

CLOVIS UNIFIED SCHOOL DISTRICT

**BID PACKAGE FOR
BID 2983
CAMPUS SECURITY IMPROVEMENTS PHASE 2**

Corine Folmer, Ed.D.
Superintendent

Clovis Unified School District
1450 Herndon Avenue
Clovis, California 93611
(559) 327-9479

**CLOVIS UNIFIED SCHOOL DISTRICT
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NOTICE TO CONTRACTORS

Notice is hereby given that CLOVIS UNIFIED SCHOOL DISTRICT, (hereinafter referred to as "Owner") will receive sealed bids prior to the date and time stated for the Bid Opening for construction of:

BID 2983– CAMPUS SECURITY IMPROVEMENTS PHASE 2

as per drawings and specifications which may be obtained electronically from:

MARK WILSON CONSTRUCTION
Attention: Cole Bendoski
5799 E Clinton Ave. Fresno, CA 93727
Email: estimating@markwilsonconstruction.com
Phone: 559-348-0421

Upon receipt of the contract documents provide the following information:

1. Organization/Contact Person for each Prime Contractor
2. Mailing address and P.O. Box Number for each Prime Contractor
3. Phone Number and Email Address for each Prime Contractor

The project will be bid as multiple prime contracts according to the list below:

Bid Form Bid	Bid Package	Contractor License
Package #	Description	Requirement (, = or)
CSI –01a	DOOR HARDWARE	C-28
CSI –02a	ELECTRICAL & LOW VOLTAGE	C-7 or C-10

Mandatory Pre-Bid Meeting- There will be one mandatory pre-bid meeting that will take place over a two-day period. Contractors will be required to sign in at each site to prove they attended the entire walk. The second day will begin at 9:00am at a site determined at the end of day one. Contractors who do not attend as mentioned will be disqualified from bidding.

Day One: **Tuesday, April 2, 2024: Clovis East High School** located at 2940 Leonard Ave., Clovis CA 93619 at **9:00am**. Meet at flagpole.

Day Two: **Wednesday, April 3, 2024: TBD as stated in Mandatory Pre-Bid Meeting**

Time of completion for this project shall be **154 calendar days** (per construction manager's work schedule) from the start of the project as established within the Owner's Notice to Proceed.

Bids must be sealed and filed in the **Clovis Unified School District Purchasing Department at 1450 Herndon Ave, Clovis, California 93611** before **11:00 am** on **April 16, 2024** on the clock designated by the Owner or its representative as the bid clock, after which time bids will be opened. No bid will be accepted by Owner after this time. Facsimile (FAX) copies of the bid will not be accepted.

Bids will be opened in public at the following address: **Clovis Unified School District, CONSTRUCTION SERVICES OFFICE, 1470 Herndon Avenue Clovis, California 93611**. Bids will NOT be accepted at the bid opening location.

The DVBE Declaration of Good Faith Efforts to use Disabled Veteran Business Enterprises must be signed, filed, and included in sealed bid package before **11:00 am** on **April 16, 2024**, at which time the bids (including the DVBE Declaration of Good Faith Efforts to Use Disabled Veteran Business Enterprises) will be opened in public.

Bids must be accompanied by a bidder's bond, cashier's check, or certified check for at least ten per cent (10%) of the amount of the base bid and made payable to the Owner, issued by an Admitted Surety.

The successful bidder will be required to furnish a Payment (Labor and Material) Bond in the amount of one hundred per cent (100%) of the contract price, and a Faithful Performance Bond in the amount of one hundred per cent (100%) of the contract price, said bonds to be secured from an Admitted Surety.

The successful bidder will be allowed to substitute securities or establish an escrow in lieu of retainage, pursuant to Public Contract Code Section 22300, and as described in the General Conditions.

The Owner will not consider or accept any bids from contractors who are not licensed to do business in the State of California, in accordance with the California Public Contract Code, providing for the licensing of contractors. In accordance with Section 3300 of said Code, the Contractor shall have a license classification as described in the **MULTIPLE PRIME CONTRACT SCHEDULE**.

This bid is subject to Pre-Qualification. In accordance with Public Contract Code 20111.6, Notice is hereby given that the Clovis Unified School District has determined Bidders performing as both a Prime Contractor and General Contractor (A or B license), or an Electrical, Mechanical, and Plumbing Contractor utilized as a Prime Contractor or Subcontractor must be prequalified prior to bidding on this project. For purposes of this prequalification, Electrical, Mechanical, and Plumbing contractors are contractors holding either a C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43, and C-46 California State Contractors license. Prequalification Applications may be obtained from Clovis USD Purchasing Web Site: <https://www.cusd.com/Pre-Qualification.aspx>. Pre-Qualification status must be obtained by Clovis Unified School District **prior to 12:00 pm April 1, 2024**. Submission of questionnaire does not constitute qualified status.

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted, nor will any contract be entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work. If awarded a Contract, the Bidder, and its subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project.

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. In bidding on this project, it shall be the Bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under this contract and applicable law in its bid.

The lowest bid shall be determined as follows: The lowest total of the prime bid on the base contract and the bids on all additive items and all deductive items. (Public Contract Code section 20103.8, subd. (b)). The District reserves the right to add or deduct any of the additive or deductive items from the project or contract after the lowest responsible and responsive bidder is determined.

The Director of the Department of Industrial Relations of the State of California, in the manner provided by law, has ascertained the general prevailing rate per diem wages and rate for legal holidays and overtime work as set forth in the Agreement. The Contractor must pay for any labor therein described or classified in an amount not less than rates specified. Copies of the required rates are on file at the Owner's business office and are available to any interested party on request.

The Owner reserves the right to waive any irregularity and to reject any or all bids.

Unless otherwise required by law, no bidder may withdraw its bid for a period of sixty (60) days after date set for the opening thereof.

Advertise: March 18, 2024 By: MICHAEL JOHNSTON
 March 25, 2024 ASSISTANT SUPERINTENDENT OF BUSINESS SERVICES

INSTRUCTIONS TO BIDDERS
BID 2983– CAMPUS SECURITY IMPROVEMENTS PHASE 2

SECURING DOCUMENTS:

Drawings and Specifications are electronically from:

MARK WILSON CONSTRUCTION
Attention: Cole Bendoski
5799 E Clinton Ave. Fresno, CA 93727
Email: estimating@markwilsonconstruction.com
Phone: 559-348-0421

DEPOSIT: None Required for Electronic Copies

PREQUALIFICATION:

This Contract is subject to prequalification. If a bidder is not prequalified to bid on the Contract, Owner will not accept the bid. Any subcontractors the bidder lists for work requiring C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43, or C-46 licenses must have current pre-qualified status with the Owner. Bidders must submit the prequalification application to the Owner by the date specified in the application. Bidders may obtain the prequalification application from the Owner.

Mandatory Pre-Bid Meeting- There will be one mandatory pre-bid meeting that will take place over a two-day period. Contractors will be required to sign in at each site to prove they attended the entire walk. The second day will begin at 9:00am at a site determined at the end of day one. Contractors who do not attend as mentioned will be disqualified from bidding.

Day One: **Tuesday, April 2, 2024: Clovis East High School** located at 2940 Leonard Ave., Clovis CA 93619 at **9:00am**. Meet at flagpole.

Day Two: **Wednesday, April 3, 2024: TBD as stated in Mandatory Pre-Bid Meeting**

Question Deadline: All questions must be submitted in writing to estimating@markwilsonconstruction.com on or before **April 10th, 2024** a 3:00pm (PST).

PROPOSALS:

Proposals to receive consideration shall be made in accordance with the following instructions:

1. Proposals shall be made on a form therefore, obtained from the Construction Manager or Architect or Owner. Bids not made on the proper form shall be disregarded. Numbers must be stated in words and figures, and the signatures of all individuals must be in longhand. The completed form should be without interlineation, alterations, or erasures.
2. No proposal will be considered which makes exceptions, changes, or in any manner makes reservations to the terms of the drawings or specifications, except that explanations or alternate proposals may be made on a separate sheet attached to the bid form. They will not, however, be considered in determining low bid.
3. Questions regarding documents, discrepancies, omissions, or doubt as to meanings shall be referred immediately to the Architect who will send written instructions clarifying such questions to each bidder.
4. Each bid must give the full business address of the bidder, and the name of each person signing shall also be typed or printed below the signature. Bids by individuals must be signed by the individual. Bids by partnerships must furnish the full names of all partners and must be signed in the partnership name by one of the partners, or by an authorized representative, followed by the signature and designation of the person signing. Bid by corporations must be signed with the legal name of the corporation, followed by the name of the state of

incorporation and by the signature and designation of the president, secretary, or other person authorized to bind the corporation in the matter. Satisfactory evidence of the authority of the officer signing on behalf of a corporation shall be attached.

5. Pursuant to the provisions of Sections 4100 to 4114, inclusive, of the Public Contract Code of the State of California, which are hereby incorporated and made a part hereof, every bidder shall set forth in its bid:
 - A. The name and location of the place of business, the California contractor license number, and for all projects over Twenty-Five Thousand Dollars (\$25,000), the public works contractor registration number, of each subcontractor who will perform work or labor or render service to the bidder in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the bidder, specially fabricates and installs a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half ($\frac{1}{2}$) of one percent (1%) of the bidder's total bid. An inadvertent error in listing a California contractor's license number shall not be grounds for filing a bid protest or for considering the bid nonresponsive if the bidder submits the corrected contractor's license number to the Owner within 24 hours after the bid opening, or any continuation thereof, so long as the corrected contractor's license number corresponds to the submitted name and location for that subcontractor.
 - B. The portion of the work which will be done by each such subcontractor. If the bidder fails to specify a subcontractor for any portion of the work to be performed under the contract in excess of one-half ($\frac{1}{2}$) of one percent (1%) of the bidder's total bid, the bidder agrees to perform that portion itself. The successful bidder shall not, without the consent of the Owner:
 - 1) Substitute any person as subcontractor in place of the subcontractor designated in the original bid.
 - 2) Permit any subcontract to be assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the bid.
 - 3) Sublet or subcontract any portion of the work in excess of one-half ($\frac{1}{2}$) of one percent (1%) of the total bid as to which the original bid did not designate a subcontractor.

6. The Director of the Department of Industrial Relations of the State of California, in the manner provided by law, has ascertained the general prevailing rate of per diem wages and rate for legal holidays and overtime work as set forth in Article IX of the Agreement. The Contractor must pay for any labor therein described or classified in an amount not less than the rates specified. Copies of the required rates are on file at the Owner's business office and are available to any interested party on request.

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project. To this end, Bidder shall sign and submit with its Bid the Public Works Contractor Registration Certification on the form provided, attesting to the facts contained therein. Failure to submit this form may

render the Bid non-responsive. In addition, each Bidder shall provide the registration number for each listed subcontractor in the space provided in the Designation of Subcontractors Form.

7. All bids must be accompanied by a completed Noncollusion Declaration. The bidder must certify that the Bid is genuine and is not sham or collusive, or made in the interest of or on behalf of any bidder not named in the bid, and that the bidder has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other possible bidder to refrain from bidding, and that the bidder has not in any manner sought by collusion to secure for itself an advantage over any other bidder.
8. Proposals must be accompanied by a certified check, cashier's check, or bidder's bond, for an amount not less than ten percent (10%) of the amount of the base bid, made payable to the order of the Owner. If a bidder's bond accompanies the proposal, said bond shall be secured by an Admitted Surety (an insurance organization authorized by the Insurance Commissioner to transact business of insurance in the State of California during this calendar year) and satisfactory to the Owner. Said check or bond shall be given as a guarantee that the bidder will enter into the contract if awarded the work, and in case of refusal or failure to enter into said contract, the check or bond, as the case may be, shall be payable to the Owner and retained as liquidated damages.
9. Proposals shall be sealed and filed as indicated in the Notice to Contractors. Note regarding facsimiles: EXCEPT FOR BID SECURITY, all submitted before the bid opening documents may be in the form of facsimiles which have been sent elsewhere and sealed before filing with the Owner. (Any bidder who uses or attempts to use the Owner's facsimile equipment will be disqualified immediately.) The originals of the faxed documents must be mailed to the Owner, postmarked the same as the bid opening, via certified mail, return receipt requested, or hand-delivered to the Owner by the close of business on the day of the bid opening.

Facsimiles of the bid security are not acceptable - the original of the check or bond must be submitted before the bid opening.

10. Bidders shall possess a valid California Contractors License as listed in the Notice to Bidders. A General Building Contractors License (B) shall be acceptable in accordance with the California Business and Professional Code Section 7057, paragraph (b): A general building contractor may take a prime contract or a subcontract for framing or carpentry project. However, a general building contractor shall not take a prime contract for any project involving trades other than framing or carpentry unless the prime contract requires at least two unrelated building trades or crafts other than framing or carpentry, or unless the general building contractor holds the appropriate specialty license or subcontracts with an appropriately licensed specialty contractor to perform the work. Owner reserves the right to reject any bid as nonresponsive if a listed subcontractor is not licensed at the time the bidder's bid is submitted to Owner, whether or not the bidder listed the unlicensed subcontractor inadvertently. Owner reserves the right to reject any bid as nonresponsive if a listed subcontractor is not licensed to perform the work for which it is listed at the time the bidder's bid is submitted to Owner, whether or not the bidder listed the subcontractor for that particular work inadvertently.
11. Contractor shall maintain its license in good standing through Completion of the Work and all applicable warranty periods. Owner reserves the right to reject any bid as nonresponsive if bidder or any subcontractor is not licensed in good standing from the time the bid is submitted to Owner up to award of the Contract, whether or not the bidder listed the subcontractor inadvertently, or if a listed subcontractor's license is suspended or expires prior to award of the Contract. Owner also reserves the right to reject any bid as nonresponsive if a listed subcontractor's license is not in good standing to perform the work for which it is listed from the time of submission of the bidder's bid to award of the Contract.

WITHDRAWAL OF PROPOSALS:

Proposals may be withdrawn by the bidder prior to the time fixed for the submittal of bids. A successful bidder shall not be relieved of the bid unless by consent of the Owner or bidder's recourse to Public Contract Code § 5100 et seq.

OPENING OF BIDS:

Opening of bids shall be as soon after the hour set as will be possible; opening and declaration to be as set forth in the Notice to Contractors. Any and all bidders will be permitted to attend. The Owner is allowed the number of days set forth in the Notice to Contractors in which to determine low bidder.

EXAMINATION OF CONTRACT DOCUMENTS AND SITE:

Before submitting a proposal, bidders shall examine the drawings, read the specifications, the form of contract, and other contract documents. They shall visit the site of the proposed work; examine the building, or buildings, if any, and any work that may have been done thereon. They shall fully inform themselves of all conditions, in, at, and about the site, the building or buildings, if any, and any work that may have been done thereon.

FORM OF CONTRACT:

The form of contract which the successful bidder will be required to execute, if awarded the work, is attached hereto and is made a part hereof. Contract may be modified by mutual agreement between District and Contractor.

ADDENDA OR BULLETINS:

Any addenda or bulletins, issued during the time of bidding, shall form a part of the drawings and specifications loaned to the bidder for the preparation of its proposal, shall be covered in the proposal, and shall be made a part of the Contract Documents. All addenda or bulletins shall be signed by the Architect and approved by the Division of State Architect.

AWARD OF CONTRACT:

Rejection of any or all proposals, to contract work with whomever and in whatever manner, to abandon work entirely, and/or to waive any informality in receiving of bids is reserved as the right of the Owner. Before the contract or contracts are awarded, the Owner may at its sole discretion require from the proposed Contractor on each project further evidence of the reasonable qualifications of such contractor to faithfully, capably, and reasonably perform such proposed contract and may consider such evidence before making its decision on the award of such proposed contract.

The lowest bid shall be determined as follows: The lowest total of the prime bid on the base contract and the bids on all additive items and all deductive items. The District reserves the right to add or deduct any of the additive or deductive items from the project or contract after the lowest responsible and responsive bidder is determined.

The contract shall be awarded to the lowest and most responsible bidder as interpreted by the Owner and specified herein and shall be entered into by the successful bidder within ten (10) days after being notified by the Owner. Identity of lowest bidder will be determined by adding to or subtracting from the base bid the cost of such alternatives as Owner decides to include in the work and contract. The award, if made, will be made within sixty (60) days after the opening of proposals.

EXECUTION OF CONTRACT:

The Contract shall be signed by the successful bidder in as many originals as the Owner deems necessary and returned, together with the contract bonds and insurance certificates, within ten (10) days after the bidder has received notice that the contract has been awarded.

REGISTRATION: Pursuant to SB 854, for all projects over Twenty-Five Thousand Dollars (\$25,000), the Owner shall not accept any bid or enter into any contract without proof of the bidder's current registration to perform public work under Labor Code section 1725.5.

For all projects over Twenty-five Thousand Dollars (\$25,000), the bidder shall not accept any subbid or enter into any subcontract without proof of the subcontractor's current registration to perform public work under Labor Code section 1725.5.

CONTRACT BONDS:

Two bonds, in original form, as itemized below and in the forms presented in these contract documents, shall be furnished by the successful bidder at the time of entering into the contract and filed with the Owner. They shall be in the form of surety bonds issued by an Admitted Surety (an insurance organization authorized by the Insurance Commissioner to transact business of insurance in the State of California during this calendar year) and satisfactory to the Owner.

Performance Bond in the amount of one hundred percent (100%) of the contract sum to insure Owner during construction and for one year after completion against faulty or improper materials or workmanship and to assure Owner of full and prompt performance of the contract.

Payment Bond (Labor and Material) in the amount of one hundred percent (100%) of the contract sum in accordance with the laws of the State of California to secure payment of any and all claims for labor and materials used or consumed in performance of this contract.

DRAWINGS, SPECIFICATIONS AND ADDENDA OR BULLETINS:

Return by each bidder of all drawings, specifications and addenda or bulletins in an unmutilated condition and without any marks or annotations is demanded within the time limit indicated under **DEPOSIT** in this section.

SUBSTITUTION OF MATERIALS:

The Contractor must ensure that the proposed substitutions by the Contractor or its subcontractors are submitted to the Owner and Architect a minimum of TEN (10) calendar days prior to the bid opening for review and possible approval of any equipment or materials thought to be equal to or better than those specified in the drawings or specifications. An addendum may be issued prior to bid opening, including all equipment and materials deemed equivalent to those specified and approved by the Architect. Submittals shall include comparative spec-data of the specified equipment or material and the proposed substitution as set forth in the Contract Documents. Submittals without this information will be automatically rejected.

PAYMENTS:

Payments to the Contractor on account of the contract shall be made in accordance with the terms of the contract.

TAXES:

The Owner is exempt from payment of Federal Excise Tax on materials. The Owner will furnish exemption certificates to the Contractor to be used to obtain materials ordinarily subject to Federal Excise Tax without payment of the tax. Bidders shall deduct Federal Excise Taxes from their bid prices before submitting bids, so that such taxes will not be included in the Contract Sum.

TIME OF COMPLETION AND LIQUIDATED DAMAGES:

Time of completion for this project shall be **154 calendar days** (per construction manager's work schedule) from the start of the project as established within the Owner's Notice to Proceed. All procurement, coordination, milestones, durations, activities and sequences *for the bid packages* shall be performed as shown in the Construction Management Bid Schedule and Section 01320 of the specification and as modified by a monthly schedule update, if any.

Should said work not be completed within the time limit as may be extended as herein provided, damages will be sustained by the Owner. It is understood and agreed that it is and will be impracticable or extremely difficult to determine the actual amount of damages which the Owner will sustain in the event of and by reason of such delay, and it is therefore agreed that the Contractor will pay the Owner the sum of **one thousand dollars and 00/100 (\$1000.00) per calendar** for each and every day's delay beyond the time specified as and for liquidated damages; in case the Contractor fails to make such payment, the Owner may deduct the amount thereof from any money due or that may become due the Contractor under the contract. Should such money not be sufficient to cover the agreed liquidated damages, the Owner shall have the right to recover the balance from the Contractor or his sureties.

The Contractor shall be required to satisfy the conditions set forth in the contract and Education Code section 45125.2 regarding fingerprinting requirements and student safety prior to permitting any contact with students. Upon award of the contract and before beginning work, the Contractor shall be required to provide a verification of compliance with the student safety provisions of the contract and Education Code section 45125.2.

Upon award of the bid, require signature on the enclosed declaration to ensure compliance with the general Conditions and the Education Code.

The bid is subject to DVBE requirements.

END OF SECTION
REV. 3.97 (8.98)

BID PROPOSAL FORM FOR BID 2983

Date _____, 2024

Company Name _____

Bid Package Number and Title _____

**CLOVIS UNIFIED SCHOOL DISTRICT
PURCHASING
1450 HERNDON
CLOVIS, CALIFORNIA 93611**

The undersigned doing business under the firm name of _____ hereby propose and agree to enter into an agreement, to furnish any and all labor, materials, equipment and services for the completion of work described hereinafter and in the contract documents entitled construction of:

CAMPUS SECURITY IMPROVEMENTS PHASE 2

for the sum(s) quoted below.

Total Bid _____ **Dollars \$** _____

If written notice of the acceptance of this bid is mailed, telegraphed, or delivered to the undersigned within sixty (60) days after the date of opening of the bids, or any time thereafter before this bid is withdrawn, the undersigned will, within ten (10) days after the date of such mailing, telegraphing, or delivering of such notice, execute and deliver a contract in the form of agreement present in these contract documents and give Performance and Payment Bonds in accordance with the specifications and bid as accepted.

The undersigned hereby designates as the office to which such notice of acceptance may be mailed, telegraphed, or delivered:

Our Public Liability and Property Damage Insurance is placed with:

Our Workers' Compensation Insurance is placed with:

The following must be completed without exception:

1. Name of Foreman / Superintendent for this Project _____
2. Acknowledge receipt and review of full set of bid documents _____ (Initial)
3. Crewing for this Project - Minimum Crew _____ Maximum Crew _____
4. Summary of Work has been reviewed and is included _____ (Initial)
5. Bid Schedule has been reviewed and accepted _____ (Initial)
6. The following items are attached to this bid form
 - a. Bid Proposal Form _____ (Initial)
 - b. Bid Bond _____ (Initial)
 - c. Non-Collusion Affidavit _____ (Initial)
 - d. Subcontractor Listing _____ (Initial)
 - e. Job References _____ (Initial)
 - f. Insurance Rating Submittal form _____ (Initial)
 - g. DVBE Good Faith Effort _____ (Initial)
 - h. Student Safety Declaration _____ (Initial)
 - i. Iran Contracting Act Verification Form _____ (Initial)
 - j. Federal Bid Requirements _____ (Initial)
 - k. Russia / Ukraine Sanctions _____ (Initial)
 - l. Gamewell Fire Alarm Requirements (if appropriate for project) _____ (Initial)
 - m. RS2 Component Requirements _____ (Initial)
7. Proper Prevailing wages included in this bid _____ (Initial)
*Requirements for Certified Payroll Reporting is acknowledged.

Circular letters, bulletins, addenda, etc., bound with specifications or issued during the time of bidding are included in the proposal, and, in completing the contract, they are to become part thereof.

The receipt of the following addenda to the specifications is acknowledged:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Note: Any exclusion to the scope of work or items noted in this bid form will be considered as cause to deem this bid non-responsive.

This bid may be withdrawn at any time prior to the scheduled time for the opening of bids or any authorized postponement thereof.

NOTE: Each bid must give the full business address of the bidder and be signed by him with his usual signature. Bids by partnerships must furnish the full name of all partners and must be signed by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bid by corporations must be

signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. Satisfactory evidence of the authority of the officer signing on behalf of a corporation shall be furnished.

Dated _____, 2024

Signed _____

Print or Type Name _____

Business Address _____

Phone # _____

Fax # _____

License # _____

Email Address _____

DIR NUMBER _____

Additional Signature Lines if Applicable:

Signed _____

Print or Type Name _____

Business Address _____

Signed _____

Print or Type Name _____

Business Address _____

Signed _____

Print or Type Name _____

Business Address _____

State of Incorporation if Applicable __

() Evidence of authority to bind corporation is attached.

Print or Type Name _____

Business Address _____

Phone Number: _____

FAX Number: _____

Contractor's License Number _____

Email Address _____

Do not substitute Bid Bond Form

**The Bid Bond Form in this
packet must be used.**

**Failure to use the Bid
Bond form in this bid
packet may result in
rejection of bid.**

BID BOND

KNOW ALL MEN BY THESE PRESENTS that we the undersigned

_____ as Principal and

_____ as Surety, are hereby held and firmly bound unto the Clovis Unified School District "Owner" in the sum of _____ Dollars (\$ _____) for payment of which sum, well and truly to be made, we hereby jointly and severally find ourselves, our heirs, executors, administrators, successors, and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain bid, attached hereto and hereby made a part hereof, to enter into a Contract in writing for the construction of **BID 2983- CAMPUS SECURITY IMPROVEMENTS PHASE 2** in strict accordance with Contract Documents.

NOW, THEREFORE,

- a. If said bid shall be rejected, or, in the alternate;
- b. If said bid shall be accepted and the Principal shall execute and deliver a contract in the form of agreement attached hereto and shall execute and deliver Performance and Payment Bonds in the forms attached hereto (all properly completed in accordance with said bid), and shall in all other respects perform the agreement created by the acceptance of said bid;

Then this obligation shall be void, otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all default of the Principal hereunder shall be the amount of this obligation as herein stated.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract on the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in anyway affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said contract or the call for bids, or to the work, or to the specifications.

In the event suit is brought upon this bond by the Owner and judgment is recovered the Surety shall pay all costs incurred by the Owner in such suit, including a reasonable attorney's fee to be fixed by the court.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under several seals this ____ day of _____, 20____, the name and corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Notary Seal)

(Principal)

(Business Address)

(Corporate Surety)

(Business Address)

By: _____

The rate or premium of this bond is _____ per thousand, the total amount of premium charged, \$_____.

(The above must be filled in by Corporate Surety).

In presence of:
END OF SECTION
If: 10/97 (8.98)

BID 2983

NONCOLLUSION DECLARATION

Owner: Clovis Unified School District

Contract for: BID 2983- CAMPUS SECURITY IMPROVEMENTS PHASE 2

I am the _____ of _____, 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 of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____,[month / day], 20__, at _____ [city],California.

Signature

Print Name

NOTE: A declaration does not have to be notarized.

DESIGNATION OF SUBCONTRACTORS

Page 1 of 2

Bid 2983- CAMPUS SECURITY IMPROVEMENTS PHASE 2

Each bidder shall set forth below the name and the location of the place of business of each subcontractor and the California contractor license number, and public works contractor registration number (for all projects over Twenty-five Thousand Dollars (\$25,000)), of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the Work or improvement, or to a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent (0.5%) of the bidder's total bid, and the portion of the Work which will be done by each subcontractor. An inadvertent error in listing a California contractor's license number shall not be grounds for filing a bid protest or for considering the bid nonresponsive if the bidder submits the corrected contractor's license number to the Owner within 24 hours after the bid opening, or any continuation thereof, so long as the corrected contractor's license number corresponds to the submitted name and location for that subcontractor. If the Contractor fails to specify a subcontractor for any portion of the Work to be performed under the Contract in excess of one-half of 1 percent (0.5%) of the Contractor's total bid, the Contractor shall be deemed to have agreed to perform such portion itself, and shall not be permitted to subcontract that portion of the Work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the Work as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the legislative body of the Owner.

For all projects over Twenty-five Thousand Dollars (\$25,000): for any bid proposal submitted and for any contract for public work entered into, an inadvertent error in listing a subcontractor who is not registered under Labor Code section 1725.5 shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive, provided that either: the subcontractor is registered prior to the bid opening; or the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5(a)(2)(E), if applicable, within 24 hours after the bid opening; or the subcontractor is replaced by another registered subcontractor under Public Contract Code section 4107. Failure of a listed subcontractor to be registered shall be grounds under Public Contract Code section 4107 for the Contractor, with the Owner's consent, to substitute a registered subcontractor for the unregistered subcontractor.

Failure to provide this information in a legible manner may result in the rejection of an otherwise acceptable bid.

Note: Reproduce page two for additional listings needed beyond the length of this form.

DESIGNATION OF SUBCONTRACTORS

Portion of Work	Name of Subcontractor & Phone No.	Location of Subcontractor	California Contractor License Number	Public Works Contractor Registration Number (if applicable)

I am the authorized representative of the Bidder submitting this Designation of Subcontractors and I declare that each subcontractor listed holds a valid and current contractor license in good standing in California to perform the portion of work for which the subcontractor is listed.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____, 20____, at _____ [city], California..

Signature: _____

Print Name: _____ Title: _____

END OF SECTION 3.97 (3.24)

CLOVIS UNIFIED SCHOOL DISTRICT
Bid 2983
CAMPUS SECURITY IMPROVEMENTS PHASE 2

NAME OF BIDDER _____

JOB REFERENCES

Bidders must submit a list of at least three (3) projects of similar dollar volume completed within the last 24 months for reference purposes.

DATE	JOB SITE	CONTACT PERSON	TELEPHONE NUMBER

NAME OF BIDDER _____

INSURANCE RATING SUBMITTAL FORM

Bid 2983- CAMPUS SECURITY IMPROVEMENTS PHASE 2

1. Insurance Requirements – Proof of Carriage of Insurance – coverage with rating of A- or better is required on this project.
2. Proof of A- or better coverage to be submitted with bid proposal at due date and time established in the bid packet.

Attach report of Insurance Rating to this form (Sample Report Below). Rating Report information to be obtained from A.M. Best Company – <http://www.ambest.com> **CERTIFICATE OF INSURANCE IS NOT AN AM BEST REPORT**

Name of Bidder: _____

*******This form and report are required to be submitted with bid proposal at due date and time established in bid *******

Starr International Insurance (Switzerland) AG

BestLink AMB #: 074683
Domiciliary Address
Talstrasse 58
8001 Zürich,
Switzerland

SAMPLE REPORT

Assigned to insurance companies that have, in our opinion, an excellent ability to meet their ongoing insurance obligations.



AM Best Rating Unit: AMB #: 013930 - Starr Insurance & Reinsurance Limited

View additional news, reports and products for this company.

Based on AM Best's analysis, 055404 - Starr International Company, Inc. is the AMB Ultimate Parent and identifies the topmost entity of the corporate structure. View a list of operating insurance entities in this structure.

Best's Credit Ratings

<h5>Financial Strength View Definition</h5> <table border="1" style="width: 100%; border-collapse: collapse;"><tr><td>Rating (Rating Category):</td><td>A (Excellent)</td></tr><tr><td>Affiliation Code:</td><td>g (Group)</td></tr><tr><td>Outlook (or Implication):</td><td>Stable</td></tr><tr><td>Action:</td><td>Affirmed</td></tr><tr><td>Effective Date:</td><td>November 05, 2021</td></tr><tr><td>Initial Rating Date:</td><td>March 31, 2021</td></tr></table>	Rating (Rating Category):	A (Excellent)	Affiliation Code:	g (Group)	Outlook (or Implication):	Stable	Action:	Affirmed	Effective Date:	November 05, 2021	Initial Rating Date:	March 31, 2021	<h5>Best's Credit Rating Analyst</h5> <p>Rating Office: A.M. Best Europe - Rating Services Ltd. Associate Financial Analyst: Marving Lopez Director-Analytics: Ghislain Le Cam, CFA <i>Note: See the Disclosure Information Form or Press Release below for the office and analyst at the time of the rating event.</i></p>
Rating (Rating Category):	A (Excellent)												
Affiliation Code:	g (Group)												
Outlook (or Implication):	Stable												
Action:	Affirmed												
Effective Date:	November 05, 2021												
Initial Rating Date:	March 31, 2021												
<h5>Long-Term Issuer Credit View Definition</h5> <table border="1" style="width: 100%; border-collapse: collapse;"><tr><td>Rating (Rating Category):</td><td>a (Excellent)</td></tr><tr><td>Outlook (or Implication):</td><td>Positive</td></tr><tr><td>Action:</td><td>Affirmed</td></tr><tr><td>Effective Date:</td><td>November 05, 2021</td></tr><tr><td>Initial Rating Date:</td><td>March 31, 2021</td></tr></table>	Rating (Rating Category):	a (Excellent)	Outlook (or Implication):	Positive	Action:	Affirmed	Effective Date:	November 05, 2021	Initial Rating Date:	March 31, 2021	<h5>Disclosure Information</h5> <p>Disclosure Information Form View AM Best's Rating Disclosure Form</p> <p>Press Release AM Best Revises Issuer Credit Rating Outlook to Positive for Starr International Company Inc.'s Insurance Subsidiaries November 05, 2021 View AM Best's Rating Review Form</p>		
Rating (Rating Category):	a (Excellent)												
Outlook (or Implication):	Positive												
Action:	Affirmed												
Effective Date:	November 05, 2021												
Initial Rating Date:	March 31, 2021												
<h5>Financial Size Category View Definition</h5> <table border="1" style="width: 100%; border-collapse: collapse;"><tr><td>Financial Size Category:</td><td>XV (\$2 Billion or greater)</td></tr></table>	Financial Size Category:	XV (\$2 Billion or greater)											
Financial Size Category:	XV (\$2 Billion or greater)												

DECLARATION OF GOOD FAITH EFFORTS TO USE DISABLED VETERAN BUSINESS ENTERPRISES (DVBE)

I, _____, declare that I am _____
(Name of Representative) (Title of Representative)

of _____.
(Business Name of Bidder)

The party making the foregoing bid declares that the bidder has made good faith efforts to meet the participation goal of not less than three percent (3%) of the bid amount to include disabled veteran business enterprises ("DVBE") in the work to be performed. (Education Code section 17076.11) Good faith efforts may be met in one of two ways, either: (1) by complying with the safe harbor provisions of Public Contract Code section 10115.2, subdivision (b), or (2) by complying with Public Contract Code section 10115.2, subdivision (a) by making good faith efforts other than by following the safe harbor language in Public Contract Code section 10115.2, subdivision (b). Under Public Contract Code section 10115.2 subdivision (a), the District will exercise its discretion as to whether the good faith effort has been made. The bidders will document the good faith efforts and make those documents available upon request by the District.

I declare under penalty of perjury under the law of the State of California that the DVBE requirement for this bid was met through one of the two foregoing methods and that the foregoing is true and correct.

Executed this _____ day of _____, 20____ at _____, California.

(Signature of Representative)

NOTE: A declaration does not have to be notarized.

END OF SECTION
TB:if w/LS 3.02

**STUDENT SAFETY DECLARATION
FINGERPRINTING NOTICE AND ACKNOWLEDGEMENT**
Construction, Rehabilitation or Repair Contractors
(Education Code section 45125.2)

Note: This document must be executed and submitted with the bid.

Business entities entering into contracts with the Owner for the construction, reconstruction, rehabilitation or repair of a facility must comply with Education Code sections 45125.1 and 45125.2. Such entities are responsible for ensuring full compliance with the law and should therefore review all applicable statutes and regulations. The following information is provided simply to assist such entities with compliance with the law.

1. If the Owner determines your employee(s) or you as a sole proprietorship will have more than limited contact with students, then you must take one or more of the following steps:
 - a. Install a physical barrier at the worksite to limit contact with pupils.
 - b. Have an employee (if not a sole proprietorship), who the Department of Justice has ascertained has not been convicted of a violent or serious felony, continually monitor and supervise employees. The entity shall verify in the Independent Contractor Student Contact Form to the Owner that the employee charged with monitoring and supervising its employees has no such convictions. (See attached.)
 - c. Arrange, with Owner's approval, for surveillance by Owner's personnel.

If one or more of these steps is taken, you are not required to comply with Education Code section 45125.1.

2. If you are providing the services in an emergency or exceptional situation, you are not required to comply with Education Code section 45125.2. An "emergency or exceptional" situation is one in which pupil health or safety is endangered or when repairs are needed to make a facility safe and habitable. Owner shall determine whether an emergency or exceptional situation exists.

I have read the foregoing and agree to comply with the requirements of Education Code §§ 45125.1 and 45125.2 as applicable.

Dated: _____

Signature

Name: _____

Title: _____

ATTACHMENT

Under Education Code section 45125.1, no employee of a contractor or subcontractor, and no sole proprietor, who has been convicted of or has criminal proceedings pending for a violent or serious felony may come into contact with any student. A violent felony is any felony listed in subdivision (c) of Section 667.5 of the Penal Code. Those felonies are presently defined as:

- (1) Murder or voluntary manslaughter.
- (2) Mayhem.
- (3) Rape as defined in paragraph (2) or (6) of subdivision (a) of Section 261 or paragraph (1) or (4) of subdivision (a) of Section 262.
- (4) Sodomy as defined in subdivision (c) or (d) of Section 286.
- (5) Oral copulation as defined in subdivision (c) or (d) of Section 288a.
- (6) Lewd or lascivious act as defined in subdivision (a) or (b) of Section 288.
- (7) Any felony punishable by death or imprisonment in the state prison for life.
- (8) Any felony in which the defendant inflicts great bodily injury on any person other than an accomplice which has been charged and proved as provided for in Section 12022.7, 12022.8, or 12022.9 on or after July 1, 1977, or as specified prior to July 1, 1977, in Sections 213, 264, and 461, or any felony in which the defendant uses a firearm which use has been charged and proved as provided in subdivision (a) of Section 12022.3, or Section 12022.5 or 12022.55.
- (9) Any robbery.
- (10) Arson, in violation of subdivision (a) or (b) of Section 451.
- (11) Sexual penetration as defined in subdivision (a) or (j) of Section 289.
- (12) Attempted murder.
- (13) A violation of Section 18745, 18750, or 18755.
- (14) Kidnapping.
- (15) Assault with the intent to commit a specified felony, in violation of Section 220.
- (16) Continuous sexual abuse of a child, in violation of Section 288.5.
- (17) Carjacking, as defined in subdivision (a) of Section 215.
- (18) Rape, spousal rape, or sexual penetration, in concert, in violation of Section 264.1.
- (19) Extortion, as defined in Section 518, which would constitute a felony violation of Section 186.22 of the Penal Code.
- (20) Threats to victims or witnesses, as defined in Section 136.1, which would constitute a felony violation of Section 186.22 of the Penal Code.

- (21) Any burglary of the first degree, as defined in subdivision (a) of Section 460, wherein it is charged and proved that another person, other than an accomplice, was present in the residence during the commission of the burglary.
- (22) Any violation of Section 12022.53.
- (23) A violation of subdivision (b) or (c) of Section 11418.

A serious felony is any felony listed in subdivision (c) Section 1192.7 of the Penal Code. Those felonies are presently defined as:

- (1) Murder or voluntary manslaughter; (2) Mayhem; (3) Rape; (4) Sodomy by force, violence, duress, menace, threat of great bodily injury, or fear of immediate and unlawful bodily injury on the victim or another person; (5) Oral copulation by force, violence, duress, menace, threat of great bodily injury, or fear of immediate and unlawful bodily injury on the victim or another person; (6) Lewd or lascivious act on a child under the age of 14 years; (7) Any felony punishable by death or imprisonment in the state prison for life; (8) Any felony in which the defendant personally inflicts great bodily injury on any person, other than an accomplice, or any felony in which the defendant personally uses a firearm; (9) Attempted murder; (10) Assault with intent to commit rape, or robbery; (11) Assault with a deadly weapon or instrument on a peace officer; (12) Assault by a life prisoner on a non-inmate; (13) Assault with a deadly weapon by an inmate; (14) Arson; (15) Exploding a destructive device or any explosive with intent to injure; (16) Exploding a destructive device or any explosive causing bodily injury, great bodily injury, or mayhem; (17) Exploding a destructive device or any explosive with intent to murder; (18) Any burglary of the first degree; (19) Robbery or bank robbery; (20) Kidnapping; (21) Holding of a hostage by a person confined in a state prison; (22) Attempt to commit a felony punishable by death or imprisonment in the state prison for life; (23) Any felony in which the defendant personally used a dangerous or deadly weapon; (24) Selling, furnishing, administering, giving, or offering to sell, furnish, administer, or give to a minor any heroin, cocaine, phencyclidine (PCP), or any methamphetamine-related drug, as described in paragraph (2) of subdivision (d) of Section 11055 of the Health and Safety Code, or any of the precursors of methamphetamines, as described in subparagraph (A) of paragraph (1) of subdivision (f) of Section 11055 or subdivision (a) of Section 11100 of the Health and Safety Code; (25) Any violation of subdivision (a) of Section 289 where the act is accomplished against the victim's will by force, violence, duress, menace, or fear of immediate and unlawful bodily injury on the victim or another person; (26) Grand theft involving a firearm; (27) carjacking; (28) any felony offense, which would also constitute a felony violation of Section 186.22; (29) assault with the intent to commit mayhem, rape, sodomy, or oral copulation, in violation of Section 220; (30) throwing acid or flammable substances, in violation of Section 244; (31) assault with a deadly weapon, firearm, machine gun, assault weapon, or semiautomatic firearm or assault on a peace officer or firefighter, in violation of Section 245; (32) assault with a deadly weapon against a public transit employee, custodial officer, or school employee, in violation of Sections 245.2, 245.3, or 245.5; (33) discharge of a firearm at an inhabited dwelling, vehicle, or aircraft, in violation of Section 246; (34) commission of rape or sexual penetration in concert with another person, in violation of Section 264.1; (35) continuous sexual abuse of a child, in violation of Section 288.5; (36) shooting from a vehicle, in violation of subdivision (c) or (d) of Section 26100; (37) intimidation of victims or witnesses, in violation of Section 136.1; (38) criminal threats, in violation of Section 422; (39) any attempt to commit a crime listed in this subdivision other than an assault; (40) any violation of Section 12022.53; (41) a violation of subdivision (b) or (c) of Section 11418; and (42) any conspiracy to commit an offense described in this subdivision.

End of Section

IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code sections 2202-2208)
(To be Executed by Bidder and Submitted With Bid)

As required by Public Contract Code (“PCC”) section 2204 for contracts of \$1,000,000 or more, please insert bidder’s or financial institution’s name and Federal ID Number (if available) and complete **one** of the options below. Please note that California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. (PCC §2205.)

OPTION #1 - CERTIFICATION

I, the official named below, certify I am duly authorized to execute this certification on behalf of the bidder/financial institution identified below, and the bidder/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by California Department of General Services (“DGS”) and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person/bidder, for 45 days or more, if that other person/bidder will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS. (PCC §2204(a).)

<i>Bidder Name/Financial Institution (Printed)</i>	<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	
<i>Date Executed</i>	<i>Executed in</i>

OPTION #2 – EXEMPTION

Pursuant to Public Contract Code sections 2203(c) and (d), a public entity may permit a bidder/financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enters into or renews, a contract for goods and services. If you have obtained an exemption from the certification requirement under the Iran Contracting Act, please fill out the information below, and attach documentation demonstrating the exemption approval.

<i>Bidder Name/Financial Institution (Printed)</i>	<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	<i>Date Executed</i>

**SPECIAL INSTRUCTIONS AND INFORMATION
BID PROJECT EXPENDITURES MAY INCLUDE FEDERAL FUNDING**

- 1. Project may be funded in part or in total with Federal Funds.**
- 2. City of Clovis, City of Fresno and County of Fresno are jurisdiction areas of Clovis USD**
- 3. If State of California prevailing wage rates are higher than Federal Davis-Bacon rates, project to be bid utilizing State of California prevailing wage rates as mandated by California bid laws and regulations.**
- 4. Information related to Federal Procurement Guidelines - :**
 - a. Federal Regulation Codes <https://www.ecfr.gov/cgi-bin/text-idx?node=2:1.1.2.2.1>**
 - b. 34 Code of Federal Regulations CFR 75.609 related to safety and health https://www.ecfr.gov/cgi-bin/text-idx?SID=cd37bda54b7e6822ae66876ae2b5034c&pitd=20190619&node=se34.1.75_1609&rgn=div8**
 - c. 34 Code of Federal Regulations CFR 75.616 related to energy conservation https://www.ecfr.gov/cgi-bin/text-idx?SID=6b0336c285fb183779141ccaf8b81df8&pitd=20200602&node=se34.1.75_1616&rgn=div8**
 - d. Davis Bacon Wage Rate <https://www.dol.gov/agencies/whd/government-contracts/construction>**
- 5. Awarded contractor CANNOT be on the US General Services Administration Lists of Parties Excluded from Federal Procurement or Non-Procurement Programs <https://sam.gov/content/exclusions>**
- 6. ** BIDDER MUST INCLUDE PROOF OF SEARCH RESULTS INDICATING THEY ARE NOT ON THE FEDERAL EXCLUSION LISTING - - SEE SAMPLE SCREEN SHOTS BELOW THAT IS TO BE SUBMITTED WITH BID**

Exclusions

An exclusion record identifies parties excluded from receiving Federal contracts, certain subcontracts, and certain types of Federal financial and non Financial assistance and benefits. Exclusions are also referred to as suspensions and debarments.

Search Exclusions

Advanced Search

e.g. Smith, 123456789



Type in your company name and hit search. Then go to Excluded Entity link on left of page and type in company name a second time and hit enter on keyboard.

→ ↻ sam.gov/search/?index=ex&page=1&sort=-relevance&sfm%5Bstatus%5D%5Bis_active%5D=true&sfm%5Bkeywords%5D%5B0%5D%5Bkey%5D=*GRANITE%20CONSTRUCTION*&sfm%5Bke

An official website of the United States government Here's how you know

Monitoring SAM.gov Performance Show Details May 25, 2021

Recognize and Avoid Phishing Emails Show Details Aug 25, 2020

SAM.GOV

Home Search Data Bank Data Services Help

Search e.g. 1606N020Q02, asph

Select Domain Entity Information

- Entity Registrations
- Disaster Response Registry
- Exclusions

Filter By

Keywords

GRANITE CONSTRUCTION

Classification

Excluded Entity ←

Showing 1 - 25 of 329 results

				Exclusion
GRANITE STATE LAWN CARE Active				
DUNS Unique Entity ID (blank)	CAGE Code (blank)	Physical Address 6 SUNSET ST, CLAREMONT, NH 03743 USA		Classification Special Entity Designation
SAM Unique Entity ID (blank)				Activation Date Dec 17, 2018
				Termination Date Dec 16, 2021
Granite State Industries LLC Active				
DUNS Unique Entity ID (blank)	CAGE Code (blank)	Physical Address 6 Sunset Street, Claremont, NH 03743 USA		Classification Special Entity Designation
SAM Unique Entity ID (blank)				Activation Date Dec 17, 2018
				Termination Date Dec 16, 2021
Jim A Meron Active				
DUNS Unique Entity ID (blank)	CAGE Code (blank)	Physical Address Granite Bay, CA 95746 USA		Classification Individual
SAM Unique Entity ID (blank)				Activation Date Apr 7, 2020
				Termination Date Indefinite

7. PRINT OUT THIS SCREEN SHOT INDICATING NO MATCHES FOUND WITH SEALED BID PROPOSAL AT DUE DATE AND TIME OF BID SUBMITTAL. THIS INDICATES YOUR COMPANY IS NOT EXCLUDED FROM FEDERAL CONTRACTS

Select Domain
Entity Information +

Entity Registrations

Disaster Response Registry

Exclusions

Filter By —

Keywords


"GRANITE CONSTRUCTION" ×

Classification ∨

Excluded Entity ∧

Entity Name

No results found

 **No matches found**
We couldn't find a match for your search criteria.
Please try another search or go back to previous results.

[Go Back](#)

8. THANK YOU FOR YOUR TIME IN COMPLETING THIS PROCESS AND INCLUDING DOCUMENTATION WITH BID PACKET. THIS ENSURES THE DISTRICT IS MEETING FEDERAL GRANT REQUIREMENTS. THESE GRANTS BRING FEDERAL TAX DOLLARS TO OUR COMMUNITY FOR PROJECTS THAT BENEFIT OUR STUDENTS.

RETURN WITH BID SUBMITTAL PACKET

**ALONG WITH COPY OF SCREEN SHOT INDICATING COMPANY IS NOT ON FEDERAL CONTRACT
EXCLUSION LISTING**

DECLARATION OF GOOD FAITH EFFORT TO MEET PROVISIONS OF FEDERAL FUNDING REQUIREMENTS – INCLUDING, BUT NOT LIMITED TO SAFETY & HEALTH STANDARDS, ENERGY CONSERVATION, DAVIS-BACON PREVAILING WAGE RULES AND RELATED ACT PROVISIONS

I, _____, declare that I am _____
(Name of Representative) (Title of Representative)

of _____.
(Business Name of Bidder)

The party making the foregoing bid declares that the bidder has made good faith efforts to meet the provisions of Federal funding requirements, including, but not limited to Davis-Bacon and related Act provision, the District will exercise its discretion as to whether the good faith effort has been made. The bidders will document the good faith efforts and make those documents available upon request by the District.

I declare under penalty of perjury under the law of the State of California that the Federal funding requirement for this bid was met is true and correct.

Executed this _____ day of _____, 20____ at _____, California.

(Signature of Representative)

NOTE: This declaration does not have to be notarized.

END OF SECTION

Contractor and Grantee Compliance with Economic Sanctions Imposed in Response to Russia's Actions in Ukraine

On March 4, 2022, Governor Gavin Newsom issued Executive Order N-6-22 (EO) regarding sanctions in response to Russian aggression in Ukraine. The EO is located at <https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf>.

The EO directs all agencies and departments that are subject to the Governor's authority to take certain immediate steps, including notifying all contractors and grantees of their obligations to comply with existing 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.

This correspondence serves as a notice under the EO that as a contractor or grantee, compliance with the economic sanctions imposed in response to Russia's actions in Ukraine is required, including with respect to, but not limited to, the federal executive orders identified in the EO and the sanctions identified on the U.S. Department of the Treasury website (<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programsand-country-information/ukraine-russia-related-sanctions>). Failure to comply may result in the termination of contracts or grants, as applicable.

Please note that for any agreements or grants valued at \$5 million or more, a separate notification will be sent outlining additional requirements specified under the EO.

Please contact Susan Rutledge at SusanRutledge@cusd.com if you should have any questions.

Doc# 59221, 04/2022

CONTRACTOR SIGNATURE: _____

**GAMEWELL
SPECIAL INSTRUCTIONS
(IF APPROPRIATE FOR PROJECT)**

The Fire Detection and Alarm specifications identified Gamewell-FCI, Honeywell Fire Systems as the manufacturer and specified that no other manufacturer, other than Gamewell-FCI, FCI and Gamewell will be considered for this project.

The identification of the Gamewell-FCI manufacturer is necessary in order to match the fire detection and alarm system to be installed as part of this project with new systems recently specified for Dry Creek Elementary Classroom Building and installed at other sites within the District. For example, during the summer of 2020 the District installed a new fire detection system at Young Elementary School, as well as Focal Point remote monitoring systems. All new construction and modernization projects are equipped with Gamewell. As far back as summer of 2009, the District installed new fire detection systems at Mickey Cox and Copper Hills Elementary Schools. Gamewell-FCI fire detection and alarm systems were installed at these sites, as well as Focal Point remote monitoring systems. The Focal Point remote monitoring system already in place for those other sites is planned for use with the system at Maple Creek Elementary School. The system allows for monitoring of the school campuses from remote locations throughout the District. The following District locations have Gamewell-FCI systems:

Young Elementary	Boris Elementary
Oraze Elementary	Clovis Community Day
Cole Elementary	Copper Hills Elementary
Cox Elementary	Fancher Creek Elementary
Freedom Elementary	Fugman Elementary
Garfield Elementary	Lincoln Elementary
Maple Creek Elementary	Miramonte Elementary
Miramonte Elementary	Reagan Elementary
Valley Oak Elementary	Woods Elementary
Clovis High School	Gateway
Clovis Adult	Clovis Online School
MTU	DO West
DO East	
Maintenance, Tech	
Warehouse	

In addition, the District generally designates its custodial personnel between elementary and secondary sites. Using the same Gamewell-FCI system among the elementary sites will facilitate efficiency for the personnel in maintaining the facility.

These findings are made pursuant to Public Contract Code section 3400 and other applicable provisions.

Bidder confirms that the fire alarm will be provided and installed by an authorized Gamewell distributor. Bidder must state the name of the authorized Gamewell distributor utilized for the fire alarm system and installation, even if the total work of the authorized Gamewell distributor is less than one-half of one percent (0.5%).

Proof of certification of the authorized Gamewell distributor is to be attached to this page at the time of bid submittal.

Name of Authorized Gamewell Distributor _____ License # _____

Gamewell Distributor to be listed on subcontractor page if work percentage meet subcontractor listing requirements.

Name of Bidder: _____

This form to be submitted with bid proposal at due date and time established in bid paperwork.

**GAMEWELL
SPECIAL INSTRUCTIONS
Continued
(IF APPROPRIATE FOR PROJECT)**

Notwithstanding any other provisions of the bid documents, any request for substitutions of equivalent equipment from Gamewell-FCI, must be submitted to the district no later than seven (7) calendar days prior to the bid opening. Any addendum identifying all Gamewell-FCI equipment deemed equivalent to those specified and approved by the district will be issued no fewer than three (3) calendar days prior to Bid Opening. Submittals must include comparative specification data of the specified Gamewell-FCI equipment and the proposed Gamewell-FCI equivalent equipment substitution.

INSTRUCTION TO BIDDERS – SUBSTITUTION OF MATERIAL SECTION as listed DOES NOT apply to this project.

ARTICLE 30. SUBSTITUTIONS – as listed in General Conditions, DOES NOT apply to the Fire Alarm Portion of this project.

**RS2 COMPONENTS
SPECIAL INSTRUCTIONS
Pursuant to PCC 3400
APPLIES TO THIS PROJECT**

The identification of the RS2 Technologies Access Controls Hardware and Software Solutions are necessary to be installed as part of this project. In accordance with Public Contract Code 3400, the RS2 system is required in order to match other products in use on a particular public improvement either completed or in the course of completion.

AGREEMENT BETWEEN OWNER AND CONTRACTOR

THIS AGREEMENT, dated the _____ day of _____, 2024, in the County of Fresno, State of California, is by and between Clovis Unified School District (hereinafter referred to as "DISTRICT"), and _____ (hereinafter referred to as "CONTRACTOR").

The DISTRICT and the CONTRACTOR, for the consideration stated herein, agree as follows:

1. The complete contract includes all of the Project documents described in the General Conditions. The Project documents are complementary, and what is called for by any one shall be as binding as if called for by all.

2. CONTRACTOR shall perform within the time set forth in Paragraph 4 of this Agreement everything required to be performed, and shall provide and furnish all the labor, materials, necessary tools, expendable equipment, and all utility and transportation services as described in the complete contract and required for construction of

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All of said work to be performed and materials to be furnished shall be completed in a good workmanlike manner in strict accordance with the plans, drawings, specifications and all provisions of the complete contract as hereinabove defined. The CONTRACTOR shall be liable to the DISTRICT for any damages arising as a result of a failure to fully comply with this obligation, and the CONTRACTOR shall not be excused with respect to any failure to so comply by any act or omission of the Architect, Engineer, Inspector, Division of State Architect, or representative of any of them, unless such act or omission actually prevents the CONTRACTOR from fully complying with the requirements of the Project documents, and unless the CONTRACTOR protests at the time of such alleged prevention that the act or omission is preventing the CONTRACTOR from fully complying with the Project documents. Such protest shall not be effective unless reduced to writing and filed with the DISTRICT within three (3) working days of the date of occurrence of the act or omission preventing the CONTRACTOR from fully complying with the Project documents.

3. DISTRICT shall pay to the CONTRACTOR, as full consideration for the faithful performance of the contract, subject to any additions or deductions as provided in the Project documents, the sum of _____ (\$).

4. The work shall be commenced on or before the fifth (5th) day after receiving the DISTRICT's Notice to Proceed – total project shall be completed within **154 calendar days (per construction manager's work schedule)**. Individual project trades to be completed in accordance with construction manager's work schedule.

5. Time is of the essence. If the work is not completed in accordance with Paragraph 4 above, it is understood that the DISTRICT will suffer damage. It being impractical and infeasible to determine the amount of actual damage, in accordance with Government Code Section 53069.85, it is agreed that CONTRACTOR shall pay to DISTRICT as fixed and liquidated damages, and not as a penalty, the sum **One Thousand Dollars (\$1000.00)** for each calendar day of delay until work is completed and accepted. This amount shall be deducted from any payments due to or to become due to

CONTRACTOR. CONTRACTOR and CONTRACTOR'S surety shall be liable for the amount thereof. Time extensions may be granted by the DISTRICT as provided in the General Conditions.

6. In the event CONTRACTOR for a period of ten (10) calendar days after receipt of written demand from DISTRICT to do so, fails to furnish tools, equipment, or labor in the necessary quantity or quality, or to prosecute said work and all parts thereof in a diligent and workmanlike manner, or after commencing to do so within said ten (10) calendar days, fails to continue to do so, then the DISTRICT may exclude the CONTRACTOR from the premises, or any portion thereof, and take possession of said premises or any portion thereof, together with all material and equipment thereon, and may complete the work contemplated by this Agreement or any portion of said work, either by furnishing the tools, equipment, labor or material necessary, or by letting the unfinished portion of said work, or the portion taken over by the DISTRICT to another contractor, or by a combination of such methods. In any event, the procuring of the completion of said work, or the portion thereof taken over by the DISTRICT, shall be a charge against the CONTRACTOR, and may be deducted from any money due or to become due to CONTRACTOR from the DISTRICT, or the CONTRACTOR shall pay the DISTRICT the amount of said charge, or the portion thereof unsatisfied. The sureties provided for under this Agreement shall become liable for payment should CONTRACTOR fail to pay in full any said cost incurred by the DISTRICT.

7. The CONTRACTOR agrees to and does hereby indemnify and hold harmless the DISTRICT, its governing board, officers, agents, and employees from every claim or demand made, and every liability, loss, damage, or expense, of any nature whatsoever, which may be incurred by reason of:

(a) Liability for damages for (1) death or bodily injury to persons; (2) injury to, loss or theft of property; or (3) any other loss, damage or expense arising under either (1) or (2) above, sustained by the CONTRACTOR upon or in connection with the work called for in this Project, except for liability resulting from the sole active negligence, or willful misconduct of the DISTRICT.

(b) Any injury to or death of any person(s) or damage, loss or theft of any property caused by any act, neglect, default or omission of the CONTRACTOR, or any person, firm, or corporation employed by the CONTRACTOR, either directly or by independent contract, arising out of, or in any way connected with the work covered by this Agreement, whether said injury or damage occurs on or off District property.

The CONTRACTOR, at CONTRACTOR's own expense, cost, and risk shall defend any and all actions, suits, or other proceedings that may be brought or instituted against the DISTRICT, its governing board, officers, agents or employees, on any such claim, demand or liability, and shall pay or satisfy any judgment that may be rendered against the DISTRICT, its governing board, officers, agents or employees in any action, suit or other proceedings as a result thereof.

8. Contractor shall provide the insurance set forth in the General Conditions. The amount of general liability insurance shall be not less than \$1,000,000 per occurrence for bodily injury, personal injury and property damage and the amount of automobile liability insurance shall be not less than \$2,000,000 per accident for bodily injury and property damage combined single limit.

9. Public Contract Code Section 22300 permits the substitution of securities for any monies withheld by a public agency to ensure performance under a contract. At the request and expense of the CONTRACTOR, securities equivalent to the amount withheld shall be deposited with the public agency, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the CONTRACTOR. The District retains the sole discretion to approve the bank selected by the CONTRACTOR to serve as escrow agent. Upon satisfactory completion of the contract, the securities shall be returned to the CONTRACTOR. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the CONTRACTOR may request DISTRICT to make payment of earned retentions directly to the escrow agent at the expense of the CONTRACTOR. Also at the CONTRACTOR's expense, the CONTRACTOR may direct investment of the payments in securities, and the CONTRACTOR shall receive interest earned on such investment upon the same conditions as provided for securities deposited by CONTRACTOR. Upon satisfactory completion of the contract, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300. CONTRACTOR shall pay to each subcontractor, not later than 20 days after receipt of such payment, the respective amount of interest earned, net of costs attributed to retention withheld from each subcontractor, on the amount of retention withheld to insure performance of the CONTRACTOR.

10. Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not currently inserted, then upon application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

11. The complete contract as set forth in Paragraph 1 of this Agreement constitutes the entire Agreement of the parties. No other agreements, oral or written, pertaining to the work to be performed, exists between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties and pursuant to action of the Governing Board of the District.

12. CONTRACTOR shall comply with those provisions of the Labor Code requiring payment of prevailing wages, keeping of certified payroll records, overtime pay, employment of apprentices, and workers' compensation coverage, as further set forth in the General Conditions, and shall file the required workers' compensation certificate before commencing work.

The Contractor and each subcontractor shall furnish a certified copy of all payroll records directly to the Labor Commissioner. Submittal of said records to meet DIR submittal process instructions and requirements.

For public works contracts awarded on and after January 1, 2015, those public works projects shall be subject to compliance monitoring and enforcement by the Department of Industrial Relations.

As of March 1, 2015, a contractor or subcontractor shall not be qualified to submit a bid or to be listed in a bid proposal subject to the requirements of Public Contract Code section 4104 unless currently registered and qualified under Labor Code section 1725.5 to perform public work as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code.

As of April 1, 2015, a contractor or subcontractor shall not be qualified to enter into, or engage in the performance of, any contract of public work (as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code) unless currently registered and qualified under Labor Code section 1725.5 to perform public work.

13. The Contractor must comply with the applicable requirements of the Division of State Architect ("DSA") Construction Oversight Process ("DSA Oversight Process"), including but not limited to (a) notifying the Owner's Inspector of Record/Project Inspector ("IOR") upon commencement and completion of each aspect of the work as required under DSA Form 156; (b) coordinating the Work with the IOR's inspection duties and requirements; (c) submitting verified reports under DSA Form 6-C; and (d) coordinating with the Owner, Owner's Architect, any Construction Manager, any laboratories, and the IOR to meet the DSA Oversight Process requirements without delay or added costs to the Project.

Contractor shall be responsible for any additional DSA fees related to review of proposed changes to the DSA-approved construction documents, to the extent the proposed changes were caused by Contractor's wrongful act or omissions. If inspected work is found to be in non-compliance with the DSA-approved construction documents or the DSA-approved testing and inspection program, then it must be removed and corrected. Any construction that covers unapproved or uninspected work is subject to removal and correction, at Contractor's expense, in order to permit inspection and approval of the covered work in accordance with the DSA Oversight Process.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed.

DISTRICT

By: _____
Signature

Michael Johnston
Associate Superintendent
Title

CONTRACTOR

By: _____
Signature* (see next p.)

Title

(Second signature required only for corporation)

By: _____
Signature** (see next p.)

Print Name

Title

(CORPORATE SEAL OF CONTRACTOR, if
corporation)

Contractor's License No.

Tax ID/Social Security No.

**If CONTRACTOR is a corporation, the first signature must be by one of the following officers of the corporation: Chairman of the Board, President, or any Vice President.*

***If CONTRACTOR is a corporation, the second signature must be by a different person from the first signature and must be by one of the following officers of the corporation: Secretary, any Assistant Secretary, the Chief Financial Officer, or any Assistant Treasurer.*

Purch Bid fr.If 9 98

PAYMENT BOND
(Labor and Material)

KNOW ALL MEN BY THESE PRESENTS:

That **WHEREAS,**

_____ and

Hereinafter designated as the "Principal", have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to construct

Bid 2983
CAMPUS SECURITY IMPROVEMENTS PHASE 2

Which said agreement dated _____, 20____, and all of the contract documents attached to or forming a part of said agreement, are hereby referred to and made a part hereof; and

WHEREAS, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by whom the contract is awarded to secure the claims arising under said agreement.

NOW, THEREFORE, THESE PRESENTS WITNESSETH:

That the said Principal and the undersigned

_____ are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of _____ **Dollars (\$ _____)** which sum well and truly be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the said Principal or any of its subcontractors, or the heirs, executors, administrators, successors, or assigns of any, all, or either of them, shall fail to pay for any materials, provisions, provender or other supplies, or teams, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind or for amounts due under the Unemployment Insurance Act with respect to such work or labor, that said Surety will pay the same in an amount not exceeding the amount hereinabove set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the Court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

And the said Surety, for value received, thereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of said contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety

this _____ day of _____, 20____

(To be signed by _____)
(Principal and Surety, _____)
(and acknowledged and _____)
(Notarial Seal attached _____)

Principal

Surety

By:

Attorney-in-Fact

The above bond is accepted and approved this _____ day of _____,
20____ .

END OF SECTION
3.97 (8.98)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that we

_____ as Principal, and _____ as Surety, are held and firmly bound unto **Clovis Unified School District**, in the County of Fresno, State of California, hereinafter called the "Owner", acting on behalf of the State Allocation Board, State of California, in the sum of **Dollars (\$ _____)** for the payment of which sum well and truly made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such, that whereas the Principal entered into a certain contract with the Owner, dated _____, 20____ for construction of

**Bid 2993
CAMPUS SECURITY IMPROVEMENTS PHASE 2**

NOW, THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Owner, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, then this obligation to be void, otherwise to remain in full force and virtue.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract, or to the work, or to the specifications.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals this _____ day of _____, 20____ hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(To be signed by _____)
(Principal and Surety, _____)
(and acknowledged and _____)
(Notarial Seal attached _____)

(Affix Corporate Seal) _____
(Individual Principal)

(Business Address)

(Affix Corporate Seal) _____
(Corporate Principal)

(Business Address)

(Affix Corporate Seal) _____
(Corporate Surety)

(Business Address)

By: _____

The rate or premium on this bond is _____ per thousand.

The total amount of premium charged is _____ .

The above must be filled in by Corporate Surety.

END OF SECTION
3.97 (8.98)

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GENERAL CONDITIONS FOR CONTRACTS ON CONSTRUCTION MANAGEMENT PROJECTS

ARTICLE 1. DEFINITIONS

The following terms have the following meanings, notwithstanding that any such terms may be elsewhere defined in the Contract Documents. Any terms not expressly defined in this Article but defined in other portions of the Contract Documents have the respective meanings so given.

