

**PROJECT MANUAL**

**BID #B-03-2022-23**  
**MECHANICAL UPGRADES at NEW DISTRICT OFFICE**

**BID #B-04-2022-23**  
**ELECTRICAL UPGRADES at NEW DISTRICT OFFICE**

**BID #B-05-2022-23**  
**GENERAL CONSTRUCTION at NEW DISTRICT OFFICE**

**BERRYESSA UNION SCHOOL DISTRICT**

**Measure U Bond Program**  
Berryessa Union School District  
1376 Piedmont Road  
San Jose, CA 95132

**Job Walk Date: 9/22/2022**

**Bids Due Date: 10/05/2022**

**DOCUMENTS 00 01 10**

**TABLE OF CONTENTS**

**DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS**

00 00 00	Title Page
00 01 10	Table of Contents
00 11 16	Notice to Bidders – Bid #B-03-2022-23 - Mechanical Upgrades
00 11 16	Notice to Bidders – Bid #B-04-2022-23 - Electrical Upgrades
00 11 16	Notice to Bidders – Bid #B-05-2022-23 - General Construction
00 21 13	Instructions to Bidders
00 41 26	Bid Form – Bid #B-03-2022-23 – Mechanical Upgrades
00 41 26	Bid Form - Bid #B-04-2022-23 – Electrical Upgrades
00 41 26	Bid Form – Bid #B-05 -2022-23 – General Construction
00 43 13	Bid Bond
00 43 36	Designation of Subcontractors
00 43 40	Sufficient Funds Declaration
00 45 19	Non Collusion Affidavit
00 45 26	Workers’ Compensation Certification
00 45 28	Drug Free Workplace Certification
00 45 30	Roof Project Certification
00 45 32	Fingerprinting Notice and Acknowledgement
00 45 34	Iran Contracting Act Certification
00 50 50	Notice of Intent to Award
00 51 00	Notice of Award
00 52 26	Agreement between Owner and Contractor
00 54 26	Escrow Agreement for Security Deposits in Lieu of Retention
00 55 00	Notice to Proceed
00 61 13.13	Performance Bond
00 61 13.16	Payment Bond
00 72 00	General Conditions
00 73 00	Special Conditions
00 73 73	Compliance Monitoring and Enforcement Notice
00 81 00	Hazardous Materials Procedures and Requirements
00 88 00	Agreement and Release of Any and All Claims
00 89 00	Guarantee Form
00 92 00	Smoke-Free Environmental Certification
00 92 50	Asbestos and Other Hazardous Materials Certification
00 93 00	Lead-Based Paint Certification
00 93 50	Imported Materials Certification

## **DIVISION 01 – GENERAL REQUIREMENTS**

01 10 00	Summary of Work
	Bid Division Descriptions
01 20 00	Price and Payment Procedures
01 21 00	Allowances
01 22 00	Unit Prices
01 23 00	Alternates & Unit Pricing
01 25 00	Substitution Procedures
01 30 00	Administrative Requirements
01 32 16	Construction Progress Schedule
01 40 00	Quality Requirements
01 50 00	Temporary Facilities and Controls
01 60 00	Materials and Equipment
01 60 05	Product Requirements
01 61 00	Delivery, Storage and Handling
01 70 00	Execution and Closeout Procedures
01 72 00	Field Engineering
01 77 00	Closeout Procedures
01 78 00	Closeout Submittals

## **TECHNICAL SPECIFICATIONS**

### **DIVISION 2 – EXISTING CONDITIONS**

### **DIVISION 3 - CONCRETE**

### **DIVISION 4 – MASONRY**

### **DIVISION 5 – METALS**

05 52 00	Handrails & Railings
----------	----------------------

### **DIVISION 6 – WOOD, PLASTICS, AND COMPOSITES**

06 20 00	Finish Carpentry
06 41 00	Custom Casework

### **DIVISION 7 – THERMAL AND MOISTURE PROTECTION**

07 20 22	Insulation
07 27 00	Firestopping
07 92 00	Joint Sealers

### **DIVISION 8 - OPENINGS**

08 11 13	Standard Steel Frames
08 14 00	Wood Doors
08 41 13	Aluminum Entrances and Storefronts
08 71 00	Door Hardware

08 80 00 Glazing

DIVISION 9 - FINISHES

09 21 16 Gypsum Board Systems  
09 22 16 Metal Studs- Non Load Bearing  
09 30 13 Ceramic Tile  
09 51 13 Acoustical Suspension Systems  
09 51 14 Acoustical Ceilings – Lay-in  
09 65 13 Resilient Base and Accessories  
09 67 23 Resinous Flooring – Epoxy  
09 68 13 Carpet Tile  
09 91 00 Painting

DIVISION 10 - SPECIALTIES

10 14 10 Room Signage  
10 14 11 Restroom Signage

DIVISION 12 - FURNISHINGS

DIVISION 21 – FIRE SUPPRESSION

DIVISION 22 – PLUMBING

DIVISION 23 – HEATING, VENTILATION AND AIR CONDITIONING

23 00 00 Mechanical General Requirements  
23 05 00 Heating Ventilating Air Conditioning  
23 05 93 Testing Adjusting Balancing  
23 09 22 Climate Management Control For HVAC

DIVISION 26 – ELECTRICAL

26 05 00 General Electrical Requirements  
26 05 19 Line Voltage Wire and Cable  
26 05 26 Grounding  
26 05 33 Outlet, Junction and Pull Boxes  
26 05 42 Conduits, Raceways and Fittings  
26 05 50 Through-Penetration Firestopping for Electrical Systems  
26 24 16 Panelboards and Distribution Panels  
26 27 26 Devices Wiring  
26 28 16 Circuit Breakers  
26 51 00 Lighting

DIVISION 27 – COMMUNICATIONS

27 10 00 Telecommunications Cabling System  
27 51 17 Assistive Listening System- Portable

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 31 00 Fire Alarm System (Existing)

DIVISION 31 – EARTHWORK

31 00 00 Earthwork

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 12 16 AC Paving

32 13 13 Portland Cement Concrete Paving

32 17 23 Pavement Markings- Parking

DIVISION 33 – UTILITIES

END OF TABLE OF CONTENTS

**DOCUMENT 00 11 16**

**NOTICE TO BIDDERS**

Pursuant to Public Contract Code 20111 and 20112, notice is hereby given that sealed bids will be accepted by the Berryessa Union School District in the Purchasing Department, 1376 Piedmont Road, San Jose, California 95132, BEFORE the time and date indicated:

**Bid #B-03-2022-23**  
**MECHANICAL UPGRADE PROJECT AT NEW DISTRICT OFFICE**  
**DUE DATE: OCTOBER 5, 2022 BEFORE 2:00PM**

The Berryessa Union School District is seeking qualified and experienced licensed contractors to submit sealed bids for the project listed above. This is a Measure U Bond Program project.

There will be a Non-Mandatory Pre-Bid Conference and Job Walk for this project. The Pre-Bid Conference and Job Walk will begin at 1:00pm on September 22, 2022. Meet outside in the parking lot at the New District Office, 981 Ridder Park Dr, San Jose, CA 95132. COVID 19 Guidelines will be enforced – face coverings and social distancing is required. Contractors are not to visit the site without an appointment.

The time of completion for this project shall be:  
Start Date: 10/18/2022 and Completion Date: 12/20/2022.

Plans/Specifications, Reference Documents, and Bid Documents will be available after September 16, 2022, at: [www.berryessa.k12.ca.us](http://www.berryessa.k12.ca.us). Go to Business > Purchasing > Current Bids. Contractors are reminded to frequently check the website under Current Bids for updates and addenda.

Licensing requirement: Class “B” or “C20”  
Contact: Strawn Construction, Inc., Jim Wilson - [Jwilson@scmdinc.com](mailto:Jwilson@scmdinc.com) – 408-605-7240

SB854: No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The District shall award the Contract, if it awards it at all, to the lowest responsive and responsible bidder based on: Base Bid

The Board of Trustees reserves the right to waive any irregularities, accept or reject any or all bids, and be the sole judge of merit and suitability of the workmanship and materials.

For the Governing Board,  
Berryessa Union School District  
Bonny S Gregorius  
Purchasing and Contracts Manager  
408-923-1871

END OF DOCUMENT

**DOCUMENT 00 11 16**

**NOTICE TO BIDDERS**

Pursuant to Public Contract Code 20111 and 20112, notice is hereby given that sealed bids will be accepted by the Berryessa Union School District in the Purchasing Department, 1376 Piedmont Road, San Jose, California 95132, BEFORE the time and date indicated:

**Bid #B-04-2022-23**  
**ELECTRICAL UPGRADE PROJECT AT NEW DISTRICT OFFICE**  
**DUE DATE: OCTOBER 5, 2022 BEFORE 2:30PM**

The Berryessa Union School District is seeking qualified and experienced licensed contractors to submit sealed bids for the project listed above. This is a Measure U Bond Program project.

There will be a Non-Mandatory Pre-Bid Conference and Job Walk for this project. The Pre-Bid Conference and Job Walk will begin at 2:00pm on September 22, 2022. Meet outside in the parking lot at the New District Office, 981 Ridder Park Dr, San Jose, CA 95132. COVID 19 Guidelines will be enforced – face coverings and social distancing is required. Contractors are not to visit the site without an appointment.

The time of completion for this project shall be:  
Start Date: 10/18/2022 and Completion Date: 12/20/2022.

Plans/Specifications, Reference Documents, and Bid Documents will be available after September 16, 2022, at: [www.berryessa.k12.ca.us](http://www.berryessa.k12.ca.us). Go to Business > Purchasing > Current Bids. Contractors are reminded to frequently check the website under Current Bids for updates and addenda.

Licensing requirement: Class “B” or “C10”  
Contact: Strawn Construction, Inc., Jim Wilson - [Jwilson@scmdinc.com](mailto:Jwilson@scmdinc.com) – 408-605-7240

SB854: No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The District shall award the Contract, if it awards it at all, to the lowest responsive and responsible bidder based on: Base Bid.



The Board of Trustees reserves the right to waive any irregularities, accept or reject any or all bids, and be the sole judge of merit and suitability of the workmanship and materials.

For the Governing Board,  
Berryessa Union School District  
Bonny S Gregorius  
Purchasing and Contracts Manager  
408-923-1871

END OF DOCUMENT

**DOCUMENT 00 11 16**

**NOTICE TO BIDDERS**

Pursuant to Public Contract Code 20111 and 20112, notice is hereby given that sealed bids will be accepted by the Berryessa Union School District in the Purchasing Department, 1376 Piedmont Road, San Jose, California 95132, BEFORE the time and date indicated:

**Bid #B-05-2022-23**

**GENERAL CONSTRUCTION PROJECT AT NEW DISTRICT OFFICE  
DUE DATE: OCTOBER 5, 2022 BEFORE 3:00PM**

The Berryessa Union School District is seeking qualified and experienced licensed contractors to submit sealed bids for the project listed above. This is a Measure U Bond Program project.

There will be a Non-Mandatory Pre-Bid Conference and Job Walk for this project. The Pre-Bid Conference and Job Walk will begin at 3:00pm on September 22, 2022. Meet outside in the parking lot at the New District Office, 981 Ridder Park Dr, San Jose, CA 95132. COVID 19 Guidelines will be enforced – face coverings and social distancing is required. Contractors are not to visit the site without an appointment.

The time of completion for this project shall be:  
Start Date: 10/18/2022 and Completion Date: 12/20/2022.

Plans/Specifications, Reference Documents, and Bid Documents will be available after September 16, 2022, at: [www.berryessa.k12.ca.us](http://www.berryessa.k12.ca.us). Go to Business > Purchasing > Current Bids. Contractors are reminded to frequently check the website under Current Bids for updates and addenda.

Licensing requirement: Class “B”  
Contact: Strawn Construction, Inc., Jim Wilson - [Jwilson@scmdinc.com](mailto:Jwilson@scmdinc.com) – 408-605-7240

SB854: No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The District shall award the Contract, if it awards it at all, to the lowest responsive and responsible bidder based on: Base Bid.

The Board of Trustees reserves the right to waive any irregularities, accept or reject any or all bids, and be the sole judge of merit and suitability of the workmanship and materials.

For the Governing Board,  
Berryessa Union School District  
Bonny S Gregorius  
Purchasing and Contracts Manager  
408-923-1871

END OF DOCUMENT

**DOCUMENT 00 2113**

**INSTRUCTIONS TO BIDDERS**

**SECURING DOCUMENTS:**

Drawings and Specifications are available for review and downloading online on September 16, 2022 at:

<http://www.berryessa.k12.ca.us/OUR-DISTRICT/Business-Services/Purchasing/Current-Bids/index.html> or Strawn Construction

Strawn Construction contact: Jim Wilson: [jwilson@scmdinc.com](mailto:jwilson@scmdinc.com) 408-605-7240

Contact the Purchasing Department and/or Kitchell for any technical questions about bidding or bid documents.

**BID FORMAT:**

**NOTE - A SEPARATE BID WITH A BID BOND AND ASSOCIATED DOCUMENTS ARE REQUIRED FOR EACH BID PACKAGE**

Bids should be submitted using the District provided Bid Documents. Please include the following documents with your bid(s):

**MECHANICAL UPGRADE PROJECT – BID #B-03-2022-23**

- 00 41 26 Bid Form
- 00 43 13 Bid Bond
- 00 43 36 Designation of Subcontractors
- 00 43 40 Sufficient Funds Declaration
- 00 45 19 Non-Collusion Affidavit
- 00 45 32 Fingerprinting Notice and Acknowledgement

**ELECTRICAL UPGRADE PROJECT – BID #B-04-2022-23**

- 00 41 26 Bid Form
- 00 43 13 Bid Bond
- 00 43 36 Designation of Subcontractors
- 00 43 40 Sufficient Funds Declaration
- 00 45 19 Non-Collusion Affidavit
- 00 45 32 Fingerprinting Notice and Acknowledgement

**GENERAL CONSTRUCTION – BID #B-05-2022-23**

- 00 41 26 Bid Form
- 00 43 13 Bid Bond
- 00 43 36 Designation of Subcontractors

00 43 40 Sufficient Funds Declaration  
00 45 19 Non-Collusion Affidavit  
00 45 32 Fingerprinting Notice and Acknowledgement

**PREQUALIFICATION:**

This Project is not subject to prequalification.

**SB854 REGISTRATION:**

The Owner shall not accept any bid as of March 1, 2015, or enter into any contract as of April 1, 2015, without proof of the bidder's current registration to perform public work under Labor Code section 1725.5.

The bidder shall not accept any subbid as of March 1, 2015, or enter into any subcontract as of April 1, 2015, without proof of the subcontractor's current registration to perform public work under Labor Code section 1725.5.

**BIDS:**

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

1. Bids shall be made on a form therefor, obtained from the 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.
2. No bid will be considered which makes exceptions, changes, or in any manner makes reservations to the terms of the drawings or specifications.
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. Oral responses will not be binding on the Owner or Architect or any Construction Manager.
4. Each bid must give the full business address of the bidder and be signed by bidder with bidder's usual signature. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Bids 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 chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation 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.

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 and these Instructions to Bidders, every bidder shall set forth in its bid:
  - A. The name and location of the place of business and the California contractor's license 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 Industrial Relations of the State of California, in the manner provided by law, has ascertained the general prevailing rate of per diem wages and the rate for legal holidays and overtime work. 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.

7. All bids must be accompanied by a completed Noncollusion Declaration and Sufficient Funds Declaration (Labor Code § 2810). All bids must be accompanied by an executed Fingerprinting Notice and Acknowledgment.
8. Bids 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 bid, 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). The surety insurer must, unless otherwise agreed to by Owner in writing, at the time of issuance of the bond, have a rating not lower than "A-" as rated by A.M. Best Company, Inc. or other independent rating companies. Owner reserves the right to approve or reject the surety insurer selected by Contractor and to require Contractor to obtain a bond from a surety insurer 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. Bids shall be sealed and filed as indicated in the Notice to Bidders. Irrespective of how a bidder chooses to deliver the bid and other documents to the Owner, the bidder is responsible for ensuring that the bid and other documents are actually received at the location designated in the Contract Documents for receipt of the bid and other documents prior to the time for the bid opening. Bids and other documents for any reason not actually received at the designated location prior to the time for the bid opening shall not be opened or considered.
10. **THIS CONTRACT IS NOT SUBJECT TO THE DVBE REQUIREMENTS OF EDUCATION CODE SECTION 17076.11.**

#### **WITHDRAWAL OF BIDS:**

Bids may be withdrawn by bidders prior to the time fixed for the submittal of bids or any authorized postponement thereof. 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 Bidders. Any and all bidders will be permitted to attend.

#### **EXAMINATION OF CONTRACT DOCUMENTS AND SITE:**

Before submitting a bid, bidders shall examine the drawings, read the specifications, the form of Agreement between Contractor and Owner, and the other Contract Documents. Bidders shall visit the site of the proposed Work; examine the building, or buildings, if any, and any work that may have been done thereon. Bidders 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.

Pursuant to Public Contract Code section 1104: 1) bidders shall not be required to assume responsibility for the completeness and accuracy of architectural or engineering plans and specifications, except on clearly designated design build projects; 2) however, bidders shall be required to review architectural or engineering plans and specifications prior to submission of their bids and to report any errors and omissions to the Architect or Owner; and 3) the review shall be confined to the bidder's capacity as a bidder and not as a licensed design professional.

#### **FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR:**

The form of Agreement between Owner and Contractor which the successful bidder will be required to execute, if awarded the Work, is a part of this Bid Package.

#### **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 bid, shall be covered in the bid, 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.

#### **EVIDENCE OF RESPONSIBILITY:**

Upon the request of Owner, a bidder shall submit promptly to the Owner or its designee satisfactory evidence showing the bidder's financial resources, the bidder's experience in the type of work required by the Owner, the bidder's organization available for the performance of the Contract, and any other required evidence of the bidder's or its subcontractor's qualifications to perform the proposed Contract. The Owner may consider such evidence before making its decision awarding the proposed Contract. Failure to submit evidence of the bidder's or its subcontractors' responsibility to perform the proposed Contract may result in rejection of the bid.

#### **AWARD OF CONTRACT:**

Rejection of any or all bids, 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(s) are awarded, the Owner may at its sole discretion, require from the proposed Contractor on the 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 Contract(s) shall be awarded to the lowest responsible and responsive bidder as interpreted by the Owner under California law and as specified herein and shall be entered into by the successful bidder within ten (10) days after mailing, faxing or delivery of the Notice of Award of Contract. Owner reserves the right, without any liability, to cancel the award of any bid for any reason at any time before the full execution of the Agreement between Owner and Contractor.

#### **EXECUTION OF AGREEMENT BETWEEN OWNER AND CONTRACTOR:**

The Agreement between Owner and Contractor shall be signed by the successful bidder in as many originals as the Owner deems necessary and returned, together with the required Contract bonds, insurance certificates, additional insured endorsement, declarations page, a Public Contract Code section 3006(a) Roof Project Certification, if required, and Independent Contractor Student Contact Form, within ten (10) days after the mailing, faxing or delivering of the Notice of Award of Contract. If the ten (10) day period would expire after the date for commencement of the Work, Contractor must submit the documents before the date of commencement of the Work. If the successful bidder does not comply with this paragraph, Owner may revoke and/or cancel the award to the successful bidder and award the Contract to the next lowest bidder, or may otherwise proceed as allowed by law. A Roof Project Certification is not required if (1) the Owner has ADA (average daily attendance) of 2,500 or less, or (2) the Project involves repair of 25% or less of the roof, or costs \$21,000 or less.

#### **CONTRACT BONDS:**

As required by the Contract Documents, two bonds, as itemized below and in the forms presented in these Contract Documents, shall be furnished by the successful bidder on the Project at the time of entering into the Contract and filed with the Owner before the successful bidder commences any work on the Project. They shall be in the form of surety bonds issued by Admitted Surety insurers (an insurance organization authorized by the Insurance Commissioner to transact business of insurance in the State of California during this calendar year). The surety insurers must, unless otherwise agreed to by Owner in writing, at the time of issuance of the bond, have a rating not lower than "A-" as rated by A.M. Best Company, Inc. or other independent rating companies. Owner 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 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 and during any warranty or guaranty period, 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:**

Drawings, Project Manuals, Specifications, Addenda and Bulletins will be posted on the District website at [www.berryessa.k12.ca.us](http://www.berryessa.k12.ca.us) click on Business Services > Purchasing > Current Bids for updates. Staff recommends that all vendors periodically check the District current bid section on the website for updates and addenda during the bidding process.

**SUBSTITUTION OF MATERIALS:**

The Contractor must ensure that the proposed substitutions by the Contractor or its subcontractors are submitted to the Architect's office a minimum of fourteen (14) 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 will be issued seven (7) calendar days 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 Documents.

**TAXES:**

The Owner is generally 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. Bidder shall deduct Federal Excise Taxes from their bid prices before submitting bids, so that such taxes will not be included in the Contract Sum.

**EARLY TERMINATION:**

Notwithstanding any provision herein to the contrary, if for any fiscal year of this Contract the governing body of the Owner fails to appropriate or allocate funds for future periodic payments under the Contract after exercising reasonable efforts to do so, the Owner may upon thirty (30) days' notice, order work on the Project to cease. The Owner will remain obligated to pay for the work already performed but shall not be obligated to

pay the balance remaining unpaid beyond the fiscal period for which funds have been appropriated or allocated and for which the work has not been done.

### **TIME OF COMPLETION AND LIQUIDATED DAMAGES:**

Time of Completion for the Project shall be as follows:

Start Date: October 18, 2022

Completion Date: December 20, 2022.

Liquidated damages will accrue and may be assessed as provided in the Contract Documents. Should said Work not be Completed within the time limit as may be extended as herein provided (i.e., the Completion deadline), 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 (\$1,000.00) per calendar day** for each and every day's delay beyond the Completion deadline as and for liquidated damages, during or as a result of each calendar day by which Completion of the Project is delayed beyond the Completion deadline; 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, the Owner shall have the right to recover the balance from the Contractor or its Sureties.

### **BID PROTEST PROCEDURE**

Any bidder may file a bid protest. The protest shall be filed in writing with the Purchasing and Contracts Manager not more than ONE (1) business day after the date of the bid opening. An e-mail address shall be provided and by filing the protest, the protesting bidder consents to receipt of e-mail notices for purposes of the protest and protest related questions and protest appeal, if applicable. The protest shall specify the reasons and facts upon which the protest is based.

Resolution of Bid Controversy: Once the bid protest is received, the apparent lowest responsible bidder will be notified of the protest and the evidence presented. If appropriate, the apparent low bidder will be given an opportunity to rebut the evidence and present evidence that the apparent low bidder should be allowed to perform the work. If deemed appropriate by the District, an informal hearing will be held. District will issue a written decision within fifteen (15) calendar days of receipt of the protest, unless factors beyond the District's reasonable control prevent such resolution. The decision on the bid protest will be copied to all parties involved in the protest.

Appeal: If the protesting bidder or the apparent low bidder is not satisfied with the decision, the matter may be appealed to the Assistant Superintendent of Business Services, or their designee, within three (3) business days after receipt of the District's

written decision on the bid protest. The appeal must be in writing and sent via overnight registered mail with all accompanying information relied upon for the appeal and an e-mail address from which questions and responses may be provided to:

Berryessa Union School District  
Attn: Assistant Superintendent of Business Services  
1376 Piedmont Rd  
San Jose, CA 95132

Appeal Review: The Assistant Superintendent of Business Services or their designee shall review the decision on the bid protest from the Purchasing and Contracts Manager and issue a written response to the appeal, or if appropriate, appoint a Hearing Office to conduct a hearing and issue a written decision. The written decision of the Purchasing and Contracts Manager shall be rendered within fifteen (15) calendar days and shall state the basis for the decision. The decision concerning the appeal will be final and not subject to any further Appeals.

Reservation of Rights to Proceed with Project Pending Appeal. The District reserves the right to proceed to award the Contract for the Project and commence construction pending an Appeal. If there is State Funding or a critical completion deadline, the District may choose to shorten the time limits set forth in this Section due to the urgency of proceeding with work if written notice is provided to the protesting party. E-mailed notice with a written confirmation sent by First Class Mail shall be sufficient to constitute written notice. If there is no written response to a written notice shortening time, the District may proceed with the award.

Finality. Failure to comply with this Bid Protest Procedure shall constitute a waiver of the right to protest and shall constitute a failure to exhaust the protesting bidder's administrative remedies.

END OF DOCUMENT

**DOCUMENT 00 41 26**

**BID FORM – MECHANICAL UPGRADES**

Berryessa Union School District  
1376 Piedmont Rd.  
San Jose, CA 95132

Dear Board Members:

The undersigned doing business under the firm name of:

\_\_\_\_\_ hereby propose and agree to enter into a Contract, to furnish any and all labor, materials, applicable taxes, equipment and services for the completion of Work described hereinafter and in the Contract Documents:

**New District Office  
Mechanical Upgrades  
Bid # B-03-2022-23**

prepared by: McKim Design Group. for the amount of:

<b>1</b>	_____ Dollars	
	<b>Amount in Words</b>	\$ _____
	<b>Base Bid – Mechanical Upgrades</b>	
<b>2</b>	_____ Fifty Thousand Dollars	
	<b>Allowance for Unforeseen Conditions</b>	<b>\$50,000.00</b>
<b>3</b>	_____ Dollars	
	<b>Total Amount in Words</b>	\$ _____
	<b>Base Bid + Allowance</b>	

11.1.6.1 UNIT PRICES

Any and all additional work and/or deductions shall be based on the Unit Prices. DO NOT INCLUDE THE UNIT PRICING IN YOUR BASE BID.

N/A

11.1.6.2 COURSE-OF-CONSTRUCTION INSURANCE REQUIREMENTS

Contractor, during the progress of the Work and until final acceptance of the Work by Owner upon completion of the entire Contract, shall maintain Builder’s Risk/Course-of-Construction insurance satisfactory to the Owner, issued on a completed value basis on all insurable Work included under the Contract Documents. This insurance shall insure against all risks, including but not limited to the following perils: vandalism, theft,

malicious mischief, fire, sprinkler leakage, civil authority, sonic boom, explosion, collapse, flood, earthquake (for projects not solely funded through revenue bonds, limited to earthquakes equivalent to or under 3.5 on the Richter Scale in magnitude), wind, hail, lightning, smoke, riot or civil commotion, debris removal (including demolition) and reasonable compensation for the Architect's services and expenses required as a result of such insured loss. This insurance shall provide coverage in an amount not less than the full cost to repair, replace or reconstruct the Work. Such insurance shall include the Owner, the Architect, and any other person or entity with an insurable interest in the Work as an additional named insured.

The Contractor shall submit to the Owner for its approval all items deemed to be uninsurable under the Builder's Risk/Course-of Construction insurance. The risk of the damage to the Work due to the perils covered by the Builder's Risk/Course-of-Construction insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the surety, and no claims for such loss or damage shall be recognized by the Owner, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

If written notice of the Award of Contract is mailed, faxed, or delivered to the undersigned at any time before this bid is withdrawn, the undersigned shall, within ten (10) days after the date of such mailing, faxing, or delivering of such notice, execute and deliver an agreement 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 Award of Contract may be mailed, faxed, or delivered:

\_\_\_\_\_

Our Public Liability and Property Damage Insurance is placed with:

\_\_\_\_\_

Our Workers' Compensation Insurance is placed with:

\_\_\_\_\_

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

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

Addendum No. \_\_\_\_\_ Date \_\_\_\_\_      Addendum No. \_\_\_\_\_ Date \_\_\_\_\_  
Addendum No. \_\_\_\_\_ Date \_\_\_\_\_      Addendum No. \_\_\_\_\_ Date \_\_\_\_\_

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

A bidder shall not submit a bid unless the bidder's California contractor's license number appears clearly on the bid, the license expiration date and class are stated, and the bid contains a statement that the representations made therein are made under penalty of perjury. Any bid submitted by a contractor who is not licensed pursuant to Business and Professions Code section 7028.15 shall be considered nonresponsive and shall be rejected. Any bid not containing the above information may be considered nonresponsive and may be rejected.

**NOTE:** Each bid must give the full business address of the bidder and be signed by bidder with bidder's usual signature. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Bids 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 chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation 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.

The undersigned declares under penalty of perjury under the laws of the State of California that the representations made in this bid are true and correct.

Print or Type Name: \_\_\_\_\_

Title: \_\_\_\_\_

Name of Company as Licensed: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

California Contractor License No.: \_\_\_\_\_

Class and Expiration Date: \_\_\_\_\_

State of Incorporation, if Applicable: \_\_\_\_\_

( ) Evidence of authority to bind corporation is attached.

Dated: \_\_\_\_\_, \_\_\_\_\_

Signed: \_\_\_\_\_

END OF DOCUMENT

**DOCUMENT 00 41 26**

**BID FORM – ELECTRICAL UPGRADES**

Berryessa Union School District  
1376 Piedmont Rd.  
San Jose, CA 95132

Dear Board Members:

The undersigned doing business under the firm name of:

\_\_\_\_\_ hereby propose and agree to enter into a Contract, to furnish any and all labor, materials, applicable taxes, equipment and services for the completion of Work described hereinafter and in the Contract Documents:

**New District Office  
Electrical Upgrades  
Bid # B-04-2022-23**

prepared by: McKim Design Group for the amount of:

<b>1</b>	_____ <b>Dollars</b>	
	<b>Amount in Words</b> <b>Base Bid – Electrical Upgrades</b>	\$ _____
<b>2</b>	_____ <b>Fifty Thousand Dollars</b>	
	<b>Allowance for Unforeseen Conditions</b>	<b>\$50,000.00</b>
<b>3</b>	_____ <b>Dollars</b>	
	<b>Total Amount in Words</b> <b>Base Bid + Allowance</b>	\$ _____

11.1.6.1 UNIT PRICES

Any and all additional work and/or deductions shall be based on the Unit Prices. DO NOT INCLUDE THE UNIT PRICING IN YOUR BASE BID.

N/A

11.1.6.2 COURSE-OF-CONSTRUCTION INSURANCE REQUIREMENTS

Contractor, during the progress of the Work and until final acceptance of the Work by Owner upon completion of the entire Contract, shall maintain Builder's Risk/Course-of-Construction insurance satisfactory to the Owner, issued on a completed value basis on all insurable Work included under the Contract Documents. This insurance shall insure against all risks, including but not limited to the following perils: vandalism, theft, malicious mischief, fire, sprinkler leakage, civil authority, sonic boom, explosion,



collapse, flood, earthquake (for projects not solely funded through revenue bonds, limited to earthquakes equivalent to or under 3.5 on the Richter Scale in magnitude), wind, hail, lightning, smoke, riot or civil commotion, debris removal (including demolition) and reasonable compensation for the Architect's services and expenses required as a result of such insured loss. This insurance shall provide coverage in an amount not less than the full cost to repair, replace or reconstruct the Work. Such insurance shall include the Owner, the Architect, and any other person or entity with an insurable interest in the Work as an additional named insured.

The Contractor shall submit to the Owner for its approval all items deemed to be uninsurable under the Builder's Risk/Course-of Construction insurance. The risk of the damage to the Work due to the perils covered by the Builder's Risk/Course-of-Construction insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the surety, and no claims for such loss or damage shall be recognized by the Owner, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

If written notice of the Award of Contract is mailed, faxed, or delivered to the undersigned at any time before this bid is withdrawn, the undersigned shall, within ten (10) days after the date of such mailing, faxing, or delivering of such notice, execute and deliver an agreement 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 Award of Contract may be mailed, faxed, or delivered:

---

Our Public Liability and Property Damage Insurance is placed with:

---

Our Workers' Compensation Insurance is placed with:

---

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

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

Addendum No. \_\_\_\_\_ Date \_\_\_\_\_      Addendum No. \_\_\_\_\_ Date \_\_\_\_\_  
Addendum No. \_\_\_\_\_ Date \_\_\_\_\_      Addendum No. \_\_\_\_\_ Date \_\_\_\_\_

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

A bidder shall not submit a bid unless the bidder's California contractor's license number appears clearly on the bid, the license expiration date and class are stated, and the bid

contains a statement that the representations made therein are made under penalty of perjury. Any bid submitted by a contractor who is not licensed pursuant to Business and Professions Code section 7028.15 shall be considered nonresponsive and shall be rejected. Any bid not containing the above information may be considered nonresponsive and may be rejected.

**NOTE:** Each bid must give the full business address of the bidder and be signed by bidder with bidder's usual signature. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Bids 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 chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation 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.

The undersigned declares under penalty of perjury under the laws of the State of California that the representations made in this bid are true and correct.

Print or Type Name: \_\_\_\_\_

Title: \_\_\_\_\_

Name of Company as Licensed: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

California Contractor License No.: \_\_\_\_\_

Class and Expiration Date: \_\_\_\_\_

State of Incorporation, if Applicable: \_\_\_\_\_

( ) Evidence of authority to bind corporation is attached.

Dated: \_\_\_\_\_, \_\_\_\_\_

Signed: \_\_\_\_\_

END OF DOCUMENT

**BID FORM – GENERAL CONSTRUCTION**

Berryessa Union School District  
1376 Piedmont Rd.  
San Jose, CA 95132

Dear Board Members:

The undersigned doing business under the firm name of:

\_\_\_\_\_ hereby propose and agree to enter into a Contract, to furnish any and all labor, materials, applicable taxes, equipment and services for the completion of Work described hereinafter and in the Contract Documents:

**New District Office  
General Construction  
Bid # B-05-2022-23**

prepared by: McKim Design Group for the amount of:

<b>1</b>	<b>Dollars</b>	
	<b>Amount in Words</b>	\$ _____
	<b>Base Bid – General Construction</b>	
<b>2</b>	<b>Fifty Thousand Dollars</b>	<b>\$50,000.00</b>
	<b>Allowance for Unforeseen Conditions</b>	
<b>3</b>	<b>Dollars</b>	
	<b>Total Amount in Words</b>	\$ _____
	<b>Base Bid + Allowance</b>	

11.1.6.1 Unit Prices

N/A

11.1.6.2 COURSE-OF-CONSTRUCTION INSURANCE REQUIREMENTS

Contractor, during the progress of the Work and until final acceptance of the Work by Owner upon completion of the entire Contract, shall maintain Builder’s Risk/Course-of-Construction insurance satisfactory to the Owner, issued on a completed value basis on all insurable Work included under the Contract Documents. This insurance shall insure against all risks, including but not limited to the following perils: vandalism, theft, malicious mischief, fire, sprinkler leakage, civil authority, sonic boom, explosion, collapse, flood, earthquake (for projects not solely funded through revenue bonds, limited

to earthquakes equivalent to or under 3.5 on the Richter Scale in magnitude), wind, hail, lightning, smoke, riot or civil commotion, debris removal (including demolition) and reasonable compensation for the Architect's services and expenses required as a result of such insured loss. This insurance shall provide coverage in an amount not less than the full cost to repair, replace or reconstruct the Work. Such insurance shall include the Owner, the Architect, and any other person or entity with an insurable interest in the Work as an additional named insured.

The Contractor shall submit to the Owner for its approval all items deemed to be uninsurable under the Builder's Risk/Course-of Construction insurance. The risk of the damage to the Work due to the perils covered by the Builder's Risk/Course-of-Construction insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the surety, and no claims for such loss or damage shall be recognized by the Owner, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

If written notice of the Award of Contract is mailed, faxed, or delivered to the undersigned at any time before this bid is withdrawn, the undersigned shall, within ten (10) days after the date of such mailing, faxing, or delivering of such notice, execute and deliver an agreement 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 Award of Contract may be mailed, faxed, or delivered:

---

Our Public Liability and Property Damage Insurance is placed with:

---

Our Workers' Compensation Insurance is placed with:

---

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

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

Addendum No. \_\_\_\_\_ Date \_\_\_\_\_ Addendum No. \_\_\_\_\_ Date \_\_\_\_\_  
Addendum No. \_\_\_\_\_ Date \_\_\_\_\_ Addendum No. \_\_\_\_\_ Date \_\_\_\_\_

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

A bidder shall not submit a bid unless the bidder's California contractor's license number appears clearly on the bid, the license expiration date and class are stated, and the bid contains a statement that the representations made therein are made under penalty of

perjury. Any bid submitted by a contractor who is not licensed pursuant to Business and Professions Code section 7028.15 shall be considered nonresponsive and shall be rejected. Any bid not containing the above information may be considered nonresponsive and may be rejected.

**NOTE:** Each bid must give the full business address of the bidder and be signed by bidder with bidder's usual signature. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Bids 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 chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation 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.

The undersigned declares under penalty of perjury under the laws of the State of California that the representations made in this bid are true and correct.

Print or Type Name: \_\_\_\_\_

Title: \_\_\_\_\_

Name of Company as Licensed: \_\_\_\_\_

Business Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

California Contractor License No.: \_\_\_\_\_

Class and Expiration Date: \_\_\_\_\_

State of Incorporation, if Applicable: \_\_\_\_\_

( ) Evidence of authority to bind corporation is attached.

Dated: \_\_\_\_\_, \_\_\_\_\_

Signed: \_\_\_\_\_

END OF DOCUMENT

**DOCUMENT 00 43 13**

**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 Berryessa Union School District (“Owner”) in the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) for payment of which sum, well and truly to be made, we hereby jointly and severally bind 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 Sierramont Middle School Tennis Court Project in strict accordance with Contract Documents.

NOW, THEREFORE,

a. If said bid shall be rejected, or, in the alternative;

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 full 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 hereunder, or the specifications accompanying the same, shall in any way 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 WITNESS WHEREOF, the above-bounden parties have executed this instrument under several seals this \_\_\_\_ day of \_\_\_\_\_, 201\_\_, the name and corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body. In the presence of:

(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).

END OF DOCUMENT

**DESIGNATION OF SUBCONTRACTORS**

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 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.

As of March 1, 2015, for any bid proposal submitted, and as of April 1, 2015, 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 of this section for additional listings needed beyond the length of this form.*



<b>Portion of Work</b>	<b>Name of Subcontractor &amp; Phone No.</b>	<b>Location of Subcontractor</b>	<b>California Contractor License Number</b>

Portion of Work	Name of Subcontractor & Phone No.	Location of Subcontractor	California Contractor License Number

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 \_\_\_\_\_, 201\_\_, at \_\_\_\_\_ [city], \_\_\_\_\_ [state].

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 43 40

**SUFFICIENT FUNDS DECLARATION**  
**(Labor Code section 2810)**  
**TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID**

Owner: Berryessa Union School District

Project: \_\_\_\_\_

I, \_\_\_\_\_, declare that I am the \_\_\_\_\_ of \_\_\_\_\_, the entity making and submitting the bid for the above Project that accompanies this Declaration, and that such bid includes sufficient funds to permit \_\_\_\_\_ *[insert name of entity]* to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that \_\_\_\_\_ *[the entity]* will comply with the provisions of Labor Code section 2810(d) if awarded the Contract.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and executed on \_\_\_\_\_ 20\_\_, at \_\_\_\_\_ *[city]*, \_\_\_\_\_ *[state]*.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 45 19

**NON COLLUSION DECLARATION  
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID**

Owner: Berryessa Union School District

Project:

The undersigned declares:

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 \_\_\_\_\_, 201\_\_, at \_\_\_\_\_ [city], \_\_\_\_\_ [state].

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

END OF DOCUMENT

WORKERS' COMPENSATION CERTIFICATE

Labor Code Section 3700, in relevant part, provides:

"Every employer except the state shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this state.

(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer or as one employer in a group of employers. Said certificate may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees, ... "

I am aware of the provisions of the 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. I shall supply the Owner with certificates of insurance evidencing that Workers' Compensation Insurance is in effect and providing that the Owner will receive thirty (30) days' notice of cancellation.

\_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Date

(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.)

END OF DOCUMENT



DOCUMENT 00 45 28

**DRUG-FREE WORKPLACE CERTIFICATION**

PROJECT/CONTRACT NO.: \_\_\_\_\_ for the \_\_\_\_\_  
between Berryessa Union School District (the “District” or the “Owner”) and  
\_\_\_\_\_ (the “Contractor” or the “Bidder”) for  
\_\_\_\_\_ (the “Contract” or the “Project”).

This Drug-Free Workplace Certification form is required from the successful Bidder pursuant to Government Code section 8350 et seq., the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract or grant for the procurement of any property or service from any state agency must certify that it will provide a drug-free workplace by doing certain specified acts. In addition, the Act provides that each contract or grant awarded by a state agency may be subject to suspension of payments or termination of the contract or grant, and the contractor or grantee may be subject to debarment from future contracting, if the contracting agency determines that specified acts have occurred.

The District is not a “state agency” as defined in the applicable section(s) of the Government Code, but the District is a local agency and public school district under California law and requires all contractors on District projects to comply with the provisions and requirements of Government Code section 8350 et seq., the Drug-Free Workplace Act of 1990.

Contractor shall certify that it will provide a drug-free workplace by doing all of the following:

- a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person’s or organization’s workplace and specifying actions which will be taken against employees for violations of the prohibition;
- b. Establishing a drug-free awareness program to inform employees about all of the following:
  - (1) The dangers of drug abuse in the workplace.
  - (2) The person’s or organization’s policy of maintaining a drug-free workplace.
  - (3) The availability of drug counseling, rehabilitation, and employee-assistance programs.
  - (4) The penalties that may be imposed upon employees for drug abuse violations.
- c. Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required above, and that, as a condition of

employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code section 8355 listed above and will publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the contract be given a copy of the statement required by section 8355(a), and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the District determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of section 8355, that the Contract awarded herein is subject to termination, suspension of payments, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of section 8350 et seq.

I acknowledge that I am aware of the provisions of Government Code section 8350 et seq. and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT



DOCUMENT 00 45 30

**ROOF PROJECT CERTIFICATION**

[Public Contract Code §3006(a),(b)]

I, \_\_\_\_\_ [name], \_\_\_\_\_ [name of employer], certify that I have not offered, given , or agreed to give, received, accepted, or agreed to accept, any gift, contribution, or any financial incentive whatsoever to or from any person in connection with the roof project contract. As used in this certification, “person” means any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals. Furthermore, I, \_\_\_\_\_ [name], \_\_\_\_\_ [name of employer], certify that I do not have, and throughout the duration of the contract, I will not have, any financial relationship in connection with the performance of this contract with any architect, engineer, roofing, consultant, materials manufacturer, distributor, or vendor that is not disclosed below.

I, \_\_\_\_\_ [name], \_\_\_\_\_ [name of employer], have the following financial relationships, with an architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor, or other person in connection with the following roof project contract:

\_\_\_\_\_  
[name and address of building, contract date and number]

\_\_\_\_\_  
[name and address of building, contract date and number]

\_\_\_\_\_  
[name and address of building, contract date and number]

\_\_\_\_\_  
[name and address of building, contract date and number]

I certify that to the best of my knowledge, the contents of this disclosure are true, or are believed to be true.

\_\_\_\_\_ Signature

\_\_\_\_\_ Date

\_\_\_\_\_ Print Name

\_\_\_\_\_ Print Name of Employer

END OF DOCUMENT

**DOCUMENT 00 45 32**

**FINGERPRINTING NOTICE AND ACKNOWLEDGMENT**

(Education Code Section 45125.2(a))

*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) 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, 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 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.

**INDEPENDENT CONTRACTOR STUDENT CONTACT FORM**

Contractor Name: \_\_\_\_\_  
Supervisor/Foreman Name: \_\_\_\_\_  
Start Date: \_\_\_\_\_  
Completion Date: \_\_\_\_\_  
Location of Work: \_\_\_\_\_  
Hours of Work: \_\_\_\_\_  
Length of Time on Grounds: \_\_\_\_\_  
Number of Employees on the Job: \_\_\_\_\_

Yes No  
[ ] [ ] Employees will have more than limited contact with students as determined by  
Owner, or if by Contractor, please explain:

\_\_\_\_\_  
\_\_\_\_\_

If yes, the following steps will be taken to ensure student safety (check):

- A physical barrier will be installed at the worksite to limit contact with pupils.
- Employees will be continually monitored and supervised by an employee who has not been convicted of a violent or serious felony.

Name of Supervising Employee:  
\_\_\_\_\_

Date of Department of Justice verification that supervising employee has not been  
convicted of a violent or serious felony:  
\_\_\_\_\_

Name of employee who is the custodian of the Department of Justice verification  
information:  
\_\_\_\_\_

- Owner agrees: Employees will be surveilled by Owner’s personnel.

I declare under penalty of perjury that the foregoing is true and correct to the best of my  
knowledge.

Dated: \_\_\_\_\_  
Signature \_\_\_\_\_  
Typed Name: \_\_\_\_\_  
Title: \_\_\_\_\_

*Note: This document must be executed and submitted with the executed Agreement between  
Owner and Contractor. END OF DOCUMENT*

**DOCUMENT 00 45 34**  
**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>

END OF DOCUMENT

DOCUMENT 00 50 50

**NOTICE OF INTENT TO AWARD**

DATE POSTED:

CONTRACT NUMBER:

PROJECT TITLE:

Bonny S Gregorius, the Purchasing and Contracts Manager of the Berryessa Union School District, intends to recommend to the Board of Trustees of the Berryessa Union School District the Award of the above-referenced Project to at \_\_\_\_\_ meeting of the Board of Trustees.

Deliver to the District FOUR fully executed counterparts of Document 00 52 26 (Agreement). Each copy of Document 00 52 26 (Agreement) must bear your original signature on the signature page and your initials on each page. Please print as single sided copies.

You must provide a scanned signed copy of the agreement before 3:00pm on \_\_\_\_\_.  
You must provide the original completed documents listed below by 2:00pm on \_\_\_\_\_.

FOR THE BERRYESSA UNION SCHOOL DISTRICT

By: \_\_\_\_\_

Bonny S Gregorius  
Purchasing and Contracts Manager  
408-923-1871 ofc  
408-926-8329 fax  
[bgregorius@busd.net](mailto:bgregorius@busd.net)

END OF DOCUMENT



DOCUMENT 00 50 50

**NOTICE OF INTENT TO AWARD**

DATE POSTED:

CONTRACT NUMBER:

PROJECT TITLE:

Bonny S Gregorius, the Purchasing and Contracts Manager of the Berryessa Union School District, intends to recommend to the Board of Trustees of the Berryessa Union School District the Award of the above-referenced Project to at \_\_\_\_\_ meeting of the Board of Trustees.

Deliver to the District FOUR fully executed counterparts of Document 00 52 26 (Agreement). Each copy of Document 00 52 26 (Agreement) must bear your original signature on the signature page and your initials on each page. Please print as single sided copies.

You must provide a scanned signed copy of the agreement before 3:00pm on \_\_\_\_\_.  
You must provide the original completed documents listed below by 2:00pm on \_\_\_\_\_.

FOR THE BERRYESSA UNION SCHOOL DISTRICT

By: \_\_\_\_\_

Bonny S Gregorius  
Purchasing and Contracts Manager  
408-923-1871 ofc  
408-926-8329 fax  
[bgregorius@busd.net](mailto:bgregorius@busd.net)

END OF DOCUMENT

**NOTICE OF AWARD**

Attn:

CONTRACT NO.:  
CONTRACT FOR:

The Contract Sum: \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

1. One electronic copy of the proposed Contract Documents listed below accompanies this Notice of Intent to Award.
2. You must provide the original completed documents listed below by 2:00pm on \_\_\_\_\_.
  - a. Deliver to District TWO originals of Document 00 61 13.13 (Construction Performance Bond), executed by you and your surety.
  - b. Deliver to District TWO originals of Document 00 61 13.16 (Construction Labor and Material Payment Bond), executed by you and your surety.
  - c. Deliver to District TWO original sets of the insurance certificates with endorsements required under Document 00 72 00 (General Conditions).
3. Failure to comply with these conditions within the time specified will entitle District to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid security forfeited.
4. Within 10 days after you comply with the conditions in Paragraph 2 of this Document 00 51 00, District will return to you one fully signed counterpart of Document 00 52 26 (Agreement).
5. Before you may start any Work at the Site, you must attend a preconstruction conference. The preconstruction conference will be arranged through Kitchell CEM. Questions regarding bonds and insurance may be directed to Bonny S Gregorius, Purchasing Manager at 408-923-1871.

6. **SB 854 COMPLIANCE:** No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

7. **FURNISHING OF ELECTRONIC CERTIFIED PAYROLL RECORDS TO LABOR COMMISSIONER:**

All contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (aka Division of Labor Standards Enforcement).

**FOR THE BERRYESSA UNION SCHOOL DISTRICT**

By: \_\_\_\_\_

Bonny S Gregorius  
Purchasing and Contracts Manager

Board Approval Date: \_\_\_\_\_

END OF DOCUMENT

**DOCUMENT 00 52 26**

**AGREEMENT BETWEEN OWNER AND CONTRACTOR**

This Agreement effective \_\_\_\_\_, 202\_\_, by and between Berryessa Union School District, Santa Clara County, California, hereinafter called the "Owner," and \_\_\_\_\_, hereinafter called the "Contractor."

**WITNESSETH:** That the Contractor and the Owner for the consideration hereinafter named agree as follows:

**ARTICLE I. SCOPE OF WORK.** The Contractor agrees to furnish all labor, equipment and materials, including tools, implements, and appliances required, and to perform all the work in a good and workmanlike manner, free from any and all liens and claims from mechanics, material suppliers, subcontractors, artisans, machinists, teamsters, freight carriers, and laborers required for:

all in strict compliance with the plans, drawings and specifications therefore prepared by:

**McKim Design Group**

and other contract documents relating thereto.

**ARTICLE II. CONTRACT DOCUMENTS.** The Contractor and the Owner agree that all of the documents listed in Article 1.1.1 of the General Conditions form the Contract Documents which form the Contract.

**ARTICLE III. TIME TO COMPLETE AND LIQUIDATED DAMAGES.**

Time is of the essence in this contract, and the time of Completion for the Project shall be as follows:

Start Construction – October 18, 2022

Complete Construction – December 20, 2022

Failure to Complete the Project within the time and in the manner provided for by the Contract Documents (i.e., by the Completion deadline) shall subject the Contractor to liquidated damages. For purposes of liquidated damages, the concept of “substantial completion” shall not constitute Completion and is not part of the Contract Documents. The actual occurrence of damages and the actual amount of the damages which the Owner would suffer if the Project were not Completed by the Completion deadline are dependent upon many circumstances and conditions which could prevail in various combinations and, from the nature of the case, it is impracticable and extremely difficult to fix the actual damages. Damages which the Owner would suffer in the event of delay include, but are not limited to, loss of the use of the Project, disruption of activities, costs of administration, supervision and the incalculable inconvenience and loss suffered by the public.

Accordingly, the parties agree that the amount herein set forth shall be the amount of damages which the Owner shall directly incur upon failure of the Contractor to Complete the Project by the Completion deadline: **One Thousand Dollars (\$500.00), for each calendar day** by which Completion of the Project is delayed beyond the Completion deadline as adjusted by change orders.

If the Contractor becomes liable under this section, the Owner, in addition to all other remedies provided by law, shall have the right to withhold any and all retained percentages of payments and/or progress payments, and to collect the interest thereon, which would otherwise be or become due the Contractor until the liability of the Contractor under this section has been finally determined. If the retained percentages and withheld progress payments appear insufficient to discharge all liabilities of the Contractor incurred under this Article, the Contractor and its sureties shall continue to remain liable to the Owner for such liabilities until all such liabilities are satisfied in full.

If the Owner accepts any work or makes any payment under this Agreement after a default by reason of delays, the payment or payments shall in no respect constitute a waiver or modification of any Agreement provisions regarding time of Completion and liquidated damages.

**ARTICLE IV. PAYMENT AND RETENTION.** The Owner agrees to pay the Contractor in current funds \_\_\_\_\_ dollars (\$ \_\_\_\_\_) for work satisfactorily performed after receipt of properly documented and submitted Applications for Payment and to make payments on account thereof, as provided in the General Conditions.

The retention amount on this Project is Five Percent (5%).

**ARTICLE V. CHANGES.** Changes in this Agreement or in the Work to be done under this Agreement shall be made as provided in the General Conditions.

**ARTICLE VI. TERMINATION.** The Owner or Contractor may terminate the Contract as provided in the General Conditions.

**ARTICLE VII. PREVAILING WAGES.** The Project is a public work, the Work shall be performed as a public work and pursuant to the provisions of Section 1770 et seq. of the Labor Code of the State of California, which are hereby incorporated by reference and made a part hereof, 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 to execute this Contract. 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 the Owner'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 hereby adopted by reference and shall be effective for the life of this Agreement 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.

The Contractor and any subcontractor under the Contractor as a penalty to the Owner shall forfeit not more than Two Hundred Dollars (\$200.00) 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 thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

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 this Contract or any subcontract thereunder, 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 the Owner, its officers and agents and to the representatives of the Division of Labor Law Enforcement of the State Department of Industrial Relations. The Contractor and each subcontractor shall furnish a certified copy of all payroll records directly to the Labor Commissioner.

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.

**ARTICLE VIII. WORKING HOURS.** In accordance with the provisions of Sections 1810 to 1815, inclusive, of the Labor Code of the State of California, which are hereby incorporated and made a part hereof, the time of service of any worker employed by the Contractor or a Subcontractor doing or contracting to do any part of the Work contemplated by this Agreement is limited and restricted to eight hours during any one calendar day and forty hours during any one calendar week, provided, that work may be performed by such employee in excess of said eight hours per day or forty hours per week provided that compensation for all hours worked in excess of eight hours per day, and forty hours per week, is paid at a rate not less than one and one-half (1½) times the

basic rate of pay. The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each calendar day and each calendar week by each worker employed by them in connection with the Work. The records shall be kept open at all reasonable hours to inspection by representatives of the Owner and the Division of Labor Law Enforcement. The Contractor shall as a penalty to the Owner forfeit Twenty-five Dollars (\$25.00) for each worker employed in the execution of this Agreement by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any one calendar day, and forty hours in any one calendar week, except as herein provided.

**ARTICLE IX. APPRENTICES.** The Contractor agrees to comply with Chapter 1, Part 7, Division 2, Sections 1777.5 and 1777.6 of the California Labor Code, which are hereby incorporated and made a part hereof. These sections require that contractors and subcontractors employ apprentices in apprenticeable occupations in a ratio of not less than one hour of apprentice's work for each five hours of work performed by a journeyman (unless an exemption is granted in accordance with Section 1777.5) and that contractors and subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public works solely on the ground of sex, race, religious creed, national origin, ancestry or color. Only apprentices as defined in Labor Code Section 3077, who are in training under apprenticeship standards and who have signed written apprentice agreements, will be employed on public works in apprenticeable occupations. The responsibility for compliance with these provisions is fixed with the Contractor for all apprenticeable occupations.

**ARTICLE X. DSA OVERSIGHT PROCESS.** 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.

**ARTICLE XI. INDEMNIFICATION AND INSURANCE.** The Contractor will defend, indemnify and hold harmless the Owner, its governing board, officers, agents, trustees, employees and others as provided in the General Conditions.

By this statement the Contractor represents that it has secured the payment of Workers' Compensation in compliance with the provisions of the Labor Code of the State of California and during the performance of the work contemplated herein will continue so to comply with said provisions of said Code. The Contractor shall supply the Owner with certificates of insurance evidencing that Workers' Compensation Insurance is in effect and providing that the Owner will receive thirty (30) days' notice of cancellation.

Contractor shall provide the insurance set forth in the General Conditions. The amount of general liability insurance shall be \$1,000,000.00 per occurrence for bodily injury, personal injury and property damage and a minimum of \$2,000,000.00 aggregate. The amount of automobile liability insurance shall be \$1,000,000.00 per accident for bodily injury and property damage combined single limit.

**ARTICLE XII. ENTIRE AGREEMENT.** The Contract constitutes the entire agreement between the parties relating to the Project, and supersedes any prior or contemporaneous agreement between the parties, oral or written, including the Owner's award of the Project to Contractor, unless such agreement is expressly incorporated herein. The Owner makes no representations or warranties, express or implied, not specified in the Contract. The Contract is intended as the complete and exclusive statement of the parties' agreement pursuant to Code of Civil Procedure section 1856.

**ARTICLE XIII. EXECUTION OF OTHER DOCUMENTS.** The parties to this Agreement shall cooperate fully in the execution of any and all other documents and in the completion of any additional actions that may be necessary or appropriate to give full force and effect to the terms and intent of the Contract.

**ARTICLE XIV. EXECUTION IN COUNTERPARTS.** This Agreement may be executed in counterparts such that the signatures may appear on separate signature pages. A copy, or an original, with all signatures appended together, shall be deemed a fully executed Agreement.

**ARTICLE XV. BINDING EFFECT.** Contractor, by execution of this Agreement, acknowledges that Contractor has read this Agreement and the other Contract Documents, understands them, and agrees to be bound by their terms and conditions. The Contract shall inure to the benefit of and shall be binding upon the Contractor and the Owner and their respective successors and assigns.

**ARTICLE XVI. SEVERABILITY; GOVERNING LAW; CHOICE OF FORUM.** If any provision of the Contract shall be held invalid or unenforceable by a court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof. The Contract shall be governed by the laws of the State of California. Any action or proceeding seeking any relief under or with respect to this Agreement shall be brought solely in the Superior Court of the State of California for the County of Santa Clara, subject to transfer of venue under applicable State law, provided that nothing in this Agreement shall constitute a waiver of immunity to suit by Owner.

**ARTICLE XVII. AMENDMENTS.** The terms of the Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever except



by written agreement signed by the parties and approved or ratified by the Governing Board.

**ARTICLE XVIII. ASSIGNMENT OF CONTRACT.** The Contractor shall not assign or transfer by operation of law or otherwise any or all of its rights, burdens, duties or obligations without the prior written consent of the surety on the payment bond, the surety on the performance bond and the Owner.

**ARTICLE XIX. WRITTEN NOTICE.** Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified or overnight mail to the last business address known to the person who gives the notice.

**(CONTRACTOR)**

**(OWNER)**

\_\_\_\_\_  
SIGNED BY (Contractor)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Title)

\_\_\_\_\_  
CALIFORNIA CONTRACTOR'S  
LICENSE NO.

\_\_\_\_\_  
LICENSE EXPIRATION DATE

**NOTE:** Contractor must give the full business address of the Contractor and sign with Contractor's usual signature. Partnerships must furnish the full name of all partners and the Agreement must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Corporations must sign with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation 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.

END OF DOCUMENT

**DOCUMENT 00 54 26**

**This is a fiduciary account created by statute, Public Contract Code section 22300. The funds deposited in this account shall not be released to Contractor or any other person or entity, other than Owner, including pursuant to any purported lien or writ of attachment or execution, without the prior written, express approval of Owner.**

**ESCROW AGREEMENT FOR  
SECURITY DEPOSITS IN LIEU OF RETENTION**

This Escrow Agreement is made and entered into by and between the Berryessa Union School District, whose address is 1376 Piedmont Road, San Jose, California 95132 (hereinafter called "Owner"); \_\_\_\_\_, whose address is \_\_\_\_\_ (hereinafter called "Contractor"); and \_\_\_\_\_, a state or federally chartered bank in California whose address is \_\_\_\_\_ (hereinafter called "Escrow Agent").

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

1. Pursuant to section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by the Owner pursuant to the Contract entered into between the Owner and Contractor in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), and dated \_\_\_\_\_, \_\_\_\_\_, (the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for retention earnings, the Escrow Agent shall notify the Owner within ten (10) calendar days of the deposit. The market value of the securities at the time of the substitution, as valued by the Owner, shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. If the Owner determines that the securities are not adequate it will notify Contractor and Escrow Agent, and Contractor shall deposit additional security as further determined by the Owner. Securities shall be held in the name of the Owner and shall designate the Contractor as the beneficial owner.
2. Thereafter, Owner shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.
3. Pursuant to Public Contract Code section 22300, as an alternative to the procedures set forth above, Contractor may request in writing that the Owner pay

- retention amounts directly to Escrow Agent. When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for benefit of the Contractor until such time as the escrow created under this Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.
4. The Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor and Escrow Agent.
  5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.
  6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.
  7. The Owner shall have the right to draw upon the securities or any amount paid directly to Escrow Agent in the event of default by the Contractor. Upon seven (7) days written notice to the Escrow Agent from the Owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash, including any amounts paid directly to Escrow Agent pursuant to Section 3 above, as instructed by Owner. Escrow Agent shall not be concerned with the validity of any notice of default given by Owner pursuant to this paragraph, and shall promptly comply with Owner's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to a conflicting demand and hereby waives any present or future opportunity of interpleader.
  8. Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payment of fees and charges.
  9. Escrow Agent shall rely on the written notifications from the Owner and Contractor pursuant to Sections (4), (5), (6), (7) and (8) of this Agreement and the

Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner, the Contractor and the Escrow Agent in connection with the foregoing, and exemplars of their respective signatures are as follows:

ON BEHALF OF OWNER:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typewritten Name

\_\_\_\_\_  
Title

ON BEHALF OF CONTRACTOR:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typewritten Name

\_\_\_\_\_  
Title

ON BEHALF OF ESCROW AGENT:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typewritten Name

\_\_\_\_\_  
Title

**IN WITNESS WHEREOF**, the parties have executed this Agreement by their proper officers on the date first set forth above.

OWNER:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typewritten Name

\_\_\_\_\_  
Title

CONTRACTOR:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typewritten Name

\_\_\_\_\_  
Title

ESCROW AGENT:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typewritten Name

\_\_\_\_\_  
Title

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

END OF DOCUMENT

**DOCUMENT 00 55 00**

**NOTICE TO PROCEED**

Dated: \_\_\_\_\_, 20\_\_

TO: \_\_\_\_\_  
(Contractor)

ADDRESS: \_\_\_\_\_

PROJECT: Sierramont Tennis Court Project

PROJECT/CONTRACT NO.: \_\_\_\_\_ between the Berryessa Union School District and Contractor ("Contract").

You are notified that the Contract Time under the above Contract will commence to run on \_\_\_\_\_, 20\_\_\_. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement executed by Contractor, the date of completion is \_\_\_\_\_, 20\_\_\_.

You must submit the following documents by 5:00 p.m. of the **TENTH (10<sup>TH</sup>)** calendar day following the date of this Notice to Proceed:

- a. Contractor's preliminary schedule of construction.
- b. Contractor's preliminary schedule of values for all of the Work.
- c. Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals
- d. Contractor's Safety Plan specifically adapted for the Project.
- e. A complete subcontractors list, including the name, address, telephone number, facsimile number, California State Contractors License number, classification, and monetary value of all Subcontracts.

Thank you. We look forward to a very successful Project.

Berryessa Union School District

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

END OF DOCUMENT

**DOCUMENT 00 61 13.13**

**PERFORMANCE BOND**

**KNOW ALL MEN BY THESE PRESENTS** that we, \_\_\_\_\_ as Principal and \_\_\_\_\_ as Surety, are held and firmly bound unto Berryessa Union School District, in the County of Santa Clara, State of California (“Owner”) 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, to the Owner for the full performance of a certain contract with the Owner, the terms of which are incorporated herein by reference, dated \_\_\_\_\_, 201\_\_, for construction of:

The condition of this obligation is such that, 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 for the period of time specified in the Contract after completion for correction of faulty or improper materials and workmanship and during the life of any guaranty or warranty required under the Contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreement of any and all duly authorized modifications of said Contract that may hereafter be made, then this obligation is 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.

No further agreement between Surety and Owner shall be required as a prerequisite to the Surety performing its obligations under this bond.

**IN WITNESS WHEREOF**, the above-bounden parties have executed this instrument under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_ 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 of 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 DOCUMENT



**DOCUMENT 00 61 13.16**

**PAYMENT BOND**  
**(Labor and Material)**

**KNOW ALL MEN BY THESE PRESENTS:**

That WHEREAS, Berryessa Union School District (the "Owner" of the public works project described below) 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:

Which said agreement dated \_\_\_\_\_, 20\_\_, and all of the Contract Documents 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 \_\_\_\_\_ ("Surety") are held and firmly bound unto all laborers, material men, and other persons, and bound for all amounts due, referred to in Civil Code section 9554, subdivision (b), 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 any of the persons named in Civil Code section 9100, or any of the amounts due, as specified in Civil Code section 9554, subdivision (b), 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 costs and reasonable attorney's fees 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 \_\_\_\_\_, 201\_\_.

(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 \_\_\_\_\_.

