearing surface.
 - c. Integral hanger rod attachment hardware at top.
 - d. Load rated for application.
 - e. Incorporates smooth 90-degree radiused edges to prevent snagging cable jackets on installation.
 - f. Designed so the mounting hardware is recessed to prevent cable damage.
 - g. Integral mechanical cable latch retainer to provide containment of cables within the hook. The retainer shall be removable and reusable.
 - h. Suitable for direct attachment to walls, hanger rods, beam flanges, purlins, strut, floor posts, etc. to meet job conditions.
 - i. Multi-tiered cable hooks to be used where required to provide separate cabling compartments, or where additional capacity is needed.
 - j. Finishes:
 - 1) Cable hooks for non-corrosive areas shall be pre-galvanized steel, ASTM A653. Where additional strength is required, cable hooks shall be spring steel with a

- zinc-plated finish, ASTM B633, SC3.
- 2) Cable hooks for corrosive areas shall be stainless steel, AISI Type 304.
- 3. Manufacturer
 - a. Cooper B-Line series BCH21, BCH32, BCH64
 - b. Caddy/Erico CableCat
 - c. or equal.

PART 3 EXECUTION

3.01 GENERAL

- A. The District's Representative reserves the right to request additional supports where in their sole opinion said supports are required. Any additional supports shall be installed at no additional cost to the District.

3.02 EXAMINATION

- A. Thoroughly examine site conditions for acceptance of supporting device installation to verify conformance with manufacturer and specification tolerances. Do not commence with installation until all conditions are made satisfactory.

3.03 PREPARATION

- A. Coordinate size, shape and location of concrete pads required for equipment installation with Division 3, Cast-in-place Concrete Specification.
- B. Layout support devices to maintain headroom, neat mechanical appearance and to support the equipment loads.
- C. Where shown on the Drawings or Specifications, install freestanding communications equipment on concrete pads.

3.04 INSTALLATION

- A. Furnish and install supporting devices as noted throughout Division 27.
- B. Communications device and conduit supports shall be independent of all other system supports that are not structural elements of the building, unless otherwise noted.
- C. Fasten hanger rods, conduit clamps, outlet and junction boxes to building structure using precast inserts, expansion anchors, preset inserts or beam clamps.
- D. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster or gypsum board partitions and walls.
- E. Use expansion anchors or preset inserts in solid masonry walls.
- F. Use self-drilling anchors, expansion anchor, or preset inserts on concrete surfaces.
- G. Use sheet metal screws in sheet metal studs and wood screws in wood construction.
- H. Do not fasten supports to piping, ductwork, mechanical equipment, conduit, or acoustical ceiling suspension wires.
- I. Do not drill structural steel members unless first approved in writing by the District's Representative.
- J. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.
- K. Install surface-mounted cabinets with minimum of four anchors. Provide additional support backing in stud walls prior to sheet rocking as required to adequately support cabinets and panels.
- L. Bridge studs top and bottom with channels to support flush mounted cabinets and panelboards in stud walls.

3.05 ERECTION OF METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal fabrications accurately in location, alignment, and

elevation to support and anchor electrical materials and equipment.

- B. Field Welding: Comply with AWS "Structural Welding Code."

3.06 WOOD SUPPORTS

- A. Cut, fit, and place wood grounds, nailers, blocking, and anchorage accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

3.07 ANCHORAGE

- A. Conform with the means of anchorage described in the DSA approved Contract Documents

3.08 DISTRIBUTION PATHWAY VIA CEILING HUNG CABLE HOOKS (J-HOOKS):

- A. Void, Plenum or Suspended Ceiling Exposed Cable Installation. Where drawings specifically show or permit use of exposed cable installation in voids, conform to the most restrictive requirements of Code, TIA-569-C and this Section.
- B. Provide support for all cabling. Do not place or attach directly to T-bar grid, concealed spline grid, flexible or rigid ductwork, HVAC registers, sprinkler piping or fixtures, light fixtures or building structure. Conform to the National Electric Code.
- C. Placement:
1. All pathways created by ceiling hung cable hooks shall be reviewed by the District's Representative prior to installation.
 2. Ceiling hung cable hooks and cabling supported by same shall not obscure access to access doors, hatches, air dampers, valves, filter sections, VAV boxes, cable trays, junction boxes, pull boxes or similar areas of access required by other trades.
 3. All ceiling hung cable hooks shall be mounted close enough together such that upon completion of the station cable installation a minimum amount of cable droop occurs between adjacent rings. The distance between supporting rings shall not exceed 48 inches or as required by the current edition of TIA-569-C.
- D. Refer to the separation requirements listed in Section 27 15 00 - Communications Horizontal Cabling for minimum distances from electrical power and other electro-magnetic sources.
- E. Follow manufacturer's recommendations for allowable fill capacity for each size of cable hook.
1. Cable hooks shall be capable of supporting a minimum of 30 pounds with a safety factor of 3.
 2. Spring steel cable hooks shall be capable of supporting a minimum of 100 pounds with a safety factor of 3 where extra strength is required.
 3. Where aggregate cable bundle supported by ceiling hung cable hooks exceeds either the rated cable or weight load limit of the ceiling hung cable hook system, provide ceiling basket tray - Type CTW - as specified in Section 27 05 36.

END OF SECTION

SECTION 270533
CONDUITS AND BACKBOXES FOR COMMUNICATIONS SYSTEMS

GENERAL**1.01 SCOPE OF WORK:**

- A. Provide telecommunications pathways in accordance with ANSI/TIA-569-C, as specified in this Section and as shown on the plans. Provide system furniture pathways in accordance with UL 1286.
 - 1. Provision of all low voltage Communications Systems Pathway, including:
 - a. Rigid steel conduit and fittings.
 - b. PVC insulated rigid steel conduit and fittings.
 - c. Intermediate metal conduit and fittings.
 - d. Electrical metallic tubing and fittings.
 - e. Flexible metallic conduit and fittings.
 - f. Liquidtight flexible metallic conduit and fittings.
 - g. Miscellaneous conduit fittings and products.
 - 2. Terminal cabinets and pull boxes
 - 3. Device Boxes
 - 4. TelePower Poles
 - 5. Wireless Access Point Enclosures,
- B. Provide fire penetration sealant systems at rated wall and floor/ceiling penetrations and where indicated.
- C. At Hazardous Occupancies, installation conforms to the requirements of National Electric Code for Class and Division rating of spaces.

1.02 RELATED WORK IN OTHER SECTIONS:

- A. Related work: Consult all other Sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.
 - 1. Division 1: Cutting and patching.
 - 2. Section 27 05 00 - Common Work Results for Communications.
 - 3. Section 27 05 26 - Grounding and Bonding for Communications Systems
 - 4. Section 27 05 29 - Hangers and Supports for Communications Systems
 - 5. Section 27 05 33 - Conduits and Backboxes for Communications Systems
 - 6. Section 27 05 36 - Cable Trays for Communications Systems
 - 7.

1.03 REFERENCES

- A. Usage: In accordance with Division 1.
 - 1. American National Standards Institute (ANSI)
 - a. ANSI C80.1 1994 Rigid Steel Conduit - Zinc Coated
 - b. ANSI C80.3 1991 Electrical Metallic Tubing - Zinc Coated
 - 2. American Society For Testing and Materials (ASTM)
 - a. ASTM E 84 Surface Burning Characteristics of Building Materials
 - b. ASTM E 119 Fire Tests of Building Construction and Materials
 - c. ASTM E 814 Fire Tests of Penetration Firestop Systems
 - 3. BICSI
 - a. Telecommunications Distribution Methods Manual (TDMM)
 - b. Information Transport Systems Installation Methods Manual (ITSIMM)
 - 4. National Electrical Manufacturers Association (NEMA)
 - a. NEMA 250-2003 Enclosures for Electrical Equipment (1000 Volts Maximum)

- b. NEMA FB 1 (ANSI/NEMA FB 1-2003) Fittings, Cast Metal Boxes and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable
 - c. FB 2.10 2000 Selection and Installation Guidelines For Fittings For Use With Non-Flexible Metallic Conduit Or Tubing (Rigid Metal Conduit, Intermediate Metal Conduit, And Electrical Metallic Tubing).
 - d. FB 2.20 2000 Selection and Installation Guidelines for Fittings for use with Flexible Electrical Conduit and Cable
 - e. NEMA ICS 6 1988 (Rev. 1) Enclosures for Industrial Control and Systems
 - f. NEMA OS 3-2002 Selection and Installation Guidelines for Electrical Outlet Boxes.
 - g. NEMA RN 1-1998 Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
 - h. NEMA TC 7 2000 Smooth Wall Coilable Polyethylene Electrical Plastic Duct
 - i. NEMA TC 13 2000 Electrical Nonmetallic Tubing (ENT).
 - j. NEMA TC 14 1984(R 1986) Filament-Wound Reinforced Thermosetting Resin Conduit and Fittings
5. National Fire Protection Association
- a. NFPA 101 Life Safety Code
6. Underwriters Laboratories, Inc. (UL)
- a. UL 1 2000 Flexible Metal Conduit
 - b. UL 6 2004 Electrical Rigid Metal Conduit - Steel
 - c. UL 50 (1995; R 1999, Bul. 2001) Enclosures for Electrical Equipment
 - d. UL 263 Fire Tests of Building Construction and Materials
 - e. UL 360 1986 (Bul. 1991) (R 1993) Liquid-Tight Flexible Steel Conduit
 - f. UL 514A 1991 (R 2004) Metallic Outlet Boxes
 - g. UL 514B 1989 (R 2004) Conduit, Tubing and Cable Fittings
 - h. UL 514C 1996 (R 2000) Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers.
 - i. UL 651 1989 (R 1989) (Bul. 1993) Schedule 40 and 80 Rigid PVC Conduit.
 - j. UL 723 Surface Burning Characteristics of Building Materials
 - k. UL 797 1993 (R 2004) Electrical Metallic Tubing - Steel
 - l. UL 1242 1983 (R1993) (Bul. 1993) Intermediate Metal Conduit.
 - m. UL 1286 (1999; R 2001, Bul. 2002) Office Furnishings
 - n. UL 1479 Fire Tests of Through Penetration Firestops
 - o. UL Fire Resistance Directories

1.04 SUBMITTALS

- A. Conform with the requirements of Division 1 and Section 27 05 00 - Common Work Results for Communications and the following:
 - 1. Where required, Contractor shall complete and submit for review to District's Representative, a Coring/Sawcutting Summary Description and obtain written authorization for District prior to the commencement of any cutting or coring activities. Contractor shall include all pertinent information with the Coring/Sawcutting Summary Description and submit with detailed work plan fourteen (14) days prior to desired coring/cutting activity.
 - a. Coring/Saw-cutting Summary Description to identify means of protection of:
 - 1) Structural integrity of any element of Project.
 - 2) Integrity of weather-exposed or moisture-resistant element.
 - 3) Efficiency, maintenance, or safety of any operational element.
 - 4) Visual qualities of sight-exposed elements.
 - 5) Work of District.
 - 6) Utility supply, drains, fire alarm, communication.
 - b. Include in request:
 - 1) Identification of Project, including District's Project Name and A/C

- number. Location and description of affected Work.
- 2) Necessity for cutting and patching.
- 3) Description of proposed work, and products to be used, methods to be employed to locate existing structural members.
- 4) Alternatives to cutting and patching.
- 5) Effect on work of District.
- 6) Date and time work will be executed.
- 7) Location on form for District's Representative to provide direction.

1.05 QUALITY ASSURANCE

- A. All materials, equipment and parts comprising the units specified herein shall be new and unused, and of current manufacturer.
- B. Only products and applications listed in this Section may be used on the project unless otherwise submitted and approved by the District's Representative.
- C. Comply with Section 27 00 00 Communications General Requirements.
- D. Firestopping installations shall use only complete systems purchased as a whole unit. Firestopping using individual material components or parts/materials collected from multiple kits is prohibited.
- E. The firestopping systems used shall be tested and qualified for the purpose by an independent Nationally Recognized Testing Laboratory. Mortar, grout and similar substances shall not be used to seal telecommunications openings in a fire-rated wall, ceiling or floor.
- F. Mortar may be used to fill the annular space around a sleeve only if such material and application meets the requirements of the California Building Code Section 713, paragraph 713.3.1.
- G. Firestopping products shall bear the classification marking of the qualified testing and inspection agency.
- H. Installation shall be by qualified and trained technicians. The Contractor shall, at their expense, replace entirely any firestop system installed by an uncertified installer. Minimum installer qualifications are as follows:
 - 1. FM Research approved in accordance with FM AS 4991.
 - 2. Certified, licensed, or otherwise qualified by the firestopping manufacturer as having the necessary staff, training and a minimum of 1 year experience in the installation of the manufacturer's products per specified requirements.
- I. A manufacturer's willingness to sell its firestopping products to the Contractor or to an installer engaged by the Contractor does not in itself confer qualification on the Installer. The Installer shall have been trained by a direct representative of the manufacturer (not a distributor or sales agent) in the proper selection and installation procedures.

PART 2 PRODUCTS

201 GENERAL

- A. Provide the following types of conduit systems listed by their commonly used generic name.

202 RACEWAY

- A. Manufacturers:
 - 1. Raceway:
 - a. Allied Tube and Conduit Co.
 - b. Triangle PWC, Inc.
 - c. Western Tube and Conduit Corp.
 - d. Spring City Electrical Manufacturing Co.
 - e. Occidental Coating Co. (OCAL).
 - f. Alflex Corp.
 - g. American Flexible Metal Conduit Co.

- h. Anaconda.
 - i. Or equal.
 - 2. Fittings:
 - a. Appleton Electric Co.
 - b. OZ/Gedney.
 - c. Thomas & Betts Corp.
 - d. Spring City Electrical Manufacturing Co.
 - e. Occidental Coating Co. (OCAL).
 - f. Carlon.
 - g. or equal.
 - B. Rigid Steel Conduit.
 - 1. Drawing and Spec Reference:RSC.
 - 2. Construction:
 - a. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.1 and UL 6.
 - b. Standard threaded couplings, locknuts, bushings, and elbows: Only materials of steel or malleable iron are acceptable. Locknuts shall be bonding type with sharp edges for digging into the metal wall of an enclosure.
 - c. Three piece couplings: Electroplated, cast malleable iron.
 - d. Insulating bushings: Threaded polypropylene or thermosetting phenolic rated 150 degree C minimum.
 - e. Insulated grounding bushings: Threaded cast malleable iron body with insulated throat and steel "lay-in" ground lug with compression screw.
 - f. Insulated metallic bushings: Threaded cast malleable iron body with plastic insulated throat rated 150 degrees C.
 - g. All fittings and connectors shall be threaded.
 - C. Coated Rigid Steel Conduit:
 - 1. Drawing and Spec Reference: CRSC.
 - 2. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.1 and NEMA RN-1 with nominal 40 mil thermoplastic vinyl coating, heat fused and bonded to the exterior of the conduit.
 - 3. Fittings:
 - a. Conduit couplings and connectors shall be as specified for galvanized rigid steel conduit and shall be factory PVC coated with an insulating jacket equivalent to that of the coated material.
 - b. Fittings over-sleeve to extend 1 conduit diameter or 1-1/2" beyond fitting, whichever is less.
 - 4. Performance:
 - a. Tensile Strength: 3500 psi.
 - 5. Approvals:
 - a. NEMA RN1 (Type 40 - 40 mils thick)
 - b. CalTrans Type 2
 - 6. Manufacturers:
 - a. Plastibond by RobRoy Industries.
 - b. Occal-40 by Occidental Coating Company.
 - c. KorKap by Plastic Applicators.
 - d. Ocal-Blue
 - e. or equal.
 - D. Intermediate Metal Conduit
 - 1. Drawing Reference: IMC
 - 2. Conduit: Hot dip galvanized steel meeting the requirements of NEC Article 345 and conforming to ANSI C80.6 and UL 1242.

3. Fittings: Conduit couplings, connector and bushing shall be as specified for galvanized rigid steel conduit. Integral retractable type IMC couplings are also acceptable.
- E. Electrical Metallic Tubing.
1. Drawing and Spec Reference: EMT.
 2. Conduit: Shall be formed of cold rolled strip steel, electrical resistance welded continuously along the longitudinal seam and hot dip galvanized after fabrication. Conduit shall conform to ANSI C80.3 specifications and shall meet UL classifications.
 3. Set screw type couplings: Electroplated, steel or cast malleable iron, UL listed concrete tight. Use set screw type couplings with four setscrews each of conduit sizes over 2 inches. Setscrews shall be of case hardened steel with hex head and cup point to firmly seat in wall of conduit for positive grounding.
 4. Set screw type connectors: Electroplated steel or cast malleable iron UL listed concrete tight with male hub and insulated plastic throat, 150 degree C temperature rated. Setscrew shall be same as for couplings.
 5. Raintight couplings: Electroplate steel or cast malleable iron; UL listed raintight and concrete tight, using gland and ring compression type construction.
 6. Raintight connectors: Electroplated steel or cast malleable iron, UL listed raintight and concrete tight, with insulated throat, using gland and ring compression type construction.
- F. Flexible Conduit:
1. Drawing Reference: FLEX
 2. Construction:
 - a. Flexible steel, zinc coated on both inside and outside by hot-dipping process.
 - b. Interlocking spirally wound continuous steel strip.
 - c. 3/4" minimum size.
 3. Fittings: Connectors shall be of the single screw clamp variety with steel or cast malleable iron bodies and threaded male hubs with insulated throats. Exception: Pressure cast screw-in connectors shall be acceptable for fixture connection in suspended ceilings and cut-in outlet boxes within existing furred walls.
 4. Approvals:
 - a. UL 1
- G. Liquidtight Flexible Metallic Conduit
1. Drawing Reference: Liquidtight
 2. Conduit: Shall be fabricated in continuous lengths from galvanized steel strips, interlocking spirally wound, covered with extruded liquidtight jacket of polyvinyl chloride (PVC) and conforming to UL 360. Provide conduit with a continuous copper-bonding conductor wound spirally between the convolutions.
 3. Fittings: Connector body and gland nut shall be of cadmium plated steel or cast malleable iron, with tapered, male, threaded hub; insulated throat and neoprene "O" ring gasket recessed into the face of the stop nut. The clamping gland shall be of molded nylon with an integral brass push-in ferrule.