- (a) **Action of the Governing Board** is a vote of a majority of the membership in a lawful meeting.
- (b) **Addenda** are the changes in plans specifications, drawings, and Contract Documents which have been authorized in writing by the DISTRICT or ARCHITECT, and which alter, explain, or clarify the Contract Documents prior to the bid deadline. The Plan Review Agency responsible for plan review and approval will also review and approve the Addenda.
- (c) **Approval** means written authorization by ARCHITECT or DISTRICT, as appropriate, for specific applications. Approvals required by the Plan Review Agency shall mean written authorization by that agency.
- (d) **ARCHITECT** – The individual, or the assigned representative, who was retained by DISTRICT to prepare the bid documents: i.e., the construction plans and specifications. As used in these General Conditions, ARCHITECT may be a licensed Architect, Mechanical Engineer, Electrical Engineer, Civil Engineer or any other design professional licensed in the State of California to provide design services.
- (e) **As shown, as indicated, and as detailed** refer to drawings accompanying the specification.
- (f) **As Directed, Accepted, Rejected, Approved** or others of similar meaning which authorize any exercise of judgment shall be distinctly understood to mean that such power to direct, accept, reject, and approve shall be vested only in DISTRICT and/or the ARCHITECT, as appropriate.
- (g) **Building** – Includes all structures, drives, and walks, steps, approaches and site.
- (h) **Called For** – As called for, shown, noted, and/or indicated in the specifications and/or drawings.
(SEE ARTICLE 20, Drawings & Specifications)
- (i) **Contract** – All of the Contract Documents for CONTRACTOR's part of the Project
- (j) **Contract Documents** includes collectively: to the extent applicable to the Project: Notice Calling for Bids/Notice to Contractors, Instructions to Bidders, Bid Form, Bid Bond or other statutory bid security, Request for Proposal, Request for Qualifications, Prime Bidder Good Faith Effort Worksheet, Prime Bidder Certificate, Pre-Construction Services Agreement, Roof Project Certification, Designation of Subcontractors, Workers' Compensation Certificate, Drug- Free Workplace Certification, Iran Contracting Act Certification, Change Orders, Shop Drawing Transmittals, any Information required of CONTRACTOR, any pre-qualification forms submitted pursuant to Public Contract Code Section 20111.5, Sufficient Funds Declaration, Non-collusion Declaration, Faithful Performance Bond, Payment Bond, Insurance Certificates, Additional Insured Endorsements, Declarations Pages, Guarantees, Warranties, Fingerprinting Notice and Acknowledgement, Independent Student Contact Form, DVBE documentation, any Escrow Agreement, CONTRACTOR's Certificate Regarding Non-Asbestos Containing Materials, General Conditions, any Special

Conditions, Plans, Drawings, Specifications, the Owner-Contractor Agreement (between DISTRICT and CONTRACTOR) and all modifications, addenda and amendments thereto, Site Lease, Sublease, and Lease and Sublease Agreement.

- (k) **Contract Sum** – The total amount payable by the DISTRICT to the CONTRACTOR as stated in the Agreement, including authorized adjustments, for performance of the work. Can also be referred to as the Contract Cost.
- (l) **Contract Time** – The duration of the work as defined in the Agreement.
- (m) **CONSTRUCTION MANAGER** –individual and/or assigned representative who has been retained by the DISTRICT to provide leadership to the construction process through services to the DISTRICT, including but not limited to, the issuing and maintenance of the Construction Management Bid Schedule (CMBS) and any updates required by approved CONTRACTOR submitted time extension requests, cost control and general construction coordination, and payment application processing and reporting to the DISTRICT. **CONTRACTOR** or **DISTRICT** are those mentioned as such in the Agreement. They are treated throughout the Contract Documents as if they are of singular number and neutral gender.
- (n) The word **CONTRACTOR**, as used herein shall be understood to mean a PRIME CONTRACTOR(s) having a direct contractual relationship with the DISTRICT
- (o) **Days** – Days shall be considered calendar days.
- (p) **Deferred Approvals** – Deferred Approvals are items identified in the drawings and/or specifications that require the CONTRACTOR to prepare drawings and/or calculations and other data for submission to the Plan Review Agency for formal review and approval into the Contract Documents. For Deferred Approvals requiring a structural engineer’s stamp and calculations, a structural engineer licensed in the State of California shall be utilized in the submittal process. The CONTRACTOR shall pay all costs associated with the preparation and approval of the deferred approvals.
- (q) **Delay Days** – Delay Days shall be considered working days. Assuming a 5-day workweek, delay days shall be converted into calendar days by a factor of 1.4. Hence 10 Delay Days = 14 Calendar Days. Delay Days will be evaluated and identified as one of the three categories listed below. Excusable delays will create adjustments in the contract time. Compensable delays will create adjustments in both the contract sum and contract time. In the event of concurrent delays, no delay damages are recoverable by either the DISTRICT or the CONTRACTOR and no extension of time shall be granted for concurrent delays. Concurrent delays shall be evaluated using schedule updates, daily reports, notices, and any other records of delaying events. In the event of a delay, the CONTRACTOR shall provide a “Notice of Delay” within 24 hours of the *delaying* event, and submit a schedule depicting the delay with all substantiating documentation within **seven (7) days** of the *delaying* event.

<u>Excusable & Compensable</u>	<u>Excusable & Non-Compensable</u>	<u>Inexcusable</u>
Delays caused by the DISTRICT, the ARCHITECT, or the DISTRICT’S forces or	<ol style="list-style-type: none"> 1. Declared State of Emergency 2. Strikes or labor shortages 3. Acts of God 	Delays caused by the CONTRACTOR, Subcontractor(s), materialmen

separate contractors	4. Fires, war, Acts of government & pestilence	or suppliers, including concurrent delays
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- (r) **DISTRICT or Owner** – As indicated in the Bid Form, Notice to Contractors and the AGREEMENT.
- (s) **Equipment and/or Furnishing Modifiers:**
 - F.B.O.** – Where the indication “F.B.O.” is noted on the drawings or listed in the specifications, such item(s) are shown or listed for information and will be “Furnished by OWNER or OTHERS” and installed by CONTRACTOR. The CONTRACTOR shall verify all dimensions and details necessary for the proper installation.
 - N.I.C.** – Where the indication “N.I.C.” is noted on the drawings or listed in the specifications, such item(s) are shown or listed for the purpose of general information and is/are “Not in Contract”. Installation and connection to services for such work are not in the contract however, coordination is required by CONTRACTOR for utility service locations and/or connection types.
 - I.C.** – “IN CONTRACT”: All item(s) shown or listed in the drawings and specifications are in the Contract and are part of the work. The naming of any item(s) shall mean to provide the item(s), that is furnishing (including all incidental and accessory items thereto) and installing (including all labor necessary to achieve full and complete functioning of the item(s) according to the best practices of the trades involved). When and if the indication “I.C.” is noted on the drawings or listed in the specifications, such a designation is listed only for clarity, in order to set the item(s) apart from the “F.B.O.” and “N.I.C.” item(s).
- (t) **Locality** in which the work is performed means the city and/or county in which the public work is done.
- (u) **Materials** – Materials incorporated in the work or used or consumed in the performance of the work.
- (v) **Plan Review Agency** is the agency responsible for the review and approval of the Plans, Specifications, Addenda, Substitution Requests (if appropriate), Change Orders and the like.
- (w) **Project** is the total construction which may include construction by DISTRICT and includes construction by separate contractors. Planned undertaking as outlined in Bid & Contract Documents.
- (x) **Reserved**
- (y) **Provide** shall include "provide complete in place," that is, "furnish and install."
- (z) **Safety Orders** are those issued by the Division of Industrial Safety and OSHA safety and health standards for construction.
- (aa) **Shop Drawings and Submittals** - They are generally treated throughout the Contract Documents as if they are one and the same.

- (bb) **Similar** – Shall be taken in its general sense and not meaning identical, and all details of such work shall be in proper relation to the location and connection of other parts of the work.
- (cc) **Standards, Rules, and Regulations** referred to are recognized printed standards and shall be considered as one and a part of these specifications within limits specified.
- (dd) **Subcontractor**, as used herein, includes those having a direct contractual relationship with CONTRACTOR and one who furnishes material worked to a special design according to plans, drawings, and specifications of this work, but does not include one who merely furnishes material not so worked.
- (ee) **Surety** is the person, firm, or corporation that executes as surety the CONTRACTOR's Bid Security, faithful performance bond and/or payment bond.
- (ff) **Work** of the CONTRACTOR or Subcontractor includes labor or materials (including, without limitation, equipment and appliances) or both, incorporated in, or to be incorporated in the construction covered by the Contract, including, but not limited to, punch list items. The Work shall constitute a "work of improvement" under Civil Code section 8050 and Public Contract Code section 7107.
- (gg) **Workers** include laborers, workers, and mechanics.
- (hh) **CONSTRUCTION ADMINISTRATION DOCUMENTS: Terms, uses and protocols.**
Notwithstanding any other provisions in the General Conditions, the following terms and definitions shall be used by all Architects, Engineers and Contractors and shall conform to "Kahua" terms. Architects, Engineers and Contractors shall utilize the Kahua software program to enter and process all Administration documents, including but not limited to those listed below, payment-related documents and other documents referenced throughout. The Kahua software, log-in credentials and training for the Kahua software program will be provided by the District upon request.
- (1) **RFI** – The term "RFI" shall mean Request for Information. An RFI is a written instrument prepared by the CONTRACTOR and submitted to the CONSTRUCTION MANAGER. An RFI shall be considered a tool for requesting additional information, above and beyond that which is available in the Contract Documents and all reference standards, and fulfilling the Contract coordination requirements for which CONTRACTOR is obligated to perform. The RFI shall not be used for requesting design and/or material substitutions.

Prior to issuing an RFI the CONTRACTOR, Subcontractor, material suppliers and the like shall thoroughly review the Contract Documents and refer to all reference standards for the information sought.

When submitting an RFI, the document shall specify the date issued and the date the information is needed by. However, the contractual response time shall be **fourteen (14) days** from the date the ARCHITECT receives the RFI, unless more time is needed under the circumstances. The CONTRACTOR shall plan its work and submit questions in sufficient time to accommodate the response time. If the Contract requires a CPM schedule, the CONTRACTOR shall include in the RFI the CPM Activity Number and the originating Subcontractor.

The CONTRACTOR shall make efforts to coordinate the Work in a timely fashion, so as to alleviate priority RFI's. If the RFI is considered a priority, the CONTRACTOR shall state the

word “Priority” on the document, and the CONTRACTOR shall provide weekly RFI Priority Schedules to the CONSTRUCTION MANAGER. The CONTRACTOR shall issue and maintain weekly RFI Priority Schedules.

The RFI Priority Schedule shall include a listing of pending requests, including the most current request, and rank the RFI's in order of priority. The ARCHITECT shall endeavor to respect the CONTRACTOR's requested order of priorities and requested response dates.

The ARCHITECT and/or Engineer's response to an RFI shall be considered a Supplemental Instruction (SI) in which the Contract Sum and/or Time is not altered. If the RFI response alters the Contract Sum and/or Time, a Construction Change Directive (CCD) or a Request for Proposal (RFP) may be issued for the changed condition(s).

Should the CONTRACTOR determine the response to the RFI creates changes in the Contract Sum and/or Time, the CONTRACTOR shall submit a change order request (COR) to the CONSTRUCTION MANAGER for review, along with a Time Extension Request (if required).

- (2) **SI** – The term “SI” shall mean Supplemental Instruction. The SI is a written instrument prepared by the ARCHITECT and submitted to the CONTRACTOR through the CONSTRUCTION MANAGER. The SI can order changes in the work that do not affect the Contract Sum and/or Time. Supplemental Instructions can also be made in a RFI response by issuing a formal SI document or by written letter from the ARCHITECT'S office.
- (3) **RFP** – The term “RFP” shall mean Request for Proposal. The RFP is a written instrument prepared by the ARCHITECT and submitted to the CONTRACTOR. The RFP is a request for changes in the Contract Sum and/or Time; for potential changed Contract conditions for which the Contract Sum and/or Time may or may not be affected. As appropriate, the CONTRACTOR shall provide the full and complete terms of the request in a Change Order Request (COR) within **ten (10) days** of receipt of the RFP. If the RFP results in added time the CONTRACTOR shall provide a Time Extension Request within the same **ten (10) days**. If the DISTRICT accepts the full terms of the RFP, the RFP shall be incorporated into a Construction Change Directive (CCD) and/or a Change Order (CO), and the approved Time Extension, if any, shall become incorporated into the next monthly schedule update to reflect the time impact(s).
- (4) **CCD** – The term “CCD” shall mean Construction Change Directive. The CCD is a written instrument prepared by the ARCHITECT and submitted to the CONTRACTOR through the CONSTRUCTION MANAGER. The CCD is a written order directing a change in the work and stating the required pricing method, if any, in the Contract Sum, and the Contract Time adjusted to reflect a previously approved Time Extension Request, if any. The CCD, without invalidating the Contract, may order changes in the work within the general scope of the Contract, consisting of additions, deletions, or other revisions within. The CCD shall become effective when the ARCHITECT, the CONSTRUCTION MANAGER, the CONTRACTOR, and the OWNER have signed the CCD.
- (5) **COR** – The term “COR” shall mean Change Order Request. The COR is a written instrument prepared by the CONTRACTOR and submitted to the CONSTRUCTION MANAGER. The COR is the CONTRACTOR's method for requesting the full and complete terms for changes in the Contract Sum and/or Time, if any. All of the terms of the COR need to be identified, and without reservations, so that the DISTRICT and/or ARCHITECT can consider the full impact of the COR. The provisions and format of the request are identified under **CHANGES AND EXTRA WORK**. ARCHITECT shall endeavor to respond to the COR on or within **fourteen (14) days** of receipt.

- (6) **CO** – The term “CO” shall mean Change Order. The Change Order shall state the change in work and the Contract Sum and/or Time adjustments, if any. RFP’s and/or CCD’s may be incorporated into a Change Order, after any adjustments in the Contract Sum and/or Time have been reviewed and accepted by the DISTRICT and ARCHITECT. The Change Order, and items contained therein, cannot be incorporated into the progress payments until the Change Order has been fully executed and accepted by the Governing Board. Upon the Governing Board’s approval, the ARCHITECT will issue the fully executed Change Order to the Plan Review Agency responsible for plan review and approval for written approval of the Change Order.

ARTICLE 2. STATUS OF CONTRACTOR

- (a) CONTRACTOR is and shall at all times be deemed to be an independent CONTRACTOR and shall be wholly responsible for the manner in which it performs the services required of it by the terms of the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the DISTRICT and CONTRACTOR or any of CONTRACTOR’s agents, employees, or subcontractors. CONTRACTOR assumes exclusively the responsibility for the acts of its employees and Subcontractors as they relate to the services to be provided during the course and scope of their employment. CONTRACTOR, its agents, employees and subcontractors shall not be entitled to any rights or privileges of DISTRICT employees and shall not be considered in any manner to be DISTRICT employees. DISTRICT shall be permitted to monitor the activities of the CONTRACTOR to determine compliance with the terms of the Contract Documents.
- (b) CONTRACTOR (including all subcontractors) is required by law to be licensed and regulated by the Contractors’ State License Board. Any CONTRACTOR not so licensed is subject to penalties under the law, and the contract will be considered void pursuant to Section 7028.7 of the Business and Professions Code. Any questions concerning a CONTRACTOR may be referred to the Registrar, Contractors’ State License Board, 9821 Business Park Drive, Sacramento, CA 95827.

ARTICLE 3. CHANGE IN NAME AND NATURE OF CONTRACTOR’S LEGAL ENTITY

- (a) Before CONTRACTOR makes any change in the name or legal nature of the CONTRACTOR’s entity, CONTRACTOR shall first notify the DISTRICT in writing and cooperate with DISTRICT in making such changes as the DISTRICT may request in the Contract Documents regarding possible change in Ownership, Principals or Officers.

ARTICLE 4. CONTRACTOR’S SUPERVISION, PROSECUTION AND PROGRESS

- (a) During progress of the work, CONTRACTOR shall keep on the work site a competent superintendent satisfactory to DISTRICT, who shall remain on the work site during the performance of the CONTRACTOR’s work and for the necessary coordination thereof. Before commencing the work herein, CONTRACTOR shall give written notice to CONSTRUCTION MANAGER of the name, qualifications and experience of such superintendent. If the superintendent is found unsatisfactory by DISTRICT, CONTRACTOR shall replace the superintendent with one acceptable to the DISTRICT. Superintendent shall not be changed or removed from the work except with written consent of DISTRICT, unless a superintendent proves to be unsatisfactory to CONTRACTOR and ceases to be in its employ, in which case, CONTRACTOR shall notify the CONSTRUCTION MANAGER in writing and replace said superintendent with one acceptable to the DISTRICT. Superintendent shall represent

CONTRACTOR and all directions given to superintendent shall be as binding as if given to CONTRACTOR.

- (b) CONTRACTOR shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills as may be necessary to perform the work in accordance with the Contract Documents. CONTRACTOR shall carefully study and compare all plans, drawings, specifications, and other instructions and shall at once report to ARCHITECT any error, inconsistency or omission which CONTRACTOR or its employees may discover. The CONTRACTOR represents itself to DISTRICT as a skilled, knowledgeable, and experienced CONTRACTOR. The CONTRACTOR shall be liable to the DISTRICT for damage resulting from errors, inconsistencies, or omissions in the Contract Documents that the CONTRACTOR knew about or that an experienced CONTRACTOR would have recognized and which CONTRACTOR did not report.
- (c) The CONTRACTOR shall verify all indicated dimensions before ordering materials or equipment, or before performing work. The CONTRACTOR shall take field measurements, verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the CONTRACTOR with the Contract Documents before commencing work. Errors, inconsistencies or omissions discovered shall be reported to the CONSTRUCTION MANAGER and DISTRICT and ARCHITECT at once. Upon commencement of any item of work, the CONTRACTOR shall be responsible for dimensions related to such item of work and shall make any corrections necessary to make work properly fit at no additional cost to DISTRICT. This responsibility for verification of dimensions is a non-delegable duty and may not be delegated to Subcontractors or agents.
- (d) Omissions from the plans, drawings or specifications, or the mis-description of customary and usual details of work which are manifestly necessary to carry out the Work or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or mis-described Work, but they shall be reported and performed as if fully and correctly set forth and described in the plans, drawings and specifications.
- (e) The CONTRACTOR shall be solely responsible for the means, methods, techniques, and procedures of construction. The CONSTRUCTION MANAGER is responsible for the construction schedule and overall sequence of construction. CONTRACTOR must promptly review, comment and accept in writing the construction schedule and the overall sequence of construction. The CONTRACTOR is responsible for its own sequences that may occur within a given CPM activity or sets of CPM activities, for which there will be no changes in the given activity duration(s) unless otherwise approved by the CONSTRUCTION MANAGER and incorporated into a monthly schedule update. The CONTRACTOR shall insure that the finished work complies with the Contract Documents.
- (f) Pursuant to Public Contract Code section 6109, no CONTRACTOR may perform work on a public works project with a subcontractor who is ineligible to perform work on the project pursuant to sections 1777.1 or 1777.7 of the Labor Code.
- (g) It is the responsibility of the CONTRACTOR to coordinate work included in their contract with that of other trades prior to detailing, installation or fabrication of the material or equipment. The CONTRACTOR shall provide coordination and/or layout documents for use by the CONTRACTOR and other trades in coordinating the work.
- (h) DISTRICT shall have the right, but not the obligation, to require the removal from the work of any superintendent, staff member, agent, or employee of the CONTRACTOR, any subcontractor, material or equipment supplier, etc., for cause.

ARTICLE 5. SUBCONTRACTORS

- (a) CONTRACTOR agrees to bind every Subcontractor by terms of the Contract Documents as far as such terms are applicable to Subcontractor's work. If CONTRACTOR subcontracts any part of the work, CONTRACTOR shall be as fully responsible to DISTRICT for acts and omissions of any Subcontractor and of persons either directly or indirectly employed by any Subcontractor, as it is for acts and omissions of persons directly employed by CONTRACTOR. Nothing contained in Contract Documents shall create any contractual relation between any Subcontractor and DISTRICT, nor shall the Contract Documents be construed to be for the benefit of any Subcontractor.
- (b) DISTRICT's consent to any Subcontractor shall not in any way relieve CONTRACTOR of any obligations under the Contract Documents and no such consent shall be deemed to waive any provision of the Contract Documents.
- (c) CONTRACTOR must submit with its bid, a Designation of Subcontractors pursuant to the Subletting and Subcontracting Fair Practices Act. If CONTRACTOR specifies more than one Subcontractor for the same portion of work or fails to specify a Subcontractor, and such portion of the work exceeds one-half of one percent of the total bid, CONTRACTOR agrees that it is fully qualified to perform and shall perform such work itself, unless CONTRACTOR provides for substitution or addition of Subcontractors. Substitution or addition of Subcontractors shall be permitted only as authorized under the Subletting and Subcontracting Fair Practices Act, California Public Contract Code Section 4100, et. seq.
- (d) In accordance with California Business and Professions Code Section 7059, if CONTRACTOR is designated as a "specialty CONTRACTOR" (as defined in Section 7058 of the Public Contract Code), all of the work to be performed outside of the CONTRACTOR's license specialty shall be performed by a licensed Subcontractor in compliance with the Subletting and Subcontracting Fair Practices Act, California Public Contract Code Section 4100, et seq.
- (e) A copy of each bid sheet, if in writing, or, if not in writing, then a written statement signed by the CONTRACTOR giving the name of the Subcontractor and the terms and conditions of such subcontract, shall be filed with the DISTRICT before the CONTRACTOR begins work. Each subcontract shall contain a reference to the Agreement between the DISTRICT and the CONTRACTOR and the terms of that Agreement and all parts of the Contract Documents shall be made a part of such subcontract insofar as applicable to the work covered thereby. Each subcontract will provide for termination in accordance with the Article entitled DISTRICT'S RIGHT TO TERMINATE AGREEMENT of these General Conditions. Each subcontract shall provide for its annulment by the CONTRACTOR at the order of the ARCHITECT if in the ARCHITECT's opinion the Subcontractor fails to comply with the requirements of the Contract Documents insofar as the same may be applicable to this work. Nothing herein contained shall relieve the CONTRACTOR of any liability or obligation hereunder.
- (f) The CONTRACTOR agrees that the State and DISTRICT have the right to review, obtain and copy all records pertaining to performance of the contract. The CONTRACTOR agrees to provide the State or the DISTRICT with any relevant information requested and shall permit the State or the DISTRICT access to its premises upon reasonable notice for purposes of interviewing employees and inspecting records. The CONTRACTOR agrees to maintain such records for a period of three years after final payment under the contract.

- (g) Each subcontract agreement for a portion of the work is assigned by the CONTRACTOR to the DISTRICT provided that:
 - A. Assignment is effective only after termination of the Contract Documents with the CONTRACTOR by the DISTRICT for cause and only for those subcontract agreements which the DISTRICT accepts by notifying the Subcontractor in writing; and
 - B. Assignment is subject to the prior rights of the surety, if any, obligated under any bond relating to the Contract Documents.

ARTICLE 6. PROHIBITED INTERESTS

- (a) No official of DISTRICT who is authorized in such capacity and on behalf of DISTRICT to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with construction of the work may be or become directly or indirectly interested financially in this work or in any part thereof. No officer, employee, ARCHITECT, attorney, engineer, CONSTRUCTION MANAGER or inspector of or for DISTRICT who is authorized in such capacity and on behalf of DISTRICT to exercise any executive, supervisory or other similar functions in connection with construction of work may be or become directly or indirectly interested financially in this work or in any part thereof. CONTRACTOR shall receive no compensation and shall repay DISTRICT for any compensation received by CONTRACTOR hereunder, should CONTRACTOR aid, abet or knowingly participate in violation of this Article.

ARTICLE 7. DISTRICT'S INSPECTOR

- (a) One or more Inspector(s), including special inspectors, as required, will be employed by DISTRICT in accordance with the requirements of Title 24, Part 1 of the California Code of Regulations and will be assigned to the Project. Duties of an Inspector are specifically defined in Section 4-342 of Title 24, 2007 California Administrative Code.
- (b) No work shall be performed by the CONTRACTOR solely upon the instructions or comments by the Inspector. The Inspector has no authority to interpret the Contract Documents or order extra work and any extra work performed without the written instruction of the DISTRICT shall be at CONTRACTOR's sole cost and expense and there will be no delay damages incurred by DISTRICT for such work.
- (c) No work shall be carried on except with the knowledge and under the inspection of the Inspector(s). The Inspector shall have free and adequate access to any or all parts of work at any time. CONTRACTOR shall furnish Inspector reasonable opportunities and equipment necessary for obtaining such information as may be necessary to keep Inspector fully informed respecting progress and manner of work and character of materials. Inspection of work shall not relieve CONTRACTOR from any obligation to fulfill the Contract Documents. The DISTRICT shall have authority to stop work whenever provisions of the Contract Documents are not being complied with and such noncompliance is discovered. CONTRACTOR shall instruct its employees accordingly.

ARTICLE 8a. ARCHITECT'S STATUS

- (a) The ARCHITECT
 - 1) The ARCHITECT shall be one of the DISTRICT's representatives during construction and shall observe the progress and quality of the work on behalf of the DISTRICT.

ARCHITECT shall have the authority to act on behalf of DISTRICT only to the extent expressly provided in the Contract Documents. ARCHITECT shall have authority to stop work whenever such stoppage may be necessary in ARCHITECT's reasonable opinion to insure the proper execution of the Contract Documents.

- 2) The ARCHITECT shall be, in the first instance, the judge of the performance of the work. ARCHITECT shall exercise authority under the Contract Documents to enforce CONTRACTOR's faithful performance.
- 3) The ARCHITECT shall have all authority and responsibility established by law, including Title 24 of the California Code of Regulations. The ARCHITECT has the authority to enforce compliance with the Contract Documents and the CONTRACTOR shall promptly comply with instructions from the ARCHITECT or an authorized representative of the ARCHITECT.
- 4) On all questions related to the quantities, the acceptability of material, equipment or workmanship, the execution, progress or sequence of work, the interpretation of plans, specifications or drawings, and the acceptable performance of the CONTRACTOR, the decision of the ARCHITECT, in consultation with the CONSTRUCTION MANAGER, shall govern and shall be precedent to any payment unless otherwise ordered by the Governing Board. The progress and completion of the work shall not be impaired or delayed by virtue of any question or dispute arising out of or related to the foregoing matters and the instructions of the ARCHITECT relating thereto.
- 5) General supervision and direction of the work by the ARCHITECT shall in no way imply that the ARCHITECT or its representatives are in any way responsible for the safety of the CONTRACTOR or its employees or that the ARCHITECT or its representatives will maintain supervision over the CONTRACTOR's construction methods or personnel other than to ensure that the quality of the finished work is in accordance with the Contract Documents.

ARTICLE 8b. CONSTRUCTION MANAGER'S STATUS

(a) The CONSTRUCTION MANAGER

- 1) The CONSTRUCTION MANAGER shall provide leadership and management for the construction process and overall sequence of the work. CONSTRUCTION MANAGER shall have the authority to act on behalf of DISTRICT to the extent expressly provided for in the Contract Documents.
- 2) The CONSTRUCTION MANAGER shall maintain the overall scheduling of the project.
- 3) The CONSTRUCTION MANAGER shall maintain and monitor the processing of shop drawings, RFI's, RFP's, CCD's, COR's, and CO's.
- 4) The CONSTRUCTION MANAGER shall review CONTRACTOR pay requests and process same through ARCHITECT and DISTRICT.
- 5) The CONSTRUCTION MANAGER shall be responsible for the general sequences of construction and overall coordination of construction. The CONSTRUCTION MANAGER shall resolve disputes and coordination issues between separate Contracts.

ARTICLE 9. NOTICE OF TAXABLE POSSESSORY INTEREST

- (a) The terms of the Agreement may result in the creation of a possessory interest. If such a possessory interest is vested in a private party to the Agreement, the private party may be subjected to the payment of property taxes levied on such interest.

ARTICLE 10. ASSIGNMENT OF ANTITRUST ACTIONS

- (a) Public Contract Code Section 7103.5 provides:
 - (1) In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the CONTRACTOR or Subcontractor offers and agrees to assign to the awarding body (DISTRICT) all rights, title, and interest in and to all causes of action it 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 public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the CONTRACTOR, without further acknowledgment by the parties.
 - (2) CONTRACTOR, for itself and all Subcontractors, agrees to assign to DISTRICT all rights, title, and interest in and to all such causes of action CONTRACTOR and all Subcontractors may have under the Contract Documents. This assignment shall become effective at the time DISTRICT tenders final payment to the CONTRACTOR, and CONTRACTOR shall require assignments from all Subcontractors to comply herewith.

ARTICLE 11. OTHER CONTRACTS

- (a) CONTRACTOR is aware that this Project may be split into several phases, and has multiple prime and or separate contracts. DISTRICT reserves the right to let other contracts in connection with this work, and it shall be the duty of the CONTRACTOR to actively schedule and coordinate its work with the DISTRICT's forces, DISTRICT's Contractor(s) and or other multiple prime contractors. No extra costs or delays shall be considered as a result of any such scheduling, coordination and cooperation. CONTRACTOR shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly connect and coordinate its work with such other contractors.
- (b) If any part of CONTRACTOR's work depends for proper execution or results upon work of any other Contractor, the CONTRACTOR shall inspect and promptly report to CONSTRUCTION MANAGER in writing any defects in such work that renders it unsuitable for such proper execution and results. CONTRACTOR will be held accountable for damages to DISTRICT for that work which it failed to inspect or should have inspected. CONTRACTOR's failure to inspect and report shall constitute its acceptance of other CONTRACTOR's work as fit and proper for reception of its work, except as to defects which may develop in other CONTRACTOR's work after execution of CONTRACTOR's work.
- (c) To insure proper execution of its subsequent work, CONTRACTOR shall measure and inspect work already in place and shall at once report to the ARCHITECT in writing any discrepancy between executed work and Contract Documents.
- (d) It is the obligation of CONTRACTOR to ascertain to its own satisfaction the scope of the work and nature of any other contracts that have been or may be awarded by DISTRICT in prosecution of the Project to the end that CONTRACTOR may perform its Contract in the light of such other contracts, if any. Items included in one or more scopes of work that appear to be

duplicate inclusions shall be included in both scopes of work. The DISTRICT at its discretion may elect to remove a duplicate item from a scope of work with an appropriate contract adjustment.

- (e) Nothing herein contained shall be interpreted as granting to CONTRACTOR exclusive occupancy at the site. CONTRACTOR shall not cause any unnecessary hindrance or delay to any other contractor working on the Project. If simultaneous execution of any contract for the Project is likely to cause interference with performance of some other contract or contracts, CONSTRUCTION MANAGER shall decide which contractor shall cease work temporarily and which contractor shall continue or whether work can be coordinated so that contractors may proceed simultaneously at no additional cost to the DISTRICT.
- (f) If the Project is split into phases *and / or bid packages* then CONTRACTOR has made allowances for any delays or damages which may arise from coordination with contractors for other phases or packages. If any delays should arise from a contractor working on a different phase or package, CONTRACTOR's sole remedy for damages, including delay damages, shall be against the contractor who caused such damage and not the DISTRICT. CONTRACTOR shall provide access to contractors for other phases or packages as necessary to prevent delays and damages to contractors working on other phases or packages.

ARTICLE 12. OCCUPANCY

- (a) DISTRICT reserves the right to occupy and use buildings and/or portions of the site at any time before completion, and such occupancy shall not constitute final acceptance of any part of work covered by the Contract Documents, nor shall such occupancy extend the date specified for completion of the work. The warranty period for the work will begin upon recording of the notice of completion
- (b) The DISTRICT and the CONTRACTOR shall agree in writing to the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the work, insurance, the period for correction of the work. Immediately prior to such partial occupancy or use, the DISTRICT, the CONTRACTOR, the CONSTRUCTION MANAGER and the ARCHITECT shall jointly inspect the area to be occupied or portion of the work to be used in order to determine and record the condition of the work.

ARTICLE 13. DISTRICT'S RIGHT TO TERMINATE AGREEMENT

- (a) If the CONTRACTOR refuses or fails to complete the work or any separable part thereof with such diligence as will insure its completion within the time specified or any permitted extension thereof, or fails to complete said work within such time, or if the CONTRACTOR should file a petition for relief as a debtor, or should relief be ordered against CONTRACTOR as a debtor under Title 11 of the United States Code, or if CONTRACTOR should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if it should refuse or should fail to supply enough properly skilled workers or proper materials to complete the work in the time specified, or if CONTRACTOR should fail to make prompt payment to Subcontractors for materials or labor, or disregard laws or ordinances or instructions of DISTRICT, or if CONTRACTOR or its Subcontractors should otherwise violate any provision of the Contract Documents, then DISTRICT may, without prejudice to any other right or remedy, serve written notice upon CONTRACTOR and its surety of DISTRICT's intention to terminate the Contract. Such notice shall contain the reasons for such intention to terminate. Unless within **ten (10) days** after the service of such notice such condition shall cease or such violation shall cease and arrangements satisfactory to DISTRICT for the correction thereof have been made, the Contract shall cease and terminate. In such case,

CONTRACTOR shall not be entitled to receive any further payment until the work is finished to DISTRICT's satisfaction.

- (b) In the event of any such termination, DISTRICT shall immediately serve written notice thereof upon surety and CONTRACTOR, and surety shall have the right to take over and perform the Contract, provided, however, that if surety within **seven (7) days** after service upon it of notice of termination does not give DISTRICT written notice of its intention to take over and perform the Contract, or does not commence performance thereof within **fifteen (15) days** after service of the notice of termination by DISTRICT on surety, DISTRICT may take over the work and prosecute it to completion by Agreement or by any other method it may deem advisable for the account and at the expense of CONTRACTOR, and CONTRACTOR and its surety shall be liable to DISTRICT for any excess cost or other damages occasioned by the DISTRICT thereby. Time is of the essence in the Contract. If the DISTRICT takes over the work as hereinabove provided, the DISTRICT may, without liability for so doing, take possession of and utilize in completing the work such materials, supplies, equipment and other property belonging to the CONTRACTOR as may be on the site of the work and necessary therefore.
- (c) If the expense of finishing the work, including compensation for additional architectural, managerial, temporary service and administrative services, exceeds the unpaid balance of the Agreement, CONTRACTOR shall pay the difference to DISTRICT. Expense incurred by DISTRICT as herein provided, and damage incurred through CONTRACTOR's default, shall be certified to DISTRICT by ARCHITECT. If the unpaid balance under the Agreement shall exceed the expense of finishing the work, including compensation for additional architectural, managerial, temporary service and administrative services, such excess shall be paid to CONTRACTOR.
- (d) In the event that sufficient funds are not appropriated to complete the work or the DISTRICT determines that sufficient funds are not available to complete the work, DISTRICT may terminate or suspend the completion of the work at any time by giving written notice to the CONTRACTOR. In the event that the DISTRICT exercises this option, the DISTRICT shall pay for any and all work and materials completed or delivered onto the site, and the value of any and all work then in progress and orders actually placed which cannot be canceled up to the date of notice of termination. The value of work and materials paid for shall include a factor of 15% for the CONTRACTOR's overhead and profit and there shall be no other costs or expenses paid to CONTRACTOR. All work, materials and orders paid for pursuant to this provision shall become the property of the DISTRICT.
- (e) DISTRICT may, without cause, order CONTRACTOR in writing to suspend, delay or interrupt the work in whole or in part for such period of time as DISTRICT may determine. Adjustment shall be made for increases in the cost of performance of the Contract caused by suspense, delay or interruption.
- (f) The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the DISTRICT.

ARTICLE 14. BONDS

- (a) Unless otherwise specified in the Special Conditions and within ten (10) days of the Notice of Award of the Contract, CONTRACTOR shall furnish a surety bond in an amount equal to **one hundred percent (100%)** of the Contract Sum as security for faithful performance of the Contract Documents and shall furnish a separate bond in an amount equal to **one hundred**

percent (100%) of the contract price as security for payment to persons performing labor and furnishing materials in connection with the work. Bonds shall be in the form set forth in these Contract Documents. If CONTRACTOR fails to furnish the required bonds, DISTRICT may terminate the Contract for cause.

- (b) To the extent, if any, that the Contract Sum is increased in accordance with the Contract Documents, CONTRACTOR shall cause the amount of the performance and payments bonds to be increased accordingly and shall promptly deliver satisfactory evidence of such increase to DISTRICT. To the extent available, the bonds shall further provide that no change or alteration of the Project Documents (including, without limitation, an increase in the Contract Sum, as referred to above), extensions of time, or modifications of the time, terms, or conditions of payment to CONTRACTOR will release the surety.
- (c) Only bonds executed by admitted surety insurers as defined in Code of Civil Procedure section 995.120 shall be accepted. The surety insurers must, unless otherwise agreed to by DISTRICT in writing, at the time of issuance of the bonds, have a rating not lower than “A-” as rated by A.M. Best Company, Inc. or other independent rating companies. DISTRICT reserves the right to approve or reject the surety insurers selected by CONTRACTOR and to require CONTRACTOR to obtain bonds from surety insurers satisfactory to OWNER.

ARTICLE 15. SUBSTITUTION OF SECURITIES

- (a) Pursuant to the requirements of Public Contract Code Section 22300, upon CONTRACTOR's request, DISTRICT will make payment to CONTRACTOR of any earned retention funds withheld from payments under the Contract Documents if CONTRACTOR deposits with the DISTRICT or in escrow with a California or federally chartered bank acceptable to DISTRICT, securities eligible for the investment pursuant to Government Code Section 16430 or bank or savings and loan certificates of deposit, upon the following conditions:
 - (1) CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.
 - (2) All expenses relating to the substitution of securities under Section 22300 and under this Article, including, but not limited to DISTRICT's overhead and administrative expenses, and expenses of the escrow agent shall be the responsibility of the CONTRACTOR.
 - (3) If CONTRACTOR chooses to enter into an escrow agreement, such agreement shall be satisfactory to DISTRICT, which agreement shall be in the form provided as part of the Contract Documents and which shall allow for the conversion to cash to provide funds to meet defaults by the CONTRACTOR including, but not limited to, termination of the CONTRACTOR's control over the work, stop notices filed pursuant to law, assessment of liquidated damages or amounts to be kept or retained under the provisions of the Contract Documents.
 - (4) Securities, if any, shall be returned to CONTRACTOR only upon satisfactory completion of the work.
- (b) To minimize the expense caused by such substitution of securities, CONTRACTOR shall, prior to or at the time CONTRACTOR requests to substitute security, deposit sufficient security to cover the entire amount to be then withheld and to be withheld under the General Conditions of the Contract Documents. Should the value of such substituted security at any time fall below the amount for which it was substituted, or any other amount which the DISTRICT determines

to withhold, CONTRACTOR shall immediately and at CONTRACTOR's expense deposit additional security qualifying under Section 22300 until the total security deposited is no less than equivalent to the amount subject to withholding under the Contract Documents.

- (c) In the alternative, under Section 22300, the CONTRACTOR may, prior to submittal of first application of payment, request DISTRICT to make payment of earned retentions directly to the escrow agent at the expense of the CONTRACTOR. Also at the CONTRACTOR's expense, the CONTRACTOR may direct investment of the payments in securities, and the CONTRACTOR shall receive interest earned on such investment upon the same conditions as provided for securities deposited by CONTRACTOR. Upon satisfactory completion of the Project, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300. If CONTRACTOR elects to receive interest on moneys withheld in retention by DISTRICT, CONTRACTOR shall, at the request of any subcontractor, make that option available to the subcontractor regarding any monies withheld in retention by the CONTRACTOR from the subcontractor. If the CONTRACTOR elects to receive any interest on any monies withheld in retention by the Owner, then the subcontractor shall receive the identical rate of interest received by the Contractor on any retention monies withheld from the subcontractor by the CONTRACTOR, less any actual pro rata costs associated with administering and calculating that interest. In the event the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If the CONTRACTOR elects to substitute securities in lieu of retention, then, by mutual consent of the CONTRACTOR and subcontractor, the subcontractor may substitute securities in exchange for the release of monies held in retention by CONTRACTOR. This shall apply only to those subcontractors performing more than five percent (5%) of the CONTRACTOR'S total bid. The CONTRACTOR shall not require any subcontractor to waive any provision of this section.
- (d) If any provision of this Article shall be found to be illegal or unenforceable, then, notwithstanding, the remainder of this Article shall remain in full force and effect, and only such provision shall be deemed stricken.

ARTICLE 16. LIABILITY, PROPERTY, FIRE, BUILDER'S RISK AND OTHER INSURANCE REQUIREMENTS

If this box is checked, then (1) the DISTRICT's Owner-Controlled Insurance Program ("OCIP") applies to the Project and (2) attached as Exhibit "I" to these General Conditions is a description of OCIP and its insurance requirements, which apply in place of each of the following provisions of this Article 16, and all of Articles 17 and 18, unless otherwise provided in said Exhibit.

- (a) **Liability and Property Insurance.** Before the commencement of the work, within ten (10) days of the Notice of Award of the Contract, and within limits acceptable to DISTRICT, the CONTRACTOR shall purchase from and maintain such commercial general liability insurance per occurrence for bodily injury, personal injury and property damage as set forth in the Contract Documents and automobile liability insurance per accident for bodily injury and property damage combined single limit as set forth in the Contract Documents as will protect the CONTRACTOR from claims set forth below, which may arise out of or result from the CONTRACTOR's operations under the Contract and for which the CONTRACTOR may be legally liable, whether such operations are by the CONTRACTOR, by a Subcontractor, by Sub-

subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- (1) Claims for damages because of bodily injury (including emotional distress), sickness, disease, or death of any person other than the CONTRACTOR's employees. This coverage shall be provided in a form at least as broad as Insurance Services Office (ISO) Form CG 0001 11188;
 - (2) Claims for damages arising from personal or advertising injury in a form at least as broad as ISO Form CG 0001 11188;
 - (3) Claims for damages because of injury or destruction of tangible property, including loss of use resulting therefrom, arising from operations under the Contract Documents;
 - (4) Claims for damages because of bodily injury, death of a person, or property damage arising out of the ownership, maintenance, or use of a motor vehicle, all mobile equipment, and vehicles moving under their own power and engaged in the work; and
 - (5) Claims involving blanket contractual liability applicable to the CONTRACTOR's obligations under the Contract Documents, including liability assumed by and the indemnity and defense obligations of the CONTRACTOR and the Subcontractors; and
 - (6) Claims involving Operations/Premises, Completed Operations/Products, Independent Contractors' coverage, and Broad Form property damage, without any exclusions for collapse, explosion, demolition, underground coverage, and excavating. Coverage for completed operations must be at least as broad as CG 2010 11185.
- (b) If commercial general liability insurance or another insurance form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the project location (with the ISO CG 2501 or insurer's equivalent endorsement provided to the DISTRICT) or the general aggregate limit shall be twice the required occurrence limit.
- (c) Any deductible or self-insured retention must be declared to and approved by the DISTRICT. At the option of the DISTRICT, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the DISTRICT, its Board of Trustees, members of its Board of Trustees, officers, employees, agents and volunteers; or the CONTRACTOR shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.
- (d) **Subcontractor Insurance Requirements.** The CONTRACTOR shall require its Subcontractors and any Sub-subcontractors to take out and maintain similar public liability insurance and property damage insurance in like amounts.
- (e) **DISTRICT Insurance.** The DISTRICT shall be responsible for purchasing and maintaining its usual liability insurance or self-insurance. Optionally, the DISTRICT may purchase and maintain other insurance for self-protection against claims that may arise from operations under the Contract Documents.
- (f) **Additional Insured Endorsement Requirements.** The CONTRACTOR shall name, on any policy of insurance, the DISTRICT, the ARCHITECT, the CONSTRUCTION MANAGER, and their respective officers, employees and agents as additional insured's. Subcontractors shall name the CONTRACTOR, the DISTRICT, and the ARCHITECT, the CONSTRUCTION MANAGER, and their respective officers, employees and agents as additional insureds. The

Additional Insured Endorsement included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the additional insureds have other insurance, which is applicable to the loss, such other insurance shall be excess to any policy of insurance required herein. The amount of the insurer's liability shall not be reduced by the existence of such other insurance.

- (g) **Consent of Insurer.** Partial occupancy or use in accordance with the Contract Documents shall not commence until the DISTRICT's insurance company providing property insurance has consented to such partial occupancy or use by endorsement or otherwise. The DISTRICT and the CONTRACTOR shall take reasonable steps to obtain consent of the insurance company and shall, without mutual consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of the insurance.
- (h) **Other Insurance.** The CONTRACTOR shall provide all other insurance required to be maintained under applicable laws, ordinances, rules, and regulations.
- (i) **Compliance.** In the event of the failure of any contractor to furnish and maintain any insurance required by this Article, the CONTRACTOR shall be in default under the Contract. Compliance by CONTRACTOR with the requirement to carry insurance and furnish certificates, policies, Additional Insured Endorsement and Declarations Page evidencing the same shall not relieve the CONTRACTOR from liability assumed under any provision of the Contract Documents, including, without limitation, the obligation to defend and indemnify the DISTRICT and the ARCHITECT.
- (j) **Builder's Risk/"All Risk" Insurance /Course of Construction Insurance.** The DISTRICT has Builder's Risk / "All Risk" Insurance / Course of Construction insurance on all insurable work included under the Contract Documents. The DISTRICT's Builder's Risk / "All Risk" Insurance / Course of Construction Insurance provides coverage for the DISTRICT ONLY and not the CONTRACTOR or any other party.

Article 17. PROOF OF CARRIAGE OF INSURANCE

- (a) Subject to Article 16 above, CONTRACTOR shall not commence work nor shall it allow any Subcontractor to commence work under the Contract Documents until all required insurance certificates, Additional Insured Endorsements, and Declarations Pages have been obtained and delivered in duplicate to and approved by DISTRICT. Such insurance shall be with an insurance company or companies lawfully authorized to do business in California as admitted insurers, with a minimum financial rating of A, Class XII status, as rated by the most current edition of Best's Key Rating Guide, published by A.M. Best Company.
- (b) Subject to Article 16 above, Certificates and insurance policies shall include the following:
 - (1) A clause stating:

"This policy shall not be non-renewed, canceled, or reduced in required limits of liability or amounts of insurance until notice has been mailed to DISTRICT stating the date of cancellation or reduction. The date of cancellation or reduction may not be less than thirty (30) days after date of mailing notice."
 - (2) Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period for cancellation and reduction of insurance.

- (3) Language stating that the DISTRICT, CONSTRUCTION MANAGER and ARCHITECT, and their respective officers, agents and employees are named additional insured under the policy described and that such insurance policy shall be primary to any insurance or self-insurance maintained by the DISTRICT, and any other insurance carried by the DISTRICT with respect to the matters covered by such policy shall be excess and non-contributing.
- (c) Subject to Article 16 above, the CONTRACTOR and its Subcontractors shall produce a certified copy of any required insurance policy upon written request of the DISTRICT.
- (d) Subject to Article 16 above, in case of CONTRACTOR's failure or refusal to provide the required insurance, the DISTRICT may, at DISTRICT's option, take out and maintain, at the expense of the CONTRACTOR, such insurance in the name of CONTRACTOR or Subcontractor, as the DISTRICT may deem proper and may deduct the cost of taking out and maintaining such insurance from any sums which are due or to become due to the CONTRACTOR under the Contract Documents.

ARTICLE 18. WORKERS' COMPENSATION INSURANCE

- (a) Subject to Article 16 above, in accordance with the provisions of Section 3700 of the California Labor Code, the CONTRACTOR and every Subcontractor shall be required to secure the payment of compensation to its employees.
- (b) Subject to Article 16 above, the CONTRACTOR shall provide, during the term of the Contract, workers' compensation insurance for all of its employees engaged in work under the Contract Documents on or at the site of the Project, and, in case any of its work is sublet, the CONTRACTOR shall require the Subcontractor similarly to provide workers' compensation insurance for all the latter's employees engaged in work under the subcontract. Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by the CONTRACTOR's insurance. In case any class of employees engaged in work under the Contract Documents on or at the site of the Project is not protected under the workers' compensation laws, the CONTRACTOR shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of such employees not otherwise protected before the commencement of the work. The CONTRACTOR shall file with the DISTRICT certificates of its insurance as required under this Article and in compliance with Labor Code section 3700. A **thirty (30) day** notice shall be provided to DISTRICT before the cancellation or reduction of any such insurance of CONTRACTOR or Subcontractor. CONTRACTOR shall submit proof of insurance and shall provide endorsements on the forms provided by the DISTRICT or on forms approved by the DISTRICT. Such endorsements shall be submitted concurrently with the Contract Documents and within ten (10) days of the Notice of Award of the Contract.
- (c) Subject to Article 16 above, prior to commencing work, the CONTRACTOR shall sign and file with the DISTRICT the certificate required by the Labor Code section 1861, acknowledging the requirement to insure against liability for workers' compensation and promising to comply with this requirement before commencing work under the contract, and continuing to comply thereafter. The form of this certificate is included below.

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Leaf Engineers
S2100500AR

**00700
GENERAL CONDITIONS for GENERAL
CONTRACTOR
CLOVIS UNIFIED SCHOOL DISTRICT**

District-Wide Lockdown – Package 2
Clovis Unified School District

(d) Form of Workers' Compensation Certificate.

WORKERS' COMPENSATION CERTIFICATE

I am aware of the provisions of Labor Code Section 3700, which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract and will continue to comply during performance.

Date

Name of Contractor

By: _____

Signature

Print Name

Title

(In accordance with Article 5 [commencing at Section 1860], Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under the contract.)

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- (e) Subject to Article 16 above, if the CONTRACTOR fails to maintain worker's compensation insurance, the DISTRICT may take out such insurance, and deduct and retain the amount of the premium for such insurance from any sums due the CONTRACTOR.

ARTICLE 19. INTENTIONALLY LEFT BLANK

ARTICLE 20. DRAWINGS AND SPECIFICATIONS

- (a) Drawings and Specifications are intended to delineate and describe the Project and its component parts to such a degree as will enable a skilled and competent CONTRACTOR to intelligently bid upon the work, coordinate the work and to carry out the work to a successful conclusion. If, as and to the extent that Public Contract Code section 1104 is deemed to apply after the Award of Contract, CONTRACTOR shall not be required to assume responsibility for the completeness and accuracy of architectural or engineering plans and specifications, notwithstanding any other provision in the Contract Documents, except to the extent that CONTRACTOR discovered or should have discovered and reported any errors and omissions to the ARCHITECT or DISTRICT, as the result of any review of the plans and specifications by CONTRACTOR required by the Instructions to Bidders or other Contract Documents, whether or not actually performed by CONTRACTOR.
- (b) Drawings and Specifications are intended to comply with all laws, ordinances, rules and regulations of constituted authorities having jurisdiction, and where referred to in the Contract documents, these laws, ordinances, rules and regulations shall be considered as a part of the Contract within the limits specified. The CONTRACTOR shall bear all expenses of correcting work done contrary to applicable laws, ordinances, rules and regulations if the CONTRACTOR performed the work (1) without first consulting the CONSTRUCTION MANAGER AND ARCHITECT for further instructions regarding the work, or (2) disregarded the CONSTRUCTION MANAGER and/or ARCHITECT's instructions regarding the work.
- (c) Questions regarding interpretation of drawings and specifications shall be clarified by the ARCHITECT; provided, however, that in the event ARCHITECT determines that CONTRACTORS requests for information (RFI's) are not justified or do not reflect adequate competent supervision, coordination, and / or knowledge by the CONTRACTOR or his/her Subcontractors, CONTRACTOR shall be required to pay ARCHITECT'S and/or CONSTRUCTION MANAGER's reasonable and customary fees in processing and responding to such requests. Should the CONTRACTOR commence work or any part thereof without seeking clarification, and/or performing its own coordination obligations, the CONTRACTOR waives any claim for extra work or damages as a result of any ambiguity, conflict or lack of information.
- (d) Figured dimensions on drawings shall govern, but work not dimensioned or mis-described shall be as directed. Work not particularly shown, mis-described or specified shall be the same as similar parts that are shown or specified. Large scale drawings shall take precedence over smaller scale drawings as to shape and details of construction. Specifications shall govern as to materials, workmanship, and installation procedures. Drawings and specifications are intended to be fully cooperative and to agree. If through the process of Contract required coordination, CONTRACTOR observes that drawings and specifications are in conflict, CONTRACTOR shall promptly notify the CONSTRUCTION MANAGER in writing, and any necessary changes shall be adjusted as provided in the Article entitled **Changes and Extra Work**; provided, however, that the specification calling for the higher quality material or workmanship shall prevail without additional cost to DISTRICT.

- (e) Materials or work described in words, which so applied, have a well known technical or trade meaning shall be deemed to refer to such recognized standards.
- (f) It is not the intention of the Contract Documents to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of such "trade name" or "trade term" shall be considered a sufficient notice to CONTRACTOR that it will be required to complete the work so named with all its incidental and accessory items according to the best practices of the trade.
- (g) The naming of any material and/or equipment shall mean furnishing and installing, including all incidental and accessory items thereto and/or labor necessary to achieve full and complete functioning of the material and/or equipment according to the best practices of the trade(s) involved, unless specifically noted otherwise.
- (h) section left blank - - -
- (i) **Electronic copies** as provided for herein related to shop drawings, submittals, and close-out documents shall be in the following formats: All small document copies (8-1/2 x 11) shall be .pdf format, and all large document copies shall be in .tif format.

ARTICLE 21. OWNERSHIP OF DRAWINGS

- (a) All plans, drawings, designs, specifications, and other incidental Architectural and engineering work or materials and other Contract Documents and copies thereof furnished by DISTRICT are DISTRICT's property. They shall not be used in other work and shall be returned to DISTRICT on request at completion of work, and may be used by DISTRICT as it may require, without any additional costs to DISTRICT. Electronic copies of the documents will not be provided except with expressed written consent of the DISTRICT and / or the CONSULTANTS.

ARTICLE 22. DETAIL DRAWINGS AND INSTRUCTIONS

- (a) In case of ambiguity, conflict, or lack of information, ARCHITECT shall furnish additional instructions by means of drawings or otherwise, as necessary for proper execution of the work. All such drawings and instructions shall be consistent with Contract Documents, true developments thereof, and reasonably inferable therefrom. Such additional instructions shall be furnished with reasonable promptness, provided that CONTRACTOR informs the CONSTRUCTION MANAGER of the relationship of the request to the critical path of construction. Refer to the term, use and protocol of an RFI defined in the Article entitled "Definitions".
- (b) Work shall be executed in conformity therewith and CONTRACTOR shall do no work without proper drawings and instructions.
- (c) The ARCHITECT will furnish necessary additional details to more fully explain the work, which details shall be considered as part of the Contract Documents.
- (d) Should any details be more elaborate, in the opinion of the CONTRACTOR, than scale drawings and specifications warrant, CONTRACTOR shall give written notice thereof to the ARCHITECT within **twenty-one (21) days** of receipt. In case no notice is given to the ARCHITECT within **twenty-one (21) days**, it will be assumed the details are reasonable development of the scale drawings. In case notice is given, then it will be considered, and if found justified, the ARCHITECT will either modify the drawings or shall recommend to DISTRICT a change order for the extra work involved.

- (e) All parts of the described and shown construction shall be of the best quality of their respective kinds and the CONTRACTOR is hereby advised to use all diligence to become fully involved as to the required construction and finish, and in no case to proceed with the different parts of the work without obtaining first from the ARCHITECT such directions and/or drawings as may be necessary for the proper performance of the work.

ARTICLE 23. SHOP DRAWINGS

- (a) Commensurate with the requirements of the Project schedule, and within **fifteen (15) days, or as required by construction schedule** of the Notice to Proceed for each bid package, the CONTRACTOR shall submit to CONSTRUCTION MANAGER **four (4) hard** copies and one electronic copy, checked, coordinated and approved by CONTRACTOR, of all shop or setting list drawings, schedules, and materials list required for the work: If this project consists of any remodel / modernization work, field dimensions require verification prior to the preparation of the Shop Drawings. ARCHITECT shall review such drawings, schedules and materials list only for conformance with the design concept of the work and compliance with information given in Contract Documents, and return as approved or disapproved with guidance as to required corrections within **fourteen (14) days**, unless more time is needed for the review. CONTRACTOR shall make any corrections required by ARCHITECT. Submit **four (4)** final hard copies and 1 electronic copy of the shop drawing with architect's markings to the CONSTRUCTION MANAGER, and furnish such other copies as may be needed for construction /coordination with other trades within **fourteen (14) days** or as required by the Contract Schedule. ARCHITECT's approval of such drawings, schedules, or materials list shall not relieve CONTRACTOR from responsibility for deviations unless CONTRACTOR has in writing called ARCHITECT's attention to such deviations at time of submission and secured ARCHITECT's written approval, nor shall it relieve CONTRACTOR from responsibility for errors in shop drawings or schedules.
 - (1) The ARCHITECT is entitled to additional review time to review complex and difficult submittals, including but not limited to structural steel shop drawings, mechanical equipment, electrical equipment, and special system components and parts. The CONTRACTOR shall breakout critical submittals into separate packages so as to expedite the review process of an individual item. The coordination of the overall submittal packages shall be the responsibility of the CONTRACTOR.
 - (2) Shop Drawings requiring "**Deferred Approval**" require a substantial amount of time for agency review and approval. Deferred Approvals generally require re-submittal to the approving Plan Review Agency. The Contractor shall apply its skill and knowledge to expedite the Deferred Approval(s) from preparation to approval. The Contractor shall submit the shop drawings / submittals so as not to delay the Project schedule. Notwithstanding anything to the contrary herein, the CONTRACTOR shall make submittals of all Deferred Approvals to the ARCHITECT within **fifteen (15) days, or as required by construction schedule** of the Notice to Proceed. ARCHITECT shall review such Deferred Approval submittals, shall endeavor to obtain review by the Plan Review Agency, and shall return as approved or disapproved with guidance as to the required corrections within sixty (60) days, unless further time is needed under the circumstances. If resubmittals are required, ARCHITECT shall endeavor to review and return the resubmittal within sixty (60) days. CONTRACTOR shall allow sufficient time in its scheduling for corrections and resubmittals of Deferred Approval items in conformance with these requirements.
- (b) All submittals of shop drawings, catalog cuts, data sheets, schedules and material lists shall be complete and shall conform to contract drawings and specifications. The Contractor shall

prepare layout and coordination drawings to demonstrate the accuracy and fit of the materials and work.

- (c) The term "shop drawing" as used herein shall be understood to include, but not be limited to, coordination efforts by CONTRACTOR, detail design calculations for the development of the shop drawing, fabrication and installation drawings, lists, graphs and operating instructions.
- (d) Shop drawings shall be submitted at a time sufficiently early to allow review of same by the Plan Review Agency (if required), and the ARCHITECT, and to accommodate the rate of construction progress required under the Contract Documents. CONTRACTOR will be required to pay ARCHITECT's reasonable and customary fees in order to expedite review of shop drawings which are not submitted in a timely fashion. CONTRACTOR may be assessed \$100 a day for each day it is late in submitting a show drawing or sample.
- (e) All shop drawing submittals shall be accompanied by an accurately completed transmittal form using the format found herein, or as approved by the DISTRICT. Any shop drawing submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for resubmittal. The CONTRACTOR may authorize a material or equipment supplier to deal directly with the ARCHITECT with regard to shop drawings. However, ultimate responsibility for the accuracy and completeness of the information contained in the submittal shall remain with the CONTRACTOR.
- (f) Normally, a separate transmittal form shall be used for each specific item, scheduled activity task, or class of material or equipment for which a submittal is required. However, due to the critical nature of a submittal, a submittal can be broken into separate sub-submittals in order to obtain the review of a more critical portion(s) of a submittal prior to the review of other sub-submittals. The transmittal form shall include the CPM Activity/ Submittal/Task Number, Early Start (ES), Early Finish (EF), Late Finish (LF) and the float for the activity. Transmittal of shop drawings on various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of the group or package as a whole. At its option, the CONTRACTOR or Supplier, may obtain from the ARCHITECT quantities of the shop drawing transmittal form at reproduction cost.
- (g) CONTRACTOR's review and approval of shop drawings and submittals shall include the following stamp:

"The CONTRACTOR has reviewed and approved not only the field dimensions but the construction criteria and has also made written notation regarding any information in the shop drawings or submittal that does not conform to the Contract Documents. This shop drawing or submittal has been coordinated with all other shop drawings and submittals received to date by the CONSTRUCTION MANAGER and this duty of coordination has not been delegated to the Owner's separate Contractor's, Subcontractors, material suppliers, the ARCHITECT, or the engineers on this project.

Signature of CONTRACTOR"

- (h) Within **thirty five (35) days** after receipt of shop drawings, the CONSTRUCTION MANAGER will endeavor to return one or more prints of each drawing to CONTRACTOR with ARCHITECT'S comments noted thereon. The CONTRACTOR shall make a complete and acceptable submittal to the CONSTRUCTION MANAGER for review by the ARCHITECT by the second submission of drawings. The DISTRICT shall withhold funds due the CONTRACTOR to

cover additional costs of the ARCHITECT'S review beyond the second submission and any other costs incurred by DISTRICT.

- (i) If prints of the shop drawing are returned to the CONTRACTOR marked "**NO EXCEPTIONS TAKEN**," formal revision of said drawing will not be required. If prints of the drawing are returned to the CONTRACTOR marked "**MAKE CORRECTIONS NOTED**," formal resubmittal of said drawings will not be required. If prints of the drawing are returned to the CONTRACTOR marked "**REVISE AND RESUBMIT**," the CONTRACTOR shall revise said drawing and shall resubmit **four (4)** copies plus on (1) electronic copy of the revised drawing to the CONSTRUCTION MANAGER. If prints of the drawing are returned to the CONTRACTOR marked "**REJECTED RESUBMIT**," the CONTRACTOR shall resubmit **four (4)** new copies plus on (1) electronic copy of the drawing to the CONSTRUCTION MANAGER. Submittals being resubmitted for revisions or submitted due to previous rejection, the CONTRACTOR shall provide a written response indicating the nature of the correction(s) and/or cloud the revised item(s). All submittals returned "**rejected**" or "**revise and resubmit**" shall be copied and distributed as noted in section (a) of this Article.
- (j) Fabrication of an item shall not be commenced before the ARCHITECT has reviewed the pertinent shop drawings and returned copies to the CONTRACTOR marked with "NO EXCEPTIONS TAKEN," or "MAKE CORRECTIONS NOTED." Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis of claims for extra work. The review of such drawings by the ARCHITECT will be limited to checking for general agreement with the Contract Documents, and shall in no way relieve the CONTRACTOR of responsibility for errors or omissions contained therein, nor shall such review operate to waive or modify any provision contained in the Contract Documents. Fabricating dimensions, quantities of material, applicable code requirements, and other contract requirements shall be the CONTRACTOR's responsibility. Coordinate integral and adjacent materials with other contracts prior to final shop drawings and fabrication.
- (k) No work represented by required shop drawings shall be purchased or commenced until the applicable submittal has been approved. The work shall conform to the approved shop drawings and all other requirements of the Contract Documents. The CONTRACTOR shall not proceed with any related work which may be affected by the work covered under shop drawings until the applicable shop drawings have been approved, particularly where piping, machinery, and equipment and the required arrangements and clearances are involved.
- (l) Except where the preparation of a shop drawing is dependent upon the approval of a prior shop drawing, all shop drawings pertaining to the same class or portion of the work shall be submitted simultaneously.
- (m) Calculations of a structural nature must be approved by the Plan Review Agency.
- (n) THE CONTRACTOR SHALL HAVE NO CLAIM FOR DAMAGES OR EXTENSION OF TIME DUE TO ANY DELAY RESULTING FROM THE CONTRACTOR HAVING TO MAKE THE REQUIRED REVISIONS TO SHOP DRAWINGS UNLESS REVIEW BY THE ARCHITECT IS DELAYED BEYOND THE TIME PROVIDED HEREIN AND THE CONTRACTOR CAN ESTABLISH THAT THE ARCHITECT'S DELAY IN REVIEW ACTUALLY RESULTED IN A DELAY IN THE CONTRACTOR CONSTRUCTION SCHEDULE. CONTRACTOR SHALL NOT BE ENTITLED TO ANY CLAIM FOR DAMAGES RESULTING FROM THE *PLAN REVIEW AGENCY* REVIEW. HOWEVER, DISTRICT MAY CONSIDER AN EXTENSION OF TIME DUE TO ANY DELAY CAUSED BY THE *PLAN REVIEW AGENCY* REVIEW.

ARTICLE 24. SURVEY, LAYOUT AND FIELD ENGINEERING

- (a) The CONTRACTOR performing the Work shall provide all layout necessary to complete the Work. Layout shall include coordination drawings as well as the physical performance of the layout by the CONTRACTOR.
- (b) Surveys to determine location of property lines and corners will be supplied by DISTRICT. Surveys to determine locations of construction, grading, site utilities and site work, shall be provided by the CONTRACTOR.
- (c) "Record Drawings" of site development shall be prepared by the CONTRACTOR, indicating revisions to the grading and the underground utility locations (horizontal and vertical locations) on the RECORD DRAWINGS provided by the CONTRACTOR as required to provide accurate as-built information. All other record drawing information including but not limited to building and hardscape shall be noted on the contract documents. The CONSTRUCTION MANAGER shall, at its option, confirm all grades and utility locations are accurate prior to final payment to the CONTRACTOR.

ARTICLE 25. SOILS INVESTIGATION REPORT & CLAIMS FOR CONCEALED OR UNKNOWN CONDITIONS

- (a) When a soils investigation report has been obtained from test holes at the site, such report is available for the CONTRACTOR's use in preparing its bid and work under the Contract Documents. Any information obtained from such report or any information given on drawings as to surface and subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only. If, during the course of work under the Contract Documents, CONTRACTOR encounters subsurface or latent conditions that differ materially from those indicated in the soils investigation report, then CONTRACTOR shall notify the CONSTRUCTION MANAGER immediately upon discovery of the condition.
- (b) If, during the course of work under the Contract Documents, CONTRACTOR encounters subsurface or otherwise concealed physical conditions, that differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in contract activities of the character provided for in the Contract Documents, then CONTRACTOR shall notify the DISTRICT of the discovery of the condition before the condition is materially changed, disturbed and/or covered. CONTRACTOR shall submit notice of possible claim for additional time and/or cost, no later than **three (3) days** after the first observance of the conditions.
- (c) WARNING: DISTRICT DOES NOT WARRANT THE SOILS AT THE PROJECT SITE. SOILS INVESTIGATION REPORT IS PROVIDED FOR CONTRACTOR'S INFORMATION ONLY. DISTRICT DOES NOT WARRANT THE SOILS CONDITIONS OF THE SITE AND CONTRACTOR IS FULLY RESPONSIBLE TO ASCERTAIN SITE CONDITIONS FOR THE PURPOSES OF DETERMINING CONSTRUCTION MEANS AND METHODS PRIOR TO COMMENCING CONSTRUCTION.

ARTICLE 26. TESTS AND INSPECTIONS

- (a) Tests and inspections will comply with California Code of Regulations Title 24, Part 1, Section 4-335.

- (b) If the Contract Documents, DISTRICT's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, CONTRACTOR shall give notice in accordance with such authority of its readiness for observation or inspection at least **two (2) working days** prior to being tested or covered up. If inspection is by authority other than DISTRICT, CONTRACTOR shall inform the DISTRICT's Inspector of the date fixed for such inspection. CONTRACTOR shall secure required certificates of inspection. Observations by DISTRICT's Inspector shall be promptly made, and where practicable, at source of supply. If any work should be covered up without approval or consent of DISTRICT's Inspector, it must be uncovered for examination and satisfactorily reconstructed at CONTRACTOR's expense in compliance with the Contract Documents. Costs of retests, and re-inspection of any materials or work found to be not in compliance with the Contract Documents shall be paid for by the DISTRICT and deducted from the Contract. Other costs for test and inspection shall be paid by the DISTRICT.