END OF DOCUMENT

**DOCUMENT 00 72 00**

**GENERAL CONDITIONS**

**for**

**CONTRACT OF CONSTRUCTION**

**Bid #B-03-2022-23**

**MECHANICAL UPGRADES at NEW DISTRICT OFFICE**

**Bid #B-04-2022-23**

**ELECTRICAL UPGRADES at NEW DISTRICT OFFICE**

**Bid #B-05-2022-23**

**GENERAL CONSTRUCTION at NEW DISTRICT OFFICE**

**BERRYESSA UNION SCHOOL DISTRICT**

**9/16/2022**

**SUMMARY OF CONTENTS**

ARTICLE 1: GENERAL CONDITIONS .....1

ARTICLE 2: OWNER.....6

ARTICLE 3: THE CONTRACTOR.....10

ARTICLE 4: ADMINISTRATION OF THE CONTRACT .....26

ARTICLE 5: SUBCONTRACTORS .....41

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS.....47

ARTICLE 7: CHANGES IN THE WORK .....49

ARTICLE 8: TIME.....57

ARTICLE 9: PAYMENTS AND COMPLETION.....61

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY .....71

ARTICLE 11: INSURANCE AND BONDS .....77

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK.....82

ARTICLE 13: MISCELLEOUS PROVISIONS .....84

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT.....96

**TABLE OF CONTENTS**

ARTICLE 1.....1	2.2 INFORMATION AND SERVICES
GENERAL CONDITIONS.....1	REQUIRED OF THE OWNER.....6
1.1 BASIC DEFINITIONS.....1	2.2.1 INTENTIONALLY LEFT BLANK.....6
1.1.1 THE CONTRACT DOCUMENTS.....1	2.2.2 SITE SURVEY.....6
1.1.2 THE CONTRACT.....1	2.2.3 SOILS.....7
1.1.3 THE WORK.....1	2.2.3.1 <i>Owner Furnished Services</i> .....7
1.1.4 THE PROJECT.....2	2.2.3.2 <i>Contractor Reliance</i> .....7
1.1.5 THE DRAWINGS.....2	2.2.4 UTILITY SURVEY.....7
1.1.6 THE SPECIFICATIONS.....2	2.2.5 INFORMATION.....7
1.1.7 THE PROJECT MANUAL.....2	2.2.6 EXISTING UTILITY LINES; REMOVAL,
1.1.8 OR 2	RELOCATION.....8
1.1.9 COMPLETION OR COMPLETE.....2	2.2.6.1 <i>Removal, Relocation</i> .....8
1.2 EXECUTION, CORRELATION AND	2.2.6.2 <i>Assessment</i> .....8
INTENT 2	2.2.6.3 <i>Notification</i> .....8
1.2.1 CORRELATION AND INTENT.....3	2.2.6.4 <i>Underground Utility Clearance</i> ..8
1.2.1.1 <i>Documents Complementary and</i>	2.2.7 EASEMENTS.....8
1.2.1.1.1 <i>Inclusive</i> 3	2.2.8 REASONABLE PROMPTNESS.....8
1.2.1.1.2 <i>Coverage of the Drawings and</i>	2.2.9 COPIES FURNISHED.....8
1.2.1.1.2.1 <i>Specifications</i> .....3	2.2.10 DUTIES CUMULATIVE.....9
1.2.1.1.2.2 <i>Conflicts</i> .....3	2.3 OWNER’S RIGHT TO STOP THE
1.2.1.1.2.3 <i>Conformance With Laws</i> .....3	WORK9
1.2.1.1.2.4 <i>Ambiguity</i> .....4	2.4 OWNER’S RIGHT TO CARRY OUT
1.2.1.1.2.5 <i>Execution</i> .....4	THE WORK.....9
1.2.2 ADDENDA AND DEFERRED APPROVALS ..4	ARTICLE 3.....9
1.2.2.1 <i>Addenda</i> .....4	THE CONTRACTOR.....9
1.2.2.2 <i>Deferred Approvals</i> .....4	3.1 DEFINITION.....9
1.2.3 SPECIFICATION INTERPRETATION.....4	3.2 SUPERVISION AND CONSTRUCTION
1.2.3.1 <i>Titles</i> .....4	PROCEDURES.....10
1.2.3.2 <i>As Shown, Etc</i> .....5	3.2.1 CONTRACTOR.....10
1.2.3.3 <i>Provide</i> .....5	3.2.2 CONTRACTOR RESPONSIBILITY.....10
1.2.3.4 <i>General Conditions</i> .....5	3.2.3 OBLIGATIONS NOT CHANGED BY
1.2.3.5 <i>Abbreviations</i> .....5	ARCHITECT’S ACTIONS.....10
1.2.3.6 <i>Plural</i> .....5	3.2.4 CONTRACTOR RESPONSIBILITY FOR
1.2.3.7 <i>Metric</i> .....5	READINESS FOR WORK.....10
1.2.3.8 <i>Standard Specifications</i> .....5	3.2.5 PROJECT MEETINGS.....10
1.2.3.9 <i>Absence of Modifiers</i> .....5	3.3 SUPERINTENDENT.....11
1.3 OWNERSHIP AND USE OF	3.3.1 FULL TIME SUPERINTENDENT.....11
ARCHITECT’S DRAWINGS,	3.3.2 STAFF.....11
SPECIFICATIONS AND OTHER	3.3.3 RIGHT TO REMOVE.....11
DOCUMENTS.....6	3.4 LABOR AND MATERIALS.....11
ARTICLE 2.....6	3.4.1 CONTRACTOR TO PROVIDE.....11
OWNER 6	3.4.2 QUALITY.....11
2.1 DEFINITION.....6	3.4.3 REPLACEMENT.....12

3.4.4	DISCIPLINE .....	12	3.11.4.2	<i>Two or More Products Specified</i> .....	21
3.5	WARRANTY .....	12	3.11.4.3	<i>Substitution Request Form</i> .....	21
3.6	TAXES .....	12	3.11.4.4	<i>List of Manufacturers and Products Required</i> .....	21
3.7	PERMITS, FEES AND NOTICES .....	12	3.11.5	DEFERRED APPROVALS .....	22
3.7.1	PAYMENT .....	12	3.12	CUTTING AND PATCHING .....	22
3.7.2	COMPLIANCE .....	13	3.12.1	SCOPE .....	22
3.7.3	CONTRACT DOCUMENTS .....	13	3.12.2	CONSENT .....	22
3.7.4	RESPONSIBILITY .....	13	3.12.3	STRUCTURAL MEMBERS .....	22
3.8.1	CONTRACT .....	13	3.12.4	Subsequent Removal .....	22
3.8.2	SCOPE .....	13	3.13	CLEANING UP .....	23
3.8.2.1	<i>Prompt Selection</i> .....	13	3.13.1	CONTRACTOR'S RESPONSIBILITY .....	23
3.8.2.2	<i>Cost</i> .....	13	3.13.2	FAILURE TO CLEANUP .....	23
3.8.2.3	<i>Cost Included in Contract Sum</i> .....	13	3.13.3	CONSTRUCTION BUILDINGS .....	23
3.8.2.4	<i>Contract Sum Adjustment</i> .....	14	3.14	ACCESS TO WORK .....	23
3.9	CONTRACTOR'S CONSTRUCTION SCHEDULES .....	14	3.15	ROYALTIES AND PATENTS .....	23
3.9.1	Requirements .....	14	3.15.1	PAYMENT AND INDEMNITY .....	23
3.9.2	DSA OVERSIGHT PROCESS .....	16	3.15.2	REVIEW .....	24
3.9.3	FAILURE TO MEET REQUIREMENTS .....	16	3.16	INDEMNIFICATION .....	24
3.10	DOCUMENTS AND SAMPLES AT THE SITE .....	17	3.16.1	SCOPE: CONTRACTOR .....	24
3.11	SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES .....	17	3.16.2	SCOPE: SUBCONTRACTORS .....	24
3.11.1	SUBMITTALS DEFINED .....	17	3.16.2.1	<i>Indemnity</i> .....	25
3.11.1.1	<i>Shop Drawings</i> .....	17	3.16.2.2	<i>Joint and Several Liability</i> .....	25
3.11.1.2	<i>Samples</i> .....	17	3.16.3	No LIMITATION .....	25
3.11.1.3	<i>Contractor's Responsibility</i> .....	17	3.17	OWNER AS INTENDED BENEFICIARY 25	
3.11.1.4	<i>Extent of Review</i> .....	18	3.18	NOTICE OF EXCUSE FOR NONPERFORMANCE .....	26
3.11.2	DRAWING SUBMISSION PROCEDURE .....	18	ARTICLE 4 .....	26	
3.11.2.1	<i>Transmittal Letter and Other Requirements</i> .....	18	ADMINISTRATION OF THE CONTRACT .....	26	
3.11.2.2	<i>Copies Required</i> .....	19	4.1	ARCHITECT .....	26
3.11.2.3	<i>Corrections</i> .....	19	4.1.1	DEFINITION .....	26
3.11.2.4	<i>Approval Prior to Commencement of Work</i> .....	19	4.1.2	MODIFICATION .....	26
3.11.3	SAMPLE SUBMISSIONS PROCEDURE .....	19	4.1.3	TERMINATION .....	26
3.11.3.1	<i>Samples Required</i> .....	19	4.2	ARCHITECT'S ADMINISTRATION OF THE CONTRACT .....	27
3.11.3.2	<i>Labels and Instructions</i> .....	19	4.2.1	STATUS .....	27
3.11.3.3	<i>Architect's Review</i> .....	20	4.2.2	SITE VISITS .....	27
3.11.3.4	<i>Record Drawings and Annotated Specifications</i> .....	20	4.2.3	LIMITATIONS OF CONSTRUCTION RESPONSIBILITY .....	27
3.11.3.5	<i>Equipment Manuals</i> .....	20	4.2.4	COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION .....	27
3.11.3.6	<i>Owner's Property</i> .....	20	4.2.5	PAYMENT APPLICATIONS .....	27
3.11.4	SUBSTITUTIONS .....	20	4.2.6	REJECTION OF WORK .....	27
3.11.4.1	<i>One Product Specified</i> .....	21	4.2.7	CHANGE ORDERS .....	28

4.2.8 WARRANTIES UPON COMPLETION.....28

4.2.9 INTERPRETATION.....28

4.2.10 ADDITIONAL INSTRUCTIONS .....28

    4.2.10.1 *Architect’s Interpretations and Decisions* 28

    4.2.10.2 *Typical Parts and Sections* .....29

    4.2.10.3 *Dimensions* .....29

4.3 INSPECTOR OF RECORD .....29

4.3.1 GENERAL .....29

4.3.2 INSPECTOR’S OF RECORD’S DUTIES .....29

4.3.3 INSPECTOR OF RECORD’S AUTHORITY TO REJECT OR STOP WORK .....29

4.3.4 INSPECTOR OF RECORD’S FACILITIES .....29

4.4 RESPONSIBILITY FOR ADDITIONAL CHARGES INCURRED BY THE OWNER FOR PROFESSIONAL SERVICES.....30

4.5 NOTICES OF POTENTIAL CHANGE, CHANGE ORDER REQUESTS, AND CLAIMS 30

4.5.1 NOTICE OF POTENTIAL CHANGE.....31

4.5.2 CHANGE ORDERS REQUESTS .....31

4.5.3 DEFINITION OF CLAIM.....32

4.5.4 TIME FOR SUBMITTING CLAIM; WAIVER.33

4.5.5 CONTENT OF CLAIM .....33

4.5.5.1 *Claim Format; Waiver*.....34

4.5.5.2 *Claims for Additional Money*.....35

4.5.5.3 *Claims for Additional Time* .....35

4.5.5.3.1 *Notice of Extent of Claim*.....35

4.5.5.3.2 *Unusually Severe Weather Claims* .36

4.5.5.4 *Pass Through Claims*.....36

4.5.6 PROCEDURES FOR CLAIMS LESS THAN OR EQUAL TO \$375,000 (PUBLIC CONTRACT CODE SECTION 20104.2) .....36

4.5.6.1 *Claims for Less Than \$50,000* .....36

4.5.6.2 *Claims Over \$50,000 and Less Than or equal to \$375,000*.....37

4.5.6.3 *Meet and Confer*.....37

4.5.6.4 *Government Code Claim* .....38

4.5.7 PROCEDURES FOR CLAIMS OVER \$375,000 38

4.5.8 CONTINUING CONTRACT PERFORMANCE 38

4.5.9 CLAIMS FOR CONCEALED OR UNKNOWN CONDITIONS.....39

4.5.9.1 *Trenches or Excavations Less Than Four Feet Below the Surface*.....39

4.5.9.2 *Trenches or Excavations Greater Than Four Feet Below the Surface*.....39

4.5.10 INJURY OR DAMAGE TO PERSON OR PROPERTY 40

ARTICLE 5 .....40

SUBCONTRACTORS.....40

5.1 DEFINITIONS .....40

5.1.1 SUBCONTRACTOR.....40

5.1.2 SUB-SUBCONTRACTOR.....40

5.1.3 SPECIALTY CONTRACTORS.....40

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK .....41

5.2.1 ASSIGNMENT OR SUBSTITUTION - CONSENT OF OWNER 41

5.2.2 GROUNDS FOR SUBSTITUTION .....41

    5.2.2.1 *No Change in Contract*.....42

    5.2.2.2 *Substitution Due to Clerical Error* .....42

5.3 SUBCONTRACTUAL RELATIONS ...42

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS .....43

5.5 SUBCONTRACTOR’S RESPONSIBILITIES.....43

5.5.1 SUPERVISION BY SUBCONTRACTORS .....43

5.5.2 DISCIPLINE AND ORDER .....43

5.5.3 DEFECTS DISCOVERED .....44

5.5.4 SUBCONTRACTOR INFORMATION.....44

5.5.5 TEMPORARY STRUCTURES .....44

5.5.6 CHARGES TO SUBCONTRACTOR.....44

5.5.7 FINES IMPOSED.....45

5.5.8 PROJECT SIGNS.....45

5.5.9 REMEDIES FOR FAILURE TO PERFORM....45

5.5.10 DISPUTES NOT TO AFFECT WORK.....45

5.5.11 APPLICATION FOR PAYMENT .....46

5.5.12 COMPLIANCE WITH PROCEDURES .....46

5.5.13 ON-SITE RECORD KEEPING.....46

5.5.14 NON-EXCLUSIVE OBLIGATIONS.....46

ARTICLE 6.....46

CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS .....46

6.1 OWNER’S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS.....46

6.1.1 OWNER’S RIGHTS.....46

6.1.2 DESIGNATION AS CONTRACTOR .....47

6.1.3 CONTRACTOR DUTIES .....47

6.1.4 OWNER OBLIGATIONS .....47

6.2 MUTUAL RESPONSIBILITY .....47

6.2.1 DELIVERY AND STORAGE.....47

6.2.2 NOTICE BY CONTRACTOR.....47

6.2.3 COSTS INCURRED .....48

6.2.4 CORRECTION OF DAMAGE.....48

6.3 OWNER’S RIGHT TO CLEAN UP .....48

ARTICLE 7.....48

CHANGES IN THE WORK.....48

7.1 CHANGES .....48

7.1.1 No CHANGES WITHOUT AUTHORIZATION  
48

7.1.2 AUTHORITY TO ORDER MINOR CHANGES  
49

7.2 CHANGE ORDERS .....49

7.3 CONSTRUCTION CHANGE  
DIRECTIVES (“CCD”) .....50

7.3.1 DEFINITION .....50

7.3.2 USE TO DIRECT CHANGE.....50

7.4 REQUEST FOR INFORMATION (“RFI”)  
50

7.4.1 DEFINITION .....50

7.4.2 SCOPE.....50

7.4.3 RESPONSE TIME .....50

7.4.4 COSTS INCURRED .....51

7.5 REQUEST FOR PROPOSAL (“RFP”)..51

7.5.1 DEFINITION .....51

7.5.2 SCOPE.....51

7.6 CHANGE ORDER REQUEST (“COR”)  
51

7.6.1 DEFINITION .....51

7.6.2 CHANGES IN PRICE.....52

7.6.3 CHANGES IN TIME .....52

7.7 PRICE OF CHANGE ORDERS.....52

7.7.1 SCOPE.....52

7.7.2 DETERMINATION OF COST.....52

7.7.3 FORMAT FOR PROPOSED COST CHANGE..54

7.7.4 DISCOUNTS, REBATES, AND REFUNDS.....55

7.7.5 ACCOUNTING RECORDS .....56

7.7.6 NOTICE REQUIRED .....56

7.7.7 APPLICABILITY TO SUBCONTRACTORS ....56

7.8 WAIVER OF RIGHT TO CLAIM MONEY OR  
TIME 56

ARTICLE 8.....56

TIME56

8.1 DEFINITIONS.....56

8.1.1 CONTRACT TIME .....56

8.1.2 NOTICE TO PROCEED .....56

8.1.3 DAYS.....57

8.2 HOURS OF WORK .....57

8.2.1 SUFFICIENT FORCES .....57

8.2.2 PERFORMANCE DURING WORKING HOURS  
57

8.2.3 LABOR CODE APPLICATION .....57

8.2.4 COSTS FOR AFTER HOURS INSPECTIONS..57

8.2.5 TIME FOR COMMENCEMENT BY  
SUBCONTRACTORS.....58

8.3 PROGRESS AND COMPLETION.....58

8.3.1 TIME OF THE ESSENCE.....58

8.3.2 NO COMMENCEMENT WITHOUT INSURANCE  
58

8.3.3 EXPEDITIOUS COMPLETION .....58

8.4 EXTENSIONS OF TIME - LIQUIDATED  
DAMAGES .....59

8.4.1 CONDITIONS ALLOWING FOR EXTENSIONS  
OF TIME TO COMPLETE THE WORK ONLY  
(EXCUSABLE DELAY).....59

8.4.2 COMPENSABLE DELAY (TIME AND MONEY)  
59

8.4.3 NOTICE BY CONTRACTOR REQUIRED;  
PROCEDURES FOR DEMANDING ADDITIONAL TIME  
OR MONEY .....59

8.4.4 EARLY COMPLETION .....59

8.4.5 LIQUIDATED DAMAGES .....60

8.5 GOVERNMENT APPROVALS .....60

ARTICLE 9.....61

PAYMENTS AND COMPLETION .....61

9.1 CONTRACT SUM.....61

9.2 COST BREAKDOWN.....61

9.2.1 REQUIRED INFORMATION .....61

9.2.2 OWNER ACCEPTANCE REQUIRED .....61

9.3 APPLICATIONS FOR PAYMENT.....61

9.3.1 PROCEDURE.....62

9.3.2 PURCHASE OF MATERIALS AND EQUIPMENT  
62

9.3.3 WARRANTY OF TITLE.....63



9.4	REVIEW OF PROGRESS PAYMENT	.63	10.2.2	CONTRACTOR NOTICES	72
9.4.1	OWNER ACCEPTANCE	63	10.2.3	SAFETY BARRIERS AND SAFEGUARDS	72
9.4.2	OWNER’S REVIEW	63	10.2.4	USE OR STORAGE OF HAZARDOUS MATERIAL	72
9.5	DECISIONS TO WITHHOLD PAYMENT	64	10.2.5	FINGERPRINTING	72
9.5.1	REASONS TO WITHHOLD PAYMENT	64	10.3	PROTECTION OF WORK AND PROPERTY	72
9.5.2	PAYMENT AFTER CURE	66	10.3.1	PROTECTION OF WORK	72
9.5.3	OVERPAYMENT AND/OR FAILURE TO WITHHOLD	66	10.3.2	PROTECTION FOR ELEMENTS	73
9.6	PROGRESS PAYMENTS	66	10.3.3	SHORING AND STRUCTURAL LOADING	73
9.6.1	PAYMENTS TO CONTRACTOR	66	10.3.4	CONFORMANCE WITHIN ESTABLISHED LIMITS	73
9.6.2	PAYMENTS TO SUBCONTRACTORS	67	10.3.5	SUBCONTRACTOR ENFORCEMENT OF RULES	73
9.6.3	PERCENTAGE OF COMPLETION OR PAYMENT INFORMATION	67	10.3.6	SITE ACCESS	73
9.6.4	NO OBLIGATION OF OWNER FOR SUBCONTRACTOR PAYMENT	67	10.3.7	PROTECTION OF MATERIALS	74
9.6.5	PAYMENT TO SUPPLIERS	67	10.4	EMERGENCIES	74
9.6.6	PAYMENT NOT CONSTITUTING APPROVAL OR ACCEPTANCE	67	10.4.1	EMERGENCY ACTION	74
9.6.7	JOINT CHECKS	67	10.4.2	ACCIDENT REPORTS	74
9.7	COMPLETION OF THE WORK	68	10.5	HAZARDOUS MATERIALS	74
9.7.1	CLOSE-OUT PROCEDURES	68	10.5.1	DISCOVERY OF HAZARDOUS MATERIALS	74
9.7.2	COSTS OF MULTIPLE INSPECTIONS	68	10.5.2	HAZARDOUS MATERIAL WORK LIMITATIONS	75
9.8	PARTIAL OCCUPANCY OR USE	68	10.5.3	INDEMNIFICATION BY OWNER FOR HAZARDOUS MATERIAL NOT CAUSED BY CONTRACTOR	75
9.9	FINAL PROGRESS PAYMENT AND RELEASE OF RETENTION	69	10.5.4	INDEMNIFICATION BY CONTRACTOR FOR HAZARDOUS MATERIAL CAUSED BY CONTRACTOR	75
9.9.1	FINAL APPLICATION FOR PROGRESS PAYMENT	69	10.5.5	TERMS OF HAZARDOUS MATERIAL PROVISION	75
9.9.2	PROCEDURES FOR APPLICATION FOR FINAL PROGRESS PAYMENT	69	10.5.6	ARCHEOLOGICAL MATERIALS	75
9.9.3	RELEASE OF RETAINAGE	70	ARTICLE 11		76
9.10	SUBSTITUTION OF SECURITIES	70	INSURANCE AND BONDS		76
ARTICLE 10		70	11.1	CONTRACTOR’S LIABILITY INSURANCE	76
PROTECTION OF PERSONS AND PROPERTY		71	11.1.1	LIABILITY INSURANCE REQUIREMENTS	76
10.1	SAFETY PRECAUTIONS AND PROGRAMS	71	11.1.2	SUBCONTRACTOR INSURANCE REQUIREMENTS	77
10.1.1	CONTRACTOR RESPONSIBILITY	71	11.1.3	OWNER’S INSURANCE	77
10.1.2	SUBCONTRACTOR RESPONSIBILITY	71	11.1.4	ADDITIONAL INSURED ENDORSEMENT REQUIREMENTS	77
10.1.3	COOPERATION	71			
10.1.4	ACCIDENT REPORTS	71			
10.1.5	FIRST-AID SUPPLIES AT SITE	71			
10.2	SAFETY OF PERSONS AND PROPERTY	71			
10.2.1	THE CONTRACTOR	72			

11.1.5 WORKERS' COMPENSATION INSURANCE 77	13.5.3 ADVANCE NOTICE TO INSPECTOR OF RECORD 84
11.1.6 BUILDER'S RISK/ .....78	13.5.4 TESTING OFF-SITE .....84
11.1.6.1 COURSE-OF-CONSTRUCTION INSURANCE REQUIREMENTS.....78	13.5.5 ADDITIONAL TESTING OR INSPECTION..84
11.1.7 CONSENT OF INSURER FOR PARTIAL OCCUPANCY OR USE .....78	13.5.6 COSTS FOR RETESTING .....84
11.1.8 FIRE INSURANCE.....79	13.5.7 COSTS FOR PREMATURE TEST.....85
11.1.9 OTHER INSURANCE .....79	13.5.8 TESTS OR INSPECTIONS NOT TO DELAY WORK 85
11.1.10 PROOF OF CARRIAGE OF INSURANCE ....79	13.6 [INTENTIONALLY LEFT BLANK] ...85
11.1.11 COMPLIANCE .....80	13.7 TRENCH EXCAVATION.....85
11.2 PERFORMANCE AND PAYMENT BONDS 80	13.7.1 TRENCHES GREATER THAN FIVE FEET .85
11.2.1 BOND REQUIREMENTS .....80	13.7.2 EXCAVATION SAFETY .....85
11.2.2 SURETY QUALIFICATION.....80	13.7.3 NO TORT LIABILITY OF OWNER.....85
ARTICLE 12 .....80	13.7.4 NO EXCAVATION WITHOUT PERMITS ...86
UNCOVERING AND CORRECTION OF WORK80	13.8 WAGE RATES .....86
12.1 UNCOVERING OF WORK .....81	13.8.1 WAGE RATES.....86
12.1.1 UNCOVERING WORK FOR REQUIRED INSPECTIONS .....81	13.8.2 HOLIDAY AND OVERTIME PAY .....86
12.1.2 COSTS FOR INSPECTIONS NOT REQUIRED 81	13.8.3 WAGE RATES NOT AFFECTED BY SUBCONTRACTS .....86
12.2 CORRECTION OF WORK; WARRANTY 81	13.8.4 CHANGE IN PREVAILING WAGE DURING BID OR CONSTRUCTION.....86
12.2.1 CORRECTION OF REJECTED WORK.....81	13.8.5 FORFEITURE AND PAYMENTS.....86
12.2.2 REMOVAL OF NONCONFORMING WORK81	13.8.6 MINIMUM WAGE RATES .....87
12.2.3 OWNER'S RIGHTS IF CONTRACTOR FAILS TO CORRECT.....81	13.8.7 PER DIEM WAGES.....87
12.2.4 COST OF CORRECTING THE WORK .....82	13.8.8 <b>POSTING OF WAGE RATES</b> .....87
12.2.5 WARRANTY CORRECTIONS .....82	13.9 RECORD OF WAGES PAID: INSPECTION .....87
12.2.6 No TIME LIMITATION .....82	13.9.1 APPLICATION OF LABOR CODE.....87
12.3 NONCONFORMING WORK .....82	13.10 APPRENTICES .....89
ARTICLE 13 .....83	13.10.1 APPRENTICE WAGES AND DEFINITIONS 90
MISCELLANEOUS PROVISIONS .....83	13.10.2 APPRENTICE LABOR POOL .....90
13.1 GOVERNING LAW .....83	13.10.3 JOURNEYMAN/APPRENTICE RATIO; COMPUTATION OF HOURS .....90
13.2 SUCCESSORS AND ASSIGNS .....83	13.10.4 JOURNEYMAN/APPRENTICE RATIO .....91
13.3 WRITTEN NOTICE .....83	13.10.4.1 <i>Apprenticeable Craft or Trade</i> ...91
13.4 RIGHTS AND REMEDIES .....83	13.10.5 RATIO EXEMPTION.....92
13.4.1 DUTIES AND OBLIGATIONS CUMULATIVE 83	13.10.6 APPRENTICE FUND.....92
13.4.2 No WAIVER .....83	13.10.7 PRIME CONTRACTOR COMPLIANCE .....92
13.5 TESTS AND INSPECTIONS .....84	13.10.8 DECISIONS OF JOINT APPRENTICESHIP COMMITTEE .....92
13.5.1 COMPLIANCE .....84	13.10.9 No BIAS.....92
13.5.2 INDEPENDENT TESTING LABORATORY..84	

13.10.10 VIOLATION OF LABOR CODE.....	93	14.2.3 PAYMENTS WITHHELD.....	96
13.11 ASSIGNMENT OF ANTITRUST CLAIMS 93		14.2.4 PAYMENTS UPON COMPLETION .....	96
13.11.1 APPLICATION .....	93	14.2.5 INCLUSION OF TERMINATION FOR CONVENIENCE.....	96
13.11.2 ASSIGNMENT OF CLAIM.....	94	14.3 SUSPENSION OR TERMINATION BY THE OWNER FOR CONVENIENCE.....	96
13.12 AUDIT .....	94	14.3.1 SUSPENSION BY OWNER.....	96
13.13 STORM WATER DISCHARGE PERMIT 94		14.3.1.1 <i>Adjustments</i> .....	97
ARTICLE 14.....	95	14.3.1.2 <i>Adjustments for Fixed Cost</i> .....	97
TERMINATION OR SUSPENSION OF THE CONTRACT .....	95	14.3.2 TERMINATION BY THE OWNER FOR CONVENIENCE.....	97
14.1 TERMINATION BY THE CONTRACTOR FOR CAUSE .....	95	14.4 NOT A WAIVER .....	97
14.2 TERMINATION BY THE OWNER FOR CAUSE 95		14.5 MUTUAL TERMINATION FOR CONVENIENCE .....	97
14.2.1 GROUNDS FOR TERMINATION .....	95	14.6 EARLY TERMINATION .....	98
14.2.2 NOTIFICATION OF TERMINATION .....	96		

# ARTICLE 1

## GENERAL CONDITIONS

### 1.1 BASIC DEFINITIONS

#### 1.1.1 THE CONTRACT DOCUMENTS

The “Contract Documents” consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, addenda issued prior to bid, Instructions to Bidders, Notice to Bidders, the Bid Form, Payment Bond, Performance Bond, required insurance certificates, additional insured endorsement and declarations page, Designation of Subcontractors, Noncollusion Declaration, Roof Project Certification (where applicable), Sufficient Funds Declaration (Labor Code section 2810) and the Fingerprinting Notice and Acknowledgment and Independent Contractor Student Contact Form, other documents referred to in the Agreement, and Modifications issued after execution of the Agreement. A Modification is a written amendment to the Contract signed by both parties, a Change Order, a Construction Change Directive, or a written order for a minor change in the Work issued by the Owner. The Contract Documents are complementary, and each obligation of the Contractor, Subcontractors, material or equipment suppliers in any one shall be binding as if specified in all.

#### 1.1.2 THE CONTRACT

The Contract Documents form the Contract. The “Contract” represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a written Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between the Architect and Contractor, between the Owner and any Subcontractor or Sub-subcontractor, or between any persons or entities other than the Owner and the Contractor. The terms of the Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever except by written agreement signed by the parties and approved or ratified by the Governing Board.

#### 1.1.3 THE WORK

The “Work” shall include all labor, materials, services and equipment necessary for the Contractor to fulfill all of its obligations pursuant to the Contract Documents, including but not limited to punch list items. It shall include the initial obligation of any Contractor or Subcontractor, who performs any portion of the Work, to visit the Site of the proposed Work with Owner’s representatives, a continuing obligation after the commencement of the Work to fully acquaint and familiarize itself with the conditions as they exist and the character of the operations to be carried on under the Contract Documents, and make such investigation as it may see fit so that it shall fully understand the facilities, physical conditions, and restrictions attending the Work under the Contract Documents. Each such Contractor or Subcontractor shall also thoroughly examine and become familiar with the Drawings, Specifications, and associated

bid documents. The “Site” refers to the grounds of the Project as defined in the Contract Documents and such adjacent lands as may be directly affected by the performance of the Work. The Work shall constitute a “work of improvement” under Civil Code section 8050 and Public Contract Code section 7107.

#### **1.1.4 THE PROJECT**

The “Project” is the total construction of the Work performed in accordance with the Contract Documents in whole or in part and which may include construction by the Owner or by separate contractors.

#### **1.1.5 THE DRAWINGS**

The “Drawings” are graphic and pictorial portions of the Contract Documents prepared for the Project and approved changes thereto, wherever located and whenever issued, showing the design, location, and scope of the Work, generally including plans, elevations, sections, details, schedules, and diagrams as drawn or approved by the Architect.

#### **1.1.6 THE SPECIFICATIONS**

The “Specifications” are that portion of the Contract Documents consisting of the written requirements for material, equipment, construction systems, instructions, quality assurance standards, workmanship, and performance of related services.

#### **1.1.7 THE PROJECT MANUAL**

The “Project Manual” is the volume usually assembled for the Work which may include, without limitation, the bidding requirements, sample forms, Agreement, Conditions of the Contract, and Specifications.

#### **1.1.8 OR**

“Or” shall include “and/or.”

#### **1.1.9 COMPLETION OR COMPLETE**

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) Owner’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.

## 1.2 EXECUTION, CORRELATION AND INTENT

### 1.2.1 CORRELATION AND INTENT

1.2.1.1 ***Documents Complementary and Inclusive.*** The Contract Documents are complementary and are intended to include all items required for the proper execution and completion of the Work. Any item of work mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be provided by Contractor as if shown or mentioned in both.

1.2.1.2 ***Coverage of the Drawings and Specifications.*** The Drawings and Specifications generally describe the work to be performed by Contractor. Generally, the Specifications describe work which cannot be readily indicated on the Drawings and indicate types, qualities, and methods of installation of the various materials and equipment required for the Work. It is not intended to mention every item of Work in the Specifications, which can be adequately shown on the Drawings, or to show on the Drawings all items of Work described or required by the Specifications even if they are of such nature that they could have been shown. All materials or labor for Work, which is shown on the Drawings or the Specifications (or is reasonably inferable therefrom as being necessary to complete the Work), shall be provided by the Contractor whether or not the Work is expressly covered in the Drawings or the Specifications. It is intended that the Work be of sound, quality construction, and the Contractor shall be responsible for the inclusion of adequate amounts to cover installation of all items indicated, described, or implied in the portion of the Work to be performed by Contractor.

1.2.1.3 ***Conflicts.*** Without limiting Contractor's obligation to identify conflicts for resolution by the Owner, it is intended that the more stringent, higher quality, and greater quantity of Work shall apply.

1.2.1.4 ***Conformance With Laws.*** Each and every provision of law required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract 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 correctly inserted, then upon application of either party the Contract shall be amended in writing to make such insertion or correction.

Before commencing any portion of the Work, Contractor shall check and review the Drawings and Specifications for such portion for conformance and compliance with all laws, ordinances, codes, rules and regulations of all governmental authorities and public utilities affecting the construction and operation of the physical plant of the Project, all quasi-governmental and other regulations affecting the construction and operation of the physical plant of the Project, and other special requirements, if any, designated in the Contract Documents. In the event Contractor observes any violation of any law, ordinance, code, rule or regulation, or inconsistency with any such restrictions or special requirements of the Contract Documents, Contractor shall promptly notify Architect and Owner in writing of same and shall ensure that any such violation or inconsistency shall be corrected in the manner provided hereunder prior to the construction of that portion of the Project. Where requirements of the Contract Documents

exceed those of the applicable building codes and ordinances, the Contract Documents shall govern. Contractor shall comply with all applicable Federal, State and local laws.

If, as and to the extent that Public Contract Code section 1104 is deemed to apply after the Award of the 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 Owner, including but not limited to 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.

**1.2.1.5 Ambiguity.** Before commencing any portion of the Work, Contractor shall carefully examine all Drawings and Specifications and other information given to Contractor as to materials and methods of construction and other Project requirements. Contractor shall immediately notify Architect and Owner in writing of any perceived or alleged error, inconsistency, ambiguity, or lack of detail or explanation in the Drawings and Specifications in the manner provided herein. If the Contractor or its Subcontractors, material or equipment suppliers, or any of their officers, agents, and employees performs, permits, or causes the performance of any Work under the Contract Documents, which it knows or should have known to be in error, inconsistent, or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all costs arising therefrom including, without limitation, the cost of correction thereof without increase or adjustment to the Contract Sum or the time for performance. If Contractor performs, permits, or causes the performance of any Work under the Contract Documents prepared by or on behalf of Contractor which is in error, inconsistent or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all resulting costs, including, without limitation, the cost of correction, without increase to or adjustment in the Contract Sum or the time for performance. In no case shall any Subcontractor proceed with the Work if uncertain without the Contractor's written direction and/or approval.

**1.2.1.6 Execution.** Execution of the Agreement Between Owner and Contractor by the Contractor is a representation that the Contractor has visited the site, become familiar with the local conditions under which the Work is to be performed and has correlated personal observations with the requirements of the Contract Documents.

## **1.2.2 ADDENDA AND DEFERRED APPROVALS**

**1.2.2.1 Addenda.** Subsequent addenda issued shall govern over prior addenda only to the extent specified. In accordance with Title 24, California Code of Regulations, addenda shall be approved by the Division of the State Architect ("DSA").

**1.2.2.2 Deferred Approvals.** The requirements approved by the DSA on any item submitted as a deferred approval in accordance with Title 24, California Code of Regulations, shall take precedence over any previously issued addenda, drawing or specification.

## **1.2.3 SPECIFICATION INTERPRETATION**

1.2.3.1 **Titles.** The Specifications are separated into titled sections for convenience only and not to dictate or determine the trade or craft involved. Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of work to be performed by any trade.

1.2.3.2 **As Shown, Etc.** Where “as shown,” “as indicated,” “as detailed,” or words of similar import are used, reference is made to the Drawings accompanying the Specifications unless otherwise stated. Where “as directed,” “as required,” “as permitted,” “as authorized,” “as accepted,” “as selected,” or words of similar import are used, the direction, requirement, permission, authorization, approval, acceptance, or selection by Architect is intended unless otherwise stated.

1.2.3.3 **Provide.** “Provide” means “provided complete in place,” that is, furnished, installed, tested, and ready for operation and use.

1.2.3.4 **General Conditions.** The General Conditions and any supplementary general conditions are a part of each and every section of the Specifications.

1.2.3.5 **Abbreviations.** In the interest of brevity, the Specifications are written in an abbreviated form and may not include complete sentences. Omission of words or phrases such as “Contractor shall,” “shall be,” etc., are intentional. Nevertheless, the requirements of the Specifications are mandatory. Omitted words or phrases shall be supplied by inference in the same manner as they are when a “note” occurs on the Drawings.

1.2.3.6 **Plural.** Words in the singular shall include the plural whenever applicable or the context so indicates.

1.2.3.7 **Metric.** The Specifications may indicate metric units of measurement as a supplement to U.S. customary units. When indicated thus: 1” (25 mm), the U. S. customary unit is specific, and the metric unit is nonspecific. When not shown with parentheses, the unit is specific. The metric units correspond to the “International System of Units” (SI) and generally follow ASTM E 380, “Standard for Metric Practice.”

1.2.3.8 **Standard Specifications.** Any reference to standard specifications of any society, institute, association, or governmental authority is a reference to the organization’s standard specifications, which are in effect as of the date the Notice to Bidders is first published. If applicable specifications are revised prior to completion of any part of the Work, the Contractor may, if acceptable to Owner and Architect, perform such Work in accordance with the revised specifications. The standard specifications, except as modified in the Specifications for the Project, shall have full force and effect as though printed in the Specifications. Architect will furnish, upon request, information as to how copies of the standard specifications referred to may be obtained.

1.2.3.9 **Absence of Modifiers.** In the interest of brevity, the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but th



e fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### **1.3 OWNERSHIP AND USE OF ARCHITECT’S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS**

The Drawings, Specifications, and other documents prepared on behalf of the Owner are instruments of the services of the Architect and its consultants and are the property of the Owner. The Contractor may retain one contract record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor, or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by the Architect, and unless otherwise indicated the Architect shall be deemed the author of them. All copies of them, except the Contractor’s record set, shall be returned or suitably accounted for to the Owner, upon request upon completion of the Work. The Drawings, Specifications, and other documents prepared by the Architect, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor, or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner and the Architect. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications, and other documents prepared by the Architect appropriate to and for use in the execution of their Work under the Contract Documents. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owner’s property interest or other reserved right. All copies made under this license shall bear appropriate attribution and the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect.

## **ARTICLE 2**

### **OWNER**

#### **2.1 DEFINITION**

The term “Owner” means the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term “Owner” means the Owner and/or the Owner’s authorized representatives, including but not limited to architects and construction managers. To the extent the Contract Documents indicate that Owner has assigned duties to particular representatives of the Owner (such as the architect, or any construction manager), Owner reserves the right at all times to reassign such duties to different Owner representatives.

#### **2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

##### **2.2.1 INTENTIONALLY LEFT BLANK**

## 2.2.2 SITE SURVEY

When required by the scope of the Project, the Owner will furnish, at its expense, a legal description or a land survey of the Site, giving, as applicable, grades and lines of streets, alleys, pavements, adjoining property, rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries, and contours of the Site. Surveys to determine locations of construction, grading, and site work shall be provided by the Contractor.

## 2.2.3 SOILS

**2.2.3.1 Owner Furnished Services.** When required by the scope of the Project, the Owner will furnish, at its expense, the services of geotechnical engineers or consultants when reasonably required or as required by local or state codes. Such services with reports and appropriate professional recommendations shall include test boring, test pits, soil bearing values, percolation tests, air and water pollution tests, and ground corrosion and resistivity tests, including necessary operations for determining subsoil, air, and water conditions.

**2.2.3.2 Contractor Reliance.** Test borings and soils reports for the Project have been made for the Owner to indicate the subsurface materials that might be encountered at particular locations on the Project. The Owner has made these documents available to the Contractor and the Contractor has studied the results of such test borings and information that it has as to the subsurface conditions and Site geology as set forth in the test borings and soils reports. The Owner does not assume any responsibility whatsoever with respect to the sufficiency or accuracy of the borings made, or of the logs of the test borings, or of other investigations, or of the soils reports furnished pursuant hereto, or of the interpretations to be made beyond the location or depth of the borings. There is no warranty or guarantee, either express or implied that the conditions indicated by such investigations, borings, logs, soil reports or other information are representative of those existing throughout the Site of the Project, or any part thereof, or that unforeseen developments may not occur. At the Owner's request, the Contractor shall make available to the Owner the results of any Site investigation, test borings, analyses, studies or other tests conducted by or in the possession of the Contractor of any of its agents. Nothing herein contained shall be deemed a waiver by the Contractor to pursue any available legal right or remedy it may have at any time against any third party who may have prepared any report and/or test relied upon by the Contractor.

## 2.2.4 UTILITY SURVEY

When required by the scope of the Project, the Owner will furnish, at its expense, all information regarding known existing utilities on or adjacent to the Site, including location, size, inverts, and depths.

## 2.2.5 INFORMATION

Upon the request of the Contractor, Owner will make available such existing information regarding utility services and Site features, including existing construction, related to the Project

as is available from Owner's records. The Contractor may not rely upon the accuracy of any such information, other than that provided under Sections 2.2.2 and 2.2.4 (except that the Contractor may not rely upon and must question in writing to the Owner and the Architect any information which appears incorrect based upon Contractor's Site inspection, knowledge of the Project, and prior experience with similar projects), unless specifically stated in writing that the Contractor may rely upon the designated information.

## 2.2.6 EXISTING UTILITY LINES; REMOVAL, RELOCATION

2.2.6.1 **Removal, Relocation.** Pursuant to Government Code section 4215, the Owner assumes the responsibility for removal, relocation, and protection of utilities located on the Site at the time of commencement of construction under this Contract with respect to any such utility facilities which are not identified in the drawings and specifications made part of the invitation to bid. The Contractor shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of the Owner to provide for removal or relocation of such utility facilities. Owner shall compensate the Contractor for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, removing or relocating such utility facilities, and for equipment necessarily idle during such work.

2.2.6.2 **Assessment.** These subparagraphs shall not be construed to preclude assessment against the Contractor for any other delays in completion of the Work. Nothing in these subparagraphs shall be deemed to require the Owner to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred from the presence of other visible facilities, such as buildings, or meter junction boxes on or adjacent to the Site.

2.2.6.3 **Notification.** If the Contractor, while performing work under this Contract, discovers utility facilities not identified by the Owner in the Contract plans or specifications, Contractor shall immediately notify the Owner and the utility in writing.

2.2.6.4 **Underground Utility Clearance.** It shall be Contractor's sole responsibility to timely notify all public and private utilities serving the Site prior to commencing work. The Contractor shall notify and receive clearance from any cooperative agency, such as Underground Service Alert, in accordance with Government Code section 4216, et seq. Contractor shall promptly provide a copy of all such notifications to the Owner.

## 2.2.7 EASEMENTS

Owner shall secure and pay for easements for permanent structures or permanent changes in existing facilities, if any, unless otherwise specified in the Contract or Contract Documents.

## 2.2.8 REASONABLE PROMPTNESS

Information or services under Owner's control will be furnished by the Owner with reasonable promptness. The Owner shall not be liable for any delays caused by factors beyond the Owner's

control including but not limited to DSA's or any other local, State or federal agency's review of bids, change order requests, RFI's or any other documents.

### **2.2.9 COPIES FURNISHED**

The Contractor will be furnished such copies of Drawings and Project Manuals as are stated in the Contract Documents.

### **2.2.10 DUTIES CUMULATIVE**

The foregoing are in addition to other duties and responsibilities of the Owner enumerated herein, and especially those in Article 6 (Construction by Owner or by Separate Contractors), Article 9 (Payments and Completion), and Article 11 (Insurance and Bonds).

### **2.3 OWNER'S RIGHT TO STOP THE WORK**

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or persistently fails to carry out Work in accordance with the Contract Documents, the Owner, after providing Notice pursuant to paragraph 2.4, may order the Contractor to stop the Work or any portion thereof, until the Contractor corrects the deficiencies. The right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Article 6.

### **2.4 OWNER'S RIGHT TO CARRY OUT THE WORK**

If the Contractor fails or refuses to carry out the Work in accordance with the Contract Documents, Owner may correct such deficiencies by whatever reasonable method the Owner may deem expedient without prejudice to other remedies the Owner may have, including but not limited to having another contractor perform some or all of the Work without terminating the Contract with Contractor. Owner may exercise this right at any time during the Contractor's Work.

Owner shall first provide written notice to Contractor of Contractor's failure or refusal to perform. The notice will provide the time period within which Contractor must begin correction of the failure or refusal to perform. If the Contractor fails to begin correction within the stated time, or fails to continue correction, the Owner may proceed to correct the deficiencies. In the event the Owner bids the work, Contractor shall not be eligible for the award of the contract. The Contractor may be invoiced the cost to Owner of the work, including compensation for additional professional and internally generated services and expenses made necessary by Contractor's failure or refusal to perform. Owner may withhold that amount from the retention, or progress payments due the Contractor, pursuant to Section 9.5. If retention and payments withheld then or thereafter due the Contractor are not sufficient to cover that amount, the Contractor shall pay the difference to the Owner.

## **ARTICLE 3**

### **THE CONTRACTOR**

#### **3.1 DEFINITION**

The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term “Contractor” means the Contractor or the Contractor’s authorized representative. To the extent that any portion of the Work is provided with the Contractor’s own forces, any reference to Subcontractors shall be equally applicable to the Contractor.

#### **3.2 SUPERVISION AND CONSTRUCTION PROCEDURES**

##### **3.2.1 CONTRACTOR**

The Contractor shall supervise and direct the Work using the Contractor’s best skill and attention, which shall meet or exceed the standards in the industry. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures, and coordinating all portions of the Work under the Contract, unless Contract Documents give other specific instructions concerning these matters. If any of the Work is performed by contractors retained directly by the Owner, Contractor shall be responsible for the coordination and sequencing of the Work of those other contractors so as to avoid any impact on the Project Schedule pursuant to the requirements of Article 6. Specific duties of the Contractor shall be in accordance with Title 24 of the California Code of Regulations. Contractor shall fully comply with any and all reporting requirements of Education Code sections 17309 and 81141 in the manner prescribed by Title 24.

##### **3.2.2 CONTRACTOR RESPONSIBILITY**

The Contractor shall be responsible to the Owner for acts and omissions of the Contractor’s employees, Subcontractors, material and equipment suppliers, and their agents, employees, invitees, and other persons performing portions of the Work under direct or indirect contract with the Contractor or any of its Subcontractors.

##### **3.2.3 OBLIGATIONS NOT CHANGED BY ARCHITECT’S ACTIONS**

The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents by the activities or duties of the Owner’s representatives, including but not limited to any construction manager and the Architect, or the Inspector of Record; or by tests, inspections, or approvals required or performed by persons other than the Contractor.

##### **3.2.4 CONTRACTOR RESPONSIBILITY FOR READINESS FOR WORK**

The Contractor shall be responsible for inspection of Work already performed under the Contract Documents to determine that such portions are in proper condition to receive subsequent work.

### **3.2.5 PROJECT MEETINGS**

Contractor shall attend Owner's Project meetings as scheduled by the Contract Documents, or as otherwise instructed by Owner, to discuss the current status of the Project and the future progress of the Work. Contractor shall have five (5) days after receipt of Owner's Project meeting minutes to provide written objections and suggested corrections.

### **3.3 SUPERINTENDENT**

#### **3.3.1 FULL TIME SUPERINTENDENT**

The Contractor shall provide a competent superintendent and assistants as necessary, all of whom shall be reasonably proficient in speaking, reading and writing English and, who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

#### **3.3.2 STAFF**

The Contractor and each Subcontractor shall: furnish a competent and adequate staff as necessary for the proper administration, coordination, supervision, and superintendence of its portion of the Work; organize the procurement of all materials and equipment so that the materials and equipment will be available at the time they are needed for the Work; and keep an adequate force of skilled workers on the job to complete the Work in accordance with all requirements of the Contract Documents.

#### **3.3.3 RIGHT TO REMOVE**

Owner shall have the right, but not the obligation, to require the removal from the Project of any superintendent, staff member, agent, or employee of any Contractor, Subcontractor, material or equipment supplier, etc., for cause.

### **3.4 LABOR AND MATERIALS**

#### **3.4.1 CONTRACTOR TO PROVIDE**

Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, material, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

#### **3.4.2 QUALITY**

Unless otherwise specified, all materials and equipment to be permanently installed in the Project shall be new and shall be of such quality as required to satisfy the standards of the Contract

Documents. The Contractor shall, if requested, promptly furnish satisfactory evidence as to kind and quality of all materials and equipment. All labor shall be performed by workers skilled in their respective trades, and the quality of their work shall meet whichever is the higher standard for their work: the standard in the industry or the standard in the Contract Documents.

### **3.4.3 REPLACEMENT**

Any work, materials, or equipment, which does not conform to these standards may be disapproved and rejected by the Owner, in which case, they shall be removed and replaced by the Contractor at no cost to the Owner.

### **3.4.4 DISCIPLINE**

The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract in accordance with paragraph 5.5.1 including, but not limited to, Subcontractors, and material or equipment suppliers retained for the Project.

### **3.5 WARRANTY**

For the period of one (1) year after completion of the Work (see Sections 9.7.1 and 12.2.5), the Contractor warrants to the Owner that material and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty does not cover damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### **3.6 TAXES**

Contractor will pay all applicable Federal, State, and local taxes on all materials, labor, or services furnished by it, and all taxes arising out of its operations under the Contract Documents. Owner is exempt from Federal Excise Tax, and a Certificate of Exemption shall be provided upon request.

### **3.7 PERMITS, FEES AND NOTICES**

#### **3.7.1 PAYMENT**

The Contractor shall secure and pay for all permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and are legally required by any authority having jurisdiction over the Project, except those required by the Division of the State Architect (DSA).

Owner shall be responsible for all testing and inspection as required by the DSA on-Site or within the distance limitations set forth in paragraph 13.5.2, unless a different mileage range is specified in the Contract Documents.

### 3.7.2 COMPLIANCE

The Contractor shall comply with and give notices required by any law, ordinance, rule, regulation, and lawful order of public authorities bearing on performance of the Work.

### 3.7.3 CONTRACT DOCUMENTS

It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with any applicable law, statute, ordinance, building codes, rule, or regulation. However, if the Contractor knew, or should have known, or observes that portions of the Contract Document are at variance therewith, the Contractor shall promptly notify the Architect, any construction manager, and Owner in writing, and necessary changes shall be accomplished by appropriate modification.

### 3.7.4 RESPONSIBILITY

If the Contractor performs Work that it knows, or should have known, is contrary to any law, statute, ordinance, building code, rule or regulation, the Contractor shall assume full responsibility for such Work, for all delays attributable thereto, and shall bear the attributable cost of correction or Project delay.

## 3.8 ALLOWANCES

### 3.8.1 CONTRACT

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities against whom the Contractor makes reasonable and timely objection.

### 3.8.2 SCOPE

3.8.2.1 **Prompt Selection.** Materials and equipment under an allowance shall be selected promptly by the Owner to avoid delay to the Work.

3.8.2.2 **Cost.** Allowances shall cover the cost to the Contractor of materials and equipment delivered at the Site and all required taxes, less applicable trade discounts, etc., as delineated in paragraph 7.7.4.

3.8.2.3 **Cost Included in Contract Sum.** Contractor's costs for unloading and handling at the Site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum and not in the allowances.



3.8.2.4 **Contract Sum Adjustment.** Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual cost and the allowances under paragraph 3.8.2.2 and the change in the Contractor's costs under paragraph 3.8.2.3.

### 3.9 CONTRACTOR'S CONSTRUCTION SCHEDULES

#### 3.9.1 REQUIREMENTS

Before the Contractor's commencement of Work on the Project Site or within two (2) weeks of award of the Contract, whichever is earlier, Contractor shall prepare and submit for the Owner's, and any construction manager's, information the construction schedule for the Work, which shall conform to the Contract Documents' requirements.

Contractor shall submit a monthly updated schedule that will include an accurate as-built schedule and the current as-planned schedule, both of which shall conform to the Contract Documents' requirements. Contractor shall submit its daily logs for the prior month with the updated schedule.

The schedule and updates shall conform, at a minimum, to industry standards for critical path scheduling and to facilitate Owner's Project management and evaluation of Contractor Claims for additional money or time.

The schedule and updates shall not exceed time limits (including milestone deadlines) under the Contract Documents and shall comply with the Contract Documents scheduling requirements and with any scheduling requirements the Owner provides to the Contractor at the beginning of the Work. The original schedule and all updates shall accurately reflect work performed to date, all construction tasks (including procurement), the critical path schedule for completion of the remainder of the Project, and the percentage of the Work completed. The original schedule and updates shall include all delay days for weather not unusually severe, even though that weather will not entitle Contractor to additional time or money.

The construction schedule shall be in the form of either a tabulation, chart, or graph, unless otherwise stated in Division 1 of the Specifications, and shall be in sufficient detail to show the chronological relationship of all activities of the Project including, but not limited to, estimated starting and completion dates of various activities, (including early and late dates and reasonable float for each activity), procurement of materials, the critical path, and scheduling of equipment. Float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity durations, or imposed dates shall be apportioned for the benefit of the Project. Whenever in the Contract Documents Contractor is required to provide a schedule and/or schedule updates, the Contractor shall provide the schedule and updates in electronic format as well as hard copy. Contractor shall be solely responsible for the accuracy, utility and reasonableness of all of its schedules. Owner's acceptance, approval or non-rejection of Contractor's schedules shall not affect Contractor's responsibility for its schedules.

The Contractor and Owner shall use any float on a “first come, first served” basis. The original schedule and updates shall reflect Contractor’s and Owner’s use of float. Float is not for the exclusive use or benefit of either Owner or Contractor, but it is a jointly owned expiring Project resource available to both parties as needed to meet schedule milestones. For the original schedule and updates, Contractor shall use a critical path network format with the critical paths clearly indicated. Contractor shall use an MS Project, Primavera, or an equivalent or better program. Contractor shall provide schedule conversion to MS Project or as directed by District. Contractor shall include reports that sort and list the activities in order of increasing float and by early and late start dates. Contractor shall endeavor to label ten to thirty percent (10-30%) of the tasks as critical, but shall not label less than five (5%) or more than fifty (50%) as critical. Contractor shall use calendar days.

If any change in Contractor’s method of operations will cause a change in the construction schedule, Contractor shall submit to Owner, Architect and any construction manager, a revised construction schedule within seven (7) days of the change, unless a different time period is stated in Division 1 of the Specifications.

If, in the Owner’s opinion, the Contractor is not prosecuting the Work at a rate sufficient to meet the Project schedule, a contractual milestone or the Project completion date (as adjusted by change orders) or if the Contractor’s actual progress falls behind the Project schedule or it is apparent to Owner or Contractor that Contractor will not meet contractual milestones or the Project completion date (as adjusted by change orders), the Owner may require that the Contractor prepare and submit a recovery plan. Contractor must submit a recovery plan within seven (7) days of a demand for the plan, unless a different time period is stated in Division 1 of the Specifications. At a minimum, the recovery plan must include a revised schedule that gets the Work back on schedule and completes all Work by the contractual milestones and Project completion date (as adjusted by change orders) or by other dates Owner specifies in the demand for a recovery plan. The recovery plan shall state the corrective actions Contractor will undertake to implement it. The recovery plan shall also list any additional money that Contractor believes it should receive if Owner orders Contractor to fully or partially implement the recovery plan. If the Owner orders Contractor to implement the recovery plan, Contractor shall do so, but the order shall not act constitute an admission by Owner that Contractor is entitled to additional money. To recover additional money, Contractor must comply with General Conditions Articles 4.5, 7 and 8.

All schedules Contractor submits shall be certified as true and correct, as follows:

I, [name of declarant], declare the following:

[Contractor company name] has contracted with [public entity name] for the [name of project] Project. [Contractor company name] authorized me to prepare schedules for [public entity name] for this Project, and I prepared the attached schedule. I am the most knowledgeable person at [contractor company name] regarding the scheduling of this Project.

The attached schedule does not breach the Contract between [contractor company name] and [public entity name] for this Project, does not violate any applicable law, satisfies all provisions of the Contract applicable to submission of the Claim, only contains truthful and accurate as-built and as-planned dates of work on the Project (including supporting data), and is not a false claim.

The attached schedule is submitted in compliance with all laws applicable to submission of a Claim, including but not limited to California Penal Code section 72 (Fraudulent Claims), Government Code sections 12650 et seq. (False Claims Act; for example, Government Code section 12651(a)(7)), and Business and Professions Code sections 17200 et seq. (Unfair Business Practices Act). I am aware that submission or certification of false claims, or other Claims that violate law or the Contract, may lead to fines, imprisonment, and/or other serious legal consequences for myself and/or [contractor company name].

While preparing this declaration and schedule I consulted with others (including attorneys, consultants, or others who work for [contractor company name]) when necessary to ensure that the statements were true and correct.

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed \_\_\_\_\_, 20\_\_, at \_\_\_\_\_, California.

\_\_\_\_\_  
[name of declarant]

### 3.9.2 DSA OVERSIGHT PROCESS

In connection with the DSA Construction Oversight Process which includes inspection cards and review of changes to the DSA-approved construction documents, the Contractor must (a) include specific tasks in its baseline schedule to take into account these procedures since they are critical path issues; and (b) include a reasonable amount of float in the baseline schedule to accommodate the additional time required by these DSA procedures.

### 3.9.3 FAILURE TO MEET REQUIREMENTS

Failure of the Contractor to provide proper schedules may, at the sole discretion of Owner, constitute either grounds to withhold, in whole or in part, progress payments to the Contractor, or a breach of contract allowing Owner to terminate the Contract.

### 3.10 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the Site for the Owner one applicable copy of Titles 19 and 24 and record copy of the Drawings, Specifications, Addenda, Change Orders, and other Modifications, in good order and marked currently to record changes and selections made during construction. In addition, the Contractor shall maintain at the Site approved Shop Drawings, Product Data, Samples, and similar required submittals. These documents shall be available to the Owner and shall be delivered to the Architect for delivery to the Owner upon completion of the Work.

### 3.11 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

#### 3.11.1 SUBMITTALS DEFINED

3.11.1.1 **Shop Drawings.** The term “shop drawings” as used herein means drawings, diagrams, schedules, and other data, which are prepared by Contractor, Subcontractors, manufacturers, suppliers, or distributors illustrating some portion of the Work, and includes: illustrations; fabrication, erection, layout and setting drawings; manufacturer’s standard drawings; schedules; descriptive literature, instructions, catalogs, and brochures; performance and test data including charts; wiring and control diagrams; and all other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment, or systems and their position conform to the requirements of the Contract Documents. The Contractor shall obtain and submit with the shop drawings all seismic and other calculations and all product data from equipment manufacturers. “Product data” as used herein are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work. As used herein, the term “manufactured” applies to standard units usually mass-produced, and “fabricated” means items specifically assembled or made out of selected materials to meet individual design requirements. Shop drawings shall: establish the actual detail of all manufactured or fabricated items, indicate proper relation to adjoining work, amplify design details of mechanical and electrical systems and equipment in proper relation to physical spaces in the structure, and incorporate minor changes of design or construction to suit actual conditions.

3.11.1.2 **Samples.** The term “samples” as used herein are physical examples furnished by Contractor to illustrate materials, equipment, or quality and includes natural materials, fabricated items, equipment, devices, appliances, or parts thereof as called for in the Specifications, and any other samples as may be required by the Owner to determine whether the kind, quality, construction, finish, color, and other characteristics of the materials, etc., proposed by the Contractor conform to the required characteristics of the various parts of the Work. All Work shall be in accordance with the approved samples.

3.11.1.3 **Contractor’s Responsibility.** Contractor shall obtain and shall submit to Architect all required shop drawings and samples in accordance with Contractor’s “Schedule for Submission of Shop Drawings and Samples” provisions in Division 1 of the Specifications and in

accordance with the Contractor's original and updated schedules, and with such promptness as to cause no delay in its own Work or in that of any other contractor, Owner or subcontractor but in no event later than fifteen (15) days after the execution of the Agreement. Contractor may be assessed \$100 a day for each day it is late in submitting a shop drawing or sample. No extensions of time will be granted to Contractor or any Subcontractor because of its failure to have shop drawings and samples submitted in accordance with the Schedule. Each Subcontractor shall submit all shop drawings, samples, and manufacturer's descriptive data for the review of the Owner, the Contractor, and the Architect through the Contractor. By submitting shop drawings, product data, and samples, the Contractor or submitting party (if other than Contractor) represents that it has determined and verified all materials, field measurements, field conditions, catalog numbers, related field construction criteria, and other relevant data in connection with each such submission, and that it has checked, verified, and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. At the time of submission, any deviation in the shop drawings, product data, or samples from the requirements of the Contract Documents shall be narratively described in a transmittal accompanying the submittal. However, submittals shall not be used as a means of requesting a substitution, the procedure for which is defined in paragraph 3.11.4, "Substitutions." Review by Owner and Architect shall not relieve the Contractor or any Subcontractor from its responsibility in preparing and submitting proper shop drawings in accordance with the Contract Documents. Contractor shall stamp, sign, and date each submittal indicating its representation that the submittal meets all of the requirements of the Contract Documents. Any submission, which in Owner's or Architect's opinion is incomplete, contains numerous errors, or has been checked only superficially by Contractor will be returned unreviewed for resubmission by the Contractor.

3.11.1.4 ***Extent of Review.*** In reviewing shop drawings, the Owner will not verify dimensions and field conditions. The Architect will review and approve shop drawings, product data, and samples for aesthetics and for conformance with the design concept of the Work and the information given in the Contract Documents. The Architect's review shall neither be construed as a complete check nor relieve the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract Documents unless the Contractor has, in writing, called the Architect's attention to the deviations at the time of submission and the Architect has given specific written approval. The Architect's review shall not relieve the Contractor or Subcontractors from responsibility for errors of any sort in shop drawings or schedules, for proper fitting of the Work, or from the necessity of furnishing any Work required by the Contract Documents, which may not be indicated on shop drawings when reviewed. Contractor and Subcontractors shall be solely responsible for determining any quantities, whether or not shown on the shop drawings.

### 3.11.2 **DRAWING SUBMISSION PROCEDURE**

3.11.2.1 ***Transmittal Letter and Other Requirements.*** All shop drawings must be properly identified with the name of the Project and dated, and each lot submitted must be accompanied by a letter of transmittal referring to the name of the Project and to the Specification section number for identification of each item clearly stating in narrative form, as we

ll as “clouding” on the submissions, all qualifications, departures, or deviations from the Contract Documents, if any. Shop drawings, for each section of the Work, shall be numbered consecutively, and the numbering system shall be retained throughout all revisions. All Subcontractor submissions shall be made through the Contractor. Each drawing shall have a clear space for the stamps of Architect and Contractor. Only shop drawings required to be submitted by the Contract Documents shall be reviewed.

3.11.2.2 **Copies Required.** Each submittal shall include one (1) legible, reproducible and five (5) legible prints and one (1) electronic copy of each drawing, including fabrication, erection, layout and setting drawings, and such other drawings as required under the various sections of the Specifications until final acceptance thereof is obtained. Subcontractor shall submit copies, in an amount as requested by the Contractor, of: manufacturers’ descriptive data for materials, equipment, and fixtures, including catalog sheets showing dimensions, performance, characteristics, and capacities; wiring diagrams and controls; schedules; all seismic calculations and other calculations; and other pertinent information as required.

3.11.2.3 **Corrections.** The Contractor shall make any corrections required by Architect and shall resubmit as required by Architect the required number of corrected copies of shop drawings or new samples until approved. Contractor shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections required by the Architect on previous submissions. Professional services required for more than one (1) re-review of required submittals of shop drawings, product data, or samples are subject to charge to the Contractor pursuant to paragraph 4.4.

3.11.2.4 **Approval Prior to Commencement of Work.** No portion of the Work requiring a shop drawing or sample submission shall be commenced until the submission has been reviewed by Owner and approved by Architect unless specifically directed in writing by the Owner. All such portions of the Work shall be in accordance with approved shop drawings and samples.

### 3.11.3 SAMPLE SUBMISSIONS PROCEDURE

3.11.3.1 **Samples Required.** In case a considerable range of color, graining, texture, or other characteristics may be anticipated in finished products, a sufficient number of samples of the specified materials shall be furnished by the Contractor to indicate the full range of characteristics, which will be present in the finished products; and products delivered or erected without submittal and approval of full range samples shall be subject to rejection. Except for range samples, and unless otherwise called for in the various sections of the Specifications, samples shall be submitted in duplicate. All samples shall be marked, tagged, or otherwise properly identified with the name of the submitting party, the name of the Project, the purpose for which the samples are submitted, and the date and shall be accompanied by a letter of transmittal containing similar information, together with the Specification section number for identification of each item. Each tag or sticker shall have clear space for the review stamps of Contractor and Architect.

3.11.3.2 **Labels and Instructions.** Samples of materials, which are generally furnished in containers bearing the manufacturers’ descriptive labels and printed application instructions, sh

all, if not submitted in standard containers, be supplied with such labels and application instructions.

3.11.3.3 **Architect's Review.** The Architect will review and, if appropriate, approve submissions and will return them to the Contractor with the Architect's stamp and signature applied thereto, indicating the appropriate action in compliance with the Architect's standard procedures.

3.11.3.4 **Record Drawings and Annotated Specifications.** The Contractor will prepare and maintain on a current basis an accurate and complete set of Record Drawings showing clearly all changes, revisions, and substitutions during construction, including, without limitation, field changes and the final location of all mechanical equipment, utility lines, ducts, outlets, structural members, walls, partitions, and other significant features, and Annotated Specifications showing clearly all changes, revisions, and substitutions during construction. A copy of such Record Drawings and Annotated Specifications will be delivered to Owner in accordance with the Schedule prepared by Contractor. In the event of a specification that allows Contractor to elect one of several brands, makes, or types of material or equipment, the annotations shall show which of the allowable items the Contractor has furnished. The Contractor will update the Record Drawings and Annotated Specifications as often as necessary to keep them current but no less often than weekly. The Record Drawings and Annotated Specifications shall be kept at the Site and available for inspection by the Owner, Inspector of Record and the Architect. On completion of the Contractor's portion of the Work and prior to Application for Final Progress Payment, the Contractor will provide one complete set of Record Drawings and Annotated Specifications to the Owner, certifying them to be a complete and accurate reflection of the actual construction conditions of the Work.

3.11.3.5 **Equipment Manuals.** Contractor shall obtain and furnish three (3) complete sets of manuals containing the manufacturers' instructions for maintenance and operation of each item of equipment and apparatus furnished under the Contract Documents and any additional data specifically requested under the various sections of the Specifications for each division of the Work. The manuals shall be arranged in proper order, indexed, and placed in three-ring binders. At the completion of its Work, the Contractor shall certify, by endorsement thereon, that each of the manuals is complete, accurate, and covers all of its Work. Prior to submittal of Contractor's Application for Final Progress Payment, and as a further condition to its approval by the Architect, each Subcontractor shall deliver the manuals, arranged in proper order, indexed, endorsed, and placed in three-ring binders, to the Contractor, who shall assemble these manuals for all divisions of the Work, review them for completeness, and submit them to the Owner through the Architect.

3.11.3.6 **Owner's Property.** All shop drawings and samples submitted shall become the Owner's property.

#### 3.11.4 SUBSTITUTIONS

3.11.4.1 **One Product Specified.** Unless the Specifications state that no substitution is permitted, whenever in the Contract Documents any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction is indicated or specified by name, make, trade name, or catalog number, with or without the words “or equal,” such specification shall be deemed to be used for the purpose of facilitating description of material, process, or article desired and shall be deemed to be followed by the words “or equal.” Contractor may, unless otherwise stated, offer any material, process, or article, which shall be substantially equal or better in every respect to that so indicated or specified and will completely accomplish the purpose of the Contract Documents.

3.11.4.2 **Two or More Products Specified.** When two or more acceptable products are specified for an item of the Work, the choice will be up to the Contractor. Contractor shall utilize the same product throughout the Project. If a timely substitution request as set forth in Section 3.11.4.3 is not provided and an “or equal” substitution is requested, the Owner may consider the substitution if the product specified is no longer commercially available. If the Owner allows the substitution to be proposed pursuant to such an untimely request, the Contractor will be responsible for the professional fees incurred by the Architect or Architect’s consultants in reviewing the proposed substitution which fees may be withheld from progress payments and/or retention.

3.11.4.3 **Substitution Request Form.** Requests for substitutions of products, materials, or processes other than those specified must be made on the Substitution Request form available from the Owner prior to the date of the bid opening. Any Requests submitted less than fourteen (14) days prior to the date of the bid opening will not be considered, except as noted in paragraph 3.11.4.2. A Substitution Request must be accompanied by evidence as to whether or not the proposed substitution: is equal in quality and serviceability to the specified item; will entail no changes in detail and construction of related work; will be acceptable in consideration of the required design and artistic effect; will provide no cost disadvantage to Owner; and will require no excessive or more expensive maintenance, including adequacy and availability of replacement parts. The burden of proof of these facts shall be upon the Contractor. The Contractor shall furnish with its request sufficient information to determine whether the proposed substitution is equivalent including but not limited to all drawings, specifications, samples, performance data, calculations, and other information as may be required to assist the Architect and the Owner in determining whether the proposed substitution is acceptable. The final decision shall be the Owner’s. The written approval of the Owner, consistent with the procedure for Change Orders, shall be required for the use of a proposed substitute material. Owner may condition its approval of the substitution upon delivery to Owner of an extended warranty or other assurances of adequate performance of the substitution. All risks of delay due to the Division of the State Architect’s, or any other governmental agency having jurisdiction, approval of a requested substitution shall be on the requesting party.

3.11.4.4 **List of Manufacturers and Products Required.** The Subcontractor shall prepare and submit to the Contractor within thirty (30) days of execution of the Subcontract comprehensive lists, in quadruplicate, of the manufacturers and products proposed for the Project, including information on materials, equipment, and fixtures required by the Contract Documents, as may be required for Contractor’s or Architect’s preliminary approval. Approval of



such lists of products shall not be construed as a substitute for the shop drawings, manufacturer's descriptive data, and samples, which are required by the Contract Documents, but rather as a base from which more detailed submittals shall be developed for the final review of the Contractor and the Architect.

### **3.11.5 DEFERRED APPROVALS**

Deferred approvals shall be submitted and processed pursuant to the requirements of Division 1 of the Specifications. All risks of delay due to the Division of the State Architect's, or any other governmental agency having jurisdiction, approval of a deferred approval shall be on the requesting party.

## **3.12 CUTTING AND PATCHING**

### **3.12.1 SCOPE**

The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

### **3.12.2 CONSENT**

The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work. All cutting shall be done promptly, and all repairs shall be made as necessary.

### **3.12.3 STRUCTURAL MEMBERS**

New or existing structural members and elements, including reinforcing bars and seismic bracing, shall not be cut, bored, or drilled except by written authority of the Architect and DSA. Work done contrary to such authority is at the Contractor's risk, subject to replacement at its own expense and without reimbursement under the Contract. Agency approvals shall be obtained by the Architect, not by the Contractor.

### **3.12.4 SUBSEQUENT REMOVAL**

Permission to patch any areas or items of the Work shall not constitute a waiver of the Owner's or the Architect's right to require complete removal and replacement of the areas or items of the Work if, in the opinion of the Architect or the Owner, the patching does not satisfactorily restore quality and appearance of the Work or does not otherwise conform to the Contract Documents. Any costs caused by defective or ill-timed cutting or patching shall be borne by the person or entity responsible.

### **3.13 CLEANING UP**

#### **3.13.1 CONTRACTOR'S RESPONSIBILITY**

The Contractor shall keep the Site and surrounding area free from accumulation of waste material or rubbish caused by operations under the Contract. The Site shall be maintained in a neat and orderly condition. All crates, cartons, paper, and other flammable waste materials shall be removed from Work areas and properly disposed of at the end of each day. The Contractor shall continuously remove from and about the Site the waste materials, rubbish, tools, construction equipment, machinery, and materials no longer required for the Work.

#### **3.13.2 FAILURE TO CLEANUP**

If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so, without prior notice to the Contractor and the cost thereof shall be invoiced to the Contractor and withheld from progress payments and/or retention. Each Subcontractor shall have the responsibility for the cleanup of its own Work. If the Subcontractor fails to clean up, the Contractor must do so.

#### **3.13.3 CONSTRUCTION BUILDINGS**

When directed by the Owner or the Architect, Contractor and Subcontractor shall dismantle temporary structures, if any, and remove from the Site all construction and installation equipment, fences, scaffolding, surplus materials, rubbish, and supplies belonging to Contractor or Subcontractor. If the Contractor does not remove the tools, equipment, machinery, and materials within fifteen (15) days after completion of its Work, then they shall be deemed abandoned, and the Owner can dispose of them for its own benefit in whatever way it deems appropriate. Contractor shall pay for any costs to dispose of the items.

### **3.14 ACCESS TO WORK**

The Contractor shall provide the Owner, the Architect, and the Inspector of Record, access to the Work in preparation and progress wherever located.

### **3.15 ROYALTIES AND PATENTS**

#### **3.15.1 PAYMENT AND INDEMNITY**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims of infringement of patent rights and shall hold the Owner and the Architect harmless and indemnify them, to the extent not caused by the Owner's active negligence, sole negligence or willful misconduct, from loss on account thereof but shall not be responsible for such defense or loss when a particular design, process, or product of a particular manufacturer is required by the Contract Documents. However, if the Contractor has reason to believe the required design,

process, or product is an infringement of a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Owner and Architect.

### **3.15.2 REVIEW**

The review by the Owner or Architect of any method of construction, invention, appliance, process, article, device, or material of any kind shall be for its adequacy for the Work and shall not be an approval for the use by the Contractor in violation of any patent or other rights of any person or entity.

## **3.16 INDEMNIFICATION**

### **3.16.1 SCOPE: CONTRACTOR**

To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Owner, the construction manager, Architect, Architect's consultants, the Inspector of Record, the State of California, and their respective agents, employees, officers, volunteers, Boards of Trustees, members of the Boards of Trustees, and directors ("Indemnitees"), from and against claims, actions, damages, liabilities, losses (including but not limited to injury or death of persons, property damage, and compensation owed to other parties), and expenses (including but not limited to attorneys' fees and costs including fees of consultants) alleged by third parties against Indemnitees arising out of or resulting from the following: Contractor's, its Subcontractors', or its suppliers' 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 Project, or failure to construct the Project, 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, its suppliers, 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 indemnified 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. The obligation to defend, indemnify and hold harmless includes any claims or actions by third parties arising out of or resulting from Labor Code section 2810. Contractor shall have no obligation to defend or indemnify the Indemnitees against claims, actions, damages, liabilities, losses, and expenses caused by the active negligence, sole negligence or willful misconduct of Indemnitees. This indemnification shall apply to all liability, as provided for above, regardless of whether any insurance policies are applicable, and insurance policy limits do not act as a limitation upon the amount of the indemnification to be provided by the Contractor.

### **3.16.2 SCOPE: SUBCONTRACTORS**

3.16.2.1 **Indemnity.** The Subcontractors shall defend, indemnify, and hold harmless the Indemnitees from and against claims, actions, damages, liabilities, and losses (including but not limited to injury or death of persons, property damage, and compensation owed to other parties), and expenses (including but not limited to attorneys' fees and costs including fees of consultants) alleged by third parties against Indemnitees arising out of or resulting from the following: Subcontractors' performance of the Work, including but not limited to the Subcontractors' use of the Site; the Subcontractors' construction of the Project or failure to construct the Project 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 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 indemnified 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. This obligation to defend, indemnify and hold harmless includes any claims or actions by third parties arising out of or resulting from Labor Code section 2810. Subcontractors shall have no obligation to defend or indemnify the Indemnitees against claims, actions, damages, liabilities, losses, and expenses caused by the active negligence, sole negligence or willful misconduct of Indemnitees. This indemnification shall apply to all liability, as provided for above, regardless of whether any insurance policies are applicable, and insurance policy limits do not act as a limitation upon the amount of the indemnification to be provided by the Subcontractors.

3.16.2.2 **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.

### 3.16.3 NO LIMITATION

The Contractor's and the Subcontractor's 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 the 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.

## 3.17 OWNER AS INTENDED BENEFICIARY

The Owner is an intended beneficiary of any architectural or engineering work secured by, or performed by, the Contractor to fulfill its obligations under the Contract. Contractor shall state in its contracts with architectural or engineering consultants that their work is for the intended benefit of the Owner.

### **3.18 NOTICE OF EXCUSE FOR NONPERFORMANCE**

If Contractor believes that acts or omissions of Owner (including but not limited to Owner caused delay) have prevented Contractor from performing the Work as required by the Contract Documents and Contractor intends to rely on Owner's acts or omissions and Civil Code section 1511(1) as reasons to excuse Contractor's nonperformance or to support, among other things, Contractor's requests for time extensions under General Conditions section 4.5, Contractor shall provide written notice of the excuse within five (5) days of the Owner's acts or omissions. If Contractor fails to timely submit the written notice Contractor shall have waived any right to later rely on the acts or omissions as a defense to Contractor's nonperformance, regardless of the merits of the defense. Contractor will not have satisfied a condition precedent or exhausted administrative remedies. Contractor acknowledges that these written notices are of critical importance to the Owner's Project management and the mitigation of Project costs and delays.

## **ARTICLE 4**

### **ADMINISTRATION OF THE CONTRACT**

#### **4.1 ARCHITECT**

##### **4.1.1 DEFINITION**

The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative, and shall also refer to all consultants under the Architect's direction and control.

##### **4.1.2 MODIFICATION**

To the extent the Contract Documents indicate that Owner has assigned duties or responsibilities to the Architect, Owner reserves the right at all times to reassign such duties or responsibilities to different Owner representatives.

##### **4.1.3 TERMINATION**

In the case of the termination of the Architect, the Owner may appoint an architect or another construction professional or may perform such functions with its own licensed professional

personnel. The status of the replacement Architect under the Contract Documents shall be that of the former architect.

## **4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT**

### **4.2.1 STATUS**

The Architect will provide administration of the Contract and may be one of several Owner's representatives during construction, through release of all retention, and during the one (1) year period following the commencement of any warranties. The Architect will advise and consult with the Owner. The Architect will have authority to act on behalf of the Owner only to the extent set forth in the Owner/Architect agreement. The Architect will have all responsibilities and power established by law, including California Code of Regulations, Title 24, to the extent set forth in the Owner/Architect agreement.

### **4.2.2 SITE VISITS**

The Architect will visit the Site at intervals necessary in the judgment of the Architect or as otherwise agreed by the Owner and the Architect in writing to become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents.

### **4.2.3 LIMITATIONS OF CONSTRUCTION RESPONSIBILITY**

The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract Documents, or by tests, inspections, or approvals required or performed by persons other than the Contractor.

### **4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION**

The Owner and the Contractor shall communicate through the Architect, unless there is a construction manager for the Project or the Owner directs otherwise. Communications between Owner and Subcontractors or material or equipment suppliers shall be through the Contractor.

### **4.2.5 PAYMENT APPLICATIONS**

The Contractor shall submit payment applications to the Architect, unless there is a construction manager for the Project or the Owner directs otherwise.

### **4.2.6 REJECTION OF WORK**

The Architect, Inspector of Record, any construction manager and others may recommend to the Owner that the Owner reject Work which does not conform to the Contract Documents or that the Owner require additional inspection or testing of the Work in accordance with paragraph

13.5.5, whether or not the Work is fabricated, installed, or completed. However, no recommendation shall create a duty or responsibility to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

#### 4.2.7 CHANGE ORDERS

The Architect will prepare change orders and construction change directives and may authorize minor changes in the Work.