203 MISCELLANEOUS CONDUIT FITTINGS AND PRODUCTS

- A. General
1. UL 514B.
 2. Listed in UL Electrical Construction Materials List.
- B. Conduit Fittings, Insulated Throat Grounding Bushings
1. Description
 - a. Threaded for Rigid Steel Conduit and Intermediate Metal Conduit.
 - b. UL Listed for use with copper conductors.
 - c. Thermoplastic insulated liner for 105 degrees Celsius.
 - d. Body of malleable iron, zinc plated; or die cast zinc.
 2. Manufacturer
 - a. Thomas & Betts (Steel City) BG-801 Series

- b. O-Z/Gedney
 - c. or equal.
- C. Watertight conduit entrance seals: Steel or cast malleable iron bodies and pressure clamps with PVC sleeve, neoprene sealing grommets and PVC coated steel pressure rings. Fittings shall be supplied with neoprene sealing rings between the body and PVC sleeve.
- D. Watertight cable sealing bushings: One piece, compression molded sealing ring with PVC coated steel pressure disks, stainless steel sealing screws and zinc plated cast malleable iron locking collar.
- E. Expansion fittings: Multi-piece unit comprised of a hot dip galvanized malleable iron or steel body and outside pressure bussing designed to allow a maximum of 4" conduit movement (2" in either direction). Furnish with external braid tinned copper bonding jumper. Unit shall be UL listed for wet or dry locations.
- F. Expansion/deflection couplings: Multi-piece unit comprised of a neoprene sleeve with internal flexible tinned copper braid attached to bronze end couplings with stainless steel bands. Coupling shall accommodate .75-inch deflection, expansion, or contraction in any direction, and allow 30-degree angular deflections. Flexible, corrosion-resistant, watertight, moisture and heat resistant molded rubber jacket and stainless steel jacket clamps. Unit shall comply with UL467 and UL514.
- 1. Manufacturer:
 - a. OZ/Gedney Type DX
 - b. Steel City Type EDF
 - c. or equal.
- G. Standard products not herein specified:
- 1. Submit for review a listing of standard electrical conduit hardware and fittings not herein specified prior to use or installation, i.e. locknuts, bushings, etc.
 - 2. Listing shall include manufacturers name, part numbers, and a written description of the item indicating type of material and construction.
 - 3. Miscellaneous components shall be equal in quality, material, and construction to similar items herein specified.
- H. Hazardous area fittings: UL listed for the application.

204 BOXES AND ENCLOSURES

- A. Junction and Device Boxes
- 1. Drawing References: As shown on Symbol Schedule
 - 2. Construction:
 - a. General
 - b. One or two piece welded knockout boxes.
 - 1) Interior
 - (a) UL 514A, cadmium or zinc-coated 1.25 oz/sq. ft., if ferrous metal.
 - (b) UL 514C approved if non-metallic.
 - 2) Exterior - Conform to the Junction and/or PullBox construction scheduled on the Plans. Where construction not otherwise scheduled or noted on the plans, conform to the following
 - (a) Cast iron or aluminum with threaded hubs and mounting lugs.
 - (b) Gasketed cover with spring lid.
 - c. If size not otherwise noted, at least 4-11/16" Square by 2-1/8" deep, or Code minimum size, whichever is larger. Where Category 6A devices are terminated, minimum size to be 5" square (5S) by 3" deep.
 - d. Provide complete with approved type of connectors and required accessories, including attachment lugs or hangers. Provide raised device covers as required to accept scheduled device.
 - e. Concealed/Flush Mounted

- 1) Provide Flush Mount Device Boxes unless otherwise indicated.
- 2) At gypsum wall assemblies, hollow masonry, tile walls and plaster walls, provide with device rings as required.
- f. Surface Mounted
 - 1) Match Backbox to Device plate such that no sharp edges or voids remain exposed to the public.
- g. Concrete floor embedded:
 - 1) Cast iron concrete pour boxes with screwed brass cover, unless otherwise noted.
 - 2) Cadmium plated screw cover attachment at least 6" on center.
3. Approvals.
 - a. UL 514A
 - b. UL 514C, if non-metallic
4. Manufacturers:
 - a. Interior:
 - 1) Steel City.
 - 2) Randl
 - 3) Bowers
 - 4) Thomas and Betts
 - 5) or equal.
 - b. Exterior, exposed with cover of same construction.
 - 1) Appleton
 - 2) Pyle-National
 - 3) or equal.
 - c. Other conditions:
 - 1) Any meeting approvals and requirements.

205 TERMINAL BOXES, PULL CANS AND ENCLOSURES

- A. Terminal Cabinets:
 1. Drawing Reference: As Scheduled.
 2. Construction:
 - a. General
 - 1) Interior dimensions not less than those scheduled.
 - 2) Door face to be not less than 95% of panel interior dimensions.
 - 3) Provide with 3/4" fire retardant treated ply backboard where device termination scheduled/required within enclosure
 - b. Interior Application
 - c. Zinc Coated Sheet Steel, code gauge with standard concentric knockouts for conduit terminations.
 - d. Finish: Manufacturer's standard gray baked enamel finish.
 - e. Flush mounted enclosure Covers: Trim fitted, continuous hinged steel door, flush catch - lockable and keyed to match. Screw fastened doors not acceptable.
 - f. Surface mount cabinets shall be furnished with screw cover trim, flush hinged door and shall not be less than 6 inches deep.
 - g. Exterior Applications
 - 1) Door and lock arrangement as required by manufacturer to maintain specified rating.
 3. Mounting:
 - a. Flush mount cabinets shall be furnished with concealed trim clamps and shall be not less than 4 inches deep or as scheduled, whichever is greater
 4. Approvals
 - a. Interior Applications:
 - 1) NEMA 250 Type 1, unless otherwise noted. Refer to plans and schedules.
 - b. Exterior Applications:

- 1) NEMA 250 Type - As scheduled, not less than NEMA 3R. Provide NEMA 4 and 4X where scheduled or where required to match installation conditions.
5. Manufacturers, Metallic Enclosures:
 - a. B-Line Electrical Enclosures
 - b. Circle AW Products.
 - c. Hammond
 - d. Henessey.
 - e. Hoffman.
 - f. Myers Electric Products
 - g. Rittal.
 - h. or equal.
6. Manufacturers, Non-metallic Enclosures
 - a. Stahlin Enclosures
 - b. Cabletek
 - c. RMS Electronics, Inc
 - d. STI, Inc
 - e. Vynckier Inc.
 - f. Or equal.

206 THROUGH PENETRATION SEALING SYSTEMS

- A. Through Penetration Sealant Assembly, Re-Enterable (Zero Maintenance)
 1. Drawing Reference: TPSR and as required at all new through penetrations through rated partitions.
 2. Application
 - a. Provide at all locations where open wire communications cabling penetrates fire-rated assemblies in basket tray, cable tray or supported by J-hooks. Zero-maintenance firestop assemblies shall be used when the pathway on one or both sides of the wall, ceiling or floor is open, such as J-hooks or cable tray.
 - b. Communications conduit sleeves through a single fire-rated wall shall not be used. For these applications, a zero-maintenance firestop assembly is required.
 3. Functions
 - a. Cables passing through fire-rated floors or walls shall pass through fire-rated assemblies which can be used by the District's technical staff to add and remove cabling without having to apply or remove putty fill, backing or similar compounds to maintain the necessary fire rating.
 - b. Through penetration system to feature either automatic self adjustment mechanisms, or integral mechanical adjustment mechanisms to permit the District's staff to adapt the assembly to the fill condition without need for supplementary or disposable materials. The assembly shall contain a self-contained sealing system which shall automatically adjust to the installed cable loading and shall permit cables to be installed, removed or retrofitted without the need to adjust, remove or reinstall firestop material.
 - c. Assemblies shall have an F Rating and T Rating equal to the rating of the barrier in which the device is installed, where such is performance is required by Code.
 - d. Assembly size and quantity shall be determined as follows:
 - 1) For round openings, the fill ratio of cabling-to-opening-size shall not exceed 40%, or as dictated by the manufacturer, whichever is more stringent.
 - 2) For rectangular openings, the fill ratio of cabling-to-opening size shall not exceed 50%, or as dictated by the manufacturer, whichever is more stringent.
 - 3) Include in the cabling cross-sectional area enough spare capacity to accommodate 50% growth. Upon commissioning, if adequate spare capacity is not observed, the contractor shall install additional assemblies at their own cost to provide such spare capacity
 4. Approvals:

- a. California State Fire Marshal.
- b. Tested to UL 1479
- c. UL 2043
5. Manufacturers - Select for application:
 - a. Specified Technologies Inc. EZ-Path Fire Rated Pathway
 - b. Wiremold FlameStopper
 - c. Hilti CP 653 Speedsleeve
 - d. or equal.
- B. Firestopping for Conduits and Other Closed Pathways
 1. Approvals: California State Fire Marshal
 2. Tested to UL 1479 or ASTM E814.
 3. Manufacturers:
 - a. Specified Technologies, Inc.
 - b. 3M
 - c. or equal.

210 EXTERIOR JOINT SEALANTS

- A. Exterior Polyurethane Weatherproofing and Control Joint Sealant: ASTM C920, Type S, Grade NS, Class 25, Use NT, M, G, A, and O; single component, chemical curing, non-staining, non-bleeding, non-sagging type; color as selected; use in exterior vertical surfaces such as, but not limited to:
 1. Sealing around exterior wall penetrations required for conduit pathways.
 2. Manufacturers:
 - a. Pecora Corporation; Dynatrol I.
 - b. Sika Corporation, Inc.; Sikaflex 1a.
 - c. BASF (Sonneborne); NP 1.
 - d. Tremco; Dymonic FC.
- B. Joint Sealant Backing
 1. General: Provide sealant backings and accessory materials, including primers, of material and type that are non-staining; are compatible with joint substrates, sealants, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 2. Foam Joint Fillers: Non-gassing, preformed, compressible, resilient, non-staining, non-waxing, non-extruding strips of flexible plastic foam of one of materials indicated below, as recommended by manufacturer for compatibility with their sealant; of size, shape, and density to control sealant depth, prevent three-sided adhesion, provide a surface against which to tool, and otherwise contribute to producing optimum sealant performance:
 - a. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin) or Type B (bicellular material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance and as recommended by sealant manufacturer.
 - b. Elastomeric Tubing Sealant Backings: Flexible cellular rubber tubing complying with ASTM D1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
 - c. Filler Type at EIFS Conditions: Non-gassing, closed-cell polyethylene foam as recommended by EIFS manufacturer.
- C. Miscellaneous Sealant Materials
 1. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from pre-construction joint sealant-substrate tests and field tests. Certify that primer will not permanently stain adjacent joint surfaces.

2. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.
3. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints, to mask off adjacent joint surfaces where sealant is not permanently intended to be applied.
4. Bondbreaker Tape: Polyethylene pressure sensitive adhesive tape, to be used in areas where backer rod cannot fit and where three-sided adhesion is to be avoided.

PART 3 EXECUTION

3.01 CONDUIT APPLICATION

- A. General: Install the following types of conduits and fittings in the locations listed, unless otherwise noted in the drawings:
 1. Exterior, Exposed:
 - a. Type RSC or IMC.
 2. Interior, Exposed, Wet and Damp Locations:
 - a. Type RSC.
 - b. At interior locations over 8 feet above finished floor, EMT with compression fittings acceptable.
 3. Interior, Hazardous Locations
 - a. Type RSC
 - b. Type IMC, where permitted by the CEC.
 4. Interior, exposed or concealed, dry locations:
 - a. RSC or IMC, if exposed or subject to physical abuse.
 - b. EMT, if fully concealed.
 5. Interior, concealed, damp locations, including in masonry walls.
 - a. RSC or IMC
 6. Embedded in Concrete
 - a. RSC or rigid non-metallic conduit.
 - b. PVC Schedule 40 or Type DB-120.
 7. Transition from walls to open plan furniture systems:
 - a. Liquidtight

3.02 GENERAL REQUIREMENTS

- A. Refer to the manufacturer's instructions and conform thereto.
- B. Distribution Pathway via EMT Raceway:
 1. The EMT conduit is to be installed meeting the NEC handbook Article 348 Installation Specifications.
 2. Provide escutcheon plates for all through wall conduit stubs.
 3. All ends of conduits shall be cut square, reamed and fitted with insulated bushing.
 4. All conduit which passes through fire walls shall be sealed with fire stop putty after all station wire has been installed.

3.03 MOUNTING AND INSTALLATION - BOXES AND ENCLOSURES

- A. Conform to the more restrictive of NEMA OS 3-2002 and the following.
- B. Provide backboxes at all communications systems devices. Installation of device plates directly to wall surface without use of a backbox, unless specifically directed on plans, is unacceptable.
- C. The distance between pull boxes shall not exceed 150 feet or more than two 90 degree bends.
- D. Align boxes plumb with floor and surrounding construction. At door frames, locate 4" from frame. Verify placement with District's Representative details to ensure that box clears all trim, etc.
- E. Support and fasten boxes securely. At stud walls use rigid bar hangers, attached to hanger with

stud and nut.

- F. At existing locations, provide cutting, patching and finishing as required to maintain or restore finishes so that resulting installation is integrated into the Architectural decor of the particular location.
- G. Mounting Height: the mounting height of a wall-mounted outlet box is defined as the height from the finished floor to the horizontal center line of the cover plate.
- H. Mount outlet boxes with the long axis vertical. Three or more gang boxes shall be mounted with the long axis horizontal.
- I. Install wiring jacks and outlet devices only in boxes which are clean; free from excess building materials, dirt, and debris.
- J. Install wiring jacks and outlet devices after wiring work is complete.

304 SUPPORT

- A. Provide supports for raceways as specified in Section 27 05 29 - Hangers and Supports for Communications Systems.
- B. All raceways installed in exposed dry locations shall be grouped in a like arrangement and supported by means of conduit straps, wall brackets or trapeze hangers in accordance with Code and the requirements of the this Section. Fasten all hangers from the building structural system.
- C. Provide supports and mounting attachments per the most restrictive of Code and the following.

RACEWAY SIZE (INCHES)	NO OF CABLES IN RUN	LOCATION	SUPPORT SPACING (FEET)	
			RSC	EMT
HORIZONTAL RUNS				
½, ¾	1-2	FLAT CEILING WALL RUNS	5	5
½, ¾	1-2	WHERE ACCESS LIMITED TO BUILDING STRUCTURE	7	7
½, ¾	3≥	ANY LOCATION	7	7
1≥	1-2	FLAT CEILING OR WALL	6	6
1≥	1-2	WHERE ACCESS LIMITED TO BUILDING STRUCTURE	10	10
1≥	3≥	ANY LOCATIONS	10	10
ANY	ANY	CONCEALED	10	10
VERTICAL RUNS				
½, ¾	ANY	EXPOSED	7	7
1, 1-¼	ANY	EXPOSED	8	8
1-1/2≥	ANY	EXPOSED	10	10

- A. Install no more than one coupling or device between supports.
- B. Conduit support
 - 1. As specified in Section 27 05 29 - Hangers and Supports for Communications Systems

305 CUTTING AND PENETRATIONS

- A. Execute all cutting, associated structural reinforcing, and patching/restoring work in a manner to prevent damage to other work and to provide proper surfaces for the installation of materials, equipment, and repairs.
- B. Perform demolition in accordance with ANSI A10.6 "Safety Requirements for Demolition"

- Operations” and NFPA 241 “Standard for Safeguarding Construction, Alteration, and Demolition Operations”, applicable regulatory requirements of public authorities having jurisdiction, the requirements of Division 1 and this specification section.
- C. Do not cut or alter structural members when not indicated without prior approval of the District’s Representative.
 - D. Execute cutting and patching of weather-exposed, moisture-resistant and sight-exposed surfaces by methods to preserve weather, moisture and visual integrity. Employ skilled workers for cutting and patching. Wherever practicable, employ original installer or fabricator providing Work under this Contract to perform cutting and patching for new work.
 - E. Provide temporary support of construction to be cut to ensure structural integrity.
 - F. Perform cutting and patching using methods and materials so as not to void existing warranties.
 - G. Cutting:
 - 1. Cut existing construction to provide for installation of Work. Make new openings neat, as close as possible to profiles indicated and only to extent necessary for new Work.
 - 2. Do not cut or alter structural members without prior consultation with the District’s Representative. Do not damage reinforcing or structural steel to remain. Do not damage electrical conduits, plumbing lines, and other utilities to remain. Restore any damaged work at Contractor’s expense.
 - 3. At concrete, masonry, paving, and other materials where edges of cuts and holes will remain exposed in the completed Work, make cuts using power-sawing and -coring equipment; do not overcut at corners of cut openings. Saw overruns shall not be permitted. Refer to additional concrete coring specific procedures below.
 - H. Adjust and fit products to provide a neat installation.
 - I. Concrete Coring:
 - 1. Cutting work shall include saw-cutting of concrete and any other miscellaneous work, as required, core-drilling of concrete slabs and walls for structural work, or other items, and removal from the premises and site of all broken concrete and debris.
 - 2. Contractor shall use extreme caution not to cut, nick, or break any rebar or post tension systems during execution of work.
 - 3. Contractor shall select and employ a Testing Agency to furnish a pachometer, where required, and take readings for the location of reinforcing steel in existing concrete.
 - a. The selected Testing Agency shall meet with the approval of the District’s Representative.
 - b. Pachometer readings shall be taken by the Contractor’s employed Testing Agency to locate reinforcing steel, including but not limited to rebar and post-tension strand support members, in concrete to be cored and cut.
 - c. The contractor or his testing agency shall mark the locations of the reinforcing steel with bright paint. Mark all reinforcing steel within 3 ft of all cuts and cores, except at slabs on grade and stem walls.
 - d. Submit proposed methods for review by the District’s Representative prior to proceeding as required elsewhere in this Section.
 - e. Cutting work shall be accurately located and shall be closely coordinated with the individual trades requiring such cutting work.
 - f. Cutting work shall be neatly and accurately performed with proper tools and equipment. Cuts shall be of minimum size required for the work.
 - g. Work to remain shall be properly protected to prevent damage from core-drilling and saw-cutting operations. Lubricant to be used with the equipment shall be channeled to prevent damage to work to remain.
 - h. At the completion of work all visible marks shall be removed to the satisfaction of the Construction Manager.
 - J. Gypsum Wall Board Penetrations: Provide circular penetrations maximum 1/8" inch larger than outer diameter of conduit being used. On both sides of the wall fill space between conduit and

wall with joint compound, depth to match gypsum board thickness.