ARTICLE 27. TRENCHES

- (a) CONTRACTOR shall provide adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life and limb in trenches and open excavation that conform to applicable safety standards.
- (b) If the Contract involves the excavation of any trench or trenches five feet or more in depth, the CONTRACTOR shall, in advance of excavation, submit to the DISTRICT or to whomever DISTRICT designates 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. If such plan varies from the Shoring System Standards established by the Construction Safety Orders of the Division of Industrial Safety, the plan shall be prepared by a registered civil or structural engineer employed by the CONTRACTOR, and all costs therefore shall be included in the price named in the Agreement for completion of the work as set forth in the Contract Documents. In no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by CAL-OSHA and a CAL-OSHA permit for such plan delivered to the DISTRICT. Labor Code Section 6705; Health and Safety Code Section 17922.5).
- (c) If the Contract Documents involve the digging of trenches or excavations that extend deeper than five (5) feet below the surface, the following shall apply:
- (1) The CONTRACTOR shall promptly, and before the following conditions are disturbed, notify the DISTRICT, in writing, of any:
 - (A) Material that the CONTRACTOR believes may be 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.
 - (B) Subsurface or latent physical conditions at the site different from those indicated by information about the site made available to bidders prior to the deadline for submitting bids.
 - (C) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

- (2) The DISTRICT shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the CONTRACTOR's cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the Contract Documents.
- (3) In the event a dispute arises between the DISTRICT and the CONTRACTOR, whether the conditions materially differ or involve hazardous waste, or cause a decrease or increase in the CONTRACTOR's cost of, or time required for, performance of any part of the work, the CONTRACTOR shall not be excused from any scheduled completion date provided for by the Contract Documents, but shall proceed with all the work to be performed under the Contract Documents. 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 contracting parties (Public Contract Code section 7104).

ARTICLE 28. DOCUMENTS ON JOBSITE

- (a) CONTRACTOR shall keep on the job site at all times one legible copy of all Contract Documents, including and annotated with addenda and change orders, and all approved drawings, plans, schedules and specifications. Said documents shall be kept in good order and available to ARCHITECT, ARCHITECT'S representatives, and all authorities having jurisdiction. CONTRACTOR shall be acquainted with and comply with the provisions of said regulations as they relate to the work. (See particularly the duties of CONTRACTOR, 24 Cal. Code of Regulations Sec. 4-343.) CONTRACTOR shall also be acquainted with and comply with all California Code of Regulations provisions relating to conditions on the work, particularly Titles 8 and 17.

ARTICLE 29. STATE AUDIT

- (a) Pursuant to and in accordance with the provisions of Government Code Section 8546.7, or any amendments thereto, all books, records and files of the DISTRICT, the CONTRACTOR, or any Subcontractor connected with the performance of the Contract Documents involving the expenditure of public funds in excess of Ten Thousand Dollars (\$10,000.00), including, but not limited to, the costs of administration of the Contract Documents, shall be subject to the examination and audit of the State Auditor at the request of the DISTRICT or as part of any audit of the DISTRICT for a period of **three (3) years** after final payment is made under the Agreement.

ARTICLE 30. SUBSTITUTIONS

- (a) CONTRACTOR shall follow all instructions and requirements set forth in INSTRUCTIONS TO BIDDERS, for compliance with this Article. All substitution requests related to structural items, fire safety issues, life safety issues and accessibility compliance issues shall be reviewed and approved by the Plan Review Agency.
- (b) Whenever in specifications any materials, process, service or equipment is indicated or specified by brand name, trade name, proprietary name or by name of manufacturer, such specification shall be deemed to be used for the purpose of facilitating description of material, process, service or equipment desired and shall be deemed to be followed by the words "or approved equal," and CONTRACTOR may, unless otherwise stated, offer any material, process, service, or equipment which shall be substantially equal or better in every respect to that so indicated or specified subject to DISTRICT or ARCHITECT approval.

- (c) If material, process, service, or equipment offered by CONTRACTOR is not, in the opinion of ARCHITECT, or DISTRICT, equal or better in every respect to that specified, then CONTRACTOR shall furnish the material, process, service, or equipment specified. The burden of proof as to equality of any material, process, service, or equipment shall rest with CONTRACTOR. This provision authorizing submission of "or equal" substantiating data shall not in any way authorize an extension of time for performance of the Agreement. The DISTRICT'S decision on substitution requests is final and not subject to any appeal, review or reconsideration.
- (d) All materials are mentioned as standards. Should a Contractor or Bidder desire to substitute materials or methods for those specified, the Contractor or Bidder shall follow the guidelines stated herein, and in accordance with the Contract Documents and Public Contract Code Section 3400. Each review of a substitution request by the Architect or its consultants will be billed to the Contractor or Bidder at an hourly rate not to exceed \$150.00 per hour.
- (e) Substitutions can be submitted in two ways :
- 1) Up to fourteen (14) working days prior to bid opening, or
 - 2) Up to thirty (30) working days after the notice to proceed has been issued for the related contract.
- (1) Prior to Bid Opening: The Contractor or Bidder must insure that proposed substitutions of materials by the Contractor or Bidder are submitted to the Architect's office a minimum of fourteen (14) working days prior to the bid opening for review and possible approval of any equipment or materials thought to be equal to or better than those specified in the drawings or specifications. An Addendum will be issued at a minimum of seven [7] working days and a maximum of three [3] working days prior to Bid Opening including all equipment and materials deemed equivalent to those specified and approved by the Architect. Submittals will include comparative spec-data of that specified equipment or material and the proposed substitution as indicated on the completed "Substitution Request Form" in accordance with the Contract Documents. Submittals without this information will be automatically rejected.
- (2) After notice to proceed: Submittals will include comparative spec-data of that specified equipment or material and the proposed substitution as indicated on the completed "Substitution Request Form" in accordance with the Contract Documents. Submittals without this information will be automatically rejected. Substitutions submitted after the thirty (30) day period will not be considered unless the product has been discontinued or the product will be of benefit to the DISTRICT, in the DISTRICT's sole discretion.
- (f) If, after the contract has been awarded, the CONTRACTOR furnishes material, process, service, or equipment more expensive than that specified, any difference in cost of such material, process, service, or equipment so furnished shall be borne by CONTRACTOR. Any engineering, design fees, or approval agencies' fees required to make adjustments in material or work of all trades directly or indirectly affected by the approved substituted items shall be borne entirely by CONTRACTOR. Any difference in cost between an approved substitution that is lower in cost than the originally specified item shall be refunded by CONTRACTOR to DISTRICT.
- (g) Price, fitness and quality being equal with regard to supplies, the DISTRICT may prefer supplies grown, manufactured, or produced in California and next prefer supplies partially manufactured grown, or produced in California, provided the bids of said suppliers or the

prices quoted by them do not exceed by more than 5% of the lowest bids/prices quoted by out of state suppliers, the major portion of the manufacture of the supplies is not done outside of California, and the public good will be served thereby. (Government Code section 4330-4334).

- (h) SUBMITTALS shall not be used as a means of requesting a substitution, the procedure for which is defined in this Article 30.

ARTICLE 31. SAMPLES

- (a) Consistent with the Contract Documents and within **fourteen (14) working days** following the Notice to Proceed of each bid package, CONTRACTOR shall furnish for approval, all samples as required in specifications together with catalogs and supporting data required by ARCHITECT. This provision shall not authorize any extension of time for performance of the work. ARCHITECT shall review such samples as to conformance with design concept of work and for compliance with information given in the Contract Documents and shall approve or disapprove them within **fifteen (15) working days** from receipt.
- (b) Unless specified otherwise, sampling, preparation of samples and tests shall be in accordance with the latest standards of the American Society for Testing and Materials.
- (c) Samples shall, upon demand of ARCHITECT or DISTRICT, be submitted for tests or examinations and considered before incorporation into the work. CONTRACTOR shall be solely responsible for delays due to samples not being submitted in time to allow for tests. Acceptance or rejection will be expressed in writing. Work shall be equal to approved samples in every respect. Samples that are of value after testing will remain the property of the CONTRACTOR.

ARTICLE 32. CONSTRUCTION SCHEDULES

- (a) The DISTRICT will prepare and provide the Construction Management Baseline Schedule (CMBS), Monthly Schedule updates, and the Short-interval-Schedules per (1) through (5) as follows:
 - (1) The DISTRICT will provide the CMBS with the bidding documents. The CONTRACTOR shall use the CMBS when preparing and submitting its price for the work. The CMBS is subject to change during construction, and will be continually updated and adjusted throughout the work as necessary. CONTRACTOR shall provide the CONSTRUCTION MANAGER with the CONTRACTOR's Crew Loading for each activity prior to the commencement of the work.
 - (2) The DISTRICT will use the CMBS for planning, executing and monitoring work progress.
 - (3) The DISTRICT will prepare a monthly schedule updates, which will comport with the monthly billing percentages shown on that month's approved schedule of values form
 - (4) The CONSTRUCTION MANAGER at each weekly coordination meeting will provide short-Interval-Schedules (SIS). The CONTRACTOR shall provide any and all schedule information requested by the CONSTRUCTION MANAGER for producing the SIS.

- (b) CONTRACTOR will exchange scheduling information with Subcontractors and suppliers. CONTRACTOR will order work, equipment and materials with sufficient lead-time to avoid interruption of the work.
- (c) If at any time, the DISTRICT considers the CONTRACTOR's completion date to be behind schedule and in jeopardy, and upon the DISTRICT's request, the CONTRACTOR shall provide a revised schedule for the CONTRACTOR'S affected activities. The revised schedule will show the CONTRACTOR's plan for making-up the schedule delay(s) and shall be input by the CONSTRUCTION MANAGER into the baseline schedule to determine if the plan is adequate for eliminating the schedule delay. The CONTRACTOR shall provide the revised schedule within 3 days of the request. Any activity that cannot be completed by its original completion date or the scheduled date as adjusted by approved time extensions shall be deemed behind schedule. Use of Float by the contractor must be approved by the Construction Manager / DISTRICT prior to its use. Should early start and finish dates not be met, the schedule will be considered "in jeopardy". The contractor shall, within 3 days of request, provide a plan for completing the activities so as not to delay subsequent activities.
- (d) Any activities shown in the contract documents but not specifically noted in the CMBS shall be included in the contract and performed in the proper sequence of work to allow proper execution of the work.

ARTICLE 33. MATERIALS AND WORK

- (a) Except as otherwise specifically stated in the Contract Documents, CONTRACTOR shall provide and pay for all materials, supplies, tools, equipment, labor, transportation, superintendence, temporary constructions of every nature, and all other services and facilities of every nature whatsoever necessary to execute and complete the work within the specified time.
- (b) Unless otherwise specified, all materials shall be new and the best of their respective kinds and grades as noted or specified, and workmanship shall be of good quality.
- (c) Materials shall be furnished in ample quantities and at such times as to insure uninterrupted progress of work and shall be stored properly and protected as required.
- (d) CONTRACTOR shall, after issuance of the Notice to Proceed by DISTRICT, place orders for materials and/or equipment as specified so that delivery may be made without delays to the work. CONTRACTOR shall, upon demand by the CONSTRUCTION MANAGER, furnish to the CONSTRUCTION MANAGER documentary evidence showing that orders have been placed.
- (e) DISTRICT reserves the right, due to any neglect in not complying with the above instructions, to place orders for such materials and/or equipment as it may deem advisable in order that the work may be completed by the date specified in the Agreement, and all expenses incidental to the procuring of these materials and/or equipment shall be paid for by the CONTRACTOR.
- (f) No materials, supplies, or equipment for work under the Contract Documents shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. CONTRACTOR warrants good title to all material, supplies, and equipment installed or incorporated in the work and agrees upon completion of all work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by it, to DISTRICT free from any claims, liens, or charges. CONTRACTOR further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any work covered by

the Contract Documents shall have any right to any lien upon the premises or any improvement or appurtenance thereon, except that CONTRACTOR may install metering devices or other equipment of utility companies or of political subdivisions, title to which is commonly retained by the utility company or political subdivision. In the event of installation of any such metering device or equipment, CONTRACTOR shall advise DISTRICT as to the owner thereof.

- (g) Nothing contained in this Article, however, shall defeat or impair the rights of persons furnishing material or labor under any bond given by CONTRACTOR for their protection or any rights under any law permitting such persons to look to funds due CONTRACTOR in the hand of DISTRICT, and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing materials or labor when no formal contract is entered into for such materials or labor.
- (h) Materials and/or equipment and the attendant liability for its protection and safety shall remain in the CONTRACTOR until incorporated in the work and accepted by the DISTRICT; no part of the materials and/or equipment shall be removed from its place of storage except for immediate installation in the work; and CONTRACTOR shall keep an accurate inventory of all materials and/or equipment in a manner satisfactory to the DISTRICT or its authorized representative. Refer to the Article entitled SCHEDULE OF VALUES AND PROGRESS PAYMENT APPLICATIONS for material title.

ARTICLE 34. INTEGRATION OF WORK

- (a) CONTRACTOR shall do all cutting, fitting, patching, and preparation of work as required to make its several parts come together properly, and fit it to receive or be received by work of other contractors; including both the CONTRACTOR's and DISTRICT's forces. In the event of clarifications, the CONTRACTOR shall follow all Supplemental Instructions (SI's) given by the ARCHITECT.
- (b) All costs caused by defective or ill-timed work shall be borne by CONTRACTOR.
- (c) CONTRACTOR shall not endanger any work by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other CONTRACTOR without the written consent of the ARCHITECT. CONTRACTOR shall be solely responsible for protecting existing work on adjacent properties and shall obtain all required permits for shoring and excavations near property lines.
- (d) When modifying existing work or installing new work adjacent to existing work, CONTRACTOR shall match, as closely as conditions of the site and materials will allow, the finishes, textures, and colors of the original work, refinishing new work as required to match existing work, at no additional cost to DISTRICT.

ARTICLE 35. OBTAINING OF PERMITS, LICENSES AND EASEMENTS

- (a) Permits, licenses, and certificates necessary for prosecution of work, shall be secured and paid for by CONTRACTOR, unless otherwise specified. All such permits, licenses, and certificates shall be delivered to the CONSTRUCTION MANAGER before required for the work to be performed or demand is made for the certificate of final payment which ever comes first. CONTRACTOR shall, and shall require Subcontractors to, maintain CONTRACTOR's licenses in effect as required by law.

- (b) Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by DISTRICT, unless otherwise specified.
- (c) Permits and charges for - utility services by serving utilities shall be secured and paid for by DISTRICT, including development and capitol facility fees, Electrical and Gas Rule 16 and/or Rule 20 fees, Cable and Telephone fees.
- (d) If applicable, the DISTRICT shall file a Notice of Intent to comply with the terms of the general permit to discharge storm water associated with construction activity (WQ Order No. 920-08-DWQ). The Notice of Intent must be sent to the following address along with the appropriate payment: California State Water Resources Control Board, Division of Water Quality, Storm Water Permit Unit, P.O. Box 100, Sacramento, CA 95812-0100. The CONTRACTOR may also call the State Water Board's Construction Activity Storm Water Hotline at (916) 341-5272. The Notice of Intent shall be filed prior to the start of any construction activity.

ARTICLE 36. INTENTIONALLY LEFT BLANK

ARTICLE 37. EXISTING UTILITY LINES; REMOVAL, RESTORATION

- (a) Pursuant to Government Code Section 4215, the DISTRICT assumes the responsibility for removal, relocation, and protection of utilities located on the construction site at the time of commencement of construction that are not identified in the Contract Documents. The CONTRACTOR shall be compensated for the costs of locating, repairing damage not due to the failure of the CONTRACTOR to exercise reasonable care, and removing or relocating existing main or trunkline utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the Project necessarily idled during such work. The CONTRACTOR shall not be assessed for liquidated damages for delay in completion of the work caused by failure of the DISTRICT to provide for removal or relocation of existing main or trunkline utility facilities.
- (b) The CONTRACTOR shall be responsible for removal, relocation, and protection of (1) existing main or trunkline utilities located on the construction site at the time of commencement of construction that are identified in the Contract Documents, and (2) all utilities, other than existing main or trunkline utilities, located on the construction site at the time of commencement of construction.
- (c) This Article shall not be construed to preclude assessment against the CONTRACTOR for any other delays in completion of the work. Nothing in this Article shall be deemed to require the DISTRICT to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the construction site can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the site of the construction
- (d) As part of the work to be performed, CONTRACTOR shall provide the notices and proceed in accordance with Government Code Sections 4216.2, 4216.3 and 4216.4 (available at <http://www.Digalert.com>), and shall pay all fees charged pursuant to Government Code Section 4216, et seq.
- (e) Prior to any underground excavation and/or trenching (example: disturbance of the site of any kind, demolition of any form, trenching, digging, removing of concrete, or scraping of grass etc.) within the CONTRACTOR's scope of work, the CONTRACTOR, shall notify CONSTRUCTION MANAGER and shall (1) visit the construction site, examine the building(s), if any, and any

work that may have been done thereon, and assess the presence of visible facilities on or adjacent to the construction site that would indicate the presence of underground utilities on the construction site; (2) review the plans and specifications, all applicable “as built” documents, and all other applicable Contract Documents, to ascertain the existence and location of underground utilities not identified in the Contract Documents; and (3) perform pothole testing as necessary to ascertain the existence and location of underground utilities not identified in the Contract Document

If the CONTRACTOR at any time discovers utility facilities not identified in the Contract Documents, or any errors or omissions in the plans and specifications, “as built” documents, or other Contract Documents, the CONTRACTOR shall immediately notify the DISTRICT in writing.

- (f) Should the CONTRACTOR damage a utility service, CONTRACTOR shall provide both the DISTRICT and the ARCHITECT with notice. The DISTRICT shall have the authority to repair the damaged service, or the DISTRICT and/or ARCHITECT can direct CONTRACTOR to repair the damaged service. In the event CONTRACTOR damages a service(s) that is not the DISTRICT’s responsibility to remove, relocate, and protect pursuant to subsection (a), or the CONTRACTOR does not take reasonable care as described in subsection (e), CONTRACTOR shall repair service at no cost to the DISTRICT. CONTRACTOR is required to schedule, notify and coordinate with “U.S.A. Locates” for the location(s) of all off-site services and/or service connections.
- (g) The DISTRICT will provide the CONTRACTOR the DISTRICT’s Locate Utilities Request Form to ensure successful scheduling and documentation of requests for locating of underground utilities to prevent damage to DISTRICT utilities and property during the construction process. Failure to comply by CONTRACTOR which results in damage to DISTRICT utilities and property shall obligate CONTRACTOR to make necessary repairs to damaged utilities and/or property at no cost to the DISTRICT.

ARTICLE 38. WORK TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS

- (a) CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to the work as indicated and specified. All work shall be performed in conformance with all applicable laws, ordinances, rules, and regulations, including but not limited to California Code of Regulations, Title 24, Parts 1 through 5, Part 7, Part 9 and Title 19.
- (b) If CONTRACTOR observes that plans, drawings or specifications are at variance with any applicable law, ordinance, rule, or regulation, CONTRACTOR shall promptly notify CONSTRUCTION MANAGER in writing and any changes deemed necessary by the ARCHITECT shall be adjusted as provided for at **ARTICLE 59, CHANGES AND EXTRA WORK**. If CONTRACTOR performs any work which it knew, or through exercise of reasonable care should have known, to be contrary to any laws, ordinances, rules or regulations, and without such notice to CONSTRUCTION MANAGER, CONTRACTOR shall bear all costs arising therefrom. Where plans, drawings or specifications state that materials, processes, or procedures must be approved by the Plan Review Agency, State Fire Marshal (SFM), or other body or agency, CONTRACTOR shall be responsible for satisfying the requirements of such bodies or agencies.

ARTICLE 39. ACCESS TO WORK

- (a) DISTRICT and its representatives shall at all times have access to the work wherever it is in preparation or progress. CONTRACTOR shall provide safe and proper facilities for such access so that DISTRICT's representatives may perform their functions.

ARTICLE 40. TIMELY PAYMENTS BY CONTRACTOR

- (a) Contractor shall pay to each of its Subcontractors, not later than the 10th day following each payment to CONTRACTOR by DISTRICT the respective amounts allowed CONTRACTOR on account of work performed by the respective Subcontractors to the extent of such Subcontractor's interest therein.

ARTICLE 41. INTENTIONALLY LEFT BLANK

ARTICLE 42. INTENTIONALLY LEFT BLANK

ARTICLE 43. INTENTIONALLY LEFT BLANK

ARTICLE 44. CLEANING UP

- 1) CONTRACTOR shall at all times keep work site free from CONTRACTOR-generated debris such as waste, rubbish, and excess materials and equipment caused by this work, at the least on a daily basis. CONTRACTOR shall not leave debris under, in, or about the work site. Upon completion of CONTRACTOR's work, CONTRACTOR shall clean all interior and exterior materials installed by CONTRACTOR, and any areas and surfaces where debris and/or overspray has collected as a direct or indirect result of the CONTRACTOR's work. If the project consists of any street improvements (paving / gutter and/or sidewalk surfaces), drain inlets and any pipeline facilities, such work shall also be free of any debris and sediments. CONTRACTOR shall be responsible for removing all hazardous waste from the job-site in containers provided by CONTRACTOR.
- 2) CONTRACTOR will provide dumpsters for the collecting and disposal of non-hazardous CONTRACTOR-generated waste from the work EXCEPT as noted in the Contract Documents. CONTRACTOR shall be responsible for placing waste into such dumpsters. If CONTRACTOR fails to clean up, the DISTRICT shall do so and all of the costs thereof shall be charged to the CONTRACTOR.
- 3) The DISTRICT shall provide final cleaning after the CONTRACTOR's clean up has been completed and if not satisfactory to the DISTRICT, CONTRACTOR will be billed any cost incurred by DISTRICT. Contractors final cleaning shall include all clean up as described in the summary or scope of work.

ARTICLE 45. PATENTS, ROYALTIES, AND INDEMNITIES

- (a) The CONTRACTOR shall hold and save the DISTRICT and its governing board, officers, agents, and employees harmless from liability of any nature or kind, including cost and expense, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the DISTRICT, unless otherwise specifically provided in the Contract Documents, and unless such liability arises from the sole negligence or willful misconduct of the CONTRACTOR.

ARTICLE 46. GUARANTEE

- (a) CONTRACTOR warrants that the work (which includes any equipment furnished by CONTRACTOR as part of the materials) shall:
 - (1) Be free from defects in workmanship and material; Be free from defects in any design performed by CONTRACTOR;
 - (2) Be new, and conform and perform to the requirements stated in the specifications and where detail requirements are not so stated, shall conform to applicable industry standards; and
 - (3) Be suitable for the use stated in the specifications.
- (b) The warranty period for discovery of defective work shall commence on the date stamped on the Notice of Completion verifying County recordation and continue for the period set forth in the specifications or for one year if not so specified. If, during the warranty period, the work is not available for use due to defective work, such time of unavailability shall not be counted as part of the warranty period. The warranty period for corrected defective work shall continue for a duration equivalent to the original warranty period.
- (c) DISTRICT shall give CONTRACTOR prompt written notice after discovery of any defective work. CONTRACTOR shall correct any such defective work, as well as any damage to any other part of the work resulting from such defective work, and shall provide repair, replacement, or reimbursement, at its sole expense, in a manner approved by the DISTRICT and with due diligence and dispatch as required to make the work ready for use (without impact to the DISTRICT's operations) by DISTRICT, ordinary wear and tear, unusual abuse or neglect excepted. Such corrections shall include, but not be limited to, any necessary adjustments, modifications, changes of design (unless of DISTRICT's design), removal, repair, replacement or reinstallation, and shall include all necessary parts, materials, tools, equipment, transportation charges and labor as may be necessary, and cost of removal and replacement of work shall be performed at a time and in such a manner so as to minimize the disruption to DISTRICT's use of the work.
- (d) In the event of failure of CONTRACTOR or Surety to commence and pursue with diligence any such repairs or replacements within **five (5) days** after being notified in writing, DISTRICT is hereby authorized to proceed to have defects repaired or replaced and made good at the expense of the CONTRACTOR and the Surety who hereby agree to pay any costs and charges therefore immediately on demand.
- (e) If, in the opinion of the DISTRICT, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the DISTRICT or to prevent interruption of operations of the DISTRICT, the DISTRICT will attempt to give the written notice required by this Article. If the CONTRACTOR or Surety cannot be contacted or neither complies with the DISTRICT's requirements for correction within a reasonable time as determined by the DISTRICT, the DISTRICT may, notwithstanding the provisions of this Article, proceed to make such correction or provide such attention and the costs of such correction or attention shall be charged against the CONTRACTOR and Surety. Such action by the DISTRICT will not relieve the CONTRACTOR and Surety of the guarantees provided in this Article or elsewhere in the Contract Documents.
- (f) This Article does not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period.

CONTRACTOR shall furnish to DISTRICT, two (2) hard copies plus 3 electronic copies on compact disc, and all appropriate guarantee or warranty certificates upon completion of the work or upon request by DISTRICT.

- (g) All guarantees required under this Article shall be in writing on the Guarantee form included in the Contract Documents, or as furnished by the DISTRICT.
- (h) CONTRACTOR shall provide to DISTRICT two (2) hard copies plus 3 electronic copies of instruction and maintenance manuals for all items that require same.
- (i) The rights and remedies outlined in this Article are in addition to all others available to the DISTRICT.

ARTICLE 47. DUTY TO PROVIDE COMPETENT WORKERS

- (a) CONTRACTOR and Subcontractors shall at all times enforce strict discipline and good order among their employees and shall not employ on the Work any person not skilled or competent in the work assigned to such person. It shall be the responsibility of CONTRACTOR to ensure compliance with this Article.
- (b) Any person in the employ of the CONTRACTOR or Subcontractors whom DISTRICT or ARCHITECT or Construction Manager may deem incompetent, troublesome or otherwise undesirable shall be excluded from the work site and shall not again be employed on it except with the written consent of DISTRICT.

ARTICLE 48. EMPLOYMENT OF LABOR/PREVAILING WAGE RATES

- (a) The Project is a public work, the Work shall be performed as a public work and pursuant to California Labor Code Section 1770 et seq., the Director of Industrial Relations has determined the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification or type of worker needed for the Project. Per diem wages shall be deemed to include employer payments for health and welfare, pension, vacation, apprenticeship or other training programs, and similar purposes. Copies of the rates are on file at DISTRICT's principal office. The rate of prevailing wage for any craft, classification or type of workmanship to be employed on this Project is the rate established by the applicable collective bargaining agreement which rate so provided is adopted by this reference and shall be effective for the life of this Contract or until the Director of the Department of Industrial Relations determines that another rate be adopted. It shall be mandatory upon the CONTRACTOR and on any Subcontractor to pay not less than the said specified rates to all workers employed in the execution of this Agreement.
- (b) The CONTRACTOR and any Subcontractor under the CONTRACTOR as a penalty to DISTRICT shall forfeit not more than Fifty Dollars (\$50.00) for each calendar day or portion thereof for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed. The difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion of a calendar day for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the CONTRACTOR or Subcontractor.

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**GENERAL CONDITIONS for GENERAL
CONTRACTOR
CLOVIS UNIFIED SCHOOL DISTRICT**

District-Wide Lockdown – Package 2
Clovis Unified School District

- (c) Nothing contained herein shall be deemed to supersede any applicable laws, orders, or regulations issued by competent authority governing wages, hours of work of the employment of labor, nor to condone any violation of such laws, orders, or regulations.
- (d) CONSTRUCTION MANAGER shall post at appropriate conspicuous weatherproof points on the site of the Project a schedule showing the Prevailing Wage Determinations published by the Director of the California Department of Industrial Relations, which are applicable to the Project.
- (e) The CONTRACTOR and each Subcontractor shall keep or cause to be kept an accurate record for work on this Project showing the names, addresses, social security numbers, work classification, straight time and overtime hours worked and occupations of all laborers, workers and mechanics employed by them in connection with the performance of the Contract or any subcontract, and showing also the actual per diem wage paid to each of such workers, which records shall be open at all reasonable hours to inspection by DISTRICT, its officers and agents and to the representatives of the Division of Labor Law

Enforcement of the State Department of Industrial Relations. CONTRACTOR and each Subcontractor shall comply with Labor Code section 1776. The CONTRACTOR and each subcontractor shall furnish a certified copy of all payroll records directly to the Labor Commissioner monthly or more frequently, if so specified in the Contract and in a format the Labor Commissioner prescribes.

- (f) For public works contracts awarded on and after January 1, 2015, those public works projects shall be subject to compliance monitoring and enforcement by the Department of Industrial Relations.
- (g) The CONTRACTOR shall be responsible for ensuring that the labor standards provisions are followed by its Subcontractors, and shall be responsible for the Labor Code violations of its Subcontractors.
- (h) It is the policy of the DISTRICT to strictly enforce the public works prevailing wage requirements set for in the California Labor Code. To that end, the CONTRACTOR and Subcontractors found to be repeat violators of the Labor Code are subject to debarment from bidding on, or being awarded, any public works construction contract to the extent provided by law.
- (i) As of March 1, 2015, the CONTRACTOR and any proposed Subcontractors shall not be qualified to submit a bid or to be listed in a bid or GMP proposal for the Project unless currently registered and qualified under California Labor Code section 1725.5 to perform public work as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code.
- (j) As of April 1, 2015, the CONTRACTOR and any proposed Subcontractors shall not be qualified to enter into, or engage in the performance of, the Contract unless currently registered and qualified under Labor Code section 1725.5 to perform public work.

ARTICLE 49. HOURS OF WORK

- (a) As provided in Article 3 (commencing at Section 1810) Chapter 1, Part 7, Division 2 of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by the CONTRACTOR or by any Subcontractor on any subcontract under the Contract upon the work or upon any part of the work contemplated by the Contract shall be limited and restricted by the Contract to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, work performed by employees of CONTRACTOR in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.
- (b) The CONTRACTOR shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by CONTRACTOR in connection with the work or any part of the work contemplated by the Contract Documents. The record shall be kept open at all reasonable hours to the inspection of the DISTRICT and to the Division of Labor Standards Enforcement, Department of Industrial Relations. Daily reports shall be transmitted to the CONSTRUCTION MANAGER, using the form provided in the Specification Section entitled "**FORMS AND REPORTS**", or on a form provided by the DISTRICT.

- (c) Pursuant to Labor Code Section 1813, the CONTRACTOR or subcontractor shall pay to the DISTRICT a penalty of twenty-five Dollars (\$25) for each worker employed in the execution of this Contract by the CONTRACTOR or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Article 3 (commencing at Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code. Regular work hours are deemed to be 7:00 a.m. to 3:30 p.m. Monday through Friday excluding holidays.
- (d) Any work performed after regular working hours, or on Saturdays, Sundays or other holidays shall be performed without additional expense to DISTRICT, unless DISTRICT has agreed to pay CONTRACTOR the premium portion of the overtime rate.
- (e) Should overtime work be required due to delays caused by CONTRACTOR, CONTRACTOR will be responsible for the costs associated with Supervision and Inspection by the DISTRICT. These costs will be deducted from the Contract Sum.

ARTICLE 50. PAYROLL RECORDS

- (a) Pursuant to the provisions of Labor Code Section 1776, the CONTRACTOR shall keep and shall cause each Subcontractor performing any portion of the work under the Contract Documents to keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by CONTRACTOR in connection with the work. CONTRACTOR to provide CONSTRUCTION MANAGER appropriate Certified Payroll Records to meet DIR reporting requirements, and may be required to update said records to DIR website for PWC-100 reporting. Each payroll record shall contain or be verified by a written declaration that is made under penalty of perjury, stating both of the following:
 - (1) The information contained in the payroll record is true and correct.
 - (2) The employer has complied with the requirements of sections 1771, 1811 and 1815 for any work performed by his or her employees on the public works project.
- (b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the CONTRACTOR on the following basis:
 - (1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.
 - (2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the DISTRICT, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.
 - (3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection upon request by the public or copies thereof made; provided, however, that a request by the public shall be made through either the DISTRICT, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the CONTRACTOR, Subcontractors, and the entity through which the

request was made. The public shall not be given access to the records at the principal office of the CONTRACTOR.

- (4) The form of certification shall be as follows:

I, _____ (Name-print), the undersigned, am _____
(position in business) with the authority to act for and on behalf of

(Name of business and/or
CONTRACTOR), certify under penalty of perjury that the records or copies thereof
submitted and consisting of _____
(description, number of pages) are the originals or true, full and correct copies of the
originals which depict the payroll record(s) of the actual disbursements by way of cash,
check, or whatever form to the individual or individuals named.

Dated: _____
Signature: _____

- (c) CONTRACTOR or subcontractor shall file a certified copy of the payroll records enumerated in subdivision (a) with the entity that requested the records within ten (10) days after receipt of a written request. In the event that the CONTRACTOR or subcontractor fails to comply within the 10-day period, the CONTRACTOR or subcontractor shall, as a penalty to the DISTRICT, forfeit twenty-five Dollars (\$25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Contractor is not subject to a penalty assessment pursuant to this provision due to the failure of a subcontractor to comply.

Any copy of payroll records made available for inspection as copies and furnished upon request to the public by the DISTRICT, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the CONTRACTOR awarded the Contract or the subcontractor performing the Contract shall not be marked or obliterated. Any copy of records made available for inspection by, or furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (29 U.S.C. Sec. 175a) shall be marked or obliterated only to prevent disclosure of an individual's name and social security number. A joint labor management committee may maintain an action in a court of competent jurisdiction against an employer who fails to comply with Labor Code section 1774. The court may award restitution to an employee for unpaid wages and may award the joint labor management committee reasonable attorney's fee and costs incurred in maintaining the action. An action may not be based on the employer's misclassification of the craft of a worker on its certified payroll records. Nothing stated herein limits any other available remedies for a violation.

- (e) The CONTRACTOR shall inform the DISTRICT of the location of the payroll records enumerated under subdivision (a), including the street address, city and county, and shall, within five (5) working days, provide a written notice of a change of location and address.

ARTICLE 51. APPRENTICES

- (a) The CONTRACTOR acknowledges and agrees that, if the Contract Documents involves a dollar amount greater than or a number of working days greater than that specified in Labor Code Section 1777.5, the provisions of Labor Code Section 1777.5 govern the Contract Documents. It shall be the responsibility of the CONTRACTOR to ensure compliance with this Article and with Labor Code Section 1777.5 for all apprenticing occupations.

- (b) Apprentices of any crafts or trades may be employed and, when required by Labor Code Section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.
- (c) Every such apprentice shall be paid the prevailing wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered.
- (d) Only apprentices, as defined in Section 3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4 (commencing at Section 3070), Division 3 of the Labor Code, are eligible to be employed on public works. The employment and training of each apprenticeship shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he or she is training or the rules and regulations of the California Apprenticeship Council.
- (e) Pursuant to Labor Code Section 1777.5, the CONTRACTOR, and any Subcontractors employing workers in any apprenticeship craft or trade, in performing any work under the Contract Documents shall apply to the applicable joint apprenticeship committee for a certificate approving the CONTRACTOR or Subcontractor under the applicable apprenticeship standards for the employment and training of apprentices.
- (f) Every CONTRACTOR and Subcontractor shall submit contract award information to the applicable joint apprenticeship committee, which shall include an estimate of journeyman hours to be performed under the Contract Documents, the number of apprentices to be employed and the approximate dates the apprentices will be employed.
- (g) If the CONTRACTOR or Subcontractor willfully fails to comply with Labor Code Section 1777.5, then, upon a determination of noncompliance by the Chief of the Division of Apprenticeship Standards, it:
 - (1) may be denied the right to bid on any subsequent project for one year from the date of such determination and for a period of three years for any second or subsequent violation;
 - (2) shall forfeit as a penalty to the DISTRICT one hundred dollars (\$100) per day for each calendar day of noncompliance, which shall be withheld from any payment due or to become due under the terms of this Agreement, and which may also be reduced or changed by the Chief to apprentice employment rather than a penalty; and
 - (3) shall forfeit as a penalty to the DISTRICT three hundred dollars (\$300) per day for each calendar day of noncompliance.
- (h) The CONTRACTOR and all Subcontractors shall comply with Labor Code Section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.
- (i) CONTRACTOR shall become fully acquainted with the law regarding apprentices prior to commencement of the work. Special attention is directed to Sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and Title 8, California Code of Regulations, Section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California. The responsibility of compliance with the sections in Article 51 is with the CONTRACTOR.

ARTICLE 52. - FIRST AID

- (a) The CONTRACTOR shall maintain emergency first aid treatment for CONTRACTOR's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C.A., Sec. 651 et seq.).

ARTICLE 53. PROTECTION OF PERSONS AND PROPERTY

- (a) The CONTRACTOR shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of the Contract Documents and shall take all necessary measures and be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the DISTRICT. The CONTRACTOR shall remove all mud, water, or other elements as may be required for the proper protection and prosecution of its work. CONTRACTOR shall provide such heat, covering, and enclosures as are necessary to protect all work, materials, equipment, appliances, and tools against damage by weather conditions. All work shall be solely at the CONTRACTOR's risk with the exception of damage to the work caused by "acts of God" as defined in Public Contract Code Section 7105.
- (b) CONTRACTOR shall take, and require Subcontractors to take, all necessary precautions for the safety of workers and shall comply with all applicable federal, state, local and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to the work site and to provide a safe and healthful place of employment. CONTRACTOR shall furnish, erect, properly maintain at all times, and remove as required by other scheduled activities, as directed by CONSTRUCTION MANAGER or ARCHITECT or as required by the conditions and progress of work, all necessary safety devices, safeguards, construction canopies, signs, audible devices for protection of the blind, safety rails, belts and nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction, as it relates to the CONTRACTOR's scope of work. CONTRACTOR shall designate a responsible employee, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety and health of workers. CONTRACTOR shall report the name and position of the person so designated in writing to DISTRICT. CONTRACTOR shall correct any violations of safety laws, standards, orders, rules, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, the CONTRACTOR at CONTRACTOR's expense shall correct such violation immediately.
- (c) In an emergency affecting safety of person or of work or of adjoining property, CONTRACTOR, without special instruction or authorization from ARCHITECT or DISTRICT, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury; and CONTRACTOR shall so act if so authorized or instructed by ARCHITECT or DISTRICT. Any compensation claimed by CONTRACTOR on account of emergency work shall be determined by written agreement with the DISTRICT.
- (d) CONTRACTOR shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.
- (e) CONTRACTOR shall (unless waived by the DISTRICT in writing):

- (1) When performing new construction on existing sites, become informed and take into specific account the maturity of the students on the site; and perform work which may interfere with school routine before or after school hours; enclose working area with a substantial barricade; and arrange work to cause a minimum amount of inconvenience and danger to students and faculty in their regular school activities.
- (2) Provide substantial barricades around any shrubs or trees indicated to be preserved.
- (3) Deliver materials to the building area over the route designated by CONSTRUCTION MANAGER.
- (4) When directed by DISTRICT, take preventive measures to eliminate objectionable dust caused by CONTRACTOR's work. Should the contractor not maintain proper dust control the DISTRICT will provide dust control with all costs being the responsibility of the CONTRACTOR.
- (5) Enforce all instructions of DISTRICT and ARCHITECT regarding signs, advertising, fires, and smoking and require that all workers comply with all regulations while on construction site.
- (6) Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, an approved civil engineer at no cost to the DISTRICT shall replace them.

ARTICLE 54. NON-DISCRIMINATION

- (a) In the performance of the terms of this Agreement, CONTRACTOR agrees that it will not engage in nor permit such Subcontractor as it may employ to engage in unlawful discrimination in employment of persons because of the race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, or sex of such persons.

ARTICLE 55. SCHEDULE OF VALUES AND PROGRESS PAYMENT APPLICATIONS

- (a) CONTRACTOR shall furnish on a form approved by DISTRICT:
 - (1) Within **ten (10) days** of Notice to Proceed and commensurate with the specification section entitled **SCHEDULE OF VALUES**, provide a detailed preliminary estimate giving a complete breakdown of Contract Price for each area of the work and/or site, which shall include all Subcontractor/supplier agreements showing the dollar amounts of these agreements to justify the schedule of values, and showing separate line items for the material cost(s) and installation cost(s).
 - (2) A periodic itemized estimate of work done for purpose of making partial payments thereon.
 - (3) Within **ten (10) days** of a request by DISTRICT, a schedule of estimated monthly payments which shall be due CONTRACTOR under the **Contract Documents**.
- (b) Values employed in making up any of these schedules are subject to the ARCHITECT's written approval and will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from contract price.
 - (1) Unless otherwise agreed in writing, payment for CONTRACTOR's mobilization costs shall be cost loaded as follows:

Contract Completion Percentage	Payment for Mobilization Percentage
---------------------------------------	--

When 5% of the Contract Sum is billed, then...	50% of mobilization cost can be billed.
When 10% of the Contract Sum is billed, then...	25% of mobilization cost can be billed.
When 20% of the Contract Sum is billed, then...	20% of mobilization cost can be billed.
When 50% of the Contract Sum is billed, then...	5% of mobilization cost can be billed.

- (c) Materials included in the progress payments shall be stored properly and protected as required to prevent damage, including but not limited to, rust, dents, scratches, and decay. Materials stored on-site and subject to payment, shall be gated and secured to prevent theft and/or vandalism. When the CONTRACTOR requests payment for materials not incorporated in the work, the following terms and conditions shall apply:
- (1) For permanent materials delivered to the project site, or stored in an approved location off-site, an allowance of one hundred percent (100%) of the material costs plus freight charges as invoiced and less retention may be made. The allowance will be based upon validated invoices or bills for such materials, including freight charges, and a copy thereof shall be made a part of the documented records for the work. All permanent materials approved for payment will have been tested by the DISTRICT for compliance with the requirements of the Contract Documents. Payment will only be made for permanent materials that conform to the requirements of the Contract Documents.
 - (2) No allowance shall be made for fuels, form lumber, falsework, temporary structures or other materials of any kind that will not become an integral part of the finished contraction.
 - (3) All permanent materials, for which an allowance is requested, shall be stored in an approved manner where damage is not likely to occur. If any of the store materials are lost or become damages in any manner, CONTRACTOR shall be responsible for repairing or replacement of such damaged materials. The value of the lost or damaged materials permanent materials shall be deducted from the CONTRACTOR's subsequent progress payments until replacement has been accomplished.
 - (4) Permanent materials, for which payment has been made, either wholly or partially, shall not be removed from the approved location until such time that it is incorporated into the work, unless approved by the DISTRICT and/or the ARCHITECT.
 - (5) The following must accompany the written request for payment of stored materials, if required by the DISTRICT:
 - (A) Consent of the Surety specifying the material type and the bid items in which the material is to be used.
 - (B) Validating invoices showing that payment for the material has been made.
 - (C) A notarized statement from CONTRACTOR attesting that the invoices, as submitted do not include charges and/or fees for placing, handling, erecting or any other charges and/or markups other than the actual material cost, sales tax(es) if applicable, and freight charges.
 - (D) Bill of lading showing delivery of the material.
 - (E) Inspection test reports, and certifications if required by the Contract Documents.
 - (F) CONTRACTOR shall obtain a negotiable warehouse receipt, endorsed over to DISTRICT for materials and/or equipment stored in an off-site warehouse. Certificate of insurance clearly indicating that the materials or equipment is fully

insured against theft, fire, vandalism, malicious mischief, as well as other coverage required under the Contract Documents.

- (6) Nothing in these General Conditions shall be interpreted as requiring DISTRICT to pay for stored materials. DISTRICT shall decide on a case-by-case basis whether it will pay for stored materials. Some factors DISTRICT will consider are: CONTRACTOR's ability to meet the Project Schedule and milestones, the effectiveness of CONTRACTOR's quality control plan, how record drawings are being maintained and kept up, the status of the material submittals, and the on-going cleanliness of the work and the work site. No payment will be made for stored materials that have not been submitted and accepted.
 - (7) If the permanent materials are stored off-site, CONTRACTOR must pay DISTRICT's representative's transportation and lodging to see the permanent materials.
 - (8) Full title to the materials and/or equipment shall vest with DISTRICT at the time of delivery to the site, warehouse or other storage location.
- (d) Commensurate with the Article entitled PAYMENTS, WAIVER AND RELEASE FORMS and other requirements of the contract, and upon receipt of the CONSTRUCTION MANAGER's approval of the Request for Payment, the DISTRICT will subtract a sum equal to five percent (5%) of the value of the work performed up to the last day of the previous month, less the aggregate of previous payments. The value of the work completed shall be an estimate only. No inaccuracy or error in said estimate shall operate to release the CONTRACTOR, or any surety, from damages arising from such work or from enforcing each and every provision of this Contract, and the DISTRICT shall have the right subsequently to correct any error made in any estimate for payment. The CONTRACTOR shall not be entitled to have any payment requests processed, or be entitled to have any payment made for work performed, so long as any lawful or proper direction given by the DISTRICT concerning the work, or any portion thereof, remains uncomplished with. At any time after the retention held by the DISTRICT totals five percent (5%) of the value of the contract and the DISTRICT's Board, in its sole discretion, finds that satisfactory progress is being made, the DISTRICT may choose not to subtract the retention from remaining payment requests, and upon receipt of the CONTRACTOR'S bonding company letter of approval for such.

DISTRICT shall have the right, if necessary for the protection of the DISTRICT, to issue joint checks made payable to the CONTRACTOR and Subcontractors and/or material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. However, DISTRICT has no duty to issue joint checks. In no event shall any joint check payment be construed to create any contract between the DISTRICT and a Subcontractor of any tier, any obligation from the DISTRICT to such Subcontractor, or rights in such Subcontractor against the DISTRICT.

ARTICLE 56. CONTRACTOR CLAIMS

- (a) If the CONTRACTOR claims compensation for any damage sustained by reason of the acts of the DISTRICT or its agents, or if the CONTRACTOR disagrees with the DISTRICT's or Architect's decisions regarding a CONTRACTOR's Change Order Request (COR), the CONTRACTOR shall provide written "Notice" to the DISTRICT **within five (5) days** after sustaining of such damage, or being notified of an adverse decision, and provide within **fourteen (14) days** of the event the factual basis supporting the claim (unless otherwise specified in writing by the DISTRICT). The written "Notice" shall state the summary points for which the factual bases will support the claim and cite in detail the Contract Documents (including plans and specifications) upon which the claim is to be based. CONTRACTOR's failure to notify the DISTRICT within such a period shall be deemed a waiver and

relinquishment of such a claim. If such notice is given within the specified time, the procedure for its consideration shall be as stated above in these General Conditions. Refer to the Articles entitled, “DEFINITIONS”, “DISPUTES - ARCHITECT’S DECISIONS”, “CHANGES AND EXTRA WORK”, “NOTICE” and “WAIVER AND RELEASE FORMS” for related Contract requirements. The claim, once submitted, shall be a “Certified Claim”.

- (b) In addition, on or before the end of the month for which the claim has been filed, the CONTRACTOR shall also file with the DISTRICT the **WAIVER AND RELEASE FORMS**, for which the claim and the amount of the claim is identified. If the claim is not indicated on the **WAIVER AND RELEASE FORMS**, CONTRACTOR’s claim shall be forfeited and invalidated and it shall not be entitled to consideration for time or payment on account of any such claim.
- (c) Pending final resolution of any Claim, unless otherwise agreed to in writing, the CONTRACTOR shall proceed diligently with performance of the work, and the DISTRICT shall continue to make any undisputed payments in accordance with the Contact Documents.
- (d) The CONTRACTOR shall certify, at the time of submission of a claim, as follows:

I, _____, being the _____ (Must be an officer) of _____ (CONTRACTOR), declare under penalty of perjury under the laws of the State of California, and do personally certify and attest that: I have thoroughly reviewed the attached claim for additional cost and/or extension of time, and know its contents, and said claim is made in good faith; the supporting data is truthful, accurate and complete; that the amount requested accurately reflects the adjustment for which the CONTRACTOR believes the DISTRICT is liable; and further, that I am familiar with California Penal Code section 72 pertaining to false claims, and further know and understand that submission or certification of a false claim may lead to fines, imprisonment and/or other severe legal consequences.

By: _____

CONTRACTOR understands and agrees that any claim submitted without this certification does not meet the terms of the Contract Documents, that DISTRICT or DISTRICT representatives, may reject the claim on that basis and that unless CONTRACTOR properly and timely files the claim with the certification, CONTRACTOR cannot further pursue the claim in any forum. A condition precedent will not have been satisfied.

- (e) Failure to request money based on costs, or time extensions, as part of a COR constitutes a complete waiver of CONTRACTOR’s right to claim the omitted money or time. All money or time for an issue must be included in the COR at the time submitted.

ARTICLE 57. DISPUTES - ARCHITECT’S DECISIONS

- (a) The ARCHITECT shall, within a reasonable time, make decisions on all claims of the DISTRICT or CONTRACTOR and on all other matters relating to the execution and progress of the work. The decisions of the ARCHITECT shall not be binding, but shall be advisory only.
- (b) Except for tort claims, all claims by the CONTRACTOR for a time extension, payment of money or damages arising from work done by, or on behalf of, the CONTRACTOR pursuant to the Contract Documents, payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or as to the amount of payment which is disputed by the DISTRICT of Three Hundred Seventy Five Thousand Dollars (\$375,000) or less shall be subject to the settlement and arbitration provisions procedures set forth in Public Contract Code Section 20104, et seq. Those sections require that the claim be in writing, include the documents

necessary to substantiate the claim, and be filed on or before the final date of payment, subject to all time limits and notice requirements for filing claims under the Contract Documents.

- (1) For claims less than Fifty Thousand Dollars (\$50,000) the DISTRICT shall respond in writing to written claims within **forty-five (45) days** of receipt of the claim or may request in writing within **thirty (30) days** of receipt of the claim additional documentation supporting the claim or relating to any defenses to the claim the DISTRICT may have against the CONTRACTOR. The DISTRICT's written response to the claim shall be submitted to the claimant within **fifteen (15) days** after receipt of the further documentation or within a time period equivalent to that taken by the CONTRACTOR to provide the additional documentation, whichever is greater.
- (2) For claims over Fifty Thousand Dollars (\$50,000) and less than or equal to Three Hundred Seventy Five Thousand Dollars (\$375,000), the DISTRICT shall respond in writing to all written claims within **sixty (60) days** of receipt of the claim or may request in writing within **thirty (30) days** of the receipt of the claim any additional documentation supporting the claim or relating to any defenses to the claim the DISTRICT may have against the CONTRACTOR. The DISTRICT's written response to the claim shall be submitted to the CONTRACTOR within **thirty (30) days** after receipt of further documentation or within a period of time no greater than that taken by the CONTRACTOR in producing the additional documentation, whichever is greater. If the CONTRACTOR disputes the DISTRICT's written response or the DISTRICT fails to respond within a timely fashion, the CONTRACTOR within **fifteen (15) days** after the response or failure to respond may demand in writing an informal conference to meet and confer for settlement of the issues in dispute, which conference shall be scheduled within **thirty (30) days** for settlement of the dispute. If the claim or any portion of the claim remains in dispute following the meet and confer conference, the CONTRACTOR may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the CONTRACTOR submits his or her written claim until the time that the claim is denied as a result of the meet and confer process including any period of time utilized by the meet and confer process. Further, should legal action be pursued, the provisions relating to mediation and arbitration contained in Public Contract Code section 20104.4 shall be followed.
- (c) In the event of a dispute between the parties as to performance of the work, the interpretation of the Contract Documents or payment or nonpayment for work performed or not performed, the parties shall attempt to resolve the dispute via the procedures set forth in this Article. Pending resolution of the dispute, CONTRACTOR agrees to continue the work and/or disputed work diligently to completion. If the dispute is not resolved, CONTRACTOR agrees it will neither rescind the Contract nor stop the progress of the work and/or the disputed work, but CONTRACTOR's sole remedy, following exhaustion of the procedures set forth in this Article, shall be to submit such controversy to determination by a court of the State of California, in Fresno County, having competent jurisdiction of the dispute, after the work has been completed, and not before.
- (d) All meetings and correspondence relative to disputes and claims, which involve offers of good faith and negotiations, are subject to the Evidence Code 1152 exclusions.

ARTICLE 58. PAYMENTS

- (a) Each month, on a date to be determined by DISTRICT, the CONTRACTOR shall be entitled to submit a progress payment invoice for unpaid work provided to the DISTRICT. The invoice

shall be on a form approved and/or provided by the DISTRICT, and submitted to the CONSTRUCTION MANAGER for review and processing. Within **seven (7) days** of submission, the CONSTRUCTION MANAGER will review the CONTRACTOR invoice for legitimacy, and if any corrections or adjustments are required CONTRACTOR shall be required to resubmit the corrected invoice within **three (3) days** of the request. Upon receipt of the corrected invoice, the CONSTRUCTION MANAGER will verify the corrections and then forward the invoice to the Project Inspector for review. DISTRICT, within **thirty (30) days** after receipt of the invoice from the CONSTRUCTION MANAGER shall pay CONTRACTOR a sum equal to ninety five percent (95%) of value of the CONTRACTOR invoice. Payments for Change Order items can be included into the CONTRACTOR invoice that is, after the Change Order has been fully executed and approved by the DISTRICT Governing Board and/or authorized representative. CONSTRUCTION MANAGER will endeavor to provide DISTRICT with signed copies of the CONTRACTOR invoice on or before **seven (7) days** of receipt from CONTRACTOR. Work completed as estimated shall be an estimate only and no inaccuracy or error in said estimate shall operate to release CONTRACTOR or Surety from any damages arising from such work or from enforcing each and every provision of the Contract Documents, and DISTRICT shall have the right subsequently to correct any error made in any estimate for payment. CONTRACTOR SHALL NOT BE ENTITLED TO HAVE ANY PAYMENT ESTIMATES PROCESSED OR BE ENTITLED TO HAVE ANY PAYMENT FOR WORK PERFORMED SO LONG AS ANY LAWFUL OR PROPER DIRECTION CONCERNING WORK, OR ANY PORTION THEREOF, GIVEN BY THE DISTRICT OR ARCHITECT REMAINS UNCOMPLIED WITH BY THE CONTRACTOR.

- (b) DISTRICT has discretion to require from the CONTRACTOR any of the following information with the application for payment:
 - (1) certified payroll covering the period of the prior application for payment;
 - (2) unconditional waivers and releases from all Subcontractors/suppliers for which payment was requested under the prior application for payment;
 - (3) receipts or bills of sale for any items.
 - (4) Signature of the Inspector, confirming that the maintenance of the Record Drawings is being kept up-to-date, and that the Record Drawings are not being used as a construction set.

- (c) Before payment is made hereunder, a certificate in writing shall be signed by the Project Inspector stating the Contract Documents have been adhered to and to confirm the estimates in the certification of application for payment, then submitted to the CONSTRUCTION MANAGER. The CONSTRUCTION MANAGER shall state the work for which the payment is claimed has been performed in general conformance with the terms of the Contract Documents and that the amount stated in the certificate is due under the terms of the Contract Documents, in which the certificate shall be attached to and made a part of the application made and filed with the DISTRICT, provided that if the CONSTRUCTION MANAGER or the Project Inspector shall, within **three (3) days** after written demand therefore, fail to deliver such certificate to the DISTRICT, the CONTRACTOR may file its application with the DISTRICT without said certificate, but together with such application shall file a statement that demand was made for such certificate and that the same was refused. Thereupon, the DISTRICT will either allow said application as presented or shall reject all or part of it. It is understood, moreover, that the certificate of the CONSTRUCTION MANAGER shall not be conclusive upon the DISTRICT, but shall be advisory only.

- (d) NO PAYMENT BY DISTRICT HEREUNDER SHALL BE INTERPRETED SO AS TO IMPLY THAT DISTRICT HAS INSPECTED, APPROVED, OR ACCEPTED ANY PART OF THE WORK. The final payment of five percent (5%) of the value of the work done under the Contract Documents, if unencumbered, shall be made **thirty-five (35) days** after recording by the

DISTRICT of the Notice of Completion. ACCEPTANCE WILL BE MADE ONLY BY ACTION OF THE GOVERNING BOARD OF DISTRICT.

- (e) Unless otherwise provided, on or before making request for final payment of the undisputed amount due under the Contract Documents, CONTRACTOR shall submit to DISTRICT, in writing a summary of all claims for compensation under or arising out of the Contract Documents which were timely filed. The acceptance by CONTRACTOR of the payment of the final amount shall constitute a waiver of all claims against DISTRICT under or arising out of the Contract Documents, except those previously made, in a timely manner and in writing, and identified by CONTRACTOR as unsettled at the time of CONTRACTOR's final request for payment.

ARTICLE 59. CHANGES AND EXTRA WORK

- (a) DISTRICT may, as provided by law and without affecting the validity of the Contract Documents, order changes, modifications, deletions and extra work by issuance of written change orders from time to time during the progress of the work, with the contract sum and time being adjusted accordingly. All such work shall be executed under conditions of the original Contract Documents. DISTRICT has discretion to order changes on a "Unit Price", "Negotiated Sum", or "Time and Material" basis with adjustments to time made after CONTRACTOR has justified the impact on the critical path of the work. The following records shall also be kept by CONTRACTOR:
 - (1) CONTRACTOR shall maintain its records in such a manner as to provide a clear distinction between the direct costs of any extra work and/or deductive work and the original Contract work. This requirement pertains to the costs for wholly or partially approved Change Order Requests (COR's), Construction Change Directives (CCD's), Change Orders (CO's) and work CONTRACTOR considered to be potential Change Orders.
 - (2) CONTRACTOR shall furnish within seven (7) days after the Notice to Proceed, a complete listing of CONTRACTORS and Subcontractors hourly labor rates, indicating the direct hourly wage rate, payroll taxes and insurance costs.
- (b) Notwithstanding any other provision in the Contract Documents, the adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in a change order shall constitute the entire compensation and/or adjustment in the contract time due CONTRACTOR arising out of the change in the work covered by the change order unless otherwise provided in the change order. The amount of the compensation due CONTRACTOR shall be calculated pursuant to **subparagraph (e)** of this Article. The entire compensation shall not include any additional charges not set forth in **subparagraph (e)** and shall not include delay damages (due to processing of a change order, refusal to sign a change order) indirect, consequential, and incidental costs including any management costs, extended home office and field office overhead, administrative costs and profit other than those amounts authorized under **subparagraph (e)** of this Article.
- (c) In giving instructions, ARCHITECT shall have authority to make minor changes in the work, not involving a change in cost, and not inconsistent with the purposes of the Project. The DISTRICT's authorized representative may authorize changes in work involving a change in cost and/or time. Except in an emergency endangering life or property, no extra work or change shall be made unless pursuant to a written order from DISTRICT, authorized by DISTRICT'S representative, and no claim for addition to contract sum shall be valid unless so ordered.

(d) If the ARCHITECT determines that work required to be done constitutes extra work outside the scope of the Contract Documents, the ARCHITECT shall issue a request for a detailed proposal (RFP) or issue a Construction Change Directive (CCD) to the CONTRACTOR. CONTRACTOR will respond with a detailed proposal (COR) upon receipt of the RFP or CCD within fourteen (14) days of receipt of such documents. If the work is to be performed by a Subcontractor, CONTRACTOR must include a detailed bid from the Subcontractor.

(e) Value of any such extra work, change, or deduction shall be determined at the discretion of DISTRICT in one or more of the following ways:

(1) By “**Unit Prices**” contained in CONTRACTOR’s original bid and incorporated in the Contract Documents or fixed by subsequent “**Negotiated Sum**” agreement between DISTRICT and CONTRACTOR.

(2) By cost of labor and material and percentage for overhead and profit (“**time and material**”). If the value is determined by this method the following requirements shall apply:

(A) Daily Reports by CONTRACTOR.

(i) General. At the close of each working day, the CONTRACTOR shall submit a daily report to the CONSTRUCTION MANAGER and/or Inspector, on forms approved by the DISTRICT, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day, and for other services and expenditures when authorized concerning extra work items including any schedule delay days required. An attempt shall be made to reconcile the report daily, and the CONSTRUCTION MANAGER and/or Inspector and the CONTRACTOR shall sign it. In the event of disagreement, pertinent notes shall be entered by each party to explain points that cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the CONTRACTOR. The CONSTRUCTION MANAGER shall organize and forward copies of the CONTRACTOR’s and Inspector’s reports to the ARCHITECT upon the completion of each “Time and Material” activity. ANY REPORTS NOT SUBMITTED IN A TIMELY MANNER AND NOT SIGNED BY THE CONSTRUCTION MANAGER AND/OR INSPECTOR SHALL NOT BE CONSIDERED AS A PART OF THE COSTS CONSIDERED FOR THE CHANGE ORDER. THE CONTRACTOR SHALL NOTIFY THE INSPECTOR AND THE CONSTRUCTION MANAGER PRIOR TO STARTING THE WORK EACH DAY.

(ii) Labor. The report shall show names of workers, classifications, and hours worked and hourly rate. Superintendent expenses are not allowed.

(iii) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of **\$250** or less or where an invoice is not provided.

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental sources, or distributors, at the time the work is performed. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage,

insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the extra work shall be included.

If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the DISTRICT than holding it at the work site, it shall be returned, unless the CONTRACTOR elects to keep it at the work site at no expense to the DISTRICT.

All equipment shall be acceptable to the ARCHITECT, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and manufacturer's approved modifications shall be used to classify equipment and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

- (iv) Equipment. The report shall show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable, and hourly/daily cost.
- (v) Other Services and Expenditures. Other services and expenditures shall be described in such detail as the DISTRICT may require.

(B) Basis for Establishing Costs

- (i) Labor. The costs of labor will be the actual cost for wages prevailing locally for each craft classification or type of workers at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from federal, state or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. The use of labor classifications, which would increase the extra work cost, will not be permitted unless the CONTRACTOR establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.
- (ii) Materials. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the work site in the quantities involved, plus sales tax, freight and delivery. The DISTRICT reserves the right to approve materials and sources of supply, or to supply materials to the CONTRACTOR if necessary for the progress of the work. No markup shall be applied to any material provided by the DISTRICT.
- (iii) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of \$250 or less or where an invoice is not provided.
Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental source, or distributors, at the time the work is performed. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the extra work shall be included. If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the DISTRICT than holding it at the work site, it shall be returned, unless the CONTRACTOR elects to keep it at the work site at no

expense to the DISTRICT. All equipment shall be acceptable to the ARCHITECT, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and manufacturer's approved modifications shall be used to classify equipment and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

- (iv) Other Items. The DISTRICT may authorize other items, which may be required on the extra work. Such items include labor, services, material and equipment which are different in their nature from those required by the work and which are of a type not ordinarily available from the CONTRACTOR or any of the Subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.
 - (v) Invoices. Vendors' invoices for material, equipment rental, and other expenditures shall be submitted with the request for payment. If invoices or other documentation does not substantiate the request for payment, the DISTRICT may establish the cost of the item involved at the lowest price, which was current at the time of the report.
- (3) The following form for "EXTRA WORK and/or DEDUCTIVE WORK" and the "OVERHEAD & PROFIT (O&P) PERCENTAGE SCHEDULE" shall be used as applicable by the DISTRICT and CONTRACTOR to communicate proposed additions and deductions to the Contract Documents. State and City sales taxes and payroll taxes and insurance shall be shown separately and will be allowed on Extra Work and shall be credited on Deductive Work. NOTE THAT THE O&P PERCENTAGE SCHEDULE DOES NOT APPLY TO PROJECTS PERFORMED UNDER THE LEASE-LEASEBACK METHOD OF PROJECT DELIVERY, WHICH PROJECTS HAVE THEIR OWN AGREED-UPON O&P RATES.

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FORM FOR EXTRA WORK AND/OR DEDUCTIVE WORK

SUBCONTRACTOR WORK (list each if more than one)		ADDITIVE	DEDUCTIVE
1	SUBCONTRACTOR LABOR TOTAL ①	\$ _____	\$ _____
2	SUBCONTRACTOR MATERIAL TOTAL ①,	\$ _____	\$ _____
3	SUBCONTRACTOR EQUIPMENT TOTAL ①,	\$ _____	\$ _____
4	SUBTOTAL #1 (LINES 1, 2 & 3)	\$ _____	\$ _____
5	SUBCONTRACTOR'S OVERHEAD AND PROFIT FOR SUBTOTAL #1 (LINE 4) ③	\$ _____	\$ _____
6	SUBTOTAL #2 (LINES 4 & 5) ③	\$ _____	\$ _____

CONTRACTOR'S WORK		ADDITIVE	DEDUCTIVE
7	CONTRACTOR LABOR TOTAL ①	\$ _____	\$ _____
8	CONTRACTOR MATERIAL TOTAL ①,	\$ _____	\$ _____
9	CONTRACTOR EQUIPMENT TOTAL ①,	\$ _____	\$ _____
10	SUBTOTAL #3 (LINES 7, 8 & 9)	\$ _____	\$ _____
11	CONTRACTOR'S OVERHEAD AND PROFIT FOR SUBTOTAL #3 (LINE 10) ③	\$ _____	\$ _____
12	CONTRACTOR'S OVERHEAD AND PROFIT FOR SUBTOTAL #2 (LINE 6) ③	\$ _____	\$ _____
13	SUBTOTAL #4 (LINES 10, 11 & 12)	\$ _____	\$ _____

14	SUM OF SUBTOTALS #2 & #4	\$ _____	\$ _____
15	CONTRACTOR'S BOND	\$ _____	\$ _____
16	NET TOTAL FOR C.O.R. (5)⑥	\$ _____	

①: Attach itemized list(s) indicating hours, rates, material quantity, material costs, and unit costs
 ②: Include the cost for taxes.
 ③: Refer to the Overhead and Profit Schedule
 ④: Contractor's bond and liability insurance premium, if in fact actual bonds and insurance are to be purchased. Total costs shall not exceed 2% of the Net Total (line 16). Refer to the O&P Schedule.
 (5) Includes all direct and indirect costs, including but not limited to, acceleration, cumulative affect of the change(s), expediting the Work, Fragnets, etc.

Leaf Engineers
S2100500AR

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CONTRACTOR
CLOVIS UNIFIED SCHOOL DISTRICT

District-Wide Lockdown – Package 2
Clovis Unified School District

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NOTE: OVERHEAD AND PROFIT SHALL BE CALCULATED ON THE NET AMOUNT OF THE CHANGE ORDER

OVERHEAD & PROFIT (O&P) PERCENTAGE SCHEDULE

- (i) Refer to the O&P Schedule below. The cost of the work does not include the overhead and profit mark-up's.
- (ii) For all work, the CONTRACTOR's Bond and Liability Insurance Premium may be added in onto the "Form for EXTRA WORK and/or DEDUCTIVE WORK."
- (iii) The O&P Schedule shall be used for "Negotiated Sum" and/or "Time and Materials" work. Unit Price work shall not have the overhead and profit mark-up applied to the work, on the basis that the Unit Price includes overhead and profit margins.