#### 4.2.8 WARRANTIES UPON COMPLETION

The Architect in conjunction with the Inspector of Record, or as otherwise directed by Owner, will conduct field reviews of the Work to determine the date of completion, shall receive and forward to the Owner for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor. The handling by the Architect of such warranties, maintenance manuals, or similar documents shall not diminish or transfer to the Architect any responsibilities or liabilities required by the Contract Documents of the Contractor or other entities, parties, or persons performing or supplying the Work.

Except as may be otherwise directed by Owner, the Architect will conduct a field review of the Contractor's comprehensive list of items to be completed or corrected for development of a punch list and one (1) follow-up field review if required. The cost incurred by the Owner for further field reviews or the preparation of further punch lists by the Architect shall be invoiced to the Contractor and withheld from payment and/or retention.

#### 4.2.9 INTERPRETATION

The Architect, Inspector of Record, any construction manager, the Owner or any independent consultant of Owner, as Owner deems appropriate, will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of the Contractor. The Owner's response to such requests will be made with reasonable promptness, while allowing sufficient time to permit adequate review and evaluation of the request.

#### 4.2.10 ADDITIONAL INSTRUCTIONS

4.2.10.1 *Architect's Interpretations and Decisions.* Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations of and decisions regarding the Contract Documents, the Architect will endeavor to secure faithful performance under the Contract Documents by both the Owner and the Contractor and will not show partiality to either. The Work shall be executed in conformity with, and the Contractor shall do no work without, approved drawings, Architect's clarifying instructions, and/or submittals.

4.2.10.2 *Typical Parts and Sections.* Whenever typical parts or sections of the Work are completely detailed on the Drawings, and other parts or sections which are essentially of the sa

me construction are shown in outline only, the complete details shall apply to the Work which is shown in outline.

4.2.10.3 **Dimensions.** Dimensions of Work shall not be determined by scale or rule. Figured dimensions shall be followed at all times. If figured dimensions are lacking on Drawings, Architect shall supply them on request. The Owner's decisions on matters relating to aesthetic effect will be final if consistent with the Contract Documents.

### 4.3 INSPECTOR OF RECORD

#### 4.3.1 GENERAL

One or more Project inspectors ("Inspector of Record") employed by the Owner and approved by the Division of the State Architect will be assigned to the Work in accordance with the requirements of Title 24 of the California Code of Regulations. The Inspector of Record's duties will be as specifically defined in Title 24.

#### 4.3.2 INSPECTOR OF RECORD'S DUTIES

All Work shall be under the observation of or with the knowledge of the Inspector of Record. The Inspector of Record shall have free access to any or all parts of the Work at any time. The Contractor shall furnish the Inspector of Record such information as may be necessary to keep the Inspector of Record fully informed regarding progress and manner of work and character of materials. Such observations shall not, in any way, relieve the Contractor from responsibility for full compliance with all terms and conditions of the Contract, or be construed to lessen to any degree the Contractor's responsibility for providing efficient and capable superintendence. The Inspector of Record is not authorized to make changes in the drawings or specifications nor shall the Inspector of Record's approval of the Work and methods relieve the Contractor of responsibility for the correction of subsequently discovered defects, or from its obligation to comply with the Contract Documents.

#### 4.3.3 INSPECTOR OF RECORD'S AUTHORITY TO REJECT OR STOP WORK

The Inspector of Record shall have the authority to reject work that does not comply with the provisions of the Contract Documents. In addition, the Inspector of Record may stop any work which poses a probable risk of harm to persons or property. The Contractor shall instruct its employees, Subcontractors, material and equipment suppliers, etc., accordingly. The absence of any Stop Work order or rejection of any portion of the Work shall not relieve the Contractor from any of its obligations pursuant to the Contract Documents.

#### 4.3.4 INSPECTOR OF RECORD'S FACILITIES

Within seven (7) days after notice to proceed, the Contractor shall provide the Inspector of Record with the temporary facilities as required under Division 1 of the Specifications.



#### **4.4 RESPONSIBILITY FOR ADDITIONAL CHARGES INCURRED BY THE OWNER FOR PROFESSIONAL SERVICES**

If at any time prior to the completion of the requirements under the Contract Documents, through no fault of its own, the Owner is required to provide or secure additional professional services for any reason by any act or omission of the Contractor, the Contractor shall be invoiced by the Owner for any actual costs incurred for any such additional services, which costs may, among other remedies, be withheld from the progress payments and/or retention. Such invoicing shall be independent from any other Owner remedies, including but not limited to liquidated damages. If payments then or thereafter due to the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. Additional services shall include, but shall not be limited to, the following:

- A. Services made necessary by the default of the Contractor.
- B. Services made necessary due to the defects or deficiencies in the Work of the Contractor.
- C. Services required by failure of the Contractor to perform according to any provision of the Contract Documents.
- D. Services in connection with evaluating substitutions of products, materials, equipment, Subcontractors proposed by the Contractor, and making subsequent revisions to drawings, specifications, and providing other documentation required (except for the situation where the specified item is no longer manufactured or available).
- E. Services for evaluating and processing Claims submitted by the Contractor in connection with the Work outside the established Change Order process.
- F. Services required by the failure of the Contractor to prosecute the Work in a timely manner in compliance within the specified time of completion.
- G. Services in conjunction with the testing, adjusting, balancing and start-up of equipment other than the normal amount customarily associated for the type of Work involved.
- H. Services in conjunction with more than one (1) re-review of required submittals of shop drawings, product data, and samples.

#### **4.5 NOTICES OF POTENTIAL CHANGE, CHANGE ORDER REQUESTS, AND CLAIMS**

If the Contractor identifies the potential for extra work, delay in the critical path schedule, or the need for additional money or time, or if the Contractor requests additional money or time, or if the Contractor believes that Owner has failed to pay amounts due or otherwise breached the Contract, or otherwise believes that it is entitled to a modification of the Contract terms and conditions, then Contractor shall follow the procedures in this Section 4.5 and Article 7,

otherwise Contractor shall have waived its rights to pursue those issues and any later attempts to recover money or obtain a modification shall be barred. Contractor specifically acknowledges the Owner's and public's interest in, and need to know of, potential changes and disputes as early as possible so Owner can investigate, mitigate and resolve adverse cost and time impacts, if any. It is Contractor's obligation to know and comply with the requirements of Section 4.5 and Article 7, and Owner has no obligation to notify Contractor of any failure to comply with those requirements.

#### **4.5.1 NOTICE OF POTENTIAL CHANGE**

Contractor shall submit a written Notice of Potential Change for extra work, critical path delay, or additional money or time. Contractor shall submit written Notices of Potential Change to Owner within five (5) days of Contractor becoming aware of the issues creating the potential for change, unless the issues are, or may soon be, adversely affecting the costs or critical path of the Work, in which case the Contractor must submit the written notice without delay so the Owner may take immediate action to mitigate cost and schedule impacts of the change, if any. The written notice shall explain the nature of the potential change so the Owner may take action to mitigate costs and schedule impacts, if necessary.

When submitting a written Notice of Potential Change based on extra work, Contractor shall not perform the extra work until directed in writing to do so by Owner. When submitting a written Notice of Potential Change for an issue of critical path delay, Contractor shall proactively mitigate the effects of the alleged delay as much as reasonably possible so as to minimize any impact to the schedule, until otherwise directed by Owner.

Failure to timely submit a written Notice of Potential Change shall constitute a complete waiver by Contractor of any right to later submit a change order request or pursue a Claim on that issue, or to later pursue any additional money or time extensions in any manner related to that issue, regardless of the merits. Contractor will not have satisfied a condition precedent or exhausted administrative remedies. Contractor acknowledges that these written notices are of critical importance to the Owner's Project management and the mitigation of Project costs and delays.

#### **4.5.2 CHANGE ORDERS REQUESTS**

If, after submitting a written Notice of Potential Change pursuant to Section 4.5.1, Contractor continues to believe that it is entitled to additional money or time (including but not limited to grant of a time extension; payment of money or damages arising from work done by, or on behalf of, the Contractor, payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to; or an amount the payment of which is disputed by the Owner) based on an issue, then Contractor shall submit a Change Order Request ("COR") to Owner within twenty (20) days of (i) becoming aware of the issues creating a potential change, or (ii) the date by which it should have become aware of the issues creating a potential change. A rejection at any time or a lack of a rejection by Owner of a Notice of Potential Change does not affect the timeline for submitting a COR.

Failure to timely submit a COR related to an issue, or failure to comply with any of the COR requirements in the Contract shall constitute a complete waiver by Contractor of any right to later submit a COR or Claim on that issue, or to later pursue any additional money (including time extensions) in any manner related to that issue, regardless of the merits. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

The COR shall state the grounds for the additional money or time requested and the amount of money or time requested, and Contractor shall include all information supporting the COR.

Contractor shall certify the COR using the form set forth in Section 4.5.5.1, except that every reference to “Claim” shall be changed to “COR.” If a COR is submitted without certification, a certification can still be submitted within the timelines set forth in the first paragraph of section 4.5.2. If the COR is not timely certified, Contractor will have completely waived its rights to any money or time for that issue. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

The Owner may accept the entire COR, accept part of the COR and reject the remainder, reject the entire COR, or request additional information. If the Owner does not respond within thirty (30) days by accepting the entire COR, accepting part of the COR and rejecting the remainder, or requesting additional information, the entire COR shall be deemed rejected as of the thirtieth (30th) day. If the Owner requests additional information, then the Contractor shall submit the information within fifteen (15) days of the date of the request and the Owner shall have fifteen (15) days after the receipt of the additional information to accept or reject (in whole or in part) the COR. If the Owner fails to respond within fifteen (15) days after the submission of additional information, the entire COR shall be deemed rejected as of the fifteenth (15th) day.

#### 4.5.3 DEFINITION OF CLAIM

A “Claim” is a separate demand by the Contractor for (a) a time extension, (b) payment of money or damages arising from work done by, or on behalf of, the Contractor, payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (c) an amount the payment of which is disputed by the Owner. A claim includes any claim within the scope of Public Contract Code section 20104 et seq. Resubmittal in any manner of a COR which was previously rejected under Section 4.5.2 constitutes a Claim, whether the COR was rejected in whole or in part, and whether the COR was rejected expressly or deemed rejected by Owner inaction. A Claim includes any dispute Contractor may have with the Owner, including one which does not require a Notice of Potential Change or COR under Sections 4.5.1 and 4.5.2, and includes an alleged breach of contract by the Owner. A Claim under this Article 4.5 shall also constitute a claim for purposes of the California False Claims Act. In the event of a conflict between a Claims provision in Division 1 of the Specifications and Section 4.5, Section 4.5 shall take precedence.

The Notice of Potential Change and COR procedures above are less formal procedures which precede the more formal Claim. A Notice of Potential Change does not constitute a Claim. A COR does not constitute a Claim; **except that** if insufficient time remains before the Claim deadline (see Article 4.5.4) for Contractor to submit a COR and for Owner to process and reject

the COR under Article 4.5.2, then either (1) Contractor may submit a COR which Owner shall treat as a Claim, but only if the COR complies with all requirements in this Article 4.5 and Article 7 for COR's and Claims, or (2) a COR is not required so long as a Claim complying with this Article 4.5 is timely submitted.

A Claim does not include vouchers, invoices, progress payment applications, or other routine or authorized forms of requests for progress payments on the Contract; however, those documents remain "claims" for purposes of the California False Claims Act. A Claim does not include a Government Code Claim. ("Government Code Claim" means a claim under Government Code sections 900 et seq. and 910 et seq.)

#### 4.5.4 TIME FOR SUBMITTING CLAIM; WAIVER

Contractor shall submit a Claim to the Owner's construction manager (or in the absence of a construction manager, to Architect and Owner) on or before the date of the Final Progress Payment. Owner's rejection, or lack of rejection, of a COR at any time does not affect the deadline for filing a Claim.

In addition, on or before submitting its request for a final progress payment based on 100% completion of the work, Contractor shall submit to Owner, in writing, a summary of all Claims for money or time extensions under or arising out of this Contract which were timely filed and which were fully compliant with the Contract's requirements for Claims. The submission of an Application for Payment for the Final Progress Payment shall constitute a complete waiver of all Claims against Owner under or arising out of this Contract, except those identified in the above summary. Contractor will not have satisfied a condition precedent or exhausted administrative remedies. This Claim summary requirement shall not extend the time for submitting a Claim.

Failure to timely submit a Claim, failure to include a Claim in the Claim summary, or failure to comply with any of the Claim requirements in the Contract, including but not limited to this Article 4, will act as a complete waiver of Contractor's rights to (a) recover money or time on the issues for which a Claim was required, (b) submit a Government Code Claim for the money or time (see Section 4.5.6.4), and (c) initiate any action, proceeding or litigation for the money or time, regardless of the merits. Contractor will not have satisfied a condition precedent or exhausted administrative remedies. Owner does not have an obligation to reject the Claim for a failure to comply with any of the Claim requirements in the Contract, including the lack of certification, and any failure by Owner to reject, or any delay in rejecting, a Claim on that basis does not waive the Owner's right to reject the Claim on that basis at a later time. In no event may the Contractor reserve its rights to assert a Claim for a time extension or additional money beyond the timelines set forth in this provision unless the Owner agrees in writing to allow the reservation.

#### 4.5.5 CONTENT OF CLAIM

4.5.5.1 *Claim Format; Waiver.* Every Claim shall be in writing. All money or time extensions sought must be stated and itemized in the Claim at the time submitted. The re

sponsibility to substantiate Claims shall rest with the Contractor. In addition, the Contractor shall include a certification with each and every Claim at the time of submission, as follows:

I, [name of declarant], declare the following:

[Contractor company name] has contracted with Berryessa Union School District for the Northwood Elementary School Flexible Instructional Space Alteration and Related Modernization Project. ([Contractor company name]) authorized me to prepare the attached Claim for money and/or time extension) for Berryessa Union School District regarding this Project (dated \_\_\_\_\_, 20\_\_, entitled \_\_\_\_\_, and requesting \$ \_\_\_\_\_ and/or \_\_\_ additional days), and I prepared the attached Claim. I am the most knowledgeable person at [contractor company name] regarding this Claim.

The attached Claim complies with all laws applicable to submission of a Claim, including but not limited to California Penal Code section 72, Government Code sections 12650 et seq. (False Claims Act), and Business and Professions Code sections 17200 et seq. (Unfair Business Practices Act). I am aware that submission or certification of false claims, or other claims that violate law or the Contract, may lead to fines, imprisonment, and/or other serious legal consequences for myself or [contractor company name].

The attached Claim does not breach the Contract between [contractor company name] and Berryessa Union School District for this Project, is not a false claim, does not violate any applicable law, satisfies all provisions of the Contract applicable to submission of the Claim, only contains truthful and accurate supporting data, and only requests money and/or time extensions that accurately reflect the adjustments to money and time for which I believe that Berryessa Union School District is responsible under its Contract with [contractor company name].

While preparing this declaration and Claim I consulted with others (including attorneys, consultants, or others who work for [Contractor company name]) when necessary to ensure that the statements were true and correct.

Contractor understands and agrees that any Claim submitted without this certification does not meet the terms of the Contract Documents; that Owner, or Owner's 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 and all rights to additional money or time for the issues covered by the Claim are waived due to a condition precedent not having been satisfied.

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed \_\_\_\_\_, 2\_\_, at \_\_\_\_\_, California.

[name of declarant]

Contractor's failure to timely submit a certification will constitute a complete waiver of Contractor's rights to (a) recover money or time on the issues for which a Claim was required, (b) submit a Government Code Claim (see Section 4.5.6.4) for the money or time, and (c) initiate any action, proceeding or litigation for the money or time. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

**4.5.5.2 Claims for Additional Money.** Each Claim for additional money (including but not limited to those described in (b) and (c) of the first paragraph of Section 4.5.3) must include all facts supporting the Claim, including but not limited to all supporting documentation plus a written analysis as to (a) why the claimed cost was incurred, (b) why Contractor could not mitigate its costs, (c) why the claimed cost is the responsibility of the Owner, and (d) why the claimed cost is a reasonable amount. In no event will the Contractor be allowed to reserve its rights to assert a Claim for money at a later time, unless the Owner expressly agrees in writing to allow the reservation. Any costs, direct or indirect, not asserted shall be waived. A Claim may not include any costs incurred in preparation of the Claim or in preparation of any underlying COR, including but not limited to costs of delay analysis.

**4.5.5.3 Claims for Additional Time**

**4.5.5.3.1 Notice of Extent of Claim.** If the Contractor wishes to make a Claim for an increase in the Contract Time (including but not limited to Section 4.5.3(a)), the Claim shall include, but not be limited to, all facts supporting the Claim, all documentation of such facts, all information required by the Contract Documents, and a current schedule and delay analysis explaining (a) the nature of the delay, (b) the Owner's responsibility for the claimed delay, (c) the claimed delay's impact on the critical path, (d) the claimed delay's impact on completion date (including an analysis of any float still remaining and whether the alleged delay in work exceeds such remaining float), and (e) why Contractor could not mitigate the delay impacts.

In the case of a continuing delay, only one (1) initial Claim is necessary that is based on estimates of when the continuing delay will end, but within thirty (30) days of the end of the continuing delay an updated final Claim must be submitted, which shall also be certified. In no event will the Contractor be allowed to reserve its rights to assert a Claim for a time extension, unless the Owner expressly agrees in writing to allow the reservation. Any time extension not asserted shall be waived.

**4.5.5.3.2 Unusually Severe Weather Claims.** If unusually severe weather is the basis for a Claim for additional time, Contractor must provide Owner data and facts showing that the weather conditions were abnormal for the period of time, could not have been reasonably an

anticipated or mitigated, and had an adverse effect on the critical path of the scheduled construction.

**4.5.5.4 “Pass Through” Claims.** A Subcontractor or supplier to Contractor may not submit a request for additional time or money directly to the Owner. If a subcontractor or supplier submits a request for additional money or time to Contractor and Contractor wishes to pass it through to Owner, then Contractor must comply with all requirements of Section 4.5, including Notices of Potential Change, Change Order Requests, and Claims. Contractor must prepare and submit its own analysis of the Subcontractor’s request, and the Claim must include a copy of the Subcontractor’s request along with any other necessary supporting documentation.

The Contractor’s analysis of the Subcontractor’s request must include Contractor’s detailed explanation as to why the Subcontractor or supplier’s request is the Owner’s responsibility, including Contractor’s analysis of (a) why the amount of damages the Subcontractor or supplier requests is justified and appropriate, (b) how Contractor’s breach of the subcontract caused the Subcontractor or supplier to incur these damages, and (c) how the Owner’s breach of the Contract caused the Contractor’s breach of the subcontract. Any Contractor Claim that fails to include the above information, or that states that Owner is responsible for the Subcontractor’s request only in the event that Contractor is found to owe money to Subcontractor, shall act as a complete waiver of Contractor’s rights to (a) recover money or time on the issues for which a Claim was required, (b) submit a Government Code Claim (see Section 4.5.6.4) for the money or time, and (c) initiate any action, proceeding or litigation for the money or time. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

#### **4.5.6 PROCEDURES FOR CLAIMS LESS THAN OR EQUAL TO \$375,000 (PUBLIC CONTRACT CODE SECTION 20104.2)**

Claims less than or equal to \$375,000 are subject to this section 4.5.6, as well as the separate procedures and substantive provisions of Sections 4.5.1 through 4.5.5.

**4.5.6.1 Claims for Less Than \$50,000.** For Claims of less than fifty thousand dollars (\$50,000), the Owner shall respond in writing to any written Claim within 45 days of receipt of the Claim, or may request, in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the claim the Owner may have against the Contractor.

If additional information is thereafter required, it shall be requested and provided pursuant to this subsection, upon mutual agreement of the Owner and Contractor. If Owner and Contractor cannot reach mutual agreement, Contractor’s failure to provide any reasonably-requested information within fifteen (15) days after the request, shall act as a complete waiver of Contractor’s rights to (a) recover money or time on the issues for which a Claim was required, (b) submit a Government Code Claim (see Section 4.5.6.4) for the money or time, and (c) initiate any action, proceeding or litigation for such money or time. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

The Owner's written response to the Claim, as further documented, shall be submitted to the Contractor within 15 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

**4.5.6.2 Claims Over \$50,000 and Less Than or equal to \$375,000.** For claims over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the Owner shall respond in writing to all written Claims within 60 days of receipt of the Claim, or may request, in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim the Owner may have against the Contractor.

If additional information is thereafter required, it shall be requested and provided pursuant to this subsection, upon mutual agreement of the Owner and Contractor. If Owner and Contractor cannot reach mutual agreement, Contractor's failure to provide any reasonably-requested information within thirty (30) days after the request, shall act as a complete waiver of Contractor's rights to (a) recover money or time on the issues for which a Claim was required, (b) submit a Government Code Claim (see Section 4.5.6.4) for such money or time, and (c) initiate any action, proceeding or litigation for such money or time. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

The Owner's written response to the Claim, as further documented, shall be submitted to the Contractor within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

**4.5.6.3 Meet and Confer.** If the Contractor disputes the Owner's written response, or the Owner fails to respond within the time prescribed, the Contractor may so notify the Owner, in writing, either within 15 days of receipt of the Owner's response or within 15 days of the Owner's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the Owner shall schedule a meet and confer conference for settlement of the dispute, which shall take place within 30 days of the demand. Upon written agreement of the Owner and Contractor, the conference may take place during regularly scheduled Project meetings.

If Contractor fails to timely notify the Owner that it wishes to meet and confer pursuant to the previous paragraph, then Contractor will have waived all rights to (a) recover money or time on the issues for which a Claim was required, (b) submit a Government Code Claim (see Section 4.5.6) for such money or time, and (c) initiate any action, proceeding or litigation for such money or time. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

If a Claim, or any portion of a Claim, over \$100,000 remains in dispute after the meet and confer and Contractor wishes to pursue it, Contractor must demand non-binding mediation in writing within fifteen (15) days. If Contractor fails to timely notify the Owner in writing that it wishes to mediate pursuant to this paragraph, Contractor will have waived all right to further pursue the



Claim pursuant to section 4.5.4. The parties shall reasonably cooperate to schedule and attend a mediation as soon as reasonably possible.

**4.5.6.4 Government Code Claim.** If the Claim or any portion remains in dispute after the meet and confer conference and Contractor wishes to pursue it, the Contractor **must** file a timely and proper Government Code Claim. The filing of a Government Code Claim is specifically required in addition to all contractual procedures described in Sections 4.5 through 4.5.6.3. The above contractual procedures do not act as a substitute for the Government Code Claim process, and the two sets of procedures shall be sequential with the contractual procedures coming first.

Failure to timely file a Government Code Claim shall act as complete waiver of Contractor's rights to (a) recover money or time on the issues for which a Government Code Claim was required, and (b) initiate any action, proceeding or litigation for such money or time. Contractor will not have satisfied a condition precedent or exhausted administrative remedies.

Owner and Contractor shall proceed with the Government Code Claim according to Government Code, Section 900 et seq., and as otherwise permitted by law. For purposes of the applicable Government Code provisions, and as provided in Public Contract Code section 20104.2(e), the running of the time period within which a Contractor must file a Government Code Claim shall be tolled from the time the Contractor submits a written Claim under Article 4.5 until the time that the Claim is denied, in whole or in part, as a result of the meet and confer process in Section 4.5.6.3, including any period of time utilized by the meet and confer process.

#### **4.5.7 PROCEDURES FOR CLAIMS OVER \$375,000**

Contractor and Owner shall proceed with Claims over \$375,000 pursuant to Section 4.5.6, except as follows: (a) Section 4.5.6.1, shall not be applicable; (b) for Section 4.5.6.2, Owner shall respond in writing to all written Claims within 90 days of receipt of the Claim, or may request, in writing, within 45 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim the Owner may have against the Contractor; (c) for Section 4.5.6.2, Owner shall respond within 45 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or documentation, whichever is greater; and (d) for Section 4.5.6.3, following the meet and confer conference, if the Claim or any portion of it remains in dispute and Contractor wishes to pursue it, Contractor must demand in writing within fifteen (15) days that the parties mediate (non-binding). If Contractor fails to timely notify the Owner in writing that it wishes to mediate pursuant to this paragraph, then Contractor will have waived all rights to further pursue the Claim pursuant to Section 4.5.4. The parties shall reasonably cooperate to schedule and attend a mediation as soon as reasonably possible.

#### **4.5.8 CONTINUING CONTRACT PERFORMANCE**

Despite submission or rejection of a Notice of Potential Change, COR or Claim, the Contractor shall proceed diligently with performance of the Contract as directed by Owner, and the Owner shall continue to make any undisputed payments in accordance with the Contract.

#### 4.5.9 CLAIMS FOR CONCEALED OR UNKNOWN CONDITIONS

4.5.9.1 ***Trenches or Excavations Less Than Four Feet Below the Surface.*** If Contractor encounters conditions at the Site which are subsurface or otherwise concealed physical conditions, which 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 construction activities of the character provided for in the Contract Documents, the Contractor shall give notice to the Owner promptly before conditions are disturbed and in no event later than ten (10) days after first observance of the conditions. If Contractor believes that such conditions differ materially and will cause an increase in the Contractor's cost of, time required for, or performance of any part of the Work, Contractor must comply with the provisions above for Notice of Potential Change, Change Order Request, and Claims (beginning with Section 4.5.1).

4.5.9.2 ***Trenches or Excavations Greater Than Four Feet Below the Surface.*** Pursuant to Public Contract Code section 7104, when any excavation or trenching extends greater than four feet below the surface:

4.5.9.2.1 The Contractor shall promptly, and before the following conditions are disturbed, notify the public entity, in writing, of any:

(1) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law.

(2) Subsurface or latent physical conditions at the site differing from those indicated by information about the site made available to bidders prior to the deadline for submitting bids.

(3) 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.

4.5.9.2.2 The public entity 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.

4.5.9.2.3 In the event that a dispute arises between the public entity 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, but shall proceed with all work to be performed under the Contract. 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.

#### **4.5.10 INJURY OR DAMAGE TO PERSON OR PROPERTY**

If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, any of the other party's employees or agents, or others for whose acts such party is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding ten (10) days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. For a Notice of Potential Change, COR and Claim for additional cost or time related to this injury or damage, Contractor shall follow Section 4.5.

### **ARTICLE 5**

#### **SUBCONTRACTORS**

##### **5.1 DEFINITIONS**

###### **5.1.1 SUBCONTRACTOR**

A Subcontractor is a person or entity, who has a contract with the Contractor to perform a portion of the Work at the Site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor. To the extent that the term Trade Contractor is utilized in the Contract Documents, it shall have the same meaning as the term "Subcontractor."

###### **5.1.2 SUB-SUBCONTRACTOR**

A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the Site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

###### **5.1.3 SPECIALTY CONTRACTORS**

If a Subcontractor is designated as a "Specialty Contractor" as defined in section 7058 of the Business and Professions Code, all of the Work outside of that Subcontractor's specialty shall be performed in compliance with the Subletting and Subcontracting Fair Practices Act, Public Contract Code sections 4100, et seq.

##### **5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK**

### 5.2.1 ASSIGNMENT OR SUBSTITUTION - CONSENT OF OWNER

In accordance with Public Contract Code sections 4107 and 4107.5, no Contractor whose bid is accepted shall, without the written consent of the Owner: substitute any person or entity as a Subcontractor in place of the Subcontractor designated in the original bid; permit any such Subcontract to be assigned or transferred, or allow it to be performed by any person or entity other than the original Subcontractor listed in the original bid; sublet or subcontract any portion of the Work in excess of one-half of one percent (0.5%) of the Contractor's total bid as to which its original bid did not designate a Subcontractor. Any assignment or substitution made without the prior written consent of the awarding authority shall be void, and the assignees shall acquire no rights in the Contract. Any consent, if given, shall not relieve Contractor or its Subcontractors from their obligations under the terms of the Contract Documents.

### 5.2.2 GROUNDS FOR SUBSTITUTION

Pursuant to Public Contract Code section 4107 and the procedure set forth therein, no Contractor whose bid is accepted may request to substitute any person or entity as a Subcontractor in place of a Subcontractor listed in the original bid except in the following instances:

- A. When the Subcontractor listed in the bid after having a reasonable opportunity to do so, fails or refuses to execute a written Contract for the scope of work specified in the subcontractor's bid and at the price specified in the subcontractor's bid, when that written Contract, based upon the general terms, conditions, plans and specifications for the Project involved or the terms of that Subcontractor's written bid, is presented to the Subcontractor by the prime contractor;
- B. When the listed Subcontractor becomes insolvent or the subject of an order for relief in bankruptcy;
- C. When the listed Subcontractor fails or refuses to perform his or her Subcontract;
- D. When the listed Subcontractor fails or refuses to meet the bond requirements of the prime contractor set forth in Public Contract Code section 4108.
- E. When the Contractor demonstrates to the awarding authority, or its duly authorized officer, subject to the further provisions of Public Contract Code section 4107.5, that the name of the Subcontractor was listed as the result of inadvertent clerical error;
- F. When the listed Subcontractor is not licensed pursuant to the Contractors License Law; or
- G. When the awarding authority, or its duly authorized officer, determines that the Work being performed by the listed Subcontractor is substantially unsatisfactory and not in substantial accordance with the plans and specifications, or the Subcontractor is substantially delaying or disrupting the progress of the Work.

- H. When the listed Subcontractor is ineligible to work on a public works project pursuant to Section 1777.1 of the Labor Code.
- I. When the awarding authority determines that a listed Subcontractor is not a responsible contractor.

5.2.2.1 **No Change in Contract.** Any substitutions of Subcontractors shall not result in any increase in the Contract Sum or result in the granting of any extension of time for the completion of the Project.

5.2.2.2 **Substitution Due to Clerical Error.** The Contractor, as a condition of asserting a claim of inadvertent clerical error in the listing of a Subcontractor, shall, pursuant to Public Contract Code section 4107.5, within two (2) working days after the time of the prime bid opening by the awarding authority, give written notice to the awarding authority and copies of such notice to both the Subcontractor it claims to have listed in error, and the intended Subcontractor who had bid to the Contractor prior to bid opening. Any listed Subcontractor who has been notified by the Contractor in accordance with the provisions of this section as to an inadvertent clerical error, shall be allowed six (6) working days from the time of the prime bid opening within which to submit to the awarding authority and to the Contractor written objection to the Contractor's claim of inadvertent clerical error.

In all other cases, the Contractor must make a request in writing to the awarding authority for the substitution of a subcontractor, giving reasons therefore. The awarding authority shall mail a written notice to the listed Subcontractor giving reasons for the proposed substitution. The listed Subcontractor shall have five (5) working days from the date of such notice within which to file with the awarding authority written objections to the substitution.

Failure to file written objections pursuant to the provisions of this section within the times specified herein shall constitute a complete waiver of objection to the substitution by the listed Subcontractor and, where the ground for substitution is an inadvertent clerical error, an agreement by the listed Subcontractor that an inadvertent clerical error was made.

If written objections are filed, the awarding authority shall give five (5) days notice to the Contractor and to the listed Subcontractor of a hearing by the awarding authority on the Contractor's request for substitution as provided in Public Contract Code section 4107. The determination by the awarding authority shall be final.

### 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all obligations and responsibilities, which the Contractor, by the Contract Documents, assumes toward the Owner. Each subcontract agreement shall preserve and protect the rights of the Owner under the Contract Documents with respect to the Work to be performed by the

Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound. Upon written request of the Subcontractor, the Contractor shall identify to the Subcontractor the terms and conditions of the proposed subcontract agreement, which may be at variance with the Contract Documents. Subcontractors shall similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### **5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS**

Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

- A. Assignment is effective only after termination of the Contract with the Contractor by the Owner for cause pursuant to Article 14 and only for those subcontract agreements which the Owner 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.

#### **5.5 SUBCONTRACTOR'S RESPONSIBILITIES**

Every Subcontractor is bound to the following provisions, unless specifically noted to the contrary in the Subcontractor's contract subject to the limitations of section 5.3.

##### **5.5.1 SUPERVISION BY SUBCONTRACTORS**

Subcontractors shall efficiently supervise their Work, using their best skill and attention. Each of them shall carefully study and compare all Drawings, Specifications, and other instructions, shall at once report to Contractor any error or omission which any of them may discover, and shall subsequently proceed with the Work in accordance with instructions from the Contractor concerning such error or omission. Each Subcontractor shall be fully responsible for and shall bear the full risk of loss of all of its property.

##### **5.5.2 DISCIPLINE AND ORDER**

Each Subcontractor shall at all times enforce strict discipline and good order among its Subcontractors, material or equipment suppliers, or their agents, employees, and invitees, and shall establish and maintain surveillance over the activities of each of the foregoing to minimize any disturbance, damage, pollution, or unsightly conditions relative to property areas adjacent to or in the vicinity of the Site. The Contractor shall have the right to remove from the Work any

employee of a Subcontractor for any reason including, without limitation, incompetence or carelessness.

### **5.5.3 DEFECTS DISCOVERED**

Should the proper and accurate performance of the Work depend upon the proper and accurate performance of other work not included in its Contract, each Subcontractor shall use all necessary means to discover any defect in such other work and shall allow the Contractor, the Owner and Architect, or other Subcontractors as Contractor elects, a reasonable amount of time to remedy such defects. If the Subcontractor should proceed with its Work, it shall be considered to have accepted such other work, unless the Subcontractor shall have proceeded pursuant to instructions in writing by the Contractor over its written objection.

### **5.5.4 SUBCONTRACTOR INFORMATION**

Each Subcontractor shall submit to the Owner, the Contractor, or the Architect, as the case may be, promptly when requested by any of the foregoing, information with respect to the names, responsibilities, and titles of the principal members of its staff, the adequacy of the Subcontractor's equipment and the availability of necessary materials and supplies. Subcontractor shall fully cooperate with Contractor in its periodic review of the adequacy of Subcontractor's supervision, personnel, and equipment, and the availability of necessary materials and supplies and shall promptly comply with the requirements of the Contractor with respect thereto.

### **5.5.5 TEMPORARY STRUCTURES**

Each Subcontractor shall furnish at its expense its own temporary facilities and storage except those specifically agreed to be furnished to it by the Contractor in the Subcontract Agreement. Subcontractor's material storage rooms and field offices, etc., will be placed in locations designated by the Contractor. When it becomes necessary due to the progress of the Project for the Subcontractor to relocate its field operations, it will do so in an expeditious manner and at no additional cost to Contractor or Owner. The construction of material storage rooms and field offices, etc., will be of fire resistive material only, such as concrete or gypsum block, rated drywall, or sheet metal.

### **5.5.6 CHARGES TO SUBCONTRACTOR**

Each Subcontractor may be subject to the Contractor's reasonable charges for hoisting, repair to other work caused by the fault or negligence of Subcontractor, removal of Subcontractor's rubbish, and clean-up occasioned by Subcontractor.

### **5.5.7 FINES IMPOSED**

Subcontractor shall comply with and pay any fines or penalties imposed for violation of any applicable law, ordinance, rule, regulation, Environmental Impact Report mitigation requirement, and lawful order of any public authority, including, without limitation, all OSHA and California OSHA requirements and those of other authorities having jurisdiction of the safety of persons or property.

#### **5.5.8 PROJECT SIGNS**

Each Subcontractor shall not display on or about the Project any sign, trademark, or other advertisement. The Owner will permit a single Project sign, which shall be subject to the Owner's prior and sole discretion and approval, as to all matters including, without limitation, size, location, material, colors, style and size of printing, logos and trademarks (if any), text, and selection of names to be displayed.

#### **5.5.9 REMEDIES FOR FAILURE TO PERFORM**

Without limitation of any other right or remedy available to Contractor under the Contract Documents or at law, should: the Subcontractor fail to perform its portion of the Work in a skilled and expeditious manner in accordance with the terms of the Contract Documents with sufficient labor, materials, equipment, and facilities; delays the progress of the job or otherwise fail in any of its obligations; or either a receiver is appointed for the Subcontractor or the Subcontractor is declared to be bankrupt or insolvent, and such appointment, bankruptcy, or insolvency proceedings or declaration is not set aside within thirty (30) days, then the Contractor, upon three (3) days notice to the Subcontractor (subject to the requirements of Pub. Contracts Code, § 4107), may provide such labor, materials, or perform such work and recover the cost plus profit and overhead from monies due or to become due thereafter to the Subcontractor. The Contractor may terminate the employment of the Subcontractor, taking possession of its tools, materials, and equipment related to the Work and cause the entire portion of the Subcontractor's Work to be finished either by another Subcontractor or through the Contractor's own forces.

#### **5.5.10 DISPUTES NOT TO AFFECT WORK**

In the event of any dispute as to whether or not any portion of the Work is within the scope of the Work to be performed by a Subcontractor, or any dispute as to whether or not the Subcontractor is entitled to a Change Order for any Work requested of it or entitled to payment, the Subcontractor shall continue to proceed diligently with the performance of the Work. Regardless of the size or nature of the dispute, the Subcontractor shall not under any circumstances cease or delay performance of its portion of the Work during the existence of the dispute. The Contractor shall continue to pay the undisputed amounts called for under the Subcontract Agreement during the existence of the dispute. Any party stopping or delaying the progress of the Work because of a dispute shall be responsible in damages to the Owner, the Architect, and the Contractor for any losses suffered as a result of the delay.

#### **5.5.11 APPLICATION FOR PAYMENT**

Contractor agrees to advise the Subcontractor if any documentation in connection with the Subcontractor's application for payment has not been accepted or is in any way unsatisfactory.



#### **5.5.12 COMPLIANCE WITH PROCEDURES**

Each Subcontractor shall comply with all procedures established by the Contractor for coordination among the Owner, the Owner's consultants, Architect, Contractor, and the various Subcontractors for coordination of the Work with all local municipal authorities, government agencies, utility companies, and any other agencies with jurisdiction over all or any portion of the Work. The Subcontractor shall cooperate fully with all of the foregoing parties and authorities.

#### **5.5.13 ON-SITE RECORD KEEPING**

Subcontractor shall comply with all on-Site record keeping systems established by the Contractor and shall, upon the request of the Contractor, provide the Contractor with such information and reports as the Contractor may deem appropriate. Without limitation of the foregoing, the Subcontractor shall assemble all required permits and certificates so that they are readily accessible at the Site.

#### **5.5.14 NON-EXCLUSIVE OBLIGATIONS**

The specific requirements of Article 5 are not intended to exclude the obligation of the Subcontractor to comply with any of the other provisions of the General Conditions and the other Contract Documents which are relevant to the proper performance of its portion of the Work.

## **ARTICLE 6**

### **CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

#### **6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS**

##### **6.1.1 OWNER'S RIGHTS**

The Owner reserves the right to perform work related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the Site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance. Upon the election to perform work with its own forces or by separate contracts, the Owner shall notify the Contractor. If the

Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall proceed pursuant to Section 4.5 in the Contract Documents.

### **6.1.2 DESIGNATION AS CONTRACTOR**

When separate contracts are awarded for different portions of the Project or other construction or operations on the Site, the term “Contractor” in the Contract Documents in each case shall mean the Contractor who executes each separate Owner/Contractor Agreement.

### **6.1.3 CONTRACTOR DUTIES**

The Contractor shall have overall responsibility for coordination and scheduling of the activities of the Owner’s own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule and Contract Sum deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors, and the Owner until subsequently revised.

### **6.1.4 OWNER OBLIGATIONS**

Unless otherwise provided in the Contract Documents, when the Owner performs work related to the Project with the Owner’s own forces, the Owner shall be deemed to be subject to the same obligations, and to have the same rights, which apply to the Contractor under the General Conditions, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10 and 12.

## **6.2 MUTUAL RESPONSIBILITY**

### **6.2.1 DELIVERY AND STORAGE**

The Contractor shall afford the Owner and separate contractor’s reasonable opportunity for delivery and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the separate contractors’ construction and operations with theirs as required by the Contract Documents.

### **6.2.2 NOTICE BY CONTRACTOR**

If part of the Contractor’s Work depends upon proper execution or results from work by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Owner patent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acknowledgment that the Owner’s or separate contractors’

completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

### **6.2.3 COSTS INCURRED**

Costs, expenses, and damages caused by delays, improperly timed activities, defective construction, or damages to another's work/Work or property shall be borne by the party responsible. Should Contractor/any contractor cause damage to the work/Work or property of any separate contractor on the Project, or cause any delay to any such contractor, the Contractor shall defend, indemnify and hold Owner harmless for such damage or delay under section 3.16. Owner may withhold from progress payments and/or retention the cost of delay or damage to another contractor's work or damage to another contractor's property caused by Contractor.

### **6.2.4 CORRECTION OF DAMAGE**

The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors.

### **6.3 OWNER'S RIGHT TO CLEAN UP**

If a dispute arises among the Contractor, separate contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described in Section 3.13, the Owner may clean up and allocate the cost among those responsible as the Owner determines to be just.

## **ARTICLE 7**

### **CHANGES IN THE WORK**

#### **7.1 CHANGES**

##### **7.1.1 NO CHANGES WITHOUT AUTHORIZATION**

The Owner reserves the right to change the Work by making such alterations, deviations, additions to, or deletions from the plans and specifications, as may be deemed by the Owner to be necessary or advisable for the proper completion or construction of the Work contemplated, and Owner reserves the right to require Contractor to perform such work. No adjustment will be made in the Contract unit price of any Contract item regardless of the quantity ultimately required.

Owner shall compensate Contractor with money or grant extra time for any extra work ordered by the Owner to be performed. Contractor shall follow the provisions of 7.6 and 7.7 when requesting additional money or additional time. Contractor shall expeditiously perform all extra

work upon direction, even if no agreement has been reached on extra time or money. For all such changes resulting in a credit to Owner, Contractor shall follow 7.5 and 7.7 in providing the credit to Owner. Contractor shall bring all potential credits to the Owner's attention.

There shall be no change whatsoever in the drawings, specifications, or in the Work or payments under the Contract Documents without an executed Change Order, Construction Change Directive, or order by the Owner pursuant to Section 7.1.2. Owner shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the same shall have been properly requested under Section 4.5 and authorized by, and the cost thereof approved in writing by, Change Order or Construction Change Directive. No extension of time for performance of the Work shall be allowed hereunder unless request for such extension is properly made under Section 4.5 and such time is thereof approved in writing by Change Order or Construction Change Directive. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

#### **7.1.2 AUTHORITY TO ORDER MINOR CHANGES**

The Owner has authority to order minor changes in the Work not involving any adjustment in the Contract Sum, an extension of the Contract Time, or a change which is inconsistent with the intent of the Contract Documents. Such changes shall be effected by written Construction Change Directive and shall be binding on the Contractor. The Contractor shall carry out such written orders promptly.

#### **7.2 CHANGE ORDERS ("CO")**

A CO is a written instrument signed by the Owner and the Contractor, stamped (or sealed) and signed by Architect, and approved by the Owner's Governing Board and DSA where required, stating the agreement of Owner and Contractor upon all of the following:

- A. A change in the Work;
- B. The amount of the adjustment in the Contract Sum, if any; and
- C. The extent of the adjustment in the Contract Time, if any.

Unless expressly stated otherwise in the CO, any CO executed by Owner and Contractor constitutes and includes full and complete money and time (including but not limited to, adjustments to money and time) for all costs and effects caused by any of the changes described within it. Unless expressly stated otherwise in the CO, in consideration for the money received for the changes described in the CO, Contractor waives all Claims for all costs and effects caused by any of the changes, including but not limited to labor, equipment, materials, delay, extra work, overhead (home and field), profit, direct costs, indirect costs, acceleration, disruption, impaired productivity, time extensions, and any the costs and effects on Subcontractors and suppliers of any tier.

### **7.3 CONSTRUCTION CHANGE DIRECTIVES (“CCD”)**

#### **7.3.1 DEFINITION**

A CCD is a written unilateral order signed by the Owner, and if necessary by the Architect, directing a change in the Work and stating an adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by CCD, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions pursuant to Section 7.1.1.

#### **7.3.2 USE TO DIRECT CHANGE**

A CCD shall be used in the absence of agreement on the terms of a CO. If Contractor disagrees with the terms of a CCD, it shall nevertheless perform the work directed by the CCD, but it may pursue the Notice of Potential Change, COR and Claim procedures of Section 4.5 if Contractor believes it is entitled to changes in the Contract Sum or Contract Time.

### **7.4 REQUEST FOR INFORMATION (“RFI”)**

#### **7.4.1 DEFINITION**

An RFI is a written request prepared by the Contractor asking the Owner to provide additional information necessary to clarify an item which the Contractor feels is not clearly shown or called for in the drawings or specifications, or to address problems which have arisen under field conditions.

#### **7.4.2 SCOPE**

The RFI shall reference all the applicable Contract Documents including specification section, detail, page numbers, drawing numbers, and sheet numbers, etc. The Contractor shall make suggestions and/or interpretations of the issue raised by the RFI. An RFI cannot modify the Contract Sum, Contract Time, or the Contract Documents.

#### **7.4.3 RESPONSE TIME**

Unless Owner expressly directs otherwise in writing, Contractor shall submit RFIs directly to the Architect, with copies forwarded to the Owner. Contractor shall submit a revised and updated priority schedule with each RFI. The Architect shall endeavor to follow the Contractor’s requested order of priorities. The Owner and Contractor agree that an adequate time period for the Architect (or other designated recipient of the RFI) to respond to an RFI is generally fourteen (14) calendar days after the Architect’s receipt of an RFI, unless the Owner and Contractor agree otherwise in writing. However, in all cases, the Architect shall take such time, whether more or less than 14 days, as is necessary in the Architect’s professional judgment to permit adequate review and evaluation of the RFI. If Contractor informs the Architect that it needs a response to

an RFI expedited to avoid delay to the critical path, the Architect shall provide a response as quickly as reasonably possible. The total time required for the Architect to respond is subject to the complexity of the RFI, the number of RFI's submitted concurrently and the reprioritization of pending RFI's submitted by the Contractor, among other things. If Contractor believes that the Architect's response results in a change in the Work that warrants additional money or time, or that Architect's response was unreasonably delayed and caused delay to the Project's critical path, Contractor shall follow the procedures for additional money or time under Section 4.5. No presumption shall arise as to the timeliness of the response if the response is more than fourteen (14) days after the Architect's receipt of the RFI. Contractor shall review the Contract Documents before submitting an RFI to ensure that the information is not already in the Contract Documents. To compensate the Owner for time and costs incurred for each time the information was already in the Contract Documents, Owner may withhold \$100 from progress payments or retention in addition to any other remedies which Owner may have the right to pursue.

#### **7.4.4 COSTS INCURRED**

The Contractor shall be invoiced by the Owner for any costs incurred for professional services, which shall be withheld from progress payments or retention, if an RFI requests an interpretation or decision of a matter where the information sought is equally available to the party making such request.

### **7.5 REQUEST FOR PROPOSAL ("RFP")**

#### **7.5.1 DEFINITION**

An RFP is Owner's written request asking the Contractor to submit to the Owner an estimate of the effect, including credits, of a proposed change on the Contract Sum and the Contract Time.

#### **7.5.2 SCOPE**

An RFP shall contain adequate information, including any necessary drawings and specifications, to enable Contractor to provide the cost breakdowns required by section 7.7. The Contractor shall not be entitled to any additional money for preparing a response to an RFP, whether ultimately accepted or not.

### **7.6 CHANGE ORDER REQUEST ("COR")**

#### **7.6.1 DEFINITION**

A COR is a written request prepared by the Contractor asking the Owner for additional money or time.

#### **7.6.2 CHANGES IN PRICE**

A COR shall include breakdowns per section 7.7 to validate any proposed change in Contract Sum.

### 7.6.3 CHANGES IN TIME

Where a change in Contract Time is requested, a COR shall also include delay analysis to validate any proposed change to the Contract Time, and shall meet all requirements in these General Conditions, including but not limited to Section 8.4. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Project Schedule as defined in section 3.9 and Division 1 of the Specifications.

## 7.7 PRICE OF CHANGE ORDERS

### 7.7.1 SCOPE

Any COR shall provide in writing to the Owner, the Architect and any construction manager, the effect of the proposed CO upon the Contract Sum and the actual cost of construction, which shall include a complete itemized cost breakdown of all labor and material showing actual quantities, hours, unit prices, wage rates, required for the change, and the effect upon the Contract Time of such CO.

### 7.7.2 DETERMINATION OF COST

The amount of the increase or decrease in the Contract Sum resulting from a CO, if any, shall be determined in one or more of the following ways as applicable to a specific situation:

- A. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- B. Unit prices stated in the Contractor's original bid, the Contract Documents, or subsequently agreed upon between the Owner and the Contractor;
- C. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- D. By cost of material and labor and percentage of overhead and profit. If the value is determined by this method the following requirements shall apply:

1. **Daily Reports by Contractor.**

- a) General: At the close of each working day, the Contractor shall submit a daily report to the Inspector of Record and any construction manager, on forms approved by the Owner, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day, the location of the work, and for other services and expenditures when authorized concerning extra work items. An attempt shall be made to reconcile the report daily, and it shall be signed by the Inspector of Record and the Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points which 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.

- b) Labor: Show names of workers, classifications, and hours worked.
- c) Materials: Describe and list quantities of materials used.
- d) Equipment: Show type of equipment, size, identification number, and hours of operation, including, if applicable, loading and transportation.
- e) Other Services and Expenditures: Describe in such detail as the Owner may require.

2. **Basis for Establishing Costs.**

a) Labor will be the actual cost for wages prevailing locally for each craft 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 a labor classification, 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.

b) Materials shall be at invoice or lowest current price at which such materials are locally available and delivered to the Site in the quantities involved, plus sales tax, freight, and delivery.

The Owner 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 Owner.

c) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of \$100 or less.

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental agencies 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 Owner 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 Owner.

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

d) Other Items. The Owner 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 Application for Payment.

e) Invoices. Vendors' invoices for material, equipment rental, and other expenditures shall be submitted with the COR. If the Application for Payment is not substantiated by invoices or other documentation, the Owner may establish the cost of the item involved at the lowest price which was current at the time of the Daily Report.

f) Overhead, premiums and profit. For overhead, including direct and indirect costs, submit with the COR and include: home office overhead, off-Site supervision, CO preparation/negotiation/research for Owner initiated changes, time delays, project interference and disruption, additional guaranty and warranty durations, on-Site supervision, additional temporary protection, additional temporary utilities, additional material handling costs, and additional safety equipment costs.

### 7.7.3 **FORMAT FOR PROPOSED COST CHANGE**

The following format shall be used as applicable by the Owner and the Contractor to communicate proposed additions and deductions to the Contract.

	<u>EXTRA</u>	<u>CREDIT</u>
A. Material (attach itemized quantity and unit cost plus sales tax, invoices, receipts, truck tags, etc., for force account work)	_____	_____
B. Labor (attach itemized hours and rates, daily logs, certified payroll, etc.)	_____	_____
C. Equipment (attach any invoices)	_____	_____
D. Subtotal	_____	_____
E. If Subcontractor performed Work, add Subcontractor's overhead and profit to portions performed by Subcontractor, not to exceed fifteen percent (15%) of item D.	_____	_____
F. Liability and Property Damage Insurance, Worker's Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed twenty percent (20%) of Item B.		
G. Subtotal	_____	_____
H. General Contractor's Overhead and Profit, not to exceed fifteen percent (15%) of Item G; and for work performed by subcontractors, not to exceed five percent (5%).	_____	_____
I. Subtotal	_____	_____
J. Bond not to exceed one percent (1%) of Item I.	_____	_____
K. TOTAL	_____	_____

It is expressly understood that the value of such extra work or changes, as determined by any of the aforementioned methods, expressly includes (1) any and all of the Contractor's costs and expenses, both direct and indirect, resulting from additional time required on the project or resulting from delay to the project, and (2) any costs of preparing a COR, including but not limited to delay analysis. Any costs or expenses not included are deemed waived.

It is further understood that the **total** percentage markup on any change order shall not exceed twenty five percent (25%).

#### **7.7.4 DISCOUNTS, REBATES, AND REFUNDS**

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omissions in the Work as provided herein.

#### **7.7.5 ACCOUNTING RECORDS**

With respect to portions of the Work performed by COs and CCDs on a time-and-materials, unit-cost, or similar basis, the Contractor shall keep and maintain cost-accounting records satisfactory to the Owner, which shall be available to the Owner on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents.

#### **7.7.6 NOTICE REQUIRED**

Contractor shall submit a written Notice of Potential Change for additional money or time pursuant to section 4.5.1.

#### **7.7.7 APPLICABILITY TO SUBCONTRACTORS**

Any requirements under this Article 7 shall be equally applicable to COs or CCDs issued to Subcontractors by the Contractor to the same extent required of the Contractor.

#### **7.8 WAIVER OF RIGHT TO CLAIM MONEY OR TIME**

Failure to demand 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 8**

#### **TIME**

##### **8.1 DEFINITIONS**

###### **8.1.1 CONTRACT TIME**

Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Completion of the Work.

###### **8.1.2 NOTICE TO PROCEED**

Contractor shall not commence the Work until it receives a Notice to Proceed from Owner. The date of commencement of the Work is the date established in the Notice to Proceed. The date of commencement shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.

### 8.1.3 DAYS

The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

## 8.2 HOURS OF WORK

### 8.2.1 SUFFICIENT FORCES

Contractors and Subcontractors shall furnish sufficient forces to ensure the prosecution of the Work in accordance with the Construction Schedule.

### 8.2.2 PERFORMANCE DURING WORKING HOURS

Work shall be performed during regular working hours except that in the event of an emergency or when required to complete the Work in accordance with job progress, work may be performed outside of regular working hours with the advance written consent of the Owner.

### 8.2.3 LABOR CODE APPLICATION

As provided in Article 3 (commencing at § 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 this Contract, upon the work or upon any part of the work contemplated by this Contract, is limited and restricted to eight (8) hours during any one calendar day and forty (40) hours during any one calendar week, except as hereinafter provided. Notwithstanding the provision hereinabove set forth, work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one week shall be permitted upon this public work with compensation provided for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1-1/2) times the basic rate of pay.

Contractor or subcontractor shall pay to the Owner a penalty of Twenty-five Dollars (\$25.00) 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 calendar day and forty (40) hours in any one (1) calendar week, in violation of the provisions of Article 3 (commencing at § 1810), Chapter 1, Part 7, Division 2 of the Labor Code, unless compensation for the workers so employed by Contractor is not less than one and one-half (1-1/2) times the basic rate of pay for all hours worked in excess of eight (8) hours per day.

#### **8.2.4 COSTS FOR AFTER HOURS INSPECTIONS**

If the work done after hours is required by the Contract Documents to be done outside the Contractor's or the Inspector of Record's regular working hours, the costs of any inspections, if required to be done outside normal working hours, shall be borne by the Owner.

If the Owner allows the Contractor to do work outside regular working hours for the Contractor's own convenience, the costs of any inspections required outside regular working hours, among other remedies, shall be invoiced to the Contractor by the Owner and withheld from progress payments and/or retention. Contractor shall give Owner at least 48 hours notice prior to working outside regular working hours.

If the Contractor elects to perform work outside the Inspector of Record's regular working hours, costs of any inspections required outside regular working hours, among other remedies, may be invoiced to the Contractor by the Owner and withheld from progress payments and/or retention.

#### **8.2.5 TIME FOR COMMENCEMENT BY SUBCONTRACTORS**

Unless otherwise provided in the Contract Documents, all Subcontractors shall commence their Work within two (2) consecutive business days after notice to them by the Contractor and shall prosecute their Work in accordance with the progress of the Work.

### **8.3 PROGRESS AND COMPLETION**

#### **8.3.1 TIME OF THE ESSENCE**

Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

#### **8.3.2 NO COMMENCEMENT WITHOUT INSURANCE**

The Contractor shall not knowingly, except by agreement or instruction of the Owner, in writing, commence operations on the Site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor. The date of commencement of the Work shall not be changed by the effective date of such insurance.

#### **8.3.3 EXPEDITIOUS COMPLETION**

The Contractor shall proceed expeditiously to perform the Work, with adequate forces, labor, materials, equipment, services and management, and shall achieve Completion within the Contract Time.

#### **8.4 EXTENSIONS OF TIME - LIQUIDATED DAMAGES**

##### **8.4.1 CONDITIONS ALLOWING FOR EXTENSIONS OF TIME TO COMPLETE THE WORK, ONLY (EXCUSABLE DELAY)**

If Contractor exercises due diligence, but the critical path schedule of the Work is unavoidably delayed due to acts of God, acts of public enemy, acts of the Government, acts of the Owner or anyone employed by it, acts of another contractor in performance of a contract (other than this Contract) with the Owner, fires, floods, epidemics, quarantine restrictions, labor disputes, unusually severe weather, or delays of subcontractors due to such causes, the Owner shall extend the time to complete the Work if Contractor complies with Section 4.5 and Article 7. Owner shall take into consideration other relevant factors such as concurrent delays. Contractor has the burden of proving that any delay was excusable.

##### **8.4.2 COMPENSABLE DELAY (TIME AND MONEY)**

Compensable delays are those excusable delays for which Contractor is also entitled to money. To be compensable, an excusable delay must be one for which the Owner is responsible, where the delay was unreasonable under the circumstances involved, and where the delay was not within the contemplation of the parties; *however*, Contractor shall not be entitled to monetary compensation when (a) Contractor could have reasonably anticipated the delay and avoided or minimized the cost impacts of it, (b) there was a concurrent delay which does not qualify for monetary compensation under this paragraph, (c) the cause of the delay was reasonably unforeseen by the City or the delay was caused by factors beyond the control of the Owner, including but not limited to a delay under Section 2.2.8 above or a delay caused by a utility company's failure to perform despite Owner's reasonable arrangements for such performance; or (d) any other defense available to Owner under law or equity applies. Contractor has the burden of proving that any delay was excusable and compensable, including an analysis that establishes non-concurrency.

##### **8.4.3 NOTICE BY CONTRACTOR REQUIRED; PROCEDURES FOR DEMANDING ADDITIONAL TIME OR MONEY**

For notice and other required procedures related to requests by Contractor for additional time or money related to delay, Contractor shall comply with the Contract Documents, including but not limited to Sections 3.18 and 4.5, and Article 7, above.

##### **8.4.4 EARLY COMPLETION**

Regardless of the cause therefore, the Contractor may not maintain any Claim or cause of action against the Owner for damages incurred as a result of its failure or inability to complete its work on the Project 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 on the Project.

#### **8.4.5 LIQUIDATED DAMAGES**

Failure to Complete the Project within the time and in the manner provided for by the Contract Documents (i.e., by the Completion deadline) shall subject the Contractor to liquidated damages. For purposes of liquidated damages, the concept of “substantial completion” shall not constitute Completion and is not part of this agreement. The actual occurrence of damages and the actual amount of the damages which the Owner would suffer if the Project were not completed by the Completion deadline are dependent upon many circumstances and conditions which could prevail in various combinations and, from the nature of the case, it is impracticable and extremely difficult to fix the actual damages. Damages which the Owner would suffer in the event of delay include, but are not limited to, loss of the use of the Project, disruption of activities, costs of administration, supervision and the incalculable inconvenience and loss suffered by the public.

Accordingly, the parties agree that the amount set forth in the Agreement shall be presumed to be the amount of damages which the Owner shall directly incur upon failure of the Contractor to Complete the Project by the Completion deadline, during or as a result of each calendar day by which Completion of the Project is delayed beyond the Completion deadline as adjusted by Change Orders.

If the Contractor fails to Complete the Project by the Completion deadline as adjusted by Change Orders, and liquidated damages therefore accrue, the Owner, in addition to all other remedies provided by law, shall have the right to assess liquidated damages at any time, and to withhold liquidated damages (and any interest thereon) at any time from any and all retention or progress payments, which would otherwise be or become due the Contractor. In addition, if it is reasonably apparent to the Owner before the Completion deadline (as adjusted by Change Orders) that the Contractor cannot or will not complete the Work before that Completion deadline, Owner may assess and withhold, from retention or progress payments, the estimated amount of liquidated damages that will accrue in the future. If the retained percentage or withheld progress payments are not sufficient to discharge all liabilities of the Contractor incurred under this Article, the Contractor and its sureties shall continue to remain liable to the Owner until all such liabilities are satisfied in full.

If the Owner accepts any work or makes any payment under this Agreement after a default by reason of delays, the payment or payments shall in no respect constitute a waiver or modification of any Agreement provisions regarding time of Completion and liquidated damages.

#### **8.5 GOVERNMENT APPROVALS**

Owner shall not be liable for any delays or damages related to the time required to obtain government approvals.

## **ARTICLE 9**

### **PAYMENTS AND COMPLETION**

#### **9.1 CONTRACT SUM**

The Contract Sum is stated in the Agreement, later adjusted by Change Orders and Construction Change Directives, and is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

#### **9.2 COST BREAKDOWN**

##### **9.2.1 REQUIRED INFORMATION**

On forms approved by the Owner, the Contractor shall furnish the following:

- A. Within ten (10) days of the mailing, faxing or delivering of the Notice of Award of the Contract, a detailed breakdown of the Contract Sum (Schedule of Values) for each Project or Site. Each item in the schedule of values shall include its proper share of the overhead and profit.
- B. Within ten (10) days of the mailing, faxing or delivering of the Notice of Award of the Contract, a schedule of estimated monthly payment requests (cash flow) due the Contractor showing the values and construction time of the various portions of the Work to be performed by it and by its Subcontractors or material and equipment suppliers containing such supporting evidence as to its correctness as the Owner may require;
- C. Five (5) days prior to the submission of a pay request, an itemized breakdown of work done for the purpose of requesting partial payments;
- D. Within ten (10) days of the mailing, faxing or delivering of the Notice of Award of the Contract, the name, address, telephone number, fax number, license number, and classification of all of its Subcontractors and of all other parties furnishing labor, material, or equipment for its Contract, along with the amount of each such subcontract or the price of such labor, material, and equipment needed for its entire portion of the Work.

##### **9.2.2 OWNER ACCEPTANCE REQUIRED**

The Owner shall review all submissions received pursuant to paragraph 9.2.1 in a timely manner.



All submissions must be accepted by the Owner before becoming the basis of any payment.

### 9.3 APPLICATIONS FOR PAYMENT

#### 9.3.1 PROCEDURE

On or before the fifth (5th) day of each calendar month during the progress of the portion of the Work for which payment is being requested, the Contractor shall submit to the Architect, unless there is a construction manager for the Project or the Owner directs otherwise, an itemized Application for Payment for operations completed in accordance with the Schedule of Values through the end of the previous calendar month. Such application shall be notarized, if required, and supported by the following or such portion thereof as the applicable entity requires:

- A. The amount paid to the date of the Application to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;
- B. The amount being requested with the Application for Payment by the Contractor on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;
- C. The balance that will be due to each of such entities after said payment is made;
- D. A certification that the Record Drawings and Annotated Specifications are current;
- E. The Owner approved additions to and subtractions from the Contract Sum and Time;
- F. A summary of the retentions (each Application shall provide for retention, as set out in Article 9.6);
- G. Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the Owner may require from time to time;
- H. The percentage of completion of the Contractor's Work by line item;
- I. A statement showing all payments made by the Contractor for labor and materials on account of the Work covered in the preceding Application for Payment. Such applications shall not include requests for payment of amounts the Contractor does not intend to pay to subcontractors or others because of a dispute or other reason; and
- J. Contractor's monthly reports, daily reports, and monthly schedule updates for all months of Work prior to the Application for Payment that Contractor has not previously submitted.

### **9.3.2 PURCHASE OF MATERIALS AND EQUIPMENT**

As the Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from Owner, to assure that there will be no delays, payment by the Owner for stored material shall be made only in unusual circumstances where the Architect specifically recommends, and Owner specifically approves the payment in writing. If payments are to be made on account of materials and equipment not incorporated in the Work, but delivered and suitably stored at the Site or at some other location agreed upon in writing by the Owner, the payments shall be conditioned upon submission by the Contractor, Subcontractor, or vendor of bills of sale and such other documents satisfactory to the Owner to establish the Owner's title to such materials or equipment free of all liens and encumbrances, and otherwise protect the Owner's interest, including, without limitation, provision of applicable insurance and transportation to the Site. All stored items shall be inventoried, specified by identification numbers (if applicable), released to the Owner by sureties of the Contractor and the Subcontractor and, if stored off-Site, stored only in a bonded warehouse.

### **9.3.3 WARRANTY OF TITLE**

The Contractor warrants that title to all work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the work. Transfer of title to work does not constitute a waiver by Owner of any defects in the work.

## **9.4 REVIEW OF PROGRESS PAYMENT**

### **9.4.1 OWNER ACCEPTANCE**

The Owner will, within seven (7) days after receipt of the Contractor's Application for Payment, either accept such payment or notify the Contractor in writing of the Owner's reasons for withholding acceptance in whole or in part as provided in paragraph 9.5.1.

### **9.4.2 OWNER'S REVIEW**

The review of the Contractor's Application for Payment by the Owner will be based, at least in part, on the Owner's observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated. The review is also subject to an evaluation of the Work for conformance with the Contract Documents, to results of subsequent tests and inspections, to minor deviations from the Contract Documents correctable prior to completion, and to specific qualifications expressed by the Owner. The Owner may reject the Application for Payment if it is not complete under section 9.3. The issuance of a Certificate for

Payment will constitute a representation that the Contractor is entitled to payment in the amount certified, subject to any specific qualifications Owner expresses in the Certificate for Payment. However, Contractor's entitlement to payment may be affected by subsequent evaluations of the Work for conformance with the Contract Documents, test and inspections and discovery of minor deviations from the Contract Documents correctable prior to completion. The issuance of a Certificate for Payment will not be a waiver by the Owner of any defects in the work covered by the Application for Payment, nor will it be a representation that the Owner has:

- A. Made exhaustive or continuous on-Site inspections to check the quality or quantity of the Work;
- B. Reviewed construction means, methods, techniques, sequences, or procedures;
- C. Reviewed copies of requisitions received from Subcontractors, material and equipment suppliers, and other data requested by the Owner to substantiate the Contractor's right to payment; or
- D. Made an examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

## 9.5 DECISIONS TO WITHHOLD PAYMENT

### 9.5.1 REASONS TO WITHHOLD PAYMENT

The Owner may withhold from a progress payment, in whole or in part, to such extent as may be necessary to protect the Owner due to any of the following:

- A. Defective or incomplete Work not remedied;
- B. Stop Payment Notices. For any stop payment notice, the Owner shall withhold the amount stated in the stop payment notice, the stop notice claimant's anticipated interest and court costs and 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, Owner 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 Owner for the estimated reasonable cost of litigation. However, if (1) the Contractor at its sole expense provides a bond or other security satisfactory to the Owner in the amount of at least one hundred twenty-five percent (125%) of the claim, in a form satisfactory to the Owner, which protects the Owner against such claim, and (2) the Owner chooses to accept the bond, then Owner would release the stop payment notice funds withheld to the Contractor, except that Owner 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.

- C. Liquidated damages against the Contractor, whether already accrued or estimated to accrue in the future;
- D. Reasonable doubt that the Work can be completed for the unpaid balance of any Contract Sum or by the completion date;
- E. Damage to the property or work of the Owner, another contractor, or subcontractor;
- F. Unsatisfactory prosecution of the Work by the Contractor;
- G. Failure to store and properly secure materials;
- H. Failure of the Contractor to submit on a timely basis, proper and sufficient documentation required by the Contract Documents, including, without limitation, monthly progress schedules, shop drawings, submittal schedules, schedule of values, product data and samples, proposed product lists, executed change orders, and verified reports;
- I. Failure of the Contractor to maintain record drawings;
- J. Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment;
- K. Unauthorized deviations from the Contract Documents;
- L. Failure of the Contractor to prosecute the Work in a timely manner in compliance with established progress schedules and completion dates;
- M. Subsequently discovered evidence or observations nullifying the whole or part of a previously issued Certificate for Payment;
- N. Failure by Contractor to pay Subcontractors or material suppliers as required by Contract or law, which includes but is not limited to Contractor's failure to pay prevailing wage and any assessment of statutory penalties;
- O. Overpayment to Contractor on a previous payment;
- P. Credits owed to Owner for reduced scope of work or work that Contractor will not perform;
- Q. The estimated cost of performing work pursuant to Section 2.4;
- R. Actual damages related to false claims by Contractor;
- S. Breach of any provision of the Contract Documents;

- T. Owner's potential or actual loss, liability or damages caused by the Contractor; and
- U. As permitted by other provisions in the Contract or as otherwise allowed by law, including statutory penalties Owner or other entities assessed against Contractor. (See e.g., Labor Code section 1813 (working hours) or Public Contract Code section 4110 (subcontractor listings and substitutions))

Owner may, but is not required to, provide to Contractor with the progress payment written notice of the items for which Owner is withholding amounts from the payment. To claim wrongful withholding by the Owner, or if Contractor otherwise disputes any amount being withheld, Contractor must submit an inquiry in writing to Owner within thirty (30) days of receipt of the notice, and Owner shall respond within fifteen (15) days of receipt of the inquiry. If any disputed issues remain unresolved after Owner's response, Contractor shall timely submit a Claim pursuant to Section 4.5.

For any withhold amount based on an estimate where the actual amount later becomes known and certain, no later than the final accounting for the Project the Owner will release any amount withheld over that certain and known amount. If the certain and known amount exceeds the amount previously withheld, Owner may withhold additional amounts from Contractor to cover the excess amount. If available funds are not sufficient, Contractor shall pay Owner the difference.

#### **9.5.2 PAYMENT AFTER CURE**

When Contractor removes or cures the grounds for withholding amounts, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

#### **9.5.3 OVERPAYMENT AND/OR FAILURE TO WITHHOLD**

Neither Owner's overpayment to Contractor, nor Owner's failure to withhold an amount from payment that Owner had the right to withhold, shall constitute a waiver by Owner of its rights to withhold those amounts from future payments to Contractor or to otherwise pursue recovery of those amounts from Contractor.

### **9.6 PROGRESS PAYMENTS**

#### **9.6.1 PAYMENTS TO CONTRACTOR**

Unless otherwise stated in the Contract Documents, within thirty (30) days after receipt of an undisputed and properly submitted Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the undisputed value of the Work performed up to the last day of the previous month, less the aggregate of previous payments; and Owner shall retain the

other five percent (5%) of the undisputed value of the Work. 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 bondsman, from damages arising from such Work or from enforcing each and every provision of this Contract, and the Owner shall have the right subsequently to correct any error made in any estimate for payment. Contractor shall base an Application for Payment only on the original Contract Sum plus any fully executed and Board-approved Change Orders. Contractor shall not include Notices of Potential Claims, CORs, Claims or disputed amounts.

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 Owner concerning the Work, or any portion thereof, remains uncomplished with. Payment shall not be a waiver of any such direction.

#### **9.6.2 PAYMENTS TO SUBCONTRACTORS**

No later than ten (10) days after receipt of payment from Owner, pursuant to Business and Professions Code section 7108.5, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

#### **9.6.3 PERCENTAGE OF COMPLETION OR PAYMENT INFORMATION**

The Owner will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor, and action taken thereon by the Owner, on account of portions of the Work done by such Subcontractor.

#### **9.6.4 NO OBLIGATION OF OWNER FOR SUBCONTRACTOR PAYMENT**

The Owner shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

#### **9.6.5 PAYMENT TO SUPPLIERS**

Payment to material or equipment suppliers shall be treated in a manner similar to that provided in paragraphs 9.6.2, 9.6.3 and 9.6.4.

#### **9.6.6 PAYMENT NOT CONSTITUTING APPROVAL OR ACCEPTANCE**

An accepted Application for Payment, issuance of a Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance or approval of any portion of the Work, especially any Work not in accordance with the Contract Documents.

### 9.6.7 JOINT CHECKS

Owner shall have the right, if necessary for the protection of the Owner, 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, Owner has no duty to issue joint checks. In no event shall any joint check payment be construed to create any contract between the Owner and a Subcontractor of any tier, any obligation from the Owner to such Subcontractor, or rights in such Subcontractor against the Owner.

## 9.7 COMPLETION OF THE WORK

### 9.7.1 CLOSE-OUT PROCEDURES

When the Contractor considers that the Work is complete and submits a written notice to Owner requesting an inspection of the Work, the Owner shall review the Work and prepare and submit to the Contractor a comprehensive list of items to be completed or corrected (the "Punch List"). The Contractor and/or its Subcontractors shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on the Punch List does not alter the responsibility of the Contractor to complete all Work (including the omitted item) in accordance with the Contract Documents, and to complete or correct the work so long as the statute of limitations (or repose) has not run.