- K. All communications systems conduit openings in walls and floors are the responsibility of the Contractor. Install sleeves shown on the drawings when the concrete is poured. Any openings required after the concrete has set maybe core drilled per the procedures outlined above.
- L. Patching and Restoring Work
 - 1. General
 - a. Patching shall achieve security, strength, and weather protection, as applicable, and shall preserve continuity of existing fire ratings.
 - b. Upon completion of cutting and coring, clean remaining surfaces of loose particles and dust.
 - c. Patch existing construction by filling repairing, refinishing, closing up and similar operations. Patching includes the insertion or projection of other products in or from a surface.
 - d. Patch weather-exposed components in a manner that restores them to a weathertight condition.
 - e. Finish or refinish, as required, cut and patched surfaces to provide an even surface of uniform finish, color, texture, and appearance, matching existing adjacent. Finish complete surface plane, unless otherwise indicated. Over patched wall or ceiling surfaces, finish to nearest cutoff line for entire surface, such as intersection with adjacent wall or ceiling, beam, pilasters or to nearest opening frame, unless otherwise indicated. Finished surfaces shall not present a spotty, touched-up appearance
 - f. Finish or refinish, as required; cut and patch surfaces to match adjacent finishes. Patching shall successfully duplicate undisturbed adjacent finishes, colors, textures, and profiles. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the District's Representative's judgment shall be final.
 - 2. Concrete
 - a. Preparation of Existing Surfaces: Use wire brush and air pressure to clean concrete of laitance, dirt, dust, and loose particles. Surface to received mortar shall be rough and reasonably even.
 - b. Mixing of Materials: Concrete bonding adhesive and patching mortar shall be prepared and mixed in accordance with the manufacturer's specifications and recommendations. Two (2) to five (5) parts sand shall be added to mortar as required to achieve the desired consistency for the type of work involved.
 - c. Patching of Concrete:
 - 1) Where removal of partitions, equipment, and other items has exposed holes in existing concrete floor slabs, fill in holes with new concrete and reinforce as necessary. Prepare slabs as required to provide clean, sound surfaces
 - 2) Patching of concrete work shall be expertly performed with adhesive and mortar materials specified. At completion, patched surfaces shall match adjacent surfaces as closely as possible.
 - 3) Concrete bonding agent and patching mortar shall be applied or installed where indicated on the drawings, or where otherwise required, in accordance with the manufacturer's specifications and recommendations.
 - 4) Where necessary to built-out cut, spalled, or chipped concrete surfaces, mix concrete bonding agent, mortar, and sand into a special mortar, and apply in layers as required to fill out or build up surfaces. Float, trowel, or texture new surfaces to match adjacent surfaces.
 - 5) Repair gravel pockets by cutting out (1 in. min.) to solid surface, form key and apply epoxy concrete adhesive before placing patching mortar; compact into place and neatly finish to exactly match surface texture. Honeycombed areas or gravel pockets which, in the Engineer's opinion, are too large and unsatisfactory for mortar patching as described above are to be cut to solid surfaces, keyed, and coated with epoxy concrete to produce firm bond and solid surface.

- d. Curing: Immediately after finishing patch approved curing compound according to manufacturer's instructions.

3.06 THROUGH PENETRATIONS SEALANT SYSTEMS

- A. At a minimum, follow all manufacturer instructions. In case of discrepancy between manufacturer and contractor requirements, the more stringent shall apply. In the case of conflicting instructions, report any discrepancy to the District's Representative in a timely fashion so as not to impact the construction timeline.
- B. Application: Through Penetration Sealant Assemblies, Renenterable
 1. Zero-maintenance firestop assemblies shall be used when the pathway on one or both sides of the wall, ceiling or floor is open, such as J-hooks or cable tray.
 2. Communications cable tray or ladder rack shall not be continued through a fire-rated wall. Stop the tray or ladder rack, install multiple zero- maintenance firestop assemblies as needed, and continue the tray or ladder rack on the other side. Ensure grounding of the cable tray is continuous through the wall.
 3. Communications conduit sleeves through a single fire-rated wall shall not be used. For these applications, a zero-maintenance firestop assembly is required.
- C. Application: Firestopping for Conduits and Other Closed Pathways
 1. Firestopping is required for all fire-rated penetrations where a communications conduit or other closed pathway penetrates one or more membranes of a fire-rated wall floor or ceiling
 2. Required for all telecommunications outlets located on fire-rated walls. Systems shall be UL CLIV tested
- D. For all penetrations for communications openings through fire-rated walls, floors and ceilings, install the same manufacturer's product for that type of penetration throughout the project.
- E. Coordinate with all other trades prior to installation:
 1. To ensure that through penetration firestop systems are installed according to specified requirements.
 2. To ensure that sizing of openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems is appropriate.
- F. All penetrations through fire-rated building structures (walls, ceilings and floors) shall be sealed with an appropriate firestop system that at least matches the fire rating of the structure. This requirement applies to through penetrations (complete penetration) and membrane penetrations (through one side of a hollow fire-rated structure).
 1. Any penetrating item i.e., riser slots, cables, conduit, cable tray, and raceways, etc. shall be properly firestopped.
 2. Through penetrations shall be sealed on both sides of the structure.
 3. Telecommunications outlet back-boxes installed in fire-rated walls shall be completely enclosed in an appropriate firestopping assembly within the wall.
 4. Conduit sleeves shall not be used for penetrating fire-rated floors, ceilings and walls. A zero-maintenance firestop assembly shall be used instead.
- G. Verify the locations of all fire-rated walls prior to installation.
- H. Firestopping assemblies must make a gas, smoke and water tight seal when activated in a fire.
- I. Multiple cable bundles planned to penetrate a fire-rated wall and entering the same space within 10 feet of each other shall be consolidated in to a single penetration, unless one or both penetrations are membrane penetrations.
- J. Ambient Conditions:
 1. Do not install firestopping products when ambient or substrate temperatures are outside the limitations recommended by the manufacturer.
 2. Do not install firestopping products when substrates are wet due to rain, frost, condensation, or other causes.
 3. Maintain the minimum temperature before, during, and for a minimum 3 days after

installation of materials.

- K. Schedule installation of firestopping after completion of the penetrating item (e.g., conduit) installation but prior to the covering or concealing of openings.
- L. Before beginning installation:
 - 1. Examine and clean the affected surfaces, as they shall be free of dirt, grease, oil, scale, laitance, rust, release agents, water repellants, and any other substances that may inhibit optimum adhesion.
 - 2. Provide masking and temporary covering to protect adjacent surfaces.
 - 3. Do not proceed until unsatisfactory conditions have been corrected.
- M. After installation:
 - 1. Remove equipment, materials, and debris, leaving area in undamaged, clean condition.
 - 2. Clean all surfaces adjacent to sealed openings to be free of excess firestopping materials and soiling as work progresses.
 - 3. Do not cover installed firestopping assemblies until inspected by the District's Representative.
- N. All firestop systems (including the cabling through them) and identification labels shall be installed prior to the District Representative's above-ceiling inspection.
- O. Labeling
 - 1. At all firestop locations, install a permanent label near the firestop on each side of the wall, ceiling or floor. Labels shall be pre-printed and include:
 - a. Manufacturer of the firestop.
 - b. Name of product and UL System Number.
 - c. Name of installer and company name
 - d. Date of installation.
 - e. Rating of the wall/system (F and T ratings).
 - 2. One location may have multiple labels (e.g. for a firestop in the annular space around a conduit penetration and a firestop within the conduit around the cables).
 - 3. Labels shall not be painted over or otherwise obscured or defaced.

307 RACEWAY INSTALLATION, GENERAL

- A. Conduit not otherwise sized shall be selected to provide not greater than 30% fill with the cabling indicated for installation under the work of the Project.
- B. Raceway runs are shown schematically. Install concealed unless specifically shown otherwise. Supports, pull boxes, junction boxes and similar generally not indicated. Provide where designated.
 - 1. Install exposed conduit and raceway parallel and perpendicular to nearby surfaces or exposed structural members, and follow the surface contours. Level and square conduit and raceway runs.
 - 2. Raceway runs shall be mechanically and electrically continuous between all each equipment rack and utility demarcation point, receptacle and/or surface raceway strip, as applies.
 - 3. Each conduit shall enter and be securely connected to a cabinet, junction box, pull box, or outlet by means of a locknut on the outside and a bushing on the inside or by means of a liquid-tight, threaded, self-locking, cold-weld type wedge adapter.
 - 4. Bends
 - a. All bends or elbows shall have a minimum radius as follows:

CONDUIT SIZE	MIN. RADIUS (INCHES)
3/4"	8
1"	12
1-1/4"	18

2"	24
2-1/2"	24
3"	30
3-1/2"	30
4"	30
5"	36
6"	42

- A. Use factory elbows or machine bends for conduit bends 1-1/4" and larger.
 - 1. Make bends and offsets so the inside diameter is not effectively reduced. Make bends in parallel or banked runs from the same center line so that the bends are parallel.
 - 2. Install at least one (1) 3/8", 200 pound strength nylon pull cord in all empty raceways.
 - 3. Raceways crossing building expansion joints or in straight runs exceeding 100 feet shall be provided with UL listed expansion fittings.
 - 4. Install conduit seals and drains to prevent accumulated moisture in conduits from entering Communications System enclosures.
- B. Do not install conduit in concrete slabs unless specifically directed by District's Representative. Embedded conduits in concrete slab walls, and columns shall be installed in center third between upper and lower layers of reinforcing steel as directed by the District's Representative. Space conduits 8" on center except at cabinet locations where slab thickness shall be increased as directed by the District's Representative.
- C. All conduits to be kept 12" away from steam or hot water lines. Install horizontal conduit and raceway runs below water and steam piping.
- D. Conduit dropping down to equipment shall be as straight as possible without any offsets, parallel or perpendicular to walls, ceilings and other building features.
- E. Conduit installed on any equipment shall be run symmetrical with the equipment and in such a manner as to:
 - 1. not to be exposed to damage;
 - 2. not interfere with access to components of the equipment that will interfere with maintenance operation or;
 - 3. not to be in a manner that the District deems detrimental to its operation.
- F. Whenever an installation such as that listed occurs, the Contractor shall make all necessary changes at no cost to the District.
- G. All cut ends of conduit, scratches, tool marks, etc. on any metallic raceway installed in the ground or on the exterior of the building shall be treated with two coats of specified Touch Up Paint/Tape.
- H. All raceways stubbing up into equipment or racks shall be sealed. Raceways with conductors shall be plugged with duct-seal. Spare raceways shall be capped. Prevent foreign matter from entering conduit and raceway; use temporary closure protection. Replace conduits containing concrete, varnish or other foreign material.
- I. Complete installation of conduit and raceway runs before starting installation of cables/wires within conduit and raceway.
- J. Use specified conduit and raceway fittings that are of types compatible with the associated conduit and raceway and suitable for the use and location. Join and terminate conduit and raceway with fittings designed and approved for the purpose of the conduit and raceway system and make up tight.
- K. Where chase nipples are used, align the raceway and coupling square to the box and tighten the chase nipple so no threads are exposed.

- L. Horizontal conduit or EMT runs, where required and permitted, shall be installed as close to ceiling or ceiling beams as practical.
- M. Conduit and EMT connected to wall outlets shall be run in such a manner that they will not cross water, steam or waste pipes or radiator branches.
- N. Conduit and EMT shall not be run through beams, purlins or columns except where permission is granted by District's Representative in writing.
- O. Bond installed metallic raceway in accordance with the requirements of the NEC.

308 HAZARDOUS LOCATIONS

- A. Use rigid steel conduit only.
- B. Install UL listed sealing fittings that prevent passage of explosive vapors in accordance with the manufacturers written instructions. Locate fittings at suitable, accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank coverplate having a finish similar to that of adjacent plates or surfaces.
- C. Install raceway sealing fittings at the following points and elsewhere as indicated:
 - 1. Where conduits enter or leave hazardous locations.

309 REUSE OF EXISTING CONDUIT (WHERE APPROVED TO BE USED)

- A. Existing conduit is to be used as a pathway only where so shown on the drawings.
- B. Prior to beginning work involving the use of an existing conduit, the Contractor shall consult with the District's Representative in order to establish whether or not the conduit contains active service.
- C. If no active service exists within the conduit, all cable is to be removed, and work is to proceed.
- D. If active service does exist within the conduit and it has been determined that service needs to be disrupted, then work on that conduit shall not proceed until a schedule of service outage has been established by District's Representative. Once given permission to proceed, the Contractor shall within the time period of one (1) working day; remove the old cable, install, terminate and test the new cables, and notify the District's Representative the work using the specific conduit has been completed. The District's Representative shall be responsible for the disconnection and reconnecting of the active service cross-connects within the terminal closet(s).
- E. Conduit preparation procedure:
 - 1. Remove existing Wires and Cables (if any).
 - 2. Run a mandrel ½" smaller than the inside diameter of the conduit through the conduit receiving new wires and cables.
 - 3. If the specified size mandrel will not pass through the existing conduit, start with a smaller size mandrel and increase mandrel size until the specified sized mandrel will pass.
 - 4. Run a wire brush and clean rag with an outside diameter 1/8" larger than the inside of the conduit through the conduit receiving new wires and cables.
 - 5. Repeat above until conduit is clean and materials detrimental to the wire and cables to be installed no longer exit conduit with the clean rag.

310 STATION CABLE PATHWAY INSTALLATION

- A. Cut In Boxes and Station Outlet Boxes:
 - 1. Review the proposed installation height of the WAO's with the District Representative at each building, and within each building, at each major change in conditions prior to proceeding.
 - 2. Standard Work Area Outlets (WAO)
 - a. Unless otherwise noted on the plans, all cut in boxes and surface station outlet boxes installed for conventional application WAO's in walls with existing electrical receptacles that are installed within 18" of the floor are to be installed at +18" above finished floor) to center.

- b. Where standard WAO's are to be installed in walls without electrical receptacles, install new WAO's at a height of 38" A.F.F.(above finished floor) to center,
 3. Wall Telephone WAO's
 - a. For WAO's indicated for use for telephone wall jacks, cut-in boxes are to be installed at a height of 47" A.F.F to top of box.
 4. All station outlets shall be installed so that their edges are parallel to the vertical and horizontal edges of the surface on which they are mounted.

3.11 EXTERIOR JOINT SEALANT APPLICATION

A. Examination

1. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance.
2. Verify that joint sizes and surfaces are free of defects and acceptable for installation of joint sealants.
3. Verify joint dimensions and shapes to ensure they are within the sealant manufacturer's guidelines. Resolve any variances prior to installation. Do not proceed with sealant installation until the unsatisfactory conditions have been corrected.

B. Preparation

1. Thoroughly clean the areas that the new sealant will contact using a de-greasing solvent not harmful to the environment using the two-rag wipe technique. IPA (isopropyl alcohol) is not a degreasing solvent. The new sealant should have a minimum contact area of 1/4".
2. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - a. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - b. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - 1) Concrete.
 - 2) Masonry.
 - c. Remove laitance and form-release agents from concrete.
 - d. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - 1) Metal.
 - 2) Glass.
 - 3) Porcelain enamel.
 - 4) Glazed ceramic tile.
3. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

C. Joint Priming

1. Prime joint substrates where indicated or where recommended by joint sealant manufacturer based on pre-construction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations.

2. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
 3. Allow primer to dry. Do not prime areas that cannot be sealed the same day.
- D. Installation of Sealant Backings
1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - a. Do not leave gaps between ends of joint fillers.
 - b. Do not stretch, twist, puncture, or tear joint fillers.
 - c. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.
- E. Installation Of Joint Sealants
1. General: Comply with joint sealant manufacturer's printed installation instructions
 2. Sealant Installation Standard: Comply with recommendations of ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
 3. Perform acoustical sealant application work in accordance with ASTM C919.
 4. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.
 5. Install joint backing to maintain the following joint ratios, but in no case less than 1/4 inch (6 mm):
 - a. Joints up to 1/2 inch wide: 1:1 width to depth ratio.
 - b. Joints Greater than 1/2 inch wide: 2:1 width to depth ratio; maximum 1/2 inch joint depth.
 - c. Sub-caulk joints that are deep, or joints without suitable backstop, to proper depth.
 - d. Protect side walls of joint (to depth of caulking) with bond breaker tape.
 - e. Install with adhesive on 2 faces in contact with sides of joints.
 6. Tooling of Non-sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint.
 - a. Remove excess sealant from surfaces adjacent to joints.
 - b. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - c. Provide concave joint configuration per ASTM C1193, unless otherwise indicated.
- F. Cleaning
1. Clean off excess sealants smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.
 2. Leave finished work in a neat, clean condition with no evidence of spillovers onto adjacent surfaces.
- G. Protection
1. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion.
 2. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that installations with repaired areas are indistinguishable from original work.

END OF SECTION

SECTION 270553
IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide all labor, materials, tools, and equipment required for permanent intelligible labeling on, or adjacent to, all cabling, connectors, innerduct, faceplates, jacks, receptacles, controls, fuses, circuit breakers, patching jacks, and racks.
- B. This section includes minimum requirements for the following:
 - 1. Labeling Communications Cabling
 - 2. Labeling Closet Hardware
 - 3. Labeling Work Stations
 - 4. Labeling Pathways, Spaces, Grounding and Bonding
- C. Refer to detailed plans for additional requirements.
- D. Clearly and distinctly indicate the function of the item.
- E. Coordinate with Record Drawings

1.02 REFERENCES

- A. Usage: In accordance with Division 1.
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM D 709(2001) Laminated Thermosetting Materials
- C. Telecommunications Industry Association (ANSI/TIA)
 - 1. ANSI/TIA-606-B (2012) Administration Standard Telecommunications Infrastructure
- D. Underwriters Laboratories (UL)
 - 1. UL 969 (1995; R 2001) Marking and Labeling Systems

1.03 QUALITY ASSURANCE

- A. Identification and administration work specified herein shall comply with the applicable requirements of:
 - 1. ANSI/TIA- 606-B (2012) Administration Standard Telecommunications Infrastructure
 - 2. ANSI/TIA-569C (2012) Telecommunications Pathway and Spaces
 - 3. ANSI/TIA- 568-C (2009)Telecommunications Cabling Standard.
 - 4. BICSI Telecommunications Distribution Methods Manual.
 - 5. UL 969.

1.04 SUBMITTALS

- A. Conform with the requirements of Section 01 33 23 - Shop Drawings, Product Data and Samples and Section 27 05 00 - Common Work Results for Communications.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Procedures: In accordance with Division 1

1.06 SEQUENCING

- A. Not Used.

PART 2 PRODUCTS

2.01 COMMUNICATION CABLING LABELS, INTERIOR

- A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
- B. Shall be preprinted or computer printed type. Hand written labels are not acceptable.
- C. Provide vinyl substrate with a white printing area and black print. If cable jacket is white, provide cable label with printing area that is any other color than white, preferably orange or yellow - so that the labels are easily distinguishable.

- D. Shall be flexible vinyl or other substrates to apply easy and flex as cables are bent.
- E. Shall use aggressive adhesives that stay attached even to the most difficult to adhere to jacketing.
- F. Labeler and labeling shall be as follows

Manufacturers:

- 1. Cable Type - CAT-6A Shielded
 - a. Brady TLS2200 labels - PTL-31-427, PTL-32-427
 - b. Brady Laser tab labels - LAT-18-361, LAT-53-361
 - c. Hubbell
 - d. Leviton
 - e. Panduit.
 - f. or equal.
- 2. Cable Bundles
 - a. Brady TLS2200 labels - PTL-12-109
 - b. Panduit.
 - c. or equal.