	Work by Subcontractor less than or equal to \$2,500	Work by Subcontractor more than \$2,500	Work by CONTRACTOR less than or equal to \$2,500	Work by CONTRACTOR more than \$2,500
Subcontractor Overhead & Profit	20%	15%		
CONTRACTOR Overhead & Profit	10% Excluding Bond Premium	5% Excluding Bond Premium	15% Excluding Bond Premium	10% Excluding Bond Premium
Total Overhead and Profit, not to exceed:	30%	20%	15%	10%

- (4) For "Negotiated Sum" and "Time and Material" pricing methods, the specified overhead and profit figures are defined and are agreed to include, but not limited to, the following:
 - (A) Home office administration costs
 - (B) Job site administration costs
 - (C) Small tools (Less than \$250 capital cost per item)
 - (D) Project staff and company vehicles
 - (E) Change Order preparation, procurement and set-up (including all payroll costs and fringe benefits), estimating, supervising, expediting, drafting, and clerical/secretarial services.
 - (F) As-Built Drawing maintenance
 - (G) General Supervision of the work (Direct Supervision may be included)
 - (H) Time & Material documentation procedures
 - (I) The handling, transportation and warehousing of materials other than direct identifiable cost of specific deliveries, or as included in the price of the material.
 - (J) Time Extension request or recovery schedule preparation

- (5) IT IS EXPRESSLY UNDERSTOOD THAT THE VALUE OF SUCH EXTRA WORK OR CHANGES, AS DETERMINED BY ANY OF THE AFOREMENTIONED METHODS, EXPRESSLY INCLUDES ANY AND ALL OF CONTRACTOR'S COSTS AND EXPENSES, BOTH DIRECT AND INDIRECT, RESULTING FROM ADDITIONAL TIME REQUIRED ON THE PROJECT, OR RESULTING FROM DELAYS TO THE PROJECT, INCLUDING BUT NOT LIMITED TO ACCELERATION, CUMULATIVE AFFECT OF THE CHANGE(S), EXPEDITING THE WORK, ETC.

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(f) If the CONTRACTOR should claim that any instruction, request, drawing, specification,

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action, condition, omission, default, or other situation obligates the DISTRICT to pay additional compensation to CONTRACTOR or to grant an extension of time, or constitutes a waiver of any provision in the Contract Documents, the CONTRACTOR shall provide written "Notice" to the DISTRICT **within five (5) days** after sustaining of such damage, or being notified of an adverse decision, and provide within **fourteen (14) days** of the event the factual basis supporting the claim (unless otherwise specified). The written "Notice" shall state the summary points for which the factual bases will support the claim and cite in detail the Contract Documents (including plans and specifications) upon which the claim is to be based. CONTRACTOR's failure to notify the DISTRICT within such a period shall be deemed a waiver and relinquishment of such a claim. If such notice is given within the specified time, the procedure for its consideration shall be as stated above in these General Conditions. Refer to the Articles entitled, "**DEFINITIONS,**" "**CONTRACTOR CLAIMS,**" "**DISPUTES - ARCHITECT'S DECISIONS,**" "**NOTICE**" and "**WAIVER AND RELEASE FORMS**" for related Contract requirements. The claim, once submitted, shall be a "Certified Claim."

In addition, on or before the end of the month for which the claim has been filed, the CONTRACTOR shall also file with the DISTRICT the **WAIVER AND RELEASE FORMS**, for which the claim and the amount of the claim are identified. If the claim is not indicated on the **WAIVER AND RELEASE FORMS**, CONTRACTOR's claim shall be forfeited and invalidated and it shall not be entitled to consideration for time or payment on account of any such claim.

- (g) If DISTRICT and CONTRACTOR fail to agree to the quantification of costs and/or time to be placed into a Change Order, the DISTRICT at its own discretion may issue a Construction Change Directive (CCD) for those costs and/or time impacts that is deemed appropriate for the changed work conditions. Notwithstanding the lack of agreement upon a Change Order, the CONTRACTOR shall proceed immediately with the changed work upon receipt of a CCD. If CONTRACTOR disputes the CCD, CONTRACTOR may make a claim pursuant to the Article entitled "**DISPUTES.**"

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ARTICLE 60. COMPLETION

- (a) Statutory definitions of “completion” and “complete” shall apply for those statutory purposes. For accrual of liquidated damages, Claim and warranty purposes, “completion” and “complete” mean the point in the Project where (1) Contractor has fully and correctly performed all Work in all parts and requirements, including corrective and punch list work, and (2) DISTRICT’s representatives have conducted a final inspection that confirmed this performance. “Substantial” or any other form of partial or non-compliant performance of the Work shall not constitute “completion” or “complete” under the Contract Documents.
- (b) The DISTRICT shall accept completion of the Contract and have the Notice of Completion recorded when the entire Work including CONTRACTOR’s punch list(s) and ARCHITECT’s final review comments shall have been completed to the satisfaction of the DISTRICT. The Work may only be accepted as complete by action of the DISTRICT’s Governing Board.
- (c) However, the DISTRICT, through action by the Governing Board, at its sole option, may accept completion of the Contract and have the Notice of Completion recorded when the entire Work including individual portions of the Work shall have been completed to the satisfaction of the DISTRICT, except for minor corrective and/or incomplete items.
- (d) A final walk through to determine completion of the Contract and to record the Notice of Completion shall occur only upon a valid claim by CONTRACTOR that the Project is complete except for minor corrective and/or incomplete items. Any erroneous claims of completion by CONTRACTOR resulting in a premature walk through shall be at CONTRACTOR’s sole cost and expense and DISTRICT shall make adjustments to the contract price by reducing the amount thereof to pay for any costs incurred by the DISTRICT due to the erroneous claims by the CONTRACTOR that the Project is complete. Minor corrective and/or incomplete items shall be identified in the final walk through of the Project.
- (e) If the CONTRACTOR fails to complete the minor corrective and/or incomplete items prior to the expiration of the **thirty-five (35) day** period immediately following recording of the Notice of Completion, the DISTRICT shall withhold from the final payment an amount equal to **150% of the estimated cost**, as determined by the DISTRICT, of each item until such time as the item is completed. At the end of such **thirty-five (35) day** period, if there are items remaining to be corrected and/or completed, the DISTRICT may elect to proceed as provided in the Article entitled "**ARTICLE 64. PAYMENTS WITHHELD.**"

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- (f) Regardless of the cause therefore, the CONTRACTOR may not maintain any claim or cause of action against the DISTRICT for damages incurred as a result of its failure or inability to complete its work in a shorter period than established in the Contract Documents, the parties stipulating that the period set forth in the Contract Documents is a reasonable time within which to perform the Work.

ARTICLE 61. FAILURE TO PERFORM / DELAYED PERFORMANCE OF WORK

- (a) If CONTRACTOR defaults or neglects to carry out the Work in accordance with the requirements of the Contract Documents, the DISTRICT may, after providing two (2) working days written notice to CONTRACTOR, without prejudice to any other remedy it may have, order the CONTRACTOR to stop the Work or any portion thereof, until the cause for such order has been eliminated. The right of the DISTRICT to stop the Work shall not give rise to a duty on the part of the DISTRICT to exercise this right for the benefit of the CONTRACTOR or any other person or entity. The DISTRICT shall adjust the Contract Sum by reducing the amount thereof by the cost of correcting such deficiencies. If DISTRICT in its sole discretion decides not to correct work not done in accordance with the Contract Documents, it may instead reduce the Contract Sum in an amount commensurate with the damages caused by the deficiencies.
- (b) DISTRICT shall not be liable for any delays or damages related to the time required to obtain government approvals.
- (c) Costs, expenses and damages caused by delays, improperly timed activities, defective construction, or damages to another contractor's work shall be borne by the party responsible. Should CONTRACTOR cause damage to the work or property of any separate contractor, or cause any delay to any such contractor, the CONTRACTOR shall defend, indemnify, and hold DISTRICT harmless for such damage or delay, DISTRICT may backcharge CONTRACTOR for delay or damage to another contractor's work or damage to another contractor's property.

ARTICLE 62. CORRECTION OF WORK

- (a) If it is found at any time, before or after completion of the Work, that the CONTRACTOR has varied from the drawings and/or specifications and/or Contract Documents, in materials, quality, form or finish, or in the amount or value of the materials and labor used, the ARCHITECT shall make a recommendation:
 - (1) that all such improper Work should be removed, remade and replaced, and all Work disturbed by these changes be made good at the CONTRACTOR's expense ("Option 1");
or

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- (2) that the DISTRICT deduct from any amount due CONTRACTOR, the sum of money equivalent to the difference in value between the Work performed and that called for by the drawings and specifications and Contract Documents ("Option 2"). ARCHITECT shall determine such difference in value.

The DISTRICT may, at its option, choose either Option 1 or Option 2.

- (b) In the event that the District chooses Option 1, CONTRACTOR shall promptly remove all Work identified by DISTRICT as failing to conform to the drawings, specifications, and Contract Documents, whether incorporated or not. CONTRACTOR shall promptly replace and re-execute its own Work to comply with the drawings, specifications, and Contract Documents without additional expense to DISTRICT and shall bear the expense of making good all Work of other contractors destroyed or damaged by such removal or replacement.

If CONTRACTOR does not remove such Work within a reasonable time, fixed by written notice, DISTRICT may remove it and may store the material at CONTRACTOR's expense. If CONTRACTOR does not pay expenses of such removal within **ten (10) days'** time thereafter, DISTRICT may, upon **ten (10) days'** written notice, deduct the amount of the removal and repair from the Contract amount.

ARTICLE 63. EXTENSION OF TIME - LIQUIDATED DAMAGES

- (a) The CONTRACTOR and DISTRICT hereby agree that the exact amount of damages for failure to complete the work within the time specified is extremely difficult or impossible to determine. CONTRACTOR shall be assessed the sum as set forth in the **Agreement**, as liquidated damages for each and every day the work required under the Contract Documents remains unfinished past the time for completion, as set forth in the **Agreement**, and any extensions of time granted by the DISTRICT to the CONTRACTOR under the terms of the Contract Documents. The CONTRACTOR will pay to the DISTRICT or DISTRICT may retain from amounts otherwise payable to the CONTRACTOR, said amount for each day after failure to meet the requirements of the contract completion as scheduled in the Agreement. For purposes of this article, the work shall be considered "complete" in accordance with the provisions of Article entitled "**COMPLETION**", except that the work may be considered complete without formal acceptance by the DISTRICT Governing Board so long as the Governing Board, at its next regularly scheduled meeting, accepts the work.
- (b) CONTRACTOR shall not be charged for liquidated damages, as set forth above, because of any delays in completion of work which are not the fault or negligence of CONTRACTOR, including but not restricted to acts of God as set forth herein. As soon as CONTRACTOR become aware of the delay and no later than **fourteen (14) days** from the commencement of the delay, CONTRACTOR shall notify DISTRICT in writing of causes of delay in accordance with the Contract scheduling specifications. CONTRACTOR shall provide documentation and justification to substantiate the delay and its relation to the Project's critical path. Extension of time shall apply only to that portion of work affected by the delay, and shall not apply to other portions of work not so affected.

ARTICLE 64. PAYMENTS WITHHELD

- (a) In addition to any amount which DISTRICT may retain under the Article entitled "**COMPLETION**" and the Article entitled "**PAYMENTS**," DISTRICT may withhold a sufficient

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amount or amounts of any payment or payments otherwise due to CONTRACTOR, which in DISTRICT's judgment may be necessary to cover:

- (1) Payments which may be past due and payable for just claims against CONTRACTOR or any Subcontractors, or against and about the performance of work, including, without limitation, payments made pursuant to the Article entitled "**TIMELY PAYMENTS BY CONTRACTOR.**"
- (2) The cost of defective work, which CONTRACTOR has not remedied.
- (3) Liquidated damages assessed against CONTRACTOR.
- (4) Penalties for violation of labor laws and / or deficient certified payroll.
- (5) The cost of materials ordered by the DISTRICT pursuant to the Article entitled "MATERIALS AND WORK."
- (6) The cost of completion of the Contract if there exists a reasonable doubt that the Contract can be completed for the balance then unpaid to CONTRACTOR.
- (7) Damage caused by CONTRACTOR to another contractor or Subcontractor.
- (8) Site clean-up as provided in the Article entitled "CLEANING UP."
- (9) Payments to indemnify, defend, or hold harmless the DISTRICT.
- (10) Any payments due to the DISTRICT including but not limited to payments for failed tests, utilities or imperfections.
- (11) Extra services for ARCHITECT, including but not limited to, services rendered in the evaluation of CONTRACTOR substitution requests, Requests For Information (RFI's), Change Order Requests (COR's) and Claims.
- (12) Extra services for the INSPECTOR including but not limited to re-inspection required due to CONTRACTOR's failed tests or installation of unapproved or defective materials and CONTRACTOR's requests for inspection and CONTRACTOR's failure to attend the inspection.
- (13) Record Documents and other Contract required documents.
- (14) Submission of daily reports and completeness thereof.
- (15) Breach of any provision of the Contract Documents.
- (16) Stop Payment Notices. For any stop payment notice, the DISTRICT shall withhold the amount stated in the stop payment notice plus an amount to provide for the public entity's reasonable cost of any litigation pursuant to the stop payment notice. For any stop payment notice action the parties resolve before judgment is entered, DISTRICT has the right to permanently withhold for any reasonable cost of litigation for that stop payment notice, even if it exceeds the amount originally withheld by DISTRICT for the estimated reasonable cost

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of litigation. However, if (1) the CONTRACTOR at its sole expense provides a bond or other security satisfactory to the DISTRICT in the amount of at least one hundred twenty-five percent (125%) of the claim, in a form satisfactory to the DISTRICT, which protects the DISTRICT against such claim, and (2) the DISTRICT chooses to accept the bond, then DISTRICT would release the stop payment notice funds withheld to the CONTRACTOR, except that DISTRICT may permanently withhold for any reasonable cost of litigation. Any stop payment notice release bond shall be executed by a California admitted, fiscally solvent surety, completely unaffiliated with and separate from the surety on the payment and performance bonds, that does not have any assets pooled with the payment and performance bond sureties

- (b) If the above grounds are in the opinion of the DISTRICT removed by or at the expense of CONTRACTOR, payment shall be made for amounts withheld because of them.
- (c) DISTRICT may apply such withheld amount or amounts to payment of such claims or obligations at its discretion. In so doing, DISTRICT shall make such payments on behalf of CONTRACTOR. If any payment is so made by DISTRICT, then such amount shall be considered as a payment made under contract by DISTRICT to CONTRACTOR and DISTRICT shall not be liable to CONTRACTOR for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligations. DISTRICT will render CONTRACTOR an accounting of such funds disbursed on behalf of CONTRACTOR.
- (d) As an alternative to payment of such claims or obligations, DISTRICT, in its sole discretion, may reduce the total contract price or set-off the amount against payments due.

ARTICLE 65. EXCISE TAXES

- (a) If under federal excise tax law any transaction hereunder constitutes a sale on which a federal excise tax is imposed and the sale is exempt from such excise tax because it is a sale to a state or local government for its exclusive use, the DISTRICT, upon request, will execute documents necessary to show:
 - (1) That the DISTRICT is a political subdivision of the State for the purposes of such exemption and
 - (2) That the sale is for the exclusive use of the DISTRICT. No excise tax for such materials shall be included in any bid price.

ARTICLE 66. NO ASSIGNMENT

- (a) The CONTRACTOR shall not assign, transfer, convey, sublet or otherwise dispose of the Contract or of its rights, title or interest in or to the same or any part thereof. If the CONTRACTOR assigns, transfers, conveys, sublets or otherwise disposes of the Contract or its right, title or interest therein, or any part thereof, such attempted or purported assignment, transfer, conveyance, sublease or other disposition shall be null, void and of no legal effect whatsoever; and the Contract may, at the option of the DISTRICT, be terminated, and the DISTRICT shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the CONTRACTOR, and to its purported assignee or transferee.

ARTICLE 67. NOTICE

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- (a) Any notice from one party to the other or otherwise under the Contract shall be in writing and shall be dated and signed by party giving such notice or by a duly authorized representative of such party. Any such notice shall not be effective for any purpose whatsoever unless served in one of the following manners, and copied to the ARCHITECT:
- (1) If notice is given to DISTRICT, by personal delivery thereof to DISTRICT or by deposit in the United States mail, enclosed in a sealed envelope addressed to DISTRICT, and sent by registered or certified or overnight mail with postage prepaid;
 - (2) If notice is given to CONTRACTOR, by personal delivery thereof to said CONTRACTOR or to CONTRACTOR's superintendent at the site of the Project, or by deposit in the United States mail, enclosed in a sealed envelope addressed to said CONTRACTOR at its regular place of business or at such address as may have been established for the conduct of work under the Contract, and sent by registered or certified or overnight mail with postage prepaid;
 - (3) If notice is given to the surety or other persons, by personal delivery to such surety or other person or by deposit in the United States mail, enclosed in a sealed envelope, addressed to such surety or person at the address of such surety or person last communicated by the surety or other person to the party giving notice, and sent by registered or certified or overnight mail with postage prepaid.

ARTICLE 68. NO WAIVER

- (a) The failure of the DISTRICT in any one or more instances to insist upon strict performance of any of the terms of the Contract or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion.

ARTICLE 69. NON-UTILIZATION OF ASBESTOS MATERIAL

- (a) The CONTRACTOR will be required to execute and submit a Certificate regarding Non-Asbestos Containing Materials.
- (b) Should asbestos containing materials be installed by the CONTRACTOR in violation of this certification, or if removal of asbestos containing materials is part of the work, decontamination and removal will meet the following criteria:
- (1) Decontamination and removal of work found to contain asbestos or work installed with asbestos containing equipment shall be done only under the supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency (EPA).
 - (2) The asbestos removal CONTRACTOR shall be an EPA accredited CONTRACTOR qualified in the removal of asbestos and shall be chosen and approved by the asbestos consultant who shall have sole discretion and final determination in this matter.
 - (3) The asbestos consultant shall be chosen and approved by the DISTRICT who shall have sole discretion and final determination in this matter.

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- (4) The work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.
- (c) Cost of all asbestos removal, including, but not necessarily limited to the cost of the asbestos removal CONTRACTOR, the cost of the asbestos consultant, analytical and laboratory fees, time delays and additional costs as may be incurred by the DISTRICT shall be borne entirely by the CONTRACTOR.
- (d) Hold Harmless: Interface of work with work containing asbestos shall be executed by the CONTRACTOR at his/her risk and at his/her discretion with full knowledge of the currently accepted standards, hazards, risks and liabilities associated with asbestos work and asbestos containing products. By execution of the Agreement, the CONTRACTOR acknowledges the above and agrees to hold harmless the DISTRICT, its Governing Board, employees, agents, and ARCHITECT and assigns for all asbestos liability which may be associated with this work. The CONTRACTOR further agrees to instruct its employees with respect to the above mentioned standards, hazards, risks and liabilities.

ARTICLE 70. STUDENT SAFETY ALLOWANCES

- (a) Requirements for Contact with Students: Contractor shall comply with Education Code section 45125.2 and this Article. If Contractor's employee(s), agent(s) or subcontractor(s) will have more than limited contact with students, then Contractor must take one or more of the following steps:
 - (1) Install a physical barrier at the worksite to limit contact with pupils.
 - (2) Have an employee, who the Department of Justice has ascertained has not been convicted of a violent or serious felony, continually monitor and supervise employees. The entity shall verify in the Independent Contractor Student Contact Form to the DISTRICT that the employee charged with monitoring and supervising its employees has no such convictions.
 - (3) Arrange for surveillance by personnel with DISTRICT approval.
- (b) If CONTRACTOR is providing the services in an emergency or exceptional situation, CONTRACTOR is not required to comply with Education Code section 45125.2. An "emergency or exceptional" situation is one in which pupil health or safety is endangered or when repairs are needed to make a facility safe and habitable. DISTRICT shall determine whether an emergency or exceptional situation exists.
- (c) DISTRICT Processing to Department of Justice: If Contractor is required to receive verification for an employee, agent or subcontractor from the Department of Justice pursuant to this Article or the Education Code, the DISTRICT may, at its sole discretion, assist Contractor by processing Contractor's request to the Department of Justice using the DISTRICT's fingerprinting hardware and materials. The DISTRICT will charge for such assistance at its standard rates charged to its own employees.
- (d) Verification of Compliance Under Penalty of Perjury: Contractor shall certify under penalty

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of perjury, on a form provided by the DISTRICT, compliance with this Article prior to performing any work in which any employee, agent or subcontractor will have more than limited contact with students.

- (e) Indemnification and Hold Harmless Agreement: It shall be Contractor's sole responsibility to ensure compliance with Education Code sections 45125.1 and 45125.2 and this Article. In addition to and without limiting any other indemnity promise made in this contract, Contractor agrees to defend, indemnify and hold harmless the DISTRICT for and from any and all actual or potential claims of any kind or description seeking to hold the DISTRICT, its employees or its agents responsible for violation of Education Code sections 45125.1 or 45125.2, or any other violation arising out of duties imposed by Education Code sections 45125.1 or 45125.2, arising out of Contractor's employee's, agent's or subcontractor's contact with students. Contractor's indemnification obligation shall include, without limitation, judgments, settlements, contributions, payments, fines and penalties, as well as the costs of investigating and complying with equitable decrees or governmental directives. The defense obligation shall include, without limitation, legal fees, litigation expenses, and investigative costs.
- (f) Definitions:
- (1) A "violent felony" is any felony listed in subdivision (c) of section 667.5 of the Penal Code.
 - (2) A "serious felony" is any felony listed in subdivision (c) of section 1192.7 of the Penal Code.
 - (3) An "emergency or exceptional situation" is, as determined by the DISTRICT in its sole discretion, a situation in which pupil health or safety is endangered or when repairs are needed to make a school facility safe and habitable.

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ARTICLE 71. ALLOWANCES

- (a) The following costs shall be included in all allowances;
 - (1) Cost of the product to CONTRACTOR or Subcontractor, less applicable trade discounts
 - (2) Delivery to the site
 - (3) Applicable taxes

- (b) CONTRACTOR costs included in the Contract Sum include, but are not limited to;
 - (1) Arrangement of product(s) shipping and handling at site, including unloading, uncrating, and storage.
 - (2) Protection of products from the elements and from damage
 - (3) Labor for installation, adjustments and finishing products
 - (4) Product warranties
 - (5) Scheduling changes and updates
 - (6) Other expenses required to complete installation
 - (7) CONTRACTOR and Subcontractor(s) overhead and profit

- (c) The adjustments in costs will be made if the net cost is more or less than the specified amount of the allowance. The net cost of the adjustment shall be the amount of the difference between the specified allowance and the actual cost of the material, with the exception of a not-to-exceed 15% mark-up for overhead and profit. The Contract Sum will be adjusted by Change Order.
 - (1) Submit any claims for anticipated additional costs, or other expenses caused by the selection the allowance, prior to execution of the work.
 - (2) Submit documentation for actual additional costs, or other expenses caused by the selection the allowance, prior to execution of the work.
 - (3) Failure to submit claims within the designated time will constitute a waiver of claims for additional costs.

- (d) DISTRICT will separately bid the materials, subject to the specified allowances. The successful bidder will be assigned to CONTRACTOR, and shall be considered a Subcontractor to the CONTRACTOR. Upon assignment, the CONTRACTOR shall all make the necessary submittals, prepare necessary shop drawings and coordinate all related work. CONTRACTOR shall make all necessary adjustments and revisions to the schedule for such allowances and Subcontractor assignments.

ARTICLE 72. WAIVER AND RELEASE FORMS

- (a) Commensurate with the statutes of Public Contract Code section 7100, provisions in public works contracts with public entities which provide that acceptance of a payment otherwise due a CONTRACTOR is a waiver of all claims against the public entity arising out of the work performed under the contract or which condition the right to payment upon submission of a release by the CONTRACTOR of all claims against the public entity arising out of performance

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of the public work are against public policy and null and void. This section shall not prohibit a public entity from placing in a public works contract and enforcing a contract provision which provides that payment of undisputed contract amounts is contingent upon the CONTRACTOR furnishing the public entity with a release of all claims against the public entity arising by virtue of the public works contract related to those amounts. Disputed contract claims in stated amounts may be specifically excluded by the CONTRACTOR from the operation of the release.

- (b) Neither the OWNER nor original CONTRACTOR by any term of their contract, or otherwise, shall waive, affect, or impair the claims and liens of other persons whether with or without notice except by their written consent, and any term of the contract to that effect shall be null and void. Any written consent given by any claimant pursuant to this subdivision shall be null, void, and unenforceable unless and until the claimant executes and delivers a waiver and release. Such a waiver and release shall be binding and effective to release the OWNER, construction lender, and surety on a payment bond from claims and liens only if the waiver and release follows substantially one of the forms set forth in this section and is signed by the claimant or his or her authorized agent, and, in the case of a **conditional release**, there is evidence of payment to the claimant. Evidence of payment may be by the claimant's endorsement on a single or joint payee check that has been paid by the bank upon which it was drawn or by written acknowledgment of payment given by the claimant.
- (c) No oral or written statement purporting to waive, release, impair or otherwise adversely affect a claim is enforceable or creates any estoppel or impairment of a claim unless:
 - (1) It is pursuant to a waiver and release prescribed herein, or
 - (2) The claimant had actually received payment in full for the claim.
- (d) This section does not affect the enforceability of either an accord and satisfaction regarding a bona fide dispute or any agreement made in settlement of an action pending in any court provided the accord and satisfaction or agreement and settlement make specific reference to the stop notice, or bond claims.
- (e) The waiver and release given by any claimant hereunder shall be null, void, and unenforceable unless it follows the text of the following forms in the appropriate circumstances. Each waiver form shall be printed in type equal in size or larger than the largest type on other documents signed by the claimant.
 - (e.1) Where the claimant is required to execute a waiver and release in exchange for, or in order to induce the payment of, a progress payment and the claimant is not, in fact, paid in exchange for the waiver and release or a single payee check or joint payee check is given in exchange for the waiver and release, the waiver and release shall follow the following form

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CONDITIONAL WAIVER AND RELEASE UPON "PROGRESS PAYMENT"

Upon receipt by the undersigned of a check from: _____
(Maker of Check)

in the sum of: \$ _____ payable to: _____
(Amount of Check) (Payee or Payees of Check)

and when the check has been properly endorsed and has been paid by the bank upon which it is drawn, this document shall become effective to release any mechanic's lien, stop notice, or bond right the undersigned has on the job of

_____ located at: _____
(OWNER) (Job Description)

to the following extent. This release covers a progress payment for labor, services, equipment, or material furnished to

_____ through: _____
(Your Customer) (Date)

only and does not cover any retentions retained before or after the release date; extras furnished before the release date for which payment has not been received; extras or items furnished after the release date. Rights based upon work performed or items furnished under a written change order which has been fully executed by the parties prior to the release date are covered by this release unless specifically reserved by the claimant in this release. This release of any mechanic's lien, stop notice, or bond right shall not otherwise affect the contract rights, including rights between parties to the contract based upon a rescission, abandonment, or breach of the contract, or the right of the undersigned to recover compensation for furnished labor, services, equipment, or material covered by this release if that furnished labor, services, equipment, or material was not compensated by the progress payment. Before any recipient of the document relies on it, said party should verify evidence of payment to the undersigned.

_____ (Date)
(Company Name)

By: _____
(Title)

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Exclusions: Listing of Claims, of which Notice has been given:

- | | |
|---------------------|----------------------------|
| 1. Claim for: _____ | In the amount of: \$ _____ |
| 2. Claim for: _____ | In the amount of: \$ _____ |
| 3. Claim for: _____ | In the amount of: \$ _____ |
| 4. Claim for: _____ | In the amount of: \$ _____ |
| 5. Claim for: _____ | In the amount of: \$ _____ |

- (e.2) Where the claimant is required to execute a waiver and release in exchange for, or in order to induce payment of, a progress payment and the claimant asserts in the waiver it has, in fact, been paid the progress payment, the waiver and release shall follow the following form:

UNCONDITIONAL WAIVER AND RELEASE UPON "PROGRESS PAYMENT"

The undersigned has been paid and has received a progress payment in the sum of \$ _____ for labor, services, equipment, or material furnished to

(Your Customer)

on the job of: _____ located at: _____
(OWNER) (Job Description)

and does hereby release any mechanic's lien, stop notice, or bond right that the undersigned has on the above referenced job to the following extent. This release covers a progress payment for labor, services, equipment, or materials furnished to

_____ through: _____
(Your Customer) (Date)

only and does not cover any retentions retained before or after the release date; extras furnished before the release date for which payment has not been received; extras or items furnished after the release date. Rights based upon work performed or items furnished under a written change order which has been

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equipment, or material furnished on the job, except for disputed claims for additional work in the amount of \$ _____
Before any recipient of this document relies on it, the party should verify evidence of payment to the undersigned.

(Company Name) (Date)

By: _____
(Title)

Exclusions: Listing of Claims, of which Notice has been given:

- | | |
|---------------------|----------------------------|
| 1. Claim for: _____ | In the amount of: \$ _____ |
| 2. Claim for: _____ | In the amount of: \$ _____ |
| 3. Claim for: _____ | In the amount of: \$ _____ |
| 4. Claim for: _____ | In the amount of: \$ _____ |
| 5. Claim for: _____ | In the amount of: \$ _____ |

(e.4) Where the claimant is required to execute a waiver and release in exchange for, or in order to induce payment of, a final payment and the claimant asserts in the waiver it has, in fact, been paid the final payment, the waiver and release shall follow the following form:

UNCONDITIONAL WAIVER AND RELEASE UPON "FINAL PAYMENT"

The undersigned has been paid in full for all labor, services, equipment or material

furnished to: _____
(Your Customer)

on the job of: _____ located at: _____
(OWNER) (Job Description)

and does hereby waive and release any right to a mechanic's lien, stop notice, or any right against a labor and material bond on the job, except for disputed claims for extra work in the amount of \$ _____.

(Company Name) (Date)

By: _____
(Title)

Exclusions: Listing of Claims, of which Notice has been given:

- | | |
|---------------------|----------------------------|
| 1. Claim for: _____ | In the amount of: \$ _____ |
| 2. Claim for: _____ | In the amount of: \$ _____ |
| 3. Claim for: _____ | In the amount of: \$ _____ |
| 4. Claim for: _____ | In the amount of: \$ _____ |

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5. Claim for: _____ In the amount of: \$ _____

"NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM."

ARTICLE 73. INDEMNIFICATION

(a) Scope: Prime Contractor

(To the fullest extent permitted by law, CONTRACTOR shall defend, indemnify, and hold harmless the DISTRICT, ARCHITECT, ARCHITECT's consultants, the Project Inspector, the State of California, and their respective agents, employees, officers, volunteers, Boards of Trustees, members of the Boards of Trustees, and directors, from and against claims, damages, losses, and expenses (including, but not limited to attorneys' fees and costs including fees of consultants) arising out of or resulting from: performance of the Work (including, but not limited to) the CONTRACTOR's or its Subcontractors' use of the site; the CONTRACTOR's or its Subcontractors' construction of the Work or failure to construct the Work, or any portion thereof; the use, misuse, erection, maintenance, operation, or failure of any machinery or equipment, including but not limited to scaffolds, derricks, ladders, hoists, and rigging supports, whether or not such machinery or equipment was furnished, rented, or loaned by any of the indemnitees; or any act, omission, negligence, or willful misconduct of the CONTRACTOR or its Subcontractors or their respective agents, employees, material or equipment suppliers, invitees, or licensees but only to the extent caused in whole or in part by the acts or omissions of the CONTRACTOR, its Subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party identified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity, which would otherwise exist as to a party, person, or entity described in this paragraph.

(b) Scope: Subcontractors

To the fullest extent permitted by law, the Subcontractors shall defend, indemnify, and hold harmless the DISTRICT, CONSTRUCTION MANAGER, ARCHITECT, ARCHITECT's consultants, the Project Inspector, the State of California, and their respective agents, employees, officers, volunteers, Boards of Trustees, members of the Boards of Trustees, and directors, from and against claims, damages, losses, and expenses (including, but not limited to attorneys' fees and costs including fees of consultants) arising out of or resulting from: performance of the Work (including, but not limited to) the Subcontractors' use of the site; the Subcontractors' construction of the Work or failure to construct the Work, or any portion thereof; the use, misuse, erection, maintenance, operation, or failure of any machinery or equipment, including but not limited to scaffolds, derricks, ladders, hoists, and rigging supports, whether or not such machinery or equipment was furnished, rented, or loaned by any of the indemnitees; or any act, omission, negligence, or willful misconduct of the Subcontractors or their respective agents, employees, material or equipment suppliers, invitees, or licensees but only to the extent caused in whole or in part by the acts or

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omissions of the Subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party identified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity, which would otherwise exist as to a party, person, or entity described in this paragraph.

(c) Joint and Several Liability

In the event more than one Subcontractor is connected with an accident or occurrence covered by this indemnification, then all such Subcontractors shall be jointly and severally responsible to each of the indemnitees for indemnification, and the ultimate responsibility among such indemnifying Subcontractors for the loss and expense of any such indemnification shall be resolved without jeopardy to any indemnitee. The provisions of the indemnity provided for herein shall not be construed to indemnify any Indemnitee for its own negligence if not permitted by law or to eliminate or reduce any other indemnification or right which any indemnitee has by law or equity.

(d) No Limitation

The CONTRACTOR's and the Subcontractors' obligation to indemnify and defend the indemnitees hereunder shall include, without limitation, any and all claims, damages, and costs: for injury to persons and property (including loss of use), and sickness, disease or death of any person; for breach of any warranty, express or implied; for failure of the CONTRACTOR or a Subcontractor to comply with any applicable governmental law, rule, regulation, or other requirement; and for products installed in or used in connection with the Work.

ARTICLE 74. GOVERNING LAW AND VENUE

(a) The Contract Documents shall be governed by the law of the State of California. Venue for an actions concerning or arising out of the Contract Documents or the Work shall be in Superior Court of the State of California in and for the County of Fresno.

ARTICLE 75. TERMINATION BY DISTRICT FOR CONVENIENCE

(a) DISTRICT may, at any time, terminate the Contract for the DISTRICT'S convenience and without cause.

(b) Upon receipt of written notice from the DISTRICT of such termination for the DISTRICT's convenience, CONTRACTOR shall:

- (1) Cease operations as directed by the DISTRICT in the notice;
- (2) Take actions necessary, or that the DISTRICT may direct, for the protection and preservation of the Work; and
- (3) Except for work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

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- (c) In case of such termination for the DISTRICT's convenience, the CONTRACTOR shall be entitled to receive payment for work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the work not executed.

ARTICLE 76. MUTUAL TERMINATION FOR CONVENIENCE

- (a) The CONTRACTOR and the DISTRICT may mutually agree in writing to terminate the Contract for convenience. The CONTRACTOR shall receive payment for all Work performed to the date of termination.
- (b) The CONTRACTOR may terminate the Contract if the Work is stopped for a period of thirty (30) consecutive days through no act or fault of the CONTRACTOR, a Subcontractor, a Sub-subcontractor, their agents, or employees, or any other persons performing portions of the Work for whom the CONTRACTOR is contractually responsible, for only the following reasons:
 - (1) issuance of an order of a court or other public authority having jurisdiction which requires all work to be stopped;
 - (2) an act of government, such as a declaration of national emergency, making material unavailable which requires all work to be stopped;
 - (3) if repeated suspensions, delays, or interruptions by the DISTRICT constitute in the aggregate more than 100 percent (100%) of the total number of days scheduled for completion, or one hundred twenty (120) days in any three hundred sixty-five (365) day period, whichever is less.

If one of the above reasons exists, the CONTRACTOR may, upon written notice of seven (7) additional days to the DISTRICT, terminate the Contract and recover from the DISTRICT payment for work executed and for reasonable costs verified by the Architect with respect to materials, equipment, tools, construction equipment, and machinery, including reasonable overhead, profit, and damages.

If the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the CONTRACTOR, Subcontractor, Sub-Subcontractor, their agents or employees, or any other persons performing portions of the Work for whom the CONTRACTOR is contractually responsible because the DISTRICT has persistently failed to fulfill the DISTRICT's obligations under the Contract Documents with respect to matters essential to the progress of the Work, the CONTRACTOR may, upon written notice of seven (7) additional days to the DISTRICT, terminate the Contract and recover from the DISTRICT payment for work executed and for reasonable costs verified by the Architect with respect to materials, equipment, tools, construction equipment, and machinery, including reasonable overhead, profit, and damages.

- (c) The DISTRICT may terminate the Contract if the CONTRACTOR:
 - (1) refuses or fails to supply enough properly skilled workers or proper materials;
 - (2) fails to make payment to Subcontractors for materials or labor in accordance with Business and Professions Code section 7108.5;

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- (3) disregards laws, ordinances, rules, regulations, or orders of a public authority having jurisdiction; or
 - (4) otherwise is in substantial breach of a provision of the Contract Documents.
- (d) When any of the above reasons exist, the DISTRICT may, without prejudice to any other rights or remedies of the DISTRICT and after giving the CONTRACTOR and the CONTRACTOR's surety, if any, written notice of seven (7) days, terminate the Contract and may, subject to any prior rights of the surety:
- (1) take possession of the site and of all material, equipment, tools, and construction equipment, and machinery thereon owned by the CONTRACTOR;
 - (2) accept assignment of subcontracts; and
 - (3) complete the Work by whatever reasonable method the DISTRICT may deem expedient.

If the DISTRICT terminates the Contract for one of the reasons stated above, the CONTRACTOR shall not be entitled to receive further payment until the Work is complete.

- (e) If the unpaid balance of the Contract Sum exceeds costs of completing the Work, including compensation for professional services and expenses made necessary thereby, such excess shall be paid to the CONTRACTOR. If such costs exceed the unpaid balance, the CONTRACTOR shall pay the difference to the DISTRICT. The amount to be paid to the CONTRACTOR, or DISTRICT, as the case may be, shall be certified by the Architect upon application. This payment obligation shall survive completion of the Work.

SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Phased construction.
 - 4. Work under separate contracts.
 - 5. Access to site.
 - 6. Coordination with occupants.
 - 7. Work restrictions.
 - 8. Specification and drawing conventions.
 - 9. Miscellaneous provisions.
- B. Related Requirements:
 - 1. Section 01 50 00 - Temporary Facilities and Controls for limitations and procedures governing temporary use of Owner's facilities.

1.02 PROJECT INFORMATION

- A. Project Identification: District-Wide Access Control Upgrades, Package 2
 - 1. Project Location:
 - a. Virginia Boris Elementary
 - b. Clovis East High School
 - c. Fancher Creek Elementary
 - d. Freedom Elementary
 - e. Miramonte Elementary
 - f. Reagan Elementary
 - g. Reyburn Intermediate
 - h. Orazo Elementary
 - i. Temperence-Kutner Elementary
 - j. Young Elementary
- B. Owner: Clovis Unified School District
 - 1. Owner's Representative: Nick Mele
- C. Engineer: Leaf Engineers
 - 1. Project Manager: Brian Hood
- D. Project Web Site: A project Web site administered by Architect will be used for purposes of managing communication and documents during the construction stage.

1.03 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Installing new door hardware, and access control system and lockdown system throughout the campus.

- B. Type of Contract.
 - 1. Project will be constructed under one General Contractor deemed lowest responsible bidder.

1.04 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- C. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to as directed by District.
 - 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.05 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- D. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.06 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 01 60 00 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.02 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Substitutions should only occur prior to the bid. During construction only if there is a benefit to the owner or a hardship to the project has occurred. **NO SUBSTITUTIONS DURING SUBMITTALS.**

1.03 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use facsimile of form provided in Project Manual.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

- i. Research reports evidencing compliance with building code in effect for Project, from CBC 2013.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.04 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.01 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution will not adversely affect Contractor's construction schedule.
 - c. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - d. Requested substitution is compatible with other portions of the Work.

- e. Requested substitution has been coordinated with other portions of the Work.
 - f. Requested substitution provides specified warranty.
 - g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 30 days after the Notice to Proceed.
- 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Requested substitution will not adversely affect Contractor's construction schedule.
 - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - f. Requested substitution is compatible with other portions of the Work.
 - g. Requested substitution has been coordinated with other portions of the Work.
 - h. Requested substitution provides specified warranty.
 - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

SECTION 01 26 00
CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Section:
 - 1. Section 01 25 00: Substitution Procedures and Form.
- C. Minor Changes in the Work:
 - 1. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710 *Architect's Supplemental Instructions*.

1.3 PROPOSAL REQUESTS

- A. Owner Initiated Proposal Requests:
 - 1. Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications:
 - a. Work Change Proposal Requests issued by Architect are not instructions either to stop Work in progress or to execute the proposed change.
 - b. Within time specified in Proposal Request after receipt of Proposal Request, submit quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change:
 - 1) Include list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 2) Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 3) Include costs of labor and supervision directly attributable to the change.
 - 4) Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor Initiated Proposals:
 - 1. If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect:
 - a. Include statement outlining reasons for the change and the effect of the change on the Work. Provide complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - b. Include list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

- c. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
- d. Include costs of labor and supervision directly attributable to the change.
- e. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- f. Comply with requirements in Section 01 25 00: Substitution Procedures and Form if the proposed change requires substitution of one product or system for product or system specified.
- g. Proposal Request Form: Use AIA Document G709.

1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive:
 - 1. Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order:
 - a. Construction Change Directive contains a complete description of change in the Work and designates the method to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of Work required by the Construction Change Directive. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 01 26 00

SECTION 01 31 00

COORDINATION AND MEETINGS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Coordination.
- B. Field engineering.
- C. Preconstruction conference.
- D. Site mobilization conference.
- E. Progress meetings.
- F. Pre-installation conferences.
- G. Schedules.

1.02 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 0 and Division 1 Specification Sections, apply to work of this Section.

1.03 COORDINATION

- A. Coordinate scheduling, submittals, and Work of the various Sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later. Contractor shall require each subcontractor to inspect the substrate to receive the work and the conditions under which the work is to be performed. All unsatisfactory conditions shall be reported to the Contractor in writing. Do not proceed with work until unsatisfactory conditions have been accepted by subcontractor in writing. Proceeding with the work constitutes acceptance of the existing conditions.
- B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently for accessibility for other installations, for maintenance, and for repairs. Structural elements take precedence. Penetrations of structural elements require approval of the Architect. Rerouting of ductwork, piping, or conduit around structural, mechanical or electrical elements are not changes in the work and no claim for additional cost will be allowed.
- D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

- E. Contractor and each trade installing concealed work, to which access must be available to the Owner after completion, shall furnish appropriate access doors and frames per Section 08 31 00 of these Specifications for installation by the Contractor. Locations must be suitable for the access required, and approved by the Architect.
- F. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial Completion.
- G. After Owner occupancy of premises, and prior to final acceptance, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.04 PRECONSTRUCTION CONFERENCE

- A. Preconstruction conference will be scheduled to be held within 15 days after Notice to Proceed.
- B. Attendance Required: Owner, Inspector, Architect, Contractor, and major Subcontractors and their authorized representatives.
- C. Agenda:
 - 1a. Submission of Interim Progress Schedule with status to date.
 - 1b. Submission of "first issue" of the Construction Progress Schedule including sequence of critical work and "submittals for approval."
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Definition of and Distribution of Contract Documents.
 - 4. Review of key dates.
 - 5. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule, including sequence of critical work.
 - 6. Designation and definition of responsibilities of personnel representing the parties in Contract, School Administrative Staff and the Architect.
 - 7. Communications, Construction Change Authorizations (CCA), Requests for Information (RFI), Architects Supplemental Instructions (ASI), Proposal Requests (PR), Change Quotation Requests (CQR) and Change Orders (CO).
 - 8. Field Reports, Daily Log, Record Drawings, Pay Requests and D.S.A. Verified Reports (SSS6).
 - 9. Coordination and meetings, supervision of subcontractors, construction means and methods, testing, deferred approvals, temporary facilities, staging area, clean-up.
 - 10. Submittals, shop drawings, samples, mock-ups, contractors approval, substitutions.
 - 11. Rules and regulations governing performance of the work, including prevailing wage rates.
 - 12. Procedures for safety and first aid, security, quality control, stop notice procedure, housekeeping, behavior on school site, etc.

1.05 SITE MOBILIZATION CONFERENCE

- A. Architect will schedule a conference at the Project site prior to Contractor occupancy.
- B. Attendance Required: Owner, Inspector, Architect, Special Consultants, Contractor's Superintendent, and major Subcontractors and their authorized representatives.

C. Agenda:

1. Interim Progress Schedule with status and second issue of Initial Construction Progress Schedule for approval.
2. Use of premises by Owner and Contractor.
3. Owner's requirements.
4. Construction facilities and controls provided by Owner.
5. Temporary utilities provided by Owner.
6. Survey and building layout.
7. Security and housekeeping procedures.
8. Schedules.
9. Procedures for testing.
10. Procedures for maintaining record documents.
11. Requirements for start-up of equipment.
12. Inspection and acceptance of equipment put into service during construction period.

1.06 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at weekly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within 2 days to Architect, Owner, participants, and those affected by decisions made.
- C. Advise Architect 24 hours in advance of meeting regarding items to be added to agenda.
- D. Attendance Required: Contractor's Job superintendent, major Subcontractors and suppliers, Architect, Inspector and others as appropriate to agenda topics for each meeting.
- E. Agenda:
1. Review/revise as necessary and approve minutes of previous meetings.
 2. Review of Work progress since last meeting.
 3. Field observations, problems, and decisions.
 4. Identification of problems which impede planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on progress schedule and coordination.
 13. Items requiring proposal requests.
 14. Review of outstanding proposal requests.
 15. Other business relating to Work.
- F. Revisions to Minutes:
1. Unless published minutes are challenged in writing prior to/or at the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.

2. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.
3. Challenge to minutes shall be settled as priority portion of "old business" at the next regularly scheduled meeting.

1.07 PREINSTALLATION CONFERENCES

- A. When required in individual specification Section, convene a pre-installation conference at work site prior to commencing work of the Section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific Section.
- C. Notify Architect 4 days in advance of meeting date.
- D. Prepare agenda, preside at conference, record minutes, and distribute copies within 2 days after conference to participants, with 2 copies to Architect.
- E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

1.08 SCHEDULES

A. SCOPE

1. The work under this section consists of planning, scheduling and reporting procedures required in conjunction with the progress of the work. The Contractor shall develop a CPM network schedule demonstrating fulfillment of all contract requirements. The level of detail and submittal procedures are described hereinafter.
- 2a. The Interim or Preliminary Progress Schedule can be in bar chart format as described, but it will be based on CPM Schedule. The Interim Progress Schedule should be issued at the preconstruction meeting with status/updates being reported at least monthly or at each main meeting prior to the acceptance of the Final Progress Schedule.
- 2b. Failure to provide an updated schedule each month will cause the current payment request to be held up until an updated job schedule is submitted and verified as being current by the DISTRICT or its representative.
3. The CPM network schedule shall be updated a minimum of once a month at a joint meeting with the Owner, Architect, General Contractor and required subcontractors.
4. Development and maintenance of the construction schedule and supplementary information as detailed hereinafter is the responsibility of the Contractor. Failure of the Contractor to comply with the requirements of this Section shall be grounds for determination that no further progress payments are to be made until Contractor is in compliance.
5. The Contractor shall use the accepted schedule at all times in planning, coordinating and performing the work under this Contract including all activities of the subcontractors, vendors and suppliers.
6. Conventional Activity on Arrow CPM (I-J) technique shall be utilized. The full duration of the specified Contract time definitions of the terms used herein shall be as set forth in Associated General Contractors (AGC) publication, The Use of CPM in Construction, a Manual for General Contractor's and the Construction Industry, copyright 1976. However, the provisions of this Section shall govern

the scheduling, planning, coordination and performance of the work under this Contract.

7. The Final Progress Schedule shall be:
 - a. CPM format; Microsoft Project or Primavera P6.
 - b. A detailed CPM format outlined will be per Article 7 of the General Conditions.

B. Contractor's Representative

1. The Contractor shall designate, in writing, an Authorized representative in his firm who will represent the Contractor in the preparation of the CPM schedule and progress of the project. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the Construction Schedule requirements and such authority shall not be interrupted throughout the duration of the project without approval from the Owner.
2. Within 10 calendar days from execution of the Contract, the Contractor shall submit to the Architect/Owner demonstration of competence in use of CPM scheduling. In the event of failure to satisfy Architect/Owner of competence, the Contractor shall be required to employ a qualified CPM Consultant to be approved by the Architect and Owner. Cost of such CPM Consultant shall be borne by the Contractor at no additional cost to the Owner.

C. The Complete Project CPM Schedule

1. Within 20 working days after receipt of Notice to Proceed the Contractor shall submit the COMPLETE CPM schedule in accordance with all requirements of this section. The COMPLETE CPM shall reflect the Contractor's approach to scheduling the COMPLETE project, including all submittals, procurement and all required testing and operational requirements called for elsewhere in the documents.
2. The schedule shall reflect the term of the contract for the phase(s) as described in the bid documents. The DISTRICT will assist the CONTRACTOR in completing the project. The DISTRICT does not want the project until the end of the contract time and does not plan to take possession of the project until the end of the contract term.
3. The COMPLETE CPM schedule in its original form shall contain no contract changes or delays which may have occurred prior to the acceptance of the COMPLETE CPM schedule. These changes shall be entered at the first update or revision after the COMPLETE CPM schedule has been accepted.
4. Within 10 working days after receipt of the COMPLETE CPM schedule, the Owner and Architect will meet with the Contractor for joint review, correction or adjustment of the proposal schedule. Within 5 working days after the joint review, the Contractor shall if necessary revise and shall resubmit the COMPLETE CPM schedule to the Owner and Architect. The resubmission will be reviewed by the Owner and Architect, and, if found to be as previously agreed upon, will be accepted.
5. The accepted COMPLETE CPM schedule and the computer produced calendar-dated schedule generated there from shall constitute the project work schedule until subsequently reviewed in accordance with requirements of this Section.

D. CPM Schedule Requirements

1. CPM schedule shall be per Article 7 of the General Conditions and show the sequence and interdependence of activities required for complete performance of all items of work under the contract or portion thereof. In preparing the CPM schedule the Contractor shall:
 - a. Submit a clear, legible and accurate diagram. Activities related to specific physical areas of the project shall be grouped on the diagram for ease of understanding and simplification.
 - b. Submit first COMPLETE CPM schedule without I-J code numbers. All other submittals of updates or revisions shall be made on prints of CPM diagrams which have I-J numbers supplied by the Contractor.
 - c. Submit the following for all CPM schedules:
 1. Network diagrams drawn on 30 inch x 42 inch paper.
 2. 1 reproducible transparency of each diagram.
 3. 4 blueline prints of each diagram.
 4. 4 copies of the supporting data.
 - d. Conform the network diagram to the general format illustrated in the Legend.
 - e. Describe work activities in appropriate segments such that the work is readily identifiable for assessment of progress and competition. Activities labeled "start", "continue", or "completion" are not acceptable.
 - f. Include the following for each work activity:
 1. Concise description of the work represented by the activity.
 2. Performance responsibility or trade code.
 3. Performance location, or area code.
 4. Duration (in work days).
 - g. Schedule the project so that work activities in the CPM schedule shall be durations from 1 workday to 20 workdays with not more that 2 percent exceeding these limits, except as to non-construction activities (such as procurement of materials, deliver of equipment and concrete curing).
 - h. Include trade or materials restraints to indicate the movement of trades performing major work.
 - i. Include in the network program separate activities showing:
 1. Preparation and submittal of shop drawings.
 2. Owner and Architect review of shop drawings.
 3. Procurement and delivery of materials and equipment.
 4. Installation and testing of major equipment.
 5. Required delivery for all Owner supplied, Contractor installed items.
 - j. Include a legend showing:
 1. Each location or area code number and the place or location it refers to.
 2. Each responsibility or trade code number and the trade or entity it refers to.
2. The Contractor shall submit the following supporting data with the submittal of his original CPM construction schedule:

- a. The proposed number of working days per week.
- b. The holidays to be observed during the duration of the contract (by day, month and year).
- c. The planned number of shifts per day.
- d. The number of hours per shift.
- e. The planned usage of major construction equipment on the site, on a monthly basis.
- f. The average weekly manpower usage for each trade to be employed on the project.

Any changes to the above information shall be submitted with successive updates and revisions.

3. To the extent that the CPM schedule or any revised CPM schedule shows anything not jointly agreed upon, it shall be deemed to have not been accepted by the Owner and Architect. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date of each phase notwithstanding the Owner's and Architect's acceptance of the CPM schedule.

E. Progress Reporting, Updating and Revisions

1. On a date mutually agreed upon by the Architect/Owner and the Contractor, a job site progress meeting will be held each month at which time the CPM schedule will be reviewed and updated. Attendees of this meeting will include the Owner/Architect, the General Contractor and subcontractors if requested by the Owner and Architect. The Contractor shall have his copy of the Payment Request form and all other data required by the Contract Documents accurately filled in and completed prior to this meeting. Job progress and the CPM schedule will be reviewed to verify:
 - a. Payment due to the Contractor based on percentage complete of items in the submitted Payment Request form.
 - b. Logic, time and cost data for change order work that is to be incorporated into the CPM schedule or Payment Request form.
 - c. Status of as-built record drawings and as-built record specifications.
2. The Contractor shall submit an oral and written report as part of his monthly progress review and update.
 - a. Actual start and finish dates of activities completed during update period since the last accepted revision.
 - b. Logic and duration revisions proposed.
 - c. Explanation of all changes in logic or in the schedule work sequence, in durations, manpower and equipment.
 - d. Any changes to the supporting data submitted with the original complete project schedule or with any subsequent revision.
 - e. A description of critical path for the remainder of the project.
 - f. A description of problem areas.
 - g. Current and anticipated delaying factors and their estimated impact on performance of other activities and completion dates.
 - h. An explanation of corrective action taken or proposed.

3. Within 5 working days after each monthly update or revisions, the Contractor shall submit to the Owner/Architect 1 complete blueprints set and complete set of reproducible transparencies of the last accepted CPM schedule and diagram, each marked up in red showing all revisions and changes in accordance with the monthly review meeting.
4. Within 5 working days after receipt of notice from the Owner/Architect, the Contractor shall submit a reviewed CPM schedule for any of the following reasons.
 - a. When delay in completion of any activity or group activities indicates an overrun of the contract time or milestone requirement by 20 working days or 10 percent of the remaining duration, whichever is less.
 - b. Delays in submittals or deliveries or work stoppage are encountered which make replanning or rescheduling of the work necessary.
 - c. The schedule does not represent the actual prosecution and progress of the project as being performed in the field.
5. Acceptance of any reviewed CPM schedule and all supporting data is contingent upon compliance with all other paragraphs of this section and any other previous agreements or requirements with or by the Owner/Architect.
6. The cost of revisions to the CPM schedule resulting from Contract changes shall be included as part of General Administrative cost for the change in work.
7. The cost of revisions to the CPM schedule not resulting from authorized Contract changes shall be the responsibility of the Contractor.

F. Responsibility for Completion

1. The Contractor agrees that whenever it becomes apparent from the monthly progress review meeting or the current computer produced calendar-dated schedule that phasing or contract completion dates will not be met, he shall take some or all of the following action at no additional cost to the Owner:
 - a. Increase construction manpower in such quantities and crafts as will bring the progress of the work into conformance with all other requirements of this section.
 - b. Increase the number of working hours per shift, shifts per working day, work days per week, the amount of construction equipment or any combination of the foregoing, to bring the schedule and progress of the work into conformance with all requirements of the Contract Documents.
 - c. Reschedule the work under this Contract in conformance with all other Contract requirements to demonstrate completion of the Contract work within the contract time.

G. Adjustment of the Contract Time

1. The contract time will be adjusted only for causes specified in the Contract Documents. In the event the Contractor requests an adjustment of the Contract time, he shall furnish such justification, CPM data and supporting evidence as the Owner/Architect may deem necessary for a determination as to whether or not the Contractor is entitled to an adjustment of time under the provisions of the Contract. Submission of proof based on revised activity logic, durations and costs is obligatory with any request.

2. The Contractor shall submit each request for an adjustment in the Contract item to the Owner/Architect in accordance with all other requirements of the Contract Documents. The Contractor shall include, as part of each request:
 - a. Justification for the delay in narrative form.
 - b. A subnetwork showing all CPM logic revisions, duration changes, and cost changes, for the work in questions and its relationship to other activities on the CPM schedule.
3. The schedule must clearly display that the Contractor has used, in full all the float time available for the work involved in this request. Actual delays in activities which according to the computer produced calendar dated schedule, do not effect the critical path work in the CPM schedule, will not be the basis for an adjustment of the contract time.
4. The Owner/Architect's determination as to the adjustment of the Contract time shall be based upon the latest computer produced calendar dated schedule which has been accepted at the time of the alleged delay and all other relevant information. The Contractor shall submit with every request, an updated CPM schedule when the actual field progress of the work does not conform to the accepted computer produced calendar dated schedule in force at the time of the alleged delay. The CPM data if approved by the Architect shall be included in the next monthly updating of the schedule.
5. The Owner/Architect shall, within a reasonable time after receipt of a request for extension of the Contract time and supporting evidence, review the facts and shall advise the Contractor, in writing of this decision.
6. When the Owner/Architect has not yet made a final determination as to the adjustment of the Contract time, and the parties are unable to agree as to the amount of the adjustment to be reflected in the CPM schedule, the Contractors shall reflect that amount of time adjustment in the CPM schedule as the Owner/Architect may determine to be appropriate for interim purposes. It is understood and agreed that any such interim determination by the Owner/Architect not be binding and shall be made only for the purpose of continuing to schedule the work as to any adjustment of the Contract time. The Contractor shall revise the CPM schedule prepared thereafter in accordance with the final decision.

H. Color Schedule

1. Provided by Architect after all sample color submittals are received and products are approved for use on the project. Notify Architect of any critical items requiring color selection earlier than noted above.

1.09 CLEANING AND PROTECTION

- A. During handling and installation of work, each Contractor shall clean and protect work and adjoining work. Apply protective covering on installed work where required to protect from damage or deterioration.
- B. Clean and perform maintenance on work as necessary during the duration of construction. Adjust and lubricate operable components to ensure operability without damages.

END OF SECTION 01 31 00

COORDINATION AND MEETINGS

01 31 00 - 9

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Section 01 32 00 - Construction Progress Documentation for submitting schedules and reports, including Contractor's construction schedule.
 - 2. Section 01 78 23 - Operation and Maintenance Data for submitting operation and maintenance manuals.
 - 3. Section 01 78 39 - Project Record Documents for submitting record Drawings, record Specifications, and record Product Data.

1.02 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.03 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.04 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
 - 1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement, Agreement included in Project Manual.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Name of subcontractor.
 - f. Name of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06 10 00.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06 10 00.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
 4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
 5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.
 - a. Transmittal Form for Paper Submittals: Use AIA Document G810.
 - b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).

- 4) Source (From:).
 - 5) Name and address of Architect.
 - 6) Name of Contractor.
 - 7) Name of firm or entity that prepared submittal.
 - 8) Names of subcontractor, manufacturer, and supplier.
 - 9) Category and type of submittal.
 - 10) Submittal purpose and description.
 - 11) Specification Section number and title.
 - 12) Drawing number and detail references, as appropriate.
 - 13) Indication of full or partial submittal.
 - 14) Signature of transmitter.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations: Identify deviations from the Contract Documents on submittals.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.01 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
1. Action Submittals: G.C. to review and stamp submittal prior to submitting to Architect for General Conformance to the drawings and specifications. Submit 1 paper copies and 1 electronic copy of each submittal unless otherwise indicated. Architect will 1 electronic copy.
 2. Informational Submittals: Submit 1 paper copies and 1 electronic copy of each submittal unless otherwise indicated. Architect will not return copies.
 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before or concurrent with Samples.
 6. Submit Product Data in the following format:
 - a. 1 paper and 1 electronic copies of Product Data unless otherwise indicated. Architect will return 1 electronic copy.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
 3. Submit Shop Drawings in the following format:
 - a. 1 opaque (bond) copies of each submittal. Architect will 1 electronic copy.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit 2 full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit 2 sets of Samples. Architect will retain 1 Sample sets; remainder will be returned.
 - 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Submit product schedule in the following format:
 - a. One paper copies of product schedule or list unless otherwise indicated. Architect will return 1 electronic copy.
- F. Contractor's Construction Schedule: Comply with requirements specified in Section 01 32 00 - Construction Progress Documentation.
- G. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 77 00 - Closeout Procedures.
- H. Maintenance Data: Comply with requirements specified in Section 01 78 23 - Operation and Maintenance Data.
- I. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- J. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

- K. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- L. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- M. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- N. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- O. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- P. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- Q. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- R. Schedule of Tests and Inspections: Comply with requirements specified in Section 01 40 00 - Quality Requirements.
- S. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- T. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- U. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- V. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

PART 3 - EXECUTION

3.01 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 77 00 - Closeout Procedures.
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 REFERENCE

- A. Requirements in Addenda, Alternates, Conditions and Division 01 collectively apply to this work.
- B. Applicable Sections of Title 21 California Code of Regulations (CCR) also apply to all work.

1.02 DESCRIPTION

- A. Principal Work Items Are:
 - 1. Inspections required per this section.
- B. Related Work Specified Elsewhere:
 - 1. Work to be tested or inspected: Respective Sections.

1.03 TESTS AND INSPECTIONS – GENERAL

- A. General:
 - 1. Tests: 21 CCR 35.
 - 2. Inspection: 21 CCR 33.
- B. Contractor: Shall furnish labor, materials, and equipment and perform all operations required to take and prepare test samples, as required for inspection of all work.
- C. Payment of Tests and Inspection Costs:
 - 1. District: The District will pay all costs for required testing and inspection of both on-site and off-site work, except where specifically noted otherwise.
 - 2. Costs to be reimbursed to the District by Contractor:
 - a. Cost of testing materials, which fail to meet requirements of Contract Documents.
 - b. Overtime Costs: Whenever Contractor elects to work during hours other than normal work week and laboratory inspection is required, District will pay normal cost of laboratory inspection and Contractor shall pay that portion of laboratory inspection cost due to overtime.
 - c. Where specifically noted.

1.04 REQUIRED TESTS AND INSPECTIONS

- A. General: Tests and inspections are referenced to Specification Divisions and Sections.
- B. Building Materials:
 - 1. All building materials used in this project must conform to the testing and installation standards of the current C.B.C. as published by I.C.B.O.

1.05 TESTS

- A. The District will select an independent testing laboratory to conduct the tests. Selection of the material required to be tested shall be by the laboratory or the District's representative and not by the Contractor.
- B. The Contractor shall notify the District's representative a sufficient time in advance of the manufacture of material to be supplied by him under the Contract Documents, which must, by terms of the Contract, be tested in order that the District may arrange for the testing of same at the source of supply.
- C. Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required shall not be incorporated in the job.
- D. The District will select and pay testing laboratory costs for all tests and inspections, but may be reimbursed by the Contractor for such costs under the Contract Documents.

1.06 TESTS REPORTS

- A. One copy of all test reports shall be forwarded to the Division of the State Architect by the testing agency. Such reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of the California Building Code and any other regulating standards as required by law and with the approved Specifications. Test reports shall show the specified design strength. They shall also state definitely whether or not the material or materials tested comply with requirements.

1.07 VERIFICATION OF TEST REPORTS

- A. Each testing agency shall submit to the Division of the State Architect a verified report in duplicate covering all the tests which are required to be made by that agency during the progress of the project. Such report shall be furnished each time that work on the project is suspended, covering the tests up to that time and at the completion of the project, covering all tests.

1.08 INSPECTION BY THE DISTRICT

- A. The District and his representatives shall at all times have access for the purpose of inspection to all parts of the work and to the shops wherein the work is in preparation, and the Contractor shall at all times maintain proper facilities and provide safe access for each inspection.
- B. The District shall have the right to reject materials and workmanship which are defective, or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the District. If the Contractor does not correct such rejected work within a reasonable time, fixed by written notice, the District may correct same and charge the expense to the Contractor.
- C. Should it be considered necessary or advisable by the District at any time before final acceptance of the entire work to make any examination of the work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any respect due to the fault of the Contractor or his subcontractor, he shall defray all

expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the additional cost of labor and material necessarily involved in the examination and replacement shall be allowed the Contractor.

1.09 INSPECTOR – DISTRICT'S

- A. An Inspector employed by the District and approved by DSA in accordance with the requirements of the California Code of Regulations, Title 21 and 22, will be assigned to the work. His duties are as specifically defined in the California Code of Regulations.
- B. The work of construction in all stages of progress shall be subject to the personal continuous observation of the Inspector. He shall have free access to any or all parts of the work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Contractor from any obligation to fulfill this Contract.

END OF SECTION 01 40 00

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary Controls: Barriers, enclosures and fencing, water control, fire protection, exterior enclosures, protection of the Work, and security.
- B. Construction Facilities: Access roads, access provisions, parking, progress cleaning, field offices and sheds, pedestrian access.
- C. Nothing in this Section is intended to limit types and amounts of temporary work, utilities, controls or facilities required, and no omission from this Section will be recognized by Architect that such activity is not required for successful completion of the work and compliance with requirements of Contract Documents.

1.02 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 0 and Division 1 Specification Sections, apply to work of this Section.

1.03 TEMPORARY UTILITIES

- A. Temporary Sanitary Facilities
 - 1. Provide and maintain required facilities and enclosures. Comply with all minimum requirements of all public agencies having jurisdiction.

1.04 TEMPORARY CONTROLS

- A. Barriers
 - 1. Provide complete perimeter barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
 - 2. Provide barricades required by governing authorities.
 - 3. Protect non-owned vehicular traffic, stored materials, site and structures from damage.
- B. Fencing
 - 1. Construction: Commercial grade chain link fence.
 - 2. Provide 8 foot high fence around construction site; equip with vehicular and pedestrian gates with locks. Permanent fencing indicated on the Architectural Site Plan may be installed per indicated detailing after grading is approved in lieu of security fencing required.
- C. Water Control

1. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
2. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

D. Fire Protection

1. Volatile liquids shall be kept outside, in a well ventilated location, well removed from open heating or lighting devices, and brought inside in quantities only as needed.
2. Provide housekeeping of volatile liquids and other materials to eliminate spillage and accumulation of oil wastes and provide approved hazardous waste and safety containers.
3. Fire extinguishers:
 - a. Type A at low potential locations for fire.
 - b. Type ABC dry chemical at remaining locations.
 - c. Post warnings and quick instructions at each extinguisher location.
 - d. Instruct all personnel at time of their first arrival on proper use of extinguisher and other available site facilities

E. Exterior Enclosures

1. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual Specification Sections, and to prevent entry of unauthorized persons.
2. Provide access doors with self-closing hardware and locks.

F. Protection of Installed Work

1. Protect installed Work and provide special protection where specified in individual Specification Sections.
2. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.
3. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
4. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
5. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
6. Prohibit traffic from landscaped areas.

G. Security

1. Provide security and facilities to protect Work, and Owner's operations from unauthorized entry, vandalism, or theft.
2. Coordinate with Owner's security program.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 REMOVAL

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work.
- B. Remove all such temporary facilities and controls prior to final payment.
- C. Remove underground installations to a minimum depth of 2 feet. Recompact and grade site as indicated.

3.02 CONTRACTOR'S OPERATIONS

- A. During the course of construction, do not interfere with other buildings or portions of buildings which are to remain occupied. Maintain free and safe passage to and from other buildings which are occupied.
- B. Wherever existing services are to be unavoidably interrupted, consult with the Owner's Representative and schedule the interruptions in advance. Overtime work if required will be at no additional cost to the Owner.
- C. Attempt to do all jackhammer and other particularly noisy work after normal working hours and on weekends. In all cases, schedule this work in advance with the Owner's Representative. Minimize construction noise by adequate mufflers and other means.