When the Contractor believes the Punch List work is complete and in accordance with the Contract Documents, it shall then submit a request for an additional inspection by the Owner to determine completion. Owner shall again inspect the Work and inform the Contractor of any items that are incomplete or incorrect. Contractor shall promptly complete or correct items until no items remain. After the Work, including all Punch List work, is inspected and informally deemed by the Owner to be complete, the Owner's governing body may formally accept the Work as complete at a meeting of the governing body. Warranties required by the Contract Documents shall commence on the date of Contractor's completion of the Work.

### 9.7.2 COSTS OF MULTIPLE INSPECTIONS

More than two (2) requests by Contractor to make inspections to confirm completion as required under paragraph 9.7.1 shall be considered an additional service of Owner, and all subsequent costs will be invoiced to Contractor and withheld from remaining payments.

## 9.8 PARTIAL OCCUPANCY OR USE

The Owner may occupy or use any completed, or partially completed, portion of the Work at any stage prior to acceptance, or prior to completion if there is no formal acceptance. Occupancy or use of any portion of the Work, or the whole Work, shall not constitute approval or acceptance of it, nor shall such occupancy or use relieve Contractor of any of its obligations under the Contract Documents regarding that portion of, or the whole, Work.

The Owner 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, and the commencement of warranties required by the Contract Documents. When the Contractor considers a portion complete, the Contractor may request an inspection of that portion and preparation of a Punch List by the Owner for that portion, as set forth for the entire Work under paragraph 9.7.1; however, such inspection and Punch List shall not act as any form of approval or acceptance of that portion of the Work, or of any Work not complying with the requirements of the Contract, and that portion shall be subject to subsequent inspections and Punch Lists.

Immediately prior to such partial occupancy or use, the Owner, the Architect and the Contractor 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.

## **9.9 FINAL PROGRESS PAYMENT AND RELEASE OF RETENTION**

### **9.9.1 FINAL APPLICATION FOR PROGRESS PAYMENT**

When, pursuant to Section 9.7.1, the Owner finds all of the Work is completed in accordance with the Contract Documents, it shall so notify Contractor, who shall then submit to the Owner its final Application for Payment.

Upon receipt and approval of such final Application for Payment, the Owner shall issue a final Certificate of Payment, based on its knowledge, information, and belief, and on the basis of its observations, inspections, and all other data accumulated or received by the Owner in connection with the Work, that such Work has been completed in accordance with the Contract Documents.

### **9.9.2 PROCEDURES FOR APPLICATION FOR FINAL PROGRESS PAYMENT**

The Application for Final Progress Payment pursuant to Section 9.9.1 shall be accompanied by the same details as set forth in paragraph 9.3, and in addition, the following conditions must be fulfilled:

- A. The Work shall be complete, and the Contractor shall have made, or caused to have been made, all corrections to the Work which are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of Owner required under the Contract.
- B. Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work, and Contractor delivered them to the Owner.
- C. The Contractor shall deliver to the Owner (i) reproducible final Record Drawings and Annotated Specifications showing the Contractor's Work "as built," with the Contractor's certification of the accuracy of the Record Drawings and Annotated



Specifications, (ii) all warranties and guarantees, (iii) operation and maintenance instructions, manuals and materials for equipment and apparatus, and (iv) all other documents required by the Contract Documents.

- D. Contractor shall provide extensive assistance in the utilization of any equipment or system such as initial start-up or testing, adjusting and balancing, preparation of operation and maintenance manuals and training personnel for operation and maintenance.

Acceptance of Final Progress Payment shall constitute a complete waiver of Claims except for those previously identified in writing and identified by that payee as unsettled at the time of Final Progress Payment.

### 9.9.3 RELEASE OF RETAINAGE

Owner may withhold from release or payment of retainage (or “retention”) up to 150% of disputed amounts listed in Section 9.5. If retainage is held in an escrow account pursuant to an escrow agreement under Public Contract Code section 22300 (see Section 9.10) and Owner withholds from release of retainage based on a breach of the Contract, or other default, by Contractor, Owner may withdraw the withheld retainage from the escrow account. Owner shall release the undisputed retainage within sixty (60) days after completion of the Work. For this purpose, “completion” is defined in Public Contract Code section 7107(c). No interest shall be paid on any retainage, or on any amounts withheld, except as provided to the contrary in any Escrow Agreement and General Conditions between the Owner and the Contractor under Public Contract Code section 22300.

### 9.10 SUBSTITUTION OF SECURITIES

In accordance with section 22300 of the Public Contract Code, the Owner will permit the substitution of securities for any retention monies withheld by the Owner to ensure performance under the Contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the Owner, or with a state or federally chartered bank as the escrow agent, who shall then pay such retention monies to the Contractor. Upon completion of the Contract, the securities shall be returned to the Contractor if Owner has no basis to withhold under the Contract Documents.

Securities eligible for investment under this section shall include those listed in Government Code section 16430, bank or savings and loan certificates of deposit, interest-bearing, demand-deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the Owner.

The Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

Any escrow agreement entered by Owner and Contractor pursuant to Public Contract Code section 22300, shall be substantially similar to the form set forth in Public Contract Code section 22300.

## **ARTICLE 10**

### **PROTECTION OF PERSONS AND PROPERTY**

#### **10.1 SAFETY PRECAUTIONS AND PROGRAMS**

##### **10.1.1 CONTRACTOR RESPONSIBILITY**

The Contractor shall have responsibility for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. Each Contractor shall designate a responsible member of its organization whose duties shall include loss and accident prevention, and who shall have the responsibility and full authority to enforce the program. This person shall attend meetings with the representatives of the various Subcontractors employed to ensure that all employees understand and comply with the programs. Contractor will ensure that his employees and Subcontractors cooperate and coordinate safety matters with any other contractors to form a joint safety effort.

##### **10.1.2 SUBCONTRACTOR RESPONSIBILITY**

Subcontractors have the responsibility for participating in, and enforcing, the safety and loss prevention programs established by the Contractor for the Project, which will cover all Work performed by the Contractor and its Subcontractors. Each Subcontractor shall designate a responsible member of its organization whose duties shall include loss and accident prevention, and who shall have the responsibility and full authority to enforce the program. This person shall attend meetings with the representatives of the various Subcontractors employed to ensure that all employees understand and comply with the programs.

##### **10.1.3 COOPERATION**

All Subcontractors and material or equipment suppliers, shall cooperate fully with Contractor, the Owner, and all insurance carriers and loss prevention engineers.

##### **10.1.4 ACCIDENT REPORTS**

Subcontractors shall promptly report in writing to the Contractor all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or off the Site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger. Contractor shall thereafter promptly report the facts in writing to the Owner giving full details of the accident.

### 10.1.5 FIRST-AID SUPPLIES AT SITE

The Contractor will provide and maintain at the Site first-aid supplies for minor injuries.

## 10.2 SAFETY OF PERSONS AND PROPERTY

### 10.2.1 THE CONTRACTOR

The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

- A. Employees on the Work and other persons who may be affected thereby;
- B. The Work, material, and equipment to be incorporated therein, whether in storage on or off the Site, under the care, custody, or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- C. Other property at the Site or adjacent thereto such as trees, shrubs, lawns, walks, pavement, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

### 10.2.2 CONTRACTOR NOTICES

The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury, or loss.

### 10.2.3 SAFETY BARRIERS AND SAFEGUARDS

The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

### 10.2.4 USE OR STORAGE OF HAZARDOUS MATERIAL

When use or storage of explosives, other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Contractor shall notify the Owner any time that explosives or hazardous materials are expected to be stored on Site. Location of storage shall be coordinated with the Owner and local fire authorities.

### 10.2.5 FINGERPRINTING

At its own expense, Contractor shall comply with all fingerprinting requirements under law and Contract, including but not limited to the requirements of Education Code section 45125.2 and the Independent Contractor Student Contact Form which is a part of the Contract. Contractor

shall hold harmless, defend and indemnify the Owner under section 3.16, for any costs, including attorneys' fees, Owner incurs from Contractor's failure to comply.

### **10.3 PROTECTION OF WORK AND PROPERTY**

#### **10.3.1 PROTECTION OF WORK**

The Contractor and Subcontractors shall continuously protect the Work, the Owner's property, and the property of others, from damage, injury, or loss until formal acceptance of the Work or completion of the Work if there is no formal acceptance of the Work. The Contractor and Subcontractors shall make good any such damage, injury, or loss, except such as may be solely due to, or caused by, agents or employees of the Owner.

#### **10.3.2 PROTECTION FOR ELEMENTS**

The Contractor will remove all mud, water, or other elements as may be required for the proper protection and prosecution of its Work. The Contractor shall at all times provide heat, coverings, and enclosures necessary to maintain adequate protection against weather so as to preserve the Work, materials, equipment, apparatus, and fixtures free from injury or damage.

#### **10.3.3 SHORING AND STRUCTURAL LOADING**

The Contractor shall not impose structural loading upon any part of the Work under construction or upon existing construction on or adjacent to the Site in excess of safe limits, or loading such as to result in damage to the structural, architectural, mechanical, electrical, or other components of the Work. The design of all temporary construction equipment and appliances used in construction of the Work and not a permanent part thereof, including, without limitation, hoisting equipment, cribbing, shoring, and temporary bracing of structural steel, is the sole responsibility of the Contractor. All such items shall conform to the requirements of governing codes and all laws, ordinances, rules, regulations, and orders of all authorities having jurisdiction. The Contractor shall take special precautions, such as shoring of masonry walls and temporary tie bracing of structural steel work, to prevent possible wind damage during construction of the Work. The installation of such bracing or shoring shall not damage or cause damage to the Work in place or the Work installed by others. Any damage which does occur shall be promptly repaired by the Contractor at no cost to the Owner.

#### **10.3.4 CONFORMANCE WITHIN ESTABLISHED LIMITS**

The Contractor and Subcontractors shall confine their construction equipment, the storage of materials, and the operations of workers to the limits indicated by laws, ordinances, permits, and the limits established by the Owner, and shall not unreasonably encumber the premises with construction equipment or materials.

#### **10.3.5 SUBCONTRACTOR ENFORCEMENT OF RULES**

Subcontractors shall enforce the Owner's and the Contractor's instructions, laws, and regulations regarding signs, advertisements, fires, smoking, the presence of liquor, and the presence of firearms by any person at the Site.

#### **10.3.6 SITE ACCESS**

The Contractor and the Subcontractors shall use only those ingress and egress routes designated by the Owner, observe the boundaries of the Site designated by the Owner, park only in those areas designated by the Owner, which areas may be on or off the Site, and comply with any parking control program established by the Owner such as furnishing license plate information and placing identifying stickers on vehicles.

#### **10.3.7 PROTECTION OF MATERIALS**

The Contractor and the Subcontractors shall receive, count, inspect for damage, record, store, and protect construction materials for the Work and Subcontractors shall promptly send to the Contractor evidence of receipt of such materials, indicating thereon any shortage, change, or damage (failure to so note shall constitute acceptance by the Subcontractor of financial responsibility for any shortage).

### **10.4 EMERGENCIES**

#### **10.4.1 EMERGENCY ACTION**

In an emergency affecting the safety of persons or property, the Contractor shall take any action necessary, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional money or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Section 4.5 and Article 7.

#### **10.4.2 ACCIDENT REPORTS**

The Contractor shall promptly report in writing to the Owner all accidents arising out of or in connection with the Work, which caused death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner.

### **10.5 HAZARDOUS MATERIALS**

#### **10.5.1 DISCOVERY OF HAZARDOUS MATERIALS**

In the event the Contractor encounters or suspects the presence on the Site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or any other material defined as being hazardous by section 25249.5 of the California Health and Safety Code, which (a) has not been rendered harmless, and (b) the handling or removal of which is not within the scope of the Work, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and the Architect in writing, whether or not such material was generated by the

Contractor or the Owner. The Work in the affected area shall not thereafter be resumed, except by written agreement of the Owner and the Contractor, if in fact the material is asbestos, polychlorinated biphenyl (PCB), or other hazardous material, and has not been rendered harmless. The Work in the affected area shall be resumed only in the absence of asbestos, polychlorinated biphenyl (PCB), or other hazardous material, or when it has been rendered harmless by written agreement of the Owner and the Contractor.

#### **10.5.2 HAZARDOUS MATERIAL WORK LIMITATIONS**

In the event that the presence of hazardous materials is suspected or discovered on the Site, the Owner shall retain an independent testing laboratory to determine the nature of the material encountered and whether corrective measures or remedial action is required. The Contractor shall not be required pursuant to Article 7 to perform without consent any Work in the affected area of the Site relating to asbestos, polychlorinated biphenyl (PCB), or other hazardous material, until any known or suspected hazardous material has been removed, or rendered harmless, or determined to be harmless by Owner, as certified by an independent testing laboratory and/or approved by the appropriate government agency.

#### **10.5.3 INDEMNIFICATION BY OWNER FOR HAZARDOUS MATERIAL NOT CAUSED BY CONTRACTOR**

In the event the presence of hazardous materials on the Site is not caused by the Contractor, Owner shall pay for all costs of testing and remediation, if any, and shall compensate Contractor for any additional costs incurred or Project delay in accordance with the applicable provisions of Article 7 herein. Owner shall defend, indemnify and hold harmless the Contractor and its agents, officers, directors and employees from and against any and all claims, damages, losses, costs and expenses incurred in connection with or arising out of, or relating to, the performance of the Work in the area affected by the hazardous material, except to the extent the claims, damages, losses, costs, or expenses were caused by Contractor's active negligence, sole negligence or willful misconduct. By providing this indemnification, District does not waive any immunities.

#### **10.5.4 INDEMNIFICATION BY CONTRACTOR FOR HAZARDOUS MATERIAL CAUSED BY CONTRACTOR**

In the event the presence of hazardous materials on the Site is caused by Contractor, Subcontractors, materialmen or suppliers, the Contractor shall pay for all costs of testing and remediation, if any, and shall compensate the Owner for any additional costs incurred as a result of the generation of hazardous material on the Project Site. In addition, the Contractor shall defend, indemnify and hold harmless Owner and its agents, officers, and employees from and against any and all claims, damages, losses, costs and expenses incurred in connection with, arising out of, or relating to, the presence of hazardous material on the Site, except to the extent the claims, damages, losses, costs, or expenses were caused by Owner's active negligence, sole negligence or willful misconduct.

#### **10.5.5 TERMS OF HAZARDOUS MATERIAL PROVISION**

The terms of this Hazardous Material provision shall survive the completion of the Work and/or any termination of this Contract.

#### **10.5.6 ARCHEOLOGICAL MATERIALS**

In the event the Contractor encounters or reasonably suspects the presence on the Site of archeological materials, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and the Architect in writing. The Work in the affected area shall not thereafter be resumed, except after Contractor's receipt of written notice from the Owner.

### **ARTICLE 11**

#### **INSURANCE AND BONDS**

##### **11.1. CONTRACTOR'S LIABILITY INSURANCE**

###### **11.1.1 LIABILITY INSURANCE REQUIREMENTS**

11.1.1 By the earlier of the deadline set forth in the Instructions to Bidders or the commencement of the Work and within limits acceptable to the Owner, the Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in California as admitted carriers with a financial rating of at least A+, Class XII status as rated in the most recent edition of Best's Insurance Reports such commercial general liability insurance per occurrence for bodily injury, personal injury and property damage as set forth in the Agreement and automobile liability insurance per accident for bodily injury and property damage combined single limit as set forth in the Agreement 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:

- 11.1.1.1 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;
- 11.1.1.2 claims for damages arising from personal or advertising injury in a form at least as broad as ISO Form CG 0001 11188;
- 11.1.1.3 claims for damages because of injury or destruction of tangible property, including loss of use resulting therefrom, arising from operations under the Contract Documents; and

- 11.1.1.4 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
- 11.1.1.5 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
- 11.1.1.6 claims involving Completed Operations, Independent Contractors' coverage, and Broad Form property damage, without any exclusions for collapse, explosion, demolition, underground coverage, and excavating. (XCU)

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 Owner) or the general aggregate limit shall be twice the required occurrence limit.

Any deductible or self-insured retention must be declared to and approved by the Owner. At the option of the Owner, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Owner, 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.

#### **11.1.2 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 a company or companies lawfully authorized to do business in California as admitted carriers with a financial rating of at least A+, Class XII status as rated in the most recent edition of Best's Insurance Reports, in like amounts and scope of coverage.

#### **11.1.3 OWNER'S INSURANCE**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance. Optionally, the Owner may purchase and maintain other insurance for self protection against claims which may arise from operations under the Contract. The Contractor shall not be responsible for purchasing and maintaining this optional Owner's liability insurance unless specifically required by the Contract Documents.

#### **11.1.4 ADDITIONAL INSURED ENDORSEMENT REQUIREMENTS**

The Contractor shall name, on any policy of insurance, the Owner and the Architect as additional insureds. Subcontractors shall name the Contractor, the Owner and the Architect 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.

#### 11.1.5 WORKERS' COMPENSATION INSURANCE

During the term of this Contract, the Contractor shall provide workers' compensation insurance for all of the Contractor's employees engaged in Work under this Contract on or at the site of the Project and, in case any of the Contractor's work is sublet, the Contractor shall require the Subcontractor to provide workers' compensation insurance for all the Subcontractor'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 this Contract on or at the site of the Project is not protected under the Workers' Compensation laws, the Contractor shall provide or cause a Subcontractor to provide adequate insurance coverage for the protection of those employees not otherwise protected. The Contractor shall file with the Owner certificates of insurance as required under this Article and in compliance with Labor Code section 3700.

If the contractor fails to maintain such insurance, the Owner may take out compensation insurance which the Owner might be liable to pay under the provisions of the Act by reason of an employee of the Contractor being injured or killed, and withhold from progress payments and/or retention the amount of the premium for such insurance.

#### 11.1.6 BUILDER'S RISK/"ALL RISK" INSURANCE

11.1.6.1 *COURSE-OF-CONSTRUCTION INSURANCE REQUIREMENTS.* Unless provided by Owner at Owner's sole discretion, Contractor, during the progress of the Work and until final acceptance of the Work by Owner upon completion of the entire Contract, shall maintain Builder's Risk/Course-of-Construction insurance satisfactory to the Owner, issued on a completed value basis on all insurable Work included under the Contract Documents. This insurance shall insure against all risks, including but not limited to the following perils: vandalism, theft, malicious mischief, fire, sprinkler leakage, civil authority, sonic boom, explosion, collapse, flood, earthquake (for projects not solely funded through revenue bonds, limited to earthquakes equivalent to or under 3.5 on the Richter Scale in magnitude), wind, hail, lightning, smoke, riot or civil commotion, debris removal (including demolition) and reasonable compensation for the Architect's services and expenses required as a result of such insured loss. This insurance shall provide coverage in an amount not less than the full cost to repair, replace or reconstruct the Work. Such insurance shall include the Owner, the Architect, and any other person or entity with an insurable interest in the Work as an additional named insured.

The Contractor shall submit to the Owner for its approval all items deemed to be uninsurable under the Builder's Risk/Course-of Construction insurance. The risk of the damage to the Work due to the perils covered by the Builder's Risk/Course-of-Construction insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the surety,

and no claims for such loss or damage shall be recognized by the Owner, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

#### **11.1.7 CONSENT OF INSURER FOR PARTIAL OCCUPANCY OR USE**

Partial occupancy or use in accordance with the Contract Documents shall not commence until the insurance company providing property insurance has consented to such partial occupancy or use by endorsement or otherwise. The Owner 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.

#### **11.1.8 FIRE INSURANCE**

Before the commencement of the Work, the Contractor shall procure, maintain, and cause to be maintained at the Contractor's expense, fire insurance on all Work included under the Contract Documents, insuring the full replacement value of such Work as well as the cost of any removal and demolition necessary to replace or repair all Work damaged by fire. The amount of fire insurance shall be subject to approval by the Owner and shall be sufficient to protect the Project against loss or damage in full until the Work is accepted by the Owner. Should the Work being constructed be damaged by fire or other causes during construction, it shall be replaced in accordance with the requirements of the drawings and specifications without additional expense to the Owner.

#### **11.1.9 OTHER INSURANCE**

The Contractor shall provide all other insurance required to be maintained under applicable laws, ordinances, rules, and regulations.

#### **11.1.10 PROOF OF CARRIAGE OF INSURANCE**

The Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract until all required insurance, certificates, and an Additional Insured Endorsement and Declarations Page have been obtained and delivered in duplicate to the Owner for approval subject to the following requirements:

- (a) Certificates and insurance policies shall include the following clause:

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 the Owner. Date of cancellation or reduction may not be less than thirty (30) days after the date of mailing notice.

- (b) Certificates of insurance shall state in particular those insured, the extent of insurance, location and operation to which the insurance applies, the expiration date, and cancellation and reduction notices.

- (c) Certificates of insurance shall clearly state that the Owner, the Architect and the Construction Manager are named as additional insureds under the policy described and that such insurance policy shall be primary to any insurance or self-insurance maintained by Owner and any other insurance carried by the Owner with respect to the matters covered by such policy shall be excess and non-contributing.
- (d) The Contractor and its Subcontractors shall produce a certified copy of any insurance policy required under this Section upon written request of the Owner.

#### 11.1.11 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 Owner and the Architect.

### 11.2 PERFORMANCE AND PAYMENT BONDS

#### 11.2.1 BOND REQUIREMENTS

Unless otherwise specified in the Contract Documents, prior to commencing any portion of the Work, the Contractor shall apply for and furnish Owner separate payment and performance bonds for its portion of the Work which shall cover 100% faithful performance of and payment of all obligations arising under the Contract Documents and/or guaranteeing the payment in full of all claims for labor performed and materials supplied for the Work. All bonds shall be provided by a corporate surety authorized and admitted to transact business in California. All bonds shall be submitted on the Owner's approved form.

To the extent, if any, that the Contract Sum is increased in accordance with the Contract Documents, the Contractor shall cause the amount of the bonds to be increased accordingly and shall promptly deliver satisfactory evidence of such increase to the Owner. To the extent available, the bonds shall further provide that no change or alteration of the Contract 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 the Contractor will release the surety. If the Contractor fails to furnish the required bond, the Owner may terminate the Contract for cause.

#### 11.2.2 SURETY QUALIFICATION

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 Owner 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. Owner 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 the Owner.

## **ARTICLE 12**

### **UNCOVERING AND CORRECTION OF WORK**

#### **12.1 UNCOVERING OF WORK**

##### **12.1.1 UNCOVERING WORK FOR REQUIRED INSPECTIONS**

If a portion of the Work is covered contrary to the Owner's request or to requirements specifically expressed in the Contract Documents, Contractor must, if required in writing by the Owner, uncover it for the Owner's observation and replace the removed work at the Contractor's expense without change in the Contract Sum or Time.

##### **12.1.2 COSTS FOR INSPECTIONS NOT REQUIRED**

If a portion of the Work has been covered which the Owner has not specifically requested to observe prior to its being covered, the Owner may request to see such work, and it shall be uncovered by the Contractor. If such work is in accordance with the Contract Documents, costs of uncover and replacement shall, by appropriate Change Order, be paid by the Owner. If such work is not in accordance with Contract Documents, the Contractor shall pay such costs, unless the condition was caused by the Owner or a separate contractor, in which event the Owner shall be responsible for payment of such costs to the Contractor.

#### **12.2 CORRECTION OF WORK; WARRANTY**

##### **12.2.1 CORRECTION OF REJECTED WORK**

The Contractor shall promptly correct the work rejected by the Owner for failing to conform to the requirements of the Contract Documents, until the statutes of limitation (or repose) and all warranties have run, as applicable, and whether or not fabricated, installed or completed. The Contractor shall bear costs of correcting the rejected work, including additional testing, inspections, and compensation for the Owner's expenses and costs incurred.

##### **12.2.2 REMOVAL OF NONCONFORMING WORK**

The Contractor shall remove from the Site portions of the Work which are not in accordance with the requirements of the Contract Documents and are not corrected by the Contractor or accepted or approved by the Owner.

##### **12.2.3 OWNER'S RIGHTS IF CONTRACTOR FAILS TO CORRECT**

If the Contractor fails to correct nonconforming work within a reasonable time, the Owner may correct it in accordance with Section 2.4. As part of Owner's correction of the work, the Owner

may remove any portion of the nonconforming Work and store any salvageable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten (10) days after written notice, the Owner may upon ten (10) additional days written notice sell such material or equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Architect's and other professionals and representatives' services and expenses, made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contractor shall be invoiced for the deficiency or Owner may withhold such costs from payment pursuant to Section 9.5. If progress payments or retention then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

#### **12.2.4 COST OF CORRECTING THE WORK**

The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or separate contractors, whether completed or partially completed, caused by the Contractor's correction or removal of the nonconforming work.

#### **12.2.5 WARRANTY CORRECTIONS (INCLUDES REPLACEMENT)**

Pursuant to the warranty in Section 3.5, if within one (1) year after the completion of the Work or within a longer time period for an applicable special warranty or guarantee required by the Contract Documents, any of the Work does not comply with the Contract Documents, the Contractor shall correct it after receipt of Owner's written notice to do so, unless the Owner has previously waived in writing such right to demand correction. Contractor shall correct the Work promptly, and passage of the applicable warranty period shall not release Contractor from its obligation to correct the Work if Owner provided the written notice within the applicable warranty period. Contractor's obligation to correct the warranty item continues until the correction is made. After the correction is made to Owner's satisfaction, a new warranty period of the same length as the original warranty period shall run on the corrected work. The obligations under this paragraph 12.2.5 shall survive acceptance of the Work under the Contract and termination of the Contract.

#### **12.2.6 NO TIME LIMITATION**

Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the time period of one (1) year as described in Section 12.2.5 relates only to the specific warranty obligation of the Contractor to correct the Work after the date of commencement of warranties under Sections 3.5 and 9.7.1, and has, for example, no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, or to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### **12.3 NONCONFORMING WORK AND WITHHOLDING THE VALUE OF IT**

If it is found at any time before completion of the Work that the Contractor has varied from the Contract Documents in materials, quality, form, finish, or in the amount or value of the materials or labor used, the Owner may, in addition to other remedies in the Contract Documents or under law and as allowed by law, accept the improper work. The Owner may withhold from any amount due or to become due Contractor that sum of money equivalent to the difference in value between the Work performed and that called for by the Drawings and Specifications. The Owner shall determine such difference in value. No structural related work shall be accepted that is not in conformance with the Contract Documents.

## **ARTICLE 13**

### **MISCELLANEOUS PROVISIONS**

#### **13.1 GOVERNING LAW**

The Contract shall be governed by the law of the place where the Project is located.

#### **13.2 SUCCESSORS AND ASSIGNS**

The Owner and the Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole or in part without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

#### **13.3 WRITTEN NOTICE**

In the absence of specific notice requirements in the Contract Documents, written notice shall be deemed to have been duly served if delivered in person to the individual, member of the firm or entity, or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified or overnight mail to the last business address known to the party giving notice. Owner shall, at Contractor's cost, timely notify Contractor of Owner's receipt of any third party claims relating to the Contract pursuant to Public Contract Code section 9201.

#### **13.4 RIGHTS AND REMEDIES**

##### **13.4.1 DUTIES AND OBLIGATIONS CUMULATIVE**

Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

#### **13.4.2 NO WAIVER**

No action or failure to act by the Owner, Inspector of Record, Architect or any construction manager shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed to in a written amendment to the Contract.

#### **13.5 TESTS AND INSPECTIONS**

##### **13.5.1 COMPLIANCE**

Tests, inspections, and approvals of portions of the Work required by the Contract Documents will comply with Title 24, and with all other laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction.

##### **13.5.2 INDEPENDENT TESTING LABORATORY**

The Owner will select and pay an independent testing laboratory to conduct all tests and inspections, including shipping or transportation costs or expenses (mileage and hours). Selection of the materials required to be tested shall be made by the laboratory or the Owner's representative and not by the Contractor. However, if Contractor requests that the Owner use a different testing laboratory and Owner chooses to approve such request, Contractor shall obtain prior approval. Owner will pay all costs for testing, contractor may not pay any testing expenses. Owner may invoice such costs or expenses to the Contractor or withhold such costs or expenses from progress payments and/or retention.

##### **13.5.3 ADVANCE NOTICE TO INSPECTOR OF RECORD**

The Contractor shall notify the Inspector of Record a sufficient time in advance of its readiness for required observation or inspection so that the Inspector of Record may arrange for same. The Contractor shall notify the Inspector of Record a sufficient time in advance of the manufacture of material to be supplied under the Contract Documents which must, by terms of the Contract Documents, be tested in order that the Inspector of Record may arrange for the testing of the material at the source of supply.

##### **13.5.4 TESTING OFF-SITE**

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 Inspector of Record that such testing and inspection will not be required, shall not be incorporated in the Work.

##### **13.5.5 ADDITIONAL TESTING OR INSPECTION**

If the Inspector of Record, the Architect, the Owner, or public authority having jurisdiction determines that portions of the Work require additional testing, inspection, or approval not

included under section 13.5.1, the Inspector of Record will, upon written authorization from the Owner, make arrangements for such additional testing, inspection, or approval. The Owner shall bear such costs except as provided in section 13.5.6.

#### **13.5.6 COSTS FOR RETESTING**

If such procedures for testing, inspection, or approval under sections 13.5.1, 13.5.2 and 13.5.5 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, the Contractor shall bear all costs arising from such failure, including those of re-testing, re-inspection, or re-approval, including, but not limited to, compensation for the Architect's services and expenses. Any such costs shall be paid by the Owner, invoiced to the Contractor, and, among other remedies, can be withheld from progress payments and/or retention.

#### **13.5.7 COSTS FOR PREMATURE TEST**

In the event the Contractor requests any test or inspection for the Project and is not completely ready for the inspection, the Contractor shall be invoiced by the Owner for all costs and expenses resulting from that testing or inspection, including, but not limited to, the Architect's fees and expenses, and the amount of the invoice can among other remedies, be withheld from progress payments and/or retention.

#### **13.5.8 TESTS OR INSPECTIONS NOT TO DELAY WORK**

Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### **13.6 [INTENTIONALLY LEFT BLANK]**

## **13.7 TRENCH EXCAVATION**

### **13.7.1 TRENCHES GREATER THAN FIVE FEET**

Pursuant to Labor Code section 6705, if the Contract Sum exceeds \$25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, submit to the Owner or a registered civil or structural engineer employed by the Owner a detailed plan showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

### **13.7.2 EXCAVATION SAFETY**

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but 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 the Owner or by the person to whom authority to accept has been delegated by the Owner.

### **13.7.3 NO TORT LIABILITY OF OWNER**

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the Owner or any of its employees.

### **13.7.4 NO EXCAVATION WITHOUT PERMITS**

The Contractor shall not commence any excavation work until it has secured all necessary permits including the required CAL OSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

## **13.8 WAGE RATES**

### **13.8.1 WAGE RATES**

Pursuant to the provisions of Article 2 (commencing at § 1770), Chapter 1, Part 7, Division 2, of the Labor Code, the governing board of the Owner has obtained the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification, or type of worker needed for this Project from the Director of Industrial Relations (“Director”). These rates are on file with the Clerk of the Owner’s Governing Board, and copies will be made available to any interested party on request. The Contractor shall post a copy of such wage rates at the Site.

### **13.8.2 HOLIDAY AND OVERTIME PAY**

Holiday and overtime work, when permitted by law, shall be paid for at a rate of at least one and one-half (1½) times the above specified rate of per diem wages, unless otherwise specified. Holidays shall be defined in the Collective Bargaining Agreement applicable to each particular craft, classification, or type of worker employed.

### **13.8.3 WAGE RATES NOT AFFECTED BY SUBCONTRACTS**

The Contractor shall pay and shall cause to be paid each worker engaged in work on the Project not less than the general prevailing rate of per diem wages determined by the Director, regardless of any contractual relationship which may be alleged to exist between the Contractor or any Subcontractor and such workers.

### **13.8.4 CHANGE IN PREVAILING WAGE DURING BID OR CONSTRUCTION**

If during the period this bid is required to remain open, the Director of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality

in which this public work is to be performed, such change shall not alter the wage rates discussed in the Notice to Bidders or the Contract subsequently awarded.

#### **13.8.5 FORFEITURE AND PAYMENTS**

Pursuant to Labor Code section 1775, the Contractor and any subcontractor under the Contractor shall as a penalty to the Owner, forfeit not more than two hundred dollars (\$200.00) for each calendar day, or portion thereof, for each worker paid less than the prevailing rate of per diem wages, determined by the Director, for such craft or classification in which such worker is employed for any public work done under the Agreement by the Contractor or by any Subcontractor under it. Minimum penalties shall apply, as also provided in Labor Code section 1775. The amount of the penalty shall be determined by the Labor Commissioner and shall be based on both of the following: (1) whether the failure of the contractor or subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected upon being brought to the attention of the contractor or subcontractor; and (2) whether the contractor or subcontractor has a prior record of failing to meet its prevailing wage obligations. The difference between such prevailing rate of per diem wage and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing rate of per diem wage shall be paid to each worker by the Contractor or subcontractor.

#### **13.8.6 MINIMUM WAGE RATES**

Any worker employed to perform work on the Project, which work is not covered by any craft or classification listed in the general prevailing rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the craft or classification which most nearly corresponds to the Work to be performed by them, and such minimum wage rate shall be retroactive to time of initial employment of such person in such craft or classification.

#### **13.8.7 PER DIEM WAGES**

Pursuant to Labor Code section 1773.1, per diem wages include fringe benefits such as employer payments for health and welfare, pension, and vacation pay.

#### **13.8.8 POSTING OF WAGE RATES AND OTHER REQUIRED JOB SITE NOTICES**

The Contractor shall post at appropriate conspicuous points on the Site, a schedule showing all determined wage rates and all other required job site notices as prescribed by regulation.

### **13.9 RECORD OF WAGES PAID: INSPECTION**

#### **13.9.1 APPLICATION OF LABOR CODE**

Pursuant to section 1776 of the Labor Code:

(a) Each Contractor and subcontractor shall keep accurate payroll records, showing the name, address, social security number, work classification, and 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 him or her in connection with the public work. 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 body awarding the contract and the Division of Labor Standards Enforcement of the Department of Industrial Relations ("DIR"). 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 Agreement and in a format the Labor Commissioner prescribes.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the body awarding the contract or the Division of Labor Standards Enforcement of the DIR. 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 the preparation by the contractor, subcontractors, and the entity through which the request was made. The public may not be given access to such records at the principal office of the Contractor.

(c) Unless required as of January 1, 2016, to be furnished directly to the Labor Commissioner under Labor Code section 1771.4(a)(3), the certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement of the DIR or shall contain the same information as the forms provided by the division. The payroll records may consist of printouts of payroll data that are maintained as computer records, if the printouts contain the same information as the forms provided by the division and the printouts are verified in the manner specified in (a) above.

(d) A Contractor or subcontractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested such records within 10 days after receipt of a written request.

(e) Except as provided in subdivision (f), any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body or the Division of Labor Standards Enforcement of the DIR shall be marked or obliterated 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 multiemployer Taft-Hartley trust fund (29 U.S.C. Sec. 186(c)(5) that requests the records for the purposes of allocating contributions to participants shall be marked or obliterated only to prevent disclosure of an individual's full social security number, but shall provide the last four digits of the social security number. 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 social security number.

(f) Notwithstanding any other provision of law, agencies that are included in the Joint Enforcement Strike Force on the Underground Economy established pursuant to Section 329 of the Unemployment Insurance Code and other law enforcement agencies investigating violations of law shall, upon request, be provided nonredacted copies of certified payroll records. Any copies of records or certified payroll made available for inspection and furnished upon request to the public by an agency included in the Joint Enforcement Strike Force on the Underground Economy or to a law enforcement agency investigating a violation of law shall be marked or redacted to prevent disclosure of an individual's name, address, and social security number. An employer shall not be liable for damages in a civil action for any reasonable act or omission taken in good faith in compliance with this subsection.

(g) The contractor shall inform the body awarding the contract of the location of the records enumerated under subdivision (a), including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.

(h) The contractor or subcontractor has 10 days in which to comply subsequent to receipt of written notice requesting the records enumerated in subdivision (a). In the event that the Contractor or subcontractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit one hundred dollars (\$100.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Labor Standards Enforcement of the DIR, these penalties shall be withheld from progress payments then due. A contractor is not subject to a

penalty assessment pursuant to this section due to the failure of the subcontractor to comply with this section.

## **13.10 APPRENTICES**

### **13.10.1 APPRENTICE WAGES AND DEFINITIONS**

All apprentices employed by the Contractor to perform services under the Contract shall be paid the standard 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. Only apprentices, as defined in section 3077 of the Labor Code, who are in training under apprenticeship standards and written apprenticeship agreements under Chapter 4 (commencing with § 3070) of Division 3, are eligible to be employed under this Contract. The employment and training of each apprentice shall be in accordance with the apprenticeship standards and apprentice agreements under which he or she is training.

### **13.10.2 APPRENTICE LABOR POOL**

When the Contractor to whom the Contract is awarded by the Owner, or any Subcontractor under him or her, in performing any of the Work under the Contract or subcontract, employs workers in any apprenticeable craft or trade, the Contractor and Subcontractor may apply to the joint apprenticeship committee administering the apprenticeship standards of the craft or trade in the area of the Site of the Project, for a certificate approving the Contractor or Subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected. However, approval as established by the joint apprenticeship committee or committees shall be subject to review by the Administrator of Apprenticeship. The joint apprenticeship committee or committees, subsequent to approving the subject Contractor or Subcontractor, shall arrange for the dispatch of apprentices to the Contractor or Subcontractor in order to comply with this section. Every Contractor and Subcontractor shall submit the contract award information to the applicable joint apprenticeship committee which shall include an estimate of journeyman hours to be performed under the Contract, the number of apprentices to be employed, and the approximate dates the apprentices will be employed. There shall be an affirmative duty upon the joint apprenticeship committee or committees administering the apprenticeship standards of the crafts or trade in the area of the Site of the public work, to ensure equal employment and affirmative action and apprenticeship for women and minorities. Contractors or Subcontractors shall not be required to submit individual applications for approval to local joint apprenticeship committees provided they are already covered by the local apprenticeship standards. The ratio of work performed by apprentices to journeymen, who shall be employed in the craft or trade on the Project, may be the ratio stipulated in the apprenticeship standards under which the joint apprenticeship committee operates, but, except as otherwise provided in this section, in no case shall the ratio be less than one (1) hour of apprentice work for every five (5) hours of labor performed by a journeyman. However, the minimum ratio for the Operating Engineer and Labor classification shall not be less than one (1) apprentice for each four (4) journeymen.

### **13.10.3 JOURNEYMAN/APPRENTICE RATIO; COMPUTATION OF HOURS**

Any ratio shall apply during any day or portion of a day when any journeyman or the higher standard stipulated by the joint apprenticeship committee, is employed at the job Site and shall be computed on the basis of the hours worked during the day by journeymen so. Any work performed by a journeyman in excess of eight (8) hours per day or forty (40) hours per week, shall not be used to calculate the hourly ratio required by the section. The Contractor shall employ apprentices for the number of hours computed as above before the end of the Contract. However, the Contractor shall endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the job Site. Where an hourly apprenticeship ratio is not feasible for a particular craft or trade, the Division of Apprenticeship Standards, upon application of a joint apprenticeship committee, may order a minimum ratio of not less than one (1) apprentice for each five (5) journeymen in a craft or trade classification.

#### 13.10.4 JOURNEYMAN/APPRENTICE RATIO

The Contractor or Subcontractor, if he or she is covered by this section upon the issuance of the approval certificate, or if he or she has been previously approved in the craft or trade, shall employ the number of apprentices or the ratio of apprentices to journeymen stipulated in the apprenticeship standards. Upon proper showing by the Contractor that he or she employs apprentices in the craft or trade in the state on all of his or her contracts on an annual average of not less than one (1) hour of apprentice work for every five (5) hours of labor performed by a journeyman, or in the land surveyor classification, one (1) apprentice for each five (5) journeymen, the Division of Apprenticeship Standards may grant a certificate exempting the Contractor from the 1-to-5 hourly ratio as set forth in this section. This section shall not apply to contracts of general contractors or to contracts of specialty contractors not bidding for work through a general or prime contractor, when the contracts of general contractors or those specialty contractors involve less than Thirty Thousand Dollars (\$30,000).

13.10.4.1 *Apprenticeable Craft or Trade.* “Apprenticeable craft or trade” as used in this Article means a craft or trade determined as an apprenticeable occupation in accordance with the rules and regulations prescribed by the California Apprenticeship Council. The joint apprenticeship committee shall have the discretion to grant a certificate, which shall be subject to the approval of the Administrator of Apprenticeship, exempting a Contractor from the 1-to-5 ratio set forth in this Article when it finds that any one of the following conditions is met:

- A. Unemployment for the previous three-month period in the area exceeds an average of fifteen percent (15%).
- B. The number of apprentices in training in such area exceeds a ratio of 1-to-5.
- C. There is a showing that the apprenticeable craft or trade is replacing at least one-thirtieth (1/30) of its journeymen annually through the apprenticeship training, either on a statewide basis or on a local basis.

- D. Assignment of an apprentice to any work performed under this contract would create a condition which would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyman.

#### **13.10.5 RATIO EXEMPTION**

When exemptions are granted to an organization which represents Contractors in a specific trade from the 1-to-5 ratio on a local or statewide basis, the member Contractors will not be required to submit individual applications for approval to local joint apprenticeship committees, if they are already covered by the local apprenticeship standards.

#### **13.10.6 APPRENTICE FUND**

A contractor to whom a contract is awarded, who, in performing any of the work under the contract, employs journeymen or apprentices in any apprenticeable craft or trade shall contribute to the California Apprenticeship Council the same amount that the director determines is the prevailing amount of apprenticeship training contributions in the area of the public works site. A contractor may take as a credit for payments to the council any amounts paid by the contractor to an approved apprenticeship program that can supply apprentices to the site of the public works project. The contractor may add the amount of the contributions in computing his or her bid for the contract. The Division of Labor Standards Enforcement is authorized to enforce the payment of the contributions to the fund or funds as set forth in the Labor Code section 227.

#### **13.10.7 PRIME CONTRACTOR COMPLIANCE**

The responsibility of compliance with section 13.10 and section 1777.5 of the Labor Code for all apprenticeable occupations is with the Prime Contractor. However, if a subcontractor is found to have violated Section 1777.5, the prime contractor of the project is not liable for any penalties under subdivision (2) unless the prime contractor had knowledge of the subcontractor's failure to comply with the provisions of Section 1777.5 or unless the contract executed between the contractor and the subcontractor for the performance of work on the public works project failed to include a copy of the provisions of Section 1771, 1775, 1776, 1777.5, 1831 and 1851. Additionally, the contractor shall continually monitor a subcontractor's use of apprentices required to be employed on the public works project pursuant to subdivision (d) of Section 1777.5, including, but not limited to, periodic review of the certified payroll of the subcontractor, and upon becoming aware of a failure of the subcontractor to employ the required number of apprentices, the contractor shall take corrective action, including, but not limited to, retaining funds due to the subcontractor for work performed on the public works project until the failure is corrected.

#### **13.10.8 DECISIONS OF JOINT APPRENTICESHIP COMMITTEE**

All decisions of the joint apprenticeship committee under this section 13.10 and Labor Code section 1777.5 are subject to Labor Code section 3081.

#### 13.10.9 NO BIAS

It shall be unlawful for an employer or a labor union to refuse to accept otherwise qualified employees as registered apprentices on any public works on the grounds of race, religious creed, color, national origin, ancestry, sex, or age, except as provided in the Labor Code section 3077.

#### 13.10.10 VIOLATION OF LABOR CODE

Pursuant to Labor Code section 1777.1, in the event a Contractor or Subcontractor willfully fails to comply with the provisions of this section 13.10 and Labor Code section 1777.5, among other things:

(a) The Labor Commissioner may deny to the contractor or subcontractor, and to its responsible officers, the right to bid on, or be awarded or perform work as a subcontractor on, any public works project for a period of up to one year for the first violation and for a period of up to three years for the second and subsequent violation. Each period of debarment shall run from the date the determination of noncompliance by the Labor Commissioner becomes a final order.

(b) A contractor or subcontractor who violates section 1777.5 shall forfeit as a civil penalty an amount not exceeding the sum of one hundred dollars (\$100) for each full calendar day of noncompliance for a first violation and not more than three hundred dollars (\$300) for a second or subsequent violation within a three-year period. Upon receipt of a determination that a civil penalty has been imposed, the awarding body shall enforce the penalty, which includes withholding the amount of the civil penalty from the contract progress payments or retention then due or to become due.

(c) In lieu of the penalty provided, the Labor Commissioner may for a first time violation and with the concurrence of an applicable apprenticeship program, order the contractor or subcontractor to provide apprentice employment equivalent to the work hours that would have been provided for apprentices during the period of noncompliance.

(d) Any funds withheld by the awarding body pursuant to this section shall be deposited in the General Fund.

(e) The interpretation and enforcement of section 1777.5 and this section shall be in accordance with the regulations of the California Apprenticeship Council.

Pursuant to Public Contract Code section 6109, no contractor or subcontractor may bid on, be awarded, or perform work as a subcontractor on a public works project if ineligible to bid or work on, or be awarded, a public works project pursuant to section 1777.1 of the Labor Code.



## **13.11 ASSIGNMENT OF ANTITRUST CLAIMS**

### **13.11.1 APPLICATION**

Pursuant to Public Contract Code section 7103.5 and Government Code section 4552, 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 Owner 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. § 15) or under the Cartwright Act (Chapter 2 [commencing with § 16700] of Part 2 of Division 7 of the Bus. & Prof. Code), arising from the purchase 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 Progress Payment to the Contractor, without further acknowledgment by the parties. If the Owner receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under Chapter 11 (commencing with § 4550) of Division 5 of Title 1 of the Government Code, the assignor may, upon demand, recover from the Owner any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the Owner as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

### **13.11.2 ASSIGNMENT OF CLAIM**

Upon demand in writing by the assignor, the Owner shall, within one (1) year from such demand, reassign the cause of action assigned pursuant to this Article if the assignor has been or may have been injured by the violation of law for which the cause of action arose and the Owner has not been injured thereby or the Owner declines to file a court action for the cause of action.

## **13.12 AUDIT**

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 Owner, the Contractor, or any Subcontractor connected with the performance of this Contract involving the expenditure of state funds in excess of Ten Thousand Dollars (\$10,000.00), including, but not limited to, the administration thereof, shall be subject to the examination and audit of the Office of the Auditor General of the State of California for a period of three (3) years after release of all retention under this Contract. Contractor shall preserve and cause to be preserved such books, records, and files for the audit period. During the progress of the Work and for three (3) years after release of all retention under the Contract, Owner shall also have the right to an audit, and Contractor must cooperate by producing all information requested within seven (7) days.

## **13.13 STORM WATER DISCHARGE PERMIT**

If applicable, the Contractor shall file a Notice of Intent to comply with the terms of the general permit to discharge storm water associated with construction activity Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2017-006-DWQ). The Notice of Intent must be sent to the

following address along with the appropriate payment (warrant to be furnished by the Owner upon request by the Contractor, allow warrant processing time.): California State Water Resources Control Board, Division of Water Quality, Storm Water Permit Unit, P.O. Box 1977, Sacramento, CA 95812-1977. The Contractor may also call the State Water Board's Construction Activity Storm Water Hotline at (916) 657-1146. The Notice of Intent shall be filed prior to the start of any construction activity.

## **ARTICLE 14**

### **TERMINATION OR SUSPENSION OF THE CONTRACT**

#### **14.1 TERMINATION BY THE CONTRACTOR FOR CAUSE**

Contractor may not terminate for convenience. Contractor may only terminate for cause if the Work is stopped by others for a period of one hundred eighty (180) consecutive days through no act or fault of the Contractor, a Subcontractor of any tier, their agents or employees, or any other persons performing portions of the Work for whom the Contractor is contractually responsible, **and** the Work was stopped by others for one of the following reasons: (A) Issuance of an order of a court or other public authority having jurisdiction which requires Owner to stop all Work; or (B) an act of government, such as a declaration of national emergency, making material unavailable which requires Owner to stop all Work. If such grounds exist, the Contractor may serve written notice of such grounds on Owner and demand a meet-and-confer conference to negotiate a resolution in good faith within twenty (20) days of Owner's receipt of such notice. If such conference does not lead to resolution and the grounds for termination still exist, Contractor may terminate the Contract and recover from the Owner payment for Work executed and for reasonable verified costs with respect to materials, equipment, tools, construction equipment, and machinery, including reasonable overhead, profit, and damages for the Work executed, but excluding overhead (field and home office) and profit for (i) Work not performed and (ii) the period of time that the Work was stopped.

#### **14.2 TERMINATION BY THE OWNER FOR CAUSE**

##### **14.2.1 GROUNDS FOR TERMINATION**

The Owner may terminate the Contract if the Contractor:

- A. Refuses or fails to supply enough properly skilled workers or proper materials, or refuses or fails to take steps to adequately prosecute the work toward completion within the Contract Time;
- B. Fails to make payment to Subcontractors for materials or labor in accordance with Public Contract Code section 10262 or Business and Professions Code section 7108.5, as applicable;

- C. Violates Labor Code section 1771.1(a), subject to the provisions of Labor Code section 1771.1(f);
- D. Disregards laws, ordinances, rules, regulations, or orders of a public authority having jurisdiction; or
- E. Otherwise is in breach of the Contract Documents.

#### 14.2.2 NOTIFICATION OF TERMINATION

When any of the above reasons exist, the Owner may, without prejudice to any other rights or remedies of the Owner, give notice to Contractor of the grounds for termination and demand cure of the grounds within seven (7) days (a “Notice of Intent to Terminate”). If Contractor fails to **either** (a) completely cure the grounds for termination within seven (7) days **or** (b) reasonably commence cure of the grounds for termination within seven (7) days and reasonably continue to cure the grounds for termination until such cure is complete, then Owner may terminate the Contract effective immediately upon service of written Notice of Termination and may, subject to any prior rights of Contractor’s surety on the performance bond (“Surety”):

- A. Take possession of the Site and of all material, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- B. Accept assignment of subcontracts pursuant to section 5.4; and
- C. Complete the Work by whatever reasonable method the Owner may deem expedient.

#### 14.2.3 PAYMENTS WITHHELD

If the Owner terminates the Contract for one of the reasons stated in section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is complete.

#### 14.2.4 PAYMENTS UPON COMPLETION

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 Owner. This payment obligation shall survive completion of the Contract.

#### 14.2.5 INCLUSION OF TERMINATION FOR CONVENIENCE

Any purported termination by Owner for cause under this section 14.2, which is revoked or determined to not have been for cause, shall be deemed to have been a termination for convenience effective as of the same date as the purported termination for cause.

## 14.3 SUSPENSION OR TERMINATION BY THE OWNER FOR CONVENIENCE

### 14.3.1 SUSPENSION BY OWNER

The Owner may, without cause, order the Contractor in writing to suspend, delay, or interrupt the Work in whole or in part for such period of time as the Owner may determine.

14.3.1.1 *Adjustments.* An adjustment shall be made for increases in the cost of performance of the Contract, including profit on the increased cost of performance caused by suspension, delay, or interruption. No adjustment shall be made to the extent:

- A. That performance is, was or would have been so suspended, delayed, or interrupted by another cause for which the Contractor is responsible; or
- B. That an equitable adjustment is made or denied under another provision of this Contract.

14.3.1.2 *Adjustments for Fixed Cost.* Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

### 14.3.2 TERMINATION BY THE OWNER FOR CONVENIENCE

14.3.2.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

14.3.2.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

- 1. Cease operations as directed by the Owner in the notice;
- 2. Take actions necessary, or that the Owner 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.

14.3.2.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination.

## 14.4 NOT A WAIVER

Any suspension or termination by Owner for convenience or cause under this Article 14 shall not act as a waiver of any claims by Owner against Contractor or others for damages based on breach of contract, negligence or other grounds.

## 14.5 MUTUAL TERMINATION FOR CONVENIENCE

The Contractor and the Owner may mutually agree in writing to terminate this Contract for convenience. The Contractor shall receive payment for all Work performed to the date of termination in accordance with the provisions of Article 9.

#### 14.6 EARLY TERMINATION

Notwithstanding any provision herein to the contrary, if for any fiscal year of this Contract the governing body of the Owner fails to appropriate or allocate funds for future periodic payments under the Contract after exercising reasonable efforts to do so, the Owner may upon thirty (30) days' notice, order work on the Project to cease. The Owner will remain obligated to pay for the work already performed but shall not be obligated to pay the balance remaining unpaid beyond the fiscal period for which funds have been appropriated or allocated and for which the work has not been done.

END OF DOCUMENT

**DOCUMENT 00 73 00**

**SPECIAL CONDITIONS**

1. **Mitigation Measures**

Contractor shall comply will all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act. (Public Resources Code section 21000 et. seq.).

2. **Modernization / Post Occupancy Projects**

- a. **Access.** Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Work is to start. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by the Contractor, unless, at the discretion of the District, other arrangements are made in advance.
- b. **Master Key.** Upon request, the District may, at is own discretion, provide a master key to the school site for the convenience of the Contractor. The Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the master key is lost or stolen or if any unauthorized party obtains a copy of the key or access to the school.
- c. **Maintaining Services.** The Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with the District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.
- d. **Maintaining Utilities.** The Contractor shall maintain in operation during duration of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area. No new services or connections shall be anticipated for operation of existing facilities during construction.
- e. **Confidentiality.** Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes, without

limitation, all student, parent, and employee disciplinary information and health information.

3. **Substitution for Specified Items**

- a. Requests for substitutions prior to award of the Contract shall be done within the time period indicated in the Instructions to Bidders.
- b. Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words “or equal.” Contractor may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified.
  - (1) If the material, process, or article offered by Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then Contractor shall furnish the material, process, or article specified in the Specifications without any additional compensation or change order.
  - (2) This provision shall not be applicable with respect to any material, product, thing or service for which District made findings and gave notice in accordance with Public Contract Code section 3400(b); therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.
- c. A request for a substitution shall be in writing and shall include:
  - (1) All variations of the proposed substitute from the material specified including, but not limited to, principles of operation, materials, or construction finish, thickness or gauge of materials, dimensions, weight, and tolerances;
  - (2) Available maintenance, repair or replacement services;
  - (3) Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;
  - (4) Whether or not acceptance of the substitute will require other changes in the Work (or in work performed by the District or others under Contract with the District); and
  - (5) The time impact on any part of the Work resulting directly or indirectly from acceptance of the proposed substitute.

- d. No substitutions shall be made until approved, in writing, by the District. The burden of proof as to equality of any material, process, or article shall rest with Contractor. The Contractor warrants that if substitutes are approved:
- (1) The proposed substitute is equal or superior in all respects to that specified, and that such proposed substitute is suitable and fit for the intended purpose and will perform adequately the function and achieve the results called for by the general design and the Contract Documents;
  - (2) The Contractor provides the same warranties and guarantees for the substitute that would be provided for that specified;
  - (3) The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time;
  - (4) The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute; and
  - (5) The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit.
- e. In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.
- f. In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

been convicted of a felony, as defined in Education Code section 45122.1. Contractor shall fully complete and perform all tasks required pursuant to the Criminal Background Investigation/ Fingerprinting Certification.

4. **Weather Days**

Extensions of the Performance Period shall be determined by reference to the Terms and Conditions to Field Contract. Rain in excess of one-tenth of an inch (1/10") in



one (1) day, or temperature which does not exceed 32° F shall be considered adverse weather. The following chart shows the normal number of adverse weather days:

Jan 10	Feb 8	Mar 8	Apr 5	May 2	Jun 1	Jul 0	Aug 0	Sep 1	Oct 3	Nov 7	Dec 8
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5. **Insurance Policy Limits.** All of Contractor’s insurance shall be with insurance companies with an A.M. Best rating of no less than A: XI. All limits of insurance shall not be less than what is specified in Agreement Between Owner and Contractor Document 00 52 26, Article XI, Indemnifications and Insurance in the.

6. **Permits, Certificates, Licenses, Fees, Approval**

a. **Payment for Permits, Certificates, Licenses, and Fees.** As required in the Terms and Conditions to Field Contract, the Contractor shall secure and pay for all permits, licenses and certificates necessary for the prosecution of the Work with the exception of the following:

- (1) Water connection fees
- (2) Sewer connection fees
- (3) Electrical connection fees
- (4) Gas connections fees
- (5) Cable TV connection fees
- (6) Phone connection fee

With respect to the above listed items, Contractor shall be responsible for securing such items, however, District will be responsible for payment of these charges or fees. Contractor shall notify the District of the amount due with respect to such items and to whom the amount is payable. Contractor shall provide the District with an invoice and receipt with respect to such charges or fees. The contractor shall receive written approval from the District prior to any payment.

b. **Storm Water Pollution Prevention Plan**

- NPDES PERMITTING

1. **General.** The intent of these requirements is to enforce federal, state and local laws, ordinances, codes and regulations that pertain to storm water pollution attributable to construction projects. Storm drains discharge directly to creeks without treatment. Therefore, discharge of pollutants (i.e. any substance, material or waste other than uncontaminated storm water) into the storm drain system is strictly prohibited.

For the purpose of eliminating storm water pollution, the Contractor shall implement effective control measures over the entire project. There are several publications which provide guidance on selecting and implementing effective control measures known as Best Management Practices (BMPs). BMPs include, but are not limited to, schedules of activities, prohibition of practices, general good housekeeping practices, operational practices, pollution prevention practices, maintenance procedures and other management procedures designed to prevent the discharge of pollutants directly or indirectly to the storm drain system. BMPs also include the construction of some facilities which may be required to prevent, control and abate storm water pollution. The reference publications are as follows:

- \* California Storm Water Best Management Practices Handbook-Industrial/Commercial
- \* California Storm Water Best Management Practices Handbook-Construction Activity

These handbooks may be purchased from Blue Print Services (BPS), 1700 Jefferson Street, Oakland, California 94612, (510) 287-5485.

The Contractor shall be responsible for preparing and submitting to the Owner a Storm Water Pollution Prevention Plan (SWPPP) in conformance with the California NPDES (National Pollution Discharge Elimination System) General Permit for Storm Water Discharges associated with construction activity. The SWPPP shall address intended methods to reduce the amount of pollutants contained in storm water runoff during construction of the work.

The SWPPP is considered a report available to the public under Section 308 (b) of the Clean Water Act. The SWPPP shall be kept at the site during construction and made available upon request of a representative of the Regional Water Board or other local agency. The Contractor shall amend the SWPPP for any change in construction or operations which may affect the discharge of pollutants to surface water, ground waters, or storm drain system.

The Contractor shall submit the SWPPP to the Owner and governing agencies within fifteen (15) days of the Notice to Proceed. Upon approval of the SWPPP, the Contractor shall be responsible for implementing, maintaining, and repairing all storm water pollution controls as described in his approved SWPPP for the duration of the work. The Contractor shall make any repairs to the storm water pollution controls and amend the SWPPP if, in the opinion of the Owner, the Contractor is not in compliance with the SWPPP. Failure to make the necessary repairs or other maintenance when directed by the Owner shall result in the necessary repair work being done by District forces, and the Contractor will be billed at double the rate of all District expenses. In addition, the Contractor shall be responsible for any fines imposed by the

Regional Water Quality Control Board or other agency as a result of noncompliance, negligence, or violation of permit conditions.

Records of all inspections and compliance certifications reporting must be retained as part of the Storm Water Pollution Prevention Plan for a period of three years. Upon completion of the project construction and termination of coverage under the General Permit, the records shall be retained by the contractor with a copy of the final SWPPP.

2. Material Storage. Storage and exposure of raw materials, by-products, finished products, and containers shall be controlled as described below:

All construction materials shall be stored at least ten (10) feet away from inlets, catch basins, and curb returns. The Contractor shall not allow any material to enter the storm drain system. At the end of each working day, the Contractor shall collect and dispose of all scrap, debris, and waste material.

During wet weather or when rain is forecast, the Contractor shall store materials that can contaminate rainwater or be transported by storm water or other runoff to the storm drain system inside a building or cover them with a tarp or other waterproof material secured with weighted tires or sandbags to prevent contact with rain.

The Contractor is reminded that storage and disposal of all hazardous materials such as paints, thinners, solvents, and fuels; and all hazardous wastes such as waste oil must meet all federal, state and local standards and requirements.

3. De-watering Operations. All groundwater removed from the trench or excavations must be de-silted prior to discharging it into the storm drain system through filtering materials and methods meeting the Association of Bay Area Governments (ABAG) Standards for Erosion & Sediment Control Measures and/or through methods and procedures described in the California Storm Water Best Management Practice Handbook - Construction Activity (latest edition).
4. Pavement Saw-Cutting Operations. The Contractor shall prevent any saw-cutting debris from entering the storm drain system. The Contractor, preferably, shall use dry cutting techniques and sweep up residue. If wet methods are used, the Contractor shall vacuum slurry as cutting proceeds or collect all wastewater by constructing a sand bag sediment barrier. The bermed area shall be of adequate size to collect all wastewater and solids. The Contractor shall allow collected water to evaporate if the wastewater volume is minimal and if maintaining the ponding area does not interfere with public use of the street area or create a safety hazard. If approved by the Owner, the Contractor may direct or pump saw-cutting wastewater to a dirt area and allow to infiltrate. The dirt area shall be adequate to contain all the wastewater. After wastewater has infiltrated, all remaining saw-cutting residue must be removed and disposed of properly. Remaining silt and debris from the ponding or bermed area shall be removed or vacuumed and disposed of properly.

If a suitable dirt area is not available or discharge to the sanitary sewer is not feasible, with the approval of the Owner and Contra Costa County Flood Control (CCCFC) & Water Conservation District (WCD), the Contractor shall filter the saw-cutting wastewater through filtering materials and methods meeting ABAG Standards for Erosion and Sedimentation Control Measures (latest edition) before discharging to the storm drain.

5. Pavement Operations. The Contractor shall prevent the discharge of pollutants from paving operations by using measures to prevent run-on and run-off pollution, disposing of wastes properly, and by implementing the procedures in the Best Management Practices Handbook. In addition, the Contractor shall observe the following guidelines:

- Paving during wet weather:
  - a) No paving while it is raining.
  - b) No paving of the top lift of asphalt concrete (AC) on any day that experiences ¼” of rain in a twenty-four (24) hour period.
  - c) No paving of bottom lift if previous seventy-two (72) hour period experienced more than ½” rain, unless directed by the Owner.
- Store materials as required under section 2.
- Cover inlets and manholes when applying asphalt, seal coat, tack coat, slurry seal, fog seal, etc.
- Place drip pans or absorbent materials under paving equipment when not in use. During wet weather, store contaminated paving equipment indoors, or cover with tarp or other waterproof covering.
- Sweep site daily using mechanical methods to prevent sand, gravel or excess asphalt from entering or being transported by rain into the storm drain system.
- Keep ample supplies of drip pans or absorbent materials on-site.
- If paving involves Portland cement concrete, refer to section G6 below.
- All of the above at the discretion of the Owner.

6. Concrete Operations. **Do not wash out concrete trucks into storm drains, open ditches, streets, streams, etc.** The Contractor shall prevent the discharge of pollutants from concrete operations by using measures to prevent run-on and run-off pollution, properly disposing of wastes, and by implementing the following BMPs:

- Store all materials in waterproof containers or under cover away from drain inlets or drainage areas.
- Avoid mixing excess amounts of Portland cement materials. Dispose of any excess materials properly.
- Whenever possible, perform washout of concrete trucks off-site where discharge is controlled and not permitted to discharge to the storm drain system. For on-site washout:
- Locate washout area at least fifty (50) feet from storm drains, open ditches or other water bodies, preferably in a dirt area. Confine run-off from this area by constructing a temporary pit or bermed area large enough for the liquid and solid waste.

- Wash out concrete wastes into the temporary pit where the concrete can set, be broken up and then disposed of properly. If the volume of water is greater than what will allow concrete to set, allow the wash water to infiltrate and/or evaporate, if possible. Remove or vacuum the remaining silt and debris from the ponding or bermed area and dispose of it properly.
  - Dispose of wastewater from washing of exposed aggregate to dirt area. The dirt area shall be adequate to contain all the wastewater and once the wastewater has infiltrated, any remaining residue must be removed.
  - Collect and return sweepings from exposed aggregate concrete to a stockpile or dispose of the waste in trash container.
7. Grading and Excavation Operations. The Contractor shall prepare a 40 scale erosion control plan and submit it to the Owner and governing agencies for approval, within fifteen (15) days of the Notice To Proceed.

The erosion and sedimentation control materials and methods shall be in accordance with ABAG Standards For Erosion And Sediment Control Measures and/or the procedures and methods described in the California Storm Water Best Management Practice Handbook - Construction Activity (latest edition).

Sedimentation and erosion control/filter materials shall be placed in a manner that will retain any debris or sediment from flowing into the storm drain system. The Contractor shall have labor, tools, equipment and materials needed, at the job site, to provide the erosion control measures necessary as a result of earthwork or trenching before beginning or continuing these construction activities. Sand bags and straw wattle shall be stockpiled adjacent to the locations of activity and ready to be installed when the rainfall forecast for 48 hours is 40% or greater or when directed by the Owner.

The Contractor shall install siltation control devices around catch basins at the end of each working day. These devices shall be maintained at all times during the construction period, and shall be removed when construction is complete.

The Contractor shall not be allowed to block existing drainage flowing onto the work area. The Contractor shall install temporary drainage facilities, if necessary. There shall be no extra compensation to the Contractor for keeping existing drainage open. The Contractor is responsible for any damage to property or existing improvements resulting from blocking existing drainage.

The Contractor shall inspect the sites of work at the beginning and once every 24-hour period through the duration of each storm to assure that inlets and pipes are not blocked with silt or debris and shall be prepared to make repairs to the erosion control devices and take any other remedial measures as directed by the Owner. At the end of a storm event all depressions with ponded water, the water in catch basins, and the check dam ponds shall be pumped dry and all silt and debris

removed. This work shall be completed within twenty-four (24) hours after the end of each storm.

8. Spill Prevention and Control. The Contractor shall take any and all precautions to prevent accidental spills during the work under this contract. However, in the event of a spill:
  - The Contractor shall immediately contain and prevent leaks and spills from entering the storm drain system, and properly clean-up and dispose of the waste and clean-up materials. If waste is hazardous, the Contractor shall comply with all federal, state and local hazardous waste requirements.
  - The Contractor shall not wash any spilled material into the streets, gutters, storm drains, or creeks.
  - The Contractor shall report any hazardous material spills immediately to the Owner and the City of San Jose Police Department, as per hazardous material response protocol.
9. Vehicle/Equipment Cleaning. The Contractor shall not perform vehicle or equipment cleaning or maintenance on-site or in the street using soaps, solvents, de-greasers, steam cleaning equipment or equivalent methods. The Contractor shall perform vehicle or equipment cleaning with water only in a designated, bermed area that will not allow rinse water to run off-site or into the storm drain system. The rinse-water shall be permitted to infiltrate in dirt area or shall be discharged to the sanitary sewer with the approval of the Owner.

The Contractor shall dispose of wash water from the cleaning of water base paint equipment and tools to the sanitary sewer.

If using oil based paint, to the maximum extent practicable, the Contractor shall filter the paint thinner and solvents for reuse and dispose of the waste thinner and solvent, and sludge from cleaning of equipment and tools as hazardous waste. No disposal of oil base materials is allowed into the City sewer system.

10. Contractor Training and Awareness. The Contractor shall train all employees on the water pollution prevention requirements contained in these specifications. The Contractor shall inform all subcontractors of the water pollution prevention contract requirements and include appropriate subcontract provisions to ensure that these requirements are met.

The Contractor shall utilize thermoplastic to stencil new catch basins, constructed as part of the project, with “No Dumping, Drains to Bay”.

11. Good Housekeeping Practices. In addition to the practices and procedures discussed above, the Contractor shall implement the following applicable good housekeeping practices.
  - Store materials that have the potential to be transported to the storm drain system by storm run-off or by a spill under cover in a contained area or in sealed waterproof containers.

- Use tarps on the ground to collect fallen debris or splatters that could contribute to storm water pollution.
- Secure opened bags of cement, and of other light or powdered materials which can be transported by wind.
- Pick up litter, construction debris and other wastes daily from outside areas including the sidewalk area, gutter, street pavement and storm drains impacted by the project. All wastes shall be stored in covered containers or disposed of or recycled immediately.
- Dispose of wash water to the sanitary sewer with the approval of Owner or recycle wash water (refer to section 6).
- Inspect vehicles and equipment arriving on-site for leaking fluids and promptly repair leaking vehicles and equipment. Vehicles leaking fluids will not be allowed on the construction site and if not repaired, must be removed.
- Avoid spills by handling materials carefully. Keep a stockpile of spill control materials, such as rags or absorbents, readily accessible on-site. Clean up all spills immediately to prevent any material from being discharged to the storm drain (refer to section 8).
- Train employees regularly on good housekeeping practices and BMPs. Assign responsibility to specific employees on BMPs, good housekeeping practices, and what to do in the event of a spill (refer to section 10).
- Maintain and replace all sediment and water pollution control devices as necessary to ensure that said controls are working effectively (e.g. inspect all sediment ponds or sandbag sedimentation/filtering systems after each rain. Remove accumulated sediment and debris and replace or repair damaged sandbags immediately).

END OF DOCUMENT

**DOCUMENT 00 73 73**

**COMPLIANCE MONITORING AND ENFORCEMENT NOTICE**

The \_\_\_\_\_ is a public works project that is subject to compliance monitoring and enforcement by the Department of Industrial Relations. The prevailing wage laws require that all workers be paid at least the minimum hourly prevailing wage rate as determined by the Director of Industrial Relations for the specific classification (or type of work) performed by workers on the project. The awarding body shall post prevailing wage rates and all other job site postings prescribed by regulation or require the prime contractor to do so.

The Contractor, and each subcontractor, shall submit weekly certified payrolls directly to the Labor Commissioner at least monthly or more frequently if specified in the contract with the District. CPRs shall be in a format prescribed by the Labor Commissioner and the department shall undertake those activities it deems necessary to monitor and enforce compliance with prevailing wage requirements. Complaints concerning nonpayment of the required prevailing wage rates to workers on this project may be filed with the Division of Labor Standards Enforcement (DLSE).

END OF DOCUMENT



**HAZARDOUS MATERIALS PROCEDURES AND REQUIREMENTS**

**1. Summary**

This document includes information applicable to hazardous materials and hazard waste abatement.

**2. Notice of Hazardous Waste or Materials Conditions**

- a. Contractor shall give notice in writing to the District, the Construction Manager, and the Architect promptly, before any of the following conditions are disturbed, and in no event later than twenty-four (24) hours after first observance, of any:
  - (1) Material that Contractor believes may be material that is hazardous waste or hazardous material, 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;
  - (2) Other material that may present a substantial danger to persons or property exposed thereto in connection with Work at the site.
- b. Contractor's written notice shall indicate whether the hazardous waste or material was shown or indicated in the Contract Documents to be within the scope of Work, and whether the materials were brought to the site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible. As used in this document the term "hazardous materials" shall include, without limitation, asbestos, lead, Polychlorinated biphenyl (PCB), petroleum and related hydrocarbons, and radioactive material.
- c. In response to Contractor's written notice, the District shall investigate the identified conditions.
- d. If the District determines that conditions do not involve hazardous materials or that no change in terms of Contract is justified, the District shall so notify Contractor in writing, stating reasons. If the District and Contractor cannot agree on whether conditions justify an adjustment in Contract Price or Contract Times, or on the extent of any adjustment, Contractor shall proceed with the Work as directed by the District.
- e. If after receipt of notice from the District, Contractor does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume Work under special conditions, then District may order such portion of Work that is in connection with such hazardous condition or such affected area to be

deleted from the Work, or performed by others, or District may invoke its rights to terminate the Contract in whole or in part. District will determine entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of Work, or performing the Work by others.

- f. If Contractor stops Work in connection with any hazardous condition and in any area affected thereby, Contractor shall immediately redeploy its workers, equipment, and materials, as necessary, to other portions of the Work to minimize delay and disruption.

### **3. Additional Warranties and Representations**

- a. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training, and ability to comply fully with all applicable law and contract requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to address adequately the actual or potential dangers of Contract performance).
- b. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state, and other governmental and quasi-governmental requirements applicable to the Work.
- c. Contractor represents and warrants that it has studied carefully all requirements of the Specifications regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in the Contract, and prior to submitting its bid, has either (a) verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by the Contract Documents, or (b) by way of approved "or equal" request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by the Contract Documents. Contractor accepts the risk that any specified procedure will result in a completed Project in full compliance with the Contract Documents.