2.02 CLOSET HARDWARE LABELS

- A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
- B. Shall be preprinted or computer printed type. Hand written labels are not acceptable.
- C. Where insert type labels are used provide clear plastic cover over label.
- D. Manufacturer:
 - 1. Copper Patch Panels by Siemon or approved equal by District.
 - a. 4 port group
 - 1) Brady Laser tab labels - 2.8" x 0.375" (71.12mm x 9.52mm), LAT-43-707
 - 2) Hubbell XPLPPA series
 - 3) Leviton
 - 4) Panduit.
 - 5) or equal.
 - b. 6 port group
 - 1) Brady Laser tab labels - 3.6" x 0.375" (91.44mm x 9.52mm), LAT-44-707
 - 2) Hubbell
 - 3) Leviton
 - 4) Panduit.
 - 5) or equal.
 - c. Individual port
 - 1) Brady
 - (a) TLS2200 labels - 0.5" x 0.375" (12.70mm x 9.52mm) white, PTL-44-422
 - (b) Laser tab labels - 0.5" x 0.375" (12.70mm x 9.52mm) white, LAT-45-707
 - (c) TLS2200 labels - 0.5" x 0.375" (12.70mm x 9.52mm) clear, PTL-44-430
 - (d) Laser tab labels - 0.5" x 0.375" (12.70mm x 9.52mm) clear, LAT-45-712
 - (e) TLS2200 labels - 0.5" x 0.5" (12.70mm x 12.70mm) white, PTL-7-422
 - (f) Laser tab labels - 0.5" x 0.5" (12.70mm x 12.70mm) white, LAT-46-707
 - (g) TLS2200 labels - 0.5" x 0.5" (12.70mm x 12.70mm) clear, PTL-7-430
 - (h) Laser tab labels - 0.5" x 0.5" (12.70mm x 12.70mm) clear, LAT-46-712
 - 2) Hubbell
 - 3) Leviton
 - 4) Panduit.
 - 5) or equal
 - d. Patch Panel Name Label.
 - 1) Hubbell XOLPPID Series

- 2) Brady
 - 3) Leviton
 - 4) Panduit
 - 5) or equal.
2. Non-keystone based fiber patch panels
 - a. Hubbell XPLFOSEPAW
 - b. Brady
 - c. Leviton
 - d. Panduit
 - e. as provided with Patch Panel by the manufacturer
 - f. or equal.
 3. 110 blocks
 - a. Brady Laser tab labels - 7.9" x 0.475" (200.6mm x 12.07mm), LAT-177-124
 - b. Hubbell XPL110 series.
 - c. Leviton
 - d. Panduit.
 - e. or equal.

2.03 GROUNDING AND BONDING, PATHWAY, AND SPACE LABELS

- A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
- B. Shall be preprinted or computer printed type. Hand written labels are not acceptable.
- C. Manufacturers:
 1. Brady Corporation
 - a. TLS2200 labels
 - 1) PTL-20-422, Size 2.0" x 1.0" (50.80mm x 25.40mm)
 - 2) PTL-22-422, Size 3.0" x 1.0" (76.20mm x 25.40mm)
 - 3) PTL-37-422, Size 3.0" x 1.9" (76.20mm x 48.26mm)
 - 4) PTL-23-422, Size 4.0" x 1.0" (101.60mm x 25.4mm)
 - 5) PTL-38-422, Size 4.0" x 1.0" (101.60mm x 25.4mm)
 - b. Laser tab labels
 - 1) LAT-13-747, Size 1.875" x 0.833" (47.63mm x 21.16mm)
 - 2) LAT-24-747, Size 1.75" x 1.0" (44.45mm x 25.40mm)
 - 3) LAT-32-747, Size 3.0" x 0.9" (76.20mm x 22.86mm)
 - 4) LAT-33-747, Size 2.0" x 1.437" (50.80mm x 36.50mm)
 - 5) LAT-34-747, Size 3.0" x 1.437" (76.20mm x 36.50mm)
 - c. Continuous tape for TLS2200
 - 1) PTL-8-422, Size 0.5" (12.70mm) white polyester
 - 2) PTL-8-430, Size 0.5" (12.70mm) clear polyester
 - 3) PTL-8-439, Size 0.5" (12.70mm) white vinyl
 - 4) PTL-42-439, Size 1.0" (25.4mm) white vinyl
 - 5) PTL-43-439, Size 1.9" (48.26mm) white vinyl
 2. Panduit.
 3. or equal.

2.04 WORKSTATION LABELS

- A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
- B. Shall be preprinted or computer printed type. Hand written labels are not acceptable.
- C. Where insert type labels are used provide clear plastic cover over label.
- D. Manufacturers:
 1. Brady Corporation
 - a. Desi-strip inserts
 - 1) TLS2200 labels -1.9"x0.375"(48.26mmx9.52mm) white, PLT-40-412

- 2) Laser tab labels -1.9"x0.375"(48.26mmx9.52mm) white, LAT-176-124
- b. Location ID
 - 1) TLS2200 labels - 1.0" x 0.375" (25.40mm x 9.52mm) white, PTL-16-422
 - 2) Laser tab labels -1.0" x 0.375" (25.40mm x 9.52mm) white, LAT-47-707
 - 3) TLS2200 labels- 1.0" x 0.375" (25.40mm x 9.52mm) clear, PTL-16-430
 - 4) Laser tab labels -1.0" x 0.375" (25.40mm x 9.52mm) clear, LAT-8-712
 - 5) TLS2200 labels- 1.0" x 0.5" (25.40mmx 12.70mm) white, PTL-17-422
 - 6) Laser tab labels -1.0" x 0.5" (25.40mm x 12.70mm) white, LAT-7-707
 - 7) TLS2200 labels- 1.0" x 0.5" (25.40mm x 12.70mm) clear, PTL-17-430
 - 8) Laser tab labels- 1.0" x 0.5" (25.40mm x 12.70mm) clear, LAT-7-712
 - 9) TLS2200 labels- 1.5" x 0.375" (38.10mm x 9.52mm) white, PTL-45-422
 - 10) Laser tab labels- 1.5" x 0.375" (38.10mm x 9.52mm) white, LAT-47-707
 - 11) TLS2200 labels- 1.5" x 0.375" (38.10mm x 9.52mm) clear, PTL-45-430
 - 12) Laser tab labels-1.5" x 0.375" (38.10mm x 9.52mm) clear, LAT-47-712
 - 13) TLS2200 labels- 1.5" x 0.5" (38.10mm x 12.70mm) white, PTL-29-422
 - 14) Laser tab labels- 1.5" x 0.5" (38.10mm x 12.70mm) white, LAT-47-707
 - 15) TLS2200 labels- 1.5" x 0.5" (38.10mm x 12.70mm) clear, PTL-29-430
 - 16) Laser tab labels-1.5" x 0.5" (38.10mm x 12.70mm) clear, LAT-47-712
- c. Outlet/Jack ID
 - 1) TLS2200 labels -0.5" x 0.375" (12.70mm x 9.52mm) white, PTL-44-422
 - 2) Laser tab labels - 0.5" x 0.375" (12.70mm x 9.52mm) white, LAT-45-707
 - 3) TLS2200 labels - 0.5" x 0.375" (12.70mmx 9.52mm) clear, PTL-44-430
 - 4) Laser tab labels -0.5" x 0.375" (12.70mmx 9.52mm) clear, LAT-45-712
 - 5) TLS2200 labels - 0.5" x 0.5" (12.70mm x 12.70mm) white, PTL-7-422
 - 6) Laser tab labels- 0.5" x 0.5" (12.70mm x 12.70mm) white, LAT-46-707
 - 7) TLS2200 labels - 0.5" x 0.5" (12.70mm x 12.70mm) clear, PTL-7-430
 - 8) Laser tab labels - 0.5" x 0.5" (12.70mm x 12.70mm) clear, LAT-46-712
- d. General Use Labels
 - 1) TLS2200 labels - 0.375" (9.52mm) cont. white, PTL-46-422
 - 2) TLS2200 labels - 0.375" (9.52mm) cont. clear, PTL-46-430
2. Hubbell
 - a. Location ID
 - 1) Desi-Strip Style
 - (a) XPLFP10W
 - 2) Adhesive
 - (a) XPLFPA10W, XPLFPA10W,
 - b. Outlet/Jack ID
 - 1) XPLIPA10W, XPLIPA10C
3. Leviton
4. Panduit.
5. or equal.

2.05 NAMEPLATES

A. Field Fabricated Nameplates

1. Features/Function/Construction
 - a. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified or as indicated on the drawings.
 - b. Comply with ASTM D 709.
 - c. Each nameplate inscription shall identify the function and, when applicable, the position.
 - d. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core.
 - e. Surface shall be matte finish.
 - f. Corners shall be square.

- g. Accurately align lettering and engrave into the core.
- h. Minimum size of nameplates shall be one by 2.5 inches.
- i. Lettering shall be a minimum of 0.25 inch high normal block style

PART 3 EXECUTION

3.01 GENERAL

- A. Apply labeling to clean surfaces free of oil, dust, solvents or loose material.
- B. Apply after Project painting in area of application is complete.
- C. All labels shall be machine/printer created labels.
- D. Apply to locations where labeling will not be damaged, covered over or in the way of the ordinary maintenance and operation of the installed communications infrastructure or system.
- E. Apply labeling right side up, parallel to major edges of surfaces to which it is applied. When no line is evident, apply parallel to floor line. Correct conditions of labeling applied out of true.
- F. Protect installed labeling from damage.
- G. Replace labeling that is defaced, illegible or peeling off of the surface to which it is applied.

3.02 WORKSTATION JACK, CABLE AND PATCH PANEL ASSIGNED CIRCUIT NUMBERS

- A. Label General: WAO jack assignment number and patch panel port number shall be the same number.
- B. Station cable numbers shall be in the following format
 1. XXX.YYY.PZZ, where:
 - a. XXX = IDF Number/MDF
 - b. YYY = Room Number
 - c. PZZ = Port Number:
 2. Example 1: Port 5 in Room 106 connected to the MDF == MDF.106.P05
 3. Example 2: Port 2 in Room 212 connected to IDF 6 == 6.212.P02
- C. The cover plate area directly above and beneath the jacks are the labeling areas. In the top area, using the specified means, label the faceplate number assigned on the contract documents.

3.03 IDENTIFICATION & LABELING

- A. Pathways
 1. Pathways shall be marked at each endpoint and at all intermediate pull or junction boxes. In the case of partitioned pathways (i.e. innerduct) each partition shall have a unique identifier.
 2. Label pathways using the appropriate abbreviation and a number.
 3. Use adhesive type labels.
- B. Labels shall be affixed at the entry to all telecommunications rooms and spaces (Includes entrance facilities, communication equipment rooms, communication equipment spaces and work areas)
 1. Use adhesive type labels for all communications space labeling,
 2. Affix labels to entrance doors - coordinate location with District's Representative.
- C. Cables
 1. Horizontal and Indoor Backbone Cables shall be marked within 12" of each endpoint or to innerduct in which the cable is installed.
 2. Except where installed in innerduct or conduit, all backbone fiber optic cable shall have affixed to the outer jacket, labels of a bright color that contain at least the legend "FIBER OPTIC CABLE." These labels must be affixed at separations no greater than 50 ft.
 3. Within every manhole/vault/pullbox and within 4 ft of the entrance into a building every backbone cable's assigned identifier shall be affixed to either the cable's outer jacket or to innerduct in which the cable is installed.

4. Any cable installed in conduit shall be labeled at all intermediate pull or junction boxes.
 5. Label cables using the appropriate circuit ID.
 6. Use adhesive type labels for all communications cable labels.
 7. Affix labels to cables - marking cable is not permitted.
 8. Where cable is fully encased in innerduct label the outside of the innerduct with the cable label and, where the contents are fiber optic cabling, the "FIBER OPTIC CABLE" label.
- D. 110 blocks
1. Each cable termination position on 110 blocks shall be labeled with number designators.
 - a. All backbone copper cable termination blocks shall be labeled with both the pair count of every 5th pair and the cable's assigned identifier.
 2. Where insert type labels are used install clear plastic cover over reprinted or Laser printed type label. Install five (5) pair and four (4) pair 110 I.D. strips for backbone cabling.
 - a. District's Representative to provide District generated cable number.
 3. Pair call-out labeling: Pair call-out labeling shall designate every fifth (5th) pair consecutively through total pair count of the cable terminated on the block but not including the first (1st) and twenty-fifth (25th) pairs of each twenty-five (25) pair field bundle: Example for fifty (50) pair cable -- 5, 10, 15, 20, 30, 35, 40, 45.
- E. Backbone Fiber Patch Panel Labeling
1. Each backbone fiber patch panel shall have a header label.
 - a. Header Label format and content shall be as follows:
 - 1) DISTRICT generated cable number.
 - 2) 'From' District building Telecommunication Room (TR) number for ISP riser or 'From' District building number for OSP cable.
 - 3) Fiber strand type designation and strand count. SM (single mode) XX; MM (multi-mode) XX where XX = strand count. If cable is a hybrid make sure both strand type counts are accounted for in header label.
 - b. District's Representative to provide District generated cable number.
 - c. Fiber Patch Panel Port Labeling: Label each fiber patch panel port with the strand count terminated on the port. Example for a duplex port termination: 5-6 = strand 5 and strand 6 of cable are terminated on this fiber patch panel port. Simplex port termination 6 = strand 6 is of cable is terminated on this fiber patch panel port.
 - d. All labels shall be printed labels. Hand labeling is not acceptable unless approved in writing as acceptable by the PP&C project manager or his/her designate.
- F. Voice Cross-Connect System Labeling
1. The 110-Blocks shall be labeled "Voice Cross-Connect to Rack #_ Panel #". Each cable shall be numbered from 1-48 on the 110-block Designation Strips.
 2. The patch panels on the racks shall be labeled "Voice Cross-Connect Rack #_ Panel #". Each jack shall be numbered from 1-48 on each panel.
- G. Workstations
1. All faceplate labels shall indicate the faceplate number and the circuit ID for each cable that it houses
 2. For faceplates where insert type labels are used install clear plastic cover over preprinted or Laser printed type label.
 3. For faceplates without insert type labels use adhesive type labels affix labels to faceplate - marking faceplates is not permitted.
 4. Patch cords installed under the work of this Project shall be labeled at each endpoint using the appropriate circuit ID.
 5. Use adhesive type labels for all communications cable labels.
 6. Affix labels to cables - marking cable is not permitted.
- H. Grounding and Bonding
1. The TMGB(s) (telecommunications main ground bar) shall be labeled as such with an adhesive type label(s) affix label(s) to TMGB.

2. The conductor connecting the TMGB (telecommunications main ground bar) to the building ground shall be labeled at each end with an affixed label in a visible location as close as practicable to the bonding point at each end of the conductor.
- I. Firestopping
 1. Each firestopping location shall be labeled at each location where firestopping is installed, on each side of the penetrated fire barrier, within 300 mm (12 in.) of the firestopping material.

END OF SECTION

SECTION 274100
AUDIO / VISUAL SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDES

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1, apply to this Section.
- B. Furnish and install all equipment, accessories, cabling, devices, and materials in accordance with the project specifications and drawings to ensure a fully operational multipurpose room AV system.
- C. It shall be the responsibility of the Electrical contractor to provide and install all conduit systems, standard electrical boxes, and operating power for the communication system as outlined on the project drawings.
- D. The Intercom Communication System Contractor (The Contractor) shall coordinate all system requirements.
- E. Equipment specified herein is designed to provide specific functional and operational characteristics. It is the responsibility of the Intercom System Contractor to provide all features and functions as outlined in these specifications.
- F. The Contractor shall provide one (1) priority page sensor which will interrupt the AV system for General or Emergency PA System Announcement. Contractor to provide PPS-25 for interface.
- G. Provide testing, as described in Part 3, for all requirements, shall be performed with all cable runs and wiring devices in place.
- H. Provide a service contract and warranty as outlined in Part 3 of these specifications.
- I. Provide all documentation and training as outlined in these specifications.

1.02 RELATED SECTIONS

- A. Section 270500 - Common Work Results for Communications
- B. Section 270526 - Grounding and Bonding for Communications Systems
- C. Section 270529 - Hangers and Supports for Communication Systems
- D. Section 270533 - Conduits and backboxes for Communication Systems
- E. Section 270553 - Identification for Communications Systems

1.03 CODES AND REGULATIONS

- A. NFPA 70, National Electrical Code.
- B. NFPA 101, Code for Safety to Life from Fire in Buildings and Structures.
- C. UL 50, Enclosures for Electrical Equipment.
- D. FCC Rules, Part 76.

- E. All applicable parts will be FCC Class B approved.
- F. Americans with Disabilities Act.
- G. Texas Accessibility Standards.
- H. International Building Codes (IBC).
- I. Local and State Building Codes.
- J. All requirements of the local Authority Having Jurisdiction (AHJ).

1.04 SUBMITTALS

- A. Submit a complete submittal package within 30 calendar days after award of this work for approval. Equipment is not to be ordered without approval. Partial submittals are not acceptable for review. Each submittal shall include a dated transmittal.
- B. Submittals may be electronically transmitted in PDF file format (preferred) or paper copies may be provided in quantities indicated in Division 1. Paper copies shall be organized including index tabs in a 3-ring black binder of sufficient size.
- C. A statement of qualification as an Extron installer shall be provided prior to commencing the work in scope. Contractor/Installer shall meet the qualifications set forth by the manufacturer in order to ensure system installation and commissioning meet the project needs.
- D. Quality Assurance Submittal:
 - 1. Letter from Intercom Equipment Manufacturer stating that the Contractor is an Authorized Factory Distributor for the area where the project is located.
 - 2. Product Data Submittal including special boxes, cable, and other material as requested by the Architect including:
 - a. A cover sheet with the name and location of the project, the name, address, and telephone number of the Contractor, and the name, address, and telephone number of the submitting subcontractor. Include on or after the cover sheet sufficient space for review stamps.
 - 3. An indication of any deviations from Contract Document requirements, including variations and limitations. Show any revisions to equipment layout required by use of selected equipment.
 - 4. A product data index and complete equipment list including for each product submitted for approval the manufactures name and part number, including options and selections.
 - 5. Cut sheets or catalog data illustrating 1 the physical appearance, size, function, compatibility, standards compliance, and other relevant characteristics of each product on the equipment list. Indicate by prominent notation (an arrow, circle, or other means) on each sheet the exact product and options being submitted.
 - 6. Submit design data, when the scope of work is required, including calculations, schematics, risers, sequences, or other data.

7. Any resubmittal shall include a complete revised equipment list and any product data that is revised.
8. Submit shop drawings locating all components of the intercom system and indicating circuit routing, cable type, and gauge. Shop or coordination drawings shall include information that will allow to the Contractor to coordinate interdisciplinary work and when necessary, guide the manufacturer or fabricator in producing the product. Shop or coordination drawings shall be specifically prepared to illustrate the submitted portion of work, this may require diagrams, schedules, details, and accurate to scale equipment and device layouts prepared using a CAD or BIM engineering drawing program.