3.03 DUST CONTROL

Control dust as necessary by watering and sprinkling. Also refer to Spec Section 01 57 23 SWPPP for requirements.

3.04 FIRE HAZARD AND BURNING

- A. The Contractor is hereby made aware of the fire hazard that exists at the site.
- B. Exercise all possible safety precautions to prevent fires and be responsible for any negligence of Subcontractors causing fires or creating fire hazards.
- C. No burning of any kind shall be permitted.

END OF SECTION 01 50 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 01 25 00 - Substitution Procedures for requests for substitutions.

1.02 DEFINITIONS

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

1.03 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.05 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. Refer to other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 01 77 00 - Closeout Procedures.

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 4. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 - Substitution Procedures for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.02 COMPARABLE PRODUCTS

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

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Salvaging non-hazardous construction waste.
 - 2. Recycling non-hazardous construction waste.
 - 3. Disposing of non-hazardous construction waste.

1.02 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery demolition of construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.

- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 01 78 23 - Operation and Maintenance Data for operation and maintenance manual requirements.
 - 2. Section 01 78 39 - Project Record Documents for submitting record Drawings, record Specifications, and record Product Data.
 - 3. Section 01 79 00 - Demonstration and Training for requirements for instructing Owner's personnel.

1.02 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.03 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.04 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.05 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
 5. Submit test/adjust/balance records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 79 00 - Demonstration and Training.
 6. Advise Owner of changeover in heat and other utilities.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 7 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.06 FINAL COMPLETION PROCEDURES

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
 1. Submit a final Application for Payment according to Section 00 72 00- General Conditions.
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect and Engineers will either proceed with inspection or notify Contractor of unfulfilled requirements.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.07 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.08 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.

- i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
- j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
- k. Remove labels that are not permanent.
- l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
- p. Leave Project clean and ready for occupancy.

3.02 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 77 00

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
1. Operation and maintenance documentation directory.
 2. Emergency manuals.
 3. Operation manuals for systems, subsystems, and equipment.
 4. Product maintenance manuals.
 5. Systems and equipment maintenance manuals.

1.02 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 2. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return two copies.
- C. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.01 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.
- B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- C. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for Architect.
 - 8. Name and contact information for Commissioning Authority.
 - 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.
- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- F. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- G. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.02 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.

3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.03 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.04 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.05 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.

- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.01 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original project record documents as part of operation and maintenance manuals.

- F. Comply with Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Requirements:
 - 1. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.02 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up record prints.
 - 2. Number of Copies: Submit copies of record Drawings as follows:
 - a. Final Submittal:
 - 1) Submit one set of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one set of file prints.
 - 3) Submit record digital data files and one set of plots.
 - 4) Certified as-builts similar to top with locations and elevations.
 - 5) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
- B. Record Specifications: Submit **one paper copy** and a scanned **PDF electronic file** of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit **one paper copy** and a scanned **PDF electronic file** of each submittal.

PART 2 - PRODUCTS

2.01 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it.
 - c. Record and check the markup before enclosing concealed installations.
 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
 2. Format: DWG Version, Microsoft Windows operating system.
 3. Format: Annotated PDF electronic file with comment function enabled.
 4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 5. Refer instances of uncertainty to Architect for resolution.
 6. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.02 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as [annotated PDF electronic file] [paper copy] [scanned PDF electronic file(s) of marked-up paper copy of Specifications].

2.03 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as [annotated PDF electronic file] [paper copy] [scanned PDF electronic file(s) of marked-up paper copy of Product Data].

2.04 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as [PDF electronic file] [paper copy] [scanned PDF electronic file(s) of marked-up miscellaneous record submittals].

PART 3 - EXECUTION

3.01 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good

order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 01 78 39

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and training video recordings.

1.02 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.03 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
 - 1. At completion of training, submit complete training manual(s) for Owner's use prepared and bound in format matching operation and maintenance manuals.

1.04 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 40 00 - Quality Requirements, experienced in operation and maintenance procedures and training.
- C. Preconstruction Meeting: Conduct conference at Project site to comply with requirements in Section 01 31 19.13 – Preconstruction Meeting. Review methods and procedures related to demonstration and training.

1.05 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

- B. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.01 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project record documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 - 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 - 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.

- c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
- a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
- a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
- a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
- a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 78 23 - Operation and Maintenance Data.

3.02 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
 - 2. Owner will furnish an instructor to describe Owner's operational philosophy.
 - 3. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

3.03 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video Recording Format: Provide high-quality color video recordings with menu navigation in format acceptable to Architect.
- C. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed.
- D. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

END OF SECTION 01 79 00

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

- A. Included: Provide all rough carpentry including all wood, nails, bolts, screws, framing, anchors and other rough hardware, and all other items needed for rough and finish carpentry in this work, but not specifically described in other sections of these specifications.
- B. Related Requirements:
 - 1. 03 30 00 - Cast In Place Concrete
 - 2. 06 20 00 - Finish Carpentry
 - 3. 06 40 00 - Architectural Woodwork

1.02 QUALITY ASSURANCE

- A. Codes and Standards: Comply with all pertinent provisions of the following codes and standards:
 - 1. Federal Specifications (Fed. Spec.)
 - a. FF-B-561C Bolts, (Screw), Lag
 - b. FF-B-588C(1) Bolt, Toggle: and Expansion Sleeve, Screw
 - c. FF-N-105B(3) Nails, Brads, Staples, Spikes, Wire, Cut and Wrought
 - d. FF-P-395B Pin, Drive, Guided; and Pin, Drive Powder Actuated
 - e. QQ-Z-32C Zinc Coated, Electro Deposited,
- B. Requirements for:
 - 1. U.S. Department of Commerce Product Standards:
 - a. PS 1-95 Construction and Industrial Plywood
 - b. PS 20-95 American Softwood Lumber Standard
 - 2. American Society for Testing and Materials (ASTM) Publications:
 - a. A307-91 Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
 - 3. American Wood Preservers' Association (AWPA) Publication:
 - a. C2-77 Standard for the Preservative Treatment of Lumber, Timber, Bridge Ties, and Mine Ties by Pressure Treatment
 - b. Standard for the Preservative Treatment of Plywood by Pressure Treatment
 - c. M4-77 Standard for the Care of Preservative Treated Wood Products
 - 4. American Forest & Paper Association (AFPA) Publications:

- a. 2005 Edition National Design Specification for Wood Construction and Supplement, Design Values for Wood Construction (as adopted by 2016 CBC).
 5. Redwood Inspection Service (RIS) Publication: Standard Specifications for Grades of California Redwood Lumber, April 1989 Edition.
 6. International Conference of Building Officials (ICBO) Publication & State of California:
 - a. California Building Code Standards, 2016 Edition
 - b. California Building Code, 2016 Edition
 7. West Coast Lumber Inspection Bureau (WCLIB) Publication: Standard Grading Rules for West Coast Lumber, No. 17, September 1, 1991 Edition (Rev. 1993)
 8. Western Wood Products Association (WWPA) Publication: Standard Grading Rules for Western Lumber, January 1, 1988.
 9. Title 24, Part 2, California Code of Regulations.
- C. Conflicting Requirements: In the event of conflict between pertinent codes and regulations and the requirements of the referenced standards or these specifications, the provisions of the more stringent shall govern.
- D. Qualifications of Personnel
1. Throughout progress of the work of this section, provide at least one person thoroughly familiar with the specification requirements, completely trained and experienced in the necessary skills, and who shall be present at the site and shall direct all work performed under this section.
 2. In actual installation of the work of this section, use adequate numbers of skilled workmen to ensure installation in accordance with the approved design and approved recommendations of the manufacturer of the material which is being installed or applied.

1.03 ACTION SUBMITTALS

- A. Retain only the most common and essential submittals and delete the rest.
- B. General: Make submittals in accordance with requirements of the General Conditions.
- C. Pneumatically-Driven Fasteners: Submit manufacturer's literature and installation instructions and one sample for review by the Architect.
- D. Framing Devices: Submit manufacturer's literature describing dimensions, materials and load carrying capacities for review by the Architect.
- E. Powder Actuated Fasteners: Submit manufacturer's literature describing installation instructions and load carrying capacity for review by the Architect.

1.04 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation, and to protect the work and materials of all other trades.
- B. Replacement: In the event of damage, immediately make all repairs and replacements necessary and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 GRADING AND MARKING

- A. Framing Lumber: Grade and grade-mark lumber in accordance with the following standards:
1. Douglas Fir-Larch: WCLIB or WWPA
 2. Redwood: RSI
 3. Exposed Structural Members: (Glu-Lam excepted) Manual of Millwork, Woodwork Institute of California, 1978, (MM-WIC-78).
 4. Exceptions: The provisions of WCLIB paragraph 2b and WWPA Section 5.6 which permits five percent (5%) of the material to fall below grade shall not apply to structural framing members. Structural framing members which have permissible grade characteristics or defects in such combination as to affect the serviceability of the member shall be rejected.
- B. Plywood: Legibly identified with appropriate grade trademark of American Plywood Association. Plywood shall conform to requirements of Product Standard PS1-95. The outer plies of sanded or finished plywood shall be not less than 95 percent of the thickness required at the time of lay-up prior to sanding. Do not incorporate improperly or illegibly identified plywood into the work.
- C. Preservative Treated Lumber and Plywood: Each piece of preservative treated lumber or plywood shall be labeled with a permanent mark indicating conformance with the applicable AWP standard. The label shall be an approved AWP quality mark or that of an ALSC (American Lumber Standards Committee) approved independent inspection agency that maintains continuing control, testing, and inspection over the quality of the product.

2.02 MATERIALS

- A. Lumber: Surfaced four sides, except when otherwise required. Sizes of surfacing of lumber shall conform to PS 20 for dressed sizes of yard and structural lumber. Sizes of framing lumber and board lumber indicated on the drawings and specified hereinafter are given by nominal sizes, unless otherwise specified or indicated. Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced. To facilitate approximate equilibrium with average local atmospheric moisture conditions, lumber shall have been air seasoned for not less than 30 days, however, moisture content shall not exceed 19% when incorporated into the work. Material shall be kiln-dried when specifically noted or when customary practice requires such procedure. The following designation of materials, i.e. 'JOISTS AND PLANKS', 'POSTS AND TIMBERS', etc., is not intended to limit the use to such elements of the structure. Except as otherwise noted on the drawings, dimension lumber and boards shall be graded as specified in the following subparagraphs. Boxed heart material will not be permitted.
1. Light Framing: General Use: Douglas Fir-Larch (2" to 4" thick, 2" to 6" wide), "No. 1" - LIGHT FRAMING, Paragraph 122b WCLIB or Section 40.11 WWPA.
 2. Joists and Planks: General Use: Douglas Fir-Larch (2" to 4" thick, 5" and wider), "NO. 1" STRUCTURAL JOISTS AND PLANKS, Paragraph 123b, WCLIB or

- Section 62.11 WWPA, except that 2X12's shall be No. 1 or better Douglas Fir-Larch.
3. Beams and Stringers: General Use: Douglas Fir-Larch (5" and thicker), "NO.1" BEAMS AND STRINGERS, Paragraph 130b, WCLIB or Section 70.11 WWPA.
 4. Posts and Timbers: General Use: Douglas Fir-Larch (4"x 4" and larger), NO.1" POSTS AND TIMBERS, Paragraph 131b, WCLIB or Section 80.00 WWPA.
 5. Boards: (Nominal sizes up to 1-1/2" thick, 2" and wider), "CONSTRUCTION" - BOARDS, 188b, WCLIB.
 6. Sill Plates: Bearing on concrete: Douglas Fir: minimum no. 2, pressure treated,. Use No. 1 Grade if 2"x 5" or larger.

B. Plywood

1. Provide plywood in accordance with following listed uses, unless otherwise designated on drawings.
2. Each panel shall bear the appropriate symbol marking as hereinafter specified, however panel thickness, identification index or specie group shall be as required on the drawings.

2.03 TYPICAL APPLICATIONS

A. Roof Sheathing not exposed to weather

B. Signs, mounting panels and similar uses.

C. Rough Hardware

1. Fasteners: Nails, spikes, screws, lag screws, nuts, bolts and similar fastenings of the types and sizes required by the drawings or as otherwise indicated, sufficient to properly draw and secure members in place. Fastenings exposed to weather, and at other conditions which subject the fastenings to corrosion, shall be copper, stainless steel, hot-dip galvanized or other non-corrosive metal as indicated on the drawings or required by the specifications. In the absence of specific requirements elsewhere, the fastenings shall be hot-dip galvanized at such locations. Fastenings, not indicated or specified, shall conform to the requirements of "National Design Specification for Stress Grade Lumber and its Fastenings", of the American Forest & Paper Association
 - a. Common Nails and Spikes: Flat head, diamond point, smooth, bright, Fed. Spec. FF-N-105B.
 - b. Mechanically deformed (Annular): Threaded or ring shank, Stronghold, Independent Nail and Packing Co.
 - c. Concrete Nails: Flat countersunk head, diamond point, quench hardened steel.
 - d. Finishing Nails: Brad head, diamond point, smooth or mechanically deformed, Fed. Spec. FF-N-105B.
 - e. Wood Screws: Fed. Spec. FF-S-111D.
 - f. Bolts and Nuts: Steel machine bolts and nuts, ASTM A-307.
 - g. Lag Screws: Fed. Spec. FF-B-561C.
 - h. Toggle Bolts: Fed. Spec. FF-B-588.
2. Pneumatically Driven Fasteners: Pneumatically driven staples, nails, or allied fasteners shall be used only when reviewed by the Architect. Submit samples and manufacturer's installation instructions.

3. Plywood Joint Clips: H-shaped fastening device, extruded aluminum alloy, 1-3/16" long, 3/4" wide, to accommodate thickness of plywood required by structural drawings, Plyclip, Plywood Research Foundation, Tacoma, Washington or approved equal.
 4. Framing Devices: Framing anchors, joist hangers and similar devices, Simpson Company, San Leandro, California or equivalent.
 5. Powder Actuated Fasteners: The fasteners shall have a dome shaped head, a .145 inch minimum diameter smooth shank and shall have sufficient length to penetrate the concrete 1-1/8 inches. Fasteners shall be installed with a 7/8 inch minimum diameter, 14 gage steel disc under the fastener head. Fasteners shall be manufactured from AISI 1062 or 1065 steel tempered to a minimum core hardness of 50 to 57 Rockwell hardness and shall possess the following minimum properties:
 - a. Tensile Strength = 270,000 psi
 - b. Shear Strength = 162,000 psi
 6. The fasteners shall be zinc plated with a minimum thickness of .003 inches then zinc chromate passivated. Fasteners shall meet requirements of Fed. Spec. FF-P-395B and QQ-Z-325C, Type II, Class 3.
- D. Adhesive: Contact adhesive, Fed. Spec. MMM-A-130B.
- E. Mortar Bedding of Sill Plates
1. Dry-Pack Mortar: One part Portland cement to 2 parts fine sand.
 2. Non-Shrink Mortar: Ready to use metallic aggregate product requiring only the addition of water at the job site. Product shall have the following characteristics.
 - a. Be capable of producing mortar bed material having no drying shrinkage or settlement at any age.
 - b. Compressive strength of mortar (2" cubes) shall be not less than 5,000 psi at age seven days and 7,500 psi at age 28 days.
- F. Bridging: Use one of the following:
1. Two crossed wood pieces, 2" x 3" minimum size.
 2. Full depth 2" thick solid blocking.
 3. Approved metal cross bridging.
- G. Other Materials: All other materials not specifically described, but required for complete and proper performance of the work as indicated on the drawings shall be new, suitable for intended use, and subject to review of the Architect.
- 2.04 RE-USE OF MATERIALS
- A. Wood products previously used on this project for forming or other temporary uses may be incorporated into the work as concealed blocking, backing, or similar miscellaneous uses when the material has been cleaned, is equivalent in all respects to new material and has been reviewed by the Architect.
- 2.05 PRESERVATIVE TREATMENT
- A. Pressure Treatment: Wood framing and plywood shall be pressure treated with a preservative when used under the following conditions:

1. Foundation plates or sills and sleepers on a concrete slab which is in direct contact with earth.
2. Sills which rest on concrete or masonry foundations.
3. Wood in direct contact with earth.
4. Posts or columns placed directly on concrete or masonry.
5. Wood nailers embedded in concrete or masonry.

B. Preservatives

1. Treatment shall conform to AWPB C-2 for lumber and AWPA C-9 for plywood.

C. Field Handling

1. Handle treated lumber and treat penetration damage in accordance with AWPA M-4.
2. When treating lumber or plywood with a water borne salt, dry to a moisture content of 19% or less after treatment.

2.06 FIRE RETARDANT TREATMENT

A. Fire Retardant Treatment: Wood framing and plywood (as indicated in drawings) shall be treated with Pyro-Guard as manufactured by Hoover Treated Wood Products or approved equal.

B. Requirements:

1. Treated wood shall have a flame spread rating of 25 or less (Class A) and a smoke developed index of 450 or less when tested in accordance with ASTM E 84, "Standard Test Method for Surface Burning Characteristics of Burning Materials"
2. Structural performance of fire retardant wood shall meet requirements of ASTM D5664 for lumber. ASTM D 5516 and ASTM D 6305 for plywood.
3. Treated wood used in structural applications shall be installed in accordance with ESR-1791.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 WORKMANSHIP

A. General: Carpentry work shall produce joints true, plumb, level, tight and well nailed, or fastened as indicated, with all members assembled in accordance with the drawings and with all pertinent codes and regulations.

3.03 FRAMING

A. General

1. In addition to all framing operations customary to fabrication and erection indicated on the drawings, install all backing required for work of other trades.
2. Do not shim sills, joists, short studs, trimmers, headers, lintels, or other framing components.
3. Set all horizontal or sloped members with crown up.
4. Do not splice individual framing members between supports.

B. Bearings

1. Make all bearing full unless otherwise indicated on the Drawings.
2. Finish all bearing surfaces on which structural members are to rest so as to provide positive and even support. Where framing members slope, cut or notch as required to provide uniform bearing surface.
3. Provide solid blocking for joists and rafters at all bearings.

C. Notching and Boring

1. Do not notch, bore, or cut members for pipes, ducts, conduits for other reasons except as shown on the Drawings or as specifically reviewed in advance by the Architect.

D. Blocking

1. Install all blocking required to support all items of finish and to cut-off all concealed draft openings, both vertical and horizontal.
2. Fire-blocking, when of wood, shall be two inches (nominal) in thickness by the full width of the opening being blocked.
3. Fire-block in the following specific locations:
 - a. In all stud walls at ceiling and floor levels.
 - b. In all stud walls, including stud spaces, so that the maximum dimension of each concealed space is not more than eight feet.
 - c. All other location where openings could afford passage for rodents or flames.

E. Bridging

1. Required Locations
 - a. In roof rafter and ceiling joist spans where the depth of the member is more than 8" deep and the spacing is 32" or less.
 - b. In floor joist spans where the member is more than 4" deep.
2. Spacing: The spacing between adjacent bridging members and between the bearing and a bridging member shall not exceed the following:

MEMBER	MAXIMUM SPACING
Roof Rafters	10'-0"
Ceiling Joists	10'-0"

3. Place bridging at midspan where only one set of bridging is required.
4. Installation: The lower ends of the cross bridging shall be driven up and nailed after the roof has been nailed.

- F. Sill Plates: Sill plates bearing on concrete or masonry shall be accurately aligned and leveled to the required elevation shall be completely bedded in 1/2 inch Portland cement mortar, except for non-bearing walls on true and level floors, so as to obtain a. Plates shall be secured with anchor bolts in accordance with the structural details. Washers shall be placed between the plate and the nut. Nuts shall be tightened immediately prior to becoming inaccessible.
- G. Stud Walls and Partitions
 - 1. Studs: Make all studs single length, unspliced.
 - 2. Corners and Intersections: Unless otherwise indicated on the Drawings, frame all corners and intersections with three or more studs and all required bearing for wall finish.
 - 3. Spacing: Unless otherwise noted, studs shall be spaced 16" o.c.

3.04 INSTALLATION OF WOOD PANEL SHEATHING

- A. General
 - 1. Protect all sheathing from moisture by use of waterproof coverings until the plywood has in turn been covered so as to be protected.
 - 2. Install in accordance with the requirements of the drawings and notations thereon.
 - 3. Allow 1/16 inch spacing at panel ends and 1/8 inch spacing at panel edges.
 - 4. Install sheathing joints to be centered on its supporting members.
- B. Roof Sheathing
 - 1. Install with face grain perpendicular to supports and continuous over two or more spans with end joints staggered.
 - 2. No panel less than 24 inches wide shall be used.
- C. Wall Sheathing
 - 1. Wall sheathing may be installed either horizontally or vertically. Stagger end joints.
 - 2. Wood blocking shall be provided at horizontal joints not otherwise supported.
 - 3. No panel less than 12 inches wide shall be used.

3.05 FASTENING

- A. Nailing
 - 1. Use only common wire nails or spikes of the size required.
 - 2. The use of machine nailing for plywood is subject to a satisfactory jobsite demonstration review by the Architect. Approval is subject to continued satisfactory performance. If requirements for nailhead penetration and nail edge distance requirements are not met, machine nailing shall be discontinued and the Architect and Structural Engineer notified of the non-conforming work.
 - 3. Nails in sheathing shall not be overdriven to the extent that nailheads penetrate the face ply more than the thickness of the nail head.
 - 4. The spacing center to center of nails shall not be less than the required penetration. Edge or end distances shall not be less than one-half the required penetration. The required penetration is 10 nail diameters for Douglas-Fir lumber.

5. Do all nailing without splitting the wood. Prebore to a diameter smaller than the nail when required to avoid splitting. Replace all split members.
 6. Prebored holes will be required for all nails 20d and larger; or where nailing tends to split the wood.
- B. Bolting: Drill holes 1/16 inches larger in diameter than the bolts being used. Drill straight and true from one side only. Bolts shall be provided with plate washers or malleable iron washers. All nuts shall be turned up and made tight at the time of installation and again immediately before being enclosed with other fixed materials or at the completion of the job. Edges of square washers used at exposed locations shall be installed level and plumb.
- C. Lag-Screws
1. The threaded portion of the lag screw shall be inserted into its lead hole by turning with a wrench.
 2. Soap or other lubricant shall be used on the screw or in the lead hole to facilitate insertion and prevent damage to the screw.
 3. The lead hole for the shank shall have the same diameter as the shank, and the same depth as the unthreaded shank.
 4. The lead hole for the threaded portion shall have a diameter equal to 60 to 75 percent (use larger figure for larger bolts) of the shank diameter and a length equal to at least the length of the threaded portion.
 5. Washers shall be provided under the heads of lag screws that bear on wood.
- D. Wood Screws:
1. The screw shall be inserted in the lead hole by turning with a screwdriver or other tool, not by driving with a hammer.
 2. The lead hole shall have a diameter of about 70 percent of the root diameter of the screw.
- E. Powder-Actuated Fasteners: When used for the attachment of non-bearing, non-shear wall plates to concrete, the fasteners shall not be installed closer than 3 inches from the edge of the concrete nor shall they be spaced closer than 4 inches. Do not use to install plates to the top of concrete curbs nor where a cold joint is made between the slab and foundation below. Install in accordance with low velocity powder actuated tools in accordance with manufacturer's recommendation

3.06 INSTALLATION OF BUILDING PAPER

- A. Install the specified building paper over all exterior framing members where plywood siding, masonry, or stucco is indicated to be installed, lapping all joints to prevent penetration of water into the stud spaces, and securely fastening the paper in place in accordance with the manufacturer's published recommendations, but in no case less than two inch horizontal laps and six inch vertical laps.

3.07 INSTALLATION OF WOOD DOORS

- A. Prior to installation of each door, carefully inspect the door and verify:
1. That the door furnished is the proper door for the opening, as scheduled and/or specified.
 2. That the door is in sound condition, unblemished, without warp, twist, bow or similar conditions.

- B. Trim doors as necessary to provide a uniform clearance between 1/8 inch at jambs and head, and a uniform clearance at the threshold or floor to properly clear the scheduled floor finish.
- C. For each door, verify the hardware type as described in the Door Schedule and verify that the hardware actually supplied is the hardware specified. Using only the specified hinges or butts, and proper equipment for the purpose, install the door into the opening with the following hinge and butt locations throughout the work:
 - 1. Top hinge or butt: The center of the hinge or butt not more than 11" below the top of the door;
 - 2. Bottom hinge or butt: The center of the hinge or butt not more than 13" above the finish floor;
 - 3. Intermediate hinge: Equal distant between the top and butt or pivot: bottom hinge, butt, or pivot.
 - 4. With fine sandpaper, working only in the direction of the grain of the wood, remove all rough edges resulting from door trimming and leave the installed door in a condition to receive finish.

3.08 INSTALLATION OF OTHER FINISH HARDWARE

- A. Locations: Using only the specified hardware, and the proper equipment for the purpose, install all other finish hardware in the following locations throughout the work.
 - 1. Armor plates: On the push side of single-acting doors & on both sides of double-acting doors;
 - 2. Combination push: Centered 40-5/16" above the finish floor.
 - 3. Door pulls on plates: Centered 40-5/16" above the finish floor.
 - 4. Door pulls, sectional: Centered 40-5/16" above the finish floor.
 - 5. Door-closing devices: Install and adjust in strict accordance with the templates and printed instructions supplied by the manufacturer of the devices. Insofar as practicable, doors opening to or from halls or corridors shall have the closer mounted on the room side of the door.
 - 6. Extension lever flush: In the edge of the door. Center to bolts: bolt fronts 12" from the bottom and 12" from top edge of the door.
 - 7. Flush cup pulls: Centered 40-5/16" above the finish floor;
 - 8. Key cabinet: Install where directed
 - 9. Kick plates: On single-acting doors: with kick plate on push side. On double- acting doors: with kick plate on both sides.
 - 10. Mortise Deadlock: Center 60" above the finish floor strike.
 - 11. Knob lock and knob: Center 40-5/16" above the finish latch strikes floor.
 - 12. Panic bolt cross bars: Align in horizontal position with top and bottom bolts and rods aligned vertically. Install the centerline of strike 40-5/16" above the finish floor.
 - 13. Push bars: Centered 42" above the finish floor.
 - 14. Push plates: Centered 48" above the finish floor.
 - 15. Other hardware items: Installed as directed.
- B. Anchoring: Anchor all components firmly into position for long life under hard use. Use only the anchoring devices furnished with the hardware item, unless otherwise specifically directed.
- C. Adjustment: Adjust all operating hardware to operate properly in accordance with manufacturer's published recommendations.

3.09 WOOD TRIM

- A. Install wood trim plumb, level and true. Scribe members accurately in place, maintaining full widths of members whenever possible.
- B. Apply trim in full lengths except when single lengths would be impracticable or impossible.
- C. Bevel abutting joints. Miter exterior angles; cope interior angles.
- D. Set all nails for putty.

3.10 CASEWORK

- A. Assemble cabinets and casework in correct locations and position. Securely join each section with concealed fastenings into a continuous unit.
- B. Assemble tops in one length with joints permitted only as shown on drawings. Attach securely to casework.
- C. Scribe casework and tops to abutting surfaces.

3.11 PANELING

- A. Select paneling for uniformity of grain with similar grains adjacent to each other. Install panels symmetrically on and in full widths where conditions permit; otherwise as directed by Architect.
 - 1. Prefinished Panels: Secure to backing with specified contact adhesive in accordance with procedures recommended by manufacturer.
 - 2. Job Finished Panels: Secure to supports with finish nails spaced 4 inches on center along the joint, 3/8 inches from edge, and 8 inches on center at intermediate bearings. Countersink nails for putty; sand resulting burr smooth. Bear panels edge on at least 1/3 the width of the support.

3.12 SPECIALTY ITEMS

- A. Install specialty items where the specified item does not include installation within the section in which the item is specified.
- B. Install in accordance with architectural details except when such details are modified by approved shop drawings or installation details. In the absence of such details, install in accordance with manufacturer's recommendations as submitted to and approved by the Architect.

3.13 CLEANING UP

- A. Keep the premises in a neat, safe and orderly condition at all times during execution of this portion of the work, free from accumulation of sawdust, cut-ends, and debris.
- B. Do not allow any wood debris in fill or backfill at any area within the site limits.

END OF SECTION 06 10 00

SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Louvers installed in hollow metal doors.
4. Light frames and glazing installed in hollow metal doors.

B. Related Sections:

1. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
2. Division 08 Section "Flush Wood Doors".
3. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
4. Division 08 Section "Door Hardware".
5. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.

12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.03 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.
- B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Shop Drawings: Include the following:
 1. Elevations of each door design.
 2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 4. Locations of reinforcement and preparations for hardware.
 5. Details of anchorages, joints, field splices, and connections.
 6. Details of accessories.
 7. Details of moldings, removable stops, and glazing.
 8. Details of conduit and preparations for power, signal, and control systems.
- D. Samples for Verification:
 1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.04 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".
- C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 (neutral pressure at 40" above sill) or UL 10C.
 1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.

2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.
 - a. Smoke "S" Label: Doors to bear "S" label and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
- D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.
- E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.
 1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.06 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.07 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.08 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
- B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Metal Manufacturing Co.
 2. CECO Door Products.
 3. Curries Company.
 4. Steelcraft.

2.02 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.
- C. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 38 percent.
- D. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.03 HOLLOW METAL DOORS

- A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.
- B. Exterior Doors: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Design: Flush panel.
 2. Core Construction: Manufacturer's standard polystyrene. Where indicated, provide doors fabricated as thermal-rated assemblies with a minimum R-value of 2.8 or better.
 3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
 4. Vertical Edges: Vertical edges to have the face sheets joined by a continuous weld extending the full height of the door. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
 5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.

6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
 7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- C. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Design: Flush panel.
 2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
 - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
 3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
 4. Vertical Edges: Vertical edges to have the face sheets joined by a continuous weld extending the full height of the door. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
 5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
 6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
 7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- D. Manufacturers Basis of Design:
1. CECO Door Products Honeycomb Core: Regent Series.
 2. CECO Door Products Polystyrene Core: Legion Series.
 3. CECO Door Products Polyurethane Core: Imperial Series.
 4. Curries Company Polystyrene Core: 707 Series.
 5. Curries Company Polyurethane Core: 707 Series.

2.04 HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.
1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
 2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
 3. Manufacturers Basis of Design:
 - a. Curries Company – M Series.
- C. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.

1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
3. Manufacturers Basis of Design:
 - a. Curries Company M Series.
- D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.
- E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.05 FRAME ANCHORS

- A. Jamb Anchors:
 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick. Use at Interior frames only.
 3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.
 4. Exterior Nailing Flanges: Provide a 16 Ga x 3" wide nailing flange on each side of exterior frames. Nailing flanges to be formed from the same 16 Ga metal as the remainder of the frame. As an option, nailing flanges can be attached to frames utilizing a continuous weld. Welds must be continuous along each side of frames. Hot-dip galvanize frames after nailing flanges are welded in place.
- B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.
- C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.06 LIGHT OPENINGS AND GLAZING

- A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.
- B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.
- C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.
- D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and

approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

2.07 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.08 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.
- C. Hollow Metal Doors:
 - 1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
 - 2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
 - 3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
 - 4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
- D. Hollow Metal Frames:
 - 1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.
 - 3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
 - 4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.

5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
 6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
 7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
 8. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 9. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Two anchors per jamb up to 60 inches high.
 - 2) Three anchors per jamb from 60 to 90 inches high.
 - 3) Four anchors per jamb from 90 to 120 inches high.
 - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
 - b. Interior Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Three anchors per jamb up to 60 inches high.
 - 2) Four anchors per jamb from 60 to 90 inches high.
 - 3) Five anchors per jamb from 90 to 96 inches high.
 - 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - 5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
 - c. Exterior Stud Wall Type:
 - 1) Provide integral nailing flange on all sides of frame per paragraph 2.05.
 - 2) Attach with No.12 x 2" screws at 12" o.c., (3) per side min.
 10. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".
- E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
 2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.

3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.09 STEEL FINISHES

- A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.
 1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.
- C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

3.03 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.

1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
 4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Standard Steel Doors:
 - a. Jamb and Head: 1/8 inch plus or minus 1/16 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.04 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 08 11 13

SECTION 08 41 13

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Exterior and interior storefront framing.
 - 2. Storefront framing for punched openings.
 - 3. Exterior manual-swing entrance doors and door-frame units.

1.02 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.03 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include plans, elevations, sections, full-size details, and attachments to other work.
 - 1. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
- C. Samples: For each exposed finish required.
- D. Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams.
- E. Delegated-Design Submittal: For aluminum-framed entrances and storefronts indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.04 INFORMATIONAL SUBMITTALS

- A. Energy Performance Certificates: NFRC-certified energy performance values from manufacturer.
- B. Product test reports.
- C. Field quality-control reports.
- D. Sample warranties.

1.05 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

- B. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated and accredited by IAS or ILAC Mutual Recognition Arrangement as complying with ISO/IEC 17025.
- C. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
 - 1. Do not change intended aesthetic effects, as judged solely by Construction Manager, except with Construction Manager's approval. If changes are proposed, submit comprehensive explanatory data to Construction Manager for review.

1.07 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.
- B. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer to design aluminum-framed entrances and storefronts.
- B. General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed entrances and storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
 - 1. Aluminum-framed entrances and storefronts shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
 - 2. Failure also includes the following:
 - a. Thermal stresses transferring to building structure.
 - b. Glass breakage.
 - c. Noise or vibration created by wind and thermal and structural movements.
 - d. Loosening or weakening of fasteners, attachments, and other components.
 - e. Failure of operating units.
- C. Structural Loads:
 - 1. Wind Loads: As indicated on Drawings.
 - 2. Other Design Loads: As indicated on Drawings.
- D. Deflection of Framing Members: At design wind pressure, as follows:
 - 1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane not exceeding 1/175 of the glass edge length for each individual glazing lite or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
 - 2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller.

- a. Operable Units: Provide a minimum 1/16-inch clearance between framing members and operable units.
3. Cantilever Deflection: Where framing members overhang an anchor point, as follows:
 - a. Perpendicular to Plane of Wall: No greater than 1/240 of clear span plus 1/4 inch for spans greater than 11 feet 8-1/4 inches or 1/175 times span, for spans less than 11 feet 8-1/4 inches.
- E. Structural: Test according to ASTM E 330 as follows:
 1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
 2. When tested at 150 percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
 3. Test Durations: As required by design wind velocity, but not less than 10 seconds.
- F. Air Infiltration: Test according to ASTM E 283 for infiltration as follows:
 1. Fixed Framing and Glass Area:
 - a. Maximum air leakage of 0.06 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft..
 2. Entrance Doors:
 - a. Pair of Doors: Maximum air leakage of 1.0 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft..
 - b. Single Doors: Maximum air leakage of 0.5 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft..
- G. Water Penetration under Static Pressure: Test according to ASTM E 331 as follows:
 1. No evidence of water penetration through fixed glazing and framing areas when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft..
- H. Energy Performance: Certify and label energy performance according to NFRC as follows:
 1. Thermal Transmittance (U-factor): Fixed glazing and framing areas shall have U-factor of not more than 0.45 Btu/sq. ft. x h x deg F as determined according to NFRC 100.
 2. Solar Heat Gain Coefficient: Fixed glazing and framing areas shall have a solar heat gain coefficient of no greater than 0.35 as determined according to NFRC 200.
 3. Condensation Resistance: Fixed glazing and framing areas shall have an NFRC-certified condensation resistance rating of no less than 15 as determined according to NFRC 500.
- I. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes:
 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.02 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Kawneer 2 inch by 4-1/2 inch mullion profile with 1 inch glass thickness in the Trifab VG 451 System or comparable product by one of the following:
 1. Arcadia, Inc.
 2. Oldcastle BuildingEnvelope.

2.03 FRAMING

- A. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
 1. Construction: Thermally broken.
 2. Glazing System: Retained mechanically with gaskets on four sides.

3. Glazing Plane: Center.
 4. Finish: Clear anodic finish.
 5. Fabrication Method: Field-fabricated stick system.
- B. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.
- C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
- D. Materials:
1. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - a. Sheet and Plate: ASTM B 209.
 - b. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
 - c. Extruded Structural Pipe and Tubes: ASTM B 429/B 429M.
 - d. Structural Profiles: ASTM B 308/B 308M.
 2. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM, and prepare surfaces according to applicable SSPC standard.
 - a. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
 - b. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
 - c. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.04 ENTRANCE DOOR SYSTEMS

- A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation.
1. Door Construction: 2- to 2-1/4-inch overall thickness, with minimum 0.125-inch- thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
 - a. Thermal Construction: High-performance plastic connectors separate aluminum members exposed to the exterior from members exposed to the interior.
 2. Door Design: Kawneer 500 Tuffline with 6" cross rail and 10" bottom rail, or equal.
 3. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.
 - a. Provide nonremovable glazing stops on outside of door.

2.05 ENTRANCE DOOR HARDWARE

- A. Entrance Door Hardware: Hardware not specified in this Section is specified in Section 087000 "Door Hardware." If there is a conflict use hardware called out in Section 087000.
- B. General: Provide entrance door hardware for each entrance door to comply with requirements in this Section.
1. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products complying with BHMA standard referenced.
 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
 3. Opening-Force Requirements:
 - a. Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf to set the door in motion.
 - b. Accessible Interior Doors: Not more than 5 lbf to fully open door.

- C. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of entrance door hardware are indicated in "Entrance Door Hardware Sets" Article. Products are identified by using entrance door hardware designations as follows:
 - 1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in "Entrance Door Hardware Sets" Article.
 - 2. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.
 - D. Continuous-Gear Hinges: Manufacturer's standard with stainless-steel bearings between knuckles, fabricated to full height of door and frame.
 - E. Panic Exit Devices: BHMA A156.3, Grade 1, listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
 - F. Cylinders: As specified in Section 08 70 00 "Hardware."
 - 1. Keying: Master key system. Permanently inscribe each key with a visual key control number and include notation "DO NOT DUPLICATE".
 - G. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum framing.
 - H. Operating Trim: BHMA A156.6.
 - I. Removable Mullions: BHMA A156.3, extruded aluminum.
 - 1. When used with panic exit devices, provide removable mullions listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305. Use only mullions that have been tested with exit devices to be used.
 - J. Closers: BHMA A156.4, Grade 1, with accessories required for a complete installation, sized as required by door size, exposure to weather, and anticipated frequency of use; adjustable to comply with field conditions and requirements for opening force.
 - K. Concealed Overhead Holders: BHMA A156.8, Grade 1.
 - L. Door Stops: BHMA A156.16, Grade 1, floor mounted, as appropriate for door location indicated, with integral rubber bumper.
 - M. Weather Stripping: Manufacturer's standard replaceable components.
 - N. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.
 - O. Silencers: BHMA A156.16, Grade 1.
 - P. Thresholds: BHMA A156.21, raised thresholds beveled with a slope of not more than 1:2, with maximum height of 1/2 inch.
- 2.06 GLAZING
- A. Glazing: Comply with Section 08 80 00 "Glazing."
 - B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.

- C. Glazing Sealants: As recommended by manufacturer.
- D. Sealants used inside the weatherproofing system shall have a VOC content of 250 g/L.
- E. Sealants used inside the weatherproofing system shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.07 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Fabricate components that, when assembled, have the following characteristics:
 - 1. Profiles that are sharp, straight, and free of defects or deformations.
 - 2. Accurately fitted joints with ends coped or mitered.
 - 3. Physical and thermal isolation of glazing from framing members.
 - 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 - 5. Provisions for field replacement of glazing from interior.
 - 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
- E. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
- F. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
- G. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.
- H. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.08 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General:
 - 1. Comply with manufacturer's written instructions.
 - 2. Do not install damaged components.
 - 3. Fit joints to produce hairline joints free of burrs and distortion.
 - 4. Rigidly secure nonmovement joints.

5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
6. Seal perimeter and other joints watertight unless otherwise indicated.

B. Metal Protection:

1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Set continuous sill members and flashing in full sealant bed as specified in Section 079200 "Joint Sealants" to produce weathertight installation.

D. Install components plumb and true in alignment with established lines and grades.

E. Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation.

F. Install glazing as specified in Section 08 80 00 "Glazing."

G. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.

1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

3.02 FIELD QUALITY CONTROL

A. Testing Agency: Construction Manager will engage a qualified testing agency to perform tests and inspections.

B. Field Quality-Control Testing: Perform the following test on representative areas of aluminum-framed entrances and storefronts.

1. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Construction Manager shall be tested according to AAMA 501.2 and shall not evidence water penetration.
 - a. Perform a minimum of two tests in areas as directed by Construction Manager.

C. Aluminum-framed entrances and storefronts will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 08 41 13

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions of Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.
- B. Related Sections: The following sections are noted as containing requirements that relate to this Section, but may not be limited to this listing.
 - 1. Division 08: Section - Hollow Metal Doors and Frames.
 - 2. Division 08: Section - Wood Doors.
 - 3. Division 08: Section - Aluminum-Framed Storefronts.
 - 4. Division 28: Section - Electronic Access Control.

1.3 REFERENCES

- A. 2022 California Building Code, CCR Title 24, Part 2
- B. BHMA - Builders' Hardware Manufacturers Association
- C. DHI - Door and Hardware Institute
- D. NFPA - National Fire Protection Association.
 - 1. NFPA 80 - Fire Doors and Other Opening Protectives
 - 2. NFPA 105 - Smoke and Draft Control Door Assemblies
- E. UL - Underwriters Laboratories.
 - 1. UL 10C - Fire Tests of Door Assemblies
 - 2. UL 305 - Panic Hardware

- F. WHI - Warnock Hersey Incorporated

- G. SDI - Steel Door Institute

1.4 SUBMITTALS & SUBSTITUTIONS

- A. General: Submit in accordance with Conditions of the Contract and Division 01 Specification sections.
- B. Submit product data (catalog cuts) including manufacturers' technical product information for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.

- C. Submit electronic PDF copies of schedule organized vertically into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening. Include following information:
1. Include a Cover Sheet with:
 - a. Job Name, location, telephone number.
 - b. Architects name, location and telephone number.
 - c. Contractors name, location, telephone number and job number.
 - d. Suppliers name, location, telephone number and job number.
 - e. Hardware consultant's name, location and telephone number.
 2. Job Index information included:
 - a. Numerical door number index including; door number, hardware heading number and page number.
 - b. Complete keying information (referred to DHI hand-book "Keying Systems and Nomenclature"). Provision should be made in the schedule to provide keying information when available; if it is not available at the time the preliminary schedule is submitted.
 - c. Manufacturers' names and abbreviations for all materials.
 - d. Explanation of abbreviations, symbols, and codes used in the schedule.
 - e. Mounting locations for hardware.
 - f. Clarification statements or questions.
 - g. Catalog cuts and manufacturer’s technical data and instructions.
 3. Vertical schedule format sample:

Heading Number 1 (Hardware group or set number - HW Group #1)					
(a) 1 Single - Door #101 - Corridor 101 to Exterior			(b) 90°	(c) RH	
(d) 3'-0" x 7'-0" x 1-3/4" - Wood Door x Hollow Metal Frame - 20 Minute					
(e) 1.	(f) 3 ea	(g) Hinges - (h) 5BB1 4.5 x 4.5 NRP	(i) 1/2 TMS	(j) 630	(k) IVE
2.	1 ea	Lockset - ND80P6D x RHO x RH x 10-025 x JTMS		626	SCH
3.	1 ea	Closer - 4040XP x EDA x TBSRT		689	LCN

- (a) Single or pair of doors with opening number and location.
- (b) Degree of opening.
- (c) Hand of door(s).
- (d) Door/frame dimensions and material; Label requirements, if any.
- (e) Hardware item line # (Optional).
- (f) Quantity.
- (g) Product description.
- (h) Product part number.
- (i) Fastenings and other pertinent information.
- (j) Hardware finish codes per ANSI/BHMA A156.18.
- (k) Manufacturer abbreviation.

- D. Make substitution requests in accordance with Division 01. Substitution requests must be made prior to bid date. Include product data and indicate benefit to the project. Furnish samples of any proposed substitution.
- E. Wiring Diagrams: Provide product data and wiring and riser diagrams for all electrical products listed in the Hardware Schedule portion of this section.
- F. Keying Schedule: Submit separate detailed schedule indicating clearly how the District's final instructions on keying of locks has been fulfilled.

- G. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- H. Furnish as-built/as-installed schedule with close-out documents, including keying schedule and transcript, wiring/riser diagrams, manufacturers' installation and adjustment and maintenance information.
- I. Fire Door Assembly Testing: Submit a written record of each fire door assembly to the District to be made available to the Authority Having Jurisdiction (AHJ) for future building inspections.

1.5 QUALITY ASSURANCE

- A. Obtain each type of hardware (latch and lock sets, hinges, closers, exit devices, etc.) from a single manufacturer.
- B. Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this project and that employs an experienced architectural hardware consultant (AHC) who is available to District, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.
 - 1. Responsible for detailing, scheduling and ordering of finish hardware.
 - 2. Meet with District to finalize keying requirements and to obtain final instructions in writing.
 - 3. Stock parts for products supplied and are capable of repairing and replacing hardware items found defective within warranty periods.
- C. Hardware Installer: Company specializing in the installation of commercial door hardware with five years documented experience.
- D. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and tested by UL or Warnock Hersey for given type/size opening and degree of label. Provide proper latching hardware, door closers, approved-bearing hinges and seals whether listed in the Hardware Schedule or not.
 - 1. Where emergency exit devices are required on fire-rated doors, (with supplementary marking on doors' UL labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL label on exit devices indicating "Fire Exit Hardware".
- E. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.
- F. Product packaging to be labelled in compliance with CA Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Coordinate delivery of packaged hardware items to the appropriate locations (shop or field) for installation.
- B. Hardware items shall be individually packaged in manufacturers' original containers, complete with proper fasteners. Clearly mark packages on outside to indicate contents and locations in hardware schedule and in work.
- C. Provide locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, etc.

- D. Contractor to inventory door hardware jointly with representatives of hardware supplier and hardware installer until each all are satisfied that count is correct.

1.7 WARRANTY

- A. Provide warranties of respective manufacturers' regular terms of sale from day of final acceptance as follows:
 - 1. Locksets: Ten (10) years.
 - 2. Exit devices: Ten (10) years.
 - 3. Closers: Thirty (30) years.
 - 4. Electronic: Three (3) years.
 - 5. All other hardware: Two (2) years.

1.8 MAINTENANCE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for District's continued adjustment, maintenance, and removal and replacement of door hardware.

1.9 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-installation conference at least one week prior to beginning work of this section.
- B. Attendance: Architect, Construction Manager, Contractor, Security Contractor, Hardware Supplier, Installer, Key District's Personnel, and Project Inspector.
- C. Agenda: Review hardware schedule, products, installation procedures and coordination required with related work. Review District's keying standards.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

<u>Item</u>	<u>Manufacturer</u>	<u>Acceptable Substitutes</u>
Hinges	Ives	Hager, Stanley, McKinney
Locks, Latches & Cylinders	Schlage	None – District Standard
Exit Devices	Von Duprin	None – District Standard
Closers	LCN	None – District Standard
Push, Pulls & Protection Plates	Ives	Trimco, BBW, DCI
Flush Bolts & Coordinators	Ives	Trimco, BBW, DCI
Door Stops	Ives	Trimco, BBW, DCI
Seals, Bottoms & Thresholds	Zero	Pemko, National Guard

2.2 MATERIALS

- A. Hinges:
 - 1. Provide hinges conforming to ANSI/BHMA A156.1.
 - 2. Hinges shall be sized in accordance with the following:
 - a. Height:
 - 1) Doors up to 42" wide: 4-1/2 inches.
 - 2) Doors 43" to 48" wide: 5 inches.
 - b. Width: Sufficient to clear frame and trim when door swings 180 degrees.
 - c. Number of Hinges: Provide 3 hinges per leaf to 7'-5" in height. Add one for each additional 2 feet in height.

3. Exterior out-swinging hinges shall be non-ferrous material and shall have stainless steel hinge pins. All doors to have non-rising pins.
 4. Furnish non-removable pins (NRP) at all exterior out-swing doors and interior key lock doors with reverse bevels.
 5. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
- B. Continuous Hinges:
1. Provide aluminum geared continuous hinges fabricated from 6063-T6 aluminum conforming to ANSI/BHMA A156.26, Grade 1.
 2. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
 3. Provide continuous hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
 4. Provide continuous hinges 1" shorter in length than nominal height of door, unless otherwise noted, with symmetrical hole pattern.
 5. Install continuous hinges with fasteners supplied by manufacturer.
- C. Heavy Duty Cylindrical Locks and Latches: Schlage "ND" Series as scheduled with "Rhodes" lever design.
1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3 hour fire doors.
 2. Provide cylindrical locksets exceeding the ANSI/BHMA A156.2 Grade 1 performance standards for strength, security, and durability in the categories below:
 - a. Abusive locked lever torque – minimum 3,100 inch-pounds without gaining access.
 - b. Offset lever pull – minimum 1,600 foot pounds without gaining access.
 - c. Vertical lever impact – minimum 100 impacts without gaining access.
 - d. Cycle Test – tested to minimum 16 million cycles with no visible lever sag; without the use of performance aids such as set screws or spacers.
 3. Cylinders: Refer to "KEYING" article, herein.
 4. Provide locks with standard 2-3/4" backset, unless noted otherwise, with 1/2" latch throw. Provide proper latch throw for UL listing at pairs.
 5. Provide locksets with separate solid steel anti-rotation thru-bolts, and no exposed screws.
 6. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
 7. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
 8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
 9. Provide levers with vandal resistant technology as scheduled for use at abusive applications.
 10. Provide wired electrified options as scheduled in the hardware sets.
 - a. 12 or 24 volt DC auto-detecting operating capability.
 - b. Selectable EL (fail safe) or EU (fail secure) operating mode via switch on chassis.
 - c. 0.23A (230mA) maximum current draw.
 - d. 0.01A (10mA) holding current.
 - e. Modular request to exit (RX) switch.
- D. Exit devices: Von Duprin as scheduled.
1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
 2. Provide certificate by independent testing laboratory that device has completed over 1,000,000 cycles and can still meet ANSI/BHMA A156.3 standards.
 3. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.

4. Provide exit devices cut to door width and height. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
6. Provide flush end caps for exit devices.
7. Exit devices shall comply with CBC Section 11B-404.2.7 and shall be mounted between 34" and 44" above the finished floor surface.
8. Provide exit devices UL certified to meet 5 lbs. maximum unlatching force requirements according to the CBC Section 11B-309.4.
9. Cylinders: Refer to "KEYING" article, herein.
10. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
11. Removable Mullions: Provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
12. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
14. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.
15. Provide exit devices with manufacturer's approved strikes.
16. Provide electrified options as scheduled.

E. Closers: LCN as scheduled.

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Provide certificate by independent testing laboratory that door closers have completed over 10,000,000 cycles and can still meet ANSI/BHMA A156.4 standards.
4. Cylinder Body: 1-1/2" diameter with 3/4" diameter double heat-treated pinion journal.
5. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120° F to -30° F.
6. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
7. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
8. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
9. Pressure Relief Valve (PRV) Technology: Not permitted.
10. Provide door closers powder coated to match balance of door hardware. Powder coating finish shall be certified to exceed 100 hours salt spray testing as described in ANSI/BHMA A156.4 and ASTM B117.
11. Provide special rust inhibitor (SRI) in highly corrosive areas, and where noted in hardware sets.
12. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

F. Flush Bolts & Dust Proof Strikes:

1. Automatic flush bolts shall be of the low operating force design.
2. Provide top bolt only model for interior doors where applicable and as permitted by testing procedures.
3. Provide dust proof strikes at openings using bottom bolts.
4. Manual flush bolts shall only be permitted on storage or mechanical openings, as scheduled.

- G. Door Stops:
1. Unless otherwise noted in hardware sets, provide wall type with appropriate fasteners. Where wall type cannot be used, provide floor type. If neither can be used, provide overhead type.
 2. Do not install floor stops more than four (4) inches from the face of the wall or partition (CBC Section 11B-307).
 3. Provide backing plate at wall framing behind wall type.
 4. Overhead stops shall be made of stainless steel and non-plastic mechanisms and finished metal end caps. Field-changeable hold-open, friction and stop-only functions. Stop-only function shall be provided at fire-rated openings.
- H. Protection Plates:
1. Provide kick, mop, and/or armor plates minimum of 0.050" thick, with four beveled edges. Furnish with sheet metal or wood screws, finished to match plates.
 2. Kick plates shall be sized 10" high and 2" less door width (LDW) at single doors and 10" high and 1" LDW at pairs or doors.
 3. Provide mop and armor plates with sizes as scheduled in hardware sets.
- I. Thresholds: As scheduled and per details.
1. Thresholds shall not exceed 1/2" in height, with a beveled surface of 1:2 maximum slope. Thresholds shall comply with CBC Section 11B-404.2.5.
 2. Set thresholds in a full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements in Division 07 "Thermal and Moisture Protection".
 3. Use 1/4" fasteners, red-head flat-head sleeve anchors (SS/FHSL).
- J. Seals: Provide silicone gasket at all rated and exterior doors.
1. Smoke & Draft Control Doors: Provide UL10C Classified gasketing that complies with NFPA 80 & NFPA 252 for use on "S" labeled Positive Pressure door assemblies.
- K. Silencers: Furnish silencers for interior hollow metal frames, 3 for single doors, 2 for pairs of doors. Omit where sound or light seals occurs, or for fire-resistive-rated door assemblies.

2.3 KEYING

- A. Furnish a Proprietary Schlage masterkey system as directed by the District lock shop. Key system to be designated and combined by the Schlage Master Key Department even if pinned by the Authorized Key Center, Authorized Security Center or a local authorized commercial dealer.
- B. A detailed keying schedule is to be prepared by the District lock shop and/or architect in consultation with a representative of Allegion or an Authorized Key Center or Authorized Security Center. Each keyed cylinder on every keyed lock is to be listed separately showing the door #, key group (in BHMA terminology), cylinder type, finish and location on the door.
- C. Furnish all cylinders in the Schlage conventional style except the exit device and removable mullion cylinders which shall be supplied in Schlage Full Size Interchangeable Core (FSIC) style. Pack change keys independently (PKI).
- D. Furnish construction keying for doors requiring locking during construction.
- E. Furnish all keys with visual key control.
1. Stamp key "Do Not Duplicate".
 2. Stamp (BHMA) key symbol on key.
 3. Stamp unique owner identifier from the key bow.

- F. Furnish mechanical keys as follows:
 - 1. Furnish 2 cut change keys for each different change key code.
 - 2. Furnish 1 uncut key blank for each change key code.
 - 3. Furnish 6 cut masterkeys for each different masterkey set.
 - 4. Furnish 3 uncut key blanks for each masterkey set.
 - 5. Furnish 2 cut control keys cut to the top masterkey for permanent I/C cylinders.
 - 6. Furnish 1 cut control key cut to each SKD combination.

2.4 FINISHES

- A. Generally to be satin chrome US26D (626 on bronze and 652 on steel) unless otherwise noted.
- B. Furnish push plates, pull plates and kick or armor plates in satin stainless steel US32D (630) unless otherwise noted.
- C. Door closers shall be powder-coated to match other hardware, unless otherwise noted.
- D. Aluminum items to be finished anodized aluminum except thresholds which can be furnished as standard mill finish.

2.5 FASTENERS

- A. Screws for strikes, face plates and similar items shall be flat head, countersunk type, provide machine screws for metal and standard wood screws for wood.
- B. Screws for butt hinges shall be flathead, countersunk, full-thread type.
- C. Fastening of closer bases or closer shoes to doors shall be by means of sex bolts and spray painted to match closer finish.
- D. Provide expansion anchors for attaching hardware items to concrete or masonry.
- E. All exposed fasteners shall have a phillips head.
- F. Finish of exposed screws to match surface finish of hardware or other adjacent work.
- G. All Exit Devices and Lock Protectors shall be fastened to the door by the means of sex bolts or through bolts.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that doors and frames are square and plumb and ready to receive work and dimensions are as instructed by the manufacturer.
- B. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions and requirements of DHI.
- B. Use the templates provided by hardware item manufacturer.

- C. Mounting heights for hardware shall be as recommended by DHI. Operating hardware shall be located between 34" and 44" above finish floor to comply with CBC Section 11B-404.2.7.
- D. Door Closers:
 - 1. Place door closers inside building, stairs, rooms, etc. Closers shall be installed to permit doors to swing 180 degrees or maximum allowable by conditions.
 - 2. Maximum effort to operate closers shall not exceed 5 lbs., such pull or push effort being applied at right angles to hinged doors.
 - 3. When fire doors are required, the maximum effort to operate the closer may be increased but shall not exceed 15 lbs. when specifically approved by fire marshal.
 - 4. All closers shall be adjusted to operate with the minimum amount of opening force and still close and latch the door. These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position.
 - 5. Compensating devices or automatic door operators may be utilized to meet the above standards.
 - 6. Per CBC Section 11B-404.2.8.1, doors shall take minimum of 5 seconds to move from an open position of 90 degrees to 12 degrees to the latch jamb.
- E. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units that are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- G. Set thresholds for exterior doors in full bed of butyl-rubber sealant.
- H. If hand of door is changed during construction, make necessary changes in hardware at no additional cost.
- I. Electronic Hardware:
 - 1. Hardware Installer shall coordinate with security contractor to route cable to connect electrified locks, panic hardware and fire exit hardware to power transfers or electric hinges at the time these items are installed so as to avoid disassembly and reinstallation of hardware.
 - 2. Hardware Installer shall also be present with the security contractor when the power is turned on for the testing of the electronic hardware applications. Installer shall make adjustments to solenoids, latches, vertical rods and closers to insure proper and secure operation.
 - 3. All wiring for electro-mechanical hardware mounted on the door shall be connected through the power transfer and terminated in the interface junction box specified for in the Electrical Section.
 - 4. Conductors shall be minimum 18 gage stranded, multicolored. A minimum 12 in. loop of conductors shall be coiled in the interface junction box. Each conductor shall be permanently marked with its function.
 - 5. If a power supply is specified in the hardware sets, all conductors shall be terminated in the power supply. Make all connections required for proper operation between the power supply and the electro-mechanical hardware. Provide the proper size conductors as specified in the manufacturer's technical documentation.

3.3 ADJUST AND CLEAN

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.

- B. Clean adjacent surface soiled by hardware installation.
- C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy, return to that work area and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- D. Instruct District's Personnel in proper adjustment and maintenance of hardware finishes, during the final adjustment of hardware.
- E. Continued Maintenance Service: Approximately six months after the completion of the project, the Contractor accompanied by the Architectural Hardware Consultant, shall return to the project and re-adjust every item of hardware to restore proper functions of doors and hardware. Consult with and instruct District's personnel in recommended additions to the maintenance procedures. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

3.4 HARDWARE LOCATIONS

- A. Conform to CCR, Title 24, Part 2; and ADA Standards; and the drawings for access-compliant positioning requirements for the disabled.

3.5 FIELD QUALITY CONTROL

- A. Contractor is responsible for providing the services of an Architectural Hardware Consultant (AHC) or a proprietary product technician to inspect installation and certify that hardware and its installation have been furnished and installed in accordance with manufacturers' instructions and as specified herein.

3.6 HARDWARE SCHEDULE

- A. The items listed in the following schedule shall conform to the requirements of the foregoing specifications.
- B. While the hardware schedule is intended to cover all doors, and other movable parts of the building, and establish type and standard of quality, the contractor is responsible for examining the Plans and Specifications and furnishing proper hardware for all openings whether listed or not. If there are any omissions in hardware groups in regard to regular doors they shall be called to the attention of the Architect prior to bid opening for instruction; otherwise, list will be considered Complete. No extras will be allowed for omissions.
- C. The Door Schedule on the Drawings indicates which hardware set is used with each door.

MANUFACTURERS ABBREVIATIONS

DON	=	Don-Jo	Filler Plates
IVE	=	Ives	Electric Hinges, Vandal Door Pulls
SCE	=	Schlage Electronics	Electronic Door Components
SCH	=	Schlage Lock	Locks, Latches & Cylinders
VON	=	Von Duprin	Exit Devices & Electric Strikes

GENERAL NOTES:

1. At all Double Doors, remove existing Door Pull or Dummy Trim from left-hand reverse (LHR) leaf. LHR leaf to be exit only.
2. Cover holes from removed hardware with plates and/or thru-bolts as required. Repaint doors and frames to match existing paint at areas exposed from removed hardware.
3. Adjust all door closers, as required, to ensure doors positively latch.