### **4. Monitoring and Testing**

- a. District reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, Work monitoring, and any other tests (in addition to testing required under the agreement or applicable law), to monitor Contract requirements of safe and statutorily compliant work methods and (where

applicable) safe re-entry level air standards under state and federal law upon completion of the job, and compliance of the work with periodic and final inspection by public and quasi-public entities having jurisdiction.

- b. Contractor acknowledges that District has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement, and post-abatement air monitoring, that District shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of the Work by Contractor. In the event District elects to perform these activities and tests, Contractor shall afford District ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Contractor will include the potential impact of these activities or tests by District in the Contract Price and the Scheduled Completion Date.
- c. Notwithstanding District's rights granted by this paragraph, Contractor may retain its own industrial hygiene consultant at Contractor's own expense and may collect samples and may perform tests including, but not limited to, pre-abatement, during abatement, and post-abatement personal air monitoring, and District reserves the right to request documentation of all such activities and tests performed by Contractor relating to the Work and Contractor shall immediately provide that documentation upon request.

## **5. Compliance with Laws**

- a. Contractor shall perform safe, expeditious, and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal, and disposal industry, the applicable law, and the Contract Documents, including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the law, delivering of all requisite notices, and obtaining all necessary governmental and quasi-governmental approvals.
- b. Contractor represents that it is familiar with and shall comply with all laws applicable to the Work or completed Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work relating to:
  - (1) The protection of the public health, welfare and environment;
  - (2) Storage, handling, or use of asbestos, PCB, lead, petroleum based products or other hazardous materials;
  - (3) The generation, processing, treatment, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum, or hazardous waste materials or other waste materials of any kind; and

- (4) The protection of environmentally sensitive areas such as wetlands and coastal areas.

## 6. Disposal

- a. Contractor has the sole responsibility for determining current waste storage, handling, transportation, and disposal regulations for the job Site and for each waste disposal facility. Contractor must comply fully at its sole cost and expense with these regulations and any applicable law. District may, but is not obligated to, require submittals with this information for it to review consistent with the Contract Documents.
- b. Contractor shall develop and implement a system acceptable to District to track hazardous waste from the Site to disposal, including appropriate "Hazardous Waste Manifests" on the EPA form, so that District may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.
- c. Contractor shall provide District with the name and address of each waste disposal facility prior to any disposal, and District shall have the express right to reject any proposed disposal facility. Contractor shall not use any disposal facility to which District has objected. Contractor shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction forwarding the original to the District.

## 7. Permits

- a. Before performing any of the Work, and at such other times as may be required by applicable law, Contractor shall deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Contractor shall submit evidence satisfactory to District that it and any disposal facility
  - (1) have obtained all required permits, approvals, and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable law, and
  - (2) are in compliance with all such permits, approvals and the regulations.

For example, before commencing any work in connection with the Work involving asbestos-containing materials, or PCBs, or other hazardous materials subject to regulation, Contractor agrees to provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt requested, or by some other method of transmittal for which a return receipt is obtained, and to

send a copy of that notice to District. Contractor shall not conduct any Work involving asbestos-containing materials or PCBs unless Contractor has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, and bonds that are required by governmental or quasi-governmental authorities, and all fees, deposits, tap fees, offsite easements, and asbestos and PCB disposal facilities expenses necessary for the prosecution of the Work, shall be procured and paid for by Contractor. Contractor shall give all notices and comply with the all applicable laws bearing on the conduct of the Work as drawn and specified. If Contractor observes or reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying District in writing of such fact. If Contractor performs any Work contrary to applicable laws, it shall bear all costs arising therefrom.

- b. In the case of any permits or notices held in District's name or of necessity to be made in District's name, District shall cooperate with Contractor in securing the permit or giving the notice, but the Contractor shall prepare for District review and execution upon approval, all necessary applications, notices, and other materials.

## **8. Indemnification**

- a. To the extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes, but is not limited to, liabilities connected to the selection and use of a waste disposal facility, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or "disposal" and "release" of materials associated with the Work (as defined in 42 U.S.C. § 9601 et seq.).

## **9. Termination**

- a. District shall have an absolute right to terminate for default immediately without notice and without an opportunity to cure should Contractor knowingly or recklessly commit a material breach of the terms of the Contract Documents, or any applicable law, on any matter involving the exposure of persons or property to hazardous waste. However, if the breach of contract exposing persons or property to hazardous waste is due solely to an ordinary, unintentional, and non-reckless failure to exercise reasonable care, then the procedures for termination for cause shall apply without modification.

END OF DOCUMENT

DOCUMENT 00 88 00

**AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS**

THIS AGREEMENT AND RELEASE OF CLAIMS (“Agreement and Release”) IS MADE AND ENTERED INTO THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ by and between the Berryessa Union School District (“District”) and \_\_\_\_\_ (“Contractor”), whose place of business is \_\_\_\_\_.

RECITALS:

- 1. District and Contractor entered into \_\_\_\_\_ NO.: \_\_\_\_\_ (“Contract” or “Project”) in the County of Santa Clara, California.
- 2. The Work under the Contract has been completed.

NOW, THEREFORE, it is mutually agreed between District and Contractor as follows:

AGREEMENT

- 3. Contractor will only be assessed liquidated damages as detailed below:

Original Contract Sum	\$ _____
Modified Contract Sum	\$ _____
Payment to Date	\$ _____
Liquidated Damages	\$ _____
Payment Due Contractor	\$ _____

- 4. Subject to the provisions hereof, District shall forthwith pay to Contractor the undisputed sum of \$\_\_\_\_\_ (\_\_\_\_\_ Dollars and \_\_\_\_\_ Cents) under the Contract, less any amounts represented by any notice to withhold funds on file with District as of the date of such payment.
- 5. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against District arising from the performance of work under the Contract, except for the claims described in Paragraph 6 and continuing obligations described in Paragraph 8. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against District, all its respective agents, employees, inspectors, assignees and transferees except for the

Disputed Claim is set forth in Paragraph 6 and continuing obligations described in Paragraph 8 hereof.

6. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

<u>Claim No.</u>	<u>Description of Claim</u>	<u>Amount of Claim</u>	<u>Date Claim Submitted</u>
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**[Insert information, including attachment if necessary]**

7. Consistent with California Public Contract Code section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 4 hereof, Contractor hereby releases and forever discharges District, all its agents, employees, inspectors, assignees, and transferees from any and all liability, claims, demands, actions, or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
8. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.
9. To the furthest extent permitted by California law, Contractor shall defend, indemnify, and hold harmless the District, its agents, representatives, officers, consultants, employees, trustees, and volunteers (the "indemnified parties") from any and all losses, liabilities, claims, suits, and actions of any kind, nature, and description, including, but not limited to, attorneys' fees and costs, directly or indirectly arising out of, connected with, or resulting from the performance of the Contract unless caused wholly by the sole negligence or willful misconduct of the indemnified parties.
10. Contractor hereby waives the provisions of California Civil Code section 1542 which provides as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR.

11. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable. If any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal, or other law, ruling, or regulations, then such provision, or part thereof, shall remain in force and effect to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.

12. All rights of District shall survive completion of the Work or termination of Contract, and execution of this Release.

\* \* \* CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING \* \* \*

Berryessa Union School District

TITLE: \_\_\_\_\_

NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

CONTRACTOR

TITLE: \_\_\_\_\_

NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

END OF DOCUMENT

11/13/13



**DOCUMENT 00 89 00**

**GUARANTEE FORM**

\_\_\_\_\_ ("Contractor") hereby agrees that the \_\_\_\_\_ ("Work" of Contractor) which Contractor has installed for the Berryessa Union School District ("District") for the following project:

**PROJECT:**

has been performed in accordance with the requirements of the Contract Documents and that the Work as installed will fulfill the requirements of the Contract Documents.

The undersigned agrees to repair or replace any or all of such Work that may prove to be defective in workmanship or material together with any other adjacent Work that may be displaced in connection with such replacement within a period of \_\_\_\_\_ year(s) from the date of completion as defined in Public Contract Code section 7107, subdivision (c), ordinary wear and tear and unusual abuse or neglect excepted. The date of completion is \_\_\_\_\_, 20\_\_.

In the event of the undersigned's failure to comply with the above-mentioned conditions within a reasonable period of time, as determined by the District, but not later than seven (7) days after being notified in writing by the District, the undersigned authorizes the District to proceed to have said defects repaired and made good at the expense of the undersigned. The undersigned shall pay the costs and charges therefore upon demand.

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Representatives to be contacted for service subject to terms of Contract:

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE NO.: \_\_\_\_\_

END OF DOCUMENT

11/13/13

**DOCUMENT 00 92 00**

**SMOKE-FREE ENVIRONMENT CERTIFICATION**

PROJECT/CONTRACT NO.: \_\_\_\_\_ between Berryessa Union School District (the “District” or the “Owner”) and \_\_\_\_\_ (the “Contractor” or the “Bidder”) (the “Contract” or the “Project”).

This Smoke-Free Environment Certification form is required from the successful Bidder.

Per District Board Policy and consistent with Education Code section 48901 and Health and Safety Code section 39002 all District sites, including the Project site are Tobacco Free Environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes; school buildings, school grounds, school owned vehicles and vehicles owned by others while on District property.

I acknowledge that I am aware of the District’s policy regarding smoke-free environments at District sites, including the Project site and hereby certify that I will adhere to the requirements of that policy and not permit any of my firm’s employees, agents, subcontractors, or my firm’s subcontractors’ employees or agents to smoke on the Project site.

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

**DOCUMENT 00 92 50**

**ASBESTOS AND OTHER HAZARDOUS MATERIALS CERTIFICATION**

Contractor hereby certifies that no Asbestos, or Asbestos-Containing Materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations "New Material Hazardous", shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for District.

Contractor further certifies that it has instructed its employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (.1%) asbestos shall be defined as asbestos-containing material.

Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.

All Work or materials found to be New Hazardous Material or Work or material installed with "New Hazardous Material" containing equipment will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the District.

Contractor has read and understood the document Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein.

Date: \_\_\_\_\_

Proper Name of Bidder: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

**DOCUMENT 00 93 00**

**LEAD-BASED PAINT CERTIFICATION**

California Occupational Safety and Health Administration (CalOSHA), Environmental Protection Agency (EPA), California Department of Health Services (DHS), California Department of Education (CDE), and the Consumer Product Safety Commission (CPSC) regulate lead-containing paint and lead products. Because the Contractor and its employees will be providing services for the District, and because the Contractor's work may disturb lead-containing building materials, **CONTRACTOR IS HEREBY NOTIFIED** of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to 1993 are presumed to contain some lead-based paint until sampling proves otherwise.

The CDE mandates that school districts utilize DHS lead-certified personnel when a lead-based hazard is identified. Examples of lead-certified personnel include: project designers, inspectors, and abatement workers. Furthermore, since it is assumed by the district that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (**Including Title 8, California Code of Regulations, Section 1532.1**). Any and all Work which may result in the disturbance of lead-containing building materials must be coordinated through the District.

The California Education Code also prohibits the use or import of lead-containing paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new school facility or in the modernization or renovation of any existing school facility. The Contractor shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

If failure to comply with these laws, rules, and regulations results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom. If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the

Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

THE UNDERSIGNED HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT HE OR SHE HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY, AS WELL AS THE EXISTENCE OF APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL OF, SUCH MATERIALS WITH WHICH IT MUST COMPLY. THE UNDERSIGNED ALSO WARRANTS THAT HE OR SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR.

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

THE UNDERSIGNED HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT HE OR SHE HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY, AS WELL AS THE EXISTENCE OF APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL OF, SUCH MATERIALS WITH WHICH IT MUST COMPLY. THE UNDERSIGNED ALSO WARRANTS THAT HE OR SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE OWNER MAY REQUIRE PROOF OF SUCH AUTHORITY.

Date: \_\_\_\_\_

Proper Name of Bidder: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

**IMPORTED MATERIALS CERTIFICATION**

PROJECT/CONTRACT NO.: \_\_\_\_\_ between Berryessa Union School District (the "District") and \_\_\_\_\_ (the "Contractor" or the "Bidder") (the "Contract" or the "Project").

This form shall be executed by the Contractor and by all entities that, in any way, provide or deliver and/or supply any soils, aggregate, or related materials ("Fill") to the Project Site. All Fill shall satisfy all requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, section 21000 et seq. of the Public Resources Code ("CEQA"), and all requirements of section 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control.

To the furthest extent permitted by California law, Contractor shall defend, indemnify, and hold harmless the District, its agents, representatives, officers, consultants, employees, trustees, and volunteers pursuant to the indemnification provisions in the Contract Documents for, without limitation, any claim(s) connected with providing, delivering, and/or supplying Fill.

Certification of:      Delivery Firm/Transporter            Supplier                          Manufacturer  
                           Wholesaler                                  Broker                              Retailer  
                           Distributor                                      Other \_\_\_\_\_

Type of Entity        Corporation                                  General Partnership  
                           Limited Partnership                          Limited Liability Company  
                           Sole Proprietorship                          Other \_\_\_\_\_

Name of firm ("Firm"): \_\_\_\_\_

Mailing address: \_\_\_\_\_

Addresses of branch office used for this Project: \_\_\_\_\_

If subsidiary, name and address of parent company: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_ =

By my signature below, I hereby certify that I am aware of section 25260 of the Health and Safety Code and the sections referenced therein regarding the definition of hazardous material. I further certify on behalf of the Firm that all soils, aggregates, or related materials provided, delivered, and/or supplied or that will be provided, delivered, and/or supplied by this Firm to the Project Site are free of any and all hazardous material as defined in section 25260 of the Health and Safety Code. I further certify that I am authorized to make this certification on behalf of the Firm.

Date: \_\_\_\_\_  
Proper Name of Contractor: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_

END OF DOCUMENT

11/13/13

**SECTION 01 10 00**  
**SUMMARY OF WORK**

**PART 1 GENERAL**

**1.1 PROJECT**

- A. Project Name: **BUSD – New District Office**
- B. Owner's Name: Berryessa Union School District.
- C. Architect: McKim Design Group

**1.2 CONTRACT DESCRIPTION**

- A. Contract Type: Each project will be a single prime contract based on a Stipulated Price as described in Document 00 5200 - Agreement Form.

**1.3 RELATED SECTIONS**

- A. Section 01 10 12 - Bid Division Descriptions.

**1.4 DESCRIPTION OF ALTERATIONS WORK**

- A. Scope of alterations work is shown on McKim Design Group drawings and specifications.
- B. MECHANICAL UPGRADES - Bid #B-03-2022-23**
- C. ELECTRICAL UPGRADES - Bid #B-04-2022-23**
- D. GENERAL CONSTRUCTION – Bid #B-05-2022-23**

**1.5 OWNER OCCUPANCY**

- A. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- B. Schedule the Work to accommodate Owner occupancy

**The Project schedule – Bid #'s B-03-2022-23, B-04-2022-23 & B05-2022-23:**

**Commence on: October 18, 2022**  
**Complete on December 20, 2022**

**C. Work by Others:**

- 1) **Civil Work**
- 2) **Data Work**
- 3) **Custom Casework**



- 4) **Flooring**
- 5) **EMS Controls**
- 6) **Security**
- 7) **Landscaping**
- 8) **BUSD Maintenance Staff work**

## 1.6 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Provide access to and from site as required by law and by Owner.
  1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Utility Outages and Shutdown.
  1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days' notice to Owner and authorities having jurisdiction.
  2. Limit shutdown of utility services to minimal hours, arranged at least 48 hours in advance with Owner.
  3. Prevent accidental disruption of utility services to other facilities.

**END OF SECTION**

**SECTION 01 10 00**  
**SUMMARY OF WORK**

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**END OF SECTION**

**BID DIVISION DESCRIPTIONS**

**PART 1 - GENERAL**

**1.1 Section Includes**

- A. Descriptions of Bid Divisions.

**1.2 Related Sections**

- A. Section 01 11 00 - Summary of Work.

**1.3 DESCRIPTIONS OF BID DIVISIONS**

- A. For the purpose of clarity, the scope of work for each Bid Division has been divided into three categories: "INCLUDED", "ALSO INCLUDED", and "EXCLUDED".
  - 1. Items listed under "INCLUDED" are the standard and/or "conventional" work scope of each Bid Division.
  - 2. Information provided under "ALSO INCLUDED" points out some items which may be considered less obvious or "unconventional," but which are included in the work scope of a particular Bid Division. (Information under this heading is not always necessary to delineate a Bid Division.)
  - 3. Information provided under the heading "EXCLUDED" is for the purpose of indicating beginning and termination points, and/or to provide an understanding of fringe involvements included in Bid Divisions. (Information under this heading is not always necessary to delineate a Bid Division.)
- B. Bid Divisions are the categories of Work into which the Project will be divided for bidding and construction. Bid Divisions should not be confused with Specification Sections.
  - 1. Bid Division Descriptions (Section 01 11 12) are a written description of the Scope of the Work included in each of the Bid Divisions.
  - 2. Bid Division Descriptions have been written to clearly define each Bid Division. Contractors are encouraged to request information or clarification by calling the Construction Manager. The Owner will not be responsible for a Contractor's incorrect interpretation of the Descriptions.

3. Although each Bid Division involves a standard segment of "conventional" trade contracting, multiple contract project delivery requires that adjustments be made to permit the completion of each Bid Division as a separate segment of construction. Each Contractor shall carefully review the total scope of responsibilities with respect to the Work of the Bid Division(s), and shall provide for the total scope in Contractor's Bid Division Proposal.

4. Each Contractor shall become familiar with the work scopes of all other Bid Divisions which interface with the Bid Division of which a proposal is being submitted. Each Contractor shall consider that the work of Contractor's Bid Division(s) may follow the work of another Bid Division, that other Contractors may perform work after the work of Contractor's Bid Division(s), and that other Contractors may work simultaneously with the work of Contractor's Bid Division(s). Each Contractor shall include provisions for such sequencing and scheduling, and for cooperation and coordination with such other Contractors in the Bid Proposal.

- 5. Nothing contained in the Bidding Documents, including the Bid Division descriptions, shall be construed by Bidders as an assignment of work to any construction industry trade. Each Bidder is responsible for Bidder's own work assignments within the Bid Division.
- 6. Project will be completed under a Project Stabilization Agreement, see Appendix B.
- 7. Pre-Qualification is required to bid on the work, see Appendix A.

## 1.4 BID DIVISION DESCRIPTIONS

### A. BID DIVISION 1: TENNIS COURT RENOVATION – B-01-2021-22

**1. Included:** The work of this project consists of the following but not limited to: Demolition of existing fencing, PCC, AC paving, misc. court furnishings. Grading, lime treatment and placement of AC paving, court surfacing, court furnishings, PCC and minor landscaping & irrigation repairs or relocation.

Division 01	General Requirements
Division 02	Existing Conditions & Demolition
02 41 13	Site Demolition
03 30 53	Sitework Concrete
06 15 40	Headerboards

31 23 00	Excavation, Grading & Backfill
31 32 13.19	Lime Soil Stabilization
32 01 90.24	Root Pruning
32 11 23	Aggregate Base
32 12 16	HMA Paving
32 12 16	Hot-Mix Asphalt Paving
32 12 16.05	HMA Pavement Repair
32 12 40	Acrylic Surfacing Sealer
32 17 23	Pavement Markings
32 84 23	Underground Irrigation Systems
32 91 13	Soil Preparation
32 93 05	Exterior Plants
32 93 10	Plant Maintenance
32 93 15	Landscape Restoration
32 93 23	Lawn Sodding

**Also included but not limited to:**

Due to compressed schedule of this summer project, contractor will be required to submit all submittals (for this Bid Division) to CM/Architect 25 days after receipt of Notice to Proceed.

Provide As-built drawings (for this Bid Division) showing original contract, change order work, RFI'S and any other additional work.

All construction included in this Bid Divisions shall be in accordance with all documents, all organizations having jurisdiction, and all other, applicable design criteria.

The Contractor is required to provide an underground utility survey performed by a licensed underground utility locator at the contractor's expense. The locator's report must be submitted to the Owner and Construction Manager for review prior to beginning any demolition, excavation or grading operations.

Provide all labor and material to repair, replace, or relocate any irrigation mainlines, lateral lines, valves or irrigation boxes impacted and/or damaged by demolition, excavation or grading work.

Include demolition and lawful disposal of existing chain link fencing/fence posts and fence post footings. Provide and install approximately 650 LF of temporary site security chain link fencing for the duration of the project. Provide manpower as necessary to relocate temporary site fencing as may be directed by Construction Manager. Provide labor for the daily securing of the site at the end of each workday.

Provide Debris bins, waste disposal and sanitary facilities for use by Bid Divisions 1 contractor and subcontractors.

Provide all labor and material for the lawful disposal of any excess soils / spoils from demolition, excavation, grading work. Any soils testing for disposal will be the responsibility of the contractor.

Provide continuous clean up. Provide one laborer all day each Friday for a weekly jobsite cleanup (broom clean).

Provide coordination with all other Bid Division Contractors, District Maintenance staff and District vendors.

Provide labor for the daily securing of the site at the end of each workday.

Provide weather protection and dewatering during grading operation(s) as required to protect grading/paving operations.

Provide all trenching, grading, backfill and compaction to sub grade associated with this scope of work.

**Excluded:**

Providing and installation of new chain link fencing - Bid Division 2 – Tennis Court Fencing

**B. BID DIVISION 2: TENNIS COURT FENCING – B-02-2021-22**

**1. Included:** The work of this project consists of the following but not limited to: Provide and installation of new court fencing, fence posts and gates.

Division 01	General Requirements
Division 02	Existing Conditions & Demolition
32 31 13	Chain Link Fencing

**Also included but not limited to:**

Due to compressed schedule of this summer project, contractor will be required to submit all submittals (for this Bid Division) to CM/Architect 25 days after receipt of Notice to Proceed.

Provide As-built drawings (for this Bid Division) showing original contract, change order work, RFI'S and any other additional work.

All construction included in this Bid Division shall be in accordance with all documents, all organizations having jurisdiction, and all other, applicable design criteria. Provide all labor and material for the lawful disposal of any excess soils / spoils from post footing drilling. Any soils testing for disposal will be the responsibility of the contractor.

Provide all labor and material to repair, replace, or relocate any irrigation mainlines, lateral lines, valves or irrigation boxes impacted and/or damaged by the fencing work.

Provide weather protection and dewatering during post footing drilling as required to protect fence post footing excavations.

Provide Debris bins, waste disposal and sanitary facilities for use by Bid Division 2 contractor and subcontractors.

Provide coordination with all other Bid Division Contractors, District Maintenance staff and District vendors.

**Excluded:**

All work included in the scope of services for Bid Division 1 – Tennis Court Renovation  
Demolition of existing chain link fencing, fence posts & fence post footings.



**SECTION 01 20 00**  
**PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

**1.2 RELATED REQUIREMENTS**

- A. Document 00 50 00 - Contracting Forms and Supplements: Forms to be used.
- B. Document 00 52 00 - Agreement Form: Contract Sum, retainages, payment period, monetary values of unit prices.
- C. Document 00 72 00 - General Conditions and Document 00 73 00 - Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- D. Document 00 73 00 - Supplementary Conditions: Percentage allowances for Contractor's overhead and profit.
- E. Section 01 2100 - Allowances: Payment procedures relating to allowances.
- F. Section 01 2200 - Unit Prices: Monetary values of unit prices, payment and modification procedures relating to unit prices.

**1.3 SCHEDULE OF VALUES**

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect and Construction Manager for approval.
- B. Forms filled out by hand will not be accepted.
- C. Submit Schedule of Values in duplicate within 10 days after date of the Notice of Award of the Contract. This date is per the District's General Conditions

Section 9.2.1.A by the District.

- D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.
- E. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- F. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.

#### 1.4 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. For each item, provide a column for listing each of the following:
  - 1. Item Number.
  - 2. Description of work.
  - 3. Scheduled Values.
  - 4. Previous Applications.
  - 5. Work in Place and Stored Materials under this Application.
  - 6. Authorized Change Orders.
  - 7. Total Completed and Stored to Date of Application.
  - 8. Percentage of Completion.
  - 9. Balance to Finish.
  - 10. Retainage.
- E. Execute certification by signature of authorized officer.

- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- H. Submit Four copies of each Application for Payment.
- I. Include the following with the application:
  - 1. Transmittal letter as specified for Submittals in Section 01 3000.
  - 2. Construction progress schedule, revised and current as specified in Section 01 3000.
  - 3. Partial release of liens from major Subcontractors and vendors.
  - 4. Affidavits attesting to off-site stored products.
  - 5. Conditional and Unconditional Waiver Releases.
- J. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

#### 1.5 MODIFICATION PROCEDURES

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ a n d / o r subcontractors of changes to the Contract Documents.
- B. For required changes, Owner, Architect or Construction Manager will issue a CCD approved by DSA and signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  - 2. Promptly execute the change.
- C. Contractor may propose a change by submitting a request for change to O w n e r , Architect or Construction Manager describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.

D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.

1. For change requested by Owner, Architect or Construction Manager for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Owner, Architect or Construction Manager.
3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
4. For change ordered by Owner, Architect or Construction Manager without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.

E. Substantiation of Costs: Provide full information required for evaluation.

1. On request, provide the following data:
  - a. Quantities of products, labor, and equipment.
  - b. Taxes, insurance, and bonds.
  - c. Overhead and profit.
  - d. Justification for any change in Contract Time.
  - e. Credit for deletions from Contract, similarly documented.
2. Support each claim for additional costs with additional information:
  - a. Origin and date of claim.
  - b. Dates and times work was performed, and by whom.
  - c. Time records and wage rates paid.
  - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

- F. Execution of Change Orders: Owner, Architect or Construction Manager will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- G. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- H. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- I. Promptly enter changes in Project Record Documents.

#### 1.06 APPLICATION FOR FINAL PAYMENT

- J. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- K. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. All closeout procedures specified in Section 01 7000 have been accomplished and the project is Certified by DSA.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

**END OF SECTION**

**SECTION 01 21 00**  
**ALLOWANCES**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

**1.2 RELATED REQUIREMENTS**

- A. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

**1.3 CONTINGENCY ALLOWANCE**

- A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.
- B. Funds will be drawn from the Contingency Allowance only by Change Order.
- C. Labor quantities MUST be verified by the I.O.R. prior to payment.
- D. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

END OF SECTION

**SECTION 01 22 00**  
**UNIT PRICES**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.

**1.2 RELATED REQUIREMENTS**

- A. Document 00 21 13 - Instructions to Bidders: Instructions for preparation of pricing for Unit Prices.
- B. Document 00 43 22 - Unit Prices Form: List of Unit Prices as supplement to Bid Form.
- C. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

**1.3 COSTS INCLUDED**

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

**1.4 UNIT QUANTITIES SPECIFIED**

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

**1.5 MEASUREMENT OF QUANTITIES**

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect, Owner or Construction Manager.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.

- D. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
- E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- F. Measurement by Area: Measured by square dimension using mean length and width or radius.
- G. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- H. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.
- I. Perform surveys required to determine quantities, including control surveys to establish measurement reference lines. Notify Architect prior to starting work.
- J. Contractor's Engineer Responsibilities: Sign surveyor's field notes or keep duplicate field notes, calculate and certify quantities for payment purposes.

## 1.6 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.
- B. Payment will not be made for any of the following:
  1. Products wasted or disposed of in a manner that is not acceptable.
  2. Products determined as unacceptable before or after placement.
  3. Products not completely unloaded from the transporting vehicle.
  4. Products placed beyond the lines and levels of the required Work.
  5. Products remaining on hand after completion of the Work.
  6. Loading, hauling, and disposing of rejected Products.

## 1.7 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not conforming to specified requirements.



- B. If, in the opinion of Architect, Owner or Construction Manager it is not practical to remove and replace the Work, Architect will direct one of the following remedies:
1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Architect, Owner or Construction Manager.
  2. The defective Work will be partially repaired to the instructions of the Architect, and the unit price will be adjusted to a new unit price at the discretion of Architect.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage price reduction.
- D. The authority of Architect to assess the defect and identify payment adjustment is final.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

**END OF SECTION**

**DOCUMENT 01 23 00**

**ALTERNATES AND UNIT PRICING**

**PART I – ALTERNATES**

**1.01 RELATED DOCUMENTS AND PROVISIONS**

- A. All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:
  - 1. General Conditions;
  - 2. Special Conditions;
  - 3. Bid Form and Proposal;
  - 4. Instruction to Bidders.

**1.02 DESCRIPTION**

- A. The following items of work include proposed modifications to, substitutions for, to and/or deletions from the various parts of the Work specified in other Documents of the Specifications. The acceptance or rejection of any of the alternates is strictly at the option of the District subject to District's acceptance of Contractor's stated prices contained in this Proposal.

**1.03 GENERAL**

- A. Where an item is omitted, or scope of Work is decreased, all Work pertaining to the item whether specifically stated or not, shall be omitted and where an items is added or modified or where scope of Work is increased, all Work pertaining to that required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

**1.04 BASE BID**

- A. The Base Bid includes all work required to construct the Project completely and in accordance with the Contract Documents.

**1.05 ALTERNATES**

- A. The below Alternate descriptions are general in nature and for reference purposes only. The Contract Documents, including, without limitation, the Drawings and Specifications, must be referred to for the complete scope of Work.

**PART 2 - UNIT PRICING**

**2.01 GENERAL**

- A. Contractor shall completely state all required figures based on Unit Prices listed below. Where scope of Work is decreased, all Work pertaining to the item, whether specifically stated or not, shall be omitted and where scope of Work is increased, all work pertaining to that item required to render same ready for use on the Project in

accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

## **2.02 UNIT PRICES**

- A. Furnish unit prices for each of the named items included on the bid form on a square foot, lineal foot, or per each basis, as applies. Unit prices shall include all labor, materials, services, profit, overhead, insurance (excluding costs of insurance covered by OCIP), bonds, taxes, and all other incidental costs of Contractor, subcontractors, and supplier(s).

**PART 3 – EXECUTION** Not Used.

END OF DOCUMENT

**SUBSTITUTION PROCEDURES**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS AND PROVISIONS**

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Substitutions For Specified Items;
- B. Special Conditions.

**1.02 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT**

- A. Catalog numbers and specific brands or trade names followed by the designation "or equal" are used in conjunction with material and equipment required by the Specifications to establish the standards of quality, utility, and appearance required. Substitutions which are equal in quality, utility, and appearance to those specified may be reviewed subject to the provisions of the General Conditions.
- B. Wherever more than one manufacturer's product is specified, the first-named product is the basis for the design used in the work and the use of alternative-named manufacturers' products or substitutes may require modifications in that design. If such alternatives are proposed by Contractor and are approved by the District and-or the Architect, Contractor shall assume all costs required to make necessary revisions and modifications of the design resulting from the substitutions requested by the Contractor.
- C. When materials and equipment are specified by first manufacturer's name and product number, second manufacturer's name and "or approved equal," supporting data for the second product, if proposed by Contractor, shall be submitted in accordance with the requirements for substitutions.
- D. If the District and-or Architect, in reviewing proposed substitute materials and equipment, requires revisions or corrections to be made to previously accepted Shop Drawings and supplemental supporting data to be resubmitted, Contractor shall promptly do so. If any proposed substitution is judged by the District and-or Architect to be unacceptable, the specified material or equipment shall be provided.

- E. Samples may be required. Tests required by the District and-or Architect for the determination of quality and utility shall be made at the expense of Contractor, with acceptance of the test procedure first given by the District.
- F. In reviewing the supporting data submitted for substitutions, the District and-or Architect will use for purposes of comparison all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Contract Documents. If more than two (2) submissions of supporting data are required, the cost of reviewing the additional supporting data shall be borne by Contractor, and the District will deduct the costs from the Contract Price.

### 1.03 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if received as noted in the contract documents. Requests not received within the timeline established may be considered or rejected at the discretion of the Architect.
  - 1. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals.
  - 2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Document and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
    - a. Product Data, including Drawings and descriptions, or products, fabrication and installation procedures.
    - b. Samples, where applicable or requested.
    - c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
    - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.

- e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
  - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
  - g. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
- B. Architect's Action: Within one week of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, whichever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name.

## **PART 2 – PRODUCTS**

### **2.01 SUBSTITUTIONS**

- A. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise, requests will be returned without action except to record noncompliance with these requirements.
1. Extensive revisions to Contract Documents are not required.
  2. Proposed changes are in keeping with the general intent of Contract Documents.
  3. The request is timely, fully documented and properly submitted.
  4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
  5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the

product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
  7. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities for the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
  8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
  9. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
  10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.
- B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval
- C. By making requests for substitutions based on Sub-paragraph above, the Contractor:
1. Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to the specified.
  2. Represents that the Contractor will provide the same warranty for the substitution that the Contractor would for the specified.
  3. Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently becomes apparent.

4. Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be completed in all respects.
- D. If a proposed substitution requires investigation, testing or approval to determine its suitability for incorporation into the work, the testing of the proposed substitution shall be as determined by the Architect. The Contractor shall bear all cost of such investigations or test.
  - E. All Substitutions that affect Structural Safety, Fire and Life Safety, Access Compliance or Energy (as applicable) shall be submitted to the Division of the State Architect for review and approval.

**PART 3 – EXECUTION** Not Used.

END OF DOCUMENT

11/13/13



**SECTION 01 30 00**  
**ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Electronic document submittal service.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Construction progress schedule.
- F. Submittals for review, information, and project closeout.
- G. Submittal procedures.

**1.2 RELATED REQUIREMENTS**

- A. Division 00 - Procurement and Contracting Requirements
- B. Section 01 3216 - Construction Progress Schedule: Form, content, and administration of schedules.
- C. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- D. Section 01 7800 - Closeout Submittals: Project record documents.

**1.3 PROJECT COORDINATION**

- A. Project Coordinator: Construction Manager.
- B. Cooperate with the Construction Manager in allocation of mobilization areas of site; staging, Contractor access, traffic, and parking facilities.
- C. Coordinate field engineering and layout work under instructions of the District, CM and Architect.
- D. Make the following types of submittals to Architect through the Construction Manager and I.O.R.:
  - 1. Requests for information.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Applications for payment and change order requests.

6. Progress schedules.
7. Closeout submittals.

## PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION

### 3.1 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format and transmitted via email or an Internet-based submittal service as determined by the CM that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
  1. Besides submittals for review, information, and closeout, this procedure applies to requests for information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
  2. [ ] All parties are required to use this service.
  3. It is Contractor's responsibility to submit documents in PDF format.
  4. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
  5. Users of the service need an email address, Internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, [www.adobe.com](http://www.adobe.com), or Bluebeam PDF Revu, [www.bluebeam.com](http://www.bluebeam.com)), unless such software capability is provided by the service provider.
  6. Paper document transmittals will be reviewed if submitted with samples or other similar items only; emailed PDF documents will not be reviewed if an internet service is agreed to.
  7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.
- B. Submittal Service: The selected service is:
  1. To be approved by the Owner.
- C. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.
  1. Representatives of Owner and Construction Manager will be included in this training as necessary.

- D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

### 3.2 CONTRACTOR MEETINGS

- A. Conduct trade preconstruction meeting with each trade to review scope and schedule prior to start of work.
- B. Conduct coordination meetings with multiple trades prior to start of work in cases where more than two trades are working simultaneously in the same work area, or where two or more trades' work intersects, or impacts the other.

### 3.3 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting after Notice of Award.
- B. Project Coordinator will schedule a meeting after Notice of Award.
- C. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
  - 4. Construction Manager.
  - 5. [ ].
- D. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties to the Contract, Owner, Construction Manager and Architect.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.
  - 8. Review site logistics plans, site safety plans and construction sequencing.
- E. The Construction Manager will record minutes and distribute copies within 48 hours after meeting to participants.[ ]

### 3.4 SITE MOBILIZATION MEETING

- A. Construction Manager will schedule meeting at the Project site prior to [ ] occupancy.
- B. Attendance Required:
  - 1. Contractor.
  - 2. Owner.
  - 3. I.O.R..
- C. Agenda:
  - 1. Use of premises by Owner and Contractor.
  - 2. Owner's requirements and occupancy prior to completion.
  - 3. Construction facilities and controls provided by Owner.
  - 4. Temporary utilities provided by Owner.
  - 5. Survey and building layout.
  - 6. Security and housekeeping procedures.
  - 7. Schedules.
  - 8. Application for payment procedures.
  - 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.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### 3.5 PROGRESS MEETINGS

- A. Construction Manager will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- B. Attendance Required: Job superintendent, Owner, CM, Architect, I.O.R., subcontractors as appropriate to agenda topics for each meeting.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of Work progress and three week look-ahead against the original schedule submitted by the contractor prior to initiation of work.
  - 3. Field observations, issues, and decisions.

4. Identification of issues that impede, or will impede, planned progress including open RFIs.
5. Review of submittals schedule and status of submittals.
6. Maintenance of progress schedule.
7. Corrective measures to regain projected schedules.
8. Planned progress during succeeding work period.
9. Maintenance of quality and work standards.
10. Effect of proposed changes on progress schedule and coordination.
11. Other business relating to Work.

D. Record minutes and distribute copies within 48 hours after meeting to participants.

### 3.6 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:

1. Product data.
2. Shop drawings.
3. Samples for selection.

B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed only for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below.

### 3.7 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:

1. Design data.
2. Certificates upon completion of installation.
3. Test reports.
4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator and to Owner.

### 3.8 SUBMITTALS FOR PROJECT CLOSEOUT

- A. When the following are specified in individual sections, submit them at project closeout:
  - 1. Project record documents with field marked as-built drawings.
  - 2. Operation and maintenance data.
  - 3. Warranties.
  - 4. Bonds.
  - 5. Training Manuals.
  - 6. Other types as indicated.
- B. Submit for Owner's benefit during and after project completion.

### 3.9 NUMBER OF COPIES OF SUBMITTALS

- A. Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Upon review and acceptance of submittals, provide two hard copies, one to the Architect and one to the Owner.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
  - 1. After review, produce duplicates.
  - 2. Retained samples will not be returned to Contractor unless specifically so stated.

### 3.10 SUBMITTAL PROCEDURES

- A. Shop Drawing Procedures:
  - 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
  - 2. Use of the Construction drawings for shop drawing production will only be allowed if the contractor and specific sub-contractor submit a signed release of liability statement provided by the Architect. [ ].
  - 3. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- B. Transmit each submittal with a copy of approved submittal form.
- C. Submit complete list of anticipated submittals no later than 10 days after notice to proceed[ ].
- D. Submittals must be submitted and review completed and accepted prior to the start of work.
- E. Submittals are to be complete for all items in each specification section. Partial

submittals may not be reviewed.

- F. Transmit each submittal with a transmittal.
- G. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- H. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- I. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents and date of review.
- J. Deliver submittals to Architect via email or Contractor's website. Provide email notification when submittals are loaded to website.
- K. Schedule submittals to expedite the Project, and coordinate submission of related items.
- L. For each submittal for review, allow 10 business days excluding delivery time to and from the Contractor.
- M. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work. Describe proposed substitutions or equals on the submittal cover. Accepting a submittal that does not identify deviations from the contract does not constitute acceptance of the deviations.
- N. Provide space for Contractor and Architect review stamps.
- O. When revised for resubmission, identify all changes made since previous submission.
- P. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- Q. Submittals not requested will not be recognized or processed.

**END OF SECTION**

**SECTION 01 32 16**  
**CONSTRUCTION PROGRESS SCHEDULE**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

**1.2 RELATED SECTIONS**

- A. Section 01 3000 - Administrative Requirements

**1.3 REFERENCES**

- A. AGC (CPSM) - Construction Planning and Scheduling Manual; Associated General Contractors of America; 2004.

**1.4 SUBMITTALS**

- A. Within 10 days after notice to proceed, submit complete, detailed construction schedule.
  - 1. This project will be built in conjunction and concurrently with other projects. Integrate schedule for this project with other projects being performed.
  - 2. Schedules to be maintained in Primavera, P6 Project Planner platform.
  - 3. Submit three copies of the schedule in 11 by 17 format, landscape.
- B. Submit updated schedule with each Application for Payment.

**1.5 SCHEDULE FORMAT**

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

**PART 2 PRODUCTS**

- 2.1 Software: Primavera P6 Project Planner or approved substitute.**

**PART 3 EXECUTION**



### 3.1 NETWORK ANALYSIS

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
- B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
  - 1. Preceding and following event numbers.
  - 2. Activity description.
  - 3. Estimated duration of activity, in maximum 15 day intervals.
  - 4. Earliest start date.
  - 5. Earliest finish date.
  - 6. Actual start date.
  - 7. Actual finish date.
  - 8. Latest start date.
  - 9. Latest finish date.
  - 10. Total and free; float time shall accrue to Owner and to Owner's benefit.

### 3.2 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within two business days.

### 3.3 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date

of each activity.

- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.

#### 3.4 UPDATE INTERVALS

- A. Provide monthly updates from notice to proceed to start of construction.
- B. Provide updates every other week during construction.

#### 3.5 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, Architect, and Owner.

**END OF SECTION**

**SECTION 01 40 00**  
**QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. References and standards.
- B. Quality assurance submittals.
- C. Control of installation.
- D. Tolerances.
- E. Testing and inspection services.

**1.2 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.

**1.3 REFERENCE STANDARDS**

- A. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2013a.

**1.4 SUBMITTALS**

- A. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
  - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- B. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

**1.5 REFERENCES AND STANDARDS**

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

## PART 2 PRODUCTS - NOT

## USED PART 3 EXECUTION

### 3.1 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### 3.2 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### 3.3 TESTING AND INSPECTION

Project Inspector to be approved by DSA and employed by the District.

Testing laboratory is to be employed by owner.

A. Limits on Testing/Inspection Agency Authority:

1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the Work.

B. Contractor Responsibilities:

1. Make available to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
3. Provide incidental labor and facilities:
  - a. To provide access to Work to be tested/inspected.
  - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
  - c. To facilitate tests/inspections.
  - d. To provide storage and curing of test samples.
4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

C. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.

D. Re-testing, re-inspection, stand-by time, and other cost or time impacts required because of non-conformance to specified requirements shall be paid for by the Contractor.

### 3.4 DIVISION OF THE STATE ARCHITECT TESTING AND INSPECTION FORM

A. Architect shall provide to Contractor DSA Testing and Inspection Form approved for the project and Contractor to cooperate with the testing agency in performing the tests indicated.

### 3.5 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.

- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

**SECTION 01 50 00**  
**TEMPORARY FACILITIES AND CONTROLS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Field offices.

1.2 TEMPORARY UTILITIES

- A. Contractor may use Owner's existing utilities on the site at no charge.
- B. Contractor to provide equipment and devices to properly tap into existing utilities or to increase capacity of utilities if Owner's capacity is not adequate.
  - 1. Electrical power and metering, consisting of connection to existing facilities.
  - 2. Water supply, consisting of connection to existing facilities.
- C. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.3 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to the Project Manager and Project Superintendent.
- B. Telecommunications services shall include:
  - 1. Cell phone lines: One line, minimum; per person.

2. Internet Connections: Minimum of one; DSL modem or faster.
3. Email: Account/address reserved for project use for each person.

#### 1.4 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

#### 1.5 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

#### 1.6 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Areas of work including storage and lay down areas are to be separated from staff and students by fencing.
- C. Provide 6 foot (1.8 m) high fence around construction site; equip with vehicular and pedestrian gates with locks.

#### 1.7 EXTERIOR ENCLOSURES

- A. 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. Provide access doors with self-closing hardware and locks.

#### 1.8 INTERIOR ENCLOSURES

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.



- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces.

## 1.9 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft. Do not disable Owner's security system without notification.

## 1.10 VEHICULAR ACCESS AND PARKING

- A. Coordinate access and haul routes with governing authorities and Owner.
- B. Provide and maintain access to fire hydrants, free of obstructions.
- C. Limited parking is available on site. Make provisions for contractor parking with the school's staff and the Construction Manager.
- D. Manage trade workers parking areas ensuring workers only parked in approved areas.

## 1.11 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site weekly.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

## 1.12 FIELD OFFICES

- A. Field office is not required.

## PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION - NOT USED

**END OF SECTION**

**DOCUMENT 01 60 00**

**MATERIALS AND EQUIPMENT**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS AND PROVISIONS**

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Purchase of Materials and Equipment;
- B. Special Conditions;
- C. Imported Materials Certification.

**1.02 MATERIAL AND EQUIPMENT**

- A. Only items approved by the District and-or Architect shall be used.
- B. Contractor shall submit lists of products and other product information in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

**1.03 MATERIAL AND EQUIPMENT COLORS**

- A. The District and-or Architect will provide a schedule of colors.
- B. No individual color selections will be made until after approval of all pertinent materials and equipment and after receipt of appropriate samples in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.
- C. Contractor shall request priority in writing for any item requiring advance ordering to maintain the approved Construction Schedule.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Contractor shall deliver manufactured materials in original packages, containers, or bundles (with seals unbroken), bearing name or identification mark of manufacturer.

- B. Contractor shall deliver fabrications in as large assemblies as practicable; where specified as shop-primed or shop-finished, package or crate as required to preserve such priming or finish intact and free from abrasion.
- C. Contractor shall store materials in such a manner as necessary to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt, or from any other cause will not be accepted.
- D. Materials are not acceptable that have been warehoused for long periods of time, stored or transported in improper environment, improperly packaged, inadequately labeled, poorly protected, excessively shipped, deviated from normal distribution pattern, or reassembled.
- E. Contractor shall store material so as to cause no obstructions of sidewalks, roadways, and underground services. Contractor shall protect material and equipment furnished under Contract.
- F. Contractor may store materials on Site with prior written approval by the District, all material shall remain under Contractor's control and Contractor shall remain liable for any damage to the materials. Should the Project Site not have storage area available, the Contractor shall provide for off-site storage at no cost to District.
- G. When any room in Project is used as a shop or storeroom, the Contractor shall be responsible for any repairs, patching, or cleaning necessary due to that use. Location of storage space shall be subject to prior written approval by District.

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Manufacturers listed in various sections of Contract Documents are names of those manufacturers that are believed to be capable of supplying one or more of items specified therein.
- B. The listing of a manufacturer does not imply that every product of that manufacturer is acceptable as meeting the requirements of the Contract Documents.

### **2.02 FACILITIES AND EQUIPMENT**

- A. Contractor shall provide, install, maintain, and operate a complete and adequate facility for handling, the execution, disposal, and distribution of material and equipment as required for proper and timely performance of Work connected with Contract.

## **2.03 MATERIAL REFERENCE STANDARDS**

- A. Where material is specified solely by reference to “standard specifications” and if requested by District, Contractor shall submit for review data on actual material proposed to be incorporated into Work of Contract listing name and address of vendor, manufacturer, or producer, and trade or brand names of those materials, and data substantiating compliance with standard specifications.

## **PART 3 - EXECUTION**

### **3.01 WORKMANSHIP**

- A. Where not more specifically described in any other Contract Documents, workmanship shall conform to methods and operations of best standards and accepted practices of trade or trades involved and shall include items of fabrication, construction, or installation regularly furnished or required for completion (including finish and for successful operation, as intended).
- B. Work shall be executed by tradepersons skilled in their respective lines of Work. When completed, parts shall have been durably and substantially built and present a neat appearance.

### **3.02 COORDINATION**

- A. Contractor shall coordinate installation of Work so as to not interfere with installation of others. Adjustment or rework because of Contractor’s failure to coordinate will be at no additional cost to District.
- B. Contractor shall examine in-place work for readiness, completeness, fitness to be concealed or to receive other work, and in compliance with Contract Documents. Concealing or covering Work constitutes acceptance of additional cost which will result should in-place Work be found unsuitable for receiving other Work or otherwise deviating from the requirements of the Contract Documents.

### **3.03 COMPLETENESS**

- A. Contractor shall provide all portions of the Work, unless clearly stated otherwise, installed complete and operational with all elements, accessories, anchorages, utility connections, etc., in manner to assure well-balanced performance, in accordance with manufacturer's recommendations and by Contract Documents. For example, electric water coolers require water, electricity, and drain services; roof drains require drain system; sinks fit within countertop, etc. Terms such as "installed complete," "operable condition," "for use intended," "connected to all utilities," "terminate with

proper cap," "adequately anchored," "patch and refinish," "to match similar," should be assumed to apply in all cases, except where completeness of functional or operable condition is specifically stated as not required.

### **3.04 APPROVED INSTALLER OR APPLICATOR**

- A. Installation by a manufacturer's approved installer or applicator is an understood part of Specifications and only approved installer or applicator is to provide on-site Work where specified manufacturer has on-going program of approving (i.e. certifying, bonding, re-warranting) installers or applicators. Newly established relationships between a manufacturer and an installer or applicator who does not have other approved applicator work in progress or completed is not approved for this Project.

### **3.05 MANUFACTURER'S RECOMMENDATIONS**

- A. All installations shall be in accordance with manufacturer's published recommendations and specific written directions of manufacturer's representative. Should Contract Documents differ from recommendations of manufacturer or directions of his representative, Contractor shall analyze differences, make recommendations to the District and the Architect in writing, and shall not proceed until interpretation or clarification has been issued by the District and-or the Architect.

END OF DOCUMENT

11/13/13

**SECTION 01 60 05**  
**PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations and procedures.
- E. Maintenance materials, including extra materials, spare parts, tools, and software.

1.2 RELATED REQUIREMENTS

- A. Section 01 4000 - Quality Requirements: Product quality monitoring.

1.3 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data and installation instructions. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
  - 1. Detail structural assemblies and structural connections to the building components.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

## PART 2 PRODUCTS

### 2.1 NEW PRODUCTS

- A. Provide new products only unless noted otherwise on the Drawings.
- B. Where all other criteria are met, Contractor shall give preference to products that:
  - 1. If used on interior, have lower emissions.
  - 2. If wet-applied, have lower VOC content.
  - 3. Have a published GreenScreen Chemical Hazard Analysis.

### 2.2 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with a Provision for equal: Equal products are acceptable with Architect's or Owner's review.
- C. If specified product does not come with required options, select alternate manufacturer or customize product to suit.

### 2.3 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to a site selected by the Owner within the District's boundaries; obtain receipt prior to final payment. Prior to delivery, coordinate delivery with Owner.

## PART 3 EXECUTION

### 3.1 SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions.
- B. Architect will consider requests for substitutions only within 15 days after date established in Notice to Proceed.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Organize in side-by-side tabular format with specified product attributes in the left column and proposed substitution in the right column.
- D. A request for substitution constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Will provide the same warranty for the substitution as for the specified product.
  - 3. The installer is qualified or certified to install the proposed substitution.

4. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  5. Waives claims for additional costs or time extension that may subsequently become apparent.
  6. Credit cost savings for substitutions to Owner.
- E. Substitution Submittal Procedure:
1. Submit one copy of request for substitution for consideration. Limit each request to one proposed substitution.
  2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  3. The Architect will notify Contractor in writing of decision to accept or reject request.
  4. If the product is accepted as equal, but additional information indicates that the product is not equal in a significant quality or property, the product will be removed and replaced at no cost to the Owner or a credit will be passed on to the Owner for diminished quality.

### 3.2 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments prior to off-loading and stockpiling to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.
- G. Provide traffic control and flagmen for deliveries.

### 3.3 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.



- D. Store sensitive and absorbent products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground and wrap in plastic.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

**END OF SECTION**

**DOCUMENT 01 61 00**

**DELIVERY, STORAGE AND HANDLING**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS AND PROVISIONS**

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Site Access, Conditions and Requirements;
- B. Special Conditions.

**1.02 PRODUCTS**

- A. Products are as defined in the General Conditions.
- B. Contractor shall not use and-or reuse materials and-or equipment removed from existing Premises, except as specifically permitted by the Contract Documents.
- C. Contractor shall provide interchangeable components of the same manufacturer, for similar components.

**1.03 TRANSPORTATION AND HANDLING**

- A. Contractor shall transport and handle Products in accordance with manufacturer's instructions.
- B. Contractor shall promptly inspect shipments to confirm that Products comply with requirements, quantities are correct, and products are undamaged.
- C. Contractor shall provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

**1.04 STORAGE AND PROTECTION**

- A. Contractor shall store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Contractor shall store sensitive products in weather-tight, climate controlled enclosures.

- B. For exterior storage of fabricated Products, Contractor shall place on sloped supports, above ground.
- C. Contractor shall provide off-site storage and protection when Site does not permit on-site storage or protection.
- D. Contractor shall cover products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.
- E. Contractor shall store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter.
- F. Contractor shall provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- G. Contractor shall arrange storage of Products to permit access for inspection and periodically inspect to assure Products are undamaged and are maintained under specified conditions.

**PART 2 – PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

END OF DOCUMENT

**SECTION 01 70 00**  
**EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Surveying for laying out the work.
- D. Cleaning and protection.
- E. Closeout procedures, except payment procedures.

**1.2 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures.
- C. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.
- E. Section 02 4050 - Cutting and Patching

**1.3 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

**1.4 QUALIFICATIONS**

- A. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

**1.5 PROJECT CONDITIONS**

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

- C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
  - 1. Indoors: Limit conduct of especially noisy interior work to times when the building is not occupied by the owner.
  - 2. Provide sound attenuation systems to prevent disruption of staff and students (if occupied by them), neighboring residents and to meet City noise ordinance requirements.

## 1.6 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new 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.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements. Exposed piping or ducts will not be allowed unless specifically noted as such on the Drawings.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## PART 2 PRODUCTS

### 2.1 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. See 02 4050 Cutting and Patching for additional information.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.
- G. Verify Drawings are coordinated and match existing conditions prior to start of work.

### 3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### 3.3 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- E. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- G. Utilize recognized engineering survey practices.
- H. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and control or expansion joints.
  2. Grid or axis for structures.
  3. Building foundation, column locations, ground floor elevations, and Eave heights.
- I. Periodically verify layouts by same means.
  - J. Maintain a complete and accurate log of control and survey work as it progresses.

### 3.4 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### 3.5 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  1. Verify that construction and utility arrangements are as shown.
  2. Report discrepancies to Architect before disturbing existing installation.
  3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
  1. Remove items indicated on drawings.
  2. Relocate items indicated on drawings.
  3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and Fire Alarm): Remove, relocate, and extend existing systems to accommodate new construction.
  1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow

- access or provide access panel.
- 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
- 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
  - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
  - b. Provide temporary connections as required to maintain existing systems in service.
- 4. Verify that services serve only abandoned facilities.
- 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- D. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- G. Refinish existing surfaces as indicated:
  - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- H. Clean existing systems and equipment.
- I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- J. Do not begin new construction in alterations areas before demolition is complete.
- K. Comply with all other applicable requirements of this section.



### 3.6 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  - 1. Complete the work.
  - 2. Replace curb cuts of insufficient size to provide
  - 3. Fit products together to integrate with other work.
  - 4. Provide openings for penetration of mechanical, electrical, and other services.
  - 5. Match work that has been cut to adjacent work.
  - 6. Repair areas adjacent to cuts to required condition.
  - 7. Repair new work damaged by subsequent work.
  - 8. Remove samples of installed work for testing when requested.
  - 9. Remove and replace defective and non-conforming work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Patching:
  - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
  - 2. Match color, texture, and appearance.
  - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### 3.7 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition. Broom sweep work areas at the end of each day.

- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Clean parking areas daily, including street parking used by workers.
- E. Sweep parking areas, driveways and streets used for the work. Removal of oil and other stains left by equipment or worker vehicles.
- F. Collect and remove waste materials, debris, and trash/rubbish from work area daily and dispose off-site weekly; do not burn or bury.

### 3.8 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. 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.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

### 3.9 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- B. Test and balance HVAC systems affected by the work.

### 3.10 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.

- F. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### 3.11 CLOSEOUT PROCEDURES

- A. Make submittals that are required by Division of the State Architect or other authorities.
  - 1. Complete DSA Form 155 at each phase of the work indicated on the DSA Inspection Card, Form 152.
- B. Notify Architect when work is considered ready for Substantial Completion.
- C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
- D. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
- E. Notify Architect when work is considered finally complete.
- F. Complete items of work determined by Architect's final inspection.

**END OF SECTION**

**DOCUMENT 01 72 00**

**FIELD ENGINEERING**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS AND PROVISIONS**

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Documents, apply to work of this document.

**1.02 SUMMARY**

- A. General: This Document specifies administrative and procedural requirements for field engineering services, including, but not necessarily limited to, the following:
  - 1. Layout of the Project
  - 2. Land Survey Work
  - 3. Shoring and Bracing Engineering
  - 4. Construction Equipment
  - 5. Support from Structure
  - 6. Stormwater Runoff Protection Plan
  - 7. Other Field Engineering
- B. Except for engineering work to be provided by the owner relative to existing conditions, all grade lines, levels and bench marks shall be established and maintained by the Contractor.

**1.03 SUBMITTALS**

- A. Certificates: Submit a certificate signed by the Land Surveyor or Professional Engineer certifying that the location and elevation of improvements comply with the Contract Documents.
- B. Final Property Survey: Submit 10 copies of the final property survey.
- C. Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of Documents "Submittals" and "Project Closeout."

## 1.04 QUALITY ASSURANCE

- A. Surveyor: Engage a Registered Land Surveyor registered with the State of California and approved by the Architect to perform land surveying and layout services required.

## PART 2 -PRODUCTS Not Used

## PART 3 -EXECUTION

### 3.01 EXAMINATION

- A. The Owner will identify existing control points and property line corner stakes.
- B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
- C. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.
- D. Promptly replace lost or destroyed project control points. Base replacements on the original survey control points.
- E. Establish and maintain a minimum of two permanent benchmarks on the site, referenced to data established by survey control points.
- F. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- G. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction. Contact utility companies, including USA, for on-site location services.
- H. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, water service piping and gas. Verify locations of underground electrical line. It is the responsibility of the Contractor to use all means possible to locate underground utilities.

### 3.02 PERFORMANCE

- A. Working from lines and levels established by the property survey, establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to properly locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
- B. Advise entities engaged in construction activities, of marked lines and levels provided for their use.
- C. As construction proceeds, check every major element for line, level and plumb.
- D. Surveyor's Log: Maintain a surveyor's log of control and other survey Work. Make this log available for reference.
  - 1. Record deviations from required lines and levels, and advise the Architect when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
  - 2. On completion of major site improvements, and other Work requiring field engineering services, prepare a certified survey showing dimensions, locations, angles and elevations of construction and sitework.
- E. Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes and invert elevations by instrumentation and similar appropriate means.
- F. Existing Utilities: Furnish information necessary to adjust, move or relocate existing structures, utility poles, lines, services or other appurtenances located in, or affected by construction. Coordinate with local authorities having jurisdiction.
- G. Final Property Survey: Before Substantial Completion, prepare a final property survey showing significant features (real property) for the Project. Include on the survey a certification, signed by the Surveyor, to the effect that principal metes, bounds, lines and levels of the Project are accurately positioned as shown on the survey.
  - 1. Provide survey both on reproducible Mylar and an electronic copy compatible with AutoCAD V-14.
- H. Shoring and Bracing:

1. Design of Shoring and Bracing for support of formwork, scaffolding, or other temporary construction supports, shall be the responsibility of the Contractor. If requested, supply engineering calculations and data regarding proposed shoring and bracing.
- I. Construction Equipment: Engineering for cranes, temporary hoists, or other hoisting equipment requiring structural loading during construction shall be the responsibility of the Contractor. If requested, supply engineering calculations and data regarding proposed construction equipment. The structural system of the building is not intended to support hoisting systems unless specifically noted, and all such equipment shall be designed to be structurally independent of the building.
- J. Storm water Runoff Protection Plan (SWRPP)
1. It shall be the responsibility of the Contractor to obtain all permits required by the EPA or their designated authority regarding control of Storm water at construction sites. It shall also be the responsibility of the Contractor to bring the construction activities for this project into compliance with the requirements of the State Water Resources Control Board General Construction Activity Storm Water Permit of April 17, 1997, to discharge storm water associated with construction activities, to be in full compliance with the San Jose Environmental Services Department Standards, and the National Pollutant Discharge Elimination (NPDES) Permit.
  2. The Contractor shall engage a Civil Engineer as necessary to prepare an Erosion Control and SWRPP, and shall fully implement the recommendations of the Plan on the Project Site, including a Post-Construction Storm Water Management Plan.
  3. The Contractor 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. 92-08-DWQ). The Notice of Intent must be sent to the following address along with the appropriate payment (warrant to be furnished by the Owner upon request by the Contractor, allow normal warrant processing time) California State Water Resources Control Board, Division of Water Quality Storm Water Permit Unit, P.O. Box 1977, 901 "P" Street, Sacramento, California 95812-1977; (916) 657-0919. The Notice of Intent shall be filed prior to the start of any construction activity.
- K. Other Field Engineering: Other field engineering affecting means and methods of construction, or engineering of specific building components as required by Specification, or demolition shall be the responsibility of the Contractor.

END OF DOCUMENT

03/01/18



**DOCUMENT 01 77 00**  
**CLOSE OUT PROCEDURES**

**PART 1 GENERAL**

**1.1 SUMMARY**

A. Document Includes:

1. Description of Contract closeout procedures including:
  - a. Removal of Temporary Construction Facilities
  - b. Substantial Completion
  - c. Final Completion
  - d. Project Record Documents
  - e. Project Guarantee
  - f. Warranties
  - g. Turn-In
  - h. Release of Claims
  - i. Fire Inspection Coordination
  - j. Building Inspection Coordination

**1.2 REMOVAL OF TEMPORARY CONSTRUCTION FACILITIES**

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore permanent facilities used during construction to specified condition.
- D. Comply with Document 01 50 00 (Temporary Facilities and Controls).

**1.3 SUBSTANTIAL COMPLETION**

- A. When Contractor considers Work or designated portion of the Work as Substantially Complete, submit written notice to District, with list of items remaining to be completed or corrected.
- B. Within reasonable time, District will inspect to determine status of completion.
- C. Should District determine that Work is not Substantially Complete, District will promptly notify Contractor in writing, listing all defects and omissions.

- D. Remedy deficiencies and send a second written notice of Substantial Completion. District will re-inspect the Work. If deficiencies previously noted are not corrected on re-inspection, then pay the cost of the re-inspection.
- E. When District concurs that Work is Substantially Complete, District will issue a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified by District.
- F. Manufactured units, equipment and systems that require startup must have been started up and run for periods prescribed by District before a Certificate of Substantial Completion will be issued.
- G. A punch list examination will be performed upon Substantial Completion. One follow-up review of punch list items for each discipline will be provided. If further Site visits are required to review punch list items due to incompleteness of the Work by Contractor, Contractor will reimburse District for costs associated with these visits.

#### **1.4 FINAL COMPLETION**

- A. Final Completion occurs when Work meets requirements for District's Final Acceptance. When Contractor considers Work is Finally Complete, submit written certification that:
  - 1. Contractor has inspected Work for compliance with Contract Documents, and all requirements for Final Acceptance have been met.
  - 2. Except for Contractor maintenance after Final Acceptance, Work has been completed in accordance with Contract Documents and deficiencies listed with Certificate of Substantial Completion have been corrected. Equipment and systems have been tested in the presence of District, and are operative.
  - 3. Work is complete and ready for final inspection.
- B. In addition to submittals required by Contract Documents, provide submittals required by governing authorities and submit final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- C. When District finds Work is acceptable and final closeout submittals are complete, District will issue final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order. Should District determine that Work is incomplete or Defective:
  - 1. District promptly will so notify Contractor, in writing, listing the incomplete or Defective items.

2. Promptly remedy the deficiencies and notify the District when it is ready for re-inspection.
3. When District determines that the Work is acceptable under the Contract Documents, District will request Contractor to make closeout submittals.

D. Final adjustments of accounts:

1. Submit a final statement of accounting to District, showing all adjustments to the Contract Sum and complete and execute Document 00 88 00 (Agreement and Release of Any and All Claims).
2. If so required, District shall prepare a final Change Order for submittal to Contractor, showing adjustments to the Contract Sum that were not previously made into a Contract Modification.

## 1.5 PROJECT RECORD DOCUMENTS

- A. Contract Documents will not be closed out and final payment will not be made until completion and submittal of Project Record Documents described in Document 01 78 39 (Project Record Documents).

## 1.6 PROJECT GUARANTEE

- A. Requirements for Contractor's guarantee of completed Work are included in Document 00 72 00 (General Conditions). Guarantee Work done under Contract against failures, leaks, or breaks or other unsatisfactory conditions due to defective equipment, materials, or workmanship, and perform repair work or replacement required, at Contractor's sole expense, for period of one year from date of Final Acceptance.
- B. Neither recordation of Final Acceptance nor final certificate for payment nor provision of the Contract nor partial or entire use or occupancy of premises by District shall constitute acceptance of Work not done in accordance with Contract Documents nor relieve Contractor of liability in respect to express warranties or responsibility for faulty materials or workmanship.
- C. District may make repairs to Defective Work as set forth in Document 00 72 00 (General Conditions).
- D. If, after installation, operation, or use of materials or equipment to be provided under Contract proves to be unsatisfactory to District, District shall have right to operate and use materials or equipment until said materials and equipment can, without damage to District, be taken out of service for correction or replacement. Period of use of Defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.

- E. Nothing in this Document 01 77 00 shall be construed to limit, relieve, or release Contractor's, Subcontractors', and equipment suppliers' liability to District for damages sustained as result of latent defects in equipment caused by negligence of suppliers' agents, employees, or Subcontractors. Stated in another manner, warranty contained in the Contract Documents shall not amount to, nor shall it be deemed to be, waiver by District of any rights or remedies (or time limits in which to enforce such rights or remedies) it may have for Defective workmanship or Defective materials under laws of this State pertaining to acts of negligence.

## 1.7 WARRANTIES

- A. Execute Contractor's Submittals and assemble warranty documents, and Installation, Operation, and Maintenance Manuals described in Document 01 33 00 (Submittal Procedures), executed or supplied by Subcontractors, suppliers, and manufacturers.
  - 1. Provide table of contents and assemble in 8½ inches by 11 inches three-ring binder with durable plastic cover, appropriately separated and organized.
  - 2. Assemble in Specification Document order.
- B. Submit material prior to final Application for Payment.
  - 1. For equipment put into use with District's permission during construction, submit within 14 Days after first operation.
  - 2. For items of Work delayed materially beyond Date of Substantial Completion, provide updated Submittal within 14 Days after acceptance, listing date of acceptance as start of warranty period.
- C. Warranties are intended to protect District against failure of Work and against deficient, Defective, and faulty materials and workmanship, regardless of sources.
- D. Limitations: Warranties are not intended to cover failures that result from the following:
  - 1. Unusual or abnormal phenomena of the elements
  - 2. Vandalism after Substantial Completion
  - 3. Insurrection or acts of aggression including war
- E. Related Damages and Losses: Remove and replace Work which is damaged as result of Defective Work, or which must be removed and replaced to provide access for correction of warranted Work.

- F. Warranty Reinstatement: After correction of warranted Work, reinstate warranty for corrected Work to date of original warranty expiration or to a date not less than one year after corrected Work was done, whichever is later.
- G. Replacement Cost: Replace or restore failing warranted items without regard to anticipated useful service lives.
- H. Warranty Forms: Submit drafts to District for approval prior to execution. Forms shall not detract from or confuse requirements or interpretations of Contract Documents.
  - 1. Warranty shall be countersigned by manufacturers.
  - 2. Where specified, warranty shall be countersigned by Subcontractors and installers.
- I. Rejection of Warranties: District reserves right to reject unsolicited and coincidental product warranties that detract from or confuse requirements or interpretations of Contract Documents.
- J. Term of Warranties: For materials, equipment, systems, and workmanship, warranty period shall be one year minimum from date of Final Completion of entire Work except where:
  - 1. Detailed Specifications for certain materials, equipment or systems require longer warranty periods.
  - 2. Materials, equipment or systems are put into beneficial use of District prior to Final Completion as agreed to in writing by District.
- K. Warranty of Title: No material, supplies, or equipment for Work under Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver premises, together with improvements and appurtenances constructed or placed thereon by Contractor, to District free from any claim, liens, security interest, or charges, and further agrees that neither Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by Contract shall have right to lien upon premises or improvement or appurtenances thereon. Nothing contained in this paragraph, however, shall defeat or impair right of persons furnishing materials or labor under bond given by Contractor for their protection or any rights under law permitting persons to look to funds due Contractor in hands of District.

**1.8 TURN-IN**

A. Contract Documents will not be closed out and final payment will not be made until all keys issued to Contractor during prosecution of Work and letters from property owners are turned in to District.

**1.9 RELEASE OF CLAIMS**

A. Contract Documents will not be closed out and final payment will not be made until Document 00 88 00 (Agreement and Release of Any and All Claims) is completed and executed by Contractor and District.

**1.10 FIRE INSPECTION COORDINATION**

A. Coordinate fire inspection and secure sufficient notice to District to permit convenient scheduling (if applicable).

**1.11 BUILDING INSPECTION COORDINATION**

A. Coordinate with District a final inspection for the purpose of obtaining an occupancy certificate (if applicable).

**PART 2 PRODUCTS – NOT USED**

**PART 3 EXECUTION – NOT USED**

END OF DOCUMENT

**SECTION 01 78 00  
CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.
- D. DSA forms

**1.2 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

**1.3 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 3. Submit one set of revised final documents in electronic form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as

the beginning of the warranty period.

D. DSA Forms

1. N/A

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  1. Drawings.
  2. Addenda.
  3. Change Orders and other modifications to the Contract.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings : Legibly mark each item to record actual construction including:
  1. Field changes of dimension and detail.
  2. Details not on original Contract drawings.

3.2 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.3 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.



- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

**DISTRICT OFFICE- TI  
BERRYESSA UNION SCHOOL DISTRICT**

1375 Piedmont Road  
San Jose, CA 95132

**BERRYESSA UNION HIGH SCHOOL DISTRICT**

**-TECHNICAL SPECIFICATIONS-**

July 2022  
MDG #2203

ARCHITECT

*McKim Design Group*

4595 Cherry Ave. 1<sup>st</sup> Floor  
San Jose, CA 95118  
(408) 927.8110

**SPECIFICATIONS**

MDG JOB #2203

DSA File No. 43-7

DSA Application No.01-120361

**BERRYESSA UNION SCHOOL DISTRICT  
DISTRICT OFFICE TI**

Berryessa Union School District  
San Jose, CA

**McKim Design Group**

4595 CHERRY AVENUE, FIRST FLOOR  
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Division of the State Architect  
Office of Regulation Services



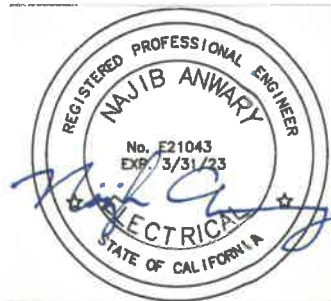
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Architect



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Mechanical



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Electrical

SECTION 05 52 00  
HANDRAILS AND RAILINGS**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Steel tubing handrails.
- B. Steel tubing balusters and posts.
- C. Brackets and fittings.

**1.2 REFERENCES**

- A. CAS/CAR – California Accessibility Statutes/California Accessibility Regulations, Books 1 and 2, Most Current Addition CBC
- B. ASTM A53 – Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless Steel Pipe.
- C. ASTM A153 – Zinc coating (Hot-Dip) on iron and steel hardware.
- D. ASTM C1107 – Packaged Dry, Hydraulic – Cement Grout (Non-Shrink).
- E. ASTM A123 – Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- F. AWS D1.1 – Structural Welding Code.
- G. Chapter 10 – California Building Code
- H. ASTM A780-most current – Repair of Damage and Uncoated Areas of Hot-Dip Galvanized Coatings
- I. CBC Chapter 11B-505

**1.3 DESIGN REQUIREMENTS**

- A. Railing assembly, wall rails and attachments to resist a load of 250 lbs applied in any direction at any point on the rail, without damage or permanent set, in accordance with CAS/CAR.
- B. Coordinate with plans for overall heights, lengths, and configurations.

**1.4 SUBMITTALS FOR REVIEW**

- A. Submit under provisions of Section 01 33 00.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners and accessories.
- C. Sample: Submit three samples of handrail and each component.

**1.5 FIELD MEASUREMENTS**

- A. Verify that field measurements are as indicated on shop drawings.