1.05 QUALIFICATIONS OF A PROPOSED CONTRACTOR

- A. Proposed contractors who do not currently possess the necessary qualifications, trained and experienced personnel, financial capacity, and meet the other requirements herein described will be disqualified.
- B. The proposed contractor, as a business entity, shall be an authorized distributor and designated representative of the equipment manufacturer, with full warranty privileges. The proposed contractor shall have been actively engaged in the business of selling, installing, and servicing commercial building commercial communication systems for a period of at least 5 years.
- C. Recently formed companies are acceptable only if specific pre-approval is requested, and granted by the Architect/Engineer, based on experience of key personnel, current and completed projects, and all licensing requirements are met 10 working days prior to the contract proposal date.
- D. The proposed contractor must be an authorized reseller with the proposed a/v manufacturer. In addition, the contractor must have at least two certified technicians/ engineers with the proposed a/v manufacturer.
- E. The proposed contractor must provide the following for this project: Proper installation of all a/v hardware and cabling, proper field terminations (if needed), full system testing per the system design, proper IP / network scheme settings provided by the customer, provide full system commissioning and provide any commissioning reports, user training to be provided along with any a/v close out documentation.
- F. The proposed contractor shall not deviate from the proposed a/v design and parts list. If any changes are needed, they need to be fully discussed and approved with the consultant and/or district before proceeding with the installation.
- G. The proposed Contractor shall have an office within 150-miles of the job site, staffed with trained technicians who are qualified and licensed to supervise the installation, to be responsible that the system is installed as submitted, to conduct system start up and perform a 100 percent operational audit of all installed devices, to instruct the Owners representatives in the proper operation of the system, and to provide service throughout the warranty period. The contractor shall be capable of dispatching technicians to repair a system within six hours of a service request.
- H. The proposed contractor shall be fully experienced in the design and installation of the type of system herein specified and shall furnish with the contract proposal an itemized list of the installations of the type specified herein. The list shall include the name of the project, date of completion, the amount of the contract, the name, and telephone number of a qualified person to contact for reference. This list must contain at least two (2) projects within a 150- mile radius of the

school district to allow school administration officials to visit the job site to review of the system installation and service. Each reference project listed must utilize equipment by the same manufacturer as the proposed system.

- I. The Contractor shall employ factory-trained technicians capable of supporting the maintenance of the system. No contract employees are allowed unless they have been to the factory service school within the last 18 months. A certificate of this 1 training shall be provided with the contractors' submittal.
- J. The Proposed Contractor shall not have any grievances or complaints of record regarding workmanship, code compliance, or service response. A Proposed Contractor that has any prior finding(s) of a code violation or has any litigation in process concerning the installation of a communication system is unacceptable.
- K. The ability of a proposed Contractor to obtain plans and provide a performance bond shall not be regarded as the sole qualification of the Contractors' competency and responsibility to meet the requirements and obligations of the contract.
- L. The Builder shall be satisfied that a proposed Contractor meets all the requirements expressed herein before including the Contractor's proposal in the project.
- M. The Owner may investigate, as they deem necessary to determine the ability of the proposed Contractor to perform the work. The proposed Contractor shall be submitted to the Owner with any information or data requested for this purpose.
- N. The Owner reserves the right to reject any contract proposal if the evidence submitted, or their investigation, fails to indicate that the Contractor is qualified to fulfil any part of the contract or to complete the work contemplated therein.
- O. The Owner reserves the right to reject the proposal of any Contractor who has previously failed to perform properly, or complete on time, contracts of a similar nature.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All basic equipment for which there are Underwriters' Laboratories Standard requirements shall be listed by Underwriters' Laboratories and be so labeled, or shall conform to their requirements, in which case, certified statements to the effect shall be furnished by the manufacturer with a copy of an examination report by a recognized laboratory acceptable to the Local Authority Having Jurisdiction.
- B. All equipment and components shall be installed in strict compliance with manufacturers' recommendations and the requirements of the components UL listing. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, electrical requirements, cable types, and physical equipment sizes, etc., before beginning system installation.
- C. All date keeping hardware, firmware, and software provided shall be fully compliant with the calendar year designated in four-digit date format. Any time equations must function normally, leap year, and daylight savings time must be supported.
- D. All basic equipment shall be new and shall be the latest product of a manufacturer of established reputation and experience of quality electronic equipment. Model numbers indicate current

equipment types; if later models exist, the Contractor shall provide those. The manufacturer shall have supplied similar apparatus to comparable installations rendering satisfactory service for at least three (3) year.

- E. All like devices shall be of the same manufacturer and model number.
- F. Only equipment devices have been shown on the contract drawings. Specific wiring between equipment has not been shown.
- G. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., speakers shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.
- H. The installation shall be subject to approval, inspection, and test of the Architect/Engineer.

2.02 ACCEPTABLE MANUFACTURES

- A. Descriptions and details, acceptable manufacturers' names listed, and specific manufacturer and model number items indicated in the plans and specifications shall establish a standard of quality, function, and design. Manufacturers and model numbers listed as "no exceptions" shall not be substituted without specific notice in an addendum. Otherwise, where a specific manufacturer's product is indicated, products of other manufacturers listed as acceptable may be submitted for approval based on the substitute product being, in the opinion of the Engineer, of equivalent or better quality than that of the product specified.
- B. Proposed contractors wishing to propose any product substitution must do so in writing to the specifying authority at least ten (10) days prior to the proposal opening.
- C. For manufacturers equipment or models other than that specified, the proposed contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment. Proposals must include detailed information showing all deviations from the system as specified
- D. Substitute products for which the proposed contractor does not obtain prior approval will not be considered acceptable for this project. Final approval of alternate products shall be based on the decision of the Owner and Architect. Prior approval to make a proposal for this project does not automatically insure products will be an acceptable equivalent.
- E. It is the responsibility of the Contractor to provide all features and functions as outlined in these specifications. The functions and features specified are vital to the operation of this facility; therefore, inclusion in the list of acceptable manufacturers does not release the contractor from strict compliance with the requirements of this specification.
- F. The model numbers used shall constitute the quality and performance of the equipment to be furnished. The Manufacturer of Extron is acceptable basis of design; any other proposed manufactures must be pre-approved by the District prior to ordering any equipment and/or devices.

2.03 ACCEPTABLE PRODUCT LIST

- A. Provide a video scaling presentation switcher that shall support up to eight inputs and two simultaneous outputs for processing and switching of DisplayPort and HDMI video sources, with additional support for signal extension over Shielded CAT-6AA cable.

1. Rack-mountable scaler and switcher for DisplayPort and HDMI video sources and associated digital and analog audio.
 - a. Video Input Requirements
 - 1) Provide video input connections.
 - a) One (1) DisplayPort supporting DisplayPort SST - Single Stream Transport data rates up to 21.6 Gbps.
 - b) Five (5) HDMI supporting HDMI specifications including 4K/60 Deep Color, data rates up to 18 Gbps, and HD lossless audio formats.
 - c) Two (2) RJ-45 for DTP & DTP2 twisted pair.
 - 2) Provide automatic detection of input video parameters.
 - a) Determine total pixels, active pixels, active lines, H/V starting points, H/V image positions, H/V image sizes, and video clock phase.
 - b) The user may selectively enable or disable automatic detection for each input.
 - 3) Provide image adjustments for brightness, contrast, color, tint, detail, H/V positioning, and sizing.
 - 4) Provide storage and recall of video parameters and picture settings.
 - a) Automatic memories for each video input
 - i. Save video settings and picture adjustments without user intervention.
 - ii. Automatically recall settings when the same video rate is encountered.
 - iii. The user may selectively enable or disable automatic memories.
 - b) Manual user presets
 - i. Save picture adjustments.
 - ii. User presets may be saved and recalled using front panel controls.
 - iii. User presets may be saved and recalled electronically via Ethernet, RS-232 or USB connection.
 - c) Manual input presets
 - i. Save video settings and picture adjustments.
 - ii. Input presets may be saved and recalled electronically via Ethernet, RS-232 or USB connection.
 - 5) Provide automatic 3:2 and 2:2 pulldown detection.
 - b. Video Output Requirements

- 1) Provide one (1) HDMI for loop-through without video scaling, selectable for any video input.
- 2) Provide scaled video output connections.
 - a) One (1) HDMI
 - b) One (1) RJ-45 for DTP2 twisted pair.
- 3) Provide a range of selectable video output rates from 640x480 to 4096x2160 @ 60 Hz.
- 4) Support custom user-defined output resolutions via EDID management.
- 5) Provide image scaling and video format conversion with 30-bit precision and 4:4:4 chroma sampling.
- 6) Provide motion adaptive deinterlacing for signals up to 1080i.
- 7) Provide aspect ratio control.
 - a) When in FILL mode, the video image shall always fill the output screen without letterbox or pillar box.
 - b) When in FOLLOW mode, the video image on the output screen shall always preserve the aspect ratio of the input signals without distortion.
- 8) Provide internal test patterns for calibration and setup.
- 9) Support image freeze via Ethernet, RS-232 or USB connection.
- 10) Support upload and placement of a custom logo graphic at any position on the video output.
 - a) Support logo placement as a foreground image.
 - b) Shall support uploading logo graphics in BMP, JPG, PNG, GIF, or TIFF format.
 - c) Shall support displaying full screen images up to 4096x2160 resolution.
 - d) Shall support up to 16 logo presets.
 - e) Shall support keying with selectable effects including transparency, color key, level key, and alpha key.
- 11) Support automatic muting of video and sync output when no video input signal is present.
 - a) Provide a choice to generate a blue screen or a black screen before disabling sync.
 - b) Provide a configurable timeout period before disabling sync.
 - c) The user may selectively enable or disable automatic muting of sync output.
- 12) Provide a low power standby state selectable via Ethernet, RS-232 or USB

- 13) Support the connection of DVI displays that do not recognize HDMI-specific formats.
 - a) Automatically enable or disable embedded TMDS audio and InfoFrames
 - b) Automatically set the correct color space
 - 14) Support selection of output color space as RGB or component video
- c. Switching Requirements
- 1) Provide configurable automatic switching modes between input sources.
 - a) Last connected: always switch to the last active connected input.
 - b) Configurable priority: switching priority may be assigned arbitrarily for any combination of the four inputs.
 - 2) Provide selectable transition effects when switching inputs.
 - a) Seamless Cut: video output shall freeze, then cut to the newly selected input source.
 - b) Seamless Fade: video output shall freeze, then fade into the newly selected input source.
 - c) Cut through black: video output shall cut to black, then cut to the newly selected input source.
 - d) Fade through black: video output shall fade to black, then fade into the newly selected input source.
 - e) Accompanying audio shall ramp down, then ramp up to match the transition effect.
- d. EDID Requirements
- 1) Provide automatic EDID management between connected devices.
 - a) Provide a set of pre-stored EDID files.
 - b) Support capture of EDID from any connected display
 - c) Support user uploading of custom-generated EDID files.
 - d) Support assignment of any pre-stored, captured, or custom uploaded EDID file to any input connection
- e. HDCP Requirements
- 1) The unit shall be HDCP 2.2 compliant.
 - a) Provide authentication and maintain continuous verification of HDCP key exchange with connected sink devices.
 - b) Provide authentication and maintain continuous verification of HDCP key exchange with connected source devices.

- c) Provide the option to disable HDCP processing at video inputs 2 through 8 when passing unencrypted content.
- d) Provide selectable, human-readable visual confirmation of HDCP compliance when encrypted content is routed to a non-HDCP compliant display.
 - i. When enabled, the video output shall be a solid green color and an on-screen message stating "HDCP CONTENT" shall be displayed.
 - ii. When enabled, the option shall be provided to display a user-provided image in place of the green video output.
 - iii. When disabled, the output shall be muted.
- 2) Provide real-time verification of HDCP status for each video input and output.
 - a) Directly readable on front panel LEDs
 - b) Electronically accessible over Ethernet, RS-232 or USB connection
- f. DTP Twisted pair requirements.
 - 1) Provide signal transmission distance capability of 330 feet (100 meters) for all supported video resolutions using a shielded CAT6 cable.
 - 2) Support video, audio, RS-232, IR, and power transmission over a single shielded CAT6 cable.
 - 3) Shall be compatible with CAT6 shielded twisted pair cable, and Extron XTP DTP 24 shielded twisted pair cable.
 - 4) Support computer and video resolutions up to 3840x2160/60 at 4:4:4 chroma sampling.
 - 5) Support stereo audio pass-through signals.
 - 6) Shall actively buffer DDC channels
 - 7) Shall be configurable for compatibility with
 - a) Extron DTP inputs
 - b) Extron XTP matrix switcher inputs
 - c) HDBaseT inputs
 - 8) Provide power to remote DTP or DTP2 endpoint connected over the shielded CAT6 cable.
- g. Audio Requirements
 - 1) Provide audio input connections.
 - a) One (1) DisplayPort, embedded.
 - b) Five (5) HDMI, embedded.

- c) Two (2) 5-pole 3.5 mm captive screw, balanced/unbalanced line level analog stereo
 - d) Two (2) 3-pole 3.5 mm captive screw, balanced/unbalanced mic/line level with +48 volt phantom power
- 2) Provide audio output connections.
- a) One (1) 2-pole, 5 mm captive screw, mono speaker level connector
 - b) Two (2) 5-pole 3.5 mm captive screw, with output level control and configurable for balanced/unbalanced, analog stereo or dual mono
 - c) One (1) HDMI, embedded and with output level control for two-channel PCM.
 - d) One (1) RJ-45 for DTP2 twisted pair transmitting both:
 - i. Embedded digital audio.
 - ii. Pass-through stereo audio
- 3) Provide mono amplification for high impedance speaker systems.
- a) Support one mono speaker level signal on one 2-pole, 5 mm screw-lock captive screw connector.
 - b) Provide a total of 100 watts rms output power into a 70 volt load, measured at 1 kHz with 0.1% THD
 - c) Provide a THD+N measurement of less than 0.1 % measured at 3 dB below clipping.
 - d) Provide a signal-to-noise ratio of greater than 90 dB measured from 20 Hz to 20 kHz, unweighted.
 - e) Utilize an efficient Class D amplifier design.
 - f) Provide Class D Ripple Suppression technology.
 - g) Provide an automatic clip limiter to detect onset of clipping by comparing input and output waveforms and automatically reduce gain with a slow attack and fast release to eliminate clipping distortion.
 - h) Provide multiple protection circuits that activate during output shorts, thermal overload, or DC faults.
- 4) Support embedding of the analog audio input signal on the HDMI and DTP / DTP2 outputs.
- 5) Support extraction of two-channel PCM embedded audio signals to analog audio outputs or pass bitstream audio to the HDMI and DTP2 outputs.
- 6) Provide the capability for all video inputs to share a common analog audio input.

- 7) Provide a delay in the audio output to match the corresponding video processing delay.
- 8) Provide gain and attenuation adjustments for analog input audio.
- 9) Support individual muting of the analog stereo or embedded digital audio outputs.
- 10) DSP Requirements
 - a) Provide digital audio processing tools including gain, mixing, parametric EQ, filtering, dynamics, and ducking.
 - b) Provide adjustable, automatic ducking of program audio when a signal is detected on microphone inputs.
 - c) Provide DSP configuration and parameter adjustments through the product configuration software.
 - d) Provide real-time level meters for inputs and outputs in the product configuration software.
 - e) Provide live DSP parameter adjustments while they are heard or metered in real-time.
 - f) Provide user presets for saving and recalling DSP parameters.
 - g) Support storage and playback of up to 16 audio files at any audio output.
- h. Integrated Control Processor Requirements
 - 1) Provide AV system control connections.
 - a) Three RJ-45: 10/100/1000Base-T Ethernet, half/full duplex with auto-detect for connection to a LAN and include link and activity LED indicators located on the left and right of each jack for troubleshooting network issues, these ports will be designated as AV LAN ports allowing for AV devices to be isolated from a corporate network.
 - b) AV LAN ports shall support a DHCP server that can distribute 50 dynamic IP addresses with a 24-hour lease.
 - c) One RJ-45: 10/100/1000Base-T, half/full duplex with auto-detect for connection to a LAN or WAN and includes link and activity LED indicators located on the left and right of the jack for troubleshooting network issues.
 - d) Two 3-pole 3.5 mm captive screw: RS-232, configurable for unidirectional or bidirectional control of AV system components
 - e) One 5-pole 3.5 mm captive screw: RS-232/RS-422/RS-485, configurable for unidirectional or bidirectional control of AV system components

- f) Two IR/serial ports on one 5-pole 3.5 mm captive screw: IR (using an IR emitter) or unidirectional RS-232 for control of AV system components.
 - g) Four low voltage relays on one 6-pole 3.5 mm captive screw: configurable for controlling lighting, controlling screens, or other device functions.
 - h) Four digital input/output ports on one 5-pole 3.5 mm captive screw: configurable for use as an interface with devices such as sensors, switches, LEDs, and relays
 - i) One eBUS® port on a 4-pole 3.5 mm captive screw for connecting to eBUS devices.
- 2) Shall support the following protocols: ICMP (ping), IEEE 802.1X, IPv4, TCP, UDP, DHCP, DNS, HTTP, HTTPS, NTP, SFTP, SMTP, SNMP, SSH
 - 3) Shall support a Web-based AV resource management application that provides a means to manage, monitor, and control AV equipment.
 - 4) Provide an internal real-time clock with a 30-year backup battery that is used to keep track of the date and time.
 - 5) Shall support the addition of an Extron LinkLicense® for use of third party devices as primary control interfaces
 - 6) Provide front panel LED activity indicators for RS-232 status, RS-232/RS-422/RS-485 status, IR/serial status, digital I/O status, relay status, eBUS status, and network status.
 - 7) Shall support control system synchronization to allow users to retain and recover configured endpoints in case of network or power failure.
 - 8) Shall be configured using Extron Global Configurator® Plus or Extron Global Configurator Professional with support for the following:
 - a) Provide support for up to eight configurable Extron TouchLink Pro touchpanels
 - b) Provide support for up to eight configurable eBUS button panels.
 - c) Provide remote monitoring and control via Ethernet.
 - d) Provide the ability to create E-mail notifications.
 - e) Provide multiple levels of password protection.
 - f) Provide the ability to create schedules and monitors.
 - g) Support up to 32 Ethernet-controllable AV devices.
 - h) Support local variables and conditional logic.
 - i) Support grouping of multiple Extron IP Link® Pro xi control processors to function as one when configured with Global Configurator Professional