HW GROUP NO. 01

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	EXIT ONLY TRIM	990-EO	626	VON
2	EA	99 LD COVER PLATE	050589	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 02

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	EXIT ONLY TRIM	990-EO	626	VON
2	EA	98 LD COVER PLATE	050588	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 03

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	EXIT ONLY TRIM	990-EO	626	VON
2	EA	99 LD COVER PLATE	050589	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 04

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	EXIT DEVICE NL TRIM	990-NL-RV	626	VON
2	EA	99 LD COVER PLATE	050589	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 05

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	EXIT ONLY TRIM	990-EO	626	VON
1	EA	EXIT DEVICE NL TRIM	990-NL-RV	626	VON
2	EA	98 LD COVER PLATE	050588	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 06

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
2	EA	99 LD COVER PLATE	050589	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 07

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
2	EA	98 LD COVER PLATE	050588	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	CARD READER	BY WORK OF DIVISION 28		
		POWER SUPPLY	BY WORK OF DIVISION 28		
			RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 08

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	PANIC HARDWARE	LD-PA-AX-99-EO-990	626	VON
1	EA	ELEC PANIC HARDWARE	QELX-PA-AX-99-NL-CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER	BY WORK OF DIVISION 28		
		POWER SUPPLY	BY WORK OF DIVISION 28		
			RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 09

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	PANIC HARDWARE	LD-PA-AX-99-EO	626	VON
1	EA	ELEC PANIC HARDWARE	QELX-PA-AX-99-NL-CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER	BY WORK OF DIVISION 28		
		POWER SUPPLY	BY WORK OF DIVISION 28		
			RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 10

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	PANIC HARDWARE	LD-PA-AX-99-EO	626	VON
1	EA	ELEC PANIC HARDWARE	QELX-PA-AX-99-NL-OP-110MD- CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 11

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	ELEC FIRE EXIT HARDWARE	PA-AX-99-L-F-M996-06-FSE	626	VON
1	EA	RIM CYLINDER	RE-USE EXISTING	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 12

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	ELEC FIRE EXIT HARDWARE	PA-AX-99-L-F-M996-06-FSE	626	VON
1	EA	RIM CYLINDER	RE-USE EXISTING	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 13

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	99 LD COVER PLATE	050589	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	RX SWITCH KIT	050251-00		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 14

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	98 LD COVER PLATE	050588	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	RX SWITCH KIT	050251-00		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 15

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	99 LD COVER PLATE	050589	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	RX SWITCH KIT	050251-00		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 16

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 5 X 4.5 CON TW8	652	IVE
1	EA	99 LD COVER PLATE	050589	628	VON
1	EA	QEL CONVERSION KIT	040063		VON
1	EA	RX SWITCH KIT	050251-00		VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 17

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	ELEC PANIC HARDWARE	RX-QELX-PA-AX-99-NL-CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 18

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	ELEC PANIC HARDWARE	RX-QELX-PA-AX-99-NL-CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	LOCK FILLER PLATE	BF-161		DON
1	EA	LATCH FILLER PLATE	EF-161		DON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 19

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	ELEC PANIC HARDWARE	RX-QELX-PA-AX-99-NL-OP-110MD- CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 20

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	DOOR CORD	798C-18	626	SCE
1	EA	ELEC PANIC HARDWARE	RX-QELX-PA-AX-98-NL-OP-110MD- CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 21

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	ELECTRIC HINGE	5BB1HW 4.5 X 4.5 CON TW8	652	IVE
1	EA	ELEC PANIC HARDWARE	RX-QELX-PA-AX-99-NL-OP-CON	626	VON
1	EA	RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	VANDAL RESISTANT PULL	VR910 NL	630	IVE
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 22

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	STOREROOM LOCK	ND80LD RHO	626	SCH
1	EA	K-I-L CYLINDER	RE-USE EXISTING	626	SCH
1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC	630	VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

HW GROUP NO. 23

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	STOREROOM LOCK	L9080L 06L	626	SCH
1	EA	MORTISE CYLINDER	RE-USE EXISTING	626	SCH
1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC	630	VON
1	EA	CARD READER POWER SUPPLY	BY WORK OF DIVISION 28 BY WORK OF DIVISION 28 RE-USE BALANCE OF EXISTING HARDWARE		

END OF SECTION 08 71 00

CAMPUS	BUILDING	DOOR NUMBER	HARDWARE SET
BORIS ELEMENTARY	ADMIN / LIBRARY	VBE-BL-DR01	01
BORIS ELEMENTARY	ADMINISTRATION	VBE-BA-DR01	01
BORIS ELEMENTARY	ADMINISTRATION	VBE-BA-DR02	13
BORIS ELEMENTARY	BUILDING C	VBE-BC-DR01	01
BORIS ELEMENTARY	BUILDING C	VBE-BC-DR02	22
BORIS ELEMENTARY	BUILDING C	VBE-BC-DR03	22
BORIS ELEMENTARY	BUILDING C	VBE-BC-DR04	01
BORIS ELEMENTARY	BUILDING D	VBE-BD-DR01	01
BORIS ELEMENTARY	BUILDING D	VBE-BD-DR02	01
BORIS ELEMENTARY	BUILDING E	VBE-BE-DR01	01
BORIS ELEMENTARY	BUILDING E	VBE-BE-DR02	01
BORIS ELEMENTARY	MPR	VBE-BMPR-DR01	13
BORIS ELEMENTARY	MPR	VBE-BMPR-DR02	01
BORIS ELEMENTARY	MPR	VBE-BMPR-DR03	01
BORIS ELEMENTARY	MPR	VBE-BMPR-DR04	01
BORIS ELEMENTARY	MPR	VBE-BMPR-DR05	01
CLOVIS EAST HIGH SCHOOL	ADMINISTRATION	CEH-BA-DR01	09
CLOVIS EAST HIGH SCHOOL	ADMINISTRATION	CEH-BA-DR02	22
CLOVIS EAST HIGH SCHOOL	ADMINISTRATION	CEH-BA-DR03	22
CLOVIS EAST HIGH SCHOOL	BUILDING 500	CEH-B500-DR01	17
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR01	06
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR02	06
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR03	06
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR04	06
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR05	06
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR06	06
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR07	06
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR08	17
CLOVIS EAST HIGH SCHOOL	BUILDING 600	CEH-B600-DR09	06
CLOVIS EAST HIGH SCHOOL	BUILDING 700	CEH-B700-DR01	19
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR01	04
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR02	04
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR03	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR04	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR05	04
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR06	04
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR07	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR08	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR09	04
CLOVIS EAST HIGH SCHOOL	GYMNASIUM EAST	CEH-BGE-DR10	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR01	19
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR02	04
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR03	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR04	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR05	06

CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR06	06
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR07	04
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR08	17
CLOVIS EAST HIGH SCHOOL	GYMNASIUM WEST	CEH-BGW-DR09	04
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR01	21
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR02	21
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR03	22
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR04	21
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR05	21
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR06	21
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR07	21
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR08	21
CLOVIS EAST HIGH SCHOOL	LOCKER ROOM BLDG	CEH-BLR-DR09	21
CLOVIS EAST HIGH SCHOOL	MAINTENANCE BLDG	CEH-BMT-DR01	23
CLOVIS EAST HIGH SCHOOL	MEDIA CENTER	CEH-BM-DR01	11
CLOVIS EAST HIGH SCHOOL	MEDIA CENTER	CEH-BM-DR02	11
CLOVIS EAST HIGH SCHOOL	MEDIA CENTER	CEH-BM-DR03	11
CLOVIS EAST HIGH SCHOOL	MEDIA CENTER	CEH-BM-DR04	11
CLOVIS EAST HIGH SCHOOL	MEDIA CENTER	CEH-BM-DR05	12
CLOVIS EAST HIGH SCHOOL	MEDIA CENTER	CEH-BM-DR06	15
CLOVIS EAST HIGH SCHOOL	MPR	CEH-BMPR-DR01	10
CLOVIS EAST HIGH SCHOOL	MPR	CEH-BMPR-DR02	10
CLOVIS EAST HIGH SCHOOL	MPR	CEH-BMPR-DR03	10
CLOVIS EAST HIGH SCHOOL	MPR	CEH-BMPR-DR04	10
CLOVIS EAST HIGH SCHOOL	MPR	CEH-BMPR-DR05	10
FANCHER CREEK ELEMENTARY	ADMINISTRATION	FCC-BA-DR01	14
FANCHER CREEK ELEMENTARY	ADMINISTRATION	FCC-BA-DR02	22
FANCHER CREEK ELEMENTARY	LIBRARY	FCC-BL-DR01	23
FANCHER CREEK ELEMENTARY	LIBRARY	FCC-BL-DR02	17
FANCHER CREEK ELEMENTARY	MPR	FCC-BMPR-DR01	08
FANCHER CREEK ELEMENTARY	MPR	FCC-BMPR-DR02	08
FANCHER CREEK ELEMENTARY	MPR	FCC-BMPR-DR03	08
FANCHER CREEK ELEMENTARY	MPR	FCC-BMPR-DR04	08
FANCHER CREEK ELEMENTARY	MPR	FCC-BMPR-DR05	17
FREEDOM ELEMENTARY	ADMIN / LIBRARY	FRM-BL-DR01	03
FREEDOM ELEMENTARY	ADMINISTRATION	FRM-BA-DR01	03
FREEDOM ELEMENTARY	ADMINISTRATION	FRM-BA-DR02	15
FREEDOM ELEMENTARY	MPR	FRM-BMPR-DR01	03
FREEDOM ELEMENTARY	MPR	FRM-BMPR-DR02	18
FREEDOM ELEMENTARY	MPR	FRM-BMPR-DR03	18
FREEDOM ELEMENTARY	MPR	FRM-BMPR-DR04	03
FREEDOM ELEMENTARY	MPR	FRM-BMPR-DR05	03
MIRAMONTE ELEMENTARY	ADMIN / LIBRARY	MRM-BL-DR01	16
MIRAMONTE ELEMENTARY	ADMINISTRATION	MRM-BA-DR01	16
MIRAMONTE ELEMENTARY	MPR	MRM-MPR-DR01	01
MIRAMONTE ELEMENTARY	MPR	MRM-MPR-DR02	01

MIRAMONTE ELEMENTARY	MPR	MRM-MPR-DR03	01
MIRAMONTE ELEMENTARY	MPR	MRM-MPR-DR04	01
ORAZE ELEMENTARY	ADMIN / LIBRARY	ORZ-BL-DR01	13
ORAZE ELEMENTARY	ADMINISTRATION	ORZ-BA-DR01	01
ORAZE ELEMENTARY	CLASSROOM 'C'	ORZ-BC-DR01	01
ORAZE ELEMENTARY	CLASSROOM 'C'	ORZ-BC-DR02	22
ORAZE ELEMENTARY	CLASSROOM 'C'	ORZ-BC-DR03	22
ORAZE ELEMENTARY	CLASSROOM 'C'	ORZ-BC-DR04	01
ORAZE ELEMENTARY	CLASSROOM 'D'	ORZ-BD-DR01	01
ORAZE ELEMENTARY	CLASSROOM 'D'	ORZ-BD-DR02	22
ORAZE ELEMENTARY	CLASSROOM 'D'	ORZ-BD-DR03	22
ORAZE ELEMENTARY	CLASSROOM 'D'	ORZ-BD-DR04	01
ORAZE ELEMENTARY	CLASSROOM 'E'	ORZ-BE-DR01	01
ORAZE ELEMENTARY	CLASSROOM 'E'	ORZ-BE-DR02	22
ORAZE ELEMENTARY	CLASSROOM 'E'	ORZ-BE-DR03	22
ORAZE ELEMENTARY	CLASSROOM 'E'	ORZ-BE-DR04	01
ORAZE ELEMENTARY	MPR	ORZ-BMPR-DR01	01
ORAZE ELEMENTARY	MPR	ORZ-BMPR-DR02	01
ORAZE ELEMENTARY	MPR	ORZ-BMPR-DR03	01
ORAZE ELEMENTARY	MPR	ORZ-BMPR-DR04	01
REAGAN ELEMENTARY	ADMINISTRATION	RGN-BA-DR01	14
REAGAN ELEMENTARY	ADMINISTRATION	RGN-BA-DR02	14
REAGAN ELEMENTARY	CLASSROOM 'C1'	RGN-BC1-DR01	05
REAGAN ELEMENTARY	CLASSROOM 'C1'	RGN-BC1-DR02	02
REAGAN ELEMENTARY	CLASSROOM 'C2'	RGN-BC2-DR01	05
REAGAN ELEMENTARY	CLASSROOM 'C2'	RGN-BC2-DR02	02
REAGAN ELEMENTARY	CLASSROOM 'C3'	RGN-BC3-DR01	05
REAGAN ELEMENTARY	CLASSROOM 'C3'	RGN-BC3-DR02	02
REAGAN ELEMENTARY	MPR	RGN-BMPR-DR01	02
REAGAN ELEMENTARY	MPR	RGN-BMPR-DR02	02
REAGAN ELEMENTARY	MPR	RGN-BMPR-DR03	02
REAGAN ELEMENTARY	MPR	RGN-BMPR-DR04	02
REYBURN INTERMEDIATE	ADMINISTRATION	RIS-BA-DR01	08
REYBURN INTERMEDIATE	ADMINISTRATION	RIS-BA-DR02	17
REYBURN INTERMEDIATE	BUILDING 100E	RIS-B100E-DR01	17
REYBURN INTERMEDIATE	BUILDING 100W	RIS-B100W-DR01	17
REYBURN INTERMEDIATE	BUILDING 200	RIS-B200-DR01	17
REYBURN INTERMEDIATE	GYMNASIUM	RIS-BG-DR01	04
REYBURN INTERMEDIATE	GYMNASIUM	RIS-BG-DR02	06
REYBURN INTERMEDIATE	GYMNASIUM	RIS-BG-DR03	06
REYBURN INTERMEDIATE	GYMNASIUM	RIS-BG-DR04	06
REYBURN INTERMEDIATE	GYMNASIUM	RIS-BG-DR05	06
REYBURN INTERMEDIATE	GYMNASIUM	RIS-BG-DR06	04
REYBURN INTERMEDIATE	LOCKER ROOM BLDG	RIS-BLR-DR01	17
REYBURN INTERMEDIATE	LOCKER ROOM BLDG	RIS-BLR-DR02	17
REYBURN INTERMEDIATE	LOCKER ROOM BLDG	RIS-BLR-DR03	17

REYBURN INTERMEDIATE	LOCKER ROOM BLDG	RIS-BLR-DR04	17
REYBURN INTERMEDIATE	LOCKER ROOM BLDG	RIS-BLR-DR05	17
REYBURN INTERMEDIATE	LOCKER ROOM BLDG	RIS-BLR-DR06	17
REYBURN INTERMEDIATE	MPR	RIS-MPR-DR01	08
REYBURN INTERMEDIATE	MPR	RIS-MPR-DR02	08
REYBURN INTERMEDIATE	MPR	RIS-MPR-DR03	08
REYBURN INTERMEDIATE	MPR	RIS-MPR-DR04	08
TEMPERANCE KUTNER ES	ADMINISTRATION	TKE-BA-DR01	07
TEMPERANCE KUTNER ES	ADMINISTRATION	TKE-BA-DR02	14
TEMPERANCE KUTNER ES	LIBRARY	TKE-BL-DR01	20
TEMPERANCE KUTNER ES	LIBRARY	TKE-BL-DR02	20
TEMPERANCE KUTNER ES	MPR	TKE-BMPR-DR01	03
TEMPERANCE KUTNER ES	MPR	TKE-BMPR-DR02	03
YOUNG ELEMENTARY	ADMIN / LIBRARY	YNG-BL-DR01	01
YOUNG ELEMENTARY	ADMINISTRATION	YNG-BA-DR01	01
YOUNG ELEMENTARY	ADMINISTRATION	YNG-BA-DR02	13
YOUNG ELEMENTARY	BUILDING 'C'	YNG-BC-DR01	01
YOUNG ELEMENTARY	BUILDING 'C'	YNG-BC-DR02	22
YOUNG ELEMENTARY	BUILDING 'C'	YNG-BC-DR03	22
YOUNG ELEMENTARY	BUILDING 'C'	YNG-BC-DR04	01
YOUNG ELEMENTARY	BUILDING 'D'	YNG-BD-DR01	01
YOUNG ELEMENTARY	BUILDING 'D'	YNG-BD-DR02	01
YOUNG ELEMENTARY	BUILDING 'E'	YNG-BE-DR01	01
YOUNG ELEMENTARY	BUILDING 'E'	YNG-BE-DR02	01
YOUNG ELEMENTARY	MPR	YNG-BMPR-DR01	01
YOUNG ELEMENTARY	MPR	YNG-BMPR-DR02	01
YOUNG ELEMENTARY	MPR	YNG-BMPR-DR03	01
YOUNG ELEMENTARY	MPR	YNG-BMPR-DR04	01
YOUNG ELEMENTARY	MPR	YNG-BMPR-DR05	13

SECTION 08 80 00

GLASS AND GLAZING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included: Provide all glass and glazing, complete, in place, as shown on the Drawings, specified herein, or needed for a complete and proper installation.

1.02 QUALITY ASSURANCE

- A. Qualifications of Installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

- A. Product Data: Per Spec Section 01 33 00 - Submittals Procedures:
 - 1. Complete materials list showing all items proposed to be furnished and installed under this Section.
 - 2. Sufficient data to demonstrate that all such materials meet or exceed the specified requirements.

1.04 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the review by the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General:

1. Conform to Codes, and additional requirements stated herein.
 2. Glazing:
 - a. Title 24, Chapter 24.
 - b. Glazing; Glass: Title 24, Section 2403 of CBC 2016, which is based on Federal Specifications DD-G-00451 b, or ASTM F2248, whichever is more restrictive.
 - c. Safety Glazing: Title 24, Section 2406, of 2016 CBC (which is based on ANSI Z97.1-1975, and CPSC 16CFR Part 1201).
- B. Glass:
1. Acceptable Manufacturers: ASG Industries Company, Ford Glass Division, Globe-Amerada Glass Company, Libby-Owens-Ford and PPG Industries. Interior glazing is single glazed, exterior glazing is dual glazed insulating units. Thickness (unless otherwise noted): outer pane and either ¼” or ½” for inner pane (as noted).
 2. Types: Named manufacturer and product shall be a standard of quality:
 - a. Interior Glazing: Clear, transparent tempered or non-tempered glass ¼” thick.
 - b. Exterior Glazing: PPG Solarban z50 (3) Solargray tempered or non-tempered outside, clear tempered or non-tempered inside.
 - 1) Exterior doors: ¼” Solargray tempered
 - c. 45 minute glazing, Superlite 1 XL glazing by Safti-First
 - d. 60 minute interior glazing, Superlite 2 XL 60 glazing by Safti-First
 - e. At exterior glazing where a laminated safety glazing is called out use annealed or tempered as required by code.
- C. Glazing Accessories:
1. Conform to FGMA "Glazing Sealing Systems Manual" and/or printed recommendations by glass or plastic glazing materials manufacturer, whichever is most stringent, for:
 - a. Setting blocks
 - b. Spacers
 - c. Glazing Points
 - d. Glazing Compound
 - e. Sealant
 - f. Glazing Tape
- D. Aluminum Glazing Accessories: U.S. Aluminum products as a standard of quality.
1. Glazing Stops and H-Bars:
 - a. General:
 - 1) Material: Extruded aluminum, 6063-T5 alloy.
 - 2) Finish: Satin, anodized finish of specified color.
 - b. Glazing Stops: Arcadia No. 22-103, unless otherwise noted.

- 1) Glazing Beads: Roll-in, non-stretch, high-shore vinyl with a 60# test fiberglass cord concealed-in and bonded to the vinyl.
- 2) No exposed screws in stop system.

2.02 FACTORY FABRICATION OF GLASS

A. General:

1. Factory fabricate to exact sizes required for each opening for all tempered glass.
2. Fabricate per Code, FGMA, SIGMA and manufacturer's printed recommendations.
 - a. Provide Code required edge clearances.
 - b. Tinted glass to have clean-cut edges.

- ### B. Labeling: Label glazing per Title 24, Section 2402. Tempered glass to have permanently etched label. Labeling of safety glazers to be per 2016 CBC Section 2406.3.

PART 3 - EXECUTION

3.01 INSPECTION

- #### A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- #### A. Selection of Glass: Where plate glass is indicated or specified, float glass may be used.
- #### B. Distortion: Cut and install glass with the visible lines or waves running with the horizontal direction.
- #### C. Fix movable items securely, or in a closed and locked position, until glazing compound has thoroughly set.
- #### D. Glass Setting:
1. Items to be glazed shall be shop-glazed or field-glazed with glass of the quality and thickness specified.
 2. Prepare surrounds and glass, unless otherwise directed, in conformance with the details and general conditions governing glazing in the FGMA Glazing Manual.

3. Aluminum windows and wood doors may be glazed in conformance with one of the glazing methods described in the standards under which they are produced, except the face puttying method illustrated and described in CS 163 will not be permitted.
4. Use beads or stops furnished with the items to be glazed to secure the glass in place.

3.03 CLEANING

- A. Prior to acceptance of the work, thoroughly clean all glass and remove all labels, paint spots, putty, and other defacements.

END OF SECTION 08 80 00

SECTION 09 91 23

PAINTING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Interior and exterior paint and coatings systems including: paint and opaque finishes.
- B. Related Requirements:
 - 1. Section 09 29 00 - Gypsum Board
 - 2. Section 09 24 00 - Cement Plastering
 - 3. Section 08 11 13 – Hollow Metal Doors & Frames

1.02 REFERENCES

- A. SSPC-SP 1 - Solvent Cleaning
- B. SSPC-SP 2 - Hand Tool Cleaning
- C. SSPC-SP 3 - Power Tool Cleaning
- D. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete
- E. EPA-Method 24

1.03 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 - Submittal Procedures.
- B. Product Data: Manufacturer's data sheets on each paint and coating product should include:
 - 1. Product characteristics
 - 2. Surface preparation instructions and recommendations
 - 3. Primer requirements and finish specification
 - 4. Storage and handling requirements and recommendations
 - 5. Application methods
 - 6. Cautions
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.
- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.
- E. Submit Zero VOC and / or SCAQMD compliant products only.

1.04 MOCK-UP

- A. Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of painting on the project
1. Finish surfaces for verification of products, colors, & sheens
 2. Finish area designated by Architect
 3. Provide samples that designate prime & finish coats
 4. Do not proceed with remaining work until the Architect approves the mock-up samples

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
1. Product name, and type (description)
 2. Application & use instructions
 3. Surface preparation
 4. VOC content
 5. Environmental issues
 6. Batch date
 7. Color number
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.06 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Specified Manufacturer: Products of the Sherwin-Williams Company are the basis of design products specified to establish the level of quality.
1. Sherwin Williams
101 Prospect Avenue NW
Cleveland, OH 44115
Tel: (800) 321-8194
Fax: (216) 566-1392
www.sherwin-williams.com

- B. Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 25 00 – Substitution Procedures. When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.02 APPLICATION/SCOPE

- A. Use this article to define the scope of painting if not fully defined in a Finish Schedule or on the drawings. This article must be carefully edited to reflect the surfaces actually found on the project. In some cases, it may be enough to use the first paragraph that says, in effect, "paint everything" along with a list of items not to paint, without exhaustively defining all the different surfaces and items that must be painted.
- B. If the project involves repainting some but not all existing painted surfaces, be sure to indicate the extent of the repainting.
- C. The descriptions of each system can also be used to further refine the definition of what is to be painted, stained, or clear finished.
- D. Industrial Maintenance Coatings are coatings, including primers, sealers, undercoaters, intermediate coatings and topcoats, formulated for or applied to substrates, including floors that are exposed to one or more of the following extreme environmental conditions:
 - 1. Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;
 - 2. Acute or chronic exposure to corrosive, caustic or acidic agents, or similar chemicals, chemical fumes, chemical mixtures, or solutions;
 - 3. Repeated exposure to temperatures in excess of 250 degrees Fahrenheit;
 - 4. Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners, or scouring agents; or
 - 5. Exterior exposure of metal structures.
- E. Surfaces To Be Coated Include:
 - 1. Cement - Poured, Precast, Tilt-Up, Cast-In-Place, Cement Board
 - 2. Masonry - (CMU - Concrete, Split Face, Scored, Smooth, etc.)
 - 3. Metal – Ferrous and Non-Ferrous
 - 4. Metal - Galvanized
 - 5. Metal - (Ceilings-Structural Steel, Joists, Trusses, Beams, Partitions, Cabinets, Lockers, etc.)
 - 6. Wood - Walls, Doors, Trim, Cabinet Work, etc.
 - 7. Drywall
 - 8. Plaster / Gypsum Board - Walls, Ceilings

2.03 MATERIALS

- A. Paints and Coatings - General.
 - 1. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

2. For opaque finishes, tint each coat including primers and finishes with Zero VOC colorants (Zero VOC, less exempt solvents).
3. All ultra deep and vivid accent colors are to be tinted in Zero VOC finishes

B. Primers:

1. Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

2.04 ACCESSORIES

A. Coating Application Accessories:

1. Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

2.05 SPECIAL APPLICATIONS

A. Theater Audience Chamber

1. Apply Two-coat EnviroMetal Brushed Scuffmaster paint system per manufacturer's complete specifications. Provide all required accessories, primers and sealers for proper application.
2. Contractor to provide an in-field sample (9'x9' section) for Architects approval prior to complete application.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Do not begin application of coatings until substrates have been properly prepared. Notify Architect of unsatisfactory conditions before proceeding.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

3.02 PREPARATION

- A. The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
- B. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry 48 hours before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

- C. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50°F unless the specified product is designed for the marginal conditions.
- D. Methods
1. Aluminum:
 - a. Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.
 2. Block (Cinder and Concrete):
 - a. Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75°F. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.
 3. Concrete, SSPC-SP13 or NACE 6:
 - a. This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.
 4. Cement Composition Siding/Panels:
 - a. Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments.
 5. Copper and Stainless Steel:
 - a. Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP 2, Hand Tool Cleaning.
 6. Drywall—Interior:

- a. Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.
7. Galvanized Metal
 - a. Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP7 is necessary to remove these treatments.
 8. Plaster
 - a. Must be allowed to dry thoroughly for at least 30 days before painting, unless the products are designed to be used in high pH environments. Room must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.
 9. Steel: Structural, Plate, etc.
 - a. Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.
 10. Solvent Cleaning, SSPC-SP1
 - a. Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.
 11. Hand Tool Cleaning, SSPC-SP2
 - a. Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
 12. Power Tool Cleaning, SSPC-SP3
 - a. Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning,

remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.

13. Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4
 - a. A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP 1 or other agreed upon methods.
14. Water Blasting, NACE Standard RP-01-72
 - a. Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.
15. Vinyl Siding, Architectural Plastics, and Fiberglass
 - a. Clean thoroughly by scrubbing with a warm, soapy water solution. Rinse thoroughly. Do not paint vinyl siding with any color darker than the original color unless the product and colors are designed for such use. Painting with darker colors may cause siding to warp.
16. Wood
 - a. Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.
17. WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

3.03 INSTALLATION

- A. Apply all coatings and materials with manufacture specifications in mind. Mix all coatings according to manufacture recommendation. Do not thin paints and coatings unless directed according to manufacturer's instructions.
- B. Do not apply to wet or damp surfaces.
 1. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days.
 2. Test new concrete for moisture content.
- C. Apply coatings using methods recommended by manufacturer.

- D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness.
- F. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.
- G. Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to each coat.

3.04 PROTECTION

- A. A Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

3.05 SCHEDULE

- A. CONCRETE - (Walls & Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place)

1. Latex Systems

a. Semi-Gloss Finish

- 1) 1st Coat: S-W Loxon Primer, A24W300
- 2) 2nd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
- 3) 3rd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600

b. Eggshell Finish

- 1) 1st Coat: S-W Loxon Primer, A24W300
- 2) 2nd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
- 3) 3rd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600

c. Flat Finish

- 1) 1st Coat: S-W Loxon Primer, A24W300
- 2) 2nd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600
- 3) 3rd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600

2. High Performance Latex System (for greater abrasion resistance)

a. Semi-Gloss Finish

- 1) 1st Coat: S-W Loxon Primer, A24W300
- 2) 2nd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series

- 3) 3rd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series
3. High Performance Epoxy System (for greater chemical and abrasion resistance)
 - a. Gloss Finish
 - 1) 1st Coat: S-W Loxon Primer, A24W300
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - b. Eggshell Finish
 - 1) 1st Coat: S-W Loxon Primer, A24W300
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series
- B. MASONRY - (CMU - Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted)
 1. Latex Systems
 - a. Semi-Gloss Finish
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - b. Eggshell Finish
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 - c. Flat Finish
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600
 2. High Performance Latex System (for greater abrasion resistance)
 - a. Semi-Gloss Finish
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series

3. High Performance Epoxy System (for greater chemical and abrasion resistance)
 - a. Gloss Finish
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - b. Eggshell Finish
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series
- C. FERROUS and Non-Ferrous METAL - (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron, Structural Iron, Ferrous Metal)
 1. Latex Systems
 - a. Semi-Gloss Finish
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - b. Eggshell Finish
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 - c. Flat Finish
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600
 2. High Performance Latex System (for greater abrasion resistance)
 - a. Semi-Gloss Finish
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series

- 3) 3rd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series
3. High Performance Epoxy System (for greater chemical and abrasion resistance)
 - a. Gloss Finish
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - b. Eggshell Finish
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series
- D. WOOD- (Doors, Trim, Cabinet Work, Partitions, Frames)
1. Latex Systems
 - a. Semi-Gloss Finish
 - 1) LOW ODOR/ZERO VOC
 - 2) 1st Coat: S-W PrepRite ProBlock Latex Primer, B51 Series
 - 3) 2nd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - 4) 3rd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - b. Eggshell Finish
 - 1) LOW ODOR/ZERO VOC
 - 2) 1st Coat: S-W PrepRite ProBlock Latex Primer, B51 Series
 - 3) 2nd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 - 4) 3rd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 2. High Performance Latex System (for greater abrasion resistance)
 - a. Semi-Gloss Finish
 - 1) 1st Coat: S-W PrepRite ProBlock Latex Primer, B51 Series
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series
- E. DRYWALL (Walls, Ceilings, Gypsum Board, Wood Pulp Board, Plaster Board, etc.)

1. Latex Systems
 - a. Semi-Gloss Finish
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Primer B28 Series
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Semi-Gloss, B31-2600
 - b. Eggshell Finish
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Primer B28 Series
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Eggshell, B20-2600
 - c. Flat Finish
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Primer B28 Series
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Flat, B30-2600
2. High Performance Latex System (for greater abrasion resistance)
 - a. Semi-Gloss Finish
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Primer B28 Series
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic, B66-650 Series
3. High Performance Epoxy System (for greater chemical and abrasion resistance)
 - a. Gloss Finish
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Primer B28 Series
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Gloss, B73 Series
 - b. Eggshell Finish
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Primer B28 Series
 - 2) 2nd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series
 - 3) 3rd Coat: S-W Pro Industrial Zero VOC WB Epoxy Eggshell, B73 Series

3.06 EXTERIOR

A. CONCRETE - (Cementitious Siding, Flexboard, Transite Board, Shingles (Non-Roof), Common Brick, Stucco, Tilt-up, Precast, and Poured-in-place Cement)

1. Latex Systems

a. Gloss Finish

- 1) 1st Coat: S-W Loxon® Acrylic Masonry Primer, A24W8300 (8 mils wet, 3.2 mils dry)
- 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
- 3) 3rd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)

b. Semi-Gloss

- 1) 1st Coat: S-W Loxon® Acrylic Masonry Primer, A24W8300 (8 mils wet, 3.2 mils dry)
- 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
- 3) 3rd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)

c. Satin Finish

- 1) 1st Coat: S-W Loxon® Acrylic Masonry Primer, A24W8300 (8 mils wet, 3.2 mils dry)
- 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series
- 3) 3rd Coat: S-W A-100® Exterior Latex Satin, A82 Series
- 4) (4 mils wet, 1.4 mils dry per coat)

d. Flat Finish

- 1) 1st Coat: S-W Loxon® Acrylic Masonry Primer, A24W8300 (8 mils wet, 3.2 mils dry)
- 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series
- 3) 3rd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)

- 4) 1st Coat: S-W Sher-Crete® Flexible Concrete Waterproofer, A5 Series
- 5) 2nd Coat: S-W Sher-Crete® Flexible Concrete Waterproofer, A5 Series (14-18 mils wet per coat)

B. CONCRETE - (Cementitious Siding, Flexboard, Transite Board, Shingles (Non-Roof), Common Brick, Stucco, Tilt-up, Precast, and Poured-in-place Cement)

1. Elastomeric System (not including; cementitious siding, Flexboard, Transite board, shingles)

a. Flat Finish

- 1) Low VOC Topcoat
- 2) 1st Coat: S-W Loxon® Acrylic Masonry Primer, A24W8300 (8 mils wet, 3.2 mils dry)

- 3) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, A5-400 Series
- 4) 3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, A5-400 Series (16 mils wet, 7.5 mils dry per coat)

2. Textured Elastomeric System

a. Flat Finish

- 1) 1st Coat: S-W Loxon® Acrylic Masonry Primer, A24W8300 (8 mils wet, 3.2 mils dry)
- 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, A5-400 Series (16 mils wet, 7.5 mils dry per coat)
- 3) 3rd Coat: S-W ConFlex XL Textured Elastomeric High Build Coating, A5-800 (Fine, Medium, Extra Coarse) (20 mils wet, 9.4 mils dry per coat)

3. Textured & Smooth Systems

a. Textured Water Based Finish

- 1) Low VOC Topcoat
- 2) 1st Coat: S-W Loxon® XP Smooth, A24W400 Series (14-18 mils wet; 6.4-8.3 mils dry)
- 3) 2nd Coat: S-W Loxon® XP Fine Textured Waterproofing System, A24-750 Series (14-18 mils wet)

b. Smooth Water Based Finish

- 1) 1st Coat: S-W Loxon® XP, A24W400 Series (14-18 mils wet; 6.4-8.3 mils dry)
- 2) 2nd Coat: S-W Loxon® XP, A24W400 Series (14-18 mils wet; 6.4-8.3 mils dry) optional

C. MASONRY - (Concrete Masonry Units [CMU]- Cinder or Concrete Block)

1. Latex Systems

a. Gloss Finish

- 1) 1st Coat: S-W PrepRite® Block Filler, B25W25 (75-100 sq ft/gal)
- 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
- 3) 3rd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)

b. Semi-Gloss Finish

- 1) 1st Coat: S-W PrepRite® Block Filler, B25W25 (75-100 sq ft/gal)
- 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
- 3) 3rd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)

c. Satin Finish

- 1) 1st Coat: S-W PrepRite® Block Filler, B25W25 (75-100 sq ft/gal)
- 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series
- 3) 3rd Coat: S-W A-100® Exterior Latex Satin, A82 Series (4 mils wet, 1.4 mils dry per coat)

d. Flat Finish

- 1) 1st Coat: S-W PrepRite® Block Filler, B25W25 (75-100 sq ft/gal)
- 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series
- 3) 3rd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)

- 4) 1st Coat: S-W Sher-Crete® Flexible Concrete Waterproof, A5 Series
- 5) 2nd Coat: S-W Sher-Crete® Flexible Concrete Waterproof, A5 Series (14-18 mils wet per coat)

D. MASONRY - (Concrete Masonry Units [CMU]- Cinder or Concrete Block)

1. Elastomeric System

a. Flat Finish

- 1) 1st Coat: S-W Loxon® Block Surfacer, A24W200 (50-100 sq ft/gal)
- 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, A5-400 Series
- 3) 3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, A5-400 Series (16 mils wet, 7.5 mils dry per coat)

b. Alternate

- 1) 1st Coat: S-W Loxon® Block Surfacer, A24W200 (50-100 sq ft/gal)
- 2) 2nd Coat: S-W Sherlastic Elastomeric Coating, A5-Series
- 3) 3rd Coat: S-W Sherlastic Elastomeric Coating, A5-Series (14 mils wet, 6 mils dry per coat)

2. Textured Elastomeric System

a. Flat Finish

- 1) 1st Coat: S-W Loxon® Block Surfacer, A24W200 (50-100 sq ft/gal)
- 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, A5-400 Series (16 mils wet, 7.5 mils dry per coat)
- 3) 3rd Coat: S-W ConFlex XL Textured Elastomeric High Build Coating, A5-800 (Fine, Medium, Extra Coarse) (20 mils wet, 9.4 mils dry per coat)

3. Textured & Smooth Masonry Systems
 - a. Textured Water Based Finish b
 - 1) 1st Coat: S-W Loxon® XP Smooth, A24W400 Series (14-18 mils wet; 6.4-8.3 mils dry)
 - 2) 2nd Coat: S-W Loxon® XP Fine Textured Waterproofing System, A24-750 Series (14-18 mils wet)
 - b. Smooth Water Based Finish
 - 1) 1st Coat: S-W Loxon® XP, A24W400 Series (14-18 mils wet; 6.4-8.3 mils dry)
 - 2) 2nd Coat: S-W Loxon® XP, A24W400 Series (14-18 mils wet; 6.4-8.3 mils dry) optional
- E. MASONRY - (Concrete Masonry Units [CMU]- Cinder or Concrete Block)
 1. Stain System
 - a. Solid Color Waterborne Finish
 - 1) 1st Coat: S-W Vertical Concrete Stain, A31 Series
 - 2) 2nd Coat: S-W Vertical Concrete Stain, A31 Series (50-250 sq ft/ gal)
 2. Clear Water Repellant
 - a. Clear
 - 1) 1st Coat: S-W Loxon® 7% Siloxane Water Repellant, A10T7
 - 2) 2nd Coat: S-W Loxon® 7% Siloxane Water Repellant, A10T7 (50-200 sq ft/ gal)
- F. CONCRETE- (Concrete Floors, Patios, Porches, Steps & Platforms)
 1. Acrylic Water-Based Floor System
 - a. Satin Finish
 - 1) 1st Coat: S-W Porch & Floor Enamel, A32-200 Series
 - 2) 2nd Coat: S-W Porch & Floor Enamel, A32-200 Series (4mils wet; 1.4 mils dry per coat)
 - b. Low Luster Finish
 - 1) 1st Coat: S-W Sher-Crete® Flexible Concrete Waterproofer, A5 Series (14-18 mils wet)
 - 2) 2nd Coat: S-W H&C Concrete Stain Water Based Clear
 - 3) 3rd Coat: S-W H&C Concrete Stain Water Based Clear (50-250 sq ft/ gal)
 - c. Flat Finish

- 1) 1st Coat: S-W Sher-Crete® Flexible Concrete Waterproofer, A5 Series
 - 2) 2nd Coat: S-W Sher-Crete® Flexible Concrete Waterproofer, A5 Series (14-18 mils wet per coat)
 2. Solid Stain Finish
 - a. Low Luster Finish
 - 1) 1st Coat: S-W H&C Concrete Stain Solid Color Water Based
 - 2) 2nd Coat: S-W H&C Concrete Stain Solid Color Water Based (50-250 sq ft/ gal)
- G. METAL - (Aluminum, Galvanizing)
 1. Latex Systems
 - a. Gloss Finish
 - 1) 1st Coat: S-W A-100® Exterior Latex Gloss, A8 Series
 - 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)
 - b. Semi-Gloss Finish
 - 1) 1st Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
 - 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)
 - c. Satin Finish
 - 1) 1st Coat: S-W A-100® Exterior Latex Satin, A82 Series
 - 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series (4 mils wet, 1.4 mils dry per coat)
 - d. Flat Finish
 - 1) 1st Coat: S-W A-100® Exterior Latex Flat, A6 Series
 - 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)
- H. METAL - Ferrous (Structural Iron & Steel, Tanks, Water Towers, Sashes, Trim, Conductors, Doors, Ducts, Vents, (Non-Galvanized))
 1. Latex Systems
 - a. Gloss Finish
 - 1) 1st Coat: S-W Pro Industrial® Pro-Cryl® Primer, B66-310 Series (2-4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)

- b. Semi-Gloss Finish
 - 1) 1st Coat: S-W Pro Industrial® Pro-Cryl® Primer, B66-310 Series (2-4 mils dry)
 - 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
 - 3) 3rd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)

- I. WOOD (Siding, Trim, Shutters, Sashes, Hardboard-Bare/Primed)
 - 1. Latex Systems
 - a. Gloss Finish
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)

 - b. Semi-Gloss
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
 - 3) 3rd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)

 - c. Satin Finish
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Satin, A82 Series (4 mils wet, 1.4 mils dry per coat)

 - d. Flat Finish
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)

- J. WOOD (Siding, Trim, Shutters, Sashes, Hardboard-Bare/Primed)
 - 1. Latex Systems
 - a. Gloss Finish

- 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)
- b. Semi-Gloss
- 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
 - 3) 3rd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)
- c. Satin Finish
- 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Satin, A82 Series (4 mils wet, 1.4 mils dry per coat)
- d. Flat Finish
- 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)
- K. WOOD (Siding, Trim, Shutters, Sashes, Hardboard-Bare/Primed)
1. Stain - Water Reducible Systems
 - a. Solid Color
 - 1) 1st Coat: S-W WoodScapes® Solid Color Stain, A15 Series
 - 2) 2nd Coat: S-W WoodScapes® Solid Color Stain, A15 Series (200-400 sq ft/gal)
 - b. Semi-Transparent
 - 1) 1st Coat: S-W WoodScapes® Semi-Transparent Stain, A15T5
 - 2) 2nd Coat: S-W WoodScapes® Semi-Transparent Stain, A15T5 (200-350 sq ft/gal)
- L. Wood Decks, Exterior (including pressure treated lumber)
1. Stain - Solid Color Acrylic Latex
 - a. Satin Finish

- 1) 1st Coat:S-W DeckScapes® Acrylic Solid Color Deck Stain, A15-150 Series
 - 2) 2nd Coat: S-W DeckScapes® Acrylic Solid Color Deck Stain, A15-150 Series (300-500 sq ft/gal)
2. Semi-Transparent-Waterborne Alkyd/Acrylic
- a. Flat Finish
- 1) 1st Coat:S-W DeckScapes® Ext. Waterborne Deck Stain, A15T15 Series
 - 2) 2nd Coat: S-W DeckScapes® Ext. Waterborne Deck Stain, A15T15 Series
 - 3) (100-300 sq ft/ per gal)
3. Toner Sealer System
- a. Semi-Transparent Stain
- 1) 1st Coat:S-W DeckScapes® Ext. Waterborne Toner, A15T452
 - 2) 2nd Coat: S-W DeckScapes® Ext. Waterborne Toner, A15T452 (150-300 sq ft/gal)
- M. ARCHITECTURAL PVC, PLASTIC, FIBERGLASS (due to the variety of substrate, check for compatibility)
1. Latex Systems
- a. Gloss Finish
- 1) 1st Coat:S-W PrepRite® ProBlock® Latex Primer, B51 Series (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)
- b. Semi-Gloss
- 1) 1st Coat:S-W PrepRite® ProBlock® Latex Primer, B51 Series (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
 - 3) 3rd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)
- c. Satin Finish
- 1) 1st Coat:S-W PrepRite® ProBlock® Latex Primer, B51 Series (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Satin, A82 Series (4 mils wet, 1.4 mils dry per coat)

- d. Flat Finish
 - 1) 1st Coat: S-W PrepRite® ProBlock® Latex Primer, B51 Series (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)
- N. DRYWALL (Gypsum Board, Exterior Drywall)
- 1. Latex Systems
 - a. Gloss Finish
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)
 - b. Semi-Gloss
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
 - 3) 3rd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)
 - c. Satin Finish
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Satin, A82 Series (4 mils wet, 1.4 mils dry per coat)
 - d. Flat Finish
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry)
 - 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series
 - 3) 3rd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)
- O. VINYL SIDING*, EIFS, SYNTHETIC STUCCO
- 1. Latex Systems
 - a. Gloss Finish

- 1) 1st Coat:S-W A-100® Exterior Latex Gloss, A8 Series
 - 2) 2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series (4 mils wet, 1.3 mils dry per coat)
- b. Semi-Gloss
- 1) 1st Coat:S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series
 - 2) 2nd Coat: S-W Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series (4 mils wet, 1.5 mils dry per coat)
- c. Satin Finish
- 1) 1st Coat:S-W A-100® Exterior Latex Satin, A82 Series
 - 2) 2nd Coat: S-W A-100® Exterior Latex Satin, A82 Series (4 mils wet, 1.4 mils dry per coat)
- d. Flat Finish
- 1) 1st Coat:S-W A-100® Exterior Latex Flat, A6 Series
 - 2) 2nd Coat: S-W A-100® Exterior Latex Flat, A6 Series (4 mils wet, 1.4 mils dry per coat)

END OF SECTION 09 91 23

GENERAL ELECTRICAL

SECTION 26 00 00

PART 1: GENERAL

1.01 RELATED DOCUMENTS:

Contact requirements of the foregoing GENERAL CONDITIONS, SPECIAL CONDITIONS and supplements thereto and all requirements of Division 1 of these Specifications shall form a part of this Section with the same force and effect as though repeated herein. The provisions of this Section shall apply to all of the following Sections of Division 26 of these Specifications. All applicable portions of the work under Division 26 shall conform fully to all provisions of all other Division 26 Sections along with other Sections of these Specifications including, but not limited to the following:

GENERAL - STANDARDS, SUBMITTAL, SHOP DRAWINGS, REVIEW, INSPECTION
Section

EXCAVATING, FILLING, GRADING Section

CONCRETE Section

1.02 SUMMARY OF WORK:

The Contractor shall provide all materials, tools, equipment, labor and services necessary to furnish and install complete working electrical systems as shown on the plans and described within these Specification. All systems, at project completion and before final acceptance, shall be demonstrated to have a complete and working functional operation. The work includes but is not specifically limited to items indicated on Drawings and specified herein.

1.03 DESCRIPTION AND INSTALLATION OF SYSTEMS:

- A. The electrical drawings are diagrammatic and do not necessarily show all raceway, wiring, number or types of fittings, offsets, bends or exact locations of items required by the electrical systems. Items not shown or indicated which are clearly necessary for proper operation, payment or installation of systems shown shall be provided at no-increase in contract price.
- B. The exact routing of systems and location of devices and equipment shall be governed by coordination with other trades, structural and architectural conditions. The Architect or Electrical Engineer reserves the right, at no increase in contract price, to make reasonable changes in location of electrical equipment or wiring systems; so as to coordinate with other systems, group them into orderly relationships, or to increase their utility. Contractor shall verify requirements in this regard prior to roughing in.
- C. Install electrical work in cooperation with other trades and make proper provisions to avoid interferences and coordinate with structural and architectural features, in a manner approved by the Architect or Electrical Engineer. All changes caused by neglect to make such provisions shall be at Contractor's expense. Provide offsets and special fittings, as required to facilitate installation of the work.
- D. When a particular product or type of product is specified with a manufacturer's designation, the latest published specifications, installation, and construction information of the manufacturer shall constitute the minimum acceptable standard. Any substitutions shall be

made in accordance with SUBSTITUTIONS.

1.04 RELATED DOCUMENTS:

A. Codes and Regulations: All electrical equipment and material and its installation shall conform to the current requirements of the following authorities and Section 01-080 CODES AND STANDARDS:

1. Occupational Safety and Health Act (OSHA).
2. 2016 California Electric Code (CEC),
3. California Code of Regulations (CCR).
 - a. Title 8, Safety Orders.
 - b. Title 19, Fire and Panic Safety Standard.
 - c. Title 24, Part 1, Administrative Regulations.
4. California Fire Code (Based on the Uniform Fire Code by NFPA).
5. California Building Code (Based on the International Building Code, now incorporated as CCR-T24, Part 2.)

NOTE: Where two or more codes or designs conflict, the most restrictive shall apply. Nothing in these Plans and Specifications shall be construed to permit work not conforming to applicable codes.

B. Tests and Standards: The tests, standards, or recommended procedures of the following agencies shall relate to all parts of these Specifications and shall be considered a minimum:

1. American National Standards Institute (ANSI).
2. Underwriters Laboratories, Inc. (UL).
3. National Electric Manufacturers Association (NEMA).
4. Electrical Testing Laboratories (ETL).
5. National Fire Protection Association (NFPA).
6. Insulated Power Cable Engineers Association (IPCEA).
7. Institute of Electrical and Electronic Engineers (IEEE).
8. Illumination Engineering Society (IES).

1.05 EXAMINATION OF DOCUMENTS AND SITE:

Before submitting a proposal, each bidder shall carefully examine the electrical, mechanical, architectural, and structural drawings and specifications. He shall also visit the site and fully inform himself as to all existing conditions and limitations applying to the work. If, after such examination and study, it appears that any change from the drawings and specifications should be allowed, the

bidder shall so state in writing together with any change in cost involved.

By the act of submitting a proposal, each bidder shall be deemed to have made such examinations of the drawings and specifications and premises, and it will be assumed that he is therefore familiar with the entire scope of the project and has based his proposal upon the work described in the Plans and Specifications and upon all existing conditions and limitations applying to his work.

1.06 EXECUTION:

- A. Workmanship: The work shall be performed by competent workmen, skilled in the particular phase of the work entailed. The work shall be first class throughout, neat, accurate and in full accordance with the intent of these Specifications and the satisfaction of the Architect or Electrical Engineer.
- B. Safety: All standard safety procedures as set forth by OSHA, CAC, and California Division of Industrial Safety shall be strictly adhered to.
- C. Coordination: The Contractor shall familiarize himself with the work of other crafts so as to be able to provide electrical service of correct size and voltage and other requirements to any equipment to be installed. The installations shall be coordinated as to location and time, and interference causing delays and non-acceptable construction shall be avoided. Prior to commencing construction, the Electrical Contractor shall arrange a conference with the Mechanical and Plumbing Contractors and sub-contractors as well as equipment suppliers and shall verify types, sizes, locations, requirements, controls, and diagrams of all equipment furnished by them. Prior to roughing in, he shall, in writing, inform the Architect or Electrical Engineer that all phases of coordination of this equipment have been covered.
Exact equipment rough-in locations shall be verified from shop drawings.
- D. Cutting and Repairing: The Electrical Contractor shall do all cutting necessary for the proper installation of his work, repair any damage done by himself or his workmen, and coordinate his work with that of others. Do no cutting or patching without approval of the Architect or Electrical Engineer. Round holes through concrete slabs or walls shall be core drilled with a diamond drill, rectangular openings shall be cut with a diamond saw. In no case shall any concrete beam or column be cut.
- E. Sleeves and Openings: Electrical Contractor shall be responsible for all sleeves and openings through walls and floors required by electrical work. All openings around conduits in sleeves shall be sealed with a material of equal fire rating as the surface penetrated. Openings not utilized shall be temporarily sealed in a similar manner. All required sleeves shall be furnished to and coordinated with the General Contractor.
- F. Cleaning and Painting: All exposed work shall be thoroughly cleaned upon completion of work. All panelboards and equipment not located in electrical or mechanical rooms or closets shall be field painted per painting specifications, finish M2, color as selected by Architect. Panelboard enclosures, fixtures, and equipment, where finish has been marred in shipment or installation, shall be completely refinished. Minor finish damage shall be rectified as indicated by the Architect or Electrical Engineer. Contractor shall remove all waste and rubbish resulting from his work from the site.

1.07 QUALITY CONTROL:

- A. Supervision: The Contractor shall personally, or through a competent representative, constantly supervise the work from beginning to completion and final acceptance. He shall cooperate fully with the inspection authorities in the provision of information and access to the work. He shall, to the best of his ability, maintain the same job foreman throughout the life of the project unless a replacement is requested or authorized by the Architect or Electrical Engineer.
- B. Inspection and Tests: The Contractor shall furnish all labor and test equipment required to fully test and adjust the equipment installed under this specification and demonstrate its proper operation.
 - 1. Arrange for all tests and inspections and provide minimum 48 hours notice to the Architect or Electrical Engineer.
 - 2. A test must demonstrate that each piece of equipment, outlet, fixture, device, and appurtenance is in sound operating condition and in proper cooperative relation to associated equipment.
 - 3. All tests shall be conducted under supervision of the Architect or Electrical Engineer, and any defects of any nature which are apparent as a result of such test shall be made correct to the satisfaction of the Architect or Electrical Engineer before final acceptance is made.
 - 4. No equipment shall be tested, or operated for any other purpose, such as checking motor rotation, until it has been fully checked in accordance with the manufacturer's instructions.
 - 5. Check and tighten nuts, bolts, lugs, and similar elements of equipment; switchboards, motor control centers, busways, panels, etc.
 - 6. Submit complete test reports with maintenance manual submission.
- C. Guarantee: The Contractor agrees to replace or repair, to the satisfaction of the Owner, any part of the installation which may fail due to defective material and/or workmanship or failure to follow Plans and Specifications, for a period of one year after final acceptance. Any damage to other work resulting from such failure or the correction thereof shall be remedied at the Contractor's expense. The Contractor shall, further, secure from the manufacturers of special equipment, such as signal systems, their respective guarantees and deliver same to Owner. Guarantees between Contractor and his suppliers shall not affect guarantees between Contractor and Owner.

1.08 GROUNDING:

- A. The conduit system supports, cabinets, switchboards, etc., and neutral conductors must be permanently and effectively grounded by means of approved ground clamp, in accordance with the electrical safety orders of the Department of Industrial Relations of the State of California.
- B. This Contractor shall exercise every precaution to obtain good contacts at all panel boxes, pull boxes, etc. Where it is not possible to obtain good contacts, the conduit shall be bonded around the boxes with a #6B&S gauge, rubber covered, double braided wire with

ground clamps.

- C. Equipment and raceway bonding procedures shall be rigidly maintained and meet all jurisdictional requirements of codes and regulations.
- D. A separate grounding conductor shall be run in all pvc conduit runs.

1.09 SUBSTITUTIONS:

- A. The Specifications or Plans are in no way to be construed as being proprietary toward one product. Those products, or types of products, listed are intended to set the standard for quality, design, and installation procedure. However, no right is implied upon the part of the Contractor to substitute other materials, products or systems without the written approval of the Architect or Engineer.
- B. All requests for substitution shall be made in accordance with applicable Section of the General requirements - SUBSTITUTIONS.
- C. All requests for substitutions shall be in writing, received at least 14 days prior to bid date, and shall indicate all information required thereon including differences from the specified item. The request for substitution shall be accompanied by cuts, product literature, performance data, specifications, drawings, samples or other means as may be required for proper evaluation by the Architect or Electrical Engineer.
- D. All proposed substitutions shall be standard product of the firm under current manufacture and be a catalog item at time of bid.
- E. Acceptance of substitution shall not relieve the Contractor from responsibility for complying with requirements of the Contract Documents. The Contractor shall be responsible for changes in other parts of the work occasioned by his substitutions and shall bear their expense.
- F. Representative samples may be required for determination of equality.

1.10 SUBMITTAL:

- A. Make submittal for all material to be used on the project, whether as specified or substitutions, within thirty five (35) days after award of Contract by the Owner, in accordance with Section 01-300, SUBMITTAL, and the following:
 - 1. All submittal shall be neat and bound in a suitable folder or binder.
 - 2. Identify each item by manufacturer, brand, trade, name, number, size, rating, and whatever other data is necessary to properly identify and check materials and equipment. Words "as specified" are not sufficient identification.
 - 3. Identify each submittal item by reference to specifications section paragraph in which item is specified, or Drawings and Detail Number.
 - 4. All submittal shall be submitted in coherent groups, e.g. all light fixtures at one time. No partial or incomplete submittal will be accepted.

5. Organize submittal in same sequence as they appear in specification sections, articles or paragraphs.
- B. Product Data: Submit eight copies, in groups, as follows:
1. Lighting Fixtures
 2. Panels, Transformers, and Lighting Controls
 3. Wiring devices
 4. Conduits and raceway types required, including fittings
 5. Electric Wire, cable and connectors
 6. Pull boxes
 7. Crisis Lockdown Alert System Equipment
 8. Telecommunications and Structured Cabling system Equipment
 9. Access Control System Equipment
- C. Shop Drawings: Shop drawings shall show physical arrangement, wiring diagram, construction details, finishes, materials used in fabrication, provisions for conduit entrance, access requirements for installation and maintenance, physical size, electrical characteristics, foundation and support details, weight, power sources, circuit numbers, and shall be compatible with the Contract Drawings and Specifications.

Show wiring as actually installed, connected, and identified for this specific project. Include identification of cables and cable conductors.

Shop and instruction drawings shall cover the equipment or device to be installed and not merely the general class of such equipment or device.

1.11 DOCUMENTATION:

- A. Construction Record Drawings: The Contractor shall furnish to the Architect or Engineer, in accordance with the GENERAL REQUIREMENTS, a complete set of "as constructed" drawings which clearly indicate all deviations from the basic contract drawings, including exact dimension locations and depths for all stubbed conduits, location and size of spare conduits, & conductors, all new and uncovered existing work outside the buildings, power feeder runs, and communications "primary" conduit runs. Corrections and changes shall be kept up to date at all times.
- B. All submittal and shop drawings will be resubmitted with record drawings showing all revisions and changes made, clearly marked with field termination wire so as to reflect actual construction record conditions. Revisions and changes will be enumerated and new dates of drawings shown.

1.12 EARTHWORK:

- A. Scope: Do all earthwork required for installation of the underground electrical work in accordance with Specification Section 02220, EARTHWORK, and the following.
- B. Existing Utilities: Prior to performing any excavation, Contractor shall establish all existing utilities in area.
- C. Patching and Paving: General Contractor to patch and pave all surfaces involved with underground utilities after fill compacted by Contractor to specified values.
- D. After Excavation: Raceways shall be installed as quickly as possible and the excavation backfilled in order to reduce hazards. Barricades, construction signs, battery operated flashing lights and guards, as required, shall be placed and maintained during the progress of the construction to protect persons from injury and to avoid property damage as per General Conditions.

1.13 EXISTING SUB-SURFACE STRUCTURES:

- A. The civil plans indicate all known electrical and major sewer and water systems on the site, underground. No exact recorded information is available on any and/or all buried systems on the site. Responsibility for absolute accuracy of site data indicated on electrical plans is not assumed by the Architect or Electrical Engineer.
- B. It shall be the Contractor's responsibility to protect all underground systems and structures while excavating and installing the electrical distribution system. Any damage done to the existing system during the course of the electrical work shall be repaired to the satisfaction of the Owner and the utility or agency involved, at the expense of the Contractor.

1.14 PORTABLE OR DETACHABLE PARTS:

The Contractor shall retain in his possession and shall be responsible for all portable and detachable parts or portions of the installation such as fuses, keys, locks, adapters, locking clips, and inserts until final completion of his work. These parts shall be itemized and delivered to the Owner at Project Closeout.

1.15 OPERATION AND SERVICE MANUALS:

- A. Contractor shall prepare manuals describing the operations, servicing, and maintenance requirements of all electrical equipment provided and complete parts lists, in accordance with Section 01-300-SUBMITTAL.
- B. Equipment: Equipment described in the manual shall include all equipment listed under "Submittal", and on all other auxiliary miscellaneous systems.
- C. Information contained in the manual shall consist of 8-1/2" x 11" size catalog data on each item, together with parts lists, description of operation, maintenance information, shop drawings, wiring and riser diagrams and test reports as installed. Catalogs and data in the manuals shall be neat, clean copies. Drawings shall be accordion folded to letter size and installed in an envelope within the manual. An index shall be provided, which shall list all contents in an orderly manner with the respective equipment supplier's name, address and

Leaf Engineers
S2100500AR

District-Wide Lockdown – Package 2
Clovis Unified School District

telephone number, and the manufacturer's recommended servicing instructions.
Diagrams shall be complete for each system installed. Provide divider sheets with
identifying tabs between each category.

END OF SECTION 26 00 00

GENERAL ELECTRICAL
26 00 00-8

SECTION 26 05 00

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

All work under Divisions 26, 27, and 28 is subject to the General, Supplementary, Special Conditions and other Division 1 Specification Sections preceding this section. The Contractor will be responsible for and governed by all requirements. Drawings indicate the general arrangement of the electrical layout and work included. The Contractor will follow these drawings to lay out and check the drawings of other trades to verify locations and spaces in which work will be installed.

1.02 SUMMARY OF WORK

- A. This portion of the work includes furnishing of all labor and materials necessary for a complete wiring system to outlets and all equipment shown on the Drawings or covered by this section of the Specifications. In general, the work includes the following:
1. Utility services and facilities as detailed on the Plans, including the defrayal of the utility installation charges.
 2. Power service and distribution system as shown, complete with switchboards, panelboards, feeders and motor control centers.
 3. Complete system of branch circuit wiring and equipment including all wiring devices and plates on all outlets.
 4. A new lighting fixture system complete with lighting controls, as shown on Plans, including factory commissioning and acceptance testing.
 5. Telephone, public address, security, data and fire alarm systems, including conductors, cable, and equipment, for complete working systems. Each system shall be terminated, tested, calibrated, and programmed by a factory authorized installer. The same installer shall terminate and test any peripheral equipment required for the operation of the system.
 6. Raceways, wiring, fused disconnect switches, etc., for equipment covered by other sections of these Specifications.
 7. All hangers, anchors, sleeves, chases and supports for fixtures, electrical equipment and materials including earthquake bracing.
 8. All excavating, backfill, concrete pads and bases as required for electrical work.
 9. All disconnection and removal of existing electrical facilities not to be reused or noted to be demolished.
 10. Include payment of all required insurances, electrical permits, fees and taxes unless specifically shown "BY OTHERS".
- B. The electrical drawings are diagrammatic and do not necessarily show all raceway, wiring, number or types of fittings, offsets, bends or exact locations of items required by the electrical systems. Items not shown or indicated which are clearly necessary for proper operation, payment or installation of systems shown shall be provided at no-increase in contract price.
- C. The exact routing of systems and location of devices and equipment shall be governed by coordination with other trades, structural and architectural conditions. The Architect or Electrical Engineer reserves the right, at no increase in contract price, to make reasonable changes in location of electrical equipment or wiring systems; so as to coordinate with other systems, group them into orderly relationships, or to increase their utility. Contractor shall verify requirements in this regard prior to roughing in.

- D. Install electrical work in cooperation with other trades and make proper provisions to avoid interferences and coordinate with structural and architectural features, in a manner approved by the Architect or Electrical Engineer. All changes caused by neglect to make such provisions shall be at Contractor's expense. Provide offsets and special fittings, as required to facilitate installation of the work.
- E. When a particular product or type of product is specified with a manufacturer's designation, the latest published specifications, installation, and construction information of the manufacturer shall constitute the minimum acceptable standard. Any substitutions shall be made in accordance with the SUBSTITUTIONS sections of the Specifications.

1.04 RULES AND REGULATIONS

- A. All work and materials shall be in full accordance with the latest rules and regulations of the following:
 - 1. California Electrical Code (CEC), 2016 Edition
 - 2. California Energy Commission, Title 24, 2016 Standards
 - 3. California Fire Code, 2016 Editions
 - 4. National Fire Alarm and Signaling Code NFPA 72, 2016 Edition
 - 5. California Building, Mechanical and Plumbing Codes, 2016 Editions
 - 6. California Code of Regulations
 - a. Title 8, Safety Orders
 - b. Title 19, Fire and Panic Safety Standard
 - c. Title 24, Part 1, Administrative Regulations
 - 7. Occupational Health and Safety Act (OSHA)
 - 8. California State Fire Marshal Rules
- B. Where two or more codes conflict, the most restrictive shall apply.
- C. Nothing in these Plans and Specifications is to be construed to permit work not conforming to these codes.
- D. Before the Final Certificate of Payment will be issued, the Contractor shall deliver to the Owner all Certificates, Permits, Record Drawings and Instructions/Parts Manuals.

1.05 TESTS AND STANDARDS

- A. The tests, standards, or recommended procedures of the following agencies shall relate to all parts of these Specifications and shall be considered a minimum:
 - 1. American National Standards Institute (ANSI).
 - 2. Underwriters Laboratories, Inc. (UL).
 - 3. National Electric Manufacturers Association (NEMA).
 - 4. Electrical Testing Laboratories (ETL).
 - 5. National Fire Protection Association (NFPA).
 - 6. Insulated Power Cable Engineers Association (IPCEA).
 - 7. Institute of Electrical and Electronic Engineers (IEEE).
 - 8. Illumination Engineering Society (IES).

1.06 EXAMINATION OF DOCUMENTS AND SITE

- A. Before submitting a proposal, each bidder shall carefully examine the electrical, mechanical, architectural, and structural drawings and specifications. He shall also visit the site and fully inform himself as to all existing conditions and limitations applying to the work. If, after such examination and study, it appears that any change from the drawings and specifications should be allowed, the bidder shall so state in writing together with any change in cost involved.
- B. By the act of submitting a proposal, each bidder shall be deemed to have made such examinations of the drawings and specifications and premises, and it will be assumed that he is therefore familiar with the entire scope of the project and has based his proposal upon the work described in the Drawings and Specifications and upon all existing conditions and limitations applying to his work.

1.07 IMPLEMENTATION

- A. **Workmanship:** The work shall be performed by competent workmen, skilled in the particular phase of the work entailed. The work shall be first class throughout, neat, accurate and in full accordance with the intent of these Specifications and the satisfaction of the Architect or Electrical Engineer.
- B. **Safety:** All standard safety procedures as set forth by OSHA, CCR, and California Division of Industrial Safety shall be strictly adhered to.
- C. **Coordination:** The Contractor shall familiarize himself with the work of other crafts so as to be able to provide electrical service of correct size and voltage and other requirements to any equipment to be installed.
- D. **Scheduling:** The installations shall be coordinated as to location and time, and interference causing delays and non-acceptable construction shall be avoided. Order equipment in a timely manner to prevent any delays in the construction schedule and he shall bear any penalty by vendors to meet schedules.
- E. **Collaboration:** Prior to commencing construction the Electrical Contractor shall arrange a conference with the general and sub-contractors as well as equipment suppliers and shall verify types, sizes, locations, requirements, controls, and diagrams of all equipment furnished by them.
- F. **Materials:** All equipment and materials shall be new, UL (Underwriters Laboratories) approved, and of the best quality. When specific trade names are used in connection with materials they are mentioned as standards but, this implies no right upon the part of the Contractor to substitute other materials or methods without prior approval.
- G. **Excavation:** The Contractor shall provide all excavating and backfill required for the proper installation of electrical work, whether or not shown on the Drawings or as specified. This shall be done per the EXCAVATION portion of the Specifications.
- H. **Cutting and Repairing:** The Electrical Contractor shall do all cutting necessary for the proper installation of his work, repair any damage done by himself or his workmen, and coordinate his work with that of others. Do no cutting or patching without approval of the Architect or Electrical Engineer. Round holes through concrete slabs or walls shall be core drilled with a diamond drill, rectangular openings shall be cut with a diamond saw. In no case shall any concrete beam or column be cut.
- I. **Sleeves and Openings:** Electrical Contractor shall be responsible for all sleeves and openings through walls and floors required by electrical work. All openings around conduits in sleeves shall be sealed with a material of equal fire rating as the surface

penetrated. Openings not utilized shall be temporarily sealed in a similar manner. All required sleeves shall be furnished to and coordinated with the General Contractor.

- J. Cleaning and Painting: All exposed work shall be thoroughly cleaned upon completion of work. All panelboards and equipment not located in electrical or mechanical rooms or closets shall be field painted per painting specifications, color as selected by Architect. Panelboard enclosures, fixtures, and equipment, where finish has been marred in shipment or installation, shall be completely refinished. Minor finish damage shall be rectified as indicated by the Architect or Electrical Engineer. Contractor shall remove all waste and rubbish resulting from his work from the site.
- K. Earthquake Restraint: All electrical equipment shall have a means to prohibit excessive motion during an earthquake. Equipment that vibrates during normal operation shall have isolators with mechanical stops. All transformers are considered to vibrate during operation. All electrical equipment and connections shall be designed to resist lateral seismic forces equal to value shown on Drawings of equipment weight with allowable working code capacity increased by 1/3 or 1.5 times the same value for the weight yield capacity. Connections shall be the same except the 1/3 increase will not be allowed.
- L. Mechanical Equipment and Other Special Equipment:
 - 1. Prior to commencing construction, the Contractor shall arrange a conference with the Mechanical and Plumbing Contractors, and the Equipment Suppliers, to verify type, sizes, locations, requirements, controls and diagrams of all equipment furnished by them. In writing, he shall inform the Electrical Engineer that all phases of coordination of this equipment have been covered. If any unusual conditions or problems arise, they are to be enumerated them at this time.
 - 2. The Contractor shall furnish all electrical line voltage wiring, fused disconnects and conduits, unless otherwise shown.
 - 3. The Contractor shall be responsible for electrical hook-up and connection to all electrical equipment furnished by all Contractors of this Project. This includes all mechanical equipment, plumbing equipment, and special equipment furnished by other contractors.
- M. Portable and Detachable Parts: The Contractor shall retain in his possession and shall be responsible for all portable and detachable parts or portions of the installation such as fuses, keys, locks, adapters, locking clips, and inserts until final completion of his work. These parts shall be itemized and delivered to the Owner at Project Closeout.

1.08 QUALITY CONTROL

- A. Supervision: The Contractor shall personally, or through a competent representative, constantly supervise the work from beginning to completion and final acceptance. He shall cooperate fully with the inspection authorities in the provision of information and access to the work. He shall, to the best of his ability, maintain the same job foreman throughout the life of the project unless a replacement is requested or authorized by the Architect or Electrical Engineer.
- B. Inspection and Tests: The Contractor shall furnish all labor and test equipment required to fully test and adjust the equipment installed under this specification and demonstrate its proper operation.
 - 1. Arrange for all tests and inspections and provide minimum 48 hours' notice to the Architect or Electrical Engineer.

2. A test must demonstrate that each piece of equipment, outlet, fixture, device, and appurtenance is in sound operating condition and in proper cooperative relation to associated equipment.
 3. All tests shall be conducted under supervision of the Architect or Electrical Engineer, and any defects of any nature which are apparent as a result of such test shall be made correct to the satisfaction of the Architect or Electrical Engineer before final acceptance is made.
 4. No equipment shall be tested, or operated for any other purpose, such as checking motor rotation, until it has been fully checked in accordance with the manufacturer's instructions.
- C. Warranty: The Contractor agrees to replace or repair, to the satisfaction of the Owner, any part of the installation which may fail due to defective material and/or workmanship or failure to follow Drawings and Specifications, for a period of one year after final acceptance. Any damage to other work resulting from such failure or the correction thereof shall be remedied at the Contractor's expense. The Contractor shall, further, secure from the manufacturers of special equipment, such as signal systems, their respective guarantees and deliver same to Owner. Guarantees between Contractor and his suppliers shall not affect warranties between Contractor and Owner.

1.09 SUBMITTAL

- A. Make submittal for all material to be used on the project, whether as specified or substitutions, within thirty five (35) days after award of Contract by the Owner, in accordance with Section 01-300, SUBMITTAL, and the following:
1. All submittal shall be neat and bound in a suitable folder or binder.
 2. Identify each item by manufacturer, brand, trade, name, number, size, rating, and whatever other data is necessary to properly identify and check materials and equipment. Words "as specified" are not sufficient identification.
 3. Identify each submittal item by reference to specifications section paragraph in which item is specified, or Drawings and Detail Number.
 4. All submittal shall be submitted in coherent groups, e.g. all light fixtures at one time. No partial, or incomplete submittal will be accepted.
 5. Organize submittal in same sequence as they appear in specification sections, articles or paragraphs.
- B. Product Data: Submit eight copies, in groups, as follows:
1. Boxes, pullboxes, conduits, and raceway types required, including fittings
 2. Electric Wire, cable and connectors
 3. Circuit breakers, Panelboards, Transformers, and disconnects.
 4. Lighting fixtures
 5. Wiring Devices
 6. Special System Equipment
- C. Shop Drawings: Shop drawings shall show physical arrangement, wiring diagram, construction details, finishes, materials used in fabrication, provisions for conduit entrance, access requirements for installation and maintenance, physical size, electrical characteristics, foundation and support details, weight, power sources, circuit numbers, and shall be compatible with the Contract Drawings and Specifications.
- D. Show wiring as actually installed, connected, and identified for this specific project. Include identification of cables and cable conductors.

- E. Shop and instruction drawings shall cover the equipment or device to be installed and not merely the general class of such equipment or device.

1.10 SUBSTITUTIONS

- A. The Specifications or Drawings are in no way to be construed as being proprietary toward one product. Those products, or types of products, listed are intended to set the standard for quality, design, and installation procedure. However, no right is implied upon the part of the Contractor to substitute other materials, products or systems without the written approval of the Architect or Engineer.
- B. All requests for substitution shall be made in accordance with the SUBSTITUTIONS section of the Specifications.
- C. All requests for substitutions shall be in writing, received at least 14 days prior to bid date, and shall indicate all information required thereon including differences from the specified item. The request for substitution shall be accompanied by cuts, product literature, performance data, specifications, drawings, samples or other means as may be required for proper evaluation by the Architect or Electrical Engineer.
- D. All proposed substitutions shall be standard product of the firm under current manufacture and be a catalog item at time of bid.
- E. Acceptance of substitution shall not relieve the Contractor from responsibility for complying with requirements of the Contract Documents. The Contractor shall be responsible for changes in other parts of the work occasioned by his substitutions and shall bear their expense.
- F. Representative samples may be required for determination of equality. It is understood that the samples may be subjected to destructive testing and will not be returned.

1.12 GUARANTEE

This Contractor agrees to replace or repair to the satisfaction of the Owner, any part of the installation that may fail due to defective material and/or workmanship, or failure to follow Plans and Specifications for one year after final acceptance. He shall further obtain from the manufacturers of special equipment (i.e., control systems) their respective guarantees and service manuals and deliver to Owner.