**PART 2 PRODUCTS****2.1 STEEL RAILING SYSTEM**

- A. Fasteners, Plates, Brackets, Flanges and Bases: Manufactured by Craneveyor Corp., South El Monte, CA., or equal.
- B. Handrails, Balusters, Posts: 1-1/4" nominal schedule 40 pipe (1.66" OD, 0.145 wall thickness), Grade B, standard weight pipe, welded joints, hot dipped galvanized, ASTM A500. Gripping surfaces with circular cross section shall have an outside diameter of 1-1/4" minimum and 2" maximum. Gripping surfaces with a non-circular cross section shall have an outside dimension of 4" minimum, 6-1/4" maximum, and a cross sectional dimension of 2-1/4" maximum.
- C. Fittings: Elbows, T-shapes, wall brackets, escutcheons: Cast steel. Brackets: Round top to accept tube rail, size to allow minimum 1-1/2 inch clearance from rail to wall. Handrails shall not rotate in their fittings.
- D. Exposed Fasteners: Flush countersunk screws or bolts; consistent with design of railing.
- E. Galvanizing: Thickness of coating on tubing in accordance with ASTM A123. Fittings shall be galvanized in accordance with ASTM A153.
- F. Finish: Gloss Enameled; Refer to Section 09 91 00 for special coatings.

- G. Non-Shrink Grout: ASTM C1107, Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 5,000 psi in 24 hours and 8,000 psi in 7 days; 1107 Advantage Grout by Dayton Superior, Miamisburg, OH. SonogROUT 10K by Sonneborn, Shakopee, MN. Super Por-Rok Anchoring Cement by Novex Systems International, Clifton NJ, or equal.
- H. Touch-Up Primer for Galvanized Surfaces: Ready mixed Zinc rich galvanizing compound, DEVCON Z, by Devcon Corp., Danvers, MA, GALVICON by Southern Coatings, Sumter, SC, or equal.
- I. Solder Zinc Alloy for Repair: Welco Gal-Viz self-fluxing solder alloy.

## 2.2 FABRICATION

- A. Fabricate handrails of specified pipe or tubing only in conformance with CAS/CAR requirements and Chapter 11 CBC.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured.
- D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- F. Continuously seal joined pieces by continuous welds in accordance with AWS D1.1.
- G. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush and hairline. Ease exposed edges to small uniform radius.
- H. Accurately form components to each other and to building structure.
- I. Hot-dip galvanize all fabricated assemblies in accordance with ASTM A123. Field welding of galvanized main components not permitted.
- J. Galvanize steel items to a zinc coating thickness in accordance with ASTM A123. Surfaces shall be free of icicles, spangles, and puddling. Provide venting holes at all enclosed sections, "V" notch and drilled holes are acceptable. Locate to prevent rainwater from entering section at exterior galvanized items.
- K. Vertical supports for handrails and railings shall be provided every 4'-0" maximum even if called out farther apart on drawings unless steel sizes are increased and specifically approved by Architect in writing.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Beginning of installation means erector accepts existing conditions.

### 3.2 PREPARATION

- A. Clean and strip steel items to bare metal where site welding is required.

### 3.3 INSTALLATION

- A. Set vertical supports in sleeves with the specified non-shrink grout.
- B. Install components plumb and level, accurately fitted, free from distortion or defects.
- C. Provide anchors, plates or angles required for connecting railings to structure. Anchor railing to structure.
- D. Field weld anchors as indicated on shop drawings. Grind welds smooth.
- E. Conceal bolts and screws. Where not concealed, use flush countersunk fastenings.
- F. Touch up welds and chipped surfaces with specified galvanizing compound prior to painting, minimum thickness of 5 mils.
- G. Repair of galvanized surfaces: No flux is required. Repair surfaces in conformance with ASTM A780-A1. Apply Gal-Viz while metal is still hot. Tin surface with Gal-Viz with wire brush. Do not direct flame on alloy. Minimum thickness 5 mils.

- H. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1-1/2" minimum. Handrail may be located in a recess if the recess is 3" maximum deep and 18" minimum clear above the top of the handrail.
- I. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. Bottoms of handrail gripping surfaces shall not be obstructed for more than 20% of their length. Where provided, horizontal projections shall occur 1-1/2" minimum below the bottom of the handrail gripping surface. The outside diameter shall be 1-1/4" minimum and 2" maximum.
- J. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.
- K. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with CBC Section 11B-505.10. Such extensions are not required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.
- L. The orientation of at least one handrail shall be in the direction of the stair run, perpendicular to the direction of the stair nosing, and shall not reduce the minimum required width of the stair per CBC section 11B-505.2.1.
- M. A 2" minimum high curb or barrier shall be provided to prevent the passage of a 4" diameter sphere rolling off the edges on a ramp or landing surface. Such a curb or barrier shall be continuous and uninterrupted along the length of a ramp per CBC Section 11B-405.9.2

#### 3.4 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: ¼ inch in 10 feet.

END OF SECTION

SECTION 06 20 00  
FINISH CARPENTRY

PART I – GENERAL

1.01 SECTION INCLUDES

- A. Installation of wood and steel doors.
- B. Wood blocking backing and nailers.

1.02 REFERENCES

- A. CAS/CAR – California Accessibility Statutes/California Accessibility Regulations, 2016 CBC chapter 11b.
- B. BHMA A156.1 through 24 – Builders Hardware Manufacturers Association Standards.
- C. APA – American Plywood Association Design and Construction Guide.
- D. NFPA 80 – Fire Doors and Windows.
- E. PS1-09 – U.S. Product Standard, Construction and Industrial Plywood.
- F. SDI-107 – Hardware on Steel Doors.
- G. SDI-109 – Hardware for Standard Steel Doors and Frames.
- H. SDI-122 – Installation for Standard Steel Doors and Frames.
- I. HMMA 840 – Installation and Storage of Hollow Metal Doors and Frames.
- J. CSAS – California State Accessibility Regulations.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Store materials in ventilated, interior locations.

PART II – PRODUCTS

2.01 DOOR MATERIALS

- A. Steel Doors: As specified in Section 08 11 14
- B. Wood Doors: As specified in Section 08 14 00.
- C. Door Hardware: As specified in Section 08 71 00.

2.02 LUMBER MATERIALS

- A. Softwood Lumber: Maximum moisture content of 12 percent, Douglas Fir, Hemlock, Ponderosa Pine or Sugar Pine species with vertical or mixed grain of quality capable of transparent finish.

2.03 SHEET MATERIALS

- A. Softwood Plywood: PS 1-09, sanded or touch sanded, APA A-D Group 1, Exposure 1, thickness: 3/4 inch.

2.04 ACCESSORIES

- A. Nails: Size and type to suit application, plain finish.
- B. Bolts, Nuts, Washers, Blind Fasteners, Lags, and Screws: Size and type to suit application; plain finish, galvanized when exposed to weather.
- C. Lumber for Shimming, Blocking and Backing: Softwood lumber of species listed herein.
- D. Primer: Alkyd type.

**PART III – EXECUTION****3.01 EXAMINATION**

- A. Verify that openings are ready to receive work and field measurements are as shown on shop drawings.
- B. Verify mechanical, electrical and building items affecting work of this Section are placed and ready to receive this work.
- C. Beginning of installation means acceptance of existing conditions.

**3.02 INSTALLATION OF WOOD DOORS**

- A. Door shall have a clearance of 1/8 inch at the sides and top and shall have a bottom clearance of 1/4 inch over thresholds and 1/2 inch at other locations unless otherwise shown. The lock edge or both edges of door shall be beveled at the rate of 1/8 inch in 2 inches. Cuts made on the job shall be sealed immediately after cutting, using a clear varnish or sealer.
- B. Installation of Fire Rated Doors: Installation, hardware and operational characteristics shall conform to NFPA 80 and shall be in conformance with the manufacturer's printed instructions. Properly sized pilot holes shall be drilled for screws in door edges. Factory applied permanent metal labels shall remain intact where installed. Labeled edge of door shall not be trimmed.
- C. Machine cut relief for hinges.
- D. Pilot drill screw and bolt holes.
- E. Prepare doors to receive finish hardware in accordance with applicable BHMA Standards requirements.
- F. Conform to applicable BHMA requirements for fit tolerances.

**3.03 INSTALLATION OF STEEL DOORS**

- A. Install doors in accordance with HMMA 840 or SDI 122 recommendations.
- B. Coordinate installation of glass or louvers where indicated.

**3.04 INSTALLATION TOLERANCES**

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge corner to corner, or as required to meet door warranty.

**3.05 ADJUSTING AND CLEANING**

- A. Adjust for smooth and balanced door movement.

END OF SECTION



SECTION 06 41 00  
CUSTOM CASEWORK

## PART 1 GENERAL

## 1.1 SECTION INCLUDES

- A. Fabricated base cabinet units with utility chase (where noted).
- B. Fabricated wall units including teaching walls where indicated.
- C. Hardware and Grommets.

## 1.2 RELATED REQUIREMENTS

- A. N/A

## 1.3 REFERENCES

- A. ANSI A208.1 - Mat Formed Wood Particleboard.
- B. NEMA (National Electric Manufacturers Association) LD3 - High Pressure Decorative Laminates.
- C. PS 1 - Construction and Industrial Plywood.
- D. PS 20 - American Softwood Lumber Standard.
- E. PS 51 - Hardwood and Decorative Plywood.
- F. AWS (Architectural Woodwork Standards) - Edition 1
- G. Chapter 11B and 23, California Building Code.
- H. AQMD - Local Air Quality Management District Regulations.

## 1.4 SUBMITTALS FOR REVIEW

- A. Submit shop drawings and product data under provisions of Section 01 33 00 and WI Technical Bulletin 434.
- B. Include materials, component profiles, assembly methods, joint details, fastening methods, accessory listings, and schedule of finishes.
- C. Submit samples under provisions of Section 01 33 00.
- D. Submit one hardware sample board identified with the project name, cabinet manufacturer's name and address and one item of each type of hardware specified for installation.
- E. Submit a complete line of plastic laminate chips, in wood grains and solid colors, identified with the manufacturer's name and chip number.
- F. Include interface with sliding marker boards on shop drawings where indicated in plans. See specification section on Marker Boards.

## 1.5 QUALITY ASSURANCE

- A. Cabinets and countertops shall be manufactured in accordance with Sections 10 and 11 of the Architectural Woodwork Standards Manual, most current edition, for Grade specified herein or to higher standards as specified herein.
- B. Before delivery to the jobsite, the casework supplier shall submit a WI Certified Compliance Certificate indicating the products he will furnish for this job, and certifying that they will fully meet all the requirements of the grade or grades specified.
- C. The first page of the shop drawings shall bear the WI Certified Compliance Label. Shop drawings not conforming to this requirement will be rejected.
- D. A statement shall appear prominently on the shop drawings, certifying that all casework construction complies to the structural requirements of California Building Code for required horizontal force factor for anchorage of non-structural components.
- E. One (1) copy of the latest issue of the WI Manual of Millwork shall be made available for reference at the jobsite throughout the construction period.
- F. Inspections by authorized WI inspectors shall be made in accordance with the following Schedule and shall be at the cost of the contractor.
  - 1. Shop inspection at place of manufacturer, prior to initial shipment of cabinet components to site.
  - 2. Site inspection immediately following installation of the first cabinet components.

3. Site inspection immediately following final installation of all cabinet work.
4. Additional site inspections may be required at the option of the Architect and at no cost to the Owner when certified WI inspection reports indicate unsatisfactory conformance with specified requirements.

- G. Written confirmation of all WI inspections shall be submitted, including WI Certified Compliance Certificate for installation.
- H. All WI Certification costs shall be included.

## 1.6 MOCKUP

- A. Provide full size base cabinet with countertop and upper cabinet of each casework type indicated, in specified finish with hardware installed. Include pairs of doors for both base and upper cabinet and at least one drawer.
- B. Units will establish a minimum standard of quality for this work.
- C. Approved units may be used as part of the Work.

## 1.7 DELIVERY, STORAGE, AND PROTECTION

- A. Conform to Section 26, WI Manual of Millwork and WI Technical Bulletin – 419R.

## 2 PART 2 PRODUCTS

### 2.1 GRADES

- A. Provide Plastic covered casework in accordance with WI Manual of Millwork, Section 15 for custom grade.
- B. Construction Style: Style A Frameless.
- C. Construction Type: Type I.
- D. Door and Drawer Front Style: Flush Overlay.
- E. Counter Tops: Overhang face of cabinet doors or drawers.

### 2.2 Acceptable Laminate Manufacturers

- A. Formica Corporation, Cincinnati, OH.
- B. Ralph Wilson Plastics Co., Temple, TX (Wilsonart)
- C. Nevamar Corporation, Odenton, MD.
- D. Pionite Decorative Laminates, Maumee, IL.
- E. Lamin-Art, Schaumburg, IL
- F. Or Equal.

### 2.3 LAMINATE MATERIALS

- A. Plastic Laminate Cabinet Surfaces: NEMA LD-3, decorative high pressure laminate, general purpose type, .028 inch thick at vertical surfaces, .050 inch thick at horizontal surfaces and .042 inch thick for post-formed work; colors as selected in wood grains, patterns or solids. Conform to Section 16, WI Manual of Millwork. Typical casework locations.
- B. Plastic Laminate Cabinet Surfaces: NEMA LD-3, decorative high pressure laminate, chemical and stain resistant type, .042 or 0038 inch thick, colors as selected. Conform to Section 17, WI Manual of Millwork. To be used in all Science Classrooms, Nurse's Office and similar locations.
- C. Plastic Laminate Countertops: NEMA LD-3, decorative high pressure laminate, general purpose type, .042 inch thick when post formed, .050 inch when flat, colors as selected in wood grains, patterns or solids. Conform to Section 16, WI Manual of Millwork.
- D. Laminate Backing Sheet: LD-3 BKS/-91 backing grade, undecorated plastic laminate, with face material of .028 inches, or BKS/-92 with face material of .042 or .050 inches.
- E. Semi-exposed Area of Cabinets: Low pressure decorative melamine overlay, except as specified herein.
  1. Apply decorative high pressure plastic laminate to all surfaces visible from a seated or standing position, including interior surfaces of open casework and casework with glass doors, to sloped tops and to tops up to 72 inches above floor or visible from an upper level.

**2.4 WOOD MATERIALS**

- A. Softwood Lumber: PS 20; Graded in accordance with WI Custom Grade, Douglas Fir, Hemlock, Ponderosa Pine, or Sugar Pine.

**2.5 SHEET MATERIALS**

- A. Core; one of the Following:
1. Wood Particleboard: ANSI A208.1, Table 1, Grade 1-M-3, composed of wood chips, medium density made with water-resistant binder.
  2. Plywood, PS 51; rotary cut Philippine Mahogany, or other close-grain hardwood Plywood with SOUND Grade face veneer and crossband layer of Grade C or better.

**2.6 ACCESSORIES**

- A. Adhesive: Urea-formaldehyde cold setting or phenol resin with catalytic agent set under a pressure of not less than 30 lbs/sq/in or any contact adhesive that has been tested in accordance with the PS 51 for Type II Adhesive and Heat Resistance Test set forth in the WI Manual of Millwork and specifically approved by WI for the area in which the project is located.
1. Adhesives shall comply with Regulations AQMD.
- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application.

**2.7 HARDWARE**

- A. Conform to Architectural Woodwork Standards Manual, most current edition. Any hardware listed therein may be installed, except where these standards are exceeded as described below.
1. Drawer Slides: Minimum 100 lb capacity all drawers. Full extension type only-Accuride #3832EC (Easy Close) or similar. At file drawers provide 150 lb capacity Accuride #4034.
  2. Shelf Standards: Flush, holes to receive Clips
  3. Seismic Shelf Clips: Hettich "Sekura #6 079707 w/ 5mm Pin
  4. Hinges: Heavy-duty, wrap-around, tight pin butts only. Rockford (RPC) #376 or #376SS (stainless steel) with Hospital Tips. Install hinges by "let-in"/mortise or surface mount. Architect to select installation method during shop drawing review. Provide information on the difference within the shop drawings.
  5. Pulls: Hafele, 3 inch c. to c. stainless steel wire-loop pulls.
  6. Locks: Minimum 5 pin keyway, OLYMPUS 700S and 800s non-IC cores at each doored cabinet and at all drawers. Keyed by room. All Casework in a room to use the same key. Add spacers as required so lock face is flush with cabinet face, typ.
  7. Door Magnetic Catches: Knape & Vogt #918 or Epco #592.
  8. Door Catch: Ives IVE-2A92.
  9. Grommets: Flexigrom #CPF2670 or equal.
  10. Counter Supports: Knape & Vogt 208 L-Bracket size per manuf. Or equal. Provide at 30" on center maximum or closer if required to support counter top loads. Color to be selected by architect from full range of manufacture's colors and bracket may be painted, color by architect. If shown on details provide steel angle instead of bracket.
- B. Finish: US-26D, unless noted otherwise.

**2.8 FABRICATION**

- A. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.
- B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- C. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Make corners and joints hairline. Locate counter butt joints minimum 2 feet from sink cutouts.
- D. Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal contact surfaces of

cut edges. Include a utility chase at all locations where plumbing or electrical devices are shown inside the cabinets. Adjust the overall depth of the cabinet at these locations. Coordinate chase locations with general contractor, plumber and electrician prior to submitting shop drawings. The chase may or may not be required but architect will decide during the shop drawing review.

- E. Backsplash: Coved and 4" or 6", to be selected by Architect or as indicated on plans.
- F. Edge: 90d formed edge with post formed laminate with 3/4" radius at edge. Rolled for typical units. No drip bullnose where sinks occur. Counter top edges to be 1-1/2" thick with overhang past face of cabinet door or drawer.
- G. Shelf Loading: 50 lbs per square foot or 50 lbs per cubic foot of total volume of cabinet whichever is less. Conform to California Building Code, current edition. Must conform to the WI standards as a minimum.
- H. Edge banding to be 3mm PVC minimum.
- I. Contractor to verify with appliance cut sheets that cabinet widths and heights accommodate appliances within the WI recommended clearances to adjacent cabinets. If plans indicate different sizing, the Contractor must notify Architect.
- J. Plastic Laminate Colors to include up to 2 colors on each piece of casework with a third color for the counter top. A total of 6 colors may be selected for the casework (3 color schemes) plus 3 colors for the counter tops. Colors to be selected by Architect from manufacturer's full range of laminate options.
- K. All upper cabinets shall have a 12" minimum clear inside depth. At kitchen locations the upper cabinets shall have a 13" minimum clear inside depth. Cabinet inside depth shall be deeper if indicated on plans.
- L. At accessible sink locations provide a removable angled panel to conceal piping/utilities below and a fixed apron along the front edge of the sink. Refer to WI 154C for reference. Where sinks occur at island locations provide necessary chases for vent loop systems as noted on plumbing plans. Also provide DSA approved anchorage of island to building slab and/or as noted on details.
- M. Where sinks occur at island locations provide necessary chases for vent loop systems as noted on plumbing plans. Also provide DSA approved anchorage of island to building slab and/or as noted on details.
- F. Solid Surface Countertops: Where indicated on plans provide material with edging shape to be selected by architect. Adhere counter tops to base cabinets or support angles per WI standards. Provide steel angle supports at 36" on center maximum at open counter top locations.

### 3 PART 3 EXECUTION

#### 3.1 PREPARATION

- A. Accurately locate and layout all casework for the project including horizontal and vertical control. This layout will take place such to allow proper installation of all blocking.
- B. Provide all cut outs and openings in all casework and countertops where plumbing and electrical fixtures and devices penetrate. Specifically, provide for electrical outlet boxes stubbed to the toe-kick area in the center of each teaching wall. Verify adequacy of backing and support framing.

#### 3.2 INSTALLATION

- A. Set and secure casework in strict accordance with Section 26, WI Manual of Millwork
- B. Casework shall be anchored to walls or floors or both. Conform to California Building Code current edition anchorage requirements minimum and as called out on plans.
- C. Provide 1 (one) 2" dia. grommet hole with plastic grommet inserts (black) to be located by the architect in the field for every 4' of counter top (ie. provide 2 grommets in a counter top that is >4' and <8', 3 grommets in a counter top >8 and <12', etc..
- D. Install sliding marker boards at all teaching stations per manufactures requirements.
- E. Operable parts for all accessible casework shall comply with CBC Section 11B-309.

**3.3 PREPARATION AND RE-LAMINATION – WHERE OCCURS**

- A. Prepare, sand and scuff all surfaces to be re-laminated.
- B. Fill all damaged areas with a catalyzed polyester filler (ie, Bondo) and sand smooth to adjacent surfaces.
- C. Apply a CARB compliant spray or rollout contact cement to manufacturer's recommendations making sure environmental conditions are met.
- D. Fit and comply with North American Architectural Woodwork Standards, Edition 2, Section 10

**3.4 ADJUSTING AND CLEANING**

- A. Adjust doors, drawers, hardware, fixtures and other moving or operating parts to function smoothly and correctly.
- B. Clean casework, counters, shelves, hardware, fittings, and fixtures.
- C. Adjust sliding marker boards at teaching wall.

END OF SECTION

SECTION 07 20 22  
INSULATION

## PART I – GENERAL

## 1.01 SECTION INCLUDES

- A. Thermal insulation in exterior wall construction.
- B. Thermal insulation in ceiling assemblies.
- C. Sound attenuation insulation in interior partition construction.

## 1.02 REFERENCES

- A. ASTM C665 – Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
- B. ASTM E84 – Surface Burning Characteristics of Building Materials.
- C. ASTM E84 – Rubber Cements.
- D. California Building Code, Chapter 7 where applicable.

## 1.03 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Provide data on product characteristics, performance criteria and methods of installation.
- C. Samples: Provide three (3) samples of each material specified minimum 12 inches square. Provide fasteners, clips and other accessories.

## PART II – PRODUCTS

## 2.01 MANUFACTURERS – INSULATION MATERIALS

- A. Products of CertainTeed Corporation, Valley Forge, PA are the standard of quality required and specified herein.  
Or products equal to from the following companies, under provisions of the Division 01 specifications.
- B. Schuller/Manville Building Insulation Division, Denver Colorado
- C. Owens-Corning Fiberglass Corp., Toledo, OH
- D. USG Corporation, Thermafiber Division, Chicago IL

## 2.02 MATERIALS – THERMAL

- A. Batt Insulation: CertaPRO ASTM C665, Type III, Class A, Category 1. Preformed glass fiber batt, CertainTeed Thermal FSK-25 Faced Batts; conforming to the following:
 

Thermal Resistance:	R/13 for nominal 4 inch cavities R/19 for nominal 6 inch cavities
Batt Size:	As required to fully fill cavities.
Thickness:	3-1/2 inch for R/11 6-1/4 inch for R/19 10 inch for R/30
Facing:	Facing on one side with flame resistant full facing.
Flame Spread:	Less than 25, ASTM E84
Smoke Developed Rating:	Maximum 50
Permeance:	0.02 or less

## 2.03 MATERIALS – SOUND

- A. Sound Attenuation Insulation: ASTM C665, Type I; preformed glass fiber, CERTAINTEED SOUND CONTROL BATTS / NOISE REDUCER; semi-rigid or roll, conforming to the following:
 

Batt Size:	As required to fully fill cavities. (Install in ALL interior walls)
Thickness:	As required to fully fill cavities.
Facing:	Unfaced
Flame Spread:	Less than 25, ASTM E84
Smoke Developed Rating:	Maximum 50

**2.04 ACCESSORIES**

- A. Nails or staples, type and size to suit application.
- B. Tape: Acrylic with polypropylene backing, Class A, flame spread less than 25, adhering type, 2-1/2 inches wide; No. 8086 CONTRACTOR SHEATHING TAPE, manufactured by 3M Company, St. Paul, MN, or equal.
- C. Insulation Fasteners: Steel impale spindle and clinch shield on flat metal base with applied adhesive, length to suit insulation thickness, capable of securely and rigidly fastening insulation in place; SPINDLE-ANCHOR or PRONG INSUL-ANCHORS, manufactured by Erico Fastening Systems, Morristown, NJ, or an approved equal. Self adhesive base plates are prohibited.
- D. Adhesive: ASTM D816; HI-PERFORMANCE ADHESIVE, manufactured by Erico Fastening Systems, Morristown, NJ, or equal.

**PART III – EXECUTION****3.01 EXAMINATION**

- A. Verify site conditions.
- B. Verify that substrate and adjacent materials are satisfactorily installed and in place and are dry and ready to receive insulation.

**3.02 INSTALLATION**

- A. Install insulation in accordance with insulation manufacturer's instructions.
- B. Install in cavities designated to receive sound and thermal insulation without gaps or voids. Extend material full height of cavity. Whether or not shown on plans, install thermal insulation in ALL exterior walls and at the underside of the roof structure and install sound attenuation batts in ALL interior walls including soffits and above hard lid ceilings that are below the roof structure such as restrooms, etc...
- C. Trim insulation to fit spaces.
- D. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within the plane of insulation. Leave no gaps or voids.
- E. Extend thermal materials full height if cavity to structure above and as otherwise required to produce a completely insulated building envelope.
- F. Extend sound materials full height of cavity to structure above and as otherwise required to produce a completely sound insulated building envelope.
- G. Tape and seal butt ends, lapped flanges, and tears or cuts in foil in thermal batts.
- H. Friction fit semi-rigid sound insulation batts in cavities.
- I. Wood Framing: Place foil side of thermal batts toward inside of building by stapling at 6 inches oc.
- J. Metal Framing: Place foil side of thermal batts toward inside of building. Place insulation fasteners at 36 inches oc vertically in two rows at each stud cavity. Tape and seal tears or cuts in foil.
- K. Install material to preclude slipping from place by use of nails, screws, wires or other approved fastening devices. Insulation shall not slump within cavities. Insulation shall fill the entire cavity.
- L. In cavities above ceilings with no finish or finish on one side retain insulation in place with 16 gage galvanized annealed wires spaced 12 inches oc vertically.
- M. Where tight, congested, difficult or otherwise unforeseen conditions are encountered employ alternate application methods or materials to effect the intended insulation system. Alternate methods or materials should be approved by the architect.

**3.03 INSPECTION**

- A. Notify Construction Manager or Architect before work is covered. Approval of Construction Manager or Architect shall be received before any work is concealed in a manner which will make inspection difficult. Work which has been covered prior to inspection shall be uncovered for inspection and recovered.

END OF SECTION

SECTION 07 27 00  
FIRESTOPPING

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Firestopping systems, products, materials and accessories.
- B. Through-penetration firestopping systems.
- C. Firestopping at intersections of fire-rated partitions and horizontal assemblies.

1.2 REFERENCES

- A. ASTM E84 – Surface Burning Characteristics of Building Materials.
- B. ASTM E814 – Fire Tests of Through-Penetration Firestops.
- C. ASTM E119 – Fire Tests of Building Construction and Materials.
- D. UL Fire Resistance Directory, 2019 Edition (or most current).
- E. Chapter 7, California Building Code.
- F. WHI Certification Listings, 2019 Edition (or most current).

1.3 SUBMITTALS FOR REVIEW

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Provide data on product characteristics, performance and limitation criteria.
- C. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- D. Submit UL or WHI approval numbers for all firestopping materials, devices and systems.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacture of products specified in this section with minimum five years experience.
- B. Applicator: Company specializing in performing the work of this Section with minimum three years experience.

1.5 REGULATORY REQUIREMENTS

- A. Conform to Sections 709 and 710 California Building Code for fire resistance standards and requirements for penetration in walls, partitions, floor-ceilings and roof-ceilings.
- B. Through-penetration firestopping systems shall conform to ASTM E814 for F & T ratings.
- C. Maintain one copy of UL Fire Resistance Directory and WHI Certification Listings, on jobsite at all times.
- D. Firestopping systems shall meet temperature limitations as described in ASTM E119 and hose stream exposure as described in ASTM E814.
- E. Firestopping insulation, sealants, fill materials and devices shall have a flame spread of 0, smoke density of 0, ASTM E84.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when temperature of substrate material and ambient air is below manufacturer's minimum recommendations.
- B. Maintain this minimum temperature before, during and for 3 days after installation of materials.
- C. Provide ventilation in areas to receive solvent cured materials.

1.7 SEQUENCING

- A. Sequence work to permit firestopping materials to be installed during or after adjacent and surrounding work is complete.

2 PART 2 PRODUCTS

2.1 APPROVED THROUGH-PENETRATION FIRESTOPPING SYSTEMS

- A. Manufacturers, products and systems as listed in the UL Fire Resistance Directory, are approved for use under this Section:



1. Through-Penetration Firestop Devices (XHCR), Factory-Built Systems: Any manufacturer listed therein.
  2. Through-Penetration Firestop Systems, (XHEZ) Field-Erected Type: Any approved systems listed therein.
  3. Fill, Void, Cavity Materials (XHHW), Installed at Jobsite: Any manufacturers listed therein.
  4. Firestop Devices (XHJI), Factory Built Systems: Any manufacturers listed therein.
  5. Forming Materials (XHKU) Jobsite Applied: Any manufacturers listed therein.
  6. Through-Penetrating Products (XHLY) Cable, Conduit, Pipe and Tubing: Any manufacturers listed therein.
- B. Manufacturers, products and systems as listed in the WHI Certification Listings, are approved for use under this section:
1. Through-Penetration Firestop Systems: Any manufacturer and system listed in "Firestop Systems" section.
- C. Manufacturers of Systems or Devices not listed in the UL Directory or WHI Certification Listings, but which can supply certification of approval since the 1994 publication date are similarly approved for use under this section.
- D. Materials and devices utilized in the above referenced systems shall be used only in those systems in which they were tested. Substitutions are not permitted.

## 2.2 APPROVED FLUTED THROUGH-PENETRATION FIRESTOPPING SYSTEMS

- A. Rectorseal Corp., Houston, TX.
1. Insulation Backer: Fiberglass.
  2. Sealant: METACAULK 1100, sprayed, 1/8 inch thick, from metal deck to gypsum board, both sides.
  3. Approval: WHI TRC/PV 60-04, T & F rating 60 minutes, WHI TRC/PV 120-14, T & F rating 120 minutes.
- B. ALI Manufacturing Co., East Berlin, CN.
1. Insulation Backer: Mineral wool.
  2. Retaining Clips: 16 or 18 gage, 3/4 flute depth, 1/2 flute width, both sides.
  3. Sealant: ALBI CLAD 161, caulked, 5/8 inch thick, around full perimeter of insulation, both sides.
  4. Install one or two 4 inch wide sections, 5/8 inch thick fire-rated gypsum board adjacent to top edge of gypsum board wall covering, both sides.
  5. Fill 1/2 inch deflection space with sealant, full depth, both sides.
- C. FIRETRAK CORP., KIMBALL, MN.
1. Insulation Backer: Mineral wool.
  2. Sealant: FS-90 STA-SMOOTH, by Goldbond.
  3. Install one or two 5/8 inch thick sections of fire-rated gypsum board, 9 inches wide at deck flutes, both sides, custom fitted to within 1/8 to 3/8 inch of decking profile. Fill space with sealant, full depth, both sides.
  4. FIRETRAK SHADOW LINE RUNNER shall be attached to bottom flute of decking as recommended by manufacturer and as specified in Section 09110.
  5. Approval: WHI FT/PV 60-01, T & F rating 60 minutes, WHI FT/PV 120-01, T & F rating 120 minutes.

## 2.3 FIRESTOPPING AT ELECTRICAL BOXES AND UTILITY OUTLETS

- A. Steel electrical outlet boxes on opposite sides of walls requiring protected openings shall be separated by a horizontal distance of 24 inches.
- B. Steel electrical outlet boxes which occur in combination with outlet boxes of any size such that the aggregate area of unprotected outlet boxes exceeds 100 square inches in any 100 square feet of wall area shall be protected by an approved material or detail to decrease the aggregate area of unprotected utility boxes to less than 100 square inches in any 100 square feet of wall.
- C. Steel electrical outlet boxes which exceed 16 square inches in area shall be protected by an approved firestop material:

1. MPP-1 MOLDABLE PUTTY PADS, by 3M Contractor Products, Minneapolis, MN.
  2. FSP FIRESTOP PUTTY PADS, by Hevi-Duty Nelson Products, Tulsa, OK.
  3. FLAMESAFE FSP 1077 FIRESTOP PADS, by International Protective Coatings Corp., Ocean, NJ.
  4. SPECSEAL PUTTY PADS, by Specified Technologies, Inc., Somerville N.J.
  5. Or equal.
- D. Utility and electrical outlets or boxes shall be securely fastened to the stud or framing of the wall, or ceiling assembly. The opening in the gypsum board facing shall be cut so that the clearance between the box and the gypsum board does not exceed 1/8 inch.
1. In smoke walls the 1/8 inch clearance shall be filled with an approved fire-rated sealant.

### 3 PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify site conditions.
- B. Verify that openings are ready to receive the Work of this Section.

#### 3.2 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material or other matter which may effect bond of firestopping material.
- B. Remove incompatible materials which affect bond.
- C. Install backing materials to arrest liquid material leakage.

#### 3.3 APPLICATION

- A. Apply primer, firestop sealant or other firestop materials in accordance with manufacturer's recommendations and as approved by regulatory agencies.
- B. Apply firestopping material in sufficient thickness or configuration to achieve designated fire rating.
- C. Install firestopping material in locations where the designated fire rating must be maintained, including, but not limited to the following:
  1. Voids or annular openings around sleeves, piping, ductwork or electrical/communications conduits which penetrate fire rated walls, partitions, floors, ceilings or assemblies.
  2. Intersections of fire-rated vertical and horizontal assemblies.
- D. Remove dam material after firestopping material has cured.

#### 3.4 CLEANING

- A. Clean adjacent surfaces of firestopping materials.

#### 3.5 PROTECTION OF FINISHED WORK

- A. Protect finished work.
- B. Protect adjacent surfaces from damage by material installation.

#### 3.6 INSPECTION

- A. Notify Inspector before work is covered. Approval of Inspector shall be received before any work is concealed in a manner which will make inspection difficult. Work which has been covered prior to inspection and approval shall be uncovered, reinspected and re-covered.

END OF SECTION

SECTION 07 92 00  
JOINT SEALERS

## PART I – GENERAL

## 1.01 SECTION INCLUDES

- A. Preparing sealant substrate surfaces.
- B. Sealant and backing.

## 1.02 REFERENCES

- A. ASTM C834 – Latex Sealing Compounds.
- B. ASTM D1056 – Flexible Cellular Materials – Sponge or Expanded Rubber.
- C. FS TT-S-227 – Sealing Compound: Elastomeric Type, Multi-Component.
- D. FS TT-S-230 – Sealing Compound: Elastomeric Type, Single Component.
- E. FS TT-S-1543a – Sealing Compound: Silicone Type.
- F. FS TT-S-001657 – Sealing Compound: Single Component, Butyl Rubber Based.

## 1.03 SUBMITTALS FOR REVIEW

- A. Submit product data under provisions of the contract.
- B. Submit product data indicating sealant chemical characteristics, performance criteria, limitations, color availability and shore hardness.
- C. Color of visible sealant to match adjacent painted surface unless specifically noted otherwise

## 1.04 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum five years experience.
- B. Applicator: Company Specializing in applying the work of this Section with minimum three years experience.
- C. Conform to Sealant and Waterproofers Institute requirements for materials.

## 1.05 FIELD SAMPLES

- A. Provide samples under provisions of the contract.
- B. Construct one field sample illustrating sealant type, color, and tooled surface, maximum 12 inches long, in each differing sealant application.
- C. Do not proceed with remainder of sealant application until approved by the Architect.
- D. Approved sample may remain as part of the Work. Disapproved sample shall be removed.

## 1.06 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation. Deliver materials in unopened containers, store in dry, covered area.

## PART II – PRODUCTS

## 2.01 SEALANTS

- A. Use sealants selected from the following types, as indicated on drawings or as appropriate to the joint being sealed. Refer to schedule for additional approved applications.

1. Type 1: One-part moisture curing Polyurethane sealant. FS TT-S-230C, Type II, non-sag, Class A DYNATROL I, manufactured by Pecora Corp., Harleysville, PA, SIKAFLEX-1a, manufactured by Silka Corp., Lyndhurst, NJ, or equal.

- a. Elongation Capability: 25 percent.
- b. Shore A Hardness Range: 20 to 40.

2. Type 2: Multi-part Polyurethane Base. FS TT-S-227E, Class A, Type II, non-sag, DYNATROL II, manufactured by Pecora Corp., Harleysville, PA, SIKAFLEX-2c N/A, manufactured by Sika Corp., Lyndhurst, NJ, or equal.

- a. Elongation Capability: 50 percent.
  - b. Shore A Hardness Range: 20 to 35.
3. Type 3: One-part moisture curing Polyurethane sealant. FS TT-S-230C, Type 1, self leveling, Class A, UREXPAN NR-201, manufactured by Pecora Corp., Harleysville, PA, VULKEM 45, manufactured by MAMECO International Inc., Cleveland, OH, or equal.
- a. Elongation Capability: 25 percent.
  - b. Shore A Hardness Range: 35.
4. Type 4: Multi-part Polyurethane Base. FS TT-S-227, Type I, self-leveling, Class A, DYNATRED or UREXPAN NR-200, manufactured by Sika Corp., Harleysville, PA, SIKAFLEX-2c N/A, manufactured by Sika Corp., Lyndhurst, NJ or equal.
- a. Elongation Capability: 250 – 300 percent.
  - b. Shore A Hardness Range: 40.
5. Type 5: One-part Silicone Sealant. FS TT-S-1543a Type S, non-sag, Class A, 863 ACETOXY Silicone Sealant, manufactured by Pecora Corp., Harleysville, PA, SCS 1200, manufactured by General Electric Co., Waterford, NY, or equal.
- a. Elongation Capability: 25 percent.
  - b. Shore A Hardness Range: 27.
6. Type 6: One-part, non-sag, acrylic latex sealing compound, ASTM C834, AC-20 manufactured by Pecora Corp., Harleysville, PA, ACRYLIC LATEX No. 834 manufactured by Tremco, Beachwood, OH, or equal.
7. Type 7: One-part, non-sag, butyl rubber base acoustical sealant ASTM C834, BA-98, manufactured by Pecora Corp., Harleysville, PA, SHEETROCK ACOUSTICAL SEALANT manufactured by USG, Chicago, IL, or equal.

## 2.02 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: ASTM D1056; round, closed cell polyethylene foam rod; oversized 25 percent larger than joint width; DENVERFOAM or GREENROD, manufactured by Pecora Corp., Harleysville, PA. SONOFOAM BACKER ROD, manufactured by Sonneborn building Products, Minneapolis, MN, or equal.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application. Apply to bottom of joints which are too shallow to receive foam backer rod.
- E. Sealant Tape: Butyl sealant tape between sheet metal laps and at concealed locations. ADCO GT-206 or approved equal.

## 2.03 FIRESTOP SEALANTS

- A. Refer to Section 07 27 00, Fire stopping if applicable.

## PART III – EXECUTION

### 3.01 EXAMINATION

- A. Verify that joint openings are ready to receive work and field measurements are as shown on Drawings and recommended by the manufacturer.
- B. Beginning of installation means installer accepts existing surfaces.

**3.02 PREPARATION**

- A. Clean and prime joints in accordance with manufacturer's instructions.
- B. Remove loose materials and foreign matter which might impair adhesion of sealant. Remove dust with compressed air.
- C. Verify that joint backing and release tapes are compatible with sealant.
- D. Perform preparation in accordance with manufacturer's recommendations.
- E. Protect elements surrounding the work of this Section from damage or disfiguration.

**3.03 INSTALLATION**

- A. Install sealant in accordance with manufacturer's instructions, using hand pointing tools, hand-operated pressure guns or air operated guns with reciprocal pumps and hoses.
- B. Measure joint dimensions and size materials to achieve required width/depth ratios.
- C. Install joint backing to achieve a neck dimension no greater than 1/3 the joint width. Where sealant is applied to concrete, concrete is to be fully cured.
- D. Install bond breaker where joint backing is not used. Install removable masking material to maintain clean lines and protect adjoining surfaces.
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges. Do not install sealant on wet or damp surfaces.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Tool joints concave, channel shaped or as detailed. Use slicking agent type recommended by manufacturer.

**3.04 CLEANING AND REPAIRING**

- A. Clean adjacent soiled surfaces immediately before sealant cures.
- B. Repair or replace defaced or disfigured finishes caused by work of this Section.

**3.05 PROTECTION OF FINISHED WORK**

- A. Protect finished installation from the work of other sections.
- B. Protect sealants until cured.

**3.06 SCHEDULE**

- A. Exterior Joints; Unless Specified Otherwise in Individual Sections:
  - 1. Joints between metal frames and concrete or masonry: Sealant Type (1).
  - 2. Joints Between Impervious Materials: Sealant Type (1).
  - 3. Vertical Expansion and Control Joints: Sealant Type (2).
  - 4. Joints in sheet metal flashings: Sealant Type (1).
  - 5. Perimeters of window frames, door frames, louvers and similar openings, and where metal, wood or other materials abut or join masonry, concrete or each other: Sealant Type (1).
  - 6. Horizontal expansion, control and abutment joints in sidewalks, concrete floors: Sealant Type (4). Joints where a self-leveling sealant cannot be used because of slope: Sealant Type (2).
  - 7. Glass glazing, cap beads (on glass), to metal and surfaces made of a silica substance: Sealant Type (5).
- B. Interior Joints; Unless Specified Otherwise in Individual Sections:
  - 1. Vertical expansion and control joints: Sealant Type (1).
  - 2. Joints between impervious materials: Sealant Type (1).
  - 3. Horizontal expansion, control, isolation and abutment joints: Sealant Type (3) or (4).
  - 4. Window and door perimeters: Sealant Type (1).
  - 5. Gypsum Board Joints: Sealant Type (1).
  - 6. For sink, tub or bath areas including countertop joints: Sealant Type (5).
  - 7. Other interior joints as indicated or shown: Sealant Type (1).
  - 8. Intersection of wall surface and cap strip at resilient flooring integrall cove: Sealant Type (1).
  - 9. Intersection of metal or wood thresholds and floor substrate, where building components are mechanically attached and required sealing: Sealant Type (6).

10. Perimeter of sound-rated walls, at intersection of gypsum board and abutting surfaces, both sides of wall: Sealant Type (7).

END OF SECTION

SECTION 08 11 13  
STANDARD STEEL FRAMES

## PART 1 GENERAL

## 1.1 SECTION INCLUDES

- A. Welded steel door frames.
- B. Welded steel window frames.
- C. Self-Adhered Door/Window Flashings

## 1.2 REFERENCES

- A. SDI – Steel Door Institute
- B. HMMA – Hollow Metal Manufacturer’s Association
- C. SDI 105 – Recommended Erection instructions for Steel Frames.
- D. SDI 111 – Recommended Standard Details Steel Doors and Frames
- E. SDI 117 – Manufacturing Tolerances Standard Steel Doors and Frames.
- F. SDI 118 – Basic Fire Door Requirements.
- G. HMMA - 820 - Hollow Metal Frames
- H. HMMA -840 - Installation and Storage.
- I. HMMA - 850 - Fire-Rated Hollow Metal Doors and Frames.
- J. ANSI A224.1 - Standard Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
- K. ASTM A366 -Steel, Carbon, Cold-Rolled Sheet.
- L. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
- M. ASTM A569 - Steel, Carbon (0.15 maximum, percent) Hot-Rolled Sheet and Strip Commercial Quality.
- N. ASTM A591 - Steel Sheet, Electrolytic Zinc-Coated, for light coating mass applications.
- O. NFPA 80 - Fire Doors and Windows.
- P. ASTM A527 – Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock-Form Quality.

## 1.3 SUBMITTALS FOR REVIEW

- A. Submit shop drawings and product data under provisions of the contract.
- B. Indicate frame configuration, anchor types and spacing, location of cutouts for hardware, reinforcement and finish.
- C. Submit Manufacturer’s installation instructions under provisions of the contract.

## 1.4 QUALITY ASSURANCE

- A. Manufacture frames to conform to SDI or HMMA standards except where exceeded by this specification.
- B. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five (5)years experience.

## 1.5 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver and protect frames with manufacturer’s shipping safeguards.
- B. Attach spreader bars on welded frames to preclude warping or bending during delivery and storage.

**2 PART 2 PRODUCTS****2.1 ACCEPTABLE MANUFACTURERS**

- A. Any of eleven manufacturers belonging to the Steel Door Institute, Cleveland, OH
- B. Any of 55 manufacturers belonging to the Hollow Metal Manufacturers Association, Chicago, IL.
- C. Any manufacturer providing certification of compliance with standards of fabrication, installation, finish and testing required in current issues of SDI or HMMA Specification Guides.

**2.2 WELDED FRAMES**

- A. Type: Combination buck frame and integral stop and flat trim, double rabbet, profiles as indicated on the drawings, cold rolled steel ASTM A366, or Hot-Rolled Steel, ASTM A569 or paintable galvanized steel without primer, ASTM A527, minimum 16 gage.
  - 1. Drywall: Provide backbend
  - 2. Plaster: Provide plaster key.
- B. Anchors: Provide two anchors at head for openings up to 48 inches, three if wider, maximum 30 inches on centers. Provide three at jamb for doors up to 84 inches in height, additional anchors at maximum 30 inches on centers for higher doors.
  - 1. Provide appropriate type of anchors consistent with type of wall construction for each installation and in conformance with HMMA 820 and SDI-111.
- C. Floor Attachment: Provide metal anchor with provision for expansion anchor attachment to concrete floor, adjustable for height, welded in place. Minimum thickness: 14 gage.
- D. Hardware Attachment: Mortise, reinforce, drill and tap at factory to receive specified hardware. Install minimum 10 gage reinforcing welded to frame for surface mounted hardware, except install 7 gage reinforcing for hinges in accordance with HMMA 820. Tap to templates.
- E. Silencers: Make provision for minimum three rubber silencers at strike jamb of all doors, except fire-rated doors, and one at head of each leaf of double doors, except fire-rated doors.
- F. Fire Rated Frames:
  - 1. Construct as tested and rated in accordance with HMMA 850 and SDI 118.
  - 2. Conform to NFPA 80.
  - 3. Attach UL or WH label to frame.

**2.3 PROTECTIVE COATINGS**

- A. Interior Frames: Modified Alkyd, air dried meeting requirements of ANSI A224.1, shop applied, or ASTM A527 galvanized steel without primer.
- B. Exterior Frames: ASTM A525 Hot-Dip Galvanized 0.60 ounces per square foot(G60), or ASTM A591 Electrolytic zinc-coated 0.60 ounces per square foot(A60).
- C. Pre-treat and prime with modified alkyd, air dried meeting requirements of ANSI A224.1, shop applied.
- D. Galvanizing to A25 thickness permitted on ASTM A527 paintable galvanized steel.



- E. On surfaces where zinc coating has been removed during fabrication, frames shall receive a factory-applied touch-up primer.

## 2.4 FABRICATION

- A. Fabricate exterior welded steel door and window frames as machine-mitered face-welded unit type in accordance with HMMA 820. Weld and grind smooth. No intermittent welds or plate splices permitted at intersections.
- B. Fabricate interior welded steel door and window frames as machine-mitered face-welded unit type in accordance with HMMA 820. Weld and grind smooth.
- C. Where cross mullions or t intersections occur, frames shall be fabricated as butted and face-welded assembly joints, in accordance with HMMA 820. At mullion-to-base intersections extend mullion to floor and face weld. Where butted joints are exposed to weather, seal intersection with one-component polyurethane sealant as specified in section 07900.
  - 1. At window frame apply minimum ¾ inch high, 16 gage channel stops, attach with flat head machine screws, countersunk, tamper-proof type where exposed to weather.
- D. Machine mitered faces and butt joined integral stops permitted with continuous welds.
- E. Fabricate frames with hardware reinforcement plates welded in place. This includes electronic strikes where noted in door hardware specification.
- F. Fabricate frames to accept anchors as described in HMMA 820 and SDI-111 for type of wall construction
- G. Reinforce frames for door checks on both sides, where required.
- H. Apply primer to all surfaces of frames, in accordance with requirements of ANSI A224.1 Galvanized surfaces shall be pretreated prior to application of primer.
- I. Attach fire rated label to each fire rated door frame. On fire-rated windows or window assemblies, locate label with consistency and in the following locations in the order of preference: Top side of muntins or sills over 72 inches high, underside of muntins below 48 inches high or lower right hand jamb within 6 inches of sill.

## 3 PART 3 EXECUTION

### 3.1 INSTALLATION

- A. **Install Vycor V40 (By Grace Construction & Packaging) or approved equal per manuf. recommendations at all exterior openings where frames are being installed. This is required at ALL exterior door and window openings.**
- B. Install frames in accordance with HMMA 840 and SDI-105.
- C. Coordinate anchor placement with type of wall construction.
- D. Paint frames under section 09 90 00.
- E. Provide provisions within frames to account for conduit to security and electric door strikes.

### 3.2 TOLERANCES

- A. Conform to standard of tolerances as required in HMMA 840 and SDI-117

END OF SECTION

SECTION 08 14 00  
WOOD DOORS

## PART I – GENERAL

## 1.01 WORK INCLUDED

- A. Wood doors fire rated and non-rated.
- B. Louvers.
- C. Shielded Stops.
- D. Glass Stops.

## 1.02 REFERENCES

- A. ANSI A208.1 – Wood Particle Board.
- B. ANSI/NWMA I.S.1 – Industry Standard for Wood Flush Doors.
- C. ASTM C612 – Mineral Fiber Block and Board Thermal Insulation.
- D. ASTM E152 – Fire Tests of Door Assemblies.
- E. NFPA 80 – Fire Doors and Windows.
- F. Chapter 10 California Building Code.
- G. WIC – Manual of Millwork, Woodwork Institute of California, Current Edition.
- H. NFPA 252 – Standard Method of Fire Tests for Door Assemblies.
- I. UL – Underwriter's Laboratory.
- J. WH – Warnock-Hersey.

## 1.03 QUALITY ASSURANCE

- A. Fire Door Construction: Conform to ASTM E152.
- B. Conform to NFPA 80 for fire rated class indicated.
- C. Provide doors from one manufacturer only.
- D. Doors shall be manufactured in accordance with Section 20 of the latest edition of the Manual of Millwork of the Woodwork Institute of California for Premium Architectural Grade or to higher standards as specified herein.
- E. Before delivery to the jobsite, the door supplier shall submit a WIC Certified Compliance Certificate indicating the products he will furnish for this job and certifying that they will fully meet all the requirements of the grade or grades specified.
- F. The first page of the shop drawings shall bear the WIC Certified Compliance Label. Shop drawings not conforming to this requirement will be rejected.
- G. One (1) copy of the latest issue of the WIC Manual of Millwork shall be made available for reference at the jobsite throughout the installation period.
- H. Upon completion, a WIC Certified Compliance Certificate shall be submitted.

## 1.04 REGULATORY REQUIREMENTS

- A. Conform to Section 1004, California Building Code for fire rated doors.

## 1.05 SUBMITTALS FOR REVIEW

- A. Submit shop drawings and product data under provisions of Section 01 33 00.
- B. Indicate door elevations, types, hand, thickness, stile and rail reinforcement, internal blocking for hardware attachment and cutouts.
- C. Submit samples under provisions of Section 01 33 00.
- D. Submit three samples of each door type specified, illustrating each face veneer specified. Samples shall illustrate core material.
- E. Submit Manufacturer's installation instructions under provisions of Section 01 33 00.
- F. Submit Certificate of Compliance for fire-rated doors.

## 1.06 QUALITY ASSURANCE

- A. Fire Door Construction: Conform to ASTM E152.
- B. Conform to NFPA 80 for fire rated class indicated.
- C. Provide doors from one manufacturer only.
- D. Doors shall be manufactured in accordance with Section 20 of the latest edition of the Manual of

Millwork of the Woodwork Institute of California. For Premium Architectural Grade or to higher standards as specified herein.

- E. Before delivery to the jobsite, the door supplier shall submit a WIC Certified Compliance Certificate indicating the products he will furnish for this job and certifying that they will meet all the requirements of the grade or grades specified.
- F. The first page of the shop drawings shall bear the WIC Certified Compliance Label. Shop drawings not conforming to this requirement will be rejected.
- G. One (1) copy of the latest issue of the WIC Manual of Millwork shall be made available for reference at the jobsite throughout the installation period.
- H. Upon completion, a WIC Certified Compliance Certificate shall be submitted.

#### 1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Protect doors with resilient packaging sealed with heat shrunk plastic or other manufacturer's shipping safeguards.
- B. Package, deliver and store doors in accordance with WIC requirements.
  - 1. Store in a dry, broom-clean area.
  - 2. Protect materials from damage.
  - 3. Replace units damaged, warped or otherwise not usable.
- C. Exposed wood at tops, bottoms and cutouts for hardware and accessories; seal prior to shipment.

#### 1.08 WARRANTY

- A. Provide life of original installation warranty for interior doors.
  - 1. Warranty shall state that doors will not warp, twist, bend, shrink, the veneers buckle or delaminate, or the joints open for the warranty period. Any door of 25 square feet or larger may have a warp or twist of not more than 1/4 inch in eight feet. Any door which develops defects within the scope of this warranty shall be replaced with a new door without expense to the owner.
  - 2. During the first year of warranty, replacement doors shall be delivered to the contractor for installation.
  - 3. During the succeeding years of the warranty, replacement doors shall be delivered to the building in which defective door is located. Bill of lading shall indicate the name of the building and room or location where door is to be replaced. Warranty shall include cost of removal of defective unit, installation of replacement and finishing.

### PART II – PRODUCTS

#### 2.01 MANUFACTURERS

- A. Wood Doors: Products of Weyerhaeuser Co., Tacoma, WA, are the standard of quality required and specified herein. Similar products of Eggers, Industries, Two Rivers, WI, VTI Industries, Holstein, IA, Algoma Architectural Doors, Algoma, WI, and Buell Door Co., Dallas, TX, may be submitted for approval under provisions of section 01 25 00.

#### 2.02 DOOR TYPES

- A. Particle Board Core, DPC-1 (Non-Fire Rated).
  - 1. Thickness: 1-3/4 inch.
  - 2. Face: Wood Veneer Premium Grade, Species: Red Oak, plain sliced.
  - 3. Crossband: Hardwood veneer, 1/16 inch thick.
  - 4. Side Edges: Two ply, 1-1/2 inch laminated outer strip, species at mill option.
  - 5. Top and Bottom Edges: 1-1/8 inch hardwood or softwood mill option.
  - 6. Face Assembly Adhesive: Type II, water-resistant.
  - 7. Core Assembly Adhesive: Type II, water-resistant.
  - 8. Core: 28 lb minimum density, ANSI A208.1.
  - 9. Moisture Stripping: Sealed edges.
- B. Particle Board Core DFP-20/30, (20 minute fire rated).
  - 1. Thickness: 1-3/4 inch.
  - 2. Face: Wood Veneer Premium Grade, Species: Red Oak, plain sliced.

3. Crossband: Hardwood veneer, 1/16 inch thick.
  4. Side Edges: 1-1/2 inch laminated hardwood, veneer to match face veneer.
  5. Top and Bottom Edges: 1-1/8 inch hardwood or softwood mill option.
  6. Face Assembly Adhesive: Type II, water-resistant.
  7. Core Assembly Adhesive: Type II, water-resistant.
  8. Core: 28 lb minimum density, ANSI A208.1.
  9. Moisture Stripping: Not applicable.
- C. Mineral Core DFM-45 (3/4 hour Fire-Rated).
1. Thickness: 1-3/4 inch.
  2. Face: Wood Veneer Premium Grade, Species: Red Oak, plain sliced.
  3. Crossband: Hardwood veneer, 1/16 inch thick.
  4. Side Edges: 3/4 inch. Veneer to match face veneer.
  5. Top and Bottom Edges: 1/2 inch top, 1-1/2 inch bottom.
  6. Face Assembly Adhesive: Type I, waterproof.
  7. Core Assembly Adhesive: Type II, water-resistant.
  8. Core: Incombustible mineral, asbestos free, minimum 28 lbs. Per cu. Ft. density, ASTM C612, 10 percent maximum absorption weight.
  9. Blocking for Hardware: Flame resistant, 5 inch top edge for closers, 5 inch for bottom hardware or automatic closers where applicable, 5 x 18 inch for locks, 5 inch center block for panic hardware, 5 x 12 inch for floor closers or pivot hinges where applicable.
  10. Machining for Hardware: Factory machining only.

### 2.03 ACCESSORIES

- A. Louvers: Inverted split Y type, non-vision, Model FDLS manufactured by Anemostat Products Division, Carson, CA, or an approved equal.
1. Frame: 18 gage.
  2. Louver Blades: 18 gage.
  3. Finish: Special color lacquer, as selected by Architect.
  4. Exterior Doors: Provide one-way vandalproof through-bolts and 18-14 mesh insect screen. Unit shall be hot-dip galvanized after fabrication.
- B. Glass Stop: Unit frame, Model FGS 75 manufactured by Anemostat Products Division, Carson, CA, or an approved equal for fire-rated and non-fire-rated doors.
1. Frame: 18 gage, cold rolled steel.
  2. Finish: Special color lacquer, as selected by Architect or (grey primer) or (bronze baked enamel) or (custom baked enamel).
  3. Labeling: Unit shall have UL or WH label.
  4. Fire Rating: (20 minute) or (45/60 minute). Refer to plans for rating requirements.
  5. Glazing: (1/4" Wire Glass) or (Non-Wired Glass). Refer to Section 08 80 00. Note: some glass to be dual pane 1" insulated, low E.
  6. Aesthetics: Tight mitered corners, 90 degree angles on glass stop.
  7. Interior Doors: (Cold Rolled Steel) or (#304 Stainless Steel) or (Hot Dipped Galvanized)
  8. Exterior Doors: Unit shall be hot-dip galvanized after fabrication OR Stainless Steel.
  9. Mounting: Countersink, one-way vandal resistant heads, through bolts.

### 2.04 FABRICATION

- A. Fabricate non-rated doors in accordance with WIC Quality Standards and ANSI/NWMA I.S.1.
- B. Fabricate fire rated doors in accordance with WIC Quality Standards and ANSI/NWMA I.S.1 and to UL or WH requirements. Attach permanent metal fire rating label to door edge, either on hinge stile or top edge.
- C. Machine doors at factory for finish hardware.
- D. Seven-ply or nine-ply construction not permitted.
- E. Veneer: Face veneer grain shall run vertically; crossband veneer run horizontally.
- F. Transom Panels: Same construction as doors, grain matched.

**PART III – EXECUTION**

**3.01 INSTALLATION**

- A. Install doors under Section 06 20 00.

**3.02 FINISHING**

- A. Field Finishing: In accordance with Section 09 91 00, Painting.

**END OF SECTION**

SECTION 08 41 13  
ALUMINUM ENTRANCES AND STOREFRONTS

## PART I – GENERAL

## 1.01 WORK INCLUDED

- A. Aluminum doors, frames and glazed lights.
- B. Glass and infill panels.
- C. Anchors, brackets and attachments.
- D. Door hardware.
- E. Perimeter sealant.
- F. Self-Adhered Door/Window Flashings

## 1.02 REFERENCES

- A. ASTM A36 – Structural Steel.
- B. ASTM A123 – Zinc (Hot-Dip Galvanized) coatings on Iron and Steel Products.
- C. ASTM B221 – Aluminum-Alloy Extruded Bar, Rod, Wire, Shape and Tube.
- D. Chapter 24 California Building Code.
- E. ASTM E283 – Rate of Air Leakage through External Windows, Curtain Walls and Doors.
- F. ASTM E331 – Water Penetration of Exterior Windows, Curtain Walls and Doors.

## 1.03 PERFORMANCE REQUIREMENTS

- A. System to provide for expansion and contraction within system components caused by a cycling temperature range of 170 F degrees without causing detrimental effects to system or components.
- B. Members are to withstand dead loads and live loads caused by pressure and suction of wind as calculated in accordance with Chapter 54, California Building Code.
- C. Limit mullion deflection to 1/175, or flexure limit of glass with full recovery of glazing materials, whichever is less.
- D. Limit water infiltration to zero at 6.2psf, ASTM E331.
- E. Air Infiltration Differential: ASTM E238; maximum .60 cfm/sq ft of fixed area.
- F. System to accommodate, without damage to system or components, or deterioration of perimeter seal; Movement within system; movement between system and perimeter framing components; dynamic loading and release of loads; and deflection of structural support framing. Required minimum loading on frame without failing: 270 lbs.
- G. T-24 Documents – Comply with all requirements within the T-24 documents in order to achieve the required energy values.

## 1.04 SUBMITTALS FOR REVIEW

- A. Submit shop drawings and product data under provisions of Section 01 30 00.
- B. Include system and component dimensions; components with in assembly; framed opening requirements and tolerances; anchorage and fasteners; glass and infills; door hardware requirements; and affected related work.
- C. Submit manufacturer's installation instructions under provisions of Section 01 30 00.
- D. Submit samples under provisions of Section 01300.
- E. Submit three samples, illustrating prefinished aluminum surface and specified glass.
- F. Where identified as a deferred submittal, submit stamped engineered drawings for any window spans in the vertical direction 10'-0" or greater.

## 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Provide wrapping or strippable coating to protect prefinished aluminum surfaces.

## 1.06 GUARANTEE

- A. Provide five (5) year manufacturer's guarantee.
- B. Cover complete system for failure to meet specified requirements.

**PART II – PRODUCTS****2.01 MANUFACTURERS**

- A. Kawneer, Company, Inc., Cerritos, CA.
- B. United States Aluminum
- C. Any Equal submitted as a substitution.

**2.02 MATERIALS**

- A. Extruded Aluminum: ASTM B221; 6063-T6 alloy and temper.
- B. Glazing Gaskets: EPDM elastomeric extrusions.
- C. Steel Sections: ASTM A36; shaped to suit mullion sections.
- D. Touch-Up Primer for Galvanized Surfaces: Zinc-rich Type.
- E. Fasteners: Stainless steel.

**2.03 FABRICATED COMPONENTS**

- A. Frames: Match Existing
- B. Doors: 1-3/4 inches thick, 5 inch wide to rail, 5 inch wide vertical stiles, 10 inch wide bottom rail; square glazing stops, STYLE 500.

**2.04 GLASS AND GLAZING MATERIALS**

- A. Glass and Glazing Materials: As specified in Section 08 84 00 and shall be Low E dual glazing.
- B. Glass and Glazing Material: Solarban 70 or 90, Solar Control Low E dual glazing, by Vitro Architectural Glass. Outdoor lite color to be selected by Architect, indoor lite to be clear.
- C. Glass in Exterior Lights: Safety, tempered. Low E dual glazing.
- D. Glass in Doors: Safety, tempered. Low E dual glazing.

**2.05 HARDWARE**

- A. Applied Door Stop: No. 69-154.
- B. Sill Sweep Strips: Resilient seal type, No. 38-560.
- C. Sill Sweep Strips:
- D. Threshold: Extruded aluminum, one piece per door opening 4 inches wide, 1/2 inch high, No. 69-139.
- E. Hinges: Offset butt type.
- F. Hinges: Hager
- G. Cross Rail: 3-1/2 inch high, No. 200-058.
- H. Push/Pull: Style C-09.
- I. Lockset: Schlage model #
- J. Panic Device: As specified in Section 08 71 00 – to be included with this section.
- K. Panic Device: Von Duprin CD-PA-AX-99-NL or L, with cylinder dogging CD.
- L. Closer: As specified in Section 08 71 00 – to be included with this section.
- M. Closer: Norton 7500H or LCN 4040XP.
- N. Cylinder Lock: As specified in Section 08 71 00 – to be included with this section.
- O. Door Stop: District standard

**2.06 FABRICATION**

- A. Fabricate doors and frames allowing for minimum clearances and shim spacing around perimeter of assembly, yet enabling installation.
- B. Rigidly fit and secure joints and corners with internal reinforcement. Make joints and connections flush, hairline and weatherproof.
- C. Develop drainage holes with moisture pattern to exterior.
- D. Prepare components to receive anchor devices. Fabricate anchorage items.
- E. Arrange fasteners, attachments and jointing to ensure concealment from view.
- F. Prepare components with internal reinforcement for door hardware and door operator hinge hardware.

**2.07 FINISHES**

BUSDO

- A. Extruded Aluminum Surfaces: Match Existing
- B. Concealed Steel Items: Galvanized in accordance with ASTM A123 primed with zinc-rich paint.
- C. Apply two coats of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.

### PART III – EXECUTION

#### 3.01 INSPECTION

- A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this Section.
- B. Beginning of installation means acceptance of existing conditions.

#### 3.02 INSTALLATION

- A. Install doors, frames, glazing and hardware in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely attach frame assembly to structure.
- C. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- D. Coordinate attachment and seal of air and vapor barrier materials.
- E. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- F. Install hardware using templates provided. Refer to Section 08 71 00 for installation requirements.
- G. Install and infill panels in accordance with Section 08 80 00, using exterior manufacturer's standard extruded glazing gaskets.
- H. Install perimeter two component polyurethane type sealant, backing materials, and installation requirements in accordance with Section 07 92 00.
- I. Adjust operating hardware.
- J. Install Vycor V40 (By Grace Construction & Packaging) or approved equal per manuf. recommendations at all exterior openings where storefront system is being installed.

#### 3.03 TOLERANCES

- A. Variation from Plane: 0.03 inches per foot maximum or 0.25 inches per 30 feet, whichever is less.
- B. Misalignment of Two Adjoining Member Abutting in Plane: 0.015 inches.

#### 3.04 CLEANING

- A. Remove protective material from prefinished aluminum surfaces.
- B. Wash down exposed surfaces using a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
- C. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

END OF SECTION



SECTION 08 71 00  
DOOR HARDWAREPART 1 - GENERALSECTION INCLUDES

Door hardware components related to door installation and control systems and furnishing and installation of devices.

REFERENCES:

- A. CCR – California Building Code – Current Edition
- B. BHMA A156.18 – Materials and Finishes
- C. DHI-02 – Installation Guide for Doors and Hardware
- D. DHI-03 – Keying Systems and Nomenclature
- E. U.L. – Underwriter's Laboratories
- F. NFPA 80 – Fire Doors and Windows
- G. NFPA 105 – Smoke Control Door Assemblies
- H. MIL-R-6130 – Rubber, Cellular, Chemically Blown
- I. MIL-R-6855/3 – Rubber, Synthetic, Rods (or Rounds)
- J. Chapter 10 & 11B – California Building Code
- K. 2010 Standards for Accessible Design

DESCRIPTION OF WORK:

**Definition:** "Finish Hardware" includes items known commercially as finish hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame. Types of items in this section include (but are not necessarily limited to):

- Hinges
- Lock cylinders and keys
- Lock and latch sets
- Exit devices
- Key lock box vault
- Push/pull units
- Sliding door equipment
- Closers
- Overhead Holders
- Miscellaneous door control devices
- Door trim units
- Protection plates

QUALITY ASSURANCE:

**Manufacturer:** Obtain each kind of hardware (latch and lock sets, hinges, closers, etc.) from only one manufacturer, although several may be indicated as offering products complying with requirements.

**Supplier:** A recognized builders hardware supplier who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or employs an experienced hardware consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.

**Fire-Rated Openings:** Provide hardware for fire-rated openings in compliance with the 2019 CBC, UL 10B, UL10C, and NFPA 252. Provide only hardware which has been tested and listed by UL for

types and sizes of doors required and complies with requirements of door and door frame labels. Include smoke seals.

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".

#### SUBMITTALS:

**Product Data:** Submit manufacturers' technical information for each item of hardware. Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.

**Hardware Schedule:** Submit final hardware schedule in manner indicated below. Hardware schedules are intended for coordination of work.

**Final Hardware Schedule:** Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

Type, style, function, size and finish of each hardware item.

Name and manufacturer of each item.

Fastenings and other pertinent information.

Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.

Explanation of all abbreviations, symbols, codes, etc. contained in schedule.

Mounting locations for hardware.

Door and frame sizes and materials.

#### Submittal Sequence:

Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by builders hardware, and other information essential to the coordinated review of hardware schedule.

**Keying Schedule:** Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.

#### PRODUCT DELIVERY, STORAGE AND HANDLING:

Packaging of hardware, on a set by set basis, is the responsibility of the supplier. As material is received by the hardware supplier from the various manufacturers, sort and repackage in containers marked with the hardware set number. Two or more identical sets may be packed in the same container.

Inventory hardware jointly with representative of the hardware supplier and the hardware installer until each is satisfied that the count is correct.

Provide secure lock-up for hardware delivered to the project, but not yet installed. Control and handling and installation of hardware items which are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses, both before and after installation.

#### JOB CONDITIONS:

Coordination: Coordinate hardware with other work. Tag each item or package separately, with identification related to the final hardware schedule, and include basic installation instructions in the package. Furnish hardware items of proper design for use on doors and frames of the thicknesses, profile, swing, security and similar requirements indicated, as necessary for proper installation and function. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check the shop drawings of such other work, to confirm that adequate provisions are made for the proper installation of hardware.

#### PART 2 - PRODUCTS

##### SCHEDULED HARDWARE:

Requirements for design, grade, function, finish, size and other distinctive qualities of each type of builders hardware is indicated in the Finish Hardware Data Sheet and Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the following.

Manufacturer's product designations: One or more manufacturers are listed for each hardware type required. An asterisk (\*) after a manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements including those specified elsewhere in this section.

##### MATERIALS AND FABRICATION:

###### General:

Hand of door: The drawings show the direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of the door movement as shown.

Fasteners: Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws.

Furnish screws for installation, with each hardware item. Provide phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match the hardware finish or, if exposed in surfaces of other work, to match the finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.

Provide concealed fasteners for hardware units which are exposed when the door is closed, except to the extent no standard units of the type specified are available with concealed fasteners. Do not use through bolts for installation where the bolt head or the nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work.

Tools for Maintenance: Furnish a complete set of specialized tools as needed for Owner's continued adjustment, maintenance, and removal and replacement of builders hardware. Obtain written verification of delivery from Owner.

*(Project Close-out Item)*

HINGES, BUTTS AND PIVOTS:

Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template- produced units.

Screws: Furnish Phillips flat-head all-purpose or machine screws for installation of units, except furnish Phillips flat-head all-purpose or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.

Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

Steel Hinges: Steel.

Non-ferrous Hinges: Stainless steel.

Exterior Doors: Non-ferrous-stainless.

Interior Doors: Steel non-rising.

Tips: Flat button and matching plug, finished to match leaves.

All butts installed at all exterior condition subjected to vandalism shall be provided with non-removable pins.

Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.

LOCK CYLINDERS AND KEYING:

General: Supplier will meet with Owner to finalize keying requirements and obtain final instructions in writing.

Existing System: Grandmasterkey the locks to the Owner's existing system, (Schlage), with masterkey to the existing school system.

Equip locks with cylinders for interchangeable-core pin tumbler inserts. Furnish only temporary inserts for the construction period, and remove these when directed.

Contractor to provide final inserts.

Key Quantity: Furnish 3 change keys for each lock; 5 master keys for each master system; and 5 grandmaster keys for each grandmaster system. Obtain written verification of delivery from Owner.  
*(Project Close-out Item)*

Metals: Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.

Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock which is not designated to be keyed alike with a group of related locks.

Key Material: Provide keys of nickel silver only.

Furnish one extra blank for each lock.

Deliver keys to key control system manufacturer.  
Deliver keys to Owner's representative.  
Obtain written verification of delivery from Owner.

*(Project Close-out Item)*

Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of the number of locks required for the project.

Key control manufacturer to set up complete cross index system and place keys on markers and hooks in the cabinet as determined by the final key schedule.

#### LOCKS, LATCHES, BOLTS AND THRESHOLDS:

Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set.

Provide standard (open) strike plates for interior doors of residential units where wood door frames are used.

Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.

Provide roller type strikes where recommended by manufacturer of the latch and lock units.

Lock Throw: Provide 5/8" minimum throw of latch and deadbolt used on pairs of doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

All permanent keys shall be delivered to the Owner's Representative via registered mail.

Locks: Except where otherwise specified, all locks and latches and component parts shall be by one manufacturer.

All locks shall be of such construction that when locked, the door may be opened from within by using lever and without the use of a key or special knowledge.

All locks shall have box strikes and curved lips long enough to protect the trim and facilitate correct installation and application. All locks to have 3/4" throw where required.

All locks shall have a "free-wheeling" lever when the outside lever is in the locked position. Lever rose shall have built in mechanical stop to reduce vandalism.

Flush Bolt Heads: Minimum of 1/2" diameter rods of brass, bronze or stainless steel, with minimum 12" long rod. Use of this device shall be permitted in accordance with Section 1133B.2.1 and 1008.1.8, Title 24. Where flush bolts occurs in the path of travel, provide automatic accessible flush bolt.

Exit Device Pressure: Exit Devices (Panic Hardware) shall have a 5 pound maximum effort to release per CBC 11B-309.4

Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position. Provide glass bead kits as required at doors with glass lites. The maximum unlatching force for exit devices to be 5 pounds.