- 9) Security Requirements
 - a) Support SFTP and SSH for secure communication between the control processor and a TouchLink Pro touchpanel or Network Button Panel
 - b) Support HTTPS and SSH for secure communication between the control processor and Extron Control App
 - c) Support HTTPS for secure communication between the control processor and Extron Control for Web
 - d) Support SSH for secure communication between the control processor and controlled device for programmed systems
 - e) Support SFTP and SSH for secure communication between the control processor and the configuration or programming software
 - f) Provide the option to modify administrator and user credentials
 - g) Support security updates to maintain network health.
 - h) Require that a Secure Socket Layer (SSL) Certificate is installed to maintain system confidentiality and data integrity.
 - i) Support the installation of an owner furnished certificate with the following properties:
 - i. Certificates shall include x.509 support.
 - ii. Certificates shall include public / private key exchange.
 - iii. Certificates shall support PEM encoding.
 - iv. Extron shall furnish documentation that describes all supported network ports and services.
- i. Control/remote - RS-232 and IR Pass-Through Over Shielded CAT-6A Requirements
 - 1) Provide connections for AV device control.
 - a) One (1) 3-pole 3.5 mm captive screw: IR pass-through to a DTP twisted pair receiver.
 - b) Support Ethernet insertion of RS-232 signals for transmission to a DTP endpoint.
 - 2) Support RS-232 and IR transmission over shielded CAT-6A up to 330 feet (100 meters)
- j. Control/remote – Presentation Switcher Requirements
 - 1) Provide control connections.
 - a) One (1) RJ-45: 10/100/1000Base-T Ethernet
 - b) One (1) 3-pole 3.5 mm captive screw: RS-232
 - c) One (1) Mini USB-B: USB 2.0

- 2) Provide alternatives for configuration and operation.
 - a) On-screen menus navigated using front panel controls.
 - b) Product configuration software connected via Ethernet, USB, or RS-232
 - c) Serial commands sent over Ethernet, RS-232 or USB connection.
 - 3) Support disabling of front panel controls to prevent inadvertent or unauthorized changes to configuration settings.
 - 4) Support triggering of standard CEC commands at main HDMI and DTP2 outputs
- k. General Requirements
- 1) Enclosure shall be rack-mountable, full rack width, and 1RU in height.
 - 2) Shall be equipped with an internal 100-240 VAC, 50/60 Hz universal power supply.
 - 3) Shall meet regulatory compliances.
 - a) Shall meet safety compliances under CE, c-UL, and UL
 - b) Shall meet EMI/EMC compliances under CE, C-tick, FCC Class A, ICES, and VCCI
 - c) Shall comply with appropriate requirements of RoHS and WEEE
 - 4) Shall provide three-year parts and labor warranty.
2. Approved device shall be the Extron IN1808 IPCP Q SA (part number 60-1615-92); no alternates or equals.
- B. ShareLink Pro 1100
1. Content sharing from Microsoft Windows® and macOS® computers as well as Apple® and Android® smartphones, and tablets
 2. Digital video input requirements
 - a. Shall provide one (1) HDMI Type A connector for digital video signals with embedded audio.
 - 1) Shall support 640x480 @ 60 Hz to 4096x2160 @ 60 Hz (Pass-through mode)
 - 2) Shall support 640x480 @ 60 Hz to 3840x2160 @ 30 Hz (Window mode)
 3. Digital video output requirements
 - a. Shall provide one (1) HDMI Type A connector for digital video signals with embedded audio.
 - 1) Shall support 640x480, 800x600, 1024x768, 1280x720, 1280x724, 1366x768, 1600x1200, 1920x1200, 3840x2160 (up to 60 Hz), 4096x2160 (up to 60 Hz), 480i, 480p, 576i, 576p, 720i, 720p, 1080i, 1080p, 2K, 4K @ 60 Hz (Pass-through mode)

- 2) Shall support 640x480, 800x600, 1024x768, 1280x720, 1280x724, 1366x768, 1600x1200, 1920x1200, 3840x2160 (up to 30 Hz only), 480p, 576p, 720p, 1080p, 2K, 4K @ 30 Hz (Window mode)
4. Audio output requirements
 - a. Shall support embedded audio on HDMI output connector.
 - b. Shall provide one (1) 3.5 mm captive screw connector for analog stereo audio signals.
 5. Network interconnection requirements.
 - a. Shall provide dual Gigabit Ethernet connections to support high-speed data links to networks and other network resources
 - b. Shall provide support for IEEE 802.1X authentication standard for port-based Network Access Control
 - c. Shall provide SNMP support to allow remote health monitoring of network-attached devices.
 6. Control requirements.
 - a. Shall support remote access via a web browser for monitoring unit and firmware updates.
 - b. Shall provide four (4) 3.5 mm captive screw connectors for contact closure/tally output connections.
 - c. Shall provide one (1) 3.5 mm captive screw connector for display control.
 - d. Shall provide a collaboration mode that enables any attendee to display content from a personal device and control the presentation.
 - e. Shall provide a moderator mode for single-point control to ensure only approved content is displayed.
 - f. Shall support use of security codes to authenticate users and prevent unintentional display of content within adjacent spaces.
 - 1) Randomly generated authentication codes
 - 2) User-defined authentication codes
 7. Functional requirements
 - a. Shall provide screen display of content from a single personal device or simultaneous display of up to four windows of multiple devices on a single display.
 - b. Shall enable presentation of content from an Apple® iOS® or Android® smartphone or tablet via a wireless or wired Ethernet network connection via the Extron ShareLink Pro app.
 - c. Shall enable presentation of content from a Windows® or Apple® macOS® computer via a wireless or wired network connection.

- d. Shall support iOS mirroring of Apple smartphones and tablets from the iPad or iPhone Control Center
 - e. Shall enable the presentation of application windows, documents and images using software app.
 - f. Shall provide WebShare™ technology to enable attendees to view slide images on personal devices via a wireless connection and a Web browser.
 - g. Shall include Video Screen Saver functionality that can be set to automatically mute video and sync output to the display device when no active connections are detected.
8. Power requirements
- a. Shall be equipped with an external, universal AC power supply capable of supporting 100 - 240 VAC, 50/60 Hz power.
 - b. Shall be PoE IEEE 802.3at (PoE+), class 4 (type 2), compliant.
 - c. Data Encryption
 - d. Shall support minimum 128-bit Data Encryption to ensure that content sent between a personal computer and ShareLink Pro is fully encrypted and secure.
9. General requirements
- a. Shall support the use of HDMI to DVI-D cables or adapters for DVI-D signals.
 - b. Shall provide an LED indicator on the front panel for visual indication of power.
 - c. Shall have a 1" (2.5 cm) high, half rack width metal enclosure.
 - d. Shall be rack mountable with optional rack shelf.
 - e. Shall be furniture or wall mountable with optional mounting kits.
 - f. Shall meet regulatory compliance.
 - 1) CE, c-UL, UL
 - 2) CE, c-UL, UL, C-tick, FCC Class A, ICES, VCCI
 - 3) Appropriate requirements of RoHS, WEEE
 - g. Shall provide at least three years parts and labor warranty.
 - h. Approved device shall be the Extron ShareLink Pro 1100 (60-1943-01); no alternates or equals.
- C. DMP 128 Plus
- 1. Provide an audio digital matrix processor that shall support 12 mono analog inputs capable of microphone or line level signals and 8 mono analog line level outputs for signal routing and management.
 - a. 12 input, 8 output audio digital matrix processor with digital audio expansion port, automixer function with eight groups, 64-bit floating point DSP engine, four input / four output USB audio interface, macros, 8x4 configurable aux inputs / outputs, 16

virtual processing loops, up to eight audio file players, ACP audio control panel support, and 24-bit/48 kHz audio converters

1) Input Requirements

- a) Shall support twelve mono analog inputs that accepts 3.5 mm captive screw connectors:
 - i. Microphone level.
 - ii. Line level, balanced or unbalanced.
- b) Shall provide input gain adjustment from -18 dB to +80 dB in 0.1 dB steps, adjustable per input.
- c) Shall provide selectable +48 volt phantom power for condenser microphones on first eight inputs
- d) Shall provide analog to digital conversion at 48 kHz sampling rate with 24-bit resolution.

2) Output Requirements

- a) Shall support eight mono line level, balanced or unbalanced outputs that accept 3.5 mm captive screw connectors.
- b) Shall provide output attenuation adjustment from 0 dB to -100 dB in 0.1 dB steps, adjustable per output.
- c) Shall provide digital to analog conversion at 48 kHz sampling rate with 24-bit resolution.

3) DSP Engine Requirements

- a) Shall provide 64-bit floating point DSP engine.
- b) Shall provide a 52x44 mix matrix such that all inputs and returns can be discretely routed to any or all of the outputs or sends.
- c) Shall provide a maximum, deterministic latency of 3.2 ms from input to output.
- d) Shall provide additional, deterministic latency of 1.3 ms when Virtual Path routing is used.

4) Audio Device Requirements — Input to Output

- 5) Shall provide an analog into analog out signal-to-noise ratio of greater than 107 dB measured from 20 Hz to 20 kHz, at maximum balanced output, unweighted.
- 6) Shall provide a THD+N measurement of less than 0.02% measured at 20 Hz to 20 kHz, at maximum level.

b. Configuration Software Requirements

- 1) Shall provide PC-based DSP Configurator software allowing flexible control of the digital signal processor's fixed architecture.
- 2) Shall provide a Live mode for real-time control of parameters without compiling and file uploading to processor.
- 3) Shall provide an Emulate mode for offline configuration.
- 4) Shall provide single, scrollable window for viewing of all inputs and outputs, audio processing blocks, routing, mix points, and virtual routing.
- 5) Shall provide setup and configuration of digital audio processing tools including, but not limited to: Filters (high pass, low pass, bass shelving, treble shelving, parametric, dynamic loudness, and notch EQ); Dynamics processing (AGC, Compressor, Limiter, Noise Gate); Delay processing; Ducking and Adaptive Gain processing; Feedback Suppressor processing, Automixing; and multiple gain stages.
- 6) Shall provide cut, copy, paste editing between processing blocks.
- 7) Shall provide matrix routing with integrated mix point gain adjustment between inputs, outputs, aux inputs, aux outputs, virtual sends, virtual returns, expansion inputs, and expansion outputs.
- 8) Shall provide a library of pre-designed processor settings for inputs and outputs with user-customizable parameters.
- 9) Shall provide Group Master controls for consolidation of individual gain or mute control members of the same type into one point of control.
- 10) Shall provide Soft Limits settings to define upper and lower control limits on Group Masters for use with external controls.
- 11) Shall provide Presets for recall of any processing block setting, level setting or audio routing; presets shall be saved for the entire system, or any selected partial group of inputs, outputs, mix points, and DSP blocks.
- 12) Shall provide real-time metering of levels within each Input Gain, AGC, Compressor, Limiter, Noise Gate, Automixer, and Output Attenuation processing block in Live mode.
- 13) Shall provide a Meter Bridge window for real-time metering of all input and output channels with clipping indication in Live mode.
- 14) Shall provide keyboard-based navigation of configuration software utilizing directional controls, keyboard shortcuts, and spreadsheet software-style commands.
- 15) Shall provide file saving in both Live and Emulate mode.
- 16) Shall provide file upload in Live mode.
- 17) Shall provide configuration and file saving of multiple, linked or networked processors from a single configuration software session.

- c. Aux Input/Output Requirements
 - 1) Shall provide a total of 8 Aux Inputs to be configured with a combination of file players and USB audio connections.
 - 2) Shall provide a total of 4 Aux Outputs, assignable to USB audio connections.
- d. Expansion Port Requirements
 - 1) Shall provide digital audio expansion port for bidirectional signal routing between two connected processors at sub-millisecond latency.
 - 2) Shall support 16 incoming signals and 16 outgoing signals.
 - 3) Shall provide uncompressed digital audio at 48 kHz sampling rate with 24-bit resolution.
 - 4) Product shall include as standard, 1 foot (0.3 m) shielded CAT 6 cable for the purposes of interconnecting two units.
- e. Automixer Requirements
 - 1) Shall provide Automixer Group selection for optional channel assignment into any of eight groups.
 - 2) Shall provide gated and gain sharing automixer types.
 - 3) Shall provide Last Open Mic Priority and Chairman Priority modes.
 - 4) Shall provide Max Number of Open Microphone parameter from 1 to 12 microphones.
 - 5) Shall provide Gate Threshold level and adjustable Off Reduction level for gated channels.
 - 6) Shall provide adjustable parameters for Attack, Hold, and Release times
 - 7) Shall provide real-time metering of Signal Level, Gate Status, and Gate Threshold target from within the Automix parameter setup window.
 - 8) Shall provide global view with Gate Status indication of all channels assigned to an automixer group.
- f. Control Requirements
 - 1) Shall accept an RJ-45 connector to provide Ethernet monitoring and control using standard TCP/IP protocols to support real-time monitoring and system management over a LAN or WAN
 - 2) Shall accept 3.5 mm captive screw connectors to support bidirectional RS-232
 - 3) Shall provide an ACP audio control port to support the use of Extron Audio Control Panels.
 - 4) Shall provide a female USB mini type B port for software control.

- 5) Shall support remote control operation via external control system using Simple Instruction Set commands sent over RS-232, Ethernet, or USB
 - 6) Shall provide 8 sets of 3 configurable digital I/O ports that accept 3.5 mm captive screw connectors and can be programmed to sense and then respond to external triggers.
- g. Front Panel Requirements
- 1) Shall provide a green LED for power indication.
 - 2) Shall provide Configuration port that accepts a USB mini type B connector.
 - 3) Shall provide green LEDs for Expansion port, LAN port, and USB audio interface activity indication.
 - 4) Shall provide green LEDs for input and output signal presence indication.
 - 5) Shall provide red LEDs for input and output clip warning indication.
- h. Rear Panel Requirements
- 1) Shall provide 12 inputs that accept 3.5 mm captive screw connectors.
 - 2) Shall provide 8 outputs that accept 3.5 mm captive screw connectors.
 - 3) Shall provide a 4x4 digital audio interface on a mini USB B port
 - 4) Shall provide 8 digital input and 16 digital output ports that accept 3.5 mm captive screw connectors.
 - 5) Shall provide bidirectional RS-232 port that accepts 3.5 mm captive screw connector.
 - 6) Shall provide Expansion port that accepts an RJ-45 connector.
 - 7) Shall provide Ethernet host port that accepts an RJ-45 connector.
 - 8) Shall provide an ACP audio control port that accepts a 3.5 mm captive screw connector.
- i. General Requirements
- 1) Shall provide internal universal power supply with IEC power socket and support for international 100-240 VAC, 50/60 Hz standards.
 - 2) Shall be enclosed in a rack-mountable 1U, full rack width metal enclosure.
 - 3) Shall meet regulatory compliances.
 - a) Shall meet safety compliances under CE, c-UL, and UL
 - b) Shall meet EMI/EMC compliances under CE, C-tick, FCC Class A, ICES, and VCCI
 - c) Shall comply with appropriate requirements of RoHS and WEEE
 - 4) Shall provide three year parts and labor warranty

2. Approved device shall be the Extron DMP 128 Plus, part number 60-1511-01; no alternates or equals.
- D. XPA U 3502
1. Provide a compact, energy efficient audio amplifier with low thermal dissipation that shall support two analog inputs and two amplified outputs with 350 watts rms per channel.
 - a. Compact stereo amplifier with 350 watts rms power output per channel and ENERGY STAR® qualification
 - 1) Input Requirements
 - a) Shall support two, balanced or unbalanced line level signals on two 3-pole, 3.5 mm captive screw connectors.
 - 2) Output Requirements
 - a) Shall support two speaker level signals on two 2-pole, 5 mm screw-lock captive screw connectors.
 - b) Shall provide 350 watts rms per channel into 4 or 8 ohms measured at 1 kHz with 0.1% THD.
 - c) Shall provide a signal-to-noise ratio of 100 dB measured from 20 Hz to 20 kHz, unweighted.
 - d) Shall support a minimum load impedance of 4 ohms.
 - e) Shall provide a THD+N measurement of 0.1% measured at 1 kHz, at 3 dB below clipping.
 - 3) Amplifier Requirements
 - a) Shall utilize an efficient Class D amplifier design.
 - b) Shall provide Class D Ripple Suppression technology.
 - c) Shall be convection cooled and operate without fans or vents.
 - d) Shall provide an automatic clip limiter to detect onset of clipping by comparing input and output waveforms and automatically reduce gain without audible artifacts to eliminate clipping distortion.
 - e) Shall provide multiple protection circuits that activate during output shorts, thermal overload, or DC faults.
 - f) Shall provide power factor correction technology to remove harmonic content on the AC power line.
 - 4) Power Requirements
 - a) Shall draw 110.9 watts during typical (1/8 power) operation with all output channels driven with 4 ohm loads
 - b) Shall draw 106.9 watts during typical (1/8 power) operation with all output channels driven with 8 ohm loads

- c) Shall draw 7.8 watts during quiescent operation.
 - d) Shall provide a low power standby mode.
 - i. Shall enter standby mode after 25 minutes (+/- 5 minutes) of inactivity.
 - ii. Shall draw less than 1 watt while in standby mode.
 - iii. Shall return to full power status in less than 100 milliseconds upon signal detection while in standby mode.
 - iv. Shall feature an input signal detection threshold of -65 dBu, +/- 3 dB on a balanced input to deactivate standby mode.
 - e) Shall be ENERGY STAR qualified.
 - f) Shall provide internal universal power supply with IEC power socket and support for international 100-240 VAC, 50-60 Hz standards.
- 5) Control Requirements
- a) Shall support remote standby control on two 3.5 mm captive screw connectors using optional Extron analog volume and mute controllers.
- 6) Front Panel Requirements
- a) Shall provide an LED for power indication that lights green when the unit is receiving power and active, and lights amber when the unit is in standby mode.
 - b) Shall provide an LED for indication of the enclosure temperature exceeding the optimal value.
 - c) Shall provide green LEDs for input signal presence indication.
 - d) Shall provide red LEDs for indication of clip warning and protection circuit activation.
- 7) Rear Panel Requirements
- a) Shall provide two inputs on two 3-pole, 3.5 mm captive screw connectors.
 - b) Shall provide two outputs on two 2-pole, 5 mm screw-lock captive screw connectors.
 - i. Shall support 22 AWG to 12 AWG speaker cables.
 - c) Shall support remote control of volume and muting per channel on two 3-pole, 3.5 mm captive screw connectors\
 - d) Shall provide remote standby control port on one 2-pole, 3.5 mm captive screw connector that supports standby defeat with the insertion of included 10k ohm resistor.