1.13 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS

The Engineer's decision will be final on interpretation of the Drawings and Specifications. Whenever "AS MAY BE DIRECTED", "SUITABLE", "APPROVED EQUAL", "AS REQUIRED", or other words of similar intent and meaning are used which infer that judgment is to be exercised, it is understood that it is the judgment of the Engineer being referred to.

PART 2 – PRODUCTS

2.01 RACEWAYS:

- A. Except where specifically shown otherwise in this section, the Contractor shall furnish and install a complete steel, rigid thread galvanized rigid steel conduit system for all wiring, including control and signal wiring.
- B. Galvanized Rigid Steel (GRS)

1. All conduits shall be rigid threaded hot dipped galvanized type.
2. Joints are to be sealed with conductive pipe compound T&B "Kopr-Shield" before making up.
3. Conduits installed below grade shall be wrapped with 3M "Scotchrap #51" corrosion protection tape using half-laps for double thickness. Conduit surfaces are to be clean and dry before wrapping.

C. Steel Electrical Metal Tubing (EMT)

1. EMT may be used within the hollow dry spaces of buildings, minimum 96" above the finished floor. Trade sizes 4" and smaller may be used within hollow dry spaces of the building.
2. EMT conduit shall be Allied True Color E-Z Pull, or equal, with a colored finish specific to the following systems:
 - a. Natural: 0-150V-to-Ground Power & Lighting
 - b. Yellow: > 150V-to-Ground Power and Lighting
 - c. Blue: Copper Data & Communications
 - d. Orange: Fiber Optic Cable
 - e. Red: Fire Alarm
3. All raceway fittings, locknuts, couplings, elbows, etc., shall be hot dipped galvanized steel finish with plastic throats or bushings. Cast-type fittings shall not be used.

D. Non-Metallic Polyvinylchloride Conduit (PVC):

1. Rigid nonmetallic PVC, UL labeled and fittings approved for the purpose may be used for electrical systems 0-600V-to-ground under the following conditions:
 - a. All conduits in earth under buildings or protected by permanent paving may be Schedule 40 PVC. Any conduits running through planters or unprotected are to be encased in 3" of concrete. All raceways above grade are to be steel.
 - b. Risers shall be blue color, factory PVC coated T&B "Ocal" steel ells. Bends less than 45 degrees and offsets may be field bent.
2. All nonmetallic runs shall have a bond wire for the interconnecting of all conducting portions per Article 250 of the California Electric Code.
3. PVC shall never be used above grade.

E. Liquid-Tight Flexible Metal Conduit (LFMC):

LFMC may be used in lengths not greater than 36" at motors and other machinery to prevent the transmission of vibration. LFMC shall be supported at both ends.

- F. Surface raceways and fastenings are to be two-piece steel type, complete with all fittings of the same manufacturer and factory finished in gray. Surface plug-in strips shall be two circuit type with NEMA grounded receptacles every 12" with wiring space provided.

- G. The minimum size conduit for lighting, power, and signal wiring shall be 3/4" trade size.

- H. Conduits installed underground shall have a minimum coverage of 24" below a finished grade. Provide a magnetically traceable warning tape at 12" below grade. Electrical systems rated greater than 150V to Ground shall have a 3" concrete envelope.

2.02 CONDUCTORS:

- A. All conductors shall arrive to the project in their original, unbroken packages plainly marked as follows:
 - 1. Packaging shall indicated underwriter's labels, size, conductor material, insulation of wire, names of the manufacturer and the trade name of the wire.
 - 2. Wire or cable shall have factory markings every 24". Markings shall show its maximum allowable voltage, wire size and insulation.
- B. All conductors shall be a minimum of 98% conductivity, soft drawn copper, minimum #12 AWG unless shown otherwise. Conductors sized #8 and larger shall be stranded. Conductors sized #10 and smaller shall be solid type, except wiring within fixtures. Insulation shall be 600 Volt, type "THWN."
- C. Control circuits for mechanical equipment in locations subject to abnormal temperatures on or under furnaces and heaters shall be Type "RHH" 600 Volt insulation conductors.
- D. All branch circuits, fixture wiring joints, splices and taps for conductors #10 and smaller to be made with "Scotchlok" connectors.
- E. Two-bolt type solderless connectors or T&B "ColorKeyed" compression lugs shall be used on #8 and larger conductors.

2.03 WIRING DEVICES:

- A. Furnish and install wiring devices and plates as shown on the Drawings and described in these Specifications. Where more than one wiring device is mounted in the same location, such devices shall be mounted in a multi-gang plate. Wiring devices shall be specification grade or better.
- B. Wiring devices shall be of the color selected by the Architect.
- C. Convenience outlets to consist of a specification grade duplex receptacle mounted in an outlet box in the wall, flush with the finished plaster or surface. Outlet rating to be 20 AMPS, 125 Volts, 3-wire, back and side wired.
- D. All outlets shown outdoors or in damp locations shall be GFI type, installed in a weatherproof box and cover equipped with rubber gaskets. Surface outlets shall be weatherproof type FS boxes with hubs as required and equipped with rubber gaskets and weatherproof covers.
- E. Local switches shall be quiet toggle type, totally enclosed, 20 AMPS, 277 Volts AC rated.
- F. Device plates shall be provided for all devices with the number of gangs and openings necessary. They shall be satin brushed 302 stainless steel, unless specified otherwise.
- G. Switch plates for all outlets not in sight of a switch shall be labeled with filled etched letters showing locations of the outlet controlled.
- H. Pilot lights shall be the type with an indicating neon lamp in a handle.

2.04 OUTLET BOXES:

- A. Outlet boxes for concealed work shall be one piece pressed steel knock-out type with

zinc or cadmium coating. Boxes shall not be smaller than 4" square nominal size unless otherwise indicated. Provide extension rings, extenders, plaster rings and covers necessary for flush finish. No back-to-back or through-boxes shall be used.

- B. Bar hangers shall be used to support outlet boxes in stud or furred partitions and ceilings. Attachment screws, devices, etc., shall be of the proper type to secure boxes to metal studs. Use expansion shields in concrete and masonry. Where used for lighting fixtures, outlet boxes shall be equipped with fixture studs.
- C. Provide approved knock-out seals on all unused open knock-out holes.
- D. Outlet boxes installed in concrete slabs shall be two-piece concrete boxes, not less than 4" nominal size with a minimum depth of 2 ½".
- E. Surface boxes of cast metal threaded hub-type with suitable gasketed covers shall be used for exposed conduit runs less than 5' above finished floor, or where waterproof boxes are required.

2.05 PULL BOXES AND WIREWAYS:

- A. Pull and junction boxes shall be installed as shown to ease the pulling of wire and to comply with CEC requirements.
- B. Wireways shall be constructed in accordance with UL 870 for wireways, auxiliary gutters and associated fittings. Every component, including lengths, connectors, and fittings, shall be UL listed.

2.06 TERMINAL CABINETS AND CLOSETS:

- A. Cabinets and fronts shall be in accordance with NEMA Standard Publication No. PB 1-1971 and UL Standard No. 67. Fronts shall include doors and have flush brushed stainless steel, cylinder tumbler-type locks with catches and spring loaded door pulls. The flush lock shall not protrude beyond the front of the door. All locks shall be keyed like the panelboard locks. Fronts are to be adjustable indicating trim clamps that shall be completely concealed when the doors are closed.
- B. Doors shall be mounted by completely concealed steel hinges. Fronts shall not be removable with the door in the locked position. A frame and card with a clear plastic covering shall be provided on the inside of the door. Fronts shall be of code gauge full finish steel with rust inhibiting primer and baked enamel finish.
- C. Install finish grade 3/4" plywood board, primed and painted light gray on both sides and the edges, at the interior rear surface of telephone and signal cabinets.
- D. Provide solderless box lugs, terminal blocks with a white marking strip for conductors sized #16 and larger. Punch-down terminals shall be used for No. 18 and smaller and shall be used for all public address, intercom and other electrical terminations.

2.07 FLOOR BOXES AND UNDERFLOOR DUCTS:

- A. Provide fully adjustable Type 1, Class 1 watertight floor boxes complete with pedestal and wiring device where shown on Plans.
- B. Furnish and install a complete duct system as shown on Plans. The system shall consist of separate ducts: No. 2 duct for electrical power service; No. 4 duct for telephone; No. 4 duct for data. Ducts shall have 2" inserts on 24" centers. Furnish and install the

necessary junction boxes, couplings, supports, adapters, etc., to form a complete assembly made watertight with sealing compound.

- C. Ducts and junction boxes shall be manufactured from 14 gauge steel. They shall be UL listed and finished with a corrosion resistant coating. The junction boxes must be furnished with the proper depth to accommodate floor finish. Junction box cover plates to have an upward adjustment of 3/8". Cover plates must be leveled flush with the finished cement floor before and after the concrete has hardened.
- D. Furnish and install, where shown, telephone, data and power service fittings. All service fittings shall be furnished with receptacles, adapters and no spin locking nipples or supports.
- E. Fittings for floor boxes or ducts shall be brushed aluminum finish.
- F. Provide carpet flanges of proper size in carpeted or tiled areas.

2.08 PANELBOARDS:

- A. Furnish panelboards shown on Plans and described herein. All cans shall be a minimum of 20" wide and 5.75" deep unless otherwise shown. They shall be totally flat or equal with flush keyed locks.
- B. Panelboards shall be listed by Underwriters Laboratories, Inc.
- C. Fronts are to be sheet steel painted standard gray over a rust inhibitor. They shall be equipped with a door, flush hinges, flushed proper cylinder, tumbler-lock metal circuit card holder, and quarter turn adjustable trim clamps.
- D. Panels shall consist of a reinforced galvanized sheet steel frame with copper bus bars and circuit breakers properly supported to prevent vibration breakage in handling. All terminals shall be solderless type, suitable for specified conductors of sizes shown. Bus bars shall be sequenced phased. Provide separate blocks for neutrals and grounds.
- E. Branch circuit breakers shall be "bolt-on" and fully interchangeable without disturbing adjacent units. All two and three-pole breakers shall have common trips. Minimum IC shall be 10,000 AIC.
- F. Breakers used for switching lights shall be rated for switching duty and shall have padlock handle lock-off devices.
- G. Breakers serving mechanical equipment shall be rated HACR.
- H. All spaces shall have hardware.

2.09 MOTOR CONTROL CENTERS

- A. Furnish and install line voltage starters, RVSSs, or VFDs as required or shown on the Drawings. Furnish line connections only for integrally wired equipment furnished and installed by other sections. All starters, whether separate or mounted in Motor Control Centers, shall be furnished complete with stop/start pushbuttons, hand-off-auto switches, and two push-to-test pilot lights unless otherwise noted. They shall be in the proper NEMA enclosure.

2.10 MAGNETIC MOTOR STARTERS

- A. Magnetic motor starters, unless otherwise shown, shall be size 1 minimum, AC line voltage, HP rated across-the-line voltage in proper NEMA enclosure. They shall be equipped with three properly sized overload elements. Magnetic starters shall be listed by Underwriters Laboratories, Inc.
- B. Verify the exact motor current and voltage characteristics with the Contractor supplying the motor before installation of a starter.
- C. All magnetic starters to have a minimum of two auxiliary convertible contacts. Additional auxiliary contacts shall be provided as required to comply with the wiring diagrams of the electrical and mechanical requirements.
- D. Manual motor starters shall be flush or surface mounting type as required with number of poles and properly sized overload heaters as required for the motor being controlled. Where pilot light is called for with a starter, the pilot light shall be mounted in a separate adjacent box.
- E. Individual control relays shall have convertible contacts rated a minimum of 15 amps, 600 volts, regardless of usage voltage. Coil voltage and number and type of contacts shall be verified and supplied to suit the specific usage as shown in the wiring diagram and/or schedules on the electrical and mechanical drawings. Furnish in a proper NEMA enclosure.

2.11 DISCONNECTING DEVICES:

- A. Disconnecting devices shall be provided as shown or as required by CEC. Switches shall be motor rated and in proper NEMA enclosure.
- B. Motors 1/3 HP and less: Switches shall be the toggle-type quick make and break rated 2 HP, 250 Volts AC with the number of poles required provided with flush mounting wall plates or in suitable surface mounting NEMA enclosures.
- C. Motors 1/2 HP and larger: Disconnecting switches shall be Type HD fused multi-pole 600 Volts in proper NEMA enclosures with proper size FRS fuses. Provide three spare fuses of each type to the owner.
- D. Circuit breakers utilized as disconnecting devices must comply with the requirements stated in other articles of this section and CEC.

2.12 CONCRETE PADS, PULL HOLES AND MANHOLES:

- A. At the Contractor's option, he shall provide cast-in-place or precast structures.
- B. Where applicable, concrete structures shall be submitted to the serving utility for their approval before installation.
- C. Cast-in-place concrete shall be per the concrete section of the Specifications.
- D. Provide 8" concrete pads under all exterior switchboards, transformers, etc.

2.13 NOISE CONTROL:

- A. Outlet boxes at opposite sides of partitions shall not be placed back-to-back or through-boxes employed except where specifically permitted on the Drawings by note to reduce transmission of noise between occupied spaces.

- B. Contactors, starters, and similar noise-producing devices shall not be placed on walls that are common to occupied spaces unless specifically called for on the Drawings. Where such devices must be mounted on walls common to occupied spaces, they shall be shock mounted or isolated in such a manner to effectively prevent the transmission of their inherent noise to the occupied space.
- C. Contactors, starters, drivers, and like equipment found noticeably noisier than other similar equipment on the project will be deemed defective and shall be replaced at Engineer's request.

PART 3 – EXECUTION

3.01 INSTALLATION - GENERAL:

- A. The layout and installation of electrical work shall be coordinated with the overall construction schedule to prevent delay in completion of the project. Checking these Drawings before organizing the electrical work schedule or installing material and equipment shall be obligatory.
- B. Dimensions and information regarding accurate locations of equipment and structural limitations and finish shall be verified with other sections.
- C. The Drawings do not show all the offsets, bends, special fittings, junction boxes, or pull boxes necessary to meet job conditions and the CEC. They shall be provided as required.
- D. Electrical equipment, outlets, junction and pull boxes shall be installed in accessible locations avoiding obstructions, preserving headroom and keeping openings and passageways clear.
- E. Minor adjustments in the locations of equipment shall be made where necessary, providing such adjustments do not adversely affect function of the equipment. Major adjustments for the location of equipment shall be approved by the Architect and detailed on the Record Drawings.
- F. Structural Fittings: Furnish and install the necessary sleeved, inserts, hangers, anchor bolts and related structural items. Install at the proper time.
- G. Openings have been shown on the Architectural and Structural Drawings. Should any additional openings or holes be required for the work of this section, the cost shall be the obligation of this section.
- H. Contractors shall inspect and account for existing conditions affecting his work.
- I. Sleeves for electrical conduits passing through walls or slabs shall be placed under the work of this section before concrete is poured. Where conduits pass through suspended floor slabs, sleeves shall be standard weight galvanized steel pipe extending 2" above the finished floor level.
- J. Sleeves at other locations shall be either light weight galvanized steel pipe or galvanized sheet steel. Clearance between conduits and sleeves shall not be less than 1/2".
- K. Sleeves through outside walls and below grade shall be caulked tight with oakum and the ends sealed with an approved semi-plastic coal tar base compound or shall be of the stuffing box type. Other sleeves shall be packed with glass wool ends sealed with

Duxseal and covered with chrome plated escutcheon plates.

- L. Conduits entering through floor slabs at grade level will not require sleeves and shall be placed with tops of couplings flush at floor level.
- M. Sleeves for electrical conduit passing outside walls below grade shall be the through-wall and floor seal type.

3.02 INSTALLATION OF CONDUITS AND RACEWAYS:

- A. Raceways for electrical or signal systems run in earth that are not protected by permanent paving shall be encased in concrete with the encasement extending under the building. Branch circuit and signal system conduits installed underground between outlets, terminals, and panels within the building shall be liquid and gas tight.
- B. Conduits shall be concealed unless otherwise shown. All conduit runs exposed to view, except those in attic spaces, shall be installed parallel or at right angles to structural members, walls, or lines of the building.
- C. All conduit runs shall be mechanically and electrically continuous from outlet to outlet. Conduit size or type shall not be changed between outlets.
- D. No conduits shall be run on the roof unless specifically shown on the roof. They shall be full weight rigid steel on PVC sleepers. Install roof jacks at penetrations.
- E. Conduit stubs installed for future extensions shall be rigid steel for at least 5' of a conduit run. The conduit ends shall be terminated with couplings and pipe plugs. The closed end shall be double wrapped with Scotchrap #50 for the last 12". The concrete envelope shall leave 3" of the wrapped conduit exposed for future connection.
- F. Conduit for equipment connected permanently to the floor shall be installed with a 6" rigid conduit nipple to a flush coupling to ensure a watertight connection at the floor.
- G. All conduits shall be sloping to drain and shall be sealed with JM Clipper "Duxseal" on the high end.
- H. All conduit bends shall be carefully made so that the conduit is not flattened, kinked or otherwise compromised. The inner radius of any conduit bend shall be not less than eight times the inside diameter. Where conduits are run exposed in groups, bends of all conduits shall have a common center. Use of standard elbows will not be allowed at these locations.
- I. Each run of a conduit shall be finished before concrete, plaster, etc., is installed to ensure against obstruction or omissions. After installation, the ends of all conduits shall be plugged with metal pennies. All conduit systems shall be completed and thoroughly cleaned and dried inside before installation of any conductors.
- J. Conduits shall enter at right angles and be connected to all outlet boxes, pull boxes, and cabinets with locknuts and plastic throated grounding bushings, providing a continuous grounding system in accordance with CEC Article 250.
- K. Use Erikson couplings where a union is necessary. Running threads will not be permitted.
- L. Pull 1/8" stranded nylon pull ropes with 18" coiled at each end in all empty conduits with identification tags indicating source and destination.

- M. Furnish and install seal-offs in all conduit runs through areas of different temperature.
- N. All concealed conduits shall be installed in as direct a line as possible between outlets. No more than four (4) quarter bends or their equivalent will be allowed between outlets. Feeder conduits shall follow arrangement shown on Plans unless a change is authorized. In general, branch circuit conduits shall follow the arrangement as shown insofar as structural conditions permit.
- O. All exposed runs shall parallel buildings, walls, or partitions, and shall be supported on Kindorf Hangers to meet Title 24 Part 6, California Code of Regulations.
- P. All telephone, data, and other signal conduits shall be installed with long radius sweeps. No factory ells will be permitted.
- Q. Chrome escutcheon plates are to be used on all conduit penetrating walls, floors or ceilings.
- R. Expansion joints shall be provided at building structural expansions or as required due to length of run or difference in temperatures.
- S. All fittings exposed or in damp areas shall have sealing glands and proper gaskets. Fittings in hazardous areas shall be of the type approved for the particular hazard.
- T. Provide two 1" conduit stubs out of all panels and terminal cabinets to above a hung ceiling or as otherwise shown.
- U. Roof Penetrations:
 - 1. Where raceways penetrate roofing or any similar structural area, provide iron roof jacks sized to fit tightly to a raceway for a weather-tight seal with the flange extending a minimum of 9" under roofing on all sides. Completely seal the opening between the inside diameters of the roof flashing and the outside diameters of the penetrating raceways. Coordinate all work with the roofing section of Specifications.
- V. Fire Penetration Seals:
 - 1. Seal all penetrations for work of this section through fire rated floors, walls and ceilings to prevent the spread of smoke, fire, toxic gas or water through the penetration before, during or after a fire. The fire rating of the penetration seal shall be at least that of which it is installed so that the original fire rating is maintained as required by CEC Article 300.21.
 - 2. Where applicable, provide OZ Type CFSF/1 and CAFSF/1 fire seal fittings for conduit and cable penetrations through concrete and masonry walls, floors, slabs and similar structures. Apply an approved firestopping system, including wall wrap, partitions, caps and other accessories as required. All manufacturers' instructions and recommendations for installation of sealing fittings and barrier sealing systems.

3.03 CONDUCTORS AND CONNECTIONS:

- A. General Requirements:
 - 1. All branch circuit and fixture wiring joints, splices and taps for conductors #10 and smaller shall be made with UL approved connectors listed for 600 Volts.

Connector bodies shall consist of a cone shape rotating expandable coil spring inserts insulated with phenolic or plastic shell.

2. Do not install wire in conduits until all work of any nature that may cause injury (including pouring of concrete) is completed. Use care in pulling in wires to prevent damage to wire or insulation. Do not use blocks, tackle or other mechanical means to pull #8 AWG or smaller conductors.
3. Splices are not permitted except in outlet boxes, pull boxes, junction boxes, panelboard gutters and auxiliary gutters. No splices shall be made in underground boxes.
4. Use only wire pulling compounds listed by the UL as a lubricant for pulling conductors through raceways. The use of cleaning agents that have deleterious effect on conductor coverings are not permitted.
5. Unless otherwise shown on Plans or specified elsewhere, leave at least 12" of free conductors at each connected outlet (outlets connected to equipment or device) and 9" of free conductors and coil neatly in outlet box for future connection.

B. Terminations:

1. Circuit and signal terminations to single screw or push on terminals shall be done with insulated "Sta-Kons" or approved equal terminals.
2. Bolt type solderless connectors shall be torqued with a torque wrench according to the manufacturer's recommendations and then retightened after 24-48 hours before taping. Owners' inspector shall be informed of this procedure during the waiting period and shall witness the act of retightening.

C. Feeders and Branch Circuits:

1. Connectors and lugs for terminating stranded conductors sized #8 and larger shall be machine crimp compression type.
2. All splices shall be taped with Scotch "Super 88" vinyl electrical tape, and "Scotch Fill" tape putty where necessary for a smooth joint. For other than normal temperatures or conditions, Scotch #27 or #2520 shall be used.
3. No splices shall be made below grade in a manhole or pull holes without the Engineer's written approval. When approved, these shall be encapsulated with 3M potting kits per 3M Specifications.
4. Wires in panels, cabinets, pullboxes and wiring gutters shall be squared, labeled, and neatly grouped with Ty-raps and fanned out to the terminals.
5. Support all conductors in hand holes/manholes and label with plastic rope. Tag all conductors with plastic waterproof tags.

3.04 WIRING DEVICES:

- A. Wiring devices shall be securely fastened to the outlet box. Where the outlet box covers are back from the finished walls, the device shall be built-out with washers so that it is rigidly held in place to the box. Provide metal extenders in flammable construction per CEC.
- B. All device screw slots shall be left in a vertical orientation.

3.05 OUTLET BOXES:

- A. Boxes shall be securely fastened in position to the ceiling or walls with screws or bolts. Nails are not acceptable. The Contractor shall set and align all equipment, level, bolt down, or otherwise secure in place. No back-to-back or through-boxes shall be used.

- B. Boxes shall be accurately located and set square and true with exposed edges of a box or plaster ring flush with finished surface of walls or ceiling. All unused boxes shall be equipped with blank covers that shall match existing covers.
- C. Boxes shall have no unused openings.
- D. Boxes shall be cleaned of all direct plaster, etc., before conductors are installed. Rust spots shall be scraped to bare metal and painted with Rust-Oleum "Cold Galvanizing Compound".
- E. Suspended fixture outlets shall be equipped with 3/8" fixture mounting stud bolted to wood backing or metal studs to safely support fixture weight.
- F. Make any change in outlet location necessary to all job conditions and rearrange fixtures and equipment as directed.
- G. Study all Plans as to relation of spaces surrounding outlets so that this work may be installed at the proper time with others. Fixtures and equipment shall be symmetrically located. Conflicts and discrepancies shall be referred to the Architect immediately and prior to box installation.

3.06 JUNCTION AND PULL BOXES AND WIREWAYS:

- A. Boxes shall be installed square and plumb. An engraved nameplate shall be installed indicating the function of each box on the exterior in unfinished areas and on the interior in finished areas. Permanent markers are not acceptable.
- B. Pullboxes and wireways shall be concealed or installed flush in finished areas. They shall be surface mounted in machine rooms or unfinished areas.

3.07 TERMINAL CABINETS AND CLOSETS:

- A. Install, level and identify per schedule.

3.08 FLOOR BOXES AND PEDESTALS:

- A. Floor boxes are to be installed level and plumb. Fill with paper prior to pouring concrete. Re-level after concrete has set, then raise to accommodate the floor finish.
- B. The installation of pedestals shall be coordinated with cabinet work.

3.09 PANELBOARDS:

- A. Location:
 - 1. Unless otherwise indicated on the Drawings, install all panels with the top of the trip 6'- 0" above the finished floor.
 - 2. Space permitting, surface mount the panels where they are not visible to the public.
 - 3. Panels to have a protective cover over any electrical panel with overhead water piping. Cover to be 18" by width of a panel.
- B. Directory:
 - 1. Mount a typewritten directory behind glass or plastic in a metal holder welded to the inside of each panel door. Directory shall indicated circuit numbers and

complete description of all loads on each circuit.

3.10 DISCONNECT DEVICES:

- A. Disconnect devices shall be identify the location of the controlled device.

3.11 GROUNDING:

- A. The conduit system supports, cabinets, switchboards, etc., and neutral conductors must be permanently and effectively grounded by means of approved ground clamp, in accordance with the electrical safety orders of the Department of Industrial Relations of the State of California.
- B. This Contractor shall exercise every precaution to obtain good contacts at all panel boxes, pull boxes, etc. Where it is not possible to obtain good contacts, the conduit shall be bonded around the boxes with a #6B&S gauge, rubber covered, double braided wire with ground clamps.
- C. Equipment and raceway bonding procedures shall be rigidly maintained and meet all jurisdictional requirements of codes and regulations.
- D. A separate grounding conductor shall be run in all receptacle circuits.

3.12 IDENTIFICATION

A. Conductors:

1. All power and low voltage systems conductors and cabling shall be identified in accordance with the following schedule:
 - a. 120/208 Volts, 3-phase, 4-wire Wye: Red-Black-Blue, Neutral White
 - b. 120/240 Volts, 3-phase, 4-wire Delta: Black-Blue for single-phase, Orange for 3-phase stinger, Neutral White
 - c. 480/277 Volts, 3-phase, 4-wire Wye: Yellow-Brown-Purple-, Neutral Grey
 - d. Bond or grounding conductor (GWG): Green
 - e. Special system conductors shall be color coded and labeled
2. Brady Labels shall be used to identify terminals and destination of feeders, branch circuits, signal and control circuits, etc., at all terminations and junction boxes and shall be coordinated with the nameplates in all boxes and equipment.
3. All terminals in the switchboards, panels, relays, switches, devices, starter terminals, etc., shall have Brady Labels for identification to identify both ends of all wiring. Wires #8 and smaller to be terminated on terminal strips squared-type 9080K with white marking strip and screw lugs for wire size.

- B. Nameplates: The Contractor shall furnish and install 1" x 3" x 3/32" thick laminated black Nylon nameplates with a white core, unless specifically shown as red with a white core, engraved to produce white letters on black background for all items of electrical equipment including 2-pole and 3-pole circuit breakers, panelboards, starters, relays, time switches and disconnect switches. The plates shall screwed in place with stainless steel screws. Adhesive backed plates are not acceptable.

- C. Panels: Panels having single-pole circuit breakers shall be provided with typed schedules mounted in welded metal holders behind plastic.

- D. Devices: All devices shall have their branch circuit identified on the back side of device plate with a permanent type black marker, i.e., CKT A-21.

3.13 SUPPORTS AND ANCHORS:

- A. Provide inserts, anchors, supports, rods, brackets and miscellaneous items to adequately support and secure the electrical systems and equipment.
- B. Secure hangers, brackets, conduit straps, supports and electrical equipment to surfaces by means of toggle bolts on hollow masonry. Utilize expansion shields and machine screws or standard preset inserts on concrete or solid masonry. Utilize machine screws or bolts on metal surfaces. Utilize wood screws on wood construction. Wood, fiber plugs, or concrete nails are not acceptable.
- C. Power or velocity driven inserts may not be used for any anchorage unless specifically approved by the Engineer and where the use does not affect the finished appearance of work. Under no circumstance shall these be used in pre-stressed slabs, beams, purlins, or precast members in tension.
- D. Seismic Requirements: Provide vertical and lateral supporting equipment to resist the application of seismic forces per California Code of Regulations, Title 24 Part 1, Vol. 2 or CBC Chapter 23.

END OF SECTION 26 05 00

STRUCTURED CABLING SYSTEM

SECTION 27 10 00

Part 1 - General

1.1 Scope of Work

- A. This document describes the requirements for the contractors, products and installation relating to furnishing and installing a Structured Cabling Plant.
- B. The Cabling System as described in this document is comprised of cabling, infrastructure and termination hardware to provide an approved TIA/EIA Data Networking and Voice Communication Structured Cabling System.
- C. Provide all labor, materials, tools and equipment required for the complete installation of work called for on the Construction Drawings and described in the Specifying Documentation.
- D. 271000 contractors shall be complete with work including all testing and labeling prior to 272000 contractor work start. Also the district requires minimum of 10 days to review test documents prior to network start up.

1.2 Contractor Qualifications/Quality Assurance

- A. Safety and Indemnity
 - 1. Contractors will submit the necessary documentation to demonstrate their compliance with Section 270000 “1.5 A. Safety & Indemnity”.
- B. Contractor Qualifications
 - 1. Contractors will submit the necessary documentation to demonstrate their compliance with Section 270000 “1.5 B. Contractor Qualification”.
- C. Quality Assurance
 - 1. Contractor shall comply with all requirements as specified in Section 270000 “1.5 C. Quality Assurance”.
- D. Warranty
 - 1. Contractor shall comply with all requirements as specified in Section 270000 “1.8. Acceptance & Warranties”.
 - 2. The bid package shall be accompanied by a warranty commitment binding the awarded contractor and manufacturer to a Lifetime Structured Cabling Warranty with guaranteed performance criteria set forth in this document and/or set forth by the Manufacturer. Contractor must be trained and certified in the installation of the Manufacturer system proposed. Contractor shall submit proof of current certification in the Certified Installer Program as a Premier or Authorized Network Installer in order to install and fully warrant the Cabling System. Copy of current Certificate must be included in Proposal if not already on file with Architect/Consultant/Owner.
 - 3. A Lifetime warranty (or 25yr minimum) for the structured cabling system shall be provided for an end-to-end permanent link model installation which covers the performance of the cable, connecting hardware and the labor cost for the repair or replacement of the link.
 - 4. Links failing test parameters or producing marginal pass results will be retested or replaced at Contractor expense until link test results passing TIA/EIA Standard parameters for the category rating or better are achieved.
 - 5. Warranty application is to be submitted in advance of the project start, and full test reports shall be delivered to Manufacturer within 15 days of project completion. Lifetime Manufacturer warranty processing is to be completed by Contractor and warranty certificate delivered to owner upon project completion.

1.3 Submittal Documentation

- A. The successful contractor shall provide their submittal package in accordance with the Section 01 20 00 1.06 Submittal Schedule, and Section 270000 “1.6 Submittal Documentation”.

1.4 Equivalent Products

- A. All Products Leviton, Berk-Tek, Superior Essex, and Chatsworth form the basis of design for this Specification. Part numbers, where provided, exemplify the feature set expected to be provided for this Structured Cabling Plant.
- B. Pre-Approved Equals:
 - 1. **None, all alternate materials must be submitted for approval prior to bid.**
- C. Structured cabling manufacture system warranties shall be Limited Lifetime or 25 year.
- D. Contractors wishing to approve a system other than those specified in this document shall do so in accordance with Section 270000 “1.7 Equivalent Products”.

1.5 Typical configurations

- A. All room configurations are based on the “Learning Wall” and entry door. All locations shall be installed per plan. Classrooms shall have on average 17 Cat6 cables in each room;
 - 1. Entry door shall have ONE Cat6 cable for IP wall phone (one voice).
 - 2. Four (4) Cat6 cables, with two on each side of the whiteboard (two data, two voice)
 - 3. Student work area shall have eight (8) Cat6 cables (8 data)
 - 4. Ceiling area shall have four (4) Cat6 cables (one for the A/V projector, one for the A/V switcher, and two for wireless access point). **A red colored dot is to be placed on the ceiling grid to mark the location of these four cables.**
 - 5. Depending on the orientation of the room, two additional Cat6 cables may be added to allow for teacher flexibility.
- B. Computer labs shall have 48 Cat6 cables in each room
 - 1. Entry door shall have ONE Cat6 cable for IP wall phone (one voice).
 - 2. Computer labs shall have FORTY Cat6 cables.
 - 3. Standard A/V classroom install is included: A/V Control Panel, two input modules, and either wall or pole mounts.
 - 4. Ceiling area shall have four Cat6 cables (one A/V projector, one A/V switcher, two wireless access point). **A red colored dot is to be placed on the ceiling grid to mark the location of these four cables.**
 - 5. Three Cat6 for the teacher (phone, computer, and printer).
- C. All rooms shall be field verified prior to installation.

Part 2 - Products

2.1 Work Area Subsystem

The Work Area shall consist of the connectivity equipment used to connect the horizontal cabling subsystem and the equipment in the work area. The connectivity equipment shall include the following options:

- Patch Cords
 - Modular Inserts and Jacks
 - Faceplates
- 1. Category 6 and Category 6A Outlet Patch Cords
 - *OWNER PROVIDED*
- B. Modular Inserts and Jacks
 - 1. Category 6A Keystone Jack (for Wireless and other uses as specified)
 - Jacks must meet or exceed the Category 6A standard.
 - Jacks shall be 8-position 8-conductor RJ45-style and must have "retention-force technology" or equivalent feature to prevent time damage over the life of the jack regardless of use
 - Jacks shall be 8 position un-keyed

- Jack shall be rear-terminated industry- standard 110 IDC. Lead-frame jacks shall not be used in this Cable Plant.
 - Jacks shall have a designation indicating Category 6A on the nose which can be plainly seen from the front of the faceplate. Bottom of jack shall have date code.
 - Jacks shall utilize a paired punch down sequence. Cable pair twists shall be maintained up to the IDC, terminating all conductors adjacent to its pair mate to better maintain pair characteristics designed by the cable manufacturer.
 - Jacks shall terminate 22-26 AWG stranded or solid conductors.
 - Jacks shall be compatible with single conductor 110 impact termination tools.
 - Jacks shall have an attached color coded wiring instruction label housed between the IDC termination towers.
 - Jacks shall be manufactured in the USA
 - Jacks shall be compatible with TIA/EIA 606 color code, and have removable high-visibility color labels designating pair locations. Split-colored T568A/B labels are not approved.
 - Jacks shall utilize pair-separation towers for ease of untwisting pairs, and shall employ a snap-on rear termination cover designed for suppression and isolate of cross-talk of neighboring connectors.
 - Jacks will be terminated according to the T568B wiring scheme.
 - **Color:**
 - Data Jacks will be **BLUE**
 - Voice Jacks will be **WHITE**
 - Wireless Jacks will be **YELLOW**
 - A/V Jacks will be **GRAY**
 - Camera Jacks will be **PURPLE**
 - **Quantity:** Contractor will provide and install one jack for every outlet cable shown on the drawings.
 - Part#:**
 - Data Jacks will be 61110-RL6
 - Voice Jacks will be 61110-RW6
 - Wireless Jacks will be 61110-RY6
 - A/V Jacks will be 61110-RG6
 - Camera Jacks will be 61110-RP6
2. Category 6 Keystone Jack (for General-Purpose Data/Voice applications)
- Jacks must exceed the Category 6 standard, and must be Component-Rated for performance.
 - Jacks shall be 8-position 8-conductor RJ45-style and must have "retention-force technology" or equivalent feature to prevent time damage over the life of the jack regardless of use
 - Jacks shall be 8 position un-keyed
 - Jack shall be rear-terminated industry- standard 110 IDC. Lead-frame jacks shall not be used in this Cable Plant.
 - Jacks shall have a designation indicating Category 6 on the nose which can be plainly seen from the front of the faceplate. Bottom of jack shall have date code.
 - Jacks shall utilize a paired punch down sequence. Cable pair twists shall be maintained up to the IDC, terminating all conductors adjacent to its pair mate to better maintain pair characteristics designed by the cable manufacturer.
 - Jacks shall terminate 22-26 AWG stranded or solid conductors.
 - Jacks shall be compatible with single conductor 110 impact termination tools.
 - Jacks shall have an attached color coded wiring instruction label housed between the IDC termination towers.
 - Jacks shall be manufactured in the USA

- Jacks shall be compatible with TIA/EIA 606 color code, and have removable high-visibility color labels designating pair locations. Split-colored T568A/B labels are not approved.
- Jacks shall utilize pair-separation towers for ease of untwisting pairs, and shall employ a snap-on rear termination cover designed for suppression and isolate of cross-talk of neighboring connectors.
- Jacks will be terminated according to the T568B wiring scheme.
- **Color:**
Data Jacks will be **BLUE**
Voice Jacks will be **WHITE**
Wireless Jacks will be **YELLOW**
A/V Jacks will be **GRAY**
Camera Jacks will be **PURPLE**
- **Quantity:** Contractor will provide and install one jack for every outlet cable shown on the drawings.
Part#:
Data Jacks will be 61110-RL6
Voice Jacks will be 61110-RW6
Wireless Jacks will be 61110-RY6
A/V Jacks will be 61110-RG6
Camera Jacks will be 61110-RP6

C. Wall Mount and Modular Furniture Faceplates

1. Wall Plates

- Faceplates shall be UL Listed and CSA Certified
- Faceplates shall be 2.75" W x 4.5" H (69.8 mm x 114.3 mm)
- Faceplates shall provide for TIA/EIA 606 compliant station labeling.
- Faceplates shall have plastic covers over the mounting screws that can be replaced with a clear plastic window over a printable paper insert.
- Faceplates shall have an industry-standard KEYSTONE opening style, and shall accept any Keystone modular insert.
- Faceplates shall be made in the U.S.A.
- **Color:** Faceplate to be **WHITE**
- **Quantity:** Contractor will provide and install one single gang faceplate for each outlet shown on the drawings.
- **Part#:**
6 Port Face Plate, PN# 42080-6WS
4 Port Face Plate, PN# 42080-4WS
2 Port Face Plate, PN# 42080-2WS

2. Blank Insert

- **Color:** Blank Insert to match device plate or raceway.
- **Quantity:** Contractor will provide and install one insert for every unused port in a faceplate.

Part#: 41084-B*B

3. Blank Wall Plates

- Faceplate shall be constructed from stainless steel.
- Faceplates shall be UL Listed and CSA Certified
- Faceplates shall be 2.75" W x 4.5" H (69.8 mm x 114.3 mm) for single gang.
- **Color:** Faceplate to be **STAINLESS STEEL**
- **Quantity:** Contractor will provide and install one faceplate for each unused data/voice/video/intercom outlet shown on the drawings.

Part#: 84014-40

4. Surface Mount Raceway Insert

Inserts for Wiremold's 4050, 5450 and 5550 Device Mounting Brackets

- Insert shall allow for two category 6 jacks to be mounted flush.
- Insert shall match the color of the Raceway installed.
- **Color:** Faceplate to be **IVORY**
- **Quantity:** Contractor will provide and install one 2-port insert for each outlet in the Surface Mount Raceway shown on the drawings.
- **Part#:** Equal to Wiremold, PN# 5507-FRJ

2.2 Horizontal Distribution Cabling

The horizontal distribution cabling system is the portion of the telecommunications cabling system that extends from the Work Area (WA) telecommunications outlet/connector to the horizontal cross-connect in the Telecommunications Room (TR).

- Cabling Support System
- Copper Station Cabling
- Copper Cross-Connect Cabling

A. Copper Station Cable

1. Category 6A Unshielded Twisted Pair (UTP) Cable

- Cable will meet or exceed the proposed requirements of ANSI/TIA 568-C.2 and ISO/IEC 11801 Category 6 Cable Standard for: NEXT and ELFEXT (Pair-To-Pair and Power Sum), Insertion Loss (Attenuation), Return Loss, PSANEXT, and Delay Skew.
- Cable shall be proven to support 10 Gigabit Ethernet / 10GBASE-T, Gigabit Ethernet / IEEE 802.3an, 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.
- The cable shall consist of four unshielded twisted pairs of thermoplastic insulated bare copper enclosed in a thermoplastic jacket.
- All cable shall conform to the requirements for communications circuits defined by the California Electrical Code (Article 800) and the Canadian Building Code. Cable listed to CEC Article 800-51(a) will be used for "Plenum" installations. Cable listed to CEC Article 800-51(b) shall be installed in vertical runs penetrating more than one floor.
- Cable shall have been certified with the UL 1666 Vertical Tray Flame Test.
- Cable shall be available in a Plenum, Riser and Indoor/Outdoor rated jackets.
- Contractor will use the indoor/outdoor rated cable for all locations where the cable pathway goes underground and/or run in exterior conduit.
- Cables shall be made in the U.S.A.
- The listed Category 6A cables in this specification are manufactured by Berk-Tek
- **Color:**
Data cable jacket will be **BLUE**
Data cable for Security Cameras will be **PURPLE**
- **Quantity:** See Drawing for quantity and installation details.
- **Part#:**
For Riser Application:
Berk-Tek LANmark-10G2, PN# 11084689
For Plenum Application:
Berk-Tek LANmark-10G2, PN# 11085339
For Indoor/Outdoor Application:
Berk-Tek LANmark 10G OSP

2. Category 6 Unshielded Twisted Pair (UTP) Cable

- Cable will meet or exceed the proposed requirements of ANSI/TIA/EIA 568-C.2, 568-B.2 Addendum #1 and ISO/IEC 11801 Category 6 Cable Standard for: NEXT and ELFEXT (Pair-To-Pair and Power Sum), Insertion Loss (Attenuation), Return Loss, and Delay Skew.
- 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.
- The cable shall consist of four unshielded twisted pairs of thermoplastic insulated bare copper enclosed in a thermoplastic jacket.
- All cable shall conform to the requirements for communications circuits defined by the California Electrical Code (Article 800) and the Canadian Building Code. Cable listed to CEC Article 800-51(a) will be used for "Plenum" installations. Cable listed to CEC Article 800-51(b) shall be installed in vertical runs penetrating more than one floor.
- Cable shall have been certified with the UL 1666 Vertical Tray Flame Test.
- Cable shall be available in a Plenum, Riser and Indoor/Outdoor rated jackets.
- Contractor will use the indoor/outdoor rated cable for all locations where the cable pathway goes underground and/or run in exterior conduit.
- Cables shall be made in the U.S.A.
- The listed Category 6 cables in this specification are manufactured by Berk-Tek
- **Color:**
Data cable jacket will be **BLUE**
Data cable for Security Cameras will be **PURPLE**
- **Quantity:** See Drawing for quantity and installation details.
- **Part#:**
For Riser Application:
Superior Essex PN# 77-240-2A or Berk-Tek PN# 10136339
For Plenum Application:
Superior Essex PN# 77-240-2B or Berk-Tek PN# 10136226
For Indoor/Outdoor Application:
Mohawk CDT PN# M58772 (all cable jackets will be **BLACK**)

B. Horizontal Copper Cross-Connect Cabling

1. Voice Cross-Connect Cabling

- Cable shall meet and/or exceed the UL Listed Type CMR and the ANSI/ICEA S-80-576 standard.
- Cables shall be made in the U.S.A.
- Core Construction
 - Conductors: Solid-copper conductors, 24 AWG.
 - Insulation: Flame retardant semi-rigid PVC.
 - Core Assembly: Cable core will be made up of 100 pair units consisting of four (4) 25 pair sub-units. Each group individually identifiable by color coded unit binders.
- Jacket: Gray, flame retardant PVC jacket.
- **Color:** Voice cable jacket will be **GRAY**
- **Quantity:** See Drawing for quantity and installation details. The number of 25-pair cable between the MDF and the IDF shall be derived by multiplying the number of pairs required for the cross-connect by 1.25 to the nearest 25-pair increment.
- **Part#:**
- Superior Essex Cable: Berk-Tek:

25 pair = PN# 18-475-33	10032396
50 pair = PN# 18-579-33	10032471
100 pair = PN# 18-789-33	10032472

2.3 Backbone Cabling

The backbone cabling system is the portion of the telecommunications cabling system that extends from the Intermediate Distribution Frame (IDF) to the Main Distribution Frame (MDF).

- Fiber Optic Backbone Cabling
- Copper Backbone Cabling

A. Fiber Optic Backbone Cabling

1. Data System Backbone Cabling

- Cable shall be UL/cUL OFNR/OFN FTA rated and be Flame Resistant in accordance with the UL 1666.
- Cable shall be an OSP.
- Cable shall be constructed utilizing a loose tube design.
- Cable will be fully water blocked combining overall water blocking tape and a moisture blocking gel for each individual tube.
- Cable will maintain the following:
 - Crush Resistance (EIA-455-41) = 2000 N/cm
 - Impact Resistance (EIA-455-25) = 2000 Impacts w/1.6 N-m
 - Min Bend Radius:
 - Long Term - No Load = 15x Cable diameter
 - Short Term – Load = 20x Cable diameter
 - Operating Temp. = -40°C to +70°C
 - Storage Temp. = -40°C to +80°C
- Cable shall be constructed of 50/125µ Laser Optimized rated glass capable of:
 - 1 Gigabit Ethernet Link at 1000m/600m (@850nm/1300nm)
 - 10 Gigabit Ethernet Link at 300m/300m (@850nm/1300nm)
- ALL FIBER SHALL BE FUSION SPLICED
- The Fiber Optic Cable in this specification is manufactured by Berk-Tek
- **Color:** Fiber Optic cable jacket will be **Black**
- **Quantity:** See Drawing for quantity and installation details.
- **Part#:** **NOTE: HYBRID CABLES ARE PREFERRED OVER SEPARATE RUNS OF EACH TYPE OF CABLE. PROVIDE JUSTIFICATION IF YOU ARE NOT ABLE TO USE THE HYBRID CABLE.**
- **Field Breakout Kits: Leviton PN# 49887-12S is to be used for all cables more than 6 strands. Six strand cables will use 49887-06S. Provide two kits per buffer tube to be terminated.**

6 Strand Single Mode Fiber (needs two breakout kits)
Equal to Berk-Tek, PN# OPR006AB0403

12 Strand Single Mode Fiber (needs two breakout kits)
Equal to Berk-Tek, PN# OPR012AB0403

24 Strand Single Mode Fiber (needs four breakout kits)
Equal to Berk-Tek, PN# OPR12B024AB0403

36 Strand Single Mode Fiber (needs six breakout kits)
Equal to Berk-Tek, PN# OPR12B036AB0403

48 Strand Single Mode Fiber (needs eight breakout kits)
Equal to Berk-Tek, PN# OPR12B048AB0403

60 Strand Single Mode Fiber (needs ten breakout kits)
Equal to Berk-Tek, PN# OPR12B060AB0403

72 Strand Single Mode Fiber (needs twelve breakout kits)
Equal to Berk-Tek, PN# OPR12B072AB0403

6 Strand Multi Mode Fiber (needs two breakout kits)
Equal to Berk-Tek, PN# OPR006EB3010/25

12 Strand Multi Mode Fiber (needs two breakout kits)
Equal to Berk-Tek, PN# OPR012EB3010/25

24 Strand Multi Mode Fiber (needs four breakout kits)
Equal to Berk-Tek PN#OPR12B024EB3010/25

36 Strand Multi Mode Fiber (needs six breakout kits)
Equal to Berk-Tek PN#OPR12B036EB3010/25

48 Strand Multi Mode Fiber (needs eight breakout kits)
Equal to Berk-Tek PN#OPR12B048EB3010/25

60 Strand Multi Mode Fiber (needs ten breakout kits)
Equal to Berk-Tek PN#OPR12B060EB3010/25

72 Strand Multi Mode Fiber (needs twelve breakout kits)
Equal to Berk-Tek PN#OPR12B072EB3010/25

Hybrid 6 Strand Multi Mode, 6 Strand Single Mode Fiber
(needs 2 breakout kits)
Equal to Berk-Tek, PN# OPR012-006EB3010/25-006AB0707

Hybrid 12 Strand Multi Mode, 12 Strand Single Mode Fiber
(needs 4 breakout kits)
Equal to Berk-Tek, PN# OPR024-012EB3010/25-012AB0403

Hybrid 18 Strand Multi Mode, 18 Strand Single Mode Fiber
(needs 6 breakout kits)
Equal to Berk-Tek, PN# OPR036-018EB3010/25-018AB0403

Hybrid 24 Strand Multi Mode, 24 Strand Single Mode Fiber
(needs 8 breakout kits)
Equal to Berk-Tek, PN# OPR048-024EB3010/25-024AB0403

Hybrid 36 Strand Multi Mode, 36 Strand Single Mode Fiber
(needs 12 breakout kits)
Equal to Berk-Tek, PN# OPR12B072-036EB3010/25-036AB0403

Hybrid 48 Strand Multi Mode, 48 Strand Single Mode Fiber
(needs 16 breakout kits)
Equal to Berk-Tek, PN# OPR12B096-048EB3010/25-048AB0403

Hybrid 60 Strand Multi Mode, 60 Strand Single Mode Fiber
(needs 20 breakout kits)
Equal to Berk-Tek, PN# OPR12B120-060EB3010/25-060AB0403

Hybrid 72 Strand Multi Mode, 72 Strand Single Mode Fiber

(needs 24 breakout kits)
Equal to Berk-Tek, PN# OPR12B144-072EB3010/25-072AB0403

- B. Copper System Backbone Cabling
1. Voice System Backbone Cabling
 - Cable shall meet or exceed those specified in RUS Bulletin 1753F-208 (REA PE-89)
 - Cables shall be made in the U.S.A.
 - Core Construction
 - Conductors: Solid, annealed copper, 24 AWG unless otherwise noted on design documents.
 - Insulation: Dual insulation consisting of an inner layer of foamed polyolefin skin, colored coded in accordance with industry standards
 - Core Assembly: Cables of 25 pairs and less formed by assembling pairs together in a single group. Cables of more than 25 pairs formed by twisted pairs arranged in groups with each group having a color coded unit binder.
 - Filling Compound: The entire core assembly completely filled with ETPR compound, filling the interstices between the pairs and under the core tape.
 - Core Wrap: Non-hygroscopic dielectric tape applied longitudinally with an overlap.
 - Sheath Construction
 - Aluminum Shield: Corrosion protected plastic coated, corrugated 0.008" aluminum tape.
 - Jacket: Black, linear low-density polyethylene.
 - **Color:** Voice cable jacket will be **BLACK**
 - **Quantity:** See Drawing for quantity and installation details. The number of 25-pair cable between the MDF and the IDF shall be derived by multiplying the number of pairs serving the individual telephone handsets by 1.25 to the nearest 25-pair increment.
 - **Part#:** Equal to Superior Essex Cable:
 - 25 pair = PN# 09-097-02
 - 50 pair = PN# 09-100-02
 - 100 pair = PN# 09-104-02
 - 200 pair = PN# 09-108-02

2.4 Telecommunication Room

The Telecommunication Room (TR) includes those products that terminate horizontal and backbone cabling subsystems and connect them to the network equipment.

- Patch Cords
 - Horizontal Cabling Termination Equipment
 - Backbone Cabling Termination Equipment
 - Cabinets, Racks, and Enclosures
 - Cable Support System
- A. Patch Cords
1. Copper Patch Cords
 - 1.1 Category 6 and Category 6A Data/Voice TR Patch Cords
 - *OWNER PROVIDED*
 - 1.2 Data to Voice TR Patch Cords
 - *OWNER PROVIDED*
 2. Fiber Patch Cords
 - 2.1 Fiber Optic TR Multimode Patch Cords
 - *OWNER PROVIDED*

- 2.2 Fiber Optic TR Singlemode Patch Cords
 - *OWNER PROVIDED*

B. Horizontal Cable Termination Equipment

1. Copper Termination Equipment

1.1 Data Category 6 and 6A Patch Panels

- Panels shall be made of black 16-gauge steel in 24 port configurations.
- Panels shall have optional rear cable support bar for strain relief. Cable support bar shall attach to the rear of the patch panel itself without the use of additional fasteners or screws.
- Panels shall have write-on blocks and port numbers are silk-screened in white.
- Panels shall provide wiring identification & color code and maintain an in-line, paired punch down sequence that does not require the splitting of conductors from individual cable pairs.
- The panel shall accept all QuickPort modules and feature white write-on front labels.
- Panels shall be ANSI/TIA/EIA-568-C.1, C.2 and ISO/IEC 11801 category 6 compliant.
- Panels shall be UL LISTED 1863 and CSA certified.
- Panels shall be made by an ISO 9002 Certified Manufacturer.
- Panels shall be made in the U.S.A.
- **Color:** Patch Panel shall be **BLACK**
- **Quantity:** See Drawing for quantity and installation details. The number of patch panels to be supplied shall be derived by multiplying the number of data/voice cables being terminated at the individual TR by 1.25 and providing additional panels in the nearest 24 port increment.
- **Part#:**
24-port Category 6 patch panel, angled recessed, **4W256-H24**

1.2 Voice Termination Block (Intercom Backbone and Intercom Devices)

- Pair Capacity 50
- Blocks shall be wall mounted.
- Terminates 22 - 26 AWG (0.81 - 0.41mm) solid insulated cable or 18 - 19 AWG (1.02 - 0.91mm) solid stripped cable
- Blocks shall have stand-off legs included for all locations; S89 series stand-off bracket
- Made from High impact flame retardant thermoplastic
- Height: 254mm (10 in.), width: 86.4mm (3.4 in.), depth: 30.5mm (1.2 in.)
- **Part#: Leviton or equal**
Termination block, 40066-M50
Mounting bracket, 40089-00D

C. Backbone Cable Termination Equipment

1. Connectors

1.1 Fiber Optic Connectors

- **Anaerobic & Mechanical terminations will not be accepted.**

1.2 Fusion-Fiber Pigtail Fusion Splice Module

- Integrated module adapter bulkhead for 12 or 24 fibers with self-contained splice holders
- Individual compartments provide slack storage and bend radius guides for respective backbone cable, 900µm tight buffer pigtails, and fusion spliced fibers

- 12-fiber color-coded 900µm tight buffer pigtails 1.5m length are pre-loaded in module per specific configuration
 - Modular design allows for ease of maintenance of individual spliced fiber and allows for scaling up without impacting existing fibers
 - Included accessory kit consists of heat shrink style splice sleeves, tie wraps, and mesh sleeve
 - Installs in Leviton's Opt-X rack mount (Ultra, 1000i, and 500i) and wall mount fiber enclosures
 - Zirconia ceramic ferrules and sleeves used
 - 12-fiber splice module configurations will utilize duplex LC adapters
 - 24-fiber splice module configurations will utilize quad LC adapters
 - ALL FIBER SHALL BE FUSION SPLICED
 - **Quantity:** See Drawing for quantity and installation details.
 - **Part #: Leviton or equal**
 - 12-strand Singlemode, SPLCS-12L
 - 24-strand Singlemode, SPLCS-24L
 - 12-strand Singlemode Fusion Splice pigtail kit, UPPLC-KIT
2. Fiber Termination Panels
- 2.1 IDF Rack Mount Fiber Panel
- Fiber panels shall be constructed of durable polycarbonate plastic and black powder-coated 16-gauge steel
 - Panel shall have a sliding tray which removes completely from enclosure to facilitate field terminations and splicing
 - Sliding tray with front and rear stop shall glide forward and backward providing accessibility to front and rear of bulkhead after installation
 - Panel shall have a 17" depth for high-density fiber termination and/or splicing
 - Front saddles shall pivot for improved patch cord routing and organization
 - Removable transparent hinged doors and slide-away covers shall allow for easy access during install and visibility of interior after install
 - Panel shall employ patch cord bend radius guides to minimize macro bending
 - Stackable and adjustable fiber rings simplify cable management
 - Panel shall be no more than 1 rack unit in height and shall hold up to 3 adapter plates.
 - Panel shall be Made in the U.S.A
 - ALL FIBER SHALL BE FUSION SPLICED
 - COLOR: black with translucent blue cover panels
 - **Quantity:** See Drawing for quantity and installation details.
 - **Part#: Leviton Opt-X SDZ 2000i no exceptions**
1U - 5R1UH-S03
- 2.2 IDF Wall Mount Fiber Enclosure
- Panels shall be constructed of cold rolled 16 gauge steel with a black powder paint finish and provide for fully enclosed fiber termination.
 - Panel shall have a door design. One door shall be lockable for the "technician side" that secures the incoming and outgoing fiber cables. The second door shall accessible to provide fiber patching as needed.
 - Panels shall accept four adapter panels for 24 port configurations.
 - Panels shall have a splice tray mounting stud incorporated into the base for mounting of mechanical or fusion splice trays. Panel shall have cable management anchor points and come with cable anchors allowing for the maintenance of the incoming cable with the proper minimum bend radius.
 - Panels shall have cable entrance ports on the top and bottom with removable plastic dust covers.

- ALL FIBER SHALL BE FUSION SPLICED
- **Color:** Fiber Panel will be **BLACK**
- **Quantity:** See Drawing for quantity and installation details.
- Part: 5W320-00N

2.3 MDF Rack Mount Fiber Panel

- Fiber panels shall be constructed of durable polycarbonate plastic and black powder-coated 16-gauge steel
- Panel shall have a sliding tray which removes completely from enclosure to facilitate field terminations and splicing
- Sliding tray with front and rear stop shall glide forward and backward providing accessibility to front and rear of bulkhead after installation
- Panel shall have a 17" depth for high-density fiber termination and/or splicing
- Front saddles shall pivot for improved patch cord routing and organization
- Removable transparent hinged doors and slide-away covers shall allow for easy access during install and visibility of interior after install
- Panel shall employ patch cord bend radius guides to minimize macro bending
- Stackable and adjustable fiber rings simplify cable management
- Panel shall be 2 or 4 rack units in height and shall hold up to 6 or 12 adapter plates, respectively
- Panel shall be Made in the United States
- ALL FIBER SHALL BE FUSION SPLICED
- COLOR: black with translucent blue cover panels
- **Quantity:** See Drawing for quantity and installation details.
- **Part#: Leviton Opt-X SDX 2000i no exceptions**
2U - 5R2UH-S06
4U - 5R4UH-S12

2.4 Premise Splice Enclosures – Portable Classroom Distribution

- Modular wall-mount enclosures used to directly splice outside plant or intra-building cables
- Four fusion/mechanical splice trays; 4" Standard Splice Tray, 4" x 11.75" x 0.25" # **T4LHS-P06**
- Constructed of cold-rolled steel
- ALL FIBER SHALL BE FUSION SPLICED
- CPS-24, Customer Premise Splice Enclosure, empty (2 tray capacity)
- **Part#:** CPS24-STD

2.5 Fiber Optic Adapter Plates

- The Fiber adapter plate shall precision molded and compatible with all approved panels and enclosures (rack- or wall-mount).
- The adapter plate shall be offered in LC style in 12 or 24 fiber configurations per plate.
- The adapter plate shall be compliant to TIA-568-C.3 (for performance) and respective TIA-604-X (for intermateability) standards.
- Adapter plates shall use zirconia ceramic sleeves and be offered in standard fiber type colors pursuant to TIA-568-C.3 standards.
- The adapter and plate shall be integrated using precision-molded injection manufacturing methods, to eliminate "rattle" and loose fit.
- Adapter plates shall be made in the United States of America.
- Meets TIA-604-10B (LC) for connector intermateability
- ALL FIBER SHALL BE FUSION SPLICED
- COLOR: Aqua for Multimode, Blue for Singlemode, Black for blank plates

- Part #:
6-port Duplex LC MM Adapter Panel, 5F100-2QL
6-port Duplex LC SM Adapter Panel, 5F100-2LL
Blank Adapter Panel, 5F100-PLT

2.6 Fiber Optic OSP Splice Enclosures

- Used to directly splice outside plant or intra-building cables.
- Accommodates various splice tray designs, Maximum Capacity: 96 single fibers using 5" x 7" and 4" x 7" trays
- Enclosure made from 16-gauge steel, Hinges shall be Stainless steel
- Two-year limited product warranty.
- Durable powder-coat finish COLOR: Beige
- Size 16" x 15" x 3.4"
- ALL FIBER SHALL BE FUSION SPLICED
- Part #: Leviton CPS Customer Premise Splice Enclosure, Single Door, 24 Fiber Trays # **CPS24-STD**
Injection Molded Mini Splice Tray, Heat Shrink style (accepts standard sleeves), up to 12 fiber splicing # **T5PLS-12F**
Splice Tray Mounting Hardware Kit # SPLMT-HKT
Splice Sleeve, 40 mm # **FSSSD-040**
Cable clamp kit # CPCSR-001 & CPCSR-002
Grounding kit # CPGRD-KIT
Key Locking kit # CPLOK-KIT

3. Copper Termination Panels

3.1 OSP Protection Panels (Intercom Backbone Headend)

- 16 AWG Powder Coated Steel Construction
- Equipped with an Internal 26 AWG Fuse Link
- External Ground Connectors Accept 6 - 14 AWG Wire
- Industry Standard 5 Pin Design
- Exceeds UL497 Primary Protection Standards
- Stackable with Connection Grommets Included
- 66 Block Accepts 22 - 26 AWG Wire/18 - 19 AWG Stripped Solid Copper Wire
- **Color:** NA
- **Quantity:** See Drawing for quantity and installation details.
Part#: Circa Enterprise inc.
25 pair block, PN# 1890ECT1-25
50 pair block, PN# 1890ECT1-50
100 pair block, PN# 1890ECT1-100

3.2 OSP Protection Fuses

- 240VDC (RUS Approved)
- Nanosecond response time
- External failsafe mechanism that permanently carbon arrestors grounds the module under sustained high current conditions
- Integrated Test Points
- UL & cUL listed
- Designed to meet or exceed Telcordia standards
- ISO 9002 Certified Manufacturer
- **Color:** RED
- **Quantity:** See Drawing for quantity and installation details.

Part#: Circa Enterprise inc. 4B1SF-240

**Provide 100% fuse density for all installed Protection Panels.*

3.3 Voice Termination Block (Intercom Backbone building/TC and Intercom Devices)

- Pair Capacity 50
- Blocks shall be wall mounted.
- Terminates 22 - 26 AWG (0.81 - 0.41mm) solid insulated cable or 18 - 19 AWG (1.02 - 0.91mm) solid stripped cable
- Blocks shall have stand-off legs included for all locations; S89 series stand-off bracket
- Made from High impact flame retardant thermoplastic
- Height: 254mm (10 in.), width: 86.4mm (3.4 in.), depth: 30.5mm (1.2 in.)
- **Part#:**
Leviton 66-Style Termination block, 40066-M50
Leviton 66-Style Mounting bracket, 40089-00D

D. Cabinets, Racks, and Enclosures

Contractor will provide the following 'HC' Enclosures and components based on the number of cables to that will be terminated:

1. Remote Equipment Cabinet

- Remote equipment cabinets shall be manufactured from steel. Each cabinet shall have a rectangular body with a removable top panel and a hinged, locking front door. The door shall be solid (no window) and shall be reversible to open from the right or left side. Each cabinet shall include two keys for the door.
- The cabinet shall be constructed to meet the requirements of a NEMA Type 2 Enclosure.
- The cabinet shall include a minimum of two pairs of 19" wide EIA-310-D compliant equipment mounting rails that can be mounted to the cabinet to align equipment with the top or front of the cabinet or at a 45° angle to the back of the cabinet. The mounting rails shall support 2, 4 or 6 RMU of equipment. The cabinet shall provide space for equipment up to 20" deep when aligned with the top of the cabinet or 4" (100 mm) deep when aligned with the front of the cabinet.
- The sides and bottom of the cabinet shall be pre-punched with combination 3/4" and 1-1/2" conduit knockouts for network cable access. The rear of the cabinet shall have a 4" x 6" opening located near the bottom center of the cabinet for through-the-wall network cable access. Cable tie points shall be located around the interior perimeter on the cabinet's rear panel.
- The sides of the cabinet shall have louvers to permit airflow into and through the cabinet. The bottom of the cabinet shall have a grill to allow the addition of an accessory ventilation fan.
- Rack shall provide for a grounding point per the TIA/EIA 607-A.
- The cabinet shall support 100 lb of equipment. Load bearing capacity shall be stated in the manufacturer's product literature.
- **Color:** Remote Equipment Cabinet will be **BLACK**
 - Finish shall be black epoxy-polyester hybrid powder coat paint.
 - Mounting rails are anodized aluminum.
- **Quantity:** See Drawing for quantity and installation details.
- **Part#:**

Remote Equipment Cabinet

Equal to CPI PN# 13050-723, ThinLine II Wall-Mount Cabinet, 26" Wide x 36" High x 12" Deep Exterior, 19" EIA x 6 RMU.