Exit Doors: Shall be operable from the inside without the use of a key or any special knowledge or effort.

Thresholds: Provide thresholds for barrier-free access in accordance with the current ADA and CAC Title 24 requirements, Section 11B-404.2.5. All exterior thresholds shall be installed on a full-bed of sealant and secured in place with "dynabolts" expansion anchors.

#### PUSH/PULL UNITS:

Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation; through-bolted for matched pairs, but not for single units.

#### CLOSERS AND DOOR CONTROL DEVICES:

Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.

Provide parallel arms for all overhead closers, except as otherwise indicated.

Access-Free Closers: Where closers are indicated for doors, provide adjustable units complying with 11B-404.2.8. This applies to all doors in path of travel equipped with closers. Door closer shall comply with 11B-404.2.8 closer delay time ensuring that the force required to open a door does not exceed 5lbs. The Authority having Jurisdiction may increase the maximum effort to operate fire doors to achieve positive latching, but not to exceed 15 lbs max. Adjust all closers in the path of travel for 5 lbs. (exterior), or 5 lbs. (interior) maximum opening effort (11B-404.2.9). Closers to comply with 11B-404.2.8, closer delay and time.

Smoke Seals: All fire rated doors shall have smoke seals, head, jambs, and sill, which meet requirements of ASTM E-283 and UL 1479. Tested for smoke and draft control at 1.57 psf. Use Pemko S88D or approved equal.

Weather Stripping: All exterior doors shall be weather stripped. Use PEMKO S88D or approved equal.

#### DOOR TRIM UNITS:

Levers: To be accessible type.

Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, and similar units); either machine screws or self-tapping screw.

Fabricate edge trim of stainless steel, not more than 1/2" nor less than 1/16" smaller in length than door dimension.

Fabricate protection plates (armor, kick or mop) not more than 1- 1/2 on stop side smaller than the door width, x the height indicated.

Plastic Plates: Plastic laminate (polyester), 1/8" thick.

Latch Protectors: All exterior doors shall be equipped with latch protectors with exposed corners rounded set flush to door face, installed at all strikes to prevent "picking" of lock by inserting a tool between door and frame.

Manufacturer: B.B.W. No. 9616

Key Lock Box Vault: Furnish and install a recessed key lock box set flush into wall finish as directed by Architect or as shown on the drawings.

Manufacturer: Model 3200-R Heavy Duty, Dark Bronze  
The Knox Company, Newport Beach, CA

#### HARDWARE FOR INTERIOR SLIDING DOORS:

General: Provide manufacturer's standard hardware for interior sliding doors which are not furnished as a "package" complete with hardware.

#### HARDWARE FINISHES:

Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch-lock sets) for color and texture.

The designations used in schedules and elsewhere to indicate hardware finishes are the industry-recognized standard commercial finishes, except as otherwise noted.

#### PART 3 - EXECUTION

##### INSTALLATION:

Mount hardware units at heights between 34" to 44" A.F.F. or as indicated in "Recommended Locations for Finish Hardware" for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.

Where panic hardware and vision lights occur locate the panic hardware below the bottom of the vision light. Vision lights per code shall be installed with the sill at 42" A.F.F.

Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way. Coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division 9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.

Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

Set all exterior threshold on a full-bed of sealant and secure in place with "dyna-bolts" expansion anchors.

Install all door closers and exit devices per manufacturer instructions and secure in place to doors with sex-nuts and bolts (SNB). Exercise care not to dimple the doors.

Install any floor mounted devices (floor stops, etc.) to be located within 4" of the wall.

##### ADJUST AND CLEAN:

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

**Final Adjustment:** Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, 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.

Adjust and maintain door and gate closers per 11B-404.2.8.1, so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware. Obtain written verification of completion from Owner.

*(Project Close-out Item)*

**Continued Maintenance Service:** Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative of the latch and lock manufacturer, shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct Owner'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.

*(Project Close-out Item)*

#### FINISH HARDWARE DATA SHEET:

##### Acceptable Hardware Designs:

**Mortise Locks:** Schlage D Series and D Series "Vandalgard", "Rhodes" Design Lever.

##### Acceptable Manufacturer:

**ADA Signage:** Per Plans and Signage Specifications

**Butts and Hinges:** Hager, Stanley\*.

**Locks and Cylinders:** Schlage\*.

**Exit Devices:** Von Duprin\*.

**Overhead Closers:** LCN; Norton\*.

**Door Control Devices:** Baldwin\*, Glynn-Johnson.

**Door Trim Units:** BBW\*, Glynn-Johnson, Falcon, Ives, Trimco

**Door Stripping, Thresholds and Seals:** Pemko\*, Zero.

**Gate Hardware:** Jansen Ornamental Supply Co. (818) 442-0271.

\* - Indicates manufacturer's numbers shown elsewhere to indicate project requirements.



Except on weather stripped frames, provide silencers at all Hollow Metal Frames, 3 per single opening, 2 per double.

**(PM – REVIEW HARDWARE SCHEDULE WITH CLIENT PRIOR TO BIDDING. FINISHES NOTED BELOW INCLUDE OIL RUBBED BRONZE AND PLASTIC KICK PLATES, IS THIS CORRECT?)**

HARDWARE SCHEDULE

Note:

All hardware items shall have matching finishes with:

Satin Chromium US26D, BHMA 626, unless noted otherwise.

Thresholds shall be mill finish aluminum. Door closers shall be sprayed aluminum AI, BHMA 689. Push and pull plates shall be stainless steel.

Add below oil rubbed bronze, US10B, BHMA 613.

Thresholds shall be dark bronze anodized.

Door closers shall be sprayed dark statuary bronze, BHMA, 690.

Push and pull plates shall be oil rubbed bronze, US10B, BHMA 613.

Oil Rubbed Bronze (dull, slightly oxidized, oil rubbed) US 10B, BHMA 613, unless noted otherwise.

DISTRICT STANDARDS: (PM – Edit)

1. All hardware to be Satin Chromium US26D
2. Keyway to be 1248
3. Cores are to be interchangeable.
4. Provide construction cores.
5. Provide floor mounted door stops as shown on plans if not included in this hardware schedule. Exterior door stops to be provided and installed by site contractor.

EXTERIOR DOORS:

Group 01 Main Entry- Exit Double Door with Panic Hardware

Door 101.1- Hardware is existing to remain

- |   |                           |
|---|---------------------------|
| 3 | Butts – Existing          |
| 2 | Panic device- Existing    |
| 2 | Push pull plate -Existing |
| 1 | Door Closer – Existing    |

Group 02 Existing Exit- Single Door with Panic Hardware  
Door No.110.1- Hardware is existing to remain

- 1-1/2 Butts – Existing
- 1 Panic device- Existing
- 1 Push pull plate -Existing
- 1 Door Closer – Existing

Group 03 Exit- Single Door with Panic Hardware  
Door No.128.3

- 1-1/2 Pr. Butts FBB 199 5 x 4-1/2 NRP
- 1 Lockset: Push and pull plates
- 1 Door Closer 7500H- with cover
- 1 Panic Device (Von Duprin) LD-PA-AX-99-L-2SI  
(Provide for cylinder dogging with KEY and trim)
- 1 Threshold Pemko 2727D x 36" –Contractor to field verify installation prior to order.

**INTERIOR DOORS:**Group 04 Existing Fire Rated Lobby-Single Door  
Door No. 107.1, 127.1, 207.1, 222.1- Hardware is existing to remain

- 2 Butts - Existing
- 1 Lockset/lever– (RHO)-613 (Oil Rubbed Bronze) (Entrance w/ button) -Existing
- 1 Door Closer – Existing
- 2 Kickplates- Existing

Provide:

- 1 Panic Device (Von Duprin) LD-PA-AX-99-L-2SI  
(Provide for cylinder dogging with KEY and trim)

Group 05 Existing Fire Rated Stairwell- Single Door  
Door No. 110.1, 210.1- Hardware is existing to remain

- 1-1/2 Butts – Existing
- 1 Lockset/lever– (RHO)-613 (Oil Rubbed Bronze) -Existing
- 1 Door Closer – Existing
- 1 Kickplate- Existing at Door 110.1

Provide:

- 1 Panic Device (Von Duprin) LD-PA-AX-99-L-2SI  
(Provide for cylinder dogging with KEY and trim)
- 1 Kickplate 10" x 34" 8400 US32D B-CS or K0050 SS  
(Provide kickplate at Door 210.1)

Group 06 Existing Restrooms- Single Door  
Door No. 105.1, 106.1, 205.1, 206.1- Hardware is existing to remain

- 2 Butts - Existing
- 1 Lockset/lever– (RHO)-613 (Oil Rubbed Bronze) (Entrance w/ button) -Existing
- 1 Door Closer - Existing

Provide:

- 2 Kickplates 10" x 34" 8400 – color to be confirmed

Group 07 Existing Break Room- Single Door

Door No. 111.1-Hardware is existing to remain

1-1/2 Butts - Existing  
1 Lever- (RHO)-613 (Oil Rubbed Bronze) (no lock) -Existing

Provide:

2 Kickplates 10" x 34" 8400 – color to be confirmed

Group 08 Existing Office- Single Door

Door No. 209.1, 211.1, 212.1, 213.1, 215.1, 216.1, 220.1, 221.1, 219.1, 219.2

- Hardware is existing to remain

2 Butts - Existing  
1 Lockset/lever- (RHO)-613 (Oil Rubbed Bronze) (Entrance w/ button) -Existing

Provide:

2 Kickplates 10" x 34" 8400 – color to be confirmed

Group 09 Existing Fire Rated Utility- Single Door

Door No. 103.1, 103.2, 203.1- Existing hardware to remain

1-1/2 Butts – Existing  
1 Lockset/lever- (RHO)-613 (Oil Rubbed Bronze) -Existing  
1 Door Closer – Existing  
1 Kickplate- Existing

Group 10 Conference Rooms- Single Door

Door No. 108.1, 115.1, 116.1, 122.1, 218.1, 224.1, 225.1, 228.1, 231.1

- lever, no lock

2 Butts FBB 199 5 x 4-1/2 NRP  
1 Lockset- ND50RD-06 (RHO)-613 (Oil Rubbed Bronze)  
1 Door Closer 7500H- with cover  
2 Kickplates 10" x 34" 8400 US32D B-CS or K0050 SS  
1 Door Stop/Holder 1267 with floor strike  
Set Provide full set of door silencers

Group 11 Offices- Single Door

Door No. 113.1, 114.1, 109.1, 123.1, 125.1, 120.1, 121.1, 129.1, 223.1, 226.1, 227.1, 230.1

-Lever, lock button

2 Butts FBB 179 5 x 4-1/2 NRP  
1 Lockset ND66RD (RHO)-613 (Oil Rubbed Bronze) (Entrance w/ button)  
1 Door Closer 7500H- with cover  
2 Kickplates 10" x 34" 8400 US32D B-CS or K0050 SS  
1 Door Stop/Holder 1267 with floor strike  
Set Provide full set of door silencers

Group 12 Board Room- Single Door

Door No.127.2, 128.1, 128.2, 208.1

2 Butts FBB 179 5 x 4-1/2 NRP  
1 Lockset ND66RD (RHO)-613 (Oil Rubbed Bronze) (Store Lock Function)  
1 Door Closer 7500H- with cover  
2 Kickplates 10" x 34" 8400 US32D B-CS or K0050 SS  
1 Door Stop/Holder 1267 with floor strike

Set Provide full set of door silencers

Group 13 Utility- Single Door

Door No.118.1

1-1/2 Pr. Butts FBB 179 5 x 4-1/2 NRP  
 1 Lockset ND66RD (RHO)-613 (Oil Rubbed Bronze) (Entrance w/ button)  
 1 Door Closer 7500H- with cover  
 2 Kickplates 10" x 34" 8400 US32D B-CS or K0050 SS  
 1 Door Stop/Holder 1267 with floor strike  
 Set Provide full set of door silencers

Group 14 Superintendent- Double Door

Door no. 129.1

3 Pr. Butts FBB 179 5 x 4-1/2 NRP  
 1 Panic Device (Von Duprin) LD-PA-AX-99-L-2SI  
 (Provide for cylinder dogging with key and trim)  
 1 Lockset ND66RD (RHO)-613 (Oil Rubbed Bronze) (Entrance w/ button)  
 1 Door Closer 7500H- with cover  
 4 Kickplates 10" x 34" 8400 US32D B-CS or K0050 SS  
 1 Door Stop/Holder 1267 with floor strike  
 Set Provide full set of door silencers

END OF SECTION

SECTION 08 80 00  
GLAZING

## PART I – GENERAL

## 1.01 SECTION INCLUDES

- A. Glass and glazing for sections referencing this section for Products and installation.

## 1.02 REFERENCES

- A. ASTM C1036 – Flat Glass.
- B. ASTM C1048 – Heat-Treated Flat Glass – King HS, Kind FT Coated and Uncoated Glass.
- C. GANA – Glazing Manual, 2009 Edition.
- D. GANA – Sealant Manual, 2009 Edition.
- E. Chapter 26 and 24, California Building Code.
- F. Section KCMZ, UL Building Materials Directory, 1995 Edition.

## 1.03 PERFORMANCE REQUIREMENTS

- A. Provide minimum frame lap in accordance with Table 2403.2.1, California Building Code.
- B. T-24 Documents – Comply with all requirements within the T-24 documents in order to achieve the required energy values.

## 1.04 SUBMITTALS FOR REVIEW

- A. Submit under provisions of Section 01 33 00.
- B. Product Data on Glass Types Specified: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Samples: Submit three samples of each material specified illustrating coloration and design.

## 1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with:
  - 1. FGMA Glazing Manual.
  - 2. FGMA Sealant Manual.

## 1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not install glazing when ambient temperature is less than 50 degrees F.

## 1.07 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

## 1.08 IDENTIFICATION

- A. Each light shall bear the manufacturer's label designating the type and thickness of glass. Conform to Section 2402, California Building Code.
- B. Each light of safety glazing material installed in hazardous locations as defined in Section 2406, California Building Code shall be identified by a label which will specify the labeler, whether the manufacturer or installer, and state that safety glazing material has been utilized in such installation.

## PART II – PRODUCTS

## 2.01 MANUFACTURERS – FLAT GLASS MATERIALS

- A. Pilkington, Nippon Sheet Glass Co. Ltd, Tokyo, Japan
- B. Libby-Owens-Ford Co., Toledo, OH.
- C. Vitro, Cheswick, PA.
- D. Or equal.

## 2.02 FLAT GLASS MATERIALS

Tinting for all glass: Exterior to be color tinted to match existing, percentage to be selected, Interior to be clear, unless called out otherwise. INCLUDE SOLARBAN 70XL minimum.

- A. Float Glass: ASTM C1036, Type 1 transparent flat, Class 1 **Optifloat Clear**, Quality q3 glazing select 1/4 inch thick minimum.
- B. Safety Glass: ASTM C1048, Kind FT fully tempered, Condition A uncoated, Type 1 transparent flat, Class 1 **Optifloat Clear**, Quality q3 glazing select; 1/4 inch thick minimum.
- C. Fire Rated Glass: ANSI Z97.1, Warnock Hersey and UL rated 20 minutes, **Clear**, 1/4 inch thick, Technical Glass Products, Fire Lite Plus or as approved.
- D. Heat Absorbing, Tinted Glass: ASTM C1048, Type 1, Class 3, Quality q3; Float type, tempered, light reducing in gray color; light transmittance of 56 percent, shading coefficient of .66; 1/4 inch thick minimum.
- E. Insulating Glass Units: ASTM E774 and E773; double pane with silicone sealant edge seal; outer pane of 1/4 tinted glass, inner pane of 1/4 tempered glass, inter pane space purged dry air; total unit thickness of 1 inch.

### 2.03 GLAZING ACCESSORIES

- A. Setting Blocks: 80 to 90 Shore A durometer hardness, length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: 50 to 60 Shore A durometer hardness, minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one side.
- C. Glazing Tape: Performed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; black color.
- D. Glazing Splines: Resilient polyvinyl chloride extruded shape to suit glazing channel retaining slot.

## PART III – EXECUTION

### 3.01 EXAMINATION

- A. Verify prepared openings.
- B. Verify that openings for glazing are correctly sized and within tolerance.
- C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions and ready to receive glazing.

### 3.02 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.

### 3.03 INSTALLATION – EXTERIOR DRY METHOD (PREFORMED GLAZING)

- A. Cut glazing spline to length; install on glazing pane. Seal corners by butting spline and sealing junctions with butyl sealant.
- B. Place setting blocks at 1/4 points with edge block no more than 6 from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- D. Install removable stops without displacing glazing. Exert pressure for full continuous contact.

### 3.04 INSTALLATION – EXTERIOR WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

- A. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- B. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- D. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane of glass unit.
- E. Install removable stops, with spacer strips inserted between glazing and applied stops, 1/4 inch below sight line.
- F. Fill gap between glazing and stop with silicone type sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.

- G. Apply cap bead of silicone type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

### 3.05 INSTALLATION – EXTERIOR WET METHOD (SEALANT AND SEALANT)

- A. Place setting blocks at 1/4 points and install glazing pane or unit.
- B. Install removable stops with glazing centered in space by inserting spacer shims both sides at 24 inch intervals, 1/4 inch below sight line.
- C. Fill gaps between glazing and stops with silicone type sealant to depth of bite on glazing, but not more than 3/8 inch below sight line to ensure full contact with glazing and continue the air and vapor seal.
- D. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

### 3.06 INSTALLATION – INTERIOR DRY METHOD (TAPE AND TAPE)

- A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- D. Place glazing tape on free perimeter of glazing in same manner described above.
- E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- F. Knife trim protruding tape.

### 3.07 INSTALLATION – INTERIOR WET/DRY METHOD (TAPE AND SEALANT)

- A. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
- D. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch intervals, 1/4 inch below sight line.
- E. Fill gaps between pane and applied stop with silicone type sealant to depth equal to bite on glazing, to uniform and level line.
- F. Trim protruding tape edge.

### 3.08 CLEANING

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean and polish surfaces and frames.

### 3.09 PROTECTION OF FINISHED WORK

- A. Protect finished work.
- B. After installation, mark pane with an 'X' by using removable plastic tape or paste.

END OF SECTION

SECTION 09 21 16  
GYPSUM BOARD SYSTEMS

## PART 1 GENERAL

## 1.1 WORK INCLUDED

- A. Vertical wall gypsum board application.
- B. Metal channel ceiling frame and horizontal ceiling gypsum board application.
- C. Exterior gypsum sheathing board.
- D. Cementitious backer board or Tile backer board for tile application. Walls only.
- E. Gypsum board for toilet room and shower room ceilings.
- F. Taped and sanded joint treatment.
- G. Gypsum board finishes and textures

## 1.2 REFERENCES

- A. ASTM C1396 – Standard Specification for Gypsum Board
- B. ASTM C36 - Gypsum Wallboard.
- C. ASTM C79 - Gypsum Sheathing.
- D. ASTM C475 - Joint Reinforcing Tape and Compound for Finishing Gypsum Board.
- E. ASTM C630 - Water-Resistant Gypsum Backing Board.
- F. ASTM C635 – Metal suspension systems for acoustical and lay-in ceilings
- G. ASTM C840 – Standard Specification for Installation of Gypsum Construction
- H. ASTM C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases.
- I. UL – 1994 – Underwriters Laboratories, Inc., Fire Resistance Directory, Volume 1.
- J. GA-201 – Gypsum Board for Walls and Ceilings.
- K. GA-216 – Application and Finishing of Gypsum Board.
- L. GA-600 – Fire Resistance Design Manual.
- M. Chapter 7, California Building Code.
- N. Chapter 25, California Building Code.
- O. ESR-1222
- P. CBC 2506.2.1
- Q. ASCE 13.5.6
- R. ASTM C635-04
- S. DSA IR-25-3

## 1.3 QUALITY ASSURANCE

- A. Applicator: Company specializing in gypsum board systems work with three years experience.

## 1.4 SUBMITTALS FOR REVIEW

- A. Submit product data as outlined in other sections of this manual.
- B. Provide product data on gypsum board, joint tape and fastening, etc.

## PART 2 PRODUCTS

## 2.1 MANUFACTURERS - GYPSUM BOARD SYSTEM

- C. Gypsum Wallboard Materials: Products of United States Gypsum Corporation (USG), Chicago, IL, are the standard of quality required and specified herein. Similar products of Domtar Gypsum, Long Beach, CA, Georgia-Pacific, Atlanta, GA, and Gold Bond Building Products, Charlotte, NC, may be submitted for approval.
- D. ESR – 1222, at drywall suspension system where occurs.



**2.2 FRAMING MATERIALS**

- E. Furring Channels: 25 gage galvanized steel, 7/8 inch deep by 2-9/16 inch wide, 275 lbs per 1,000 ft weight, USG FURRING CHANNEL DWC-25 and USG METAL FURRING CHANNEL CLIPS. Z Type, where required: USG Z-FURRING CHANNEL, 1, 1-1/2, 2 and 3 inch depths.
1. Furring Channels at Cementitious Backing Board Ceilings: 20 gage, PWC-20.
- F. Angles: 1-3/8 inch by 7/8 inch, 24 gage, USG GALVANIZED METAL ANGLES.
- G. Runner Channels: Minimum weights, sizes and maximum spans as defined in CBC Section 2506 and Table 2506.2, cold rolled or hot rolled as defined therein.
- H. Taping, Bedding and Finishing Compound: ASTM C475; compatible with tape and substrate.
1. SHEETROCK ALL PURPOSE JOINT COMPOUND, non-asbestos, vinyl base.
  2. SHEETROCK POWDER JOINT COMPOUND, non-asbestos vinyl base, conventionally drying.
  3. SHEETROCK SETTING-TYPE JOINT COMPOUND, chemical hardening.
  4. SHEETROCK JOINT TAPE, cross fibered paper, PERMA – TITLE TAPE, by Perma Glass Mesh Inc., Dover, OH, or equal.
- I. Hanger Wire: 8 gage for 16 sq ft maximum, galvanized annealed, size of wire in accordance with California Building Code.
- J. Tie Wire: 18 gage galvanized annealed.
- K. Accessories: Corrosive Protective-Coated steel.
1. Corner Bead: USG No. 800 or 900.
  2. Trim: USG No. 701-A or 701-B.
  3. Control Joint: USG Control Joint No. 093.
- L. Fasteners: ASTM C1002 Phillips head, power-driven, nails not permitted.
1. Type S-12, 16 gage steel studs, minimum penetration 3/8 inch.
  2. Type S, 20 gage steel studs, minimum penetration 3/8 inch.
  3. Type W, wood construction, minimum penetration 5/8 inch.
  4. Type G, gypsum board to gypsum board, minimum penetration 1/2 inch.
- M. Adhesive: DUROCK ceramic tile mastic, DURABOND D-2001.

## 2.3 GYPSUM BOARD MATERIALS

- N. Regular: ASTM C36; 5/8 inch thick, maximum permissible length; ends square cut, tapered round edges, SHEETROCK BRAND GYPSUM PANELS.
- O. Fire Rated Gypsum Board: ASTM C36; fire resistive type, UL or WH rated; 5/8 inch thick, maximum permissible length; ends square cut, round edges, SHEETROCK BRAND TYPE X FIRE CODE "C" GYPSUM PANELS, TAPERED EDGE.
- P. Moisture Resistant Gypsum Board: ASTM C630; 5/8 inch thick, maximum permissible length; ends square cut, tapered edges, SHEETROCK BRAND W/R GYPSUM PANELS, W/R REGULAR GYPSUM PANELS OR W/R FIRE CODE TYPE X GYPSUM PANELS.
- Q. Cementitious Backing Board: Standard type; 5/8 inch thick; V-grooved edges, ends square cut, maximum permissible length, DUROCK INTERIOR TILE CEMENT BOARD.
- R. Tile Backing Board: Standard type; 5/8 inch thick panels; square edges, maximum permissible length. DensShield Tile Backer, Georgia-Pacific. At fire rated walls provide DensShield Fireguard Tile Backer which is classified as Type "X" per ASTM C1178.
- S. Gypsum Sheathing Board (exterior): ASTM C79; moisture resistant and fire resistant type; 1/2 inch or 5/8" thick, Type X where fire rating is required, maximum permissible length; ends square cut, tongue and grooved edges; water repellent paper faces, 48 inch widths, GYP-LAP GYPSUM SHEATHING.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on drawings.
- B. Beginning of installation means acceptance of substrate.
- C. Delivery and Storage: Arrange for an adequate supply of materials on the jobsite so that progress of work will be uninterrupted. Materials and accessories shall be delivered in original containers and bundles, and identified with the manufacturer's name and brand. Store gypsum board on flat, solid supports in dry areas, well protected from the elements.
- D. Provide fixtures, anchors, sleeves, inserts and miscellaneous items, and provide openings and chases as necessary. Prior to closing in and finishing of dry wall work, ascertain that piping, conduit, ductwork and fixtures which are to be concealed and which penetrate gypsum boards are in place, tested and approved.
- E. Scaffolding: Construct, erect and maintain in conformance with applicable laws and ordinances.
- F. Protection, Patching and Cleaning: Adjacent surfaces of other materials shall be protected from damage. Dry wall surfaces which have been cut out shall be neatly patched. Damaged or defective gypsum board finish shall be replaced. During progress of the work, rubbish droppings and water materials shall be removed.
- G. Fire Protection: Where required, the work shall comply with the requirements for the protection rating indicated in the governing building code.
- H. Fire Sprinkler System: In areas where sprinkler heads occur, exercise care when installing drywall work. Do not damage or obstruct the heads in any way.

### 3.2 CEILING FRAMING INSTALLATION

- A. Framing for suspended ceilings and vertical curtain walls between dropped ceilings: Install to provide plumb surfaces with no variation of more than ¼ inch in 10 ft.
- B. Ceilings shall not support material or building components other than grilles light fixtures, small electrical conduits and small ducts.
1. Small Electrical Conduits: ¾ inch in diameter or less, feeding electrical fixtures or electrical devices in the ceiling assembly.
  2. Large duct work, plumbing and like work shall have its own support system and shall not be attached to the ceiling system.
  3. Only gypsum board dead loads shall be supported by cross-furring.
- C. Ceiling Support System: Conform to California Building Code for sizes, types and spacing of ceiling support components.
- D. 48 x 48 inch spacing of both hangers and runners is permissible if the following conditions are met:
1. Vertical hanger wires are 8 gage and galvanized. If ceiling is non-accessible, 12 gage wire may be used.
  2. Main runners are 1-1/2 inch channels, 1.12 lbs per ft minimum, hot rolled.
  3. Cross-furring may be 7/8 inch, 25 gage galvanized hat sections at 24 inches maximum oc.
- E. Hangers: Hanger wires shall be provided for primary runners within 6 inches of ceiling perimeters.
1. Hanger wires with ends twisted at least 3 times around itself, shall be saddle tied to primary runner channels.
  2. Primary runner channel shall be crossed with furring channels, saddle tied to the runners with one strand of 16 gage or two strands of 18 gage tie wire. Runner channels shall be located not more than 6 inches from parallel boundary walls, or beams; furring channels 2 inches from parallel walls.
  3. Primary runner channels shall be spliced by lapping 12 inches and furring channels shall be spliced by lapping 8 inches. Splices shall be tied at 2 inches from each end with two loops of 16 ga wire.
  4. Hanger wires that are more than 1 in 6 out of plumb shall have counterbraced wires. Wires shall not attach or bend around interfering material such as duct work. Trapeze or equivalent devices shall be used where obstructions interfere with direct suspension. Trapeze suspension shall have a minimum construction of back-to-back 1-1/2 inch cold formed channels for spans up to 6 ft.
  5. Ceiling wires and unbraced ducts, pips and similar components must be separated.
  6. Refer to General Requirements section on Testing Laboratory Services for size and testing requirements for concrete expansion anchor bolts and powder actuated fasteners.
- F. Horizontal Support System:
1. A set of 4 splay wires shall be provided for each 8 ft by 8 ft. First set of splay wires shall be 4'-0" from any wall. Wires shall be taut without causing ceiling to lift. Provide vertical compression strut at each set of bracing wires.
  2. Splay wires shall be No. 12 gage, with 4 tight turns at each end. Powder actuated fasteners shall not be used for attachment of splay wires to supporting structure.
- G. Light Fixture Support:

1. Light fixtures shall be attached to the ceiling to resist a horizontal force equal to the weight of the fixtures.
  2. Install firestopping envelopes around recessed light fixtures and other electrical devices or boxes that exceed 100 sq inches in 100 sq ft where required to maintain the designated fire rating of the ceiling assembly.
- H. Furring Channel Spacing: Furring channels at drywall ceilings shall be spaced at 16 inches oc maximum.

### 3.3 GYPSUM BOARD INSTALLATION

- A. Install gypsum board in accordance with ASTM C840, GA-201, GA-216 and California Building Code. Install all Gypsum board plumb and level – provide shims/furring as required to plumb installation up to ¼" in 8'-0".
- B. Erect single layer gypsum board vertically on vertical framing in most economical direction, attached to studs and framing members with the specified fasteners spaced at 12 inches on centers at top and bottom and 12 inches on centers in the field. Solid backing not required at joints running perpendicular to studs and framing members.
1. In wood framing construction erect gypsum board horizontally only.
- C. Erect single or double layer fire rated gypsum board in accordance with California Building Code, Note (a) and GA-600, for one-hour or two hour, fire-rated, non-bearing partitions, steel or wood stud construction.
1. Gypsum board panels installed vertically or horizontally to vertical studs or framing shall be attached at 8 inches oc at vertical edges and 12 inches oc in the field and at top and bottom. Stagger all vertical and horizontal joints 24 inches oc each side and opposite sides. Where joints are not staggered the required minimum 24 inches, solid backing shall be provided. All joints shall be treated except as provided herein.
- D. Treat cut edges and holes in moisture resistant gypsum board with sealant.
- E. Place control joints consistent with lines of building spaces as indicated or at maximum 30 ft on centers.
- F. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.

### 3.4 JOINT TREATMENT

- A. Exposed gypsum board in wall areas and ceiling areas shall be cemented, taped and sanded, ready for paint.
- B. On installations where two layers of gypsum board are required, only the face layer will require finishing of joints and screw-heads.
- C. Gypsum wallboard joints in walls may either be exposed or covered with joint tape and joint compound for the portion of the wall above as suspended ceiling, which is part of a fire resistive floor-ceiling or roof-ceiling assembly, as listed in U.L. Fire Resistive Ratings (BXUV), when the following conditions are met:
1. Vertical joints occur over framing member.
  2. Horizontal joints are staggered 24 inches on opposite sides or covered with 6 inch wide strips of gypsum board attached with 1-1/2 inch laminating screws at 8 inches oc.
  3. Partition is two ply system with joints staggered 16 inches or 24 inches.
  4. Partition is not part of a smoke or sound control system.
- D. Fire-Rated Partitions: Perimeters of fire-rated partitions shall be caulked with fire-rated sealant as specified in Section 07 92 00, both sides of partition.
- E. Sound-rated Partitions: Perimeters of sound-rated partitions shall be caulked with acoustical sealant as specified in Section 07 92 00, both sides of partition.

- F. Moisture resistant gypsum board shall have all joints cemented, taped and sanded. Edges of moisture resistant faceboard which expose the gypsum core shall be job taped before the board is installed.
- G. All joints, except where excluded above including internal corners shall be filled and taped. A thin uniform layer of cement, approximately 3 inches wide, shall be applied over the joint. Tape shall be cemented over the joint and seated into the cement, leaving sufficient adhesive under the tape to provide proper bond. Internal angles, both horizontal and vertical, shall be reinforced and with the tape folded to form a straight and true angle. Metal external corners shall be cemented in place. Joints shall be allowed to dry at least 24 hours between each application of cement.

### 3.5 FINISHING GYPSUM BOARD ASSEMBLIES

- A. **General:** Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. **Gypsum Board Finish Levels:** Finish panels to levels indicated below based on final finishes identified in finish schedule, according to ASTM C 840, and GA-214-96 for locations indicated:
  - 1. **Level 1 (Ceiling Plenum Areas, Concealed Areas – Non-fire rated):** Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.
  - 2. **Level 2 (Only where specified - not typically used):** Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where indicated.
  - 3. **Level 3 (Minimum preparation for heavy texture and for heavy duty wall coverings):** Embed tape and apply separate first and fill coats of joint compound to tape, fasteners, and trim flanges where indicated. Apply drywall primer prior to finish.
  - 4. **Level 4 (Minimum for light texture application or no texture application, flat or satin paints (provide Level 5 finish for semi-gloss or gloss painted surfaces)):** Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges at panel surfaces that will be exposed to view, unless otherwise indicated. Apply drywall primer prior to finish.
  - 5. **Level 5 (Behind wall images, at areas being painted with a semi-gloss, gloss, or enamel finish, or where specifically called out), :** Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges, and apply skim coat of joint compound over entire surface. Apply drywall primer prior to finish.
- E. **Glass-Mat Gypsum Sheathing Board:** Finish according to manufacturer's written instructions for use as exposed soffit board.
- F. **Glass-Mat, Water-Resistant Backing Panels:** Finish according to manufacturer's written instructions.

- G. Cementitious Backer Units: Finish according to manufacturer's written instructions.

### 3.6 APPLYING TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture matching Architect approved mockup and free of starved spots or other evidence of thin application or of application patterns.
  - 1. No Texture: Surfaces to be painted shall have Level 4 finish minimum or Level 5 finish per section 3.5, D, 4 or unless noted otherwise in this specification or on the plans.
  - 2. Match existing finish. Where cutting and patching or replacement of existing gypsum board occurs at existing conditions the finish shall match the existing finish, then paint.
- C. Smooth Finish shall be applied to all restrooms, food service, and all surfaces to receive appropriate vinyl wall coverings and wall images. Level 5 finish required, minimum.
- D. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture finish manufacturer's written recommendations.

### 3.7 CEMENTITIOUS BACKER BOARD INSTALLATION

- A. At restrooms and other locations noted on plans and details. Pre-cut board to required sizes and make necessary cutouts. Stagger end joints in successive courses. Fasten boards to studs or furring channels with screws spaced 6 inch oc. Prefill joints with tile-setting mortar and immediately embed tape and level all joints. Apply a 1/8 inch minimum thick skim coat of latex-fortified mortar uniformly over entire surface. Install plumb and level – provide shims/furring as required to plumb installation up to 1/4" in 8'-0". Install cementitious backer board behind all interior ceramic tile unless otherwise noted. Coordinate with all plans and General Contractor during bidding.

### 3.8 CEILINGS IN WATER CLOSETS AND SHOWERS

- A. For areas where cementitious panels are not scheduled for tile finish, apply a 1/16 inch minimum thick, uniform layer of manufacturer's base coat over entire surface, including taped joints, leaving surface smooth and flat. Allow to cure 24 hours. Trowel apply 1-1/16 inch minimum thick uniform layer of manufacturer's exterior finish coat, fine texture, over all base-coated surfaces, in accordance with manufacturer's recommendations. Paint under Section 09 91 00.

**3.9 EXTERIOR GYPSUM SHEATHING INSTALLATION**

- A. Erect exterior gypsum sheathing horizontally with edges butted tight and ends occurring over firm bearing. Tack into place sufficiently to hold material until permanent attachment is provided by self-furring lath fasteners.

**3.10 TOLERANCES**

- A. Maximum Variation from True Flatness: 1/8 inch in 10 feet in any direction.

**END OF SECTION**

SECTION 09 22 16  
NON-LOAD BEARING METAL STUDS

PART I – GENERAL

1.01 SECTION INCLUDES

- A. Formed metal stud framing at interior partitions and soffits.
- B. Framing accessories.

1.02 REFERENCES

- A. ASTM C954 – Steel Drill Screws for the Application of Gypsum Board on Metal Plaster Bases.
- B. ASTM A653 – Steel Sheet, Zinc-Coated (Galvanized) by Hot-Dip Process, Structural (Physical Quality).
- C. ASTM A525 – General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- D. ASTM A591 – Steel Sheet, Cold-Rolled, Electrolytic Zinc-Coated.
- E. ASTM C754 – Installation of Steel Framing Members to Receive Screw-Attached Gypsum Wallboard, Backing Board or Water-Resistant Backing Board.
- F. AWS D1.3 – Structural Welding Code, Sheet Steel.
- G. ICC-ESR 3064P

1.03 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Submit product data describing standard framing member materials and finish, product criteria, load charts, limitations and accessories, *AND include current ICC report.*

1.04 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in non-bearing metal studs with minimum 5 years experience such as Olmar Supply, Inc., United Metal Products, Inc, Consolidated Fabricators Corp., or approved equal. See Steel Stud Manufacturers Association (SSMA) for other manufacturers.

PART II – PRODUCTS

2.01 STUD FRAMING MATERIALS

- A. Studs: ASTM A446, Grade A, minimum yield 33 ksi, hot-dip galvanized or ASTM A591, Grade A minimum yield 33 ksi electro galvanized sheet steel, DW Type, punched web, 20 gage thick, sizes required to conform to details and scheduled wall thickness. Studs shall be rolled from new steel sheet and shall not be produced from re-rolled steel. See additional properties/section on plans.
- B. Track: Formed Sheet Steel; channel shaped; same width as studs, tight fit; 20 gage thick, solid web, long leg at ceilings.
  - 1. Approved Pre-Fabricated Slip Track: SLP-TRK, 20 gage, slotted, by Metal Lite, Inc., Anaheim, CA or equal.
- C. Fasteners: ASTM C954 self-drilling, self-tapping screws, Type S-12 pan head, 1/2 inch long minimum as required to meet full shear values.
- D. Stiffeners: 3/4 inch, .3 lb per lineal foot, cold or hot rolled channel, (16 gauge).
- E. Anchorage Devices: Per plans



- F. Tie Wire: Minimum 16 gauge, galvanized, annealed low carbon steel.
- G. Welding: In accordance with AWS D1.3.
- H. Fire-Rated Sealant at Fire-Rated Walls: Conform to Section 07270.

## 2.02 FABRICATION

- A. Fabricate assemblies of to sizes and profiles required; with framing members fitted, reinforced and braced to suit design requirements.

## PART III – EXECUTION

### 3.01 EXAMINATION

- A. Verify that conditions are ready to receive work.
- B. Verify field measurements are as shown on Drawings.
- C. Verify that rough-in utilities are in proper location.
- D. Beginning of installation means installer accepts existing conditions.

### 3.02 ERECTION

- A. Perform work in accordance with ASTM C754.
- B. Align and fasten top and bottom runners as indicated on the drawings or maximum [16] inches oc.
- C. Fit runners under and above openings; secure intermediate studs at spacing of wall studs.
- D. Install studs vertically at 16 inches oc. Studs where ceramic tile is applied on one or both sides higher than 36 inches: 12 inch spacing required.
- E. Connect studs to tracks using one fastener at each flange minimum.
- F. Stud splicing not permissible.
- G. Construct corners using minimum three studs.
- H. Brace stud framing system and make rigid.
- I. Provide supports and attachments for the work.
- J. Align stud web design.
- K. Install anchors and blocking for electrical and mechanical work to be placed in or behind stud framing.
- L. Install 3/4 inch furring channel stiffeners within 24 inches of top and bottom runners and one stiffener at mid height of 8 feet high walls. At higher walls, install stiffeners spaced maximum 48 inches on centers. Tie stiffeners to studs with specified wire ties and at laps.

- M. In areas where a finish material occurs on one side of wall only, provide bridging or bracing. Two systems permitted:
1. Install 3/4 inch X 16 gage continuous brace through stud punchouts, fastened to studs with angle clips welded or screw fastened, spaced as scheduled below.
  2. Install 1-1/4 inch X 16 gage strap, 3/4 inch x 16 gage cold-rolled channel or 2-1/2 inch 20 gage stud continuous across unrestrained edges of studs, screw fastened or welded to each stud, and connected to one blocking member screw fastened or welded to adjacent studs.

N. Bracing schedule:

Stud Size	Bracing Spacing
2-1/2 inch	2'-6"
3-5/8 or 4 in	4'-0"
6 inch	6'-0"

- O. Refer to Drawings for indication of partitions extending to ceiling only and for partitions extending through ceiling to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs.
- P. Verify installation of insulation in multiple stud spaces inaccessible after stud framing erection.

### 3.03 TOLERANCES

- A. Maximum Variation From True Position: 1/4 inch.  
B. Maximum Variation of any Member from Plane: 1/4 inch.

END OF SECTION

SECTION 09 30 13  
CERAMIC TILE

## 1 PART 1 GENERAL

## 1.1 SECTION INCLUDES

- A. Ceramic tile for walls using the thin-set application method.
- B. Not used.

## 1.2 RELATED SECTIONS

- A. Section 09 21 16 – Gypsum Board Systems – for backing material behind wall tile.

## 1.3 REFERENCES

- A. ANSI/TCA 108.5 - Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
- B. ANSI/TCA A108.10 - Installation of Grout in Tile Work.
- C. ANSI/TCA A118.1 - Dry-Set Portland Cement Mortar.
- D. ANSI/TCA A118.4 - Latex-Portland Cement Mortar.
- E. ANSI/TCA A118.6 - Ceramic Tile Grouts.
- F. ANSI/TCA A137.1 - American National Standard Specifications for Ceramic Tile.
- G. ASTM C373 – Water Absorption, Bulk Density, Apparent Porosity and Apparent Specific Gravity of Fired Whiteware Products.
- H. ASTM C1028 – Static Coefficient of Friction.
- I. ASTM C171 – Sheet Materials for Curing Concrete.
- J. TCNA/TCA - (Tile Council of North America) Handbook for Ceramic Tile Installation, Current Edition
- K. CBC 11B – 302.1

## 1.4 SUBMITTALS FOR REVIEW

- A. Submit product data under provisions of Section 01 33 00.
- B. Submit product data indicating manufacturer's specifications and instructions for using dry-set portland cement or latex-cement mortars and grouts.
- C. Submit samples under provisions of Section 01 33 00.
  - 1. Provide sufficient samples of each size, color and texture to demonstrate the maximum ranges of sizes, colors, textures and flatness.
  - 2. Provide samples of all trim shapes.
  - 3. Mount tile and apply grout on two 12 inch by 12 inch plywood panels, representative of pattern, color variations and grout joint size variations.
- D. Submit TCNA method number and detail references for each type of material installation on project.
- E. Deliver master grade certificates complying with ANSI A137.1 or CTI 69.5. Required: Standard grade.
- F. On manufactured dry-set Portland cement or latex-cement mortars and grouts provide labels certifying compliance with referenced standards.
- G. Submit maintenance data.
- H. Include recommended cleaning and stain removal methods, cleaning material and polishes and waxes.

## 1.5 QUALITY ASSURANCE

- A. Conform to ANSI/TCA A137.1 for tile, except where exceeded by this specification.
- B. Conform to TCA Handbook for Ceramic Tile Installation and ANSI A108.5 for installation of mortar and tile, except where exceeded by this specification.
- C. Conform to ANSI/TCA A108.10 for installation of grout.

## 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in the manufacture of products specified in this Section with minimum five years experience.
- B. Installer: Company specializing in applying the work of this Section with minimum three years experience.

## 1.7 PRE-INSTALLATION CONFERENCE

- A. Convene one week before starting work of this section. Required Attendance:
  - 1. Owner's Representative
  - 2. Construction Manager
  - 3. Contractor
  - 4. Tile Subcontractor
  - 5. Architect

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site only in cartons which have been grade sealed by the manufacturer in accordance with ANSI/TCA A137.1 and with grade seals unbroken. Seconds grade seal quality not permitted.
- B. Tiles delivered to the job or installed in the work which do not fall within the specified standards of quality or accepted color range shall be removed from the jobsite and promptly be replaced with acceptable material.
- C. Store and protect products in dry, secure areas.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Do not install volatile materials in a closed, unventilated environment.
- B. Maintain 50 degrees F or above during installation of mortar and grout materials.
- C. Shade the work area from direct sunlight during the installation as needed to prevent rapid evaporation caused by excessive heat.

## 2 PART 2 PRODUCTS

## 2.1 MANUFACTURERS - TILE

- A. Manufacturers:
  - 1. DAL-Tile, Corona, CA
  - 2. American Olean Tile, City of Industry, CA
  - 3. Or equal.

## 2.2 TILE MATERIAL

- A. Wall Tile: ANSI/TCA A137.1, conforming to the following:
  - 1. Moisture Absorption: As permitted by ANSI A137.1.
  - 2. Size: To be Selected – may be mosaic, 1x1, 2x2, 3x3, 4x4, 6x6, 12x12, 12x24, etc. Trim pieces will vary by use.
  - 3. Edge Treatment: Exterior and interior edges to be Schluter-strip, color/finish and style to be selected. Where base material is not tile provide a Schluter strip trim piece between wall tile and base material, such as epoxy.
  - 4. Surface Finish: To be Selected.
  - 5. Color: As selected
  - 6. Patterns: As shown on plans. If no pattern is shown on plans, contractor is to bid assuming multiple colors within fields of another color. Pattern will be diagonal with a border squared to the perimeter.
  - 7. Bid amount for Material Selection: Contractor to include in bid \$8.00/sf for material cost of tile and trim pieces – with appropriate credit or cost to be transferred to the Owner at the time of selection. Grout and labor to be included in base bid. Architect may also select glass tiles and accent color tiles within field of mosaics. Contractor to include most expensive installation cost in bid.

- B. Base: Match wall tile for moisture absorption, surface finish, and color: coved bottom.
- C. Wainscot Cap: Match wall tile for moisture absorption, surface finish, color, tile length, bull nosed top edge.

### 2.3 MORTAR

- A. ANSI/TCA A118.1 – Dry-set Portland Cement Mortar.
- B. ANSI/TCA A118.4 – Latex Portland Cement Mortar.
- C. Per CBC Table 14A-A – Ceramic tile setting mortars for exterior

### 2.4 GROUT

- A. ANSI/TCA A118.6, Cementitious type with latex additive, color as selected by Architect.
- B. Point exterior tile with a Portland cement mortar.
- C. Seal all grout with grout sealer.

### 2.5 EXPANSION JOINT MATERIALS

- A. Joint Sealer: One part silicone sealant, self-leveling at horizontal joints, non-sag at vertical joints, elongation capability 25 percent, Short A, hardness range 27, 863 HIGH STRUCTURAL STRENGTH GLAZING AND CONSTRUCTION SILICONE, manufactured by Pecora Corp., Harleysville, PA, or approved equal.
- B. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- C. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- D. Joint Backing: ASTM D1056; round, closed cell polyethylene foam rod; oversized 25 percent larger than joint width; DENVERFOAM or GREENROD.
- E. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application. Apply to bottom of joints which are too shallow to receive foam backer rod.

### 2.6 ACCESSORIES

- A. Curing Paper: Kraft paper conforming to ASTM C171.

## 3 PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work. Verify types of materials which may have been in contact with surfaces.
- B. Beginning of installation means installer accepts condition of substrate.

### 3.2 PREPARATION

- A. Protect surrounding work from damage or disfiguration.
- B. Vacuum clean substrate and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances. Contractor to include leveling/plumbing existing and new surfaces up to 1/2" in 8'-0" out of plumb or level, including filling low spots and grinding/sanding high-spots. Coordinate with general contractor for installation of cement board backer and other tile substrates for proper preparation at time of bid to understand extent of leveling which may be required. Refer to Gypsum Board System specifications for cementitious backer board material and installation requirements prior to tile installation. Confirm backer board installation complies with all TCA tolerance requirements.

### 3.3 MIXING

- A. Mixing: Mix dry-set Portland cement mortar or latex-Portland cement mortar in accordance with manufacturer's instructions or as modified herein.
- B. Use brand of prepackaged dry mortar mix specified by the manufacturer.

- C. Add dry mortar mix to amount of latex specified by manufacturer and mix thoroughly to obtain complete and visually uniform wetting of the dry mortar mix. Slake for 15 minutes and remix before using.
- D. The proper mortar consistency is such that when applied with the recommended notch trowel to the backing, the ridges formed in the mortar will not flow or slump.
- E. During use, remix mortar occasionally. Additional water or fresh materials shall not be added after initial mixing. Mortar shall not be used after initial set.

#### 3.4 MORTAR APPLICATION

- A. Clean surface thoroughly. Dampen if very dry, but do not saturate.
- B. Apply mortar with flat side of trowel over an area no greater than can be covered with tile while mortar remains plastic.
- C. Within ten minutes before applying tile and using a notched trowel of type recommended by mortar manufacturer, comb mortar to obtain even setting bed without scraping back material.
- D. Cover surface uniformly with no bare spots, with sufficient mortar to ensure a minimum mortar thickness of 3/32 inch between tile and backing after tile has been beaten into place. Tile shall not be applied to skinned-over mortar.
- E. EXTERIOR INSTALLATION: Mortar as described in Table 14A-A shall be applied to the backing as a setting bed. The setting bed shall be a minimum of 3/8" thick and a maximum 3/4" thick. A paste of neat Portland cement or one half Portland cement and one half graded sand shall be applied to the back of the exterior units and to the setting bed and the unit pressed and tapped into place to provide complete coverage between the mortar bed and unit.

#### 3.5 INSTALLATION OF TILE

- A. Refer to mortar and latex manufacturers directions.
- B. Do not soak tile.
- C. Set tile firmly on the mortar or over concrete or cementitious backer board surface with a minimum of 95 percent coverage at floors and wet area walls. Back-butter ribbed tiles and other tiles in accordance with ANSI/TCA 108.5. Spacers on tile determine the joint width between tile. Strings or pegs may be used to space tile that have no spacers. Bring all surfaces to a true plane at the proper position or elevation. Thoroughly beat-in all tile with a beating block while the mortar coat is still plastic. The beating shall fill a minimum of 95 percent of the entire space between units and setting bed. Eighty percent coverage is permitted for walls in non-wet areas. Once tile is installed the installer assumes responsibility and liability for improperly installed backer board.
- D. Lay tile to pattern indicated on Drawings or request tile pattern from Architect. Do not interrupt tile pattern through openings.
- E. Place Schluter edge strips at exposed tile edges.
- F. Cut and fit tile tight to penetrations through tile. Form corners and bases neatly. Align floor, base and wall joints where floor tiles and wall tiles are same width.
- G. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. No excess setting bed mix allowed in joints. All inside corners shall be covered. No butted 90 degree intersections permitted. All outside corners shall be bull nose, eased edges, or schluter strips. Contractor to bid most expensive method of install and verify requirements with Architect during submittal process.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Keep expansion or control joints free of setting bed mix or grout. Apply sealant to joints.
- J. Allow tile to set for a minimum of 16 hours prior to grouting.
- K. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.
- L. If tile is face mounted, remove paper within one hour after tile is set and adjust all tiles that are out of line or level. Use no more water than necessary in removing paper.

- M. On exterior veneer units, provide expansion joints every 20 feet horizontally and every 10 feet vertically. Verify location of joints with Architect in field prior to installation. See specification section 07900 for expansion joint filler.

### 3.6 INSTALLATION OF GROUT

- A. Remove all mortar from face and edge of tile.
- B. Mixing: Refer to grout mix and latex manufacturer's directions.
- C. Dry blend contents of an entire container of grout prior to mixing with water or latex.
- D. Use caution to prevent scratching or damaging tile surfaces.
- E. Dampen dry joints prior to grouting. Do not leave puddles of water in joints before grouting.
- F. Force a maximum amount of grout into the joints. Cushion edge tile shall be finished evenly to the depth of the cushion. Square-edge tile shall be finished flush with the surface. Finished joint shall be uniform in color, smooth and without pinholes, voids, cracks or low spots.

### 3.7 CLEANING

- A. Clean tile work and adjacent surfaces.

### 3.8 CURING

- A. Damp-cure grout for a minimum of 72 hours. Remove and replace improperly cured grout.
  - 1. Cover with 40 lb kraft paper.
  - 2. Polyethylene curing membrane not permitted.

### 3.9 PROTECTION OF FINISHED WORK

- A. Protect finished installation.
- B. Do not permit traffic over finished floor surface.

### 3.10 REPLACEMENT OF MATERIALS

- A. Provide three percent additional tile and trim shapes of each type, color, pattern size used in the work for Owner's use in replacement and maintenance. Package securely to prevent damage and label clearly.

END OF SECTION

**SECTION 09 51 13**  
**ACOUSTICAL SUSPENSION SYSTEMS**

**1 PART 1 GENERAL****1.1 WORK INCLUDED**

- A. Suspended metal grid ceiling system, heavy duty.
- B. Perimeter trim.

**1.2 RELATED SECTIONS**

- A. Section 09 51 14 – Acoustical Ceiling Panels – Lay-In

**1.3 REFERENCES**

- A. ASTM C635 – Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
- B. ASTM C636 – Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
- C. ASTM E580 – Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint.
- D. Chapter 25, California Building Code.
- E. DSA IR 25-2.13.
- F. ICC-ES Evaluation Reports for seismic clip installation.

**1.4 QUALITY ASSURANCE**

- A. Manufacturer: Company specializing in manufacture of ceiling suspension system with five years minimum experience.
- B. Installer: Company with five years minimum experience.

**1.5 SUBMITTALS FOR REVIEW**

- A. Submit shop drawings and product data for metal grid system under provisions of Section 01 33 00.
- B. Indicate on shop drawings, grid layout and related dimensioning, junctions with other work or ceiling finishes and interrelation of mechanical and electrical items. Photographic reproductions of the contact drawings shall not be used.
- C. Submit samples under provisions of Section 01 33 00.
- D. Submit three samples each of suspension system main runner, cross runner and edge trim.
- E. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

**2PART 2 PRODUCTS****2.1 MANUFACTURERS**

- A. Armstrong, Inc., Lancaster, PA. Product: Prelude XL HEAVY DUTY, 15/16 inch wide face, exposed T. (ESR-1308)
  - 1. Main Runners: 7301
  - 2. Cross Tees: XL7342, XL7328 at 24 x 24 inch grid.
  - 3. Edge Trim: 7800 7/8" x 7/8" inch angle
  - 4. Seismic clips: BEREC2 or ALBEREC2 (where occurs)
- B. Chicago Metallic Corp., Los Angeles, CA, Product: SERIES 1200, HEAVY DUTY, 15/16 inch wide face, exposed T. (ESR-2631)
  - 1. Main Runners: 250.
  - 2. Cross Tees – Stepped End: 1254, 1252 at 24 x 24 inch grid.
  - 3. Edge Trim: 1420 15/16 x 15/16 inch angle,
  - 4. Seismic clips: 1496.00 (where occurs)
- C. USG Interiors, Inc, Chicago, IL. Product: DX HEAVY DUTY SYSTEM, 15/16 inch wide face, exposed T. (ESR-1222)



1. Main Runners: DX 26.
  2. Cross Tees: DX422, DX216 at 24 x 24 inch grid.
  3. Edge Trim: M7 7/8" x 7/8" inch angle,
  4. Seismic clips: ACM7 (where occurs)
- D. CertainTeed. Product: 15/16" EZ Stab Classic System, HEAVY DUTY SYSTEM, 15/16 inch wide face, exposed T. (ESR-3336)
1. Main Runners: EZCS12-12-20.
  2. Cross Tees: EZCS4-12-20, EZCS2-12-12 at 24 x 24 inch grid.
  3. Edge Trim: WA14-14 7/8" x 7/8" inch angle,
  4. Seismic clips: CTSPC-2 (where occurs)
- E. Or approved equal
- 2.2 SUSPENSION SYSTEM MATERIALS
- A. Grid: ASTM C635, heavy duty, exposed T, components die cut and interlocking. Class A.
  - B. Accessories: Stabilizer bars, splices, edge trim and all necessary components required for the specified suspended grid system.
  - C. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
  - D. Grid Finish: Factory applied **(White) or (Match Existing)**
  - E. Hanger Wire: No. 12 gage galvanized, annealed steel wire.
  - F. Where 1" x 1" (nominal) edge trim is utilized provide ALL the required seismic clips from the manufacturer that complies with DSA and the California Building Code. Provide the required ESR report indicating the seismic clip installation.

### 3 PART 3 EXECUTION

#### 3.1 INSPECTION

- A. Verify that existing conditions are ready to receive work.
- B. Verify that layout of hangers will not interfere with other work.
- C. Beginning of installation means acceptance of existing conditions.

#### 3.2 INSTALLATION

- A. Install system in accordance with ASTM C636, ASTM E580, Section 2501, California Building Code and DSA IR 25-2.13, and as supplemented in this Section.
- B. Lay-in ceiling assemblies in exitways shall be installed with a main runner or crossrunner surrounding all sides of each panel and each light fixture or grill. Through-connectors are not required.
- C. Ceilings shall not support material, building components or light fixtures. Ductwork, plumbing and like work shall have its own support system and shall not utilize the ceiling system or suspension wires.
- D. 12 gage hanger wires shall be used to support a maximum ceiling area of 16 square feet, spaced at 4 x 4 foot along main runners. Splices will not be permitted in any hanger wires.
- E. Provide 12 gage minimum hanger wires at the ends of main and cross runners within 8 inch from the support or within 1/4 of the length of the end tee, whichever is least, for the perimeter of the ceiling area.
- F. Provide trapeze or other supplementary support members at obstructions to main hanger spacing. Provide additional hangers, struts or braces as required at ceiling breaks, soffits or discontinuous areas. Hanger wires that are more than 1 in 6 out of plumb shall have counter-sloping wires.
- G. Ceiling grid members shall be attached to not more than 2 adjacent walls. Ceiling grid members shall be at least 3/4" inch free of other walls. If walls run diagonally to ceiling grid system runners, one end of main and cross runners shall be free and a minimum of 3/4" inch clear of wall.
- H. At the perimeter of the ceiling area where main or cross runners are not connected to the adjacent wall, provide interconnection between the runners at the free end to prevent

lateral spreading. A metal strut or a 16 gage wire with a positive mechanical connection to the runner may be used. Where the perpendicular distance from the wall to the first parallel runner is 12 inches or less, this interlock is not required.

- I. Provide sets of four 12 gage splayed bracing wires oriented 90 degrees from each other at a spacing of 8'x8', 8'x12' or 12'x12' as noted on the plans or details. Install vertical compression strut at each set of bracing wires.
- J. Provide bracing wires at locations not more than ½ the spacings specified herein from each perimeter wall and at the edge of vertical ceiling offsets.
- K. The slope of bracing wires shall not exceed 45 degrees from the plane of the ceiling and shall be taut without causing the ceiling to lift. Splices in bracing wires are not permitted. Powder actuated fasteners are not permitted for the attachment of splay wires.
- L. Fasten hanger wires with not less than 3 tight turns. Fasten bracing wires with 4 tight turns. Make all tight turns within a distance of 3 inches. Hanger or bracing wire anchors to the structure shall be installed in such a manner that the direction of the wire aligns as closely as possible with the direction of the forces acting on the wire. Wire turns made by machine where both strands have been deformed or bent in wrapping can waive the 1-1/2 inch requirement, but the number of turns shall be maintained and shall be as tight as possible.
- M. Separate all ceiling hanging and bracing wires at least 6 inches from unbraced ducts, pipes or conduit. Attach lightweight items, such as single electrical conduit not exceeding ¾ inch nominal diameter to hanger wires using approved connectors.
- N. Attach light fixtures to the ceiling grid runners to resist a horizontal force equal to the weight of the fixtures.
- O. All flush or recessed light fixtures and air terminals or services shall be independently supported by not less than 4 taut 12 gage wires each attached to the fixture and to the structure above.
  - 1. The 4 taut 12 gage wires including their attachment to the structure above shall be capable of supporting 4 times the weight of the unit.
- P. Support pendant mounted light fixtures directly from the structure above with hanger wires or cables passing through each pendant hanger and capable of supporting 4 times the weight of the fixture.
- Q. Partitions: If non-bearing partitions that extend to and terminate at a suspended ceiling are supported laterally by opposing bracing wires spaced a maximum of 8 ft oc along the top edge of the partition or by other equivalent means, they shall be considered as not adding to the lateral load required to be resisted by the ceiling system.
- R. Do not eccentrically load system or produce rotation of runners.
- S. Install edge angle at intersection of ceiling and vertical surfaces using longest practical lengths. Miter corners. Provide edge angles at junctions with other interruptions. Where curved obstructions occur, provide preformed closers to match edge molding.
- T. Form expansion joints as indicated on drawings and provide manufactures' 4-way seismic separation clips.

### 3.3 TOLERANCES

- A. Variation from Flat and Level Surface: 1/8 inch in 10 feet.

END OF SECTION

SECTION 09 51 14  
ACOUSTICAL CEILING PANELS – LAY-IN

## 1 PART 1 GENERAL

## 1.1 WORK INCLUDED

- A. Acoustical panels, lay-in.

## 1.2 RELATED SECTIONS

- A. Section 09 51 13 – Acoustical Suspension Systems.

## 1.3 REFERENCES

- A. ASTM E84 – Surface Burning Characteristics of Building Materials.
- B. ASTM E1264 – Acoustic Ceiling Products
- C. ICC ESR-1222
- D. DSA IR A-25-2.13

## 1.4 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacture of ceiling panels with five years minimum experience.
- B. Installer: Company with five years minimum experience.

## 1.5 SUBMITTALS FOR REVIEW

- A. Submit product data for acoustical panels under provisions of Section 01 33 00.
- B. Submit samples under provisions of Section 01 33 00.
- C. Submit three samples illustrating material and finish of acoustic units.
- D. Submit manufacturer's installation instructions under provisions of Section 01 33 00.
- E. Contractor to confirm the below listed T-bar ceiling tiles will be compatible with existing t-bar grid.

## 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Interior wet work shall be completed prior to installation of panels. Windows and doors shall be in place. HVAC systems shall be installed and operable where necessary to maintain a temperature range of 60 to 85 degrees F and maximum 70 percent relative humidity.

## 1.7 EXTRA STOCK

- A. Provide extra quantity of acoustic units in the amount of one box of each type specified.

## 2 PART 2 PRODUCTS

## 2.1 MANUFACTURERS

- A. Armstrong World Industries, Fullerton, CA. Product: Cirrus Second Look II, ASTM E1414 or ASTM C423 or approved equal.
  - 1. Size: 24 x 48 inches (Item No.513)
  - 2. Thickness: 3/4 inches, mineral fiber
  - 3. Light Reflectance: 0.85
  - 4. NRC: 0.65
  - 5. CAC: 35
  - 6. Fire Performance: Class A
  - 7. Edge: Beveled Tegular to match grid (15/16" if not specified)
  - 8. Surface Color: White, Scored Tegular
  - 9. Surface Finish: Medium texture

- B. Armstrong World Industries, Fullerton, CA. Product: Cirrus Tegular, ASTM E1264. Or approved equal.
1. Size: 24 x 24 inches (#578)
  2. Thickness: 3/4 inches, mineral fiber
  3. Light Reflectance: 0.85
  4. NRC: 0.35
  5. CAC: 35
  6. Fire Performance: Fire Guard
  7. Edge: Beveled Tegular to match grid (15/16" if not specified)
  8. Surface Color: White
  9. Surface Finish: Medium texture
- C. Armstrong World Industries, Fullerton, CA. Product: Optima PB Vector, ASTM E1264. Or approved equal.
1. Size: 24 x 96 inches (#3907PB) – Contractor to confirm this tile will be compatible with existing tbar grid.
  2. Thickness: 7/8 inches, mineral fiber
  3. Light Reflectance: 0.86
  4. NRC: 0.9
  5. CAC: N/A
  6. Fire Performance: Class A
  7. Edge: 15/16" Square lay-in to match grid
  8. Surface Color: Provide from full range of manufacturers' colors. Architect to select color. (Assume 2 colors to be selected)
  9. Surface Finish: FineTexture

## 2.2 FIRE CLASSIFICATION REQUIREMENTS

- A. ASTM E84 and E1264, all materials shall have a flame spread of less than 25 and a smoke density rating of less than 450 and shall be Class A.
- B. UL Rating: 1 Hour where required.

## 3PART 3 EXECUTION

### 3.1 INSPECTION

- A. Verify that existing conditions are ready to receive work. Notify Construction Manager and Architect of any differences between field and drawings. Confirm existing tbar grid will be compatible with tiles listed in Section 2.1 Manufacturers.
- B. Verify that layout of hangers will not interfere with installation of acoustic units.
- C. Beginning of installation means installer accepts condition of substrate.

### 3.2 INSTALLATION

- A. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
- B. Where square units are indicated, lay directional patterned units in basket weave pattern. Fit border neatly against abutting surfaces.
- C. Install acoustic units level, in uniform plane, and free from twist, warp and dents. Replace damaged or soiled units.
- D. Provide for complete accessibility for all units.

END OF SECTION

**SECTION 09 65 13  
TOP-SET RESILIENT BASE****1 PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Resilient base – wall

**1.2 REFERENCES**

- A. ASTM E84 and NFPA 255 – Surface Burning Characteristics of Building Materials.
- B. FS-SS-W40a – Wall Base, Rubber and Vinyl Plastic.
- C. CBC 806.6 – Wall base <=6" shall be tested per CBC 804.2 and shall be not less than Class II. Where Class I floor finish is required, the floor wall base shall be Class I. Tests shall be in accordance with NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

**1.3 FIRE CLASSIFICATION REQUIREMENTS**

- A. ASTM E84, NFPA 255: Flame spread less than 25, smoke density less than 450.

**1.4 SUBMITTALS FOR REVIEW**

- A. Submit product data under provisions of the contracts.
- B. Provide product data on specified products and colors available.
- C. Submit samples under provisions of the contract.
- D. Submit three 6 inch long samples of base material for each color selected.
- E. Submit manufacturer's installation instructions under provisions of the contract.

**1.5 OPERATION AND MAINTENANCE DATA**

- A. Submit maintenance procedures and recommended maintenance materials.

**1.6 ENVIRONMENTAL REQUIREMENTS**

- A. Store materials for three days prior to installation in area of installation to achieve temperature stability.
- B. Maintain minimum 70 degrees F temperature three days prior to, during and 24 hours after installation of materials.
- C. Provide adequate ventilation to carry off volatile fumes.

**1.7 REPLACEMENT MATERIALS**

- A. Provide minimum three percent of all materials furnished for each color and size of materials installed.

**2 PART 2 PRODUCTS****2.1 MANUFACTURERS, RUBBER**

- A. Burke / Mannington Flooring Products, Calhoun, GA.
- B. Nora Flooring Systems, Lawrence, MA.
- C. Flexco Co., Tuscumbia, GA.
- D. Azrock Industries, Inc., San Antonio, TX.
- E. Endura Co., Waltham, MA.
- F. Jason Industrial, Inc., Vernon, CA.
- G. Musson Rubber Co., Akron, OH.
- H. Pirelli Industrial Products, Inc., Teaneck, NJ.
- I. Roppe Corp., Fostoria, OH.
- J. Forbo Flooring, Hazleton, PA
- K. Or equal.

**2.2 MANUFACTURERS, VINYL**

- A. Flexco Co., Tuscumbia, GA.
- B. Armstrong World Industries, Fullerton, CA.
- C. Kentile Floors, Inc., Scottsdale, AZ.
- D. Mercer Products Co., Orlando, FL.
- E. National Floor Products Co., Florence, AL.
- F. Roppe Corp., Fostoria, OH.
- G. VPI Floor Products, Sheboygan, WI.
- H. Or equal.

### 2.3 BASE MATERIALS

- A. Base: Rubber or vinyl, 1/8 inch gage, standard toe, heights as indicated on drawings or selected by architect (either 4" or 6" height) include in base bid the cost for 6" height, color as selected by the Architect from manufacturer's standard list of colors. Base shall be a continuous roll. Provide base at wall locations.
- B. Base material shall meet FS-SS-W-40a Type I for rubber, Type II for vinyl.
- C. Base Accessories: Premolded end stops, internal and external corners of same material, size and color as base.
- D. Adhesive: As recommended by the manufacturer.

### 3 PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft, and are ready to receive work.
- B. Verify that surfaces are finished, ready to receive base installation.
- C. Beginning of installation means acceptance of existing substrate and site conditions.

#### 3.2 INSTALLATION – BASE MATERIAL

- A. Fit joints tight and vertical. Maintain minimum measurement of 18 inches between joints.
- B. All 90 degree external corners use premolded units only. At corners more or less than 90 degrees, shave a vertical strip down the back side of the material, 1/4 inch wide and not more than 1/2 the thickness at the point of bend. Bend coved toe to required angle. Bond material firmly to wall on both sides of joint to ensure a tight fit with no open void at top.
- C. At 90 degree internal corners use premolded units or as an alternate, miter material to exact angle.
- D. Install base on solid backing. Bond tight to wall and floor surfaces.
- E. Scribe and fit to door frames and other interruptions.
- F. Install base along toe kicks of ALL casework and into all open cabinets (including under sink cabinets, and under all counters).

#### 3.3 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Protection: Protect work until completion. Repair or make good any damage to this work and other materials damaged during installation of base material.

END OF SECTION

**SECTION 09 67 23  
RESINOUS FLOORING - EPOXY****1 PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Trowel applied monolithic epoxy flooring for kitchen, food processing and toilet rooms.
- B. Perimeter edging and integral ½ inch thick coved base, 6 inches high.

**1.2 REFERENCES**

- A. ASTM D2240 – Test Method for Rubber Property – Durometer Hardness.
- B. Not Used.

**1.3 REGULATORY REQUIREMENTS**

- A. Conform to CBC, current edition: Minimum 0.22 watts per cm for Class II, Interior Floor Finish.

**1.4 PERFORMANCE REQUIREMENTS**

- A. Install flooring to conform to the following:
  - 1. Slip Resistance: Dry leather, .37. Minimum Coefficient of Friction of 0.6 min. per ASTM D2047
  - 2. Surface Hardness: ASTM D2240 (Durometer) Scale "D" 70.
  - 3. Chemical resistance per manufacturer's tables.

**1.5 QUALIFICATIONS**

- A. Applicator: Company specializing in epoxy flooring applications with five years experience and approved by the materials manufacturer.

**1.6 OPERATION AND MAINTENANCE DATA**

- A. Submit cleaning and maintenance data.
- B. Include procedures for stain removal, repairing surface and cleaning.

**1.7 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials in un-opened containers, factory mixed and packaged.
- B. Store materials in a dry, secure area.

**1.8 ENVIRONMENTAL REQUIREMENTS**

- A. Do not install flooring when temperature is below 60 degrees F or above 90 degrees F.
- B. Maintain this temperature range, 24 hours before, during and 72 hours after installation of flooring.
- C. Restrict traffic from area where flooring is being installed or is curing.

**1.9 WARRANTY**

- A. Provide three year warranty.
- B. Warranty: Include coverage against flooring delamination from substrate and degradation of surface finish.

**1.10 CURING**

- A. Concrete surfaces shall be cured and dry prior to application.
- B. Commencement of work indicates acceptance of conditions.

**2 PART 2 PRODUCTS****2.1 MANUFACTURERS**

- A. Tera-Lite Inc., San Jose, CA. Product:

1. TERA-GEM III – IFS (Solid color appearance – 10 standard colors. Architect to select color) \$  
r equal.

## 2.2 MATERIALS

- A. Primer: Three component, damp-tolerant epoxy primer.
- B. Coating: Two component, epoxy resin, pigmented, color as selected by Architect.
- C. Aggregate: Fine-graded, chemical resistant, silica.
- D. Sealer Coat: Improves cleanability and chemical resistance. Color to match basecoat.

## 3 PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work, that sub-floor is clean, and free of substances which could affect bond. Verify surfaces are free of depressions, crevices, loose fasteners or protrusions.
- B. Verify concrete floors are dry to a maximum moisture vapor emissions of 3 lbs per 1000 sf in 24 hours; and exhibit negative alkalinity, carbonization, or dusting.
- C. Beginning of installation means acceptance of existing surfaces.

### 3.2 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfigurement.

### 3.3 PREPARATION

- A. Clean substrate surface free of laitence, grease, and other foreign matter.
- B. Sandblasting, bead-blasting, or acid etch are approved cleaning methods.
- C. Provide manufacturer's recommended moisture remediation material to existing concrete slab prior to installation of finish material. Cost of moisture remediation to be included in the bid with a credit to be given to Owner, if after confirmation, material is not needed.
- D. Where existing ceramic tile floors and coved tile base have been demolished down to mortar bed, the Contractor is to patch and fill as required for installation of epoxy floor system. Use Mapei Novoplan 2 underlayment or approved equal. Follow manufacturer's instructions for installation prior to epoxy floor system installation. Coordinate with demolition contractor and epoxy flooring installer as required – coordinate with general contractor at bid time to confirm all costs are covered.