- e) Shall provide recessed, detented potentiometers with laser etched position indicators for attenuation adjustment.
 - f) Shall provide green LEDs for input signal presence indication.
 - g) Shall provide red LEDs for indication of clip warning and protection circuit activation.
- 8) General Requirements
- a) Shall be enclosed in a rack-mountable 1U, half rack width metal enclosure.
 - b) Shall meet regulatory compliances.
 - i. Shall meet safety compliances under CE, C-tick, CUL, UL
 - ii. Shall meet EMI/EMC compliances under CE, C-tick, FCC Class B, ICES, VCCI Class B, CISPR 22 Class B
 - iii. Shall meet environmental compliances under ENERGY STAR, CEC, European Code of Conduct, RoHS
 - iv. Shall be UL listed for plenum airspaces and meet UL 2043 and CAN/ULC_S142:16 compliance for heat and smoke release, when used with an optional Extron Flexible Conduit Adapter Kit
 - v. Shall meet UL/IEC/EN 62368-1 for safety.
 - c) Shall provide three year parts and labor product warranty
 - d) Shall provide seven year parts and labor power supply warranty
- b. Approved device shall be the Extron XPA U 3502, part number 60-1955-01; no alternates or equals.
- E. NBP 200
- 1. Provide an ethernet enabled, three-gang network button panel for remotely controlling AV devices when paired with an Extron IP Link Pro control processor, HC 403, or HC 404.
 - a. Fully-customizable ethernet enabled button panel interface.
 - 1) Device shall have a total of ten dual color LED backlit buttons, eight dedicated for input selection and the remaining two dedicated for power. Buttons shall illuminate white or red, depending on configured or programmed functions, for ease of use in low-light environments.
 - a) Buttons shall feature two levels of illumination, dim and bright.
 - b) Buttons shall feature removable button caps allowing them to be custom labeled for easy identification.
 - 2) Device shall provide a rotary encoder knob located in the bottom left of the panel that can be used for volume, or for controlling specific functions on virtually any device that supports Ethernet, RS-232, or IR.

- 3) Device shall feature eight white LEDs arranged vertically located adjacent to the rotary encoder. When configured, these LEDs shall provide visual feedback to reflect the relative audio level of the AV system.
 - 4) Device shall have a female RJ-45 jack located on the back of the enclosure that supports 10/100Base-T, half/full duplex with auto-detect for connection to a LAN or WAN and includes link and activity LED indicators located on the left and right of the jack for troubleshooting network issues as well as supports PoE- Power over Ethernet, 802.3af
 - 5) Device shall include a multi-function button located below the faceplate on the front of the product that allows for the reset of the device or its communication properties at minimum.
 - 6) Device shall be Section 508 compliant and shall meet or exceed U.S. accessibility standards for Electronic Information Technology.
 - 7) Supports a web-based AV resource management application that provides a means to manage, monitor, and control AV equipment.
 - 8) Device shall be controllable using Extron Control for Web, Android, and iOS as a secondary point of control.
 - 9) Device shall support the following protocols: DHCP, DNS, HTTP, HTTPS, ICMP, SFTP, SSH, TCP/IP, UDP/IP.
 - 10) Device shall include both white and black faceplates.
- b. Mounting requirements
- 1) Device shall have the ability to be mounted directly in a wall, lectern, or other flat surface and shall be able to be secured using the supplied mud ring and hardware.
 - 2) Device shall have the ability to be mounted to the surface of a wall using an optional wall box.
- c. Software requirements
- 1) The device may only be configured or programmed using Extron's Global Configurator Plus or Professional, or Global Scriptor respectively.
 - 2) Shall be configured or programmed by an Extron authorized user.
 - 3) The device's configuration and settings shall be managed using Extron's Toolbelt software.
- d. Security requirements
- 1) Device shall support SSH for secure communication between the network button panel and the control processor or the meeting space collaboration system.
 - 2) Device shall support SFTP and SSH for secure communication between the control processor and the configuration or programming software.

- 3) Device shall provide the option to modify administrator and user credentials.
- 4) Device shall support security updates to maintain network health.
- 5) Device shall require that a Secure Socket Layer (SSL) Certificate is installed to maintain system confidentiality and data integrity.
- 6) Device shall support the installation of an owner furnished certificate with the following properties:
 - a) Certificates shall include x.509 support.
 - b) Certificates shall include public / private key exchange.
 - c) Certificates shall support PEM encoding.
- 7) Extron shall furnish documentation that describes all supported network ports and services.
- e. Shall meet regulatory compliances.
 - 1) CE
 - 2) c-UL
 - 3) UL
 - 4) C-Tick
 - 5) FCC Class B
 - 6) ICES
 - 7) VCCI
 - 8) RoHS
 - 9) WEEE
- f. Product Warranty
 - 1) Shall provide at least 3 years parts and labor.
- g. Approved device shall be the Extron NBP 200, part number 60-1795-01; no alternates or equals.

F. DTP T HWP 4K 231 D

- 1. Provide an HDMI decorator-style wallplate twisted pair transmitter that shall support the distribution of video, audio, and control over a shielded CAT-6A cable.
 - a. Single-gang decorator-style wallplate transmitter for the transmission of HDMI, audio, and control
 - b. Video input requirements
 - 1) Provide one (1) video input for digital video signals.

- a) Supported HDMI specifications include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through.
- c. Audio input requirements
 - 1) Support embedded digital audio on HDMI input.
 - 2) Provide a dedicated analog audio input connection.
 - a) One (1) stereo analog audio
- d. Control input requirements.
 - 1) Provide communication connections for AV device control.
 - a) One bidirectional RS-232 pass-through
 - b) One bidirectional IR pass-through
- e. Interconnection requirements
 - 1) Support interconnection between transmitter and receiver or DTP®-enabled products.
 - a) One RJ-45 twisted pair connection.
 - 2) Shall be configurable for sending digital video and embedded audio, plus bidirectional RS-232 and IR signals to an HDBaseT-enabled display.
- f. Transmission requirements
 - 1) Provide signal transmission distance capability of 230 feet (70 m) at 1920x1200, including 1080p @ 60 Hz and 2K using a shielded CAT-6A cable.
 - 2) Support signal transmission distance capability of 4K @ 30 Hz, UHD, and 2560x1600 up to 130 feet (40 m) using a shielded CAT-6A cable.
 - 3) Support video, audio, and control over a single shielded CAT-6A cable.
 - 4) Support embedded HD lossless audio formats.
 - 5) Actively buffer DDC channels
- g. Resolution requirements
 - 1) Support computer and video resolutions up to 4K, including 1080p/60 Deep Color
 - 2) Support RGB and YCbCr digital video formats.
- h. Audio requirements
 - 1) The unit shall accept additional analog stereo audio signals for simultaneous transmission with HDMI embedded audio.
 - 2) The unit shall support multiple embedded audio formats.

- 3) The unit shall support embedded HD lossless audio formats.
 - i. HDCP requirements
 - 1) The unit shall be HDCP 2.3 compliant with backward compatibility with earlier HDCP versions.
 - j. Communication requirements
 - 1) The unit shall support bidirectional RS-232 communication pass-through up to 115200 baud.
 - 2) The unit shall support bidirectional IR pass-through.
 - 3) The unit shall support EDID and HDCP transmission.
 - k. Power requirements
 - 1) The unit shall support remote power capability.
 - 2) The unit shall support being locally powered.
 - l. General Requirements
 - 1) The unit shall be compatible with CAT-6A shielded twisted pair cable, and Extron XTP DTP 24 shielded twisted pair cable.
 - 2) The unit shall support HDMI specifications including data rates up to 10.2 Gbps, Deep Color, 3D, HD lossless audio formats, and CEC pass-through.
 - 3) The unit shall support being locally or remotely powered.
 - 4) The unit shall support embedded HD lossless audio formats.
 - 5) The unit shall support the use of HDMI to DVI-D cables or adapters for DVI-D
 - 6) The unit shall support installation into standard US one-gang electrical junction boxes.
 - 7) Shall provide visual indication of signal presence and power.
 - 8) Shall meet regulatory compliances.
 - a) CE, c-UL, UL
 - b) CE, C-tick, FCC Class A, ICES, VCCI
 - 9) Shall provide at least 3 years parts and labor warranty.
 - 10) Shall be compatible with other DTP-enabled products.
 - m. Approved device shall be the Extron DTP T HWP 4K 231 D (60-1421-12 or 60-1421-13); no alternates or equals.
- G. DTP HDMI 4K 230 Rx
1. Provide an HDMI twisted pair receiver that shall support the distribution of video, audio, and control over a shielded CAT-6A cable.

- a. Rack-mountable receiver for HDMI, audio, and control.
- b. Video output requirements
 - 1) Provide one (1) video output for digital video signals.
 - a) Supported HDMI specifications include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through.
- c. Audio output requirements
 - 1) Support embedded digital audio on HDMI output.
 - 2) Provide a dedicated analog audio output connection.
 - a) One (1) stereo analog audio
- d. Control output requirements.
 - 1) Provide communication connections for AV device control.
 - a) One bidirectional RS-232 pass-through
 - b) One bidirectional IR pass-through
- e. Interconnection requirements
 - 1) Support interconnection between receiver and transmitter or DTP®-enabled products.
 - a) One RJ-45 twisted pair connection.
- f. Transmission requirements
 - 1) Provide signal transmission distance capability of 230 feet (70 m) at 1920x1200, including 1080p @ 60 Hz and 2K using a shielded CAT-6A cable.
 - 2) Support signal transmission distance capability of 4K @ 30 Hz, UHD, and 2560x1600 up to 130 feet (40 m) using a shielded CAT-6A cable.
 - 3) Support video, audio, and control over a single shielded CAT-6A cable.
 - 4) Support embedded HD lossless audio formats.
 - 5) Actively buffer DDC channels
- g. Resolution requirements
 - 1) Support computer and video resolutions up to 4K, including 1080p/60 Deep Color
 - 2) Support RGB and YCbCr digital video formats.
- h. Audio requirements
 - 1) The unit shall support analog stereo audio pass-through signals.
 - 2) The unit shall support multiple embedded audio formats.

- 3) The unit shall support embedded HD lossless audio formats.
- i. HDCP requirements
 - 1) The unit shall be HDCP 2.3 compliant with backward compatibility with earlier HDCP versions.
- j. Communication requirements
 - 1) The unit shall support bidirectional RS-232 communication pass-through up to 115200 baud.
 - 2) The unit shall support bidirectional IR pass-through.
 - 3) The unit shall support EDID and HDCP transmission.
- k. Power requirements
 - 1) The unit shall support remote power capability.
 - 2) The unit shall support being locally powered.
- l. General requirements
 - 1) The unit shall be HDCP 2.3 compliant with backward compatibility with earlier HDCP versions.
 - 2) The unit shall be compatible with CAT-6A shielded twisted pair cable, and Extron XTP DTP 24 shielded twisted pair cable.
 - 3) The unit shall support HDMI specifications including data rates up to 10.2 Gbps, Deep Color, 3D, HD lossless audio formats, and CEC pass-through.
 - 4) The unit shall support being locally or remotely powered.
 - 5) The unit shall support embedded HD lossless audio formats.
 - 6) The unit shall support the use of HDMI to DVI-D cables or adapters for DVI-D
 - 7) The unit shall have a low profile enclosure and versatile mounting capability
 - 8) Shall provide visual indication for signal presence and power.
 - 9) Shall meet regulatory compliances.
 - a) CE, c-UL, UL
 - b) CE, C-tick, FCC Class A, ICES, VCCI
 - 10) Shall provide at least 3 years parts and labor warranty.
 - 11) Shall be compatible with other DTP-enabled products.
- m. Approved device shall be the Extron DTP HDMI 4K 230 Rx (60-1271-13); no alternates or equals

2. WPD101 3.5MM

3. DENON 12-CHANNEL LINE MIXER
4. JBL CONTROL 30 SPEAKER
5. JBL SPEAKER MOUNTS - #MTC-30UB
6. For NEWHALL ES Provide FF-220T ceiling tile speakers as required in Leu of the JBL Control 30 speakers. See Newhall ES plans for further information.

2.04 RELATED WORK - NETWORK CONNECTIVITY

- A. Refer to Section 27 05 00 - Data for all Ethernet network drop connections. All Ethernet cabling and jacks used to connect to the building network shall be provided as indicated on the plans All system devices provided in this section, which require an Ethernet network connection shall be coordinated 1 with this contractor.
- B. All system devices provided in this section that require a network connection shall be coordinated with district IT department to be assigned TCP/IP configuration settings including a static IP address, domain, gateway, and subnet mask.
- C. This contractor will implement all device network configuration and device programming required to provide a complete and functional system under this specification including any special connecting network jumpers and all other types of cabling, and interconnect wires and cables required.

2.05 ADDITIONAL AUDIO VIDEO PROGRAM SOURCE

- A. DVD player shall be provided and must be incorporated to system as required per project. Contractor shall be responsible to provide new Sony - UBP-X800M2 - Streaming 4K Ultra HD Hi-Res Audio Wi-Fi Built-In Blu-Ray Player - Black. The contractor shall provide connections and interface to AV system for this player be completely functional as required per project.
- B. ADVANCED COMBO Wi-Fi/RF w/DANTE ASSISTIVE LISTENING SYSTEM
 1. Assistive listening system shall be programmed to NOT interfere with Districts private frequency range. The contractor must coordinate with district I.T. to ensure correct system frequencies are provided.
 2. Each assembly area required by 219 to provide assistive listening systems shall provide signs informing patrons of the availability of the assistive listening system. Assistive listening signs shall comply with 703.5 and shall include the International Symbol of Access for Hearing Loss complying with 703.7.2.4.
 3. In each assembly area, where audible communication is integral to the use of the space, an Assistive Listening System (ALS) shall be provided. Twenty-five percent (25%) minimum of receivers provided, but no fewer than two, shall be hearing-aid compatible.
 4. The Americans with Disabilities Act (ADA) requires that places of public accommodation provide assistive listening systems (ALS) in assembly areas where sound is important. The number of receivers required depends on the seating capacity of the assembly area, contractor shall provide required amount of receivers based on occupancy per school:

50 or fewer seats: 2 receivers

51–200 seats: 2 receivers plus 1 receiver for every 25 seats over 50

201–500 seats: 2 receivers plus 1 receiver for every 25 seats over 50, plus 1 receiver for every 4 receivers

5. The assistive listening system shall be capable of broadcasting audio over both the 72 MHz frequency and 2.4/5.0 GHz Wi-Fi frequencies, allowing users to receive the audio through a receiving device with ear speaker/headphones or directly to Bluetooth enabled hearing aids. The 72 MHz frequency shall be transmitted to a receiving device as defined below. The 2.4/5.0 GHz frequency shall be transmitted to personal smart devices such as cellular phones and tablets through a free application as defined below. The system shall be capable of connecting to a Dante™ network via an external audio interface adapter. (POE required)
6. The stationary RF transmitter shall be capable of broadcasting on 57 channels. The transmitter shall have an SNR of 80 dB or greater. The output power shall be adjustable to quarter, half or full. Channel tuning shall be capable of being locked. The device shall have an audio frequency response of 50 Hz to 15k Hz, ± 3 dB at 72 MHz. It shall have two (2) mixing audio inputs and a mixed signal output. The device shall have the following audio controls: input level, mix level and an adjustable low pass filter (contour). The device shall have an audio processor that is capable of automatic gain control and limiting. The Listen Technologies LT-800-072 is specified.
7. The stationary audio over Wi-Fi server shall be capable of delivering 2 mono / 1 stereo audio channels in 1 RU space and shall be capable of connecting to and residing on the venues existing local area network (LAN) via a single RJ45 Ethernet connection. Venue content and channel listings shall be administered through a cloud managed service. The audio over Wi-Fi server shall be compatible with the latest Wi-Fi IEEE 802.11 standards and capable of handling up to 1,000 simultaneous users. The Listen EVERYWHERE 2 Channel server LW-100P-02 is specified.
8. The RF receiver shall be capable of receiving on 57 wide and narrow band channels. The receiver shall have a signal-to-noise ratio of 80 dB or greater and shall have an audio frequency response of 50 Hz – 15 kHz (± 3 dB). The device shall employ a unique DSP SQTM noise reduction technology. The unit shall have a programmable squelch circuit. The unit shall incorporate a multi-functional display that indicates battery status, inventory number and channel. The device shall have the option of being lanyard or belt clip worn and the lanyard shall have the option of an integrated neck loop. The device shall have a USB connector used for inventory control, set up, charging and firmware upgrades. The device shall incorporate automatic battery charging circuitry and use a non-proprietary lithium ion battery. The device shall have additional charging contacts to allow multiple charging options. The Listen LR-4200-072 is specified.
9. The Wi-Fi receiver shall be personal smart devices such as cellular phones and tablets as provided by the users. The audio over Wi-Fi shall be delivered to the personal smart device via a free application downloaded onto the personal device. When the free application is launched, the personal smart device will automatically connect to the audio over Wi-Fi server. The application will list the available channels and play the audio when selected by the user. The free application shall also be capable of containing user documentation and instructions in addition to ads, promotional banners and videos. The app shall be customizable, allowing the venue to load in its color pallet and logos. The Listen EVERYWHERE App is specified.

10. Furnish and install a COMBO Wi-Fi/RF w/Dante assistive listening system+:
 - a. Listen Technologies LT-800-072 Stationary RF Transmitter (72 MHz) (Qty: 1 ea.)
 - b. Listen Technologies LW-100P-02 Listen EVERYWHERE 2 Channel server (Qty: 1 ea.)
 - c. Listen Technologies LPT-A107-B Dual RCA to Dual RCA Cable (Qty: 1ea.)
 - d. Listen Technologies LW-202 LE Venue Awareness Kit (Qty: 1ea.)
 - e. Listen Technologies LA-326 Rack mount kit (Qty: 1 ea.)
 - f. Listen Technologies LA-122 Universal antenna. (Qty: 1 ea.)
 - g. Listen Technologies LR-4200-072 Intelligent DSP RF Receiver (72MHz) Includes: LA-365 Rechargeable Li-ion Battery (Qty: 2 each or as needed, see calculator*)
 - h. Listen Technologies LA-401 Universal Ear Speaker (Qty: 2 ea. or as needed)
 - i. Listen Technologies LA-430 Intelligent Ear Phone/Neck Loop Lanyard (Qty: 2 each or as needed, see calculator*)
 - j. Listen Technologies LA-423-01 4-Port USB Charger (Qty: 1 ea. or as needed)
 - k. Listen Technologies LA-304 Assistive Listening Notification Signage Kit. (Qty: 1 ea.)
 - l. Listen Technologies LA-466 Dante 2 Channel Output XLR Adapter (POE required)
 - 1) +The Americans with Disabilities Act (ADA) 2010 ADA Standards requires public facilities to provide auditory assistance devices.

2.06 CABLE

- A. The Contractor shall provide and install new and unused ASTM bare solid copper conductor wire per ANSI/NEMA codes. Follow the manufacturer's instructions. All wire shall be UL listed for communication and control circuits.
- B. All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non11 smear nylon marking pens. Utilize Tyton Corporation Part No. RO175 Rite-On labels and Part No. FTP1 nylon marking pens or equivalent.
- C. Where network cabling is provided, the contractor to use Category 5e cable.

2.07 CABLE

CABLE TIES

- A. Nylon cable ties shall be furnished and installed to attach wire bundles to supports and for appropriate wire management as required.
 1. Nylon wire tie, 3.9", miniature - Panduit PLT1M-C or equivalent.
 2. Nylon wire tie, 5.6", miniature - Panduit PLT1.5M-C or equivalent.
 3. Nylon wire tie, 11.4", intermediate - Panduit PLT3I-C or equivalent.
 4. Nylon wire tie, 14.6", intermediate - Panduit PLT4I-C or equivalent.