Fiber Optic Bracket

Equal to CPI PN# 12955-719

Fan Kit

Equal to CPI PN# 13051-001

15amp Power Kit

Equal to CPI PN# 12934-001

12-24 Rack Screws (bag of 50)

Equal to CPI PN# 40605-005

Power Strip with Surge Suppression

Leviton 5500-192

2. Wall-mounted cabinets

- Wall-mounted cabinets shall be manufactured from steel sheet.
- Each cabinet will have a rear panel that attaches to the wall, a hinged cabinet body that swings open from the rear panel providing easy access to the rear of equipment and a locking front door.
- The rear panel will provide cable access with pre-punched knockouts, up to 3", for conduit along the top and bottom edges of the panel. There will also be cutouts in the back of the rear panel so that cables can enter the panel through the wall. The rear panel will provide attachment points for accessory equipment mounting brackets and cable tie points within the panel (cabinet).
- The cabinet body will include a single pair of vertical 19" EIA equipment mounting rails. The mounting rails will be EIA-310-D compliant with the Universal hole pattern. Mounting holes will have #12-24 threads.
- Mounting rails will be adjustable in depth so that they can be positioned at any point within the cabinet body. The design of all cabinets will allow an additional pair of mounting rails (for a total of two pairs of mounting rails per cabinet) to be added to the cabinet.
- The wall-mount cabinet shall provide a hinge design that attaches the cabinet body and the rear panel and allow the rear panel to be removed during installation. The hinge design will allow the cabinet body to open at least 90°. The hasp used to secure the rear panel and the cabinet body together will assist in drawing the components together during the locking action.
- The cabinet body will include vents that are designed to accept fan kits.
- The front door will be hinged and locking. The front door and rear panel will be keyed alike. The front door will have rounded edges and corners. The cabinet body will allow the front door to be attached so that it will swing open from the right or left. The cabinet manufacture shall provide an option for a solid or a tinted plexi-glass window front door. The plexi-glass in doors shall be bronze acrylic (not clear) with a UL flammability classification of 94HB or better.
- Finish shall be epoxy-polyester hybrid powder coat (paint).
- The cabinet shall have the option of being delivered fully assembled. All cabinets will include installation hardware (hex lag screws) for wood studs and 50 each #12-24 equipment mounting screws.
- Load bearing capacity for cabinets that wall-mount will be a minimum of 200 pounds per cabinet.
- Cabinets that are wall-mount only will be certified and UL Listed to standard UL 60950 under category NWIN.
- **CONTRACTOR TO INSTALL PROFESSIONALLY SO OWNER PROVIDED EQUIPMENT FITS IN THE RACK. VERIFY RAILS ARE PROPERLY ALIGNED SO ALL EQUIPMENT FITS (including cables/cords) AND DOORS CLOSE. VERIFY SPACING BETWEEN PANELS IS ADEQUATE FOR EQUIPMENT INSTALLATION.**
- **Color:** Wall Mount Cabinet will be **BLACK**
- **Quantity:** See Drawing for size, quantity and installation details.
- **Part#:**

Wall Mount Cabinet

12U Cabinet equal to Chatsworth Products, PN# 11900-724

18U Cabinet equal to Chatsworth Products, PN# 11900-736

26U Cabinet equal to Chatsworth Products, PN# 11900-748

**Contractor will provide an additional set of mounting rails for each wall mount cabinet, equal to Chatsworth Products PN# 12787-5xx.*

Wall/Floor Mount Cabinet

33U Cabinet equal to Chatsworth Products, PN# 13495-760

40U Cabinet equal to Chatsworth Products, PN# 13495-772

**Contractor will provide an additional set of mounting rails for each wall mount cabinet, equal to Chatsworth Products PN# 13276-7xx.*

Fan Kit/Filter Kit

Equal to Chatsworth Products Fan Kit, PN# 12804-701

Equal to Chatsworth Products Filter Kit, PN# 12805-701

Grounding Kit

Equal to Chatsworth Products, PN# 10610-019

Power Strip with Surge Suppression

Leviton 5500-192

3. Floor Mount 2-post Racks

- Each rack shall have two L-shaped top angles, two L-shaped base angles and two C-shaped equipment-mounting channels. The rack shall assemble with nut and bolt hardware. The base angles shall be pre-punched for attachment to the floor.
- Equipment mounting channels shall be 3" (76 mm) deep and punched on the front and rear flange with the EIA-310-D Universal hole pattern, 1-3/4" (44.45 mm) rack-mount spaces (U), to provide 45U, 52U or 58U for equipment. Each mounting space (U) shall be marked and numbered on the mounting channel.
- When assembled with top and bottom angles, equipment-mounting channels shall be spaced to allow attachment of 19" EIA rack-mount equipment. Equipment attachment points shall be threaded with 12-24 roll-formed threads. The rack shall include assembly and equipment-mounting hardware. Racks shall include 50 each combination pan head, pilot point mounting screws.
- The assembled rack shall measure 7' (2.1 m)/84" (2133 mm) high, 8' (2.4 m)/96" (2438 mm) high or 9' (2.7 m)/108" (2743 mm) high; 20.3" (515.9 mm) wide and 15" (381.0 mm) deep. The sides (webs) of the equipment-mounting channels shall be punched to allow attachment of vertical cable managers along the sides of the rack or for rack-to-rack baying.
- Assembly hardware shall electrically bond the top angles, side channels and base angles together when assembled, and there shall be a masked ground attachment point with 1/4-20 threaded studs spaced 5/8" apart on the inside of the side channel to attach a ground lug allowing easy attachment to the Telecommunications Ground.
- The rack shall be rated for 1,000 lb (453.6 kg) of equipment.
- Certifications: Communications Circuit Accessory, DUXR and DUXR7 category, file number 140851
- Material: Steel and aluminum extrusion
- Construction: Bolted assembly, Ships unassembled
- **Color: BLACK**
- **Quantity:** See Drawing for quantity and installation details.
- **Part#: Chatsworth Products Inc.**

Floor Mount 2-Post Rack

CPI# 55053-703

Vertical Wire Managers

Equal to Leviton, PN# 8980L-VFR

Power Strip with Surge Suppression

Leviton 5500-192

4. Floor Mount 4-post Racks

- Four-post frame with threaded mounting holes used to support 19" wide rack-mount communications equipment and shelves
- For indoor use only, in environmentally controlled areas; may not be used outdoors, in industrial or harsh environments, or in plenum spaces
- Includes: (1) top pan, (1) bottom pan, (4) mounting channels, (2) base angles, (2) top angles
- Assembly hardware; (100) #12-24 equipment mounting screws
- Equipment Support: Front and rear pairs of 3" deep C-shaped equipment mounting channels, Fixed in place, 29" apart front-to-rear, 19" wide, EIA-310-D compliant hole pattern
- 1-3/4" high rack-mount units (RMU); RMU spaces are marked and numbered on the channels
- Universal hole pattern, 5/8"-5/8"-1/2" vertical hole spacing
- Threaded #12-24 equipment mounting holes, Includes 100 each #12-24 equipment mounting screws
- Load capacity: 2000 lb of equipment
- Material:; Aluminum extrusion, Aluminum sheet
- Construction: Bolted assembly, Ships unassembled
- **Color: BLACK**
- **Quantity:** See Drawing for quantity and installation details.
- **Part#: Chatsworth Products Inc.**

Floor Mount 4-Post Open Frame Rack

CPI# 15053-703

Grounding Kit

10610-019

Power Strip with Surge Suppression

Leviton 5500-192

5. Floor Mount Cabinets

- Four-post frame with threaded mounting holes used to support 19" wide rack-mount communications equipment and shelves
- For indoor use only, in environmentally controlled areas; may not be used outdoors, in industrial or harsh environments, or in plenum spaces
- Includes: (1) top pan, (1) bottom pan, (4) mounting channels, (2) base angles, (2) top angles
- Assembly hardware; (100) #12-24 equipment mounting screws
- Equipment Support: Front and rear pairs of 3" deep C-shaped equipment mounting channels, Fixed in place, 29" apart front-to-rear, 19" wide, EIA-310-D compliant hole pattern
- 1-3/4" high rack-mount units (RMU); RMU spaces are marked and numbered on the channels
- Universal hole pattern, 5/8"-5/8"-1/2" vertical hole spacing
- Threaded #12-24 equipment mounting holes, Includes 100 each #12-24 equipment mounting screws
- Load capacity: 2000 lb of equipment
- Material:; Aluminum extrusion, Aluminum sheet
- Construction: Bolted assembly, Ships unassembled
- **Color: BLACK**
- **Quantity:** See Drawing for quantity and installation details.
- **Part#: Chatsworth Products Inc.**

Floor Mount Cabinet

CPI# M1050-741

Grounding Kit

10610-019

Power Strip with Surge Suppression

Leviton 5500-192

6. Outdoor Wireless Access Point Enclosure
 - Non-glass-filled polyester material, UV resistance; Overlapping tongue-and-groove raised cover and gasket provide secure Type 4X seal
 - Removable snap-hinge cover allows for easy access to cover and body for modifications
 - Molded layout grid on inside of body and solid covers assists with component mounting
 - Molded-in embosses for rear panel mounting
 - Internal rail system and adjustable panel blocks allow
 - UL 508A Listed, NEMA/EEMAC Type 4
 - Material: Non-glass-filled polyester
 - **Color: Light-Gray**
 - **Quantity:** See Drawing for quantity and installation details.
 - **Part#: Pentair**
 - **Polypro Wifi, PN# D16148WF**

E. Cable Support System

1. Ladder Rack Cable Runway

- Stringers shall be fabricated from 16ga .375" x 1.5" Cold Rolled Steel tubing.
- Rungs shall be fabricated from 16ga .5" x 1.0" Cold Rolled Steel tubing
- Rungs shall be spaced at 9.0" center to center
- A straight length of ladder shall be capable of supporting 45 pounds per foot when a 10' length is tested according to NEMA VE-1.
- Ladder Rack shall have a powder coat finished.
- Ladder Rack shall be available in standard 6ft. and 10ft. lengths.
- Ladder rack shall be a part of a total system that includes: manufacture bends, wall supports, joining hardware, etc.
- Ladder Rack shall be grounding per the TIA/EIA 607-A.
- **Color:** Ladder Rack will be **BLACK**
- **Quantity:** See Drawing for quantity and installation details.
- **Part#:** Equal to Chatsworth Products Cable Raceway, PN# 11252-71X

Part 3 - Backbone slack loops

- Storage rings may be used to store coiled slack loops on backboard.
- Part #:
Fiber storage rings, Indoor fiber: 48900-IFR
Fiber storage rings, Outdoor fiber: 48900-OFR

Part 4 - Execution

4.1 Installation

A. Work Area Outlets Installation

- No more than 12" of cable shall be stored in an outlet box, modular furniture raceway, or insulated walls.

- Bend radius of the cable in the termination area shall not be less than 4 times the outside diameter of the cable.
- The cable jacket shall be maintained to within 12.7mm (½ inch) of the termination point.
- All UTP cables shall have no more than 6.4mm (1/4 inch) of pair *untwisted* at the termination point.
- Data jacks, unless otherwise noted in drawings, shall be located in the top position(s) of each faceplate. Data jacks in horizontally oriented faceplates shall occupy the left-most position(s).
- Voice jacks, unless otherwise noted in drawings, shall occupy the next position(s) below the data on the faceplate. Voice jacks in horizontally oriented faceplates shall occupy the position left of the data jack.
- Video jacks, unless otherwise noted in drawings, shall occupy the bottom position(s) on the faceplate. Video jacks in horizontally oriented faceplates shall occupy the position left of the data/voice jack.
- All faceplates installed shall be level.
- All outlets will be labeled according to the approved labeling scheme.
- Each faceplate shall be machine labeled. The labeling shall be placed on the faceplate so that the individual jack can be clearly identified by its associated label.
- Cables shall be identified by a self-adhesive label in accordance with the Identification and Labeling section of this specification and ANSI/TIA/EIA-606. The cable label shall be applied to the cable no further than 6" behind termination module, behind the faceplate on a section of cable that can be accessed by removing the cover plate.

B. Horizontal Distribution Cable Installation

- Cable shall be installed in accordance with manufacturer's recommendations and best industry practices.
- Nylon or plastic locking cable ties, e.g. "Zip-Ties", shall not be used on this project.
- Contractor will provide a three foot "service loop" for all station cables. The service loop will be coiled and secured using Velcro in the accessible ceiling at the conduit stub to the work area outlet box.
- Tie Wraps will not be allowed for supporting, bundling and/or dressing of any station cables on this project.
- Contractor will provide a three foot "service loop" for all station cables. The service loop will be coiled and secured using Velcro in the accessible ceiling at the conduit stub to the work area outlet box.
- A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in all "common" conduit runs. "Common" Conduit Runs are those that house more than one cable or set of cables that do not specifically feed a Work Station Outlet. Examples of "Common" Conduit Runs are: floor/ceiling penetrations, stub-throughs, distribution conduits, all conduits between J-boxes, etc.
- Cable raceways shall not be filled greater than the TIA/EIA-569-A maximum fill for the particular raceway type or 40%.
- Cables shall be installed in continuous lengths from origin to destination (no splices) except for transition points, or consolidation points.
- The cable's minimum bend radius and maximum pulling tension shall not be exceeded.
- Pulling tension on 4-pair UTP cables shall not exceed 25-lb for a four-pair UTP cable.
- The Cable Support System shall be installed in such a way that will allow for future cables to be added and to provide sufficient protection of all cable.

- For all installs where station cables are not installed in a continuous conduit run the following guidelines will apply. The Contractor will be responsible to reinstall all cables and pathways that do not meet with the following at no additional cost to the Owner:
 - J-hooks shall be installed to support all station cables every 14" – 28" inches.
 - All pathways shall be run at right angles. No diagonal pathways will be allowed unless otherwise noted on the drawings.
 - Horizontal cables shall be bundled in groups of no more than 25 cables per Caddy's CAT21 J-hook, no more than 40 cables per Caddy's CAT32 J-hook, and no more than 64 cables per Caddy's CAT64 J-hook.
 - A separate J-hook is used for each group of cable. Specifically, CAT6 cable, fiber cable, and fire alarm are to have their own J-hook.
 - At no point shall cable(s) rest on acoustic ceiling grids, acoustic panels, or lighting fixtures.
 - All cables will be installed so that there is a minimum of 3" of clearance above all ceiling grid and tiles.
 - All cables will be installed so that there is a minimum of 12" of clearance above all florescent lighting.
 - All cables will be installed so that there is a minimum of 6" of clearance from all fire alarm and electrical system conduits.
 - Cables shall not be attached to the ceiling grid or lighting fixture wires. The contractor will provide their own carriers wires to support their horizontal cabling.
 - All cables shall be installed above fire-sprinkler systems and plumbing system fixtures and devises. Cables shall not be attached to or supported by these fixtures and/or their ancillary equipment or hardware.
 - The cable system and support hardware shall be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.
 - Contractor is responsible for sealing around all cables that penetrate fire rated barriers.
 - Wireless and overhead cables shall be secured by an in-ceiling mounting bracket affixed to its dedicated ceiling wire or mounted to building structure.
- Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the contractor prior to final acceptance at no cost to the Owner.

C. Horizontal Cross-Connect Installation

- Cables shall be cleaned, dressed, and terminated in accordance with the recommendations made in the TIA/EIA-568-A standard, manufacturer's recommendations and best industry practices. Contractor to verify standard network equipment can be installed without any interference from the cables. Equipment typically is installed directly above and/or below the panel.
- The cable jacket shall be maintained to within 12.7mm (½ inch) of the termination point.
- All UTP cables shall have no more than 6.4mm 1/4 inch) of pair *untwist* at the termination point.
- Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
- All cables shall be neatly bundled in groups of 24 and dressed continuously from the entrance point of the Telecommunications Room to their respective panels or blocks. Each panel or block shall be fed by an individual bundle

separated and dressed back to the point of cable entrance into the rack or frame. Contractor will use Velcro strip to bundle cables together. The use of Tie –Wraps is not permitted.

- Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view shall not be acceptable.

D. Backbone Cable Installation

- Backbone cables shall be installed separately from horizontal distribution cables.
- Each individual cable is to be labeled. See details sheets for labeling examples. Cable type and from/to are required. Each cable to be labeled at any accessible point, including, but not limited to, pull boxes, Christy boxes, junction boxes, and any pass through location.
- Where possible the backbone and horizontal cables shall be installed in separate conduits.
- Where possible backbone cables of the same type shall be combined in conduit runs to maximize conduit fill ratios.
- Where backbone cables and distribution cables are installed in a cable tray or wireway, backbone cables shall be installed first and bundled separately from the horizontal distribution cables.
- Pulling tension on Backbone cables shall not exceed the manufacture's limitations.
- The minimum bend radius for all Backbone cables is 16 times the cable diameter or the manufactures specification, whichever is greater.
- Cable slack shall be provided in every pull box, junction box, cabinet, entry facility, telecom room and termination enclosure.
 - * 25 feet of slack per cable shall be mounted on a service ring inside the enclosure.
 - * All cable shall be installed such that all cable is above the bottom of the enclosure. All cable shall be suspended on cable support hooks around the perimeter of the enclosure. Cable Support Hooks equal to Hubbell Power Systems PN# **C2031124** and **C2031133** (part numbers dependent on size of enclosure, sample part numbers only, not to be used in all circumstances).
 - * Entry & telecom rooms & cabinets: Minimum 25' feet coiled in re-closeable storage ring.
 - * If 25' is not possible, contact the owner and discuss an agreeable amount of slack, followed up with an confirming RFI.
 - * Minimum of 25' of slack in each vault and a minimum of 15' of slack in any other type of box (pull box, Christy box, pass through space, etc).
- All OSP cables may not penetrate more than 50ft into the buildings before be terminated or splices to cable with a fire resistant jacket, unless the jacket is indoor/outdoor rated.
- A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.
- All backbone cables shall be securely fastened to the sidewall of the TR on each floor.
- Backbone cables spanning more than three floors shall be securely attached at the top of the cable run with a wire mesh grip and on alternating floors or as required by local codes.
- Vertical runs of cable shall be supported to messenger strand, cable ladder, or other method to provide proper support for the weight of the cable.
- Large bundles of cables and/or heavy cables shall be attached using metal clamps and/or metal banding to support the cables.

- E. Backbone Cross-Connect Installation
- Cables shall be cleaned, dressed, and terminated in accordance with the recommendations made in the TIA/EIA-568-C document, manufacturer's recommendations and best industry practices.
 - Bend radius of the cable in the termination area shall not exceed 16 times the outside diameter of the cable.
 - All cables shall be neatly bundled and dressed continuously from the entrance point of the Telecommunications Room to their respective panels or blocks.
 - Contractor will provide a minimum of a 3 foot "service loop" for each backbone cable before terminating to allow future rearrangement. Cables will be coiled and secured above the ceiling where possible or to the Telco Backboard where entrance point is from the floor.
 - Wall mounted termination block fields shall be installed with the lowest edge of the mounting frame 18" from the finished floor.
 - Contractor shall provide a machine label 1ft. to 2ft. from the entrance point of the TR and 6in. to 12in. from the termination point on each backbone cable. Cable shall be easily identified and fully legible without removing the bundle support ties.
- F. Cabinets, Racks, Enclosures and Ladder Rack Installation
- Wall Mount Racks/Cabinets shall be securely attached to the Telco Backboard using minimum 5/16" hardware or as required by local codes. Mounting rails shall be adjusted to the proper depth to allow for the closing of doors when populated with network electronics. Coordinate with Owner for final depth required.
 - Floor Mount Racks/Cabinets shall be securely attached to the concrete floor using minimum 3/8" drop-in anchor hardware or as required by local codes.
 - All Floor Mount Racks/Cabinets will be either; secured on one side to the wall or attached to the closest wall with ladder rack.
 - All Racks/Cabinets shall be braced to meet Zone 4 seismic requirements.
 - Contractor will maintain a minimum of 36 inches of clearance from the front of the all rack/cabinets and all other obstructions.
 - Floor Mount Racks/Cabinets shall be installed to allow for a minimum of 36" from rear and all other obstructions.
 - All racks shall be grounded to the telecommunications ground bus bar.
 - Rack mount screws not used for installing patch panels and other hardware shall be bagged and left with the rack upon completion of the installation.
 - The plywood bottom edge shall be mounted vertically no less than 12" above the finished floor.
 - Contractor will provide all cutouts for the Electrical Contractors expansion rings and electric receptacles as shown on the drawings.
 - Ladder Rack must be securely attached to walls, backboards, and racks/cabinets to comply with all Zone 4 seismic requirements.
 - Ladder rack shall be installed so that there is a minimum of 8" of unobstructed clearance above rack.
 - Ladder Rack shall be installed so that there is a minimum of 12" of clearance from all: florescent lighting, electrical conduits/circuits, and fire alarm conduits/devices.

4.2 Identification and Labeling

- A. The labeling scheme for CAT6 cable is as follows for classrooms (verify with Owner prior to printing the labels):

When entering the room (if the room has multiple doors, the door designated as the primary entry door), label numbering shall start a one (1) and then increment as data drops are added going around the room, then any drops in the ceiling, and then any drops in the floor. For each room, numbering starts over at one (1). Each jack color starts at one (1) and increments for each additional jack of the same color. Label designations are based on jack color:

Blue = **D#** White = **V#** Yellow = **W#** Gray = **A#** Purple = **C#**

Patch Panel Label Format: **RM#** - _____

The first part of the label shall be the room number the data drop is located in, RM is part of the label, followed by the room number or room designation. The last part of the label shall be the type, as stated above based on jack color, then followed by the drop number. For example, RM3-D10 is room 3, data drop 10. RM3-V2 would be room 3, voice data drop 2.

The label format in the room: **RM#** - _____ - _____

The first part of the label shall be **RM**, followed by the room number/ designation the cabinet/rack is located in.

The second part of the label shall be the patch panel the cable is terminated on. The top most panel is **A** and continues down with **B**, **C**, etc... If multiple panels span more than one rack/cabinet, when standing in front of the rack/cabinets, the top left panel shall be **A**.

The last part of the label uses the label based on jack color, as stated above, and the drop number. Example, RM3-A-D10: Indicates the other end of the cable is in the cabinet/rack in room 3, terminated on panel A, and the last portion, ie D10 in this example, was the tenth data drop in this room. The last portion, D10 in this example, would match the patch panel label, RM3-D10.

Label scheme for non-classroom buildings follows the above scheme, but the label number starts at 1 (one) for each type (D, V, W, A, C) and increments throughout the building and does not reset for each room/office. Start at one and do not repeat the number anywhere in the building (for each type).

- B. The approved system will comply with the TIA/EIA -606-A Class 2 designations and include at a minimum, identifiers for all major components of the system: telecommunication rooms, grounding bus bars, racks, cables, panels and outlets. The labeling system shall designate the cables origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the cable system infrastructure.
- C. All label printing will be machine generated or hand-held printers using indelible ink ribbons or cartridges. Self-laminating labels will be used on cable jackets, appropriately sized to the OD of the cable, and placed within view at the termination point on each end. Outlet, patch panel and wiring block labels shall be installed on, or in, the space provided on the device.
- D. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme.
- E. All fiber cable labels are to include the type, count, from and to on each label. Any point the fiber is accessible shall be labeled. At a minimum, that would include the starting point, any Christy boxes, cabinets/racks, any rooms the cable passes through, and the ending point. Service loops provided and labeled at each location, a minimum of 25' in each vault and 15' minimum in a Christy box/any other box or pass through space.
- F. **Labels are to verified by Owner prior to printing.** Labels are to include building/room designations used by the site. Do NOT use building/room designations from the plans unless approved by Owner in writing.

4.3 Testing and Acceptance

A. General

1. The Owner reserves the right to be present during any & all types of tests being performed.
2. Contractor will notify the Owner/Owner's Representative 24 hours before commencement of testing.
3. Upon receipt of the test documentation, the Customer reserves the right to have the contractor perform a 10% witnessed "spot testing" of the cabling system to validate test results provided in the test document, at no additional cost. If a significant amount of cables are marginal and/or fail during the "spot test" Contractor will retest the entire cable plant at no additional cost.
4. Contractors shall provide proof of test equipment calibration prior to testing.
5. Test equipment shall have been factory calibrated within six months of project testing dates.
6. All cables and termination hardware shall be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements of TIA/EIA-568-C, TSB-67 and TSB-95. All pairs of each installed cable shall be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.
7. All cables shall be tested in accordance with this document, the ANSI/TIA/EIA standards, the Manufacturer's Warranty guidelines and best industry practice. If any of these are in conflict, the Contractor shall bring any discrepancies to the attention of the project team for clarification and resolution.

B. Copper Cable Testing

1. Twisted Pair Cable

- All twisted-pair copper cable links (including backbone cables) shall be tested for continuity, pair reversals, shorts, opens and performance as indicated below.
- Continuity - Each pair of each installed cable shall be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as indicated by the test unit in accordance with the manufacturers' recommended procedures, and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.
- Length - Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set forth in the ANSI/TIA/EIA-568-A Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length shall be recorded as the length for the cable.

2. Category 6 Performance

- Follow the Standards requirements established in:
 - ANSI/TIA/EIA-568-C.0 Wire Map
Length
Attenuation
NEXT (Near end crosstalk)
 - ANSI/TIA/EIA-568-C.2 Return Loss
ELFEXT Loss
Propagation Delay

Delay skew
PSNEXT (Power sum near-end crosstalk loss)
PSELFEXT (Power sum equal level far-end crosstalk loss)

- A Level III or better test unit is required to verify category 6 performances and must be updated to include the requirements of TSB-95 and Amendment 5. Testers will be equal to or better than Fluke Network's DTX CableAnalyzer™ Series.
 - All testers shall have been recalibrated within 6 months of use on this project. Contractor will be asked to provide proof of recalibration.
 - Test results shall be automatically evaluated by the equipment, using the most up-to-date criteria from the TIA/EIA Standard, and the result shown as pass/fail. The approved Level Three tester shall provide a printed document for each test that is also available in a downloadable file using an application from the test equipment manufacturer. The printed test results shall include a print out of all tests performed, and the individual test results for each cable.
3. Category 6A Performance
- Shall met all test paramenters as stated above for Category 6, with the addition of PSANEXT, PSAACR, and PSAACR-F:

C. Fiber Optic Cable Testing

1. Backbone Fiber

- Each fiber strand shall be tested for attenuation with an Optical Power Meter and light source and with an Optical Time Domain Reflectometer (OTDR) for actual length and splice/connector loss. Cable length shall be verified using sheath markings. The guidelines and procedures established for Tier 1 testing in TIA/TSB-140 shall apply.
- All fiber optic cables shall be tested from the site's MDF to each fiber terminals located in the IDF. The results of OTDR testing to define the length of each riser cable shall be documented. The Contractor shall conduct a power meter (loss) test of each fiber optic station and riser cable at both wavelengths, 850/1300nm for MM and 1310/1550nm for SM, A to B, B to A, and OSPL (OSPL is defined as $L_a + L_b$). No individual station or riser fiber link segment (including connectors) shall measure more than 2.0 dB loss. Tests shall be conducted using ANSI/EIA/TIA/EIA-526-14A, Method B. Test results evaluation for the panel to panel (backbone) shall be based on the values set forth in ANSI/TIA/EIA-568-C.2. The Contractor shall provide an electronic printout for each strand tested with the Power Meter and the OTDR.
- Where concatenated links are installed to complete a circuit between devices, the Contractor shall test each link from end to end to ensure the performance of the system. After the link performance test has been successfully completed, each link shall be concatenated and tested. The test method shall be the same used for the test described above. The evaluation criteria shall be established between the Owner and the Contractor prior to the start of the test.
- All installed cables must meet or exceed the defined standards for performance. The Contractor shall take all steps necessary to repair or replace any optic not meeting the standard.
- Fiber optic riser and station cable test results shall be provided in electronic format to the Owner.

4.4 System Closeout and As-built Documentation

- A. Upon completion of the installation, the telecommunications contractor shall provide three (3) full documentation sets to the Owner's Representative/Engineer for

- approval. One (1) to be a hardcopy and two (2) to be electronic copies.
Documentation shall include the items detailed in the sub-sections below.
- B. Documentation shall be submitted within ten (10) working days of the completion of each testing phase. This is inclusive of all test results and draft as-built drawings. Draft drawings may include annotations done by hand. Machine generated (final) copies of all drawings shall be submitted within 30 calendar days of the completion of each testing phase. At the request of the Owner's Representative/Engineer, the telecommunications contractor shall provide copies of the original test results.
 - C. The Owner's Representative/Engineer will request that a 10% random field re-test be conducted on the cable system, at no additional cost, to verify documented findings. Tests shall be a repeat of those defined above. If findings contradict the documentation submitted by the telecommunications contractor, additional testing can be requested to the extent determined necessary by the Engineer, including a 100% re-test. This re-test shall be at no additional cost to the Owner.
 - D. **Test Results** documentation shall be provided in two media, as listed above, one (1) hardcopy and one (1) on disk within three weeks after the completion of the project. The documentation shall be clearly marked on the outside front cover with the words "Project Test Documentation", the project name, and the date of completion (month and year). The results shall include a record of test frequencies, cable type, conductor pair and cable (or outlet) I.D., measurement direction, reference setup, and crew member name(s). The test equipment name, manufacturer, model number, serial number, software version and last calibration date will also be provided at the end of the document. Unless the manufacturer specifies a more frequent calibration cycle, a bi-annual calibration cycle is anticipated on all test equipment used for this installation. The test document shall detail the test method used and the specific settings of the equipment during the test as well as the software version being used in the field test equipment.
 - E. Printouts generated for each cable by the wire test instrument shall be submitted as part of the documentation package.
 - F. When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be documented.
 - G. The **As-Built** drawings are to include cable routes, outlet locations and the approved labeling identifiers. Their sequential number as defined elsewhere in this document shall identify outlet locations. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. These documents will be modified accordingly by the telecommunications contractor to denote as-built information as defined above and returned to the Owner.
 - H. Contractor will provide one laminated 11"x17" drawing at each IDF that includes the building layout for that IDF, along with the outlet locations and all of the approved labeling. The as-built/current layout is to be provided.
 - I. Test results are to be submitted to the manufacturer and a copy of the warranty certification is to be provided to the owner.

Sample Rack Layout in a classroom:

Top of unit: Fiber distribution unit(s)
Skip 1U.
24-port patch panel
Owner provided network switch (installed by Owner)
24-port patch panel

Repeat the pattern: panel/switch/panel....

At the bottom on the cabinet, skip 1U above the bottom and the UPS is installed. 1U above the UPS, the power strip is installed.

END OF SECTION

SECTION 27 51 13 PAGING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Wall-Mounted Speaker, Weather Resistant
- B. Paging System Cable
- C. Conduit

1.2 QUALITY ASSURANCE

- A. Manufacturer: The manufacturer shall have ten (10) years documented experience in the design and manufacture of paging system devices and equipment.
- B. Installer: The Contractor shall have a minimum of ten (10) years documented experience in paging system installation with demonstrated prior experience with the selected manufacturer's system installation and programming.
 - 1. The Contractor shall own and maintain all tools and equipment necessary for successful installation and testing of the system and have personnel adequately trained in the use of such tools and equipment.
- C. The Contractor(s) shall provide a résumé of prior experience in similar types and scales of projects, and other projects that may have been completed with the client. The résumé shall include the project name, square footage, budget, system descriptions, and references with email addresses and phone numbers.
- D. The entire installation shall comply with all applicable electrical and safety codes. All applicable devices, equipment, and cabling shall be listed by Underwriters' Laboratories, Inc.

1.3 REFERENCES

- A. NFPA 70 - National Electrical Code
- B. State of California: Title 19-California Code of Regulations Title 24-Building Standards
- C. UL 813 - Standards for Commercial Audio Systems
- D. UL 1480 - Speakers for Fire Alarm, Emergency, and Commercial and Professional Use

1.4 SUBMITTALS

- A. Submit product data under the provisions of Section 27 05 00, Part 1.6.
- B. Quality Assurance:
 - 1. Provide system checkout test procedure to be performed at acceptance, including test results of any cabling and equipment installed.

1.5 SYSTEM DESCRIPTION

- A. This specification section describes the furnishing and installation, of a exterior rated system including cabling and speaker installation.
- B. Performance Statement: This specification section and the accompanying design documents are performance based, describing the minimum material quality, required features, and operational requirements of the system. These documents do not convey every wire that must be installed or every equipment connection that must be made. Based on the equipment constraints described and the performance required of the system as presented in these documents, the vendor and the Contractor are solely responsible for determining all wiring, programming, and miscellaneous equipment required for a complete and operational system.
- C. This Contractor shall furnish and install a speaker/horn system as hereinafter specified and further detailed on the drawings. System shall be completely wired and ready for use including, but not limited to, outlet boxes, conduit, wire and speakers.

1.6 PROJECT RECORD DOCUMENTS

- A. Provide final system block diagram showing any deviations from shop drawing submittal. Block diagram shall include cable number documenting the numbers installed on both ends of the cable in the field.
- B. Provide documentation of all test results and statement that system checkout test, as outlined in shop drawing submittal, is complete and satisfactory.
- C. Provide documentation indicating speaker tap value at time of installation.
- D. Warranty: Submit written warranty and complete all Owner registration forms.
- E. Complete all operation and maintenance manuals as described herein.

1.7 OPERATION AND MAINTENANCE DATA

- A. Submit data under provisions of Section 27 05 00.
- B. Operation and Maintenance data shall be submitted in hard copy and electronic .pdf format.
- C. Operation data shall include:
 - 1. Manufacturer's full operation instructions for each piece of equipment.
 - 2. Complete documentation of all settings and programming.
 - 3. Detailed, step-by-step instructions for system operation, including accessing, initiating, and performing all required system features and functions listed herein.
- D. Maintenance data shall include:

1. Description of servicing procedures:
 - a. Documentation of all manufacturers' recommended preventive and remedial maintenance procedures to be performed by the Owner.
 - b. Troubleshooting flowcharts.
2. Spare parts list.

1.8 WARRANTY

- A. Unless otherwise noted, provide warranty for a minimum of five (5) years after Substantial Completion, as defined by the Contract. Certain system components may require additional manufacturer's warranty as described herein.
- B. The warranty shall:
 1. Ensure that all approved devices, equipment, cabling, and other components specified and installed by this contractor meet or exceed the specified requirements.
 2. Ensure against product defects.
 3. Cover the replacement or repair of the defective product(s) and labor for the replacement or repair of such defective product(s).
 4. Include emergency service and repair on-site, with response times of 24 hours from time of notification. The system shall be repaired and restored to operation within 24 hours of technician's arrival on site.
- C. Refer to the individual product sections for further warranty requirements of individual system components.

PART 2 PRODUCTS

2.1 SYSTEM HEADEND

- A. Headend equipment is existing and not included in the scope of work.

2.2 WALL-MOUNTED SPEAKER, WEATHER RESISTANT

- A. outdoor-rated IP speaker for voice paging, emergency alerting, and loud ringing applications. This IP speaker is also a fully compliant 3rd party SIP endpoint. Rotary tap impedance selector, tilt and swivel base for positioning with mounting bracket and screw terminals for mounting.
 1. Basis of Design
 - a. Bogen SPT15A (non powered)
 - b. Bogen SAH15 (self amplified)

2.3 PAGING SYSTEM CABLE

- A. Speaker Cable
 - 1. Wiring from terminal block to speaker: 2-pair, 22AWG stranded copper conductors with 1-pair (black, red) shielded and 1-pair (white, green) unshielded having an overall gray PVC jacket. NEC rating CMR, NEC Article 800, UL Listed. UL 1666 Riser Flame Test flame rating. RoHS compliant. . NEC rating CMR, NEC Article 800, UL Listed. UL 1666 Riser Flame Test flame rating. RoHS compliant.
 - 2. Basis of Design:
 - a. West Penn model: 357
- B. Ethernet Cable
 - 1. Category 6 UTP cable.
 - a. Refer to Section 27 10 00 for requirements.

2.4 TERMINATION

- A. Intercommunication system terminal blocks shall have Category 5e S66 style clips for terminating 22-26 AWG solid insulated cable or 18-19 AWG solid stripped cable. High impact flame retardant thermoplastic with fanning strips for cable management and labeling.
 - 1. Basis of Design:
 - a. Siemon model: S66M1-50

2.5 CONDUIT

- A. All intercommunication system cable and wiring shall be in EMT or RMC type conduit.
- B. All conduit for paging system cabling shall be a minimum of 3/4" trade size.
- C. Flexible conduit shall be used only for "fixture whip" type applications at speakers in accessible ceilings, between a speaker and nearby junction box. Flexible conduit for this application shall be no longer than four (4) feet. Flexible conduit shall not be installed for any other paging system cabling.
- D. Refer to Specification Section 26 05 33 for additional requirements.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with all manufacturer's instructions and recommendations for installation of all equipment, devices, and materials.
- B. It is the Contractor's responsibility to survey the site and include all necessary costs to perform the installation as specified.
- C. Wiring:

1. Refer to Sections 26 05 33 for conduit requirements and 26 05 13 for additional wiring requirements. Wiring not installed in conduit shall be plenum rated.
2. All overhead paging system audio cabling, including but not limited to speaker, line-level audio, and microphone-level audio cabling, shall be installed in its own cable pathway and shall not share any raceway or cable pathway with telephone or computer network cabling or cabling of any other system.
3. Cable shall not be laid directly on the ceiling grid or attached in any manner to the ceiling grid wires. Cables shall not be attached to or supported by existing cabling, plumbing or steam piping, ductwork, ceiling supports, electrical or communications conduit, or structural elements.
4. Manufacturer's minimum bend radius specifications for cables shall be observed in all instances.
5. All cable shall be installed at right angles and be kept clear of work by other trades. To reduce or eliminate EMI, the following minimum separation distances from 480V power lines shall be adhered to:
 - a. 12 inches from power lines of \leq 5-kVa
 - b. 18 inches from high voltage lighting (including fluorescent)
 - c. 39 inches from power lines of 5-kVa or greater
 - d. 39 inches from transformers and motors
6. It shall be noted that all cables shall be installed in continuous lengths from endpoint to endpoint. No splices shall be allowed unless noted otherwise.
7. All cable shall be free of tension at both ends.
8. Both ends of all cables shall be clearly labeled with an alphanumeric identifier. On speaker cables, the label shall indicate the speaker cable circuit zone or run and the telecommunications room in which the zone or run initiates; on line-level cables, the label shall indicate the signal and signal source. Record all speaker cable identifiers on record drawings.
9. No acid core or other corrosive flux solder shall be used in this system.
10. Speaker cable conductor sizes listed are minimum requirements. Actual wire size required shall be determined by the Contractor to maintain a maximum of 10% voltage drop or 0.5 dB insertion loss on any speaker zone. Actual speaker cabling installed shall meet or exceed minimum conductor sizes listed. Basis of design paging speaker cable listed herein is provided to list the minimum criteria and performance requirements for paging speaker cable.
11. The polarity of all cabling shall remain consistent throughout the project, on all equipment.
12. Do not run unbalanced audio signals over cables longer than 10 feet. Contractor shall provide a shielded transformer-based converter at signal source to convert the unbalanced signal to a balanced signal.
13. The Contractor shall provide an isolation transformer for any balanced or unbalanced audio line that exhibits hum, EMI / RFI, power line noise, or ground loops.
14. Provide all system wiring between all components as shown on project documents, as directed by the manufacturer, and/or required for proper system operation and to provide specified system functionality.
15. Conductors shall be terminated in the following orders:
 - a. West Penn #357:

- 1) Shield
 - 2) Black
 - 3) Red
 - 4) Green
 - 5) White
16. Superior Essex SEALPIC:
- a. Major:
 - 1) White
 - 2) Red
 - 3) Black
 - 4) Yellow
 - 5) Violet
 - b. Minor:
 - 1) Blue
 - 2) Orange
 - 3) Green
 - 4) Brown
 - 5) Slate

D. Equipment:

1. All speakers shall be connected in proper polarity.
2. Install and tighten all connectors in accordance with manufacturer's instructions, using the appropriate purpose-designed tools recommended by the manufacturer for that purpose. Use caution to avoid stripping or damaging connectors, terminals, or equipment by over-tightening termination fasteners.
3. The conductor color code used in terminating system cabling at system equipment and devices shall remain consistent from device to device for each unique device type throughout the project.

3.2 FIELD QUALITY CONTROL

- A. Where these specifications require a product or assembly without the use of a brand or trade name, provide a product that meets the requirements of the specifications, as supplied and warranted by the system vendor. If the product or assembly is not available from the system vendor, provide product or assembly as recommended by the system vendor.
- B. Furnished products shall be listed and classified by UL as suitable for purpose specified and indicated.
- C. Periodic observations will be performed during construction to verify compliance with the requirements of the project documents. These services do not relieve the Contractor of responsibility for compliance with the project documents.

3.3 SYSTEM SETUP, PROGRAMMING, AND ADJUSTMENT

- A. The Owner shall provide all system programming, startup, balancing, tuning, and adjustment required as part of this project. This shall include all calibration and adjustments of equipment controls, troubleshooting, and final adjustments that may be required.

3.4 TESTING

- A. After installation of the intercommunication system, the Contractor shall perform testing of the complete intercommunication system in the presence of the Commissioning agent and shall make adjustments to the pre-installation speaker tap settings to achieve the following performance results:

Area Type	Required Performance (dB)	Pre-installation Tap Settings (W)
Outdoors	110 – 115	15.00

- B. Performance results listed above shall be measured from the center of the area type for indoor spaces.

END OF SECTION 27 51 13

SECTION 28 13 00

ACCESS CONTROL SYSTEM

PART 1 GENERAL

1.1 RELATED WORK

- A. Division 08 Sections.
- B. Division 26 Sections.
- C. Division 28 Sections:
 - 1. This contractor to be responsible for access controls system.

1.2 WORK INCLUDED

- A. The Contractor shall furnish and install a complete microprocessor-based access control system as specified herein. The system shall include, but not be limited to, all control equipment, power supplies, power circuits, signal initiating and signaling devices, conduit, wire, network cabling, fittings, and all other accessories required to provide a complete and operable system.
- B. Security system devices indicated are for reference and coordination purposes only. The installing contractor shall design and provide a complete system, meeting the requirement of specification, The Contractor shall provide all security system devices required for complete system perimeter coverage acceptable to all governing authorities, Architect and Owner.
- C. The system shall include security for all access into building via card reader and electrified door hardware interface. Card reader access interface must also be provided at locations noted.
 - 1. The Control System shall be the product of a single manufacturer.
 - 2. Tag all conductors or cables at each end.
 - 3. Installation of security panels.
 - 4. Interconnection of security panels.
 - 5. Installation of new security devices.
 - 6. Preconstruction meeting with Owner's personnel, installing technician and project superintendent.
 - 7. Card reader hardware and components.
- D. The contractor shall connect this location to the district monitoring station as designated by the owner.
- E. Additional Responsibilities of the Access control contractor are as follows:
 - 1. Input all Access Control Doors, Door Position switches, Door Release buttons, Keypads and all other devices into SMS and Mapping Feature.
 - 2. Mapping feature shall be programmed for complete monitoring of all devices, as well as complete functionality of Doors. Features shall include but shall not be limited to
 - a. Lock
 - b. Unlock
 - c. Lockdown

- d. Position
- e. Alarm for Propped Door
- f. Alarm for Forced Door
3. Package and return all unused door hardware installation components. All components that are turned over to owner must be inventoried by integrator.

1.3 CODES AND STANDARDS

- A. The system shall comply with the applicable Codes and Standards as follows:
 1. National Fire Protection Association Standards:
 - a. NFPA 70 National Electric Code.
 - b. NFPA 72 National Fire Alarm Code.
 - c. NFPA 101 Life Safety Code.
 2. Local & State Building Codes.
 3. Requirements of Local Authorities having Jurisdiction.
 4. Underwriters Laboratory Requirements and Listings for use in Security Alarm Systems.
 5. Requirements of American Disabilities Act (Public law 101-336).
 6. Accessibility Standards.
 7. State Fire Marshall.

1.4 QUALITY ASSURANCE

- A. Contractor Qualifications:
 1. The installing contractor shall be the authorized representative of the Access Control Manufacturer to sell, install, and service product and all related equipment. The installing contractor shall have represented the security alarm manufacturer's product for at least five years.
 2. The installing contractor shall be licensed by the State of California as a security services contractor to design, sell, install, and service security alarm systems.
 3. The installing contractor shall provide 24-hour, 365 day per year emergency service with factory trained service technicians.
 4. The installing contractor shall have personnel on their staff that has been actively engaged in the business of designing, selling, installing, and servicing security alarm systems for at least ten (10) years.
 5. All Contractors must submit to the owner prior to starting any work the factory training certificates for all personnel that will be working on the access control system. No person is allowed to work on the system without proper manufacturer's certification.
 6. The proposing contractor for this system and the installing contractor of this system shall be of the same organization.
 7. Contractor must be a current integrator of solution in the closest major metropolitan area marketplace, have a permanent office located within 120 miles of the project, and be able to include information on current support staff to be able to service this client.
 8. The proposing/installing contractor of this system must be an authorized dealer/integrator for the project's specified Access Control System.

1.5 SUBMITTALS

- A. The installing contractor and/or equipment supplier shall provide complete and detailed shop drawings and include:
 1. Control panel wiring and interconnection schematics for all devices including intrusion detection points.

2. Complete point to point wiring diagrams.
 3. Riser diagrams.
 4. Complete floor plan drawings locating all system devices.
 5. Factory data sheets on each piece of equipment proposed. Pertinent information is to be highlighted. All non-pertinent information is to be removed or crossed out.
 6. Detailed system operational description. Any specification differences and deviations shall be clearly noted and marked.
 7. Complete system bill of material.
 8. **Line by line specification review stating compliance or deviation.**
 9. Specification Compliance: A letter shall be provided stating, by section and subsection, that the SCS installer complies with the ENTIRE specification section. If the installer intends to deviate from any portion of the specifications, a detailed explanation of reason in which the installer would like to deviate shall be provided in addition to the specification compliance letter. **NO DEVIATIONS SHALL BE ACCEPTABLE UNTIL THEY HAVE BEEN ACCEPTED BY THE PROJECT'S TECHNOLOGY CONSULTANT.**
- B. All submittal data will be in bound form with Contractor's name, supplier's name, project name, and state security license number adequately identified.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. The following access control systems are acceptable solutions for this project:
1. Access It! Universal.NET Enterprise. manufactured by RS2 Technologies.
- B. The Security Management System software shall be, SMS Field Hardware as needed
1. System Control Processors SCP shall be EP-2500
 2. System Input Output (SIO) units shall be – MR-51e or MR-52
 3. System Input/output module (SIO) 16 Inputs shall be – MR-16IN
 4. System Output module (SIO) 16 Outputs – MR-16OUT
 5. Communications Multiplexer RS-485 shall be – MUX-8
- C. Access Control System Enclosure
1. Life Safety Power
 2. Model #FP0150/250-2D8P2M8NL4E8M2
 3. Number of overall enclosures shall be based upon providing 120% of current project requirements to allow for future growth at each headend location.
 4. Power to panel shall be hardwired from 120v. power source to prevent someone from disconnecting the power to the unit.
 5. Door power supplies are part of this unit and shall be provided to interface with electrified door hardware.
 6. Provide labeling on face of panel for identification of panel as named in the access control software. Typical naming convention is 3 digit initials of campus – B(XXX) where X represents initials of building – ACP#
 7. Provide label on inside of access control panel to indicate electrical panel and circuit number of 120v. power serving panel.
 8. Provide dual local batteries for each panel where internal cards are being powered.
 9. Contractor to wire internal contact relay to indicate when power loss occurs to panel.
 10. Contractor to wire internal relay contact for door latch to indicate when access to the panel has occurred.

11. Provide all back plates and mounting hardware required for complete system installation.
- D. SMS Authentication Hardware:
1. AptiQ MT15 – Card Readers
 2. AptiQ MT11 – Mullion mount Card Readers (only to be used on retrofit applications)
 3. Readers shall be proximity style readers for all doors scheduled to receive card reader interface.
 4. All doors receiving a card reader shall also receive a steel door contact, GE 1078 Series flush mounted to provide door position status back to panel. For doors where flush mount contacts cannot be installed, contractor shall install industrial grade surface mount contact. If there is a pair of doors and one door has electrified hardware, the contractor shall also install a new door contact on the inactive door to also provide status of that door back to system.
 5. At all single and pair of doors receiving card readers, contractor shall install a ceiling or wall mounted request to exit (REX) device wired back thru the access control system to indicate when an authorized building exit has occurred. Optex, model OP-08CW.
 6. At campus administration building, contractor to provide blue push button for campus lockdown, model: SS2 434 LD-EN with custom label: LOCKDOWN. Pushbutton to be located in front office administration area and be momentary pushbutton style. Once building lockdown is activated, system shall remain in lockdown mode until authorized personnel use system software to place the system back in normal mode. Coordinate with local campus principal on final location of button prior to rough in.

2.2 MANUFACTURED UNITS

- A. System Control Processor (SCP):
1. The System Control Processor (SCP) shall link the SMS Software to all “down-stream” field hardware components (SIOs,). The SCP shall provide full distributed processing of access control / Alarm Monitoring rules and operations. A fully loaded and configured SCP shall respond in less than one-half (0.5) second to grant or deny access to cardholder.
 2. The SCP shall continue to function normally (stand-alone) in the event that it loses communication with the SMS software. While in this off-line state, the SCP shall make access granted/denied decisions and maintain a log of the events which occur. Events shall be stored in the SCP local memory, and then uploaded automatically to the SMS database after communication has been restored.
 3. In addition, the SCP shall incorporate the following features:
 - a. UL 294, ULC, and CE Certified
 - b. Support for Host Communications Speed of 115,200 bps
 - c. Support Direct Connect, Remote Dial Up, or Local Area Network (LAN) Connection
 - d. Support for up to 6 MB of On-Board Memory for the 12 MB for the EP2500
 - e. LAN Support shall utilize RJ45 (10/100baseT) Ethernet Interface
 - f. Flash Memory for real time program updates and overall host communications
 - g. Support 2 wire RS-485 downstream ports, Downstream ports shall be for connecting SIO panels via RS-485 multi-drop wiring configuration
 - h. Memory storage of up to 12 MB for the EP-2500

- i. Initial base memory download between SCP with standard memory from the SMS shall require no more than ten (10) seconds
 - j. Support for up to 32 SIO devices
 - k. Support of multiple card technologies
 - l. Supervised Communications between SCP and SMS Software
 - m. AES 256-bit Symmetrical Block Encryption conforming to the FIPS-197 standard between SCP and SMS Software communications driver.
 - n. Support of up to eight card formats and facility codes
 - o. Support for SEIWG card formats
 - p. Integration to other manufacturer's OSDP (Open Supervised Device Protocol), Magnetic (Clock and Data) and Wiegand (Data 1, Data 0) card readers
 - q. Uninterruptible Power Supply (UPS) with battery backup (** Specify the amount of Backup Time Required) (Minimum 24-hour battery backup)
 - r. 32-bit Microprocessor
 - s. Biometric Interface Support
 - t. An SCP downstream serial port shall multi-drop up to 32 access control SIO field hardware devices using an RS-485 UL 1076 Grade A communication format allowing a distance of 4,000 feet using Belden 9842 cable or equivalent
 - u. 12-24 VDC input power for the EP-2500 and 12 VDC
 - v. Issue Code Support for OSDP (Open Supervised Device Protocol), Magnetic (Clock and Data) and Wiegand (Data 1, Data 0) Card Formats
 - w. Individual Shunt Times (ADA Requirement)
 - x. Up to Nine Digit PIN Codes
 - y. Downstream serial RS-485 device support over CAT 5, 6e cable
 - z. Status LEDs for normal component and communication status
- B. RoHS ComplianceMR-16IN 16 Input Sub Input/Output module (SIO)
- 1. The Input Control Module shall provide 16 UL 1076 Grade B, A or AA alarm input zones and monitor / report line fault conditions, alarm conditions, power faults and tampers. Status LEDs shall provide information about the sixteen alarm zone inputs, cabinet tamper, and power fault.
 - 2. In addition, the SIO shall incorporate the following features:
 - a. UL 294, ULC, and CE Certified
 - b. Alarm contact status scanning at up to 180 times per second for each zone
 - c. Eight configuration DIP switches to assign unit addresses and communications speed
 - d. Elevator control support for 64 Floors using floor Tracking
 - e. Variable resistor values for line supervision
 - f. A low power CMOS microprocessor
 - g. Filtered data for noise rejection to prevent false alarms
 - h. Up to 16 Grade B, A, or AA Supervised Inputs in any Combination
 - i. 12 or 24 VDC Input Power
 - j. 2 Form C 5A, 30 VDC Contacts for load switching
 - k. 2 dedicated inputs for tamper and power status
 - l. RoHS Compliance
 - m. Support for RS-485 over CAT 5, 6e cable
- C. MR-16OUT 16 Output Sub Input/output module (SIO):
- 1. The Output Control Modules shall provide 16 Form-C 5A 30 VDC relay contacts for load switching. The relays shall be configurable for fail-safe or fail-secure operation. Each relay shall support "On" "Off" and "Pulse" operation.
 - a. 12 or 24 VDC input power
 - b. Two dedicated digital inputs for tamper and power failure status

- c. RS-485 communications, multi-dropped (2-wire or 4-wire RS-485)
 - d. Up to 16 MR-16OUTs per SCP
 - e. Onboard termination jumpers
 - f. DIP switch selectable addressing
 - g. Status LEDs for communication to the host, heartbeat and relay status
 - h. Elevator control, support for 64 floors
 - i. RoHS Compliance
 - j. Support for RS-485 over CAT 5, 6e cable
- D. MR-52 Reader Sub I/O module (SIO):
- 1. The MR-52 shall provide a dual interface between the SCP and authentication devices. The MR-52 must operate with any authentication device that produces a standard Wiegand, Magnetic or OSDP (Data 1 / Data 0 or Clock and Data) communication output.
 - 2. In addition, the MR-52 shall incorporate the following features:
 - a. 12 or 24 VDC power supply
 - b. Reader communications (Magnetic Clock/Data, Wiegand Data1/Data0 or OSDP) - more than 150 different readers approved for use
 - c. Six Form-C 5 A at 30 VDC relay outputs
 - d. Up to 8 different formats
 - e. Issue code support for Magnetic, Wiegand or OSDP formats
 - f. Door contact supervision (Open/Closed)
 - g. REX push-button monitor (Open/Closed, Supervised or Non-Supervised).
 - h. Strike Control output
 - i. Bi-color status LED support and 2-wire LED support
 - j. Beeper control
 - k. Dedicated tamper and power failure circuits
 - l. Support for offline reader access mode
 - m. Onboard jumpers for termination
 - n. Onboard jumpers for 5 VDC or 12 VDC reader support
 - o. Elevator control, native support for 6 floors without Floor Tracking.
 - p. DIP switch selectable addressing
 - q. UL 294 listed and CE approved
 - r. RoHS Compliance
 - s. Support for RS-485 over CAT 6 cable

2.3 COMPONENTS

- A. Enterprise System Server Requirements:
- 1. The district has an existing server currently installed at the district technology office that will handle all new access control systems. The integrator will be responsible to coordinate with the district on access to the server to be able to configure and commission the access control system.
- B. Panel Licensing:
- 1. **This project to provide an enterprise plus license package for 500 panels to be used for the overall district.**
 - 2. The district currently has an ESSL-50 Enterprise Plus License package that should be used to credit back to the manufacturer as part of this licensing update. The licensing should be configured to allow the district to have direct contact with the manufacturer technical support staff in lieu of having to contact the local integrator for support.
- C. API Licensing:

1. **Integrator to provide RS2 Web / REST API Licensing package as part of this project.**

- D. Security Management System Client Workstation:
 1. **The SMS client interface shall be 100% web based for local user interfaced with username and password support via active directory interface. Client license count shall still be (5) concurrent licenses per elementary school, (8) per Junior High and (10) per High School.**

- E. Campus Lockdown Sequence of Operation – Remote Interface:
 1. Project requires a local lockdown button located in front administration area of a campus which will initiate the campus lockdown for all electrified door hardware once the button is activate. The district also utilizes a remote cloud-based notification system from Catapult which sends a notification signal via IP interface to the local campus which is designed to trigger a remote message to be played on the campus intercom paging system. That interface is handled locally with an Algo, model 8301 paging adapter unit. That paging unit is located in the campus MDF room and has a momentary relay that interfaces to the campus paging system to play the emergency announcement based on what a remote user selected within the Catapult system.
 2. This access control project will build on top of the current relay interface. The access control contractor shall install a locking relay module inside the access control enclosure in the MDF room. That locking relay shall receive a signal from the Algo 8301 paging amplifier that will then communicate with the access control system to initiate a campus lockdown the same way as if a local user pushed the lockdown button in the administration area.
 3. If the campus was locked down via this remote interface, once the event is over, the campus will be able to place the building back into normal mode via the access control software interface. Once the access control system is placed back into normal mode, the lockdown locking relay shall be reset to normal mode ready to receive the next event.
 4. Access control contractor shall provide all interface patch wiring between relays and access control system and provide all relays required for this interface to operate as described.

- F. SMS Software Capabilities:
 1. The SMS Software shall support 64,000 card readers, 512,000, input points, detection points, and relay outputs. The SMS database server shall support an unlimited number of cardholders, and visitors, limited only by the available memory on the SCP. The database server shall also support an unlimited number of system events and System Operator transactions in the history file limited only by available hard disk space. Client Workstations shall be limited only by the limitations of the operating system server software.
 2. SMS Software Functionality:
 - a. Time Intervals:
 - 1) The SMS shall be capable of creating and storing an unlimited number of Time Intervals, limited only by the available hard drive space.
 - 2) Each Interval may be defined with a 50-character name.
 - 3) Each Interval will consist of a start time, an end time and the selected days the interval is to be active. Selected from a 15 day per week Calendar consisting of Sun thru Sat for 7 days and 8 Holiday Types / Categories which together will produce the 15 day per Interval Week for the individual Time Interval. Time Intervals shall be allowed to belong to any or all Time Zones so that the Time Interval only has to be defined once.

- b. Time Zones:
 - 1) The SMS shall be capable of creating and storing up to two hundred fifty-five (255) time zones. Each time zone shall have a minimum of Twelve (12) Time Intervals. Each Time Interval shall be assignable to each and every Time Zone.
 - 2) Each time zone shall be assignable to an alphanumeric name of up to 50 characters. Time zones shall be applied to access levels, card reader modes, alarm inputs, and alarm outputs. Time zones shall be allowed to belong to any or all access levels so that the time zone only has to be defined once.
3. Access Levels:
 - a. The SMS shall be capable of defining a minimum of 32,000 access levels with a minimum of 32 access levels per cardholder card. Access Levels shall consist of a combination of card readers and time zones.
 - b. Each Access Level shall be assignable to an alphanumeric name using up to 50 characters.
 - c. Card readers shall have the ability to be assigned to any or all access levels defined in the SMS. Individual card readers shall be capable of having a distinct time zone assigned to it.
 - d. The SMS shall allow a 'First Card Unlock with keypad entry' option to be assigned on a Combination of Time Zone and Allowed Card Group.
 - e. Add appropriate doors and time zones to the following access levels for campus.
 - 1) ***POLICE ONLY***
 - 2) ALL ACCESS DISTRICT WIDE 24/7
 - 3) ALL ACCESS DISTRICT WIDE Mon-Fri 6:00am-8:00pm
 - 4) Campus Level (initials) Staff Mon-Fri 6:30am-6:45pm (Elementary)
 - 5) Campus Level (initials) Staff Mon-Fri 6:00am-8:00pm (Junior High/High School)
 - 6) Campus Level (initials) Staff Select Mon-Sun 5:00am-11:00pm
 - 7) Campus Level (initials) Always 24/7
 - 8) Coordinate all times listed above with district and campus time settings.
4. Temporary Access Levels shall be enabled at the Site level.
 - a. The SMS shall be capable of assigning Temporary Access Levels inclusive of the 32,000 assignable Access Levels.
 - b. Each Temporary Access Level shall be assignable to an alphanumeric name using up to 50 characters.
 - c. Each Temporary Access Level shall be definable with a start and end date.
 - d. Temporary Access Levels shall be stored in the SCP and functionality shall be maintained in the event of disconnection with the SCP.
5. Precision Access is enabled at the Site level and allows each Cardholder to have a Time Zone assigned separately for Access to each Reader.
6. Holidays:
 - a. The SMS shall provide a minimum of 255 Holiday assignments using an embedded calendar. Holidays shall be assigned an alphanumeric name using up to 50 characters and shall be grouped into eight (8) types of holidays and shall be assignable individually. Access rights, card reader modes, and schedules must be able to be altered when the current date is designated a Holiday.
 - b. Daylight Savings Time changes shall take effect automatically, based on the SMS Server time which may be synchronized using an NTP Server or the NIST Time synchronization.
 - c. The SMS shall support Holiday Ranges that allow a single holiday to span across multiple calendar days.

7. First Card Unlock:
 - a. The SMS shall provide a First Card Unlock feature that when configured retards a pre-determined time zone activated unlock command until a valid credential has been presented and granted access to the portal. See appendix A for programming.
8. Database Segmentation
 - a. The SMS shall be required to support data Sites (segmentation, partition) whereby each Site (segmentation, partition) shall have its own set of cardholders, field hardware and system parameters (time zones, access levels etc.). This Site (segmentation, partition) shall expand the limitations of the SMS parameters (i.e. access levels and time zones) to the maximum capacity of each parameter multiplied by the number of Sites.

2.4 FIELD DEVICES

- A. Card Access Equipment:
 1. For new installations, card readers shall be Schlage MT15 or MT11 mullion style readers to be provided and installed by the access control contractor. Access control contractor shall provide and install all equipment, wiring, reader, software, programming, licenses to ensure full functionality of all devices shown on drawings.
 2. For entry doors that have automatic slider doors, access control contractor shall interface with slider door hardware motion detector and interlock slider doors to operate upon card reader swipe authentication.
 3. For doors that have ADA motor operated door hardware installed, the auto operator shall activate upon authentication of card reader.
 4. Any doors that are magnetically held, shall be interfaced with the building fire alarm system and shall communicate with a relay to release the magnet upon fire alarm activation.
 5. Provide Physical Access Input Modules for any additional control points required to be installed to monitor additional locations as indicated on drawings. Provide enclosure for any exposed areas with no ceiling where devices shall be installed.
 6. Provide a door contact for each exterior door, and other doors as located on plans. Door Contact shall monitor door position at all times. Program the system to shunt alarm on authenticated card read. Send system into full alarm during forced door. Send system into trouble for Propped door with messaging to designated user groups for all alarm types. At a pair of doors, contractor shall wire each door contact together as one common program point within the access control system.
 7. At exposed conditions where flush mount sensor cannot be installed, provide GRI 4405-A, or approved equal at each card reader door location.
 8. The contractor shall provide programming to send all data from the system to the preferred after-hours monitoring system.
 9. Provide an emergency lockdown button in the reception office on the wall behind the reception desk. The button shall be programmed to send entire campus into lockdown. Program all electronic locks to initiate full building lockdown in 10 seconds or less. Model SS2434LD-EN Blue Lockdown button with cover.
 10. **Provide a total of cards as indicated (300) 8543 smart cards for each High School, (200) 8543 smart cards for each Junior High School, (100) 8543 smart cards for each Elementary Schools and (100) 8543 smart cards for each support facility. All cards shall be ordered with sequential serial numbers and coordinated with Allegion.**
 11. Provide all necessary hardware/controller/software/licenses required to operate and manage system effectively for the locations indicated on the drawings.
 12. Security contractor is responsible for inputting all database information for initial installation and configuration of system for users that will be using the system at

the campus or administration building. Contractor shall coordinate names and locations of authorization on system with Owner once system is ready for demonstration.

13. The contractor shall provide and install a wall mounted enclosure for all Door Controllers/Gateways/Input Modules that shall be installed. The contractor shall provide enclosure to accommodate 120% of devices that shall be installed for each building. Provide conduit from the Power supply to the enclosure that no cable is exposed. Acceptable panels for consideration are:
- a. Life Safety Power, Inc. panel.

2.5 WIRING

- A. **All Access control wiring shall be green in color, no exceptions.**
- B. Wire scheme and conductor quantity shall be as required by the device manufacturer's specifications. Contractor to provide and install shielded cable as required.
- C. All 120v Power shall be furnished by the Division 26 contractor. COORDINATE EXACT LOCATION WITH ELECTRICAL CONTRACTOR PRIOR TO ROUGH-IN.
- D. All Security Conduit as required for a complete installation of this system shall be furnished by the contractor as part of their scope of work. Conduit shall be minimum of 3/4 inch. Conduit shall be painted to match surrounding area where installed, exposed to public view.
- E. Coordination with the Division 26 contractor is the responsibility of the Security Contractor to ensure all conduit is in place for a complete installation.
- F. All systems shall be connected to a dedicated 120VAC circuit and on an emergency power source if available.
- G. Color code of all access control wiring shall be yellow in color.
 1. Approved Products:
 - a. Green composite Access Control Cable: (all access control cable shall be homerun from the card reader locations to the headend panel location typically located in local building MDF/IDF.)
 - b. The following manufacturer's equivalent cable shall be acceptable. All cable shall be in a Green/composite construction, minimum conductor size of 18awg, shielded, and must be green in color. NO EXCEPTIONS.
 - 1) Tappan Wire and Cable
 - 2) Genesis
 - 3) Convergent Connectivity Technology CCT
 - c. All cable shall bare the name of the approved manufacturer. NO PRIVATE LABELED CABLE WILL BE ACCEPTED

PART 3 EXECUTION

3.1 INSTALLATION

- A. All wiring shall be in accordance with the National Electrical Code, Local Codes, and article 760 of NFPA Standard 70. All wiring sizes shall conform to recommendations of the equipment manufacturer, and as indicated on the engineered shop drawings.
- B. All wire shall be UL Listed CL2 for limited energy (300V) applications and shall be installed

in conduit. Limited energy MPP wire may be run open in return air ceiling plenums provided such wire is UL Listed for such applications and is of the low smoke producing fluorocarbon type and complies with NEC Article 760 if so approved by the local authority having jurisdiction.

- C. No other wiring shall be run in the same conduit as access controls wiring.
- D. All wire shall be installed in an approved conduit/raceway system (except where permitted by NEC and the local authority having jurisdiction). Maximum conduit "fill" shall not exceed 40% per NEC.
- E. Minimum conduit size shall be ¾" EMT. Provide shop drawings for approval prior to installation.
- F. Systems utilizing open wiring techniques with low smoke plenum cable shall provide conduit in all inaccessible locations, inside concealed walls, all mechanical/electrical rooms, or other areas where wiring might be exposed, to public view, or subject to physical damage.
- G. All conduit ends shall have a protective bushing to prevent cable damage. BUSHINGS MUST BE INSTALLED PRIOR TO INSTALLING CABLE. CUTTING BUSHING TO INSTALL AROUND INSTALLED CABLES WILL NOT BE ACCEPTED.
- H. Contractor is required to provide all mapping and software configuration showing reader and door interface locations as well as current camera views that are associated with specific door locations required to operate system.
- I. Provide an extra 18/2 conductor installed from each door contact to the nearest accessible ceiling space above for connection by the intrusion contractor. Spare conductor is to be installed to a junction box, coordinate location with intrusion contractor.

3.2 CABLE PATHWAYS

- A. Cable Support:
 - 1. All wire not installed inside conduit, or a designated cable tray system shall be installed in a dedicated cable support system for the entire run of each cable. Including, but not limited to service loops.
 - a. Approved Cable Support Product: PANDUIT® Corporation J-MOD™, or approved equal, modular support system (sized appropriately for the number of wires being installed. Reference the manufacturer's specifications for the suggested maximum cables per support size.
 - 2. The approved cable support system shall be attached directly to the building steel at a serviceable height. In the event that the building steel is not within 5' of the finished ceiling, the contractor shall provide a dedicated threaded rod extending within 5' of the finished ceiling and mount the j-hook support hook to the treaded rod.
 - 3. J-hook cable support shall be installed at a maximum of 5' on center.
 - 4. All cable installed shall be attached to the j-hook support system with plenum rated Velcro and a plenum rated Velcro tie shall be installed between each J-MOD™ cable support to keep wires neatly bundled throughout the entire run. Tie wraps will only be allowed to be used inside the control panels as required to manage the wires within each type of panel.
 - 5. ABSOLUTELY NO CABLE, NOT INSTALLED IN CONDUIT, WILL BE ALLOWED TO BE ATTACHED DIRECTLY TO THE BUILDING'S STEEL OR SUPPORTED

- IN ANY OTHER METHOD THAN THAT STATED ABOVE.
6. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO COORDINATE WITH ALL OTHER TRADES ON THE PROJECT TO ENSURE THAT THE PATHWAY OF THIS SYSTEM DOES NOT INTERFERE WITH THE INSTALLATION OF THE OTHER TRADES AND TO PREVENT THE INSTALLED PRODUCT OF OTHER TRADES FROM PUTTING STRAIN ON THE INSTALLED WIRING.

3.3 TESTING

- A. Submit a written test report from an authorized representative of the equipment manufacturer that the system has been 100% tested and approved. Final test shall be witnessed by Owner, Engineer, Electrical Contractor and performed by the equipment supplier. Final test report must be received and acknowledged by the Owner prior to substantial completion.
- B. Provide instruction as to proper use and operation of system, for the Owner's designated personnel.

3.4 WARRANTY

- A. Entire system shall be warranted against defects in materials and workmanship for a period of one (1) year from the date of substantial completion.

3.5 SOFTWARE

- A. Provide two electronic copies of the final programming and program software to the Owner's Security Supervisor after final approval.

END OF SECTION 28 13 00