2.08 CABLECABLE ROUTING, INSTALLATION, AND SUPPORT

- A. System wiring and equipment installation shall be in accordance with good engineering practices as established by the NEC and the TIA/EIA. Wiring shall meet all state and local electrical code requirements.
- B. Cable pathways, conduit, and cable support systems shall be complete with bushings, deburred, cleaned, and secure prior to installation of cable.
- C. All wiring shall test free from opens, grounds, or shorts. All communication cable shall be supported from the building structure and bundled. Do not attach any supports to joist bridging or other lightweight members.
- D. The support system shall provide a protective pathway 1 to eliminate stress that could damage the cabling. The cable shall not be crushed, deformed, skinned, crimped, twisted, or formed into tight radius bends that could compromise the integrity of the cabling.
- E. In all exposed areas such as gymnasiums, shops, field houses, janitors' closets, or mechanical / electrical rooms all communication cable shall be fully enclosed in conduit.
- F. Communication cables shall be run in trays from wall boxes to accessible area above finished ceilings. Conduit shall be required only within walls and concealed spaces to provide access.
- G. Provide bushings to protect the cable from damage for conduit ends, box openings, and passage through metal studs.
- H. Communication cables shall be run in bundles above accessible ceilings and supported from building structure. Cabling shall be loosely bundled with cable ties randomly spaced at 30 to 48 inches on center, cable ties shall not be tight enough to deform cabling and shall not be used to support the cabling.
- I. Communication cable must not be fastened to electrical conduits, mechanical ductwork/piping; sprinkler pipes, or routed to obstruct access to hatches, doors, utility access panels, or service work areas. Do not route cables through fire doors, ventilation shafts, grates, or parallel for more than four-feet with line voltage electrical conductors. Communication cables shall not be run loose on ceiling grid or ceiling tiles.
- J. Support shall be provided by mounting appropriate fasteners that may be loaded with multiple cables. Provided that the weight load is carried by the support rod or wire, the support assembly may attach to the ceiling grid for lateral stabilization. The required support wires for the ceiling grid or light fixtures shall not be utilized. Any fastener attached to the ceiling grid shall not interfere with inserting or removing ceiling tiles. The cable pathway of supports must be positioned at least 12 inches above the ceiling grid.
- K. All cabling shall be placed with regard to the environment, EMI/RFI interference, and its effect on communication signal transmission.
- L. Do not route any data communication cable within two feet of any light fixture, HVAC unit, service access area, electric panel, or any device containing a motor or transformer.
- M. Communication cable will not be installed in the same conduit, raceway, tray, duct, or track with line voltage electrical cable without a metallic barrier meeting NEC requirements.

- N. Maximum cable pulling tension should not exceed 25 lb./ft. or manufactures recommendation, whichever is less.
- O. Any pulling compounds utilized must be approved by the cable manufacturer and shall not degrade the strength or electrical characteristics of the cable.
- P. No terminations or splices shall be installed in or above ceilings.
- Q. Cable bends shall not be tighter that the manufacturers' suggested bend radius.
- R. Mount all equipment firmly in place such that vibration or jarring will not activate an alarm, supervisory, or trouble signal. Route cable in a professional, neat, and orderly installation.
- S. All cable shall have a label on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens. Utilize Tyton Corporation Part number RO175 Rite-On labels and Part number FTP1 nylon marking pens or equivalent.
- T. Each cable run shall include a three-foot service loop with wire tie located in the ceiling above the control unit panel. This is to allow for future re-termination or repair.
- U. Provide for adequate ventilation to all equipment racks and take precautions to prevent electromagnetic or electrostatic hum.
- V. All conduit, ducts, track, and raceways shall be supported from the structure at industry standard intervals for the size specified, utilizing proper anchoring devices. Cable fill may not exceed the manufacturers' instructions for each type of support.
- W. Devices mounted on a drop ceiling shall feature a backbox fitted with a support hanger (Caddy #512 or #512A for deep boxes), or equivalent with independent drop wires to support the weight of the device.

2.09 TERMINATION PRACTICES

- A. Strip back only as much cable jacket as required to terminate.
- B. Preserve wire twists as closely as possible to point of termination (0.5" maximum) to keep signal impairment to a minimum.
- C. Avoid twisting cable jacket during installation.

2.10 BUSHINGS

- A. Provide a plastic snap in bushing at each box opening, passage through a metal stud, and at the end of all open conduit stubs or sleeves prior to cable installation to protect the cabling from damage:
 - 1. Box openings - Thomas & Betts Knockout Bushing Series 3210, or equivalent.
 - 2. Metal stud passage - Thomas & Betts Twist It Bushing Catalog Number SB1216-SC, or equivalent.
 - 3. Conduit ends - Thomas & Betts Anti-Short Bushing Series 390 or Tite-Bite Combination couplings Series 442, or equivalent.

2.11 J-HOOKS

- B. Attachments for cabling support shall be spaced at approximately 48 to 60 inches on center.
- C. The cable bundle shall not be allowed to sag more than 12 inches mid-span between attachments. Attachments shall be sized as follows:
- D. Single cables or bundles up to four cables may be supported directly by the building structure. Bundles up to 1/2" dia. (Ten 1/4" cables) 2" bridle ring, Caddy #4BRT32 or equivalent.
- E. Bundles up to 3/4" dia. (Sixteen 1/4" cables) 3/4" J-Hook, Caddy #CAT12 or equivalent. Bundles up to 1-5/16" dia. (Fifty 1/4" cables) 1-5/16" J-Hook, Caddy #CAT21 or equivalent. Bundles up to 2" dia. (Eighty 1/4" cables) 2" J-Hook, 1 Caddy #CAT32 or equivalent.
- F. Split bundles greater than 2" dia. or provide cable tray.
- G. Do not mix different signal strength cables on the same J-Hook (i.e. intercom with telephone/data cable). Multiple J-Hooks can be placed on the same attachment point, up to the rated weight load of the attachment device.

2.12 SURGE AND AMPERAGE PROTECTION

- A. Electrical surge protection shall be provided for all service entrance connections and on each copper pair that connects one building to another (i.e. any other portion of a building complex not under one continuous roof) at both exit points to prevent damage to equipment.

2. FIRE STOPPING, DRAFT/NOISE STOPPING, PENETRATIONS, AND CORING

- A. UL Listed fire stopping methods that match the fire rating of the wall or floor being penetrated are to be used at all fire barrier penetrations. Seal the interior of the conduit sleeve around the cables and around the outside of the sleeve on each side of the penetration with fire-stop caulk or putty, install according to the manufacturers' instructions.
- B. All penetrations through fire rated walls or floors shall feature a suitable length of metal conduit. Hole diameter shall not exceed 1/2" larger than the conduit or sleeve to be installed. The hole shall be neatly cut, not oversize or irregular. Do not share wall/floor penetrations with ductwork, piping, line voltage electrical conduits, etc.
- C. All gypsum board or plaster penetrations shall tool cut using an appropriate hole saw / mandrel or manufactured assembly.
- D. Draft/Noise Stopping - All penetrations through non-rated walls shall include draft/noise stopping to minimize the transfer of air and sound between enclosed areas. This shall include but not limited to:
 - 1. Neatly cutting all non-rated wall penetrations with a 1" maximum clearance. All gypsum board or plaster penetrations shall be tool cut using an appropriate hole saw / mandrel or manufactured assembly. The hole shall be neatly cut and not oversize or irregular. Do not share wall penetrations with other types of ductwork, piping, line voltage electrical conduits, communications cabling, etc.
 - 2. Provide and install non-combustible mineral wool, fiberglass, cellulose insulation, caulk, and/or sealant as required. Seal the interior of conduit sleeves around the cables and around the outside of the sleeve on each side of the penetration with caulk or putty, install materials according to the manufacturers' instructions.

- E. The Contractor shall make every effort to coordinate with the building Architect, Engineer, Builder, and Electrical Contractor to have sleeves placed in new construction so that later coring or drilling of building structural members will not be required. 1 The Contractor must consult with the building Architect, Engineer, and Builder prior to drilling, coring, or sawing of any wall, floor, etc. All penetrations shall be made at approved, appropriate, locations.
- F. Upon approval, the Contractor shall be required to supply all labor, equipment, tools, and materials to create any additional penetrations, and shall provide the sleeve, temporary and final fire stopping. Special care shall be taken not to stress, overheat, or penetrate any building support member. Coring shall be made with equipment appropriate for the dry penetration of concrete and block materials. Under no circumstances shall penetrations be made utilizing a chisel or percussion type equipment. Concrete, block, or plaster cores shall be made by dry saw/core methods only.

PART 3 - EXECUTION

3.01 OCCUPANCY ADJUSTMENTS

- A. On-Site Assistance: Engage a factory-authorized service representative to provide on-site assistance in adjusting sound levels, resetting transformer taps, and adjusting controls to meet occupancy conditions. Provide up to three on-site assistance visits within one year of Substantial Completion.

3.02 CERTIFICATION, WARRANTY, SERVICE

- A. A factory trained service technician shall supervise the final connections and testing of the system and it shall be subject to the final acceptance of the Architect, Engineer, and local authorities. Testing shall insure the following:
 - 1. Before energizing the cables and wires, check for correct connections and test for short-circuits, ground faults, continuity, and insulation.
 - 2. Complete and functional system.
 - 3. Installed in accordance with manufacturer's instructions.
 - 4. Upon completion of the testing, the manufacturer or his representative shall issue to the Owner a letter of certification attesting to the fact that he has tested and adjusted the system, that all components are properly installed and free of defects, and that the system is in compliance with this specification.
- B. The contractor shall provide a warranty and service contract for the installed system. The warranty shall be against defects in material or workmanship for a period of one (1) year from the date of substantial completion. Any equipment or wiring shown to be defective shall be replaced, repaired, or adjusted free of charge. All labor and materials shall be provided at no expense to the Owner. All equipment will carry a one year warranty or manufacturer's warranty whichever is greater.
- C. The service contract shall provide a minimum of the following:
 - 1. Diagnostics of the system should a problem occur.
 - 2. Reprogramming - Desired changes to class of service of any device or to the bell schedule. The Intercom Communications System Contractor will provide this service with an unlimited number or frequency of the changes.

3. The Communication Systems Contractor will provide service software upgrades to the system that become effective during the period of the service contract.
- D. The contractor shall make available a service contract offering continuing factory authorized service of this system after the initial warranty period. This contract shall automatically renew each year at the owner's discretion. Contractor will provide the cost of renewal 1 to the owner thirty (30) days prior to the expiration of the contract after the first year.
- E. The system manufacturer shall maintain engineering and service departments capable of rendering advice regarding installation and final adjustment of the system.

3.03 DRAWINGS, MANUALS, AND TRAINING

- A. In addition, the contractor shall furnish complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets. Manuals shall include wiring diagrams to indicate internal wiring for each device and the interconnections between the items of equipment. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system. Provide a parts list with manufacturer and model number for commonly replaced parts. Include complete instructions for the inspection, testing, and maintenance of the system. Include copies of all programming sheets used to configure the system.
- B. The Contractor shall conduct formal on-site training sessions. Provide documented general instruction as follows:
 1. Provide instruction to the maintenance personnel to include the location, inspection, maintenance, testing, and operation of all system components. Provide a minimum of four (4) hours--two 2-hour sessions separated by a minimum of two weeks.
 2. Provide instruction to designated personnel on the functions and operation of the system, where required to include service request procedures. Provide a minimum of four (4) hours--two 2-hour sessions separated by a minimum of two weeks.

PART 4 - APPENDIX

List of equipment:

- A. In addition to parts listed per school, Contractor shall provide Additional spare parts for the project to District as to ensure the district will have adequate future parts available in case of future for the following items:
 - a. Provide (2) spare-Video Scaler IN1808 IPCP Q SA
 - b. Provide (2) spare XPA U 3502, 2 CH. AMP
 - c. Provide (2) spare NBP 200
 - d. Provide (4) spare DTP T HWP 4K 231 D
 - e. Provide (4) spare DTP HDMI 4K 230 Rx
 - f. Provide (2) spare Denon 12-Channel Line Mixer

B. Mcgraph

1. Projector Model #EB-PU-1008W with middle throw lens Model#ELPLM08.
2. JBL Control 30 Speaker with MTC-30UB Brackets
3. Existing AV rack new AV Equipment and microphone system, assistive listening system and blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 Plus -Audio DSP
 - d. DMP128 Plus at - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. (3) Microphone Wired Connections SM58
 - p. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - q. Blueray Player Model#UBP-X800M2
4. Draper Projector Screen Model ACCESS E (See Specification 115213 Part 2 section 2.02 for additional details)

C. Meadows

1. Projector Model #EB-PU-1008W with middle throw lens Model#ELPLM08.
2. JBL Control 30 Speaker with MTC-30UB Brackets

3. New AV rack, Middle Atlantic DWR Series Model#DWR-18-26PD with Plexi door #PDF-18. including new AV equipment, new microphone system, new assistive listening system and new blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 Plus -Audio DSP
 - d. DMP128 Plus at - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - p. Bluera y Player Model#UBP-X800M2
4. Draper Projector Screen Model ACUMEN E (See Specification 115213 Part 2 section 2.03 for additional details)

D. Newhall

1. Projector Model #EB-PU-1008W with middle throw lense Model#ELPLM08.
2. Extron Speakers, (6) Model FF 220T T-Bar Ceiling Mount.
3. New AV rack, Middle Atlantic DWR Series Model#DWR-18-26PD with Plexi door #PDF-18. including new AV equipment, new microphone system, new assistive listening system and new blue ray player as listed below:

- a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 PLUS -Audio DSP
 - d. DMP128 Plus at - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - p. Bluera y Player Model#UBP-X800M2
4. Draper Projector Screen Model TARGA (See Specification 115213 Part 2 section 2.03 for additional details)

E. Oak Hills

1. Projector Model #EB-PU-1008W with middle throw lens Model#ELPLM08.
2. JBL Control 30 Speaker with MTC-30UB Brackets
3. Existing AV rack new AV Equipment and microphone system, assistive listening system and blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 Plus -Audio DSP
 - d. DMP128 Plus at - Audio DSP

- e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. (3) Microphone Wired Connections SM58
 - p. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - q. Blu-ray Player Model#UBP-X800M2
4. Draper Projector Screen Model ACCESS E (See Specification 115213 Part 2 section 2.02 for additional details)
- F. Old Orchard
- 1. Projector Model #EB-PU-1008W with middle throw lense Model#ELPLM08.
 - 2. JBL Control 30 Speaker with MTC-30UB Brackets
 - 3. Existing AV rack new AV Equipment and microphone system, assistive listening system and blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 Plus -Audio DSP
 - d. DMP128 Plus at - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D

- h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. (3) Microphone Wired Connections SM58
 - p. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - q. Bluera y Player Model#UBP-X800M2
4. Draper Projector Screen Model ACUMEN XL E (See Specification 115213 Part 2 section 2.03 for additional details)
- G. Peachland
- 1. Projector Model #EB-PU-1008W with middle throw lense Model#ELPLM08.
 - 2. JBL Control 30 Speaker with MTC-30UB Brackets
 - 3. New AV rack, Middle Atlantic DWR Series Model#DWR-18-26PD with Plexi door #PDF-18. including new AV equipment, new microphone system, new assistive listening system and new blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 Plus -Audio DSP
 - d. DMP128 Plus at - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM

- j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - p. Bluera y Player Model#UBP-X800M2
4. Draper Projector Screen Model ACUMEN E (See Specification 115213 Part 2 section 2.03 for additional details)
- H. Pico Canyon
- 1. Projector Model #EB-PU-1008W with middle throw lens Model#ELPLM08.
 - 2. JBL Control 30 Speaker with MTC-30UB Brackets
 - 3. Existing AV rack new AV Equipment and microphone system, assistive listening system and blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 Plus -Audio DSP
 - d. DMP128 Plus at - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M

- n. (6) Microphone Wireless SM58
 - o. (3) Microphone Wired Connections SM58
 - p. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - q. Bluera y Player Model#UBP-X800M2
4. Draper Projector Screen Model ACCESS E (See Specification 115213 Part 2 section 2.02 for additional details)
- I. Stevenson Ranch
- 1. Projector Model #EB-PU-1008W with middle throw lens Model#ELPLM08.
 - 2. JBL Control 30 Speaker with MTC-30UB Brackets
 - 3. Existing AV rack, New AV Equipment and microphone system, assistive listening system and blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 PLUS -Audio DSP
 - d. DMP128 PLUS AT - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q QUAD-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - p. Bluera y Player Model#UBP-X800M2

4. Draper Projector Screen Model ACCESS E (See Specification 115213 Part 2 section 2.02 for additional details)
- J. Valencia Valley
1. Projector Model #EB-PU-1008W with middle throw lense model#ELPLM08.
 2. JBL Control 30 Speaker with MTC-30UB Brackets
 3. New AV rack, Middle Atlantic DWR Series Model#DWR-18-26PD with Plexi door #PDF-18. including new AV Equipment and microphone system, assistive listening system and blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 Plus -Audio DSP
 - d. DMP128 Plus at - Audio DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. (3) Microphone Wired Connections SM58
 - p. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - q. Blueray player model#UBP-X800M2
 4. Draper projector screen model ACUMEN E (See Specification 115213 Part 2 section 2.03 for additional details)

K. Wiley Canyon

1. Projector model #EB-PU-1008W with middle throw lens model#ELPLM08.
2. JBL Control 30 Speaker with MTC-30UB brackets
3. Existing AV rack new AV Equipment and microphone system, assistive listening system and blue ray player as listed below:
 - a. Video Scaler IN1808 IPCP Q SA
 - b. Sharelink Pro 1100
 - c. DMP128 PLUS -AUDIO DSP
 - d. DMP128 PLUS AT - AUDIO DSP
 - e. XPA U 3502, 2 CH. AMP
 - f. NBP 200
 - g. DTP T HWP 4K 231 D
 - h. DTP HDMI 4K 230 Rx
 - i. WPD101 3.5MM
 - j. Denon 12-Channel Line Mixer
 - k. (2) Shure Receiver ULXD4Q Quad-Channel Wireless Digital Receiver
 - l. (4) Body Pack ULXD1
 - m. (4) Clip on Mic. WL185M
 - n. (6) Microphone Wireless SM58
 - o. (3) Microphone Wired Connections SM58
 - p. Listen IDSP Prime Level III Stationary RF System (72MHZ)
 - q. Blue ray Player Model#UBP-X800M2
4. DRAPER PROJECTOR SCREEN MODEL ACUMEN XL E (See Specification 115213 Part 2 section 2.03 for additional details)

END SECTION