### 3.4 INSTALLATION – FLOORING

- A. Mix components according to manufacturer's recommendations.
- B. Apply bonding coat by trowel or brush. Trowel apply 3/16 – ¼ inch body coat.
- C. Apply minimum two coats. Power sand to remove trowel marks. Roller apply final-finish dressing in texture selected.
- D. Base Application: Apply vertical areas with same materials. Height of base application: 6 inches, including cove, unless otherwise indicated. Mask off base to provide a straight, neat, level top edge.
- E. Texture: **(PM – Select)**
  - a. #70 Mesh - Dry Storage, Restrooms (light to medium texture, typical for schools)
- F. Apply sealer coat per manufacturer's instructions.

### 3.5 PROTECTION

- A. Protect finished installation from traffic until curing is complete.

END OF SECTION



09 68 13  
CARPET TILE

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and all provisions of the contract.

**1.2 SUMMARY**

- A. This section includes the following:
  - 1. Tufted carpet tile.
- B. Related sections:
  - 1. All other sections and the contract

**1.3 SUBMITTALS**

- A. **Manufacturer's Data** - Submit two (2) copies of manufacturer's specifications and installation instructions for carpet tile and related items specified. Manufacturer shall also submit a plan for recycling the specified carpet tile and related items at the end of useful life of the carpet.
- B. **Fiber verification** - Certification from the fiber producer verifying use of the branded fiber in the submitted carpet product. Certification should include the % recycled content by weight for fibers, describing the source of this recycled content. If virgin nylon is used the manufacturer shall include as part of the fiber certification, the precise method that will be used to recapture the nylon at the end of the useful life of the carpet tile. State whether it will be returned to nylon carpet yarn production, downcycled to an end use other than carpet yarn, or disposed of in a specified manner.
- C. **Shop Drawings** - Submit shop drawings for areas to be carpeted showing installation of carpeting, seam diagram, pattern direction, necessary installation accessories, and provisions for work of other trades. Show location of different patterns or styles of carpet. Also, show locations of any threshold conditions. If mixed fiber types are used on the areas shown the fiber type must be clearly identified to facilitate future recycling
  - 1. The construction manager will supply reproducible prints on request, to facilitate shop drawing preparation.
- D. **Samples** - Submit standard size carpet samples of each type of carpet, in each specified pattern, color and construction.
  - 1. Any alternates to specified products) must be submitted for approval by a representative of the end user at least ten (10) working days prior to bid or proposal.
  - 2. **Final Sample Submittal** - Submit two (2) sets of samples for each carpet type.
  - 3. No carpet shipments are permitted until acceptance of final samples by representative of the end user or architect/design firm, certifying that samples are the approved color, pattern, and texture. No carpet shipments are permitted until the fiber certifications and recycling plans are approved by the end user or architect/design firm.
  - 4. **Custom Color Only** - Quality color samples shall be signed by a representative of the end user or architect/design firm, certifying that samples are the approved color, pattern, and texture.
  - 5. Samples submitted will be assumed to be the manufacturer's best obtainable match to the carpet described under Materials section.
- E. **Maintenance Instructions** - Submit to the Construction Manager two (2) copies of the manufacturer's carpet maintenance instructions, including information needed for the removal of common stains from each type of carpet required.

- F. Recycling Instructions - Submit to the Construction Manager two (2) copies of the manufacturer's instructions on post-consumer recycling of the specified carpet tile and related items
1. A representative from the carpet manufacturer shall meet with the Construction Manager in the presence of a representative of the end user and architect/design firm to review the recommended procedures, prior to occupancy of the finished spaces.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturer - Carpet manufacturer shall have no less than three years of production experience with recyclable carpet tile similar to type specified in this document; and whose published product literature clearly indicates compliance of products with requirements of this section.
1. Single source responsibility - provide product material by a single manufacturer for each recyclable carpet type specified.
  2. Commitment to sustainability - carpet manufacturer must practice environmental responsibility through programs of source reduction, recycling, reuse, and conservation.
- B. Trade Contractor - firm with not less than five years of successful carpet tile experience similar to work of this Section and recommended and approved by the carpet manufacturer. Upon request, submit letter from carpet manufacturer stating certification qualifications and acceptance of all environmental requirements.
1. Participant in environmental program including responsible carpet removal, recycling and installation
- C. Substitutes - Where a selected manufacturer or product has been specified, an equal or superior product may be accepted only upon review and written acceptance by the architect. It is mandatory that such review and approval be obtained prior to bidding, or the substitution will not be considered. All such proposed substitutions shall be submitted to the architect with appropriate manufacturer's specifications, literature, environmental compliance assurance, and independent laboratory testing data. The architect's decision as to whether a product is equal or superior to the one specified shall be final. This section applies to any "or equal" noted in the specification.

#### 1.5 PRODUCT DELIVERY AND STORAGE

- A. Deliver carpeting materials in sealed protective cartons for carpet tile and sealed containers for related materials. Carpet materials shall be bound with secure protective wrapping. Consideration should be given to bulk packaging of carpet tile when delivery is made to the jobsite for immediate installation to reduce packaging waste. Alternative, environmentally friendly, packaging must protect the carpet tile as securely as normal packaging.
- B. Storage and staging area at the site must be coordinated with the Construction Manager.
- C. Provide 3% overage of calculated yardage for each type of carpet (calculated yardage shall include carpet needed for complete installation plus waste and usable scraps). Waste, unusable scrap and carpet tile damaged during the life of the carpet tile installation must be recycled through the manufacturer's environmental program by the qualified installer.
1. Elevator Carpet - Provide extra stock for elevator carpet for two complete carpet changes for each elevator cab.
  2. Deliver specified overrun and usable scraps of packages to owner's designated storage space, properly packaged (boxed) and identified. (Redirect small pieces of waste carpet to be appropriately recycled.)

- D. Materials shall be stored in an enclosed and dry area protected from damage and soiling.

#### 1.6 PRE-INSTALLATION MEETING

- A. The manufacturer shall meet at the project site with representatives of end user, Construction Manager and the Trade Contractor to review the carpet installation procedure and coordination with other trades. The Trade Contractor must have available at this meeting the carpet manufacturer's installation procedures, instructions for the carpet types specified in the various applications required, and recycling procedures outlined in the manufacturer's environmental program.
- B. Store carpet in working areas which have been enclosed and have maintained environmental conditions as those planned for occupancy. Carpet shall be allowed to reach room temperature or minimum temperature recommended by manufacturer before installation.

#### 1.7 WARRANTY

- A. Provide warranties by Carpet Manufacturer and Trade Contractor agreeing to replace defective materials and workmanship of carpet work during one (1) year warranty period following substantial completion. Also, submit carpet manufacturer's warranties as follows:
  - 1. Wear - Surface wear shall not be more than 10% by weight throughout the life of the product.
  - 2. Static - Carpet will maintain static generation at less than 2.5 KV at 70 degrees F, and 20% R.H. throughout the life of the product.
  - 3. No delamination throughout the life of the product.
  - 4. No edge ravel throughout the life of the product.
  - 5. No dimensional instability, I.e. shrinkage, curling, and doming which adversely affect the ability of the tile to lay flat throughout the life of the product (per installation instructions). See Aachen test.
  - 6. Environmental warranty for recycling.
- B. Submit manufacturer's certified independent test results to show that carpet meets or exceeds product performance specification criteria for carpet testing requirements (i.e. see section 2.3 flame, smoke, Aachen test, etc.).
- C. Lifetime Commercial Limited Warranty (Owner's Option) - Owner will be completely satisfied with the performance of the carpet product when installed in accordance with the manufacturer's current installation specifications and is maintained in accordance with the current carpet care recommendations and such maintenance continues throughout the duration of the original installation when owned and maintained by the original end user. Further, owner will be satisfied with the recycling of the product at the end of its useful life as outlined in the manufacturer's environmental program.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURER - CT-1

- A. Subject to the minimum requirements listed above and below, provide carpeting as specified.
  - 1. Colors and patterns of carpet shall match samples.
  - 2. A preference will be given to manufacturers recycling 100% of the reclaimed carpet tile back into carpet tile with recycled content.
  - 3. The product must be capable of disassembly with nylon returned to nylon carpet yarn production and the backing returned to carpet backing production
  - 4. The product must meet the guidelines of Presidential Executive Order 13101 and meet the spirit of section 6002 of the Resource and Recovery Act (RCRA).

2.2 CARPET TILE

- A. Package Marking - Mark each carpet package according to style, color, pattern, dye lot, run number and quantity. Within each continuous carpet area, install carpet from same dye lot and run.
- B. Carpet Construction Specification - All yarn and carpet shall be manufacturer's first quality and 100% recyclable or downcyclable

2.3 Carpet shall meet the following performance standards:

- A. Carpet flammability
  - 1. Pill Test (ASTM D2859 or CPSC FF-1-70): Passes
  - 2. Radiant Panel Test (ASTM E648): > .45 watts/cm2, Class I
- B. Smoke Density (ASTM E662): < 450 Flaming Mode
- C. Dimensional Stability (Aachen Method DIN 54318): < 0.1% change
- D. Static Generation at 700 F. (AATCC 134 w/neolite): < 2.5 KV at 20% R.H.
- E. Lightfastness (AATCC 16E): 4.0 after 60 hours
- F. Crocking (AATCC 165): 4.0 wet, dry
- G. Cold Water Bleed (AATCC 107): 4.0
- H. Sublimation (AATCC 117): 4.0
- I. Gas Fade (AATCC 23): 4.0
- J. Ozone Fade (AATCC 109): 4.0
- K. Antimicrobial (AATCC 174, part II): > 95.0% reduction
- L. Fungicidal (AATCC 174, part III): No growth
- M. Soil/Stain Protection (AATCC 175-1991): > 8.0 on the Red 40 Stain Scale
- N. Appearance Retention Rating (ASTM D-5252 or ASTM D-5417): Heavy use classification
- O. CRI Green Label Air Quality Certification Passes

2.4 PRODUCT SPECIFICATIONS

- A. Product (100% recyclable) 24" Modular Tile  
 RADIANCE EW24 – 59361 / color to be determined  
 Shaw Contract Group, Div of Shaw Industries, or an approved equal.  
 Phone: 1-800-257-7429
- B. Construction Type Pattern loop
- C. Face Fiber EcoSolution Q® Premium Branded Nylon
- D. Yarn Treatment Florsept, Antistatic
- E. Gauge 1/12
- F. Stitches 9
- G. Pile Density (UM 44D) 9,076 oz/yd3
- H. Weight Density 272,280 sq oz/yd5
- I. Yarn Weight 30 oz/sq yd
- J. Pile Thickness (ASTM D-418) .119 inches
- K. Backing Structure EcoWorx®
- L. Total Weight 106.5 oz.
- M. Total Thickness .277 inches
- N. Size 24 in. x 24 in.
- O. Base Color Method 100% Solution Dyed
- P. Antimicrobial Antimicrobial Treatment (inhibits fungi, gram positive and gram negative bacteria)

2.5 MINIMUM CONSTRUCTION STANDARDS IN ADDITION TO PRODUCT SPECIFICATIONS

- A. Nylon Specification - All nylon fiber shall be branded nylon containing post-consumer recycled content.
- B. Carpet average density shall be 6000 minimum. Average pile thickness as determined by ASTM D418.
- C. Appearance Retention Rating (see product specifications)
- D. Antimicrobial with broad spectrum efficacy against bacteria and fungus for the life of the product (see product specification). Minimizes likelihood of Building Related Illness, Sick Building Syndrome, and assists in improving Indoor Air Quality.
- E. Carpet tile backing shall be 100% recyclable.

2.6 RELATED CARPET MATERIALS

- A. Leveling Compound - Latex type as recommended by carpet manufacturer and is compatible with carpet adhesive and curing/sealing compound on concrete.
- B. Releasable pressure sensitive type adhesive - Use the following as recommended by the carpet manufacturer which will allow removal of carpet at any time without damage or adherence to carpet: N5000 low VOC (no solvents) carpet tile adhesive.
- C. Multi-purpose Adhesive - Provide the following adhesive as recommended by carpet manufacturer for direct glue-down of carpet on steps.
- D. Carpet Edge Guard, Nonmetallic - Extruded or molded heavy duty vinyl or rubber carpet edge guard of size and profile indicated and with minimum 2 inch wide anchorage flange; colors selected by architect/designer from among standard colors available within the industry.
- E. Miscellaneous Materials - As recommended by manufacturer of carpet, cushion and other carpeting products and selected by Trade Contractor to meet project circumstance and requirements.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION REQUIREMENTS AND PREPARATORY WORK

- A. The Trade Contractor shall measure carefully and check all dimensions and other conditions in the field to insure proper fit in the areas designated. Trade Contractor shall be totally responsible for the accuracy of his measurements on total yardage requirements, individual floor yardage requirements and dye lot yardage requirements. No request for carpet or installation extras from the owner will be considered due to measurement or takeoff errors by the Trade Contractor. The Trade Contractor shall confirm total yardage required, including 3% attic stock along with bid.
- B. The Trade Contractor shall coordinate all installation activities with the Construction Manager.
- C. Removal of carpet to be replaced (if applicable) should be handled according to preapproved plan for reuse and/or recycling.
- D. Sequence carpeting with other work so as to minimize possibility of damage and soiling of carpet during remainder of construction period. Carpet installation must not commence until painting and finishing work is complete and ceiling and other overhead work has been tested, approved and completed, unless specifically approved by owner's Project Manager, in writing.
- E. Trade Contractor and manufacturer's representative must examine substrates for conditions over which carpeting is to be installed.
  - 1. New concrete shall be allowed to cure for ninety (90) days before carpet installation.
  - 2. Trade Contractor shall perform moisture content testing as required in manufacturer's instructions to ensure pH readings of no more than 9. Moisture transmission of 5.5 pounds per sqm per 24 hours is acceptable.

- If values exceed this level manufacturer's recommendations must be followed for moisture transmission mitigation. Do not proceed until unsatisfactory conditions are corrected. Provide manufacturer's recommended moisture remediation material to existing concrete slab prior to installation of finish material. Cost of moisture remediation to be included in base bid, with credit to be provided back to owner if not required. Credit will be determined based on industry standard labor costs and actual material costs provided by manufacturer/distributor.
3. Cracks 1/16 inch or more, holes, unevenness and roughness must be filled, leveled and made smooth with a compatible latex floor patching compound. Prior to filling, the floor must be swept clean of all loose granular debris. After filling, allow filler to dry. Then damp mop the floor with warm water and allow to dry. Vacuum after mopping, to ensure all loose granular debris is removed and provide a proper substrate to install carpet.
  - F. All surfaces to receive carpet shall be clean and dry, and in a condition satisfactory to the Trade Contractor. Trade Contractor shall notify Construction Manager in writing of any conditions which will prevent him from producing satisfactory finish work after above specified preparatory work is completed.
  - G. Trade Contractor shall vacuum floors again immediately before installation of carpeting.
  - H. Confirm compatibility of adhesive with curing compounds on concrete floors. All adhesives and curing compounds shall comply with the CRI Green Label Certification program for low VOC's.
  - I. Environmental Conditions - Areas to be carpeted must be pre-heated at a minimum of 68° F. for 72 hours prior to installation with the relative humidity not more than 65%. A minimum temperature of 50° F. shall be maintained thereafter. Carpet and adhesive must be stored at a minimum temperature of 68° F. for 72 hours prior to installation.
  - J. Once the Trade Contractor commences installation work under this contract, it shall be assumed that the condition of the floor has been accepted and any repairs or further corrections in the floor surface shall become the responsibility of the Trade Contractor.

### 3.2 INSTALLATION

- A. General
  1. Comply with manufacturer's instructions and recommendations for uniformity of direction of carpet installation.
  2. Install carpet under open-bottom obstructions and under removable flanges and furnishings, and into alcoves and closets of each space.
  3. Provide cut outs where required. Conceal cut edges with protective edge guards or overlapping flanges.
  4. Run carpet under open-bottom items such as heating convectors and install tight against walls, columns and cabinets so that the entire floor area is covered with carpet. Cover over all floor type door closures.
  5. Install edging guard at all openings and doors wherever carpet terminates, unless indicated otherwise. Prior to installation, report to the Construction Manager all other obstructions which may occur.
  6. Cutting shall be done in accordance with the manufacturer's recommendation, using the tools designed for the carpet being installed. Scraps shall be retained or disposed of per the manufacturer's environmental program.
  7. Edges shall be butted together with the proper pressure to produce the tightest joint possible without distortion.

8. All carpet shall be installed with pile-lay in the same direction except when directed to use a quarter turned method as specified in the drawings.
9. Use leveling compound where necessary. Any floor filling or leveling shall have a minimum of 4'0" of feather.
10. Expansion joints - Do not bridge building expansion joints with continuous carpeting. Provide for movements.

**B. Installation**

1. Install carpet according to carpet manufacturer's printed instructions.
2. Measuring - Divide the room into four quadrants and snap a chalk line. Make sure quadrants meet at right angles (offset the center line, if necessary, to ensure that perimeter tiles will be cut no less than half size (9 inches).
3. Apply environmentally approved adhesive as per instructions in the area to be carpeted first.
4. Note carefully if the product is designed to be installed "quarter turned" only. Arrows should point in the same direction every other tile and diagonally. Arrows on alternating tiles should be turned 90° in either direction, consistently.
5. Begin installing by laying an anchor row of tiles on one side of the center chalk line. Ensure straight lines and square corners. Repeat anchor rows in each quadrant, extending out from center. Fill in each quadrant with tiles using a stair step technique.
6. Tip individual tiles into place to avoid catching pile in the joint. Frequently check tile joints for proper alignment and firm abutment.
7. Although tiles are nominally 24 inches by 24 inches square, there will be slight gain due to joints. To check, measure 10 installed tiles from edge to edge, spanning 10 joints. This measurement should be no greater than 240 and 1/8 inches for tufted product. If more gain is measured, tiles are not butted tightly enough. Reposition and check again. Use this method to continually check for excessive gain. See manufacturer's instructions for 24" x 24" modular tiles.
8. Fixtures, architectural elements, and perimeters will require tile cutting. Cut tiles from the back. Secure cut or partial tiles with adhesive.
9. Electrical floor outlets are usually wired after tile installation. Install tile over electrical boxes and mark locations with a piece of tape. Tiles can be lifted for cut-outs later.
10. Center trench headers directly under a full tile row.
11. In open perimeter designs, use a fixed reducer strip to secure the tile area.
12. Use an environmentally acceptable permanent adhesive for tiles installed on stairs. Compatible edge trim and nosing products may also be required.

**3.3 CLEANING AND PROTECTION**

- A. On completion of the installation in each area, all dirt, carpet scraps, etc., must be removed from the surface of the carpet. Any soiling spots or excessive adhesive on the carpet shall be removed with the proper spot remover. (See Section 1.3.7)
- B. Construction traffic other than as may be required to fit up specific carpeted area will not be allowed to traverse the completed work.
- C. Remove debris, and sort pieces to be saved from scraps to be redirected and recycled.
- D. Protect carpeting against damage during construction. Cover with 6-mil thick

polyethylene covering with taped joints during the construction period, wherever protection is required, so that carpet will be without any indication of deterioration, wear, or damage at the time of acceptance. Damaged carpeting will be rejected and recycled. As the carpet is laid, remove all trimmings, excess pieces of carpet and laying materials.

- E. At the completion of the work and when directed by the Construction Manager, vacuum carpet using commercial dual motor vacuum of type recommended by carpet manufacturer. Remove spots and replace carpet where spots cannot be removed. Remove rejected carpeting and replace with new carpeting. Remove any protruding yarns with shears or sharp scissors.
- F. Protection of carpeting shall be maintained on each floor or area until accepted.

### 3.4 INSPECTION

- A. Preliminary Acceptance - Upon completion of the carpet installation of each floor, it shall be inspected by Owner, the Construction Manager and Trade Contractor.
- B. Upon completion of the installation, verify that work is complete, properly installed and acceptable. Remove and replace all work not found acceptable to the owner at the installer's expense.
- C. Upon completion of the installation the manufacturer shall deliver a certificate of recycling describing the method by which the uplifted carpet was recycled (see Section 01350 Special Project Procedures- Carpet Reclamation), and shall provide a promise of recycling specifying the method of recycling of the newly installed carpet tile at the end of its useful life.

END OF SECTION



SECTION 09 91 00  
PAINTING

## 1 PART 1 GENERAL

## 1.1 WORK INCLUDED

- A. Surface preparation.
- B. Prime coat application.
- C. Finish coat application.

## 1.2 WORK NOT INCLUDED

- A. Surfaces Not To Be Painted:
  - 1. Prefinished wall, ceiling and floor coverings.
  - 2. Items with factory-applied final finish except roof-mounted equipment or electrical panels, or equipment on painted walls (Roof mounted equipment and electrical equipment on painted walls (interior and exterior) shall be painted if visible.
  - 3. Concealed ducts, pipes and conduit.
  - 4. Glass, plastic laminate, ceramic tile, anodized aluminum.
  - 5. Steel items embedded in concrete. Exposed areas are to be painted.
  - 6. Surfaces specifically scheduled or noted on the drawings not be painted.
  - 7. Fire-Rated Labels on Doors or Frames.
  - 8. Exterior Tags on Modular Buildings

## 1.3 REFERENCES

- A. AQMD – Local Air Quality Management District, Regulations.
- B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
- C. ASTM D4444 – Use and Calibration of Hand-Held Moisture Meters.

## 1.4 QUALITY ASSURANCE

- A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with ten years experience.
- B. Applicator: Company specializing in commercial painting and finishing with five years experience.

## 1.5 REGULATORY REQUIREMENTS

- A. Conform to AQMD Regulations concerning VOC Emissions.
- B. Comply with applicable codes and regulations of governmental agencies having jurisdiction including those having jurisdiction over airborne emissions and industrial waste disposal. Where those requirements conflict with this Specification, comply with the more stringent provisions.

## 1.6 SUBMITTALS FOR REVIEW

- A. Submit product data under provisions of the contract.
- B. Provide product data on all finishing products.
- C. Submit samples under provisions of the contract.
- D. Submit three samples 8-1/2 inch x 11 inch in size illustrating range of colors and textures available for each surface finishing product scheduled for selection
- E. Prepare wood samples on type and quality of wood specified.
- F. Submit manufacturer's application instructions under provisions of the contract.

## 1.7 FIELD SAMPLES

- A. Provide samples under provisions of the contract.

- B. Provide field sample panel, illustrating coating color, texture and finish for each color scheduled.
- C. Locate as approved by Architect.
- D. Approved sample may remain as part of the Work.
- E. Do not proceed with coating application until sample panel has been approved.

#### 1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in sealed and labelled containers.
- B. Container labeling to include manufacture's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation and instructions for mixing and reducing.
- C. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area unless permitted otherwise by manufacturer's instructions.
- D. Take precautionary measures to prevent fire hazards and spontaneous combustion.

#### 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during and 48 hours after application of finishes, unless permitted otherwise by manufacturer's instructions.
- B. Do not apply exterior coatings during rain, or when relative humidity is above 50 percent, unless permitted otherwise by manufacturer's instructions.
- C. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- D. Minimum Application Temperature for Varnish and transparent Finishes: 65 degrees F for interior or exterior, unless permitted otherwise by manufacturer's instructions.
- E. Provide lighting level sufficient to conduct painting operations.

#### 1.10 EXTRA STOCK

- A. Provide an extra stock equaling ten percent (10%) of each color, type and gloss of paint used on the Work, but not more than five gallons for each.
  - 1. Label each container with color, texture and room locations in addition to the manufacturer's label.

#### 1.11 GUARANTEE

- A. Guarantee the painting work against peeling, fading, cracking, blistering or crazing for a period of two years from the Date of Substantial Completion.

### 2 PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Kelly Moore, San Carlos, CA. Basis of design is based on DuraPoxy HP Interior/ Exterior (Ultra Premium), Acryshield Exterior (Premium) and DuraPoxy Interior (Ultra Premium) paint finish. Model numbers listed in the schedule below may need to adjust based on the current paints provided by manufacturer.

Note: The DuraPoxy HP line shall be used at all interior and exterior doors and frames on both sides and all faces and edges. All other exterior surfaces shall be painted with the AcryShield paint finish.

#### 2.2 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Prepare pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
- B. Colors and Glosses: The Architect will select colors to be used in the various types of paint specified and will be the sole judge of acceptability of the various glosses obtained

from the materials proposed to be used in the Work. Architect will select a minimum of 4 colors for the interior and 4 colors for the exterior per building. If the building is over 6,000 square feet, the architect may select up to 6 colors for the interior, with no more than 4 colors being used in any single room.

1. Preliminary Interior Sheen Schedule (final sheens to be verified with Architect):
  - a. Gypsum Board – All areas other than restrooms: Satin
  - b. Gypsum Board at restrooms: Semi-gloss
  - c. Handrails, Metal Doors & Frames, other metals: Semi-Gloss
  - d. Interior Wood: Semi-gloss or clear coat
  - e. Ceiling Tiles: Satin
  - f. Exposed Ductwork: Satin or Semi-gloss
2. Preliminary Exterior Sheen Schedule (final sheens to be verified with architect):
  - a. Cement Plaster: Satin or Semi-Gloss
  - b. Metal fascia, leader-heads, rainwater leaders, downspouts, perforated metals, miscellaneous metals: Semi-gloss
  - c. Handrails, Metal Doors & Frames: Semi-Gloss
  - d. Exterior Wood: Semi-gloss or Satin
  - e. Mechanical louvers, metal trim, expansion joints, other metals within the cement plaster system: Satin or Semi-gloss
- C. Undercoats and Thinners: Provide undercoat paint produced by the same manufacturer as the finish coat. Use only the thinners recommended by the paint manufacturer and use only to be recommended limits. Insofar as practicable, use undercoat, finish coat and thinner material as parts of a unified system of paint finish.
- D. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.
- E. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified of commercial quality.

### 2.3 APPLICATION EQUIPMENT

- A. For application of the approved paint, use only such equipment as is recommended by the manufacturer.
- B. Compatibility: Prior to actual use of application equipment, use all means necessary to verify that the proposed equipment is actually compatible with the material to be applied and that the integrity of the finish will not be jeopardized by use of the proposed application equipment.

### 2.4 FINISHES

- A. Refer to schedule at end of section for surface finish. Notwithstanding product numbers listed in schedule, Contractor shall conform to most recent product numbers as published by the manufacturer.

## 3 PART 3 EXECUTION

### 3.1 INSPECTION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application not identified to be prepared by you under section 3.3.
- C. Measure moisture content of new surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
  1. Plaster and Gypsum Wallboard: 12 percent.
  2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
  3. Interior Located Wood: 15 percent, measured in accordance with ASTM D4442 and ASTM D4444.

4. Exterior Located Wood: 19 percent, measured in accordance with ASTM D4442 and ASTM D4444.
- D. Beginning of installation means acceptance of existing surfaces.

### 3.2 MATERIALS PREPARATION

- A. Mix and prepare painting material in accordance with manufacturer's recommendations.
- B. Store materials not in actual use in tightly covered containers.
- C. Maintain containers used in storage, mixing and application of paint in a clean condition, free from foreign materials and residue.
- D. Stir all materials before application to produce a mixture of uniform density and as required during the application of materials. Do not stir into the material any film which may form on the surface. Remove the film and strain the material before using.

### 3.3 SURFACE PREPARATION

- A. Remove electrical plates, hardware, light fixture trim and fittings prior to preparing surfaces or finishing.
- B. Correct minor defects and clean surfaces which affect work of this Section.
- C. Shellac and seal marks which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- F. Gypsum Board Surfaces: Fill minor defects, joints and nail head depressions with spackling compound. Prime in accordance with primer manufacturer's recommendations.
- G. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer as specified in schedule. When time permits, allow to weather a minimum of 6 months prior to coating. Clean per SSPC-SP1 using detergent and water or a degreasing cleaner, then prime as required. When weathering is not possible or surface has been treated with chromates or silicates, clean all galvanized metal with appropriate metal prep and passivator remover. To ensure passivator has been removed, perform the following test:
  - a. With a 2% to 5% copper sulfate solution, place a swab or droplets to the prepared area. If copper sulfate causes the galvanized to blacken, the passivator has been removed and is ready for paint application.
  - b. If the copper sulfate has no effect on the galvanized, continue with metal prep solution or use a Scotch pad to abrade it, being careful not to remove the galvanization itself. Apply the required primer, allow drying as described in the product data sheets and test adhesion prior to applying required finish coats.
- H. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering or corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- I. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- J. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- K. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.

- L. Wood Scheduled to Receive Paint Finish: Remove dust, grit and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied.
- M. Wood Doors and Cabinet Work scheduled for field-applied transparent or solid stain finish:
  - 1. Sand surfaces thoroughly with a 5/0, 180 grit sandpaper.
  - 2. Apply coatings as specified in the schedule to all surfaces, sides and edges, all six sides. Avoid streaking or uneven application.
- N. Wood Doors Scheduled for Painting: Seal top, bottom and all edges with primer and then paint. Leave labels intact and readable.
- O. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.
- P. Painted Steel Posts, Downspouts, Etc: Wire brush any loose or flaking paint. Scrape any bubbles and wire brush back to a point where paint has solid adhesion. Spot prime areas prior to final application of finish.
- Q. Aluminum scheduled to be painted shall be cleaned and etched as recommended by the manufacturer for proper application of finish.

3.4 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.
- B. Repair damage to other surfaces caused by work of this Section.
- C. Furnish drop cloths, shields and protective methods to prevent spray or droppings from disfiguring other surfaces.
- D. Remove empty paint containers from site.

3.5 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform finish. Number of coats specified is a minimum. Additional coats shall be applied at no extra cost, if coatings show evidence of uneven application, uneven pigmentation, brush strokes or otherwise unsatisfactory distribution of material. NOTE: BACK ROLL AFTER EACH APPLICATION.
- D. Under coats shall be lighter and brighter in tint than finish coat.
- E. Sand lightly between coats to achieve required finish.
- F. Allow applied coat to dry before next coat is applied.
- G. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- H. Prime concealed surfaces of interior and exterior woodwork with primer paint.
- I. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.
- J. Seal Tops, bottoms and cutouts for hardware and accessories of wood or plastic laminate covered doors.
- K. Split paint door frames to match color of walls on each side of opening.

3.6 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Refer to Section Divisions 15 and 16 for color coding and identification banding requirements of equipment, duct work, piping, and conduit.
  - 1. Unless otherwise indicated, conform to the following color coding system:

TYPE of PIPING	PRODUCT NUMBER	COLOR
Chilled Water	Ameritone 1986	Vista Gray
Condenser Water	Sinclair 7532	Canvas Tan
Domestic Hot Water	Sinclair 7518	Admiral Blue

Domestic Cold Water	Sinclair 7530	Edison Blue
Plant Air	Copper	Clear Lacquer
Vacuum	Sinclair 7500	Shasta White
Oxygen	Sinclair 7535	John Deere Green
Cold Soft Water	Sinclair 7575	OSHA Violet
Steam	Sinclair 7534	Caterpillar Yellow
Hot Water	Sinclair 7533	Ferguson Gray
Soil Waste	Sinclair 7531	Loam Brown
Fire	Sinclair 7570	OSHA Red
Fuel Gas	Sinclair 7572	OSHA Orange
Deionized Water		Light Blue

2. Verify appropriate specific color designations with paint manufacturer.
  3. Conform to Owner's special requirements for color coding. Match existing coding system where required.
- B. Paint shop primed equipment.
  - C. Remove all (finished and unfinished) louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
  - D. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are shop finished and confirmed with architect not to paint.
  - E. Replace identification markings on mechanical or electrical equipment when painted accidentally.
  - F. Paint interior surfaces of air ducts that are visible through grilles and louvers with one coat of flat black paint, limit of sight line. Paint dampers exposed behind louvers and grilles, to match face panels.
  - G. Paint exposed conduit and electrical equipment occurring in finished areas.
  - H. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
  - I. Color code equipment, piping, conduit, and exposed ductwork in accordance with requirements indicated. Color band and identify with flow arrows names and numbering, using stencils or other approved systems.
  - J. Replace electrical plates, hardware, light fixture trim and fittings removed prior to finishing.

**3.7 CLEANING**

- A. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.
- B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials and debris.
- C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.

**3.8 SCHEDULE – EXTERIOR SURFACES**

		Other	Kelly Moore DuraPoxy HP	Kelly Moore AcryShield
A.	Wood – Flat - Acrylic			
	1. One Coat			255
	2. Two Coats			1240
B.	Wood – Semi-Gloss - Acrylic			
	1. One Coat			255
	2. Two Coats			1250
C.	Wood – Gloss - Acrylic			

	1. One Coat	S-30 Griptec		
	2. One Coat	S-39 Beyond		
	3. One Coat	S-39 Beyond		
D.	Wood – Stain- Transparent – Acrylic			
	1. Two Coats			1285
E.	Wood – Stain – Solid – Acrylic			
	1. Two Coats			1240
F.	Wood – Clear – Spar Varnish			
	1. Three Coats	Old Master Spar Marine Varnish		
G.	Concrete – Flat – Acrylic			
	1. One Coat			247
	2. Two Coats			1240
H.	Concrete – Low Sheen – Acrylic			
	1. One Coat			247
	2. Two Coats			1245
I.	Concrete – Elastomeric			
	1. One Coat	247		
	2. Two Coats	1128		
J.	Concrete Block – Flat – Acrylic			
	1. One Coat	521		
	2. Two Coats			1240
K.	Concrete Block – Low Sheen – Acrylic			
	1. One Coat	521		
	2. Two Coats			1245
L.	Concrete Block – Elastomeric			
	1. One Coat	521		
	2. Two Coats	1128		
M.	Cement Plaster – Flat – Acrylic			
	1. One Coat			247
	2. Two Coats			1240
N.	Cement Plaster – Low Sheen – Acrylic			
	1. One Coat			247
	2. Two Coats			1245
O.	Cement Plaster – Elastomeric			
	1. One Coat	247		
	2. Two Coats	1128		
P.	Ferrous – Flat – Acrylic			

	1. One Coat	5725		
	2. One Coat			1240
	3. One Coat			1240
<b>Q.</b>	<b>Ferrous – Semi-Gloss – Acrylic</b>			
	1. One Coat	5725		
	2. One Coat	5885		
	3. One Coat	5885		
<b>R.</b>	<b>Ferrous – Gloss – Alkyd</b>			
	1. One Coat	265		
	2. One Coat	1999		
	3. One Coat	1999		
<b>S.</b>	<b>Ferrous – Factory Primed: Touch-up primer coat in lieu of full primer coat. Finish coats as specified above.</b>			
<b>T.</b>	<b>Galvanized and Aluminum – Flat - Acrylic</b>			
	1. One Coat	Surface Prep: SSPC-SP1 Krud Kutter Metal Clean		
	2. One Coat	5725		
	3. One Coat			1240
	4. One Coat			1240
<b>U.</b>	<b>Galvanized and Aluminum – Semi Gloss – Acrylic</b>			
	1. One Coat	Surface Prep: SSPC-SP1 Krud Kutter Metal Clean		
	2. One Coat	5725		
	3. One Coat	5885		
	4. One Coat	5885		
<b>V.</b>	<b>Galvanized and Aluminum – Gloss – Alkyd</b>			
	1. One Coat	Surface Prep: SSPC-SP1 Krud Kutter Metal Clean		
	2. One Coat	5725		
	3. One Coat	1999		
	4. One Coat	1999		
<b>W.</b>	<b>Entry Doors, &amp; Door Casings - Semi-Gloss – Interior/ Exterior High Performance Acrylic</b>			
	1. One Coat	295		
	2. One Coat			2888
	3. One Coat			2888



3.9 **SCHEDULE – INTERIOR SURFACES**

		Other	Kelly Moore DuraPoxy	Kelly Moore DuraPoxy HP
<b>A.</b>	<b>Wood – Matte - Acrylic</b>			
	1. One Coat	295/973		
	2. Two Coats		1600	
<b>B.</b>	<b>Wood – Semi-Gloss - Acrylic</b>			
	1. One Coat	295/973		
	2. Two Coats		1685	
<b>C.</b>	<b>Wood – Eggshell - Acrylic</b>			
	1. One Coat	295/973		
	2. Two Coats		1686	
<b>D.</b>	<b>Wood – Gloss – Acrylic</b>			
	1. One Coat	295/973		
	2. Two Coats		1680	
<b>E.</b>	<b>Wood – Stain – Transparent, Non-Yellowing - Flat – Lacquer</b>			
	1. One Coat	GemGlo 6700 Series		
	2. One Coat	Gemini Precat Sealer 210-0222		
	3. Two Coats	Gemini Precat 510- 0277		
<b>F.</b>	<b>Wood – Stain – Transparent, Non-Yellowing – Semi-Gloss - Lacquer</b>			
	1. One Coat	GemGlo 6700 Series		
	2. One Coat	Gemini Precat Sealer 210-0222		
	3. Two Coats	Gemini Precat		
	1. One Coat	GemGlo 6700 Series		
	2. One Coat	Gemini Precat Sealer 210-0222		
	3. Two Coats	Gemini Precat 510-0275		
<b>G.</b>	<b>Wood – Stain – Transparent, Non-Yellowing – Gloss - Lacquer</b>			
	1. One Coat	GemGlo 6700 Series		
	2. One Coat	Gemini Precat Sealer 210-0222		
	3. Two Coats	Gemini Precat 510-0274		
<b>H.</b>	<b>Wood – Stain – High Solids – Satin – Acrylic Urethane</b>			
	1. One Coat	Old Masters Stain		

	2. One Coat	2097		
	3. Two Coats	2097		
I.	Wood – Stain – High Solids – Semi-Gloss - Acrylic Urethane			
	1. One Coat	Old Masters Stain		
	2. One Coat	2094		
	3. Two Coats	2094		
J.	Wood – Stain Solid – Gloss - Acrylic Urethane			
	1. One Coat	Old Masters Stain		
	2. One Coat	2096		
	3. Two Coats	2096		
K.	Concrete, Plaster, Masonry – Matte - Acrylic			
	1. One Coat	971		
	2. One Coat		1600	
L.	Concrete, Plaster, Masonry – Eggshell - Acrylic			
	1. One Coat	971		
	2. Two Coats		1686	
M.	Gypsum Board – Matte - Acrylic			
	1. One Coat	971		
	2. One Coat		1600	
N.	Gypsum Board – Semi-Gloss - Acrylic			
	1. One Coat	971		
	2. Two Coats		1685	
O.	Gypsum Board – Eggshell - Acrylic			
	1. One Coat	971		
	2. Two Coats		1686	
P.	Gypsum Board – Gloss - Acrylic			
	1. One Coat	971		
	2. Two Coats		1680	
Q.	Ferrous – Matte – Acrylic			
	1. One Coat	5725		
	2. One Coat		1600	
	3. One Coat		1600	
R.	Ferrous – Semi-Gloss – Acrylic			
	1. One Coat	5725		
	2. One Coat		1685	
	3. One Coat		1685	
S.	Ferrous – Gloss – Acrylic			
	1. One Coat	5725		
	2. One Coat		1680	
	3. One Coat		1680	

T.	Ferrous – Factory Primed: Touch-up primer coat in lieu of full primer coat. Finish coats as specified above.		
U.	Galvanized and Aluminum – Matte - Acrylic		
	1. One Coat	Surface Prep: SSPC-SP1 Krud Kutter Metal Clean & Etch	
	2. One Coat	5725	
	3. One Coat		1600
	4. One Coat		1600
V.	Galvanized and Aluminum – Semi-Gloss - Acrylic		
	1. One Coat	Surface Prep: SSPC-SP1 Krud Kutter Metal Clean & Etch	
	2. One Coat	5725	
	3. One Coat		1685
	4. One Coat		1685
W	Galvanized and Aluminum – Gloss - Acrylic		
	1. One Coat	Surface Prep: SSPC-SP1 Krud Kutter Metal Clean & Etch	
	2. One Coat	5725	
	3. One Coat		1680
	4. One Coat		1680
X.	Acoustical Ceiling Tiles – sheen per Manufacturer Recommendation		
	1. One Coat	295	
	2. Two Coats	485	
Y.	Window Systems - Satin – Interior/ Exterior High Performance Acrylic		
	1. One Coat	295/973	
	2. One Coat		2888
	3. One Coat		2888
Z.	Entry Doors, & Door Casings - Semi-Gloss – Interior/ Exterior High Performance Acrylic		
	1. One Coat	295/973	
	2. One Coat		2888
	3. One Coat		2888

3.10 SPECIAL COATINGS

A. Exterior metal handrails, guardrails, ornamental metal fences and gates and exterior stairs, total 5.5 to 8.5 mil thickness, as recommended by the manufacturer:

		Tnemec		Rustoleum	
1.	Unprimed or shop primed –				

	<b>Ferrous – Gloss - Polyurethane</b>			
	a. One Coat	50-330		9100
	b. One Coat	74		9700
2.	<b>Unprimed or shop primed – Ferrous – Semi-Gloss - Polyurethane</b>			
	a. One Coat	50-330		9100
	b. One Coat	75		9700
3.	<b>Galvanized or Aluminum – Gloss - Polyurethane</b>			
	a. One Coat	P-66		9100
	b. One Coat	74		9700
4.	<b>Galvanized or Aluminum –Semi- Gloss - Polyurethane</b>			
	a. One Coat	P-66		9100
	b. One Coat	75		9700

END OF SECTION

SECTION 10 14 10  
SIGNS – ROOM IDENTIFICATION

## 1 PART 1 GENERAL

## 1.1 SECTION INCLUDES

- A. Plastic signs.

## 1.2 REFERENCES

- A. Chapters 10, 11, 2019 California Building Code, 11B Division 7.
- B. Chapter 3, Title 19, CCR.
- C. ASTM D4802 – Poly (Methyl Methacrylate) Acrylic Plastic Sheet.
- D. All signage to conform to CBC 1011.4 and 11B-703. These sections shall override other references within this specification.

## 1.3 SUBMITTALS FOR REVIEW

- A. Submit shop drawings under provisions of Division 1.
- B. Submit shop drawings listing sign styles, lettering and locations and overall dimensions of each sign. Submit proofs of ALL signs prior to ordering for final approval.
- C. Submit samples under provisions of Section Division 1.
- D. Submit two samples illustrating full-size sample sign, of type, style and color specified including method of attachment. If accepted, samples may be installed in project.
- E. Submit manufacturer's installation instructions under provisions of Section Division 1.

## 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site and protect from damage. Store until immediately prior to substantial completion.

## 1.5 PRE-INSTALLATION CONFERENCE

- A. Notify Architect when signs are ready for installation. Arrange for conference at the site. Do not proceed with installation until Architect's approval of specific locations and methods of attachment has been obtained.
- B. Provide signs from one manufacturer, unless approved.

## 1.6 REGULATORY REQUIREMENTS

- A. Conform to CBC for provisions for the physically disabled.
- B. SIGNAGE REQUIREMENTS: (Room Identification and Exit signs)
  - 1. Tactile characters shall be selected from fonts where widths of the upper case "O" is 60% min. & 110% maximum of the height of the uppercase letter "T". Character height measured vertically from the baseline of the character shall be 5/8" min. & 2" max. based on the height of the uppercase letter "T". Stroke thickness shall be 10% minimum and 15% maximum of the height of the character.
  - 2. Characters and symbols shall be contrast in color or image with either light letters on dark background or dark letters on light background. Colors to be selected by Architect.
  - 3. Letters and numbers on permanent room identification signs shall be raised minimum 1/32 inch, without serif.
  - 4. Raised letters shall be accompanied by California contracted grade 2 BRAILLE tactile identification. Braille shall be located a minimum of 3/8" and a maximum of 1/2" below the raised characters.
  - 5. For Tactile Signage: minimum height for raised characters or symbols is 5/8 inch. Maximum Height: 2 inches. See signage detail in drawings for specifics.
  - 6. Pictographs shall be accompanied by equivalent verbal description directly below and shall comply with CBC Section 11B-703.6.

7. Signs shall be located within 18 inches from edge of door on wall adjacent to latch side of door or nearest adjacent wall (where there isn't wall space at the latch side). They shall be mounted 60 inches maximum above finished floor to baseline of highest row of tactile characters, and 48 inches minimum to baseline of the lowest braille cells. For double doors with an inactive leaf and an active leaf, sign shall be mounted on the inactive leaf. For double doors with two active leafs, sign shall be mounted to the right of the right leaf.
8. Conform to all other CBC requirements including finishes and contrasts.
9. Include pictogram showing fire extinguisher inside on all signs where there is a fire extinguisher inside. This sign does not require tactile/braille requirements.

## 2 PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Acrylic Plastic Sheet: ASTM D4802, clear, ¼ inch thick. Include up to (3) different colors of plastic to be used as part of the sign.
- B. Fasteners: Clear silicone sealant, as specified in Section 07 92 00.
- C. Frames: Where noted on drawings provide anodized aluminum frame with recessed edge at all signs. The color and finish of frame shall be selected by architect from full range of colors and finishes from the manufacture and colors that match the plastic sign material color.

### 2.2 ROOM & EXIT IDENTIFICATION SIGNAGE

- A. Provide room identification signs. Install on wall adjacent to door, on latch side.
- B. Material: Laminated acrylic plastic ¼ inch total thickness, colors as selected by Architect.
  1. Upper Layer: Non-glare clear acrylic, 1/8 inch thick.
  2. Lower Layer: Opaque Acrylic, 1/8 inch thick.
- C. Type Required: Minimum 8 inches long, surface application, 7/8 inch high letters, 3/32 inch stroke width, fully tactile, with grade 2 BRAILLE indicator, or as indicated on drawings, whichever is more expensive.
  1. Provide signage where shown on plans
  2. Provide up to 15 letters per room sign
  3. Provide up to 4 numerals per room sign
  4. Provide for one sign for every door unless noted otherwise\*\*Signs may be combined into a single sign if approved by the Architect.
- D. Lettering Type Style: Helvetica Medium.

### 2.3 OCCUPANT LOAD SIGNS

- A. Provide maximum occupancy load signs where indicated or as required below. Install near main exit of following rooms:
  1. Assembly rooms.
  2. Classrooms greater than 1,000 sf.
- B. Material: Laminated plastic, ¼ inch thick, colors as selected by Architect.
  1. Upper Layer: Non-glare clear acrylic 1/8 inch thick.
  2. Lower Layer: Opaque acrylic, 1/8 inch thick.
- C. Type Required: minimum 4 inches high, minimum 8 inches long, sub-surface application, letters and numerals to comply with Table 11B-703.5.5 based on mounting height and distance from viewing location.
- D. Lettering Type Style: Helvetica complying with 11B.703.5
- E. Obtain occupant load number from Architect.
- F. Conform to Section 1002, California Building Code.

### 2.4 ACCESSIBILITY SIGN

- A. Provide at each accessible building entrance. Include International Symbol of Accessibility, manufacturer's standard, approved by Architect. Sign shall be visible to persons along approaching pedestrian ways. Provide additional directional signs as indicated on drawings.
- B. Conform to CBC 11B 703.2.1 for raised characters & CBC 11B 703.7.2.1 for ISA & directional visual signage.

**2.5 FIRE PROTECTION PLAQUE**

- A. Minimum 144 sq in size, manufacturer's standard approved by Architect, graphic layout indicating major building elements, corridors, exits, fire protection devices, routes of travel and required emergency information, in minimum 3 colors.
- B. Conform to Section 3.09, Title 19, CCR.
- C. Provide one plaque per building to be located by Architect during construction.

**2.6 ASSISTIVE LISTENING SYSTEM SIGN (ALS)**

- A. Provide in each Classroom and assembly spaces such as Conference Room, Gymnasiums, Multi-Use, etc. Graphic layout to include "ASSISTIVE LISTENING SYSTEM AVAILABLE" text and a graphic symbol of an ear as indicated on sign detail.
- B. Material: (2) layers of laminated plastic, ¼ inch thick, colors as selected by Architect.
- C. Lettering: 5/8" high Helvetica Medium tactile font, raised 1/32"
- D. Conform to CBC 11B 703.2.1 for raised characters & CBC 11B 703.7.2.1.

**3 PART 3 EXECUTION****3.1 EXAMINATION**

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means installer accepts existing surfaces.

**3.2 INSTALLATION**

- A. Install with clear silicone adhesive with zero clearance between plastic and face of substrate. Double face adhesive tape not permitted. All exterior signs to be installed with adhesive and with two (2) galvanized round head Torx Pin-Head stainless steel wood screws, 2" long minimum. Where indicated, provide colored covers to conceal screws. Where signs are to be installed directly on glass, provide vinyl backer in color specified by Architect, to mask adhesive on substrate. OR use the plastic material in same color as the sign. DO NOT USE "BLACK" UNLESS ARCHITECT NOTES THIS WITHIN THE SUBMITTAL. Install signs only after surfaces are finished, in locations indicated.
- B. Clean and polish.
- C. Code-required signs shall be field-inspected per CBC 11B-703.1.1.2.
- D. Where aluminum frames are used, anchor to walls with TapCon self tapping fasteners and anchor signs to frame with tape and silicone. At glass locations the frames shall be mounted to the glass with tape and silicone.

END OF SECTION

## SECTION 10 14 11

## SIGNS - RESTROOMS

## 1 PART 1 GENERAL

## 1.1 SECTION INCLUDES

- A. Plastic signs at restroom(s)

## 1.2 REFERENCES

- A. CBC Chapter 11B – Division 7.
- B. ASTM D4802 – Poly (Metal Methacrylate) Acrylic Plastic Sheet.

## 1.3 SUBMITTALS FOR REVIEW

- A. Submit shop drawings under provisions of Division 1.
- B. Submit shop drawings listing sign styles, lettering and locations and overall dimensions of each sign. Submit proofs of ALL signs prior to ordering for final approval.
- C. Submit samples under provisions of Section Division 1.
- D. Submit two samples illustrating full-size sample sign, of type, style and color specified including method of attachment. If accepted, samples may be installed in project.
- E. Submit manufacturer's installation instructions under provisions of Section Division 1.

## 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site and protect from damage. Store and install immediately prior to substantial completion.

## 1.5 PRE-INSTALLATION CONFERENCE

- A. Notify Architect when signs are ready for installation. Arrange for conference at the site. Do not proceed with installation until Architect's approval of specific locations and methods of attachment has been obtained.

## 1.6 REGULATORY REQUIREMENTS

- A. SIGNAGE REQUIREMENTS - Room Identification:
  - 1. Tactile characters shall be selected from fonts where widths of the upper case "O" is 60% min. & 110% max. of the height of the uppercase letter "I". Character height measured vertically from the baseline of the character shall be 5/8" min. & 2" max. based on the height of the uppercase letter "I". Stroke thickness shall be 15% max. of the height of the character.
  - 2. Characters and symbols shall be contrasting in color or image with either light letters on dark background or dark letters on light background. Colors to be selected by Architect.
  - 3. Letters and numbers on permanent room identification signs shall be raised minimum 1/32 inch, without serif.
  - 4. Upper case letters shall be accompanied by grade 2 BRAILLE tactile identification.
  - 5. Minimum height for raised characters or symbols: 5/8 inch. Maximum Height: 2 inches.
  - 6. Pictographs shall be accompanied by equivalent verbal description directly below and shall comply with CBC Section 11B-703.6.
  - 7. Signs shall be located within 18 inches from edge of door on wall adjacent to latch side of door or nearest adjacent wall (where there isn't wall space at the latch side). They shall be mounted 60 inches maximum above finished floor to baseline of highest row of tactile characters, and 48 inches minimum to baseline of the lowest braille cells. For double doors with an inactive leaf and an active leaf, sign shall be mounted on the inactive leaf. For double doors with two active leaves, sign shall be mounted to the right of the right leaf.



8. Conform to all other CBC requirements including finishes and contrasts.

## 2 PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Acrylic Plastic Sheet: ASTM D4802, laminated acrylic plastic, ¼ inch thick. Include up to (3) different colors of plastic to be used as part of the sign.
- B. Fasteners: Clear silicone sealant, as specified in Section 07 92 00.
- C. Frames: Where noted on drawings provide anodized aluminum frame with recessed edge at all signs. The color and finish of frame shall be selected by architect from full range of colors and finishes from the manufacture and colors that match the plastic sign material color.

### 2.2 RESTROOM SIGNAGE

- A. Male Restroom Signage:
  1. Doorways leading to male restrooms shall be identified by an equilateral triangle ¼ inch thick, with edges 12 inches long, with vertex pointing upward. Sign shall be mounted in center of door, 58 - 60 inches from finish floor to centerline of sign. Any pictograms shall be flush.
  2. The room shall be further identified by a rectangular room identification sign ¼ inch thick, 4 inches high upon which appears the word "MEN" in contrasting color, 2 inches high, minimum 1/32 inch thick, fully tactile, accompanied by a braille indicator immediately below, on the same sign. Sign shall be located on the wall on the latch side of door, 60 inches from finish floor to baseline of highest line of tactile character, 9 inches from edge of door (or on nearest adjacent wall if side wall is not large enough) to centerline of sign.
  3. International symbol of accessibility shall appear below the room identification sign or on the geometric door sign. Sign shall be ¼ inch thick, 6 x 8 inches in size upon which appears the international symbol of accessibility, 4-1/2 inches high, minimum 1/32 inch thick, in contrasting color.
- B. Female Restroom Signage:
  1. Doorways leading to female restrooms shall be identified by a circle ¼ inch thick, 12 inches in diameter upon which appears a female pictograph in contrasting color. Sign shall be mounted in center of door, 58-60 inches from finish floor to centerline of sign. Any pictograms shall be flush.
  2. The room shall be further identified by a rectangular room identification sign ¼ inch thick, 4 inches high upon which appears the word "WOMEN" in contrasting color, 2 inches high, minimum 1/32 inch thick, fully tactile, accompanied by a braille indicator immediately below, on the same sign. Sign shall be located on the latch side of door, 60 inches from finish floor to baseline of highest line of tactile character, 9 inches from edge of door (or on nearest adjacent wall if side wall is not large enough) to centerline of sign.
  3. International symbol of accessibility shall appear below the room identification sign or on the geometric door sign. Sign shall be ¼ inch thick, 6 x 8 inches in size upon which appears the international symbol of accessibility, 4-1/2 inches high, minimum 1/32 inch thick, in contrasting color.
- C. Unisex Restroom Signage:
  1. Doorways leading to unisex restrooms shall be identified by a circle ¼ inch thick, 12 inches in diameter with a ¼ inch thick triangle superimposed on the circle and

within the 12 inch diameter total ½ inch thick at triangle. Single user toilet facilities shall be identified as Gender Neutral per DSA BU 17-01. Triangle color shall contrast 70% min. with color of circle. Any pictograms shall be flush.

2. The room shall be further identified by a rectangular room identification sign ¼ inch thick, 4 inches high upon which appears the word "RESTROOM" or "UNISEX RESTROOM" in contrasting color, 2 inches high, minimum 1/32 inch thick, fully tactile, accompanied by a braille indicator immediately below, on the same sign. Sign shall be located on the wall on the latch side of door, 60 inches from finish floor to baseline of highest line of tactile character, and 48" minimum to base of braille, and 9 inches from edge of door (or on nearest adjacent wall if side wall is not large enough) to centerline of sign. Signage shall comply with CBC 11B-216.2 and DSA BU 17-01.
  3. International symbol of accessibility shall appear on the room identification sign.
- D. Sign colors shall contrast with color of door (and wall when mounted on wall).
  - E. Lettering Type Style: Helvetica Medium, caps only.
  - F. Substitute "BOYS" or "GIRLS"; "MEN" or "WOMEN" where appropriate.

### 3 PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means installer accepts existing surfaces.

#### 3.2 INSTALLATION

- A. Install with clear silicone adhesive with zero clearance between plastic and attachment surface. Double face adhesive tape not permitted.
- B. Install signs only after surfaces are finished, in center of door, or on wall adjacent to latch side as specified herein.
- C. Clean and polish.
- D. Signs shall be field inspected per CBC 11B.703.1.1.2

END OF SECTION

SECTION 23 00 00  
MECHANICAL GENERAL REQUIREMENTS

## PART 1 – GENERAL

## 1.01 CONDITIONS AND REQUIREMENTS

- A. Refer to the General Conditions, Supplementary Conditions, and Division 01 General Requirements.

## 1.02 SCOPE OF WORK

- A. Provide all labor, apparatus, and materials that are required to provide a complete installation as indicated on the drawings and in the specifications, including that reasonably inferred for proper execution of this Division.
- B. Consult all other Sections to determine the extent of this work specified elsewhere.
- C. Coordinate all utility requirements for equipment furnished under this Division. Rough-in required systems and make final connections.

## 1.03 REGULATIONS AND STANDARDS

- A. Install all work to meet or exceed requirements prescribed by governmental bodies having jurisdiction and in accordance with all federal, state, and local codes and ordinances, and all OSHA requirements. These codes include, but are not limited to the latest applicable edition of the following:
  - 1. California Building Code
  - 2. California Electrical Code
  - 3. California Plumbing Code
  - 4. California Mechanical Code
  - 5. California Energy Code
  - 6. California Green Buildings Standard
  - 7. California Fire Code
  - 8. National Fire Protection Association

## 1.04 QUALITY ASSURANCE

- A. Comply with current governing codes, ordinance and regulations of the Authority Having Jurisdiction and the regulations and requirements of the Owner's insurance underwriter.
- B. Where requirements differ between drawings, specifications, codes and standards, apply the more stringent.
- C. Should any change in drawings or specifications be required to comply with governing regulations, notify the Architect prior to submitting bid.

## MECHANICAL GENERAL REQUIREMENTS

- D. After contract is awarded, if minor changes or additions are required by the aforementioned authorities, even though such work is not shown on drawings or overtly covered in the specifications, they shall be included at the Contractor's expense.
- E. Execute work in strict accordance with the best practices of the trades in a thorough, substantial, skillful and well-executed manner by competent workers. Provide a competent, experienced full-time Superintendent who is authorized to make decisions on behalf of the Contractor.
- F. The Architect or Architect's Representative may conduct unannounced field reviews of any work completed or in progress. A report will be issued for all items that are found to be inconsistent with the contract documents. All items in the report shall be addressed in writing by the Contractor within two (2) weeks.

## 1.05 SAFETY

- A. Contractors must conduct a weekly safety meeting with their employees and maintain documentation of attendance and topics of discussion. Contractor shall comply with all OSHA regulations. Contractor is required to obtain and pay for insurance required to cover all activities withing Contractor's scope of work.

## 1.06 PERMITS, FEES, AND UTILITIES

- A. Secure and pay for all permits, licenses, inspections, and fees required.
- B. Coordinate with other Sections and schedule sequence of accomplishing the work in such a manner as not to interrupt existing services and utilities at a time that will inconvenience the Owner. Provide Owner a minimum 48 hour notice when utilities will be interrupted.

## 1.07 PAINTING

- A. See Division 09 for painting.

## 1.08 COORDINATION

- A. Coordinate with work performed by other Sections in order to ensure adequate space and proper location of all necessary work on this project whether or not work is under this Section. Coordination shall be done prior to order or manufacture of any systems or components.
- B. At a minimum, coordinate location of each piece of equipment, requirements for access panels, space required for supports, power requirements for each piece of equipment, and control requirements for each piece of equipment.
- C. Prepare complete set of construction coordination shop drawings indicating equipment actually purchased and exact routing of all piping and ductwork. Requirement for coordination shop drawings shall not be construed as authorization for contractor to make unauthorized changes to Contract Documents. Prior to final acceptance, contractor shall submit the coordination shop drawings as part of the record drawings.
- D. Wherever the work is of sufficient complexity, prepare additional detail drawings to scale to coordinate the work with the work of other trades. At completion, include a set of these drawings with the record drawings.
- E. Install the work in cooperation with other trades. Before installation, make proper provisions to avoid interferences.

- F. No additional costs will be considered for work which has to be relocated due to conflicts with other trades or for additional equipment/parts that need to be installed due to a lack of coordination prior to, or during, construction.

## PART 2 – PRODUCTS

### 2.01 EQUIPMENT AND MATERIALS

- B. Provide products and materials that are new, clean, free of defects, damage and corrosion. Inspect all materials and remove defective materials from the site.
- C. Provide materials and equipment bearing the label of, or listed by, the Underwriter's Laboratories (UL), unless the material or equipment is of a type for which label or listing service is not provided.
- D. Furnish all materials and equipment of the same type by the same manufacturer.
- E. Statically and dynamically balance rotating equipment for minimum vibration and lowest operating noise level.

### 2.02 ALTERNATE EQUIPMENT AND MATERIALS

- A. No substitute materials or equipment may be installed without the written approval of the Architect.
- B. Contract documents are based on materials specified and equipment manufacturers indicated. Acceptance of alternative equipment manufacturers does not relieve Contractor of the responsibility to provide equipment and materials which meet the quality and performance stated or implied in the contract documents.
- C. All submittals for substitution must include comparison to show equal with scheduled equipment. Submit proposals to supply alternate materials or equipment, in writing, with sufficient lead time for review prior to the date equipment must be ordered to maintain project schedule.
- D. No increase in the contract price will be considered to accommodate the use of alternative equipment, including revisions required by other trades.

### 2.03 SUBMITTALS

- A. Submit shop drawings, manufacturer's data, samples and test reports as specified.
- B. The review of submittals is for general compliance with the design concept and contract documents. Comments or absence of comments does not relieve the Contractor/Vendor/Manufacturer from compliance with the contract documents. The Contractor remains solely responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of construction, for performing the work in a safe manner, and for coordinating the work with that of other trades.
- C. No part of the work shall be ordered, procured, or installed until that work has been submitted, reviewed, and returned without comment.

- D. A minimum period of ten (10) working days will be required in the Engineer's office each time a submittal is sent for review. Contractor shall prioritize submittal reviews where multiple submittals are sent for review. This time period must be considered by the Contractor in the scheduling of the work.
- E. Submittals will be returned to indicate appropriate action taken as follows:
1. No Exceptions Taken.
  2. Make Corrections Noted. No Resubmittal Required.
  3. Revise and Resubmit.
  4. Rejected.
  5. Not Reviewed.
- F. Use electronic form acceptable to Architect for electronic submittals, containing the following information:
1. Project name.
  2. Date.
  3. Name and address of Architect and Engineer.
  4. Name of Owner.
  5. Name, address and contact information of Contractor.
  6. Names and contact information of sub-contractor, manufacturer, and supplier.
  7. Name of entity that prepared submittal.
  8. Category and type of submittal.
  9. Specification Section number and title.
  10. Drawing number and detail references, as appropriate.
  11. Transmittal number, numbered consecutively and revision number clearly identified.
  12. Each item submitted labeled or identified the same as on the drawings.
- G. Identify each sheet of submittal pages (using arrows, underlining or circling) to show applicable sizes, types, model numbers, ratings, capacities and options actually being proposed. Cross out non-applicable information.
- H. Organize submittals to keep all related items together; break submittal into sections and provide appropriate identifying tags on submittal pages to indicate item being submitted.
- I. Inadequate or incomplete submittals will not be reviewed and will be returned to the Contractor for resubmittal.
- J. Place orders for all equipment in time to prevent any delay in construction schedule or completion of project. No additional costs will be considered for any special handling charges or expedited processing required for materials or equipment not ordered in time.

**PART 3 – EXECUTION****3.01 EXAMINATION OF SITE**

- A. The Contract Documents do not make representations regarding the character or the extent of the subsoils, water levels, existing structural, mechanical, plumbing, and electrical installations, above or below grade, or other sub-surface conditions which may be encountered during the work.
- B. Evaluate existing conditions that may affect methods or cost of performing the work, based on examination of the site or other information. Failure to examine the Drawings or other information does not relieve the Contractor of responsibility for satisfactory completion of the work.

**3.02 DRAWINGS**

- A. Drawings show general arrangement and location of ductwork, piping, and equipment. Drawings are diagrammatic and intended to show approximate location and routing. Dimensions on drawings shall take precedence over scaled dimensions on drawings. Allow for supports, expansion, and pitch of ducts and piping. Field verify all dimensions.
- B. The exact locations of equipment, ducts, piping, and registers shall be ascertained from the Architect or the Owner's representative in the field. The Architect reserves the right to make minor changes in the location of ducts, registers, piping, and equipment up to the time of installation without additional cost.
- C. Furnish and install any incidental work not shown or specified which can reasonably be inferred as part of the work and necessary to provide a complete and workable system.
- D. Execute any work or apparatus shown on the Drawings and not specifically mentioned in the Specifications, or vice versa. Omission from Drawings or Specifications of any minor details of construction, installation, materials, or essential specialties does not relieve Contractor from furnishing complete workable system.

**3.03 RECORD DRAWINGS**

- A. Contractor shall maintain a complete set of documents on site that are marked up during the construction process indicating all changes that have been made. Record drawings shall be maintained up to date throughout construction. Indicate clearly all work installed differently from that shown.
- B. Upon completion of work, certify all record drawings with a stamp including the date and name of Contractor. Submit one (1) complete, bookmarked, set of electronic record drawings to the Architect for final review.
- C. Record drawings must include the following as a minimum:
  - 1. Actual equipment locations.
  - 2. Revisions or substitutions to equipment schedules.
  - 3. Duct/pipe size and routing.
  - 4. Dimensional changes to drawings.
  - 5. Revisions to details shown on drawings.
  - 6. Changes made by RFIs, Addenda, or Change Orders.

7. Locations of access panels and shut-off valves.
8. Locations and depths of underground utilities.
9. Controls sequence of operations.

#### 3.04 PROTECTION OF BUILDING

- A. Protect new and existing building structures and adjacent finished surfaces during construction. Patch, repair, and refinish existing work damaged by work under this Division to match adjacent undisturbed areas.

#### 3.05 DELIVERY, DRAYAGE AND HAULING

- A. Include all drayage, hauling, hoisting, shoring and placement in the building of equipment specified and be responsible for the timely delivery of equipment to the project as required by the construction schedule.
- B. Provide proper protection and storage of all items and tools required.
- C. If equipment is not delivered or installed at the project site in a timely manner as required by the construction schedule, the Contractor shall be responsible for disassembly, re-assembly, manufacturer's supervision, shoring, general construction modification, delays, overtime costs, etc. at no additional cost to the Owner.

#### 3.06 EQUIPMENT AND MATERIAL PROTECTION

- A. Protect the work, equipment, and material of other trades from damage by work or workers of this trade, and correct damage caused without additional cost to the Owner.
- B. The Contractor shall be responsible for all work, materials, and equipment until finally inspected, tested, and accepted. Protect work against theft, injury, or damage. Carefully store material and equipment received on site that is not immediately installed.
- C. Cover open ends of work with temporary covers or plugs during construction to prevent entry of dust, dirt, water or other obstructing material. Cover and protect equipment and materials from damage due to water, humidity, paint, spray-on fireproofing, construction debris, etc. Store equipment subject to moisture damage, such as insulation or electrical components in dry, heated spaces.
- D. Provide adequate means for fully protecting finished parts of the materials and equipment against damage from whatever cause during the process of the work until final acceptance.
- E. Do not install damaged items. Take immediate steps to obtain replacement or repair. Replace all wet or damp insulation or acoustic lining.

#### 3.07 QUALITY OF WORK

- A. The quality of work shall be of a standard generally accepted in the respective trade. Use only experienced, competent, and properly equipped workers. Replace work falling below this standard as directed by the Architect.
- B. Systems shall be worked into a complete and integrated arrangement with like elements arranged neatly with adequate head room and passageway free from obstructions.



**3.08 CUTTING AND PATCHING**

- A. Do not cut, channel or drill unfinished masonry, tile, etc. unless written permission is obtained from the Architect. Perform this work in a manner acceptable to the Architect. Cutting of structural members or footings is prohibited without the prior written consent of the Structural Engineer.
- B. Where cutting, channeling or drilling of floors, walls, partitions, ceilings, or other surfaces is necessary from the proper installation, support or anchorage of ductwork, piping, or equipment, lay out the work carefully in advance. Repair any damage to the building, piping, equipment or finishes using skilled tradesmen for all required work.
- C. Provide slots, chases, openings and recesses through floors, walls, ceilings and roofs as required. Where these openings are not provided, provide cutting and patching to accommodate penetrations.
- D. Provide sleeves for all ductwork and piping passing through new floors, walls, partitions, and any other building construction, of adequate diameter to allow minimum of 1" clearance all around between sleeve and ductwork or piping. When ductwork or piping is insulated, insulation shall pass continuously through sleeve with 1" clearance between insulation and sleeve or hole in existing construction.

**3.09 ACCESS**

- A. Damper operators, filters, and indicating equipment or specialties requiring reading, adjusting, inspection, repairing, removal, or replacement shall be conveniently and accessibly located with reference to finished building.
- B. No dampers, controls, or equipment shall be placed in a location that will be inaccessible after the system is complete. Access panels or doors shall be provided where required whether shown on Drawings or not.
- C. Access panels shall be 24" x 24" unless otherwise directed, style as selected by the Architect. Panels shall have the same acoustic barrier or rating as the construction in which panel is installed.
- D. Doors shall be Milcor, Newman or equal, with concealed hinges, screwdriver locks, prime coated with rust inhibitive paint, finish painted in field to match adjacent surface. Provide key locks where required by Architect/Owner. All access doors shall be keyed the same. Doors in walls of toilet rooms shall be stainless steel.
- E. Continuously check installation manuals for clearance and accessibility of equipment. No allowance of any kind will be made for negligence on part of Contractor to foresee means of installing equipment in proper position.

**3.010 SEISMIC RESTRAINTS**

- A. All equipment, ductwork, piping, and materials shall be fastened and securely anchored to building structure as required by the Drawings, Specifications, OSHPD Preapproval of Manufacturer's Certification OPM-0043-13 and OPM-0052-13, and the California Building Code.

**3.011 MANUFACTURER'S DIRECTIONS**

- A. Materials and equipment shall be installed in accordance with manufacturer's application and recommendations, requirements, and instructions, and in accordance with Contract Documents.
- B. Conflicts between manufacturer's instructions and Contract Documents shall be brought to the Architect's attention for resolution prior to installation.
- C. Where requirements indicated in Contract Documents exceed manufacturer's requirements, Contract Documents shall govern.

**3.012 BELT DRIVES**

- A. Belt drives for fans and equipment shall consist of "V" belts and sheaves.
- B. Drives that require not more than two belts shall be provided with variable pitch, driving sheaves to provide some speed adjustment above and below the normal required operating speed; the adjustments to be as near equal as practicable.
- C. Belts shall be furnished in matching sets.
- D. Fan drives for blower-type fans shall be selected for the proper fan speeds required for the air volumes specified or shown on the Drawings at the static pressures indicated. The static pressures indicated show estimated conditions, which may vary under actual operating conditions. Should it be necessary to adjust the fan speeds to obtain the proper air volume, the Contractor shall make the necessary changes to the drives without additional cost the Owner.

**3.013 ELECTRICAL MOTORS FOR HVAC EQUIPMENT**

- A. Provide electric motors for driving the mechanical equipment. Motors shall be of proper power, construction and speed to suit the specified equipment.
- B. Motors and motor control equipment shall conform to NEMA standards and shall be UL listed.
- C. Coordinate the NEMA type of each motor with the torque and inertia load of the equipment served, and the in-rush current characteristics of the motor with the motor starter selection, so that all items furnished constitute a complete motor control and protection package. Motor shall not operate in the 15% service factor range.
- D. Motors located in ducted air streams or subject to outside air elements shall be totally enclosed fan cooled; others shall be open drip-proof design.
- E. Motors used with variable frequency drives shall be designed specifically for use on AC inverter power and adjustable speed applications.
- F. Each motor shall be factory-wired to a junction box mounted on the motor or on the driven piece of equipment to facilitate single point of field power connection under Division 26.
- G. Motors 1/2 HP and smaller shall be rated 120 VAC – single phase – 60 hertz and shall be provided with integral thermal overload protection, unless otherwise indicated.
- H. Motors 3/4 HP and larger shall be rated for 208 VAC or 460 VAC – 3 phase – 60 hertz, unless otherwise indicated.

**3.014 COORDINATION WITH ELECTRICAL CONTRACTOR**

- A. Coordinate with the Electrical Contractor on furnishing and installing of controls, motors, starters, etc. Provide copies of submittal and installation data to Electrical Contractor for all items requiring electrical connection.
- B. Furnish and install all line voltage and low-voltage temperature control wiring in the Mechanical work, including all interlock wiring between motor starter coils, interlock relays, and temperature control equipment. Conduit for temperature control wiring shall be responsibility of Mechanical Contractor and shall be of type specified in Division 26.
- C. Electrical Contractor shall furnish disconnect switches, motor starters, conduit and wiring for line voltage power to the equipment. See Division 26 and Drawings.

**3.015 ELECTRICAL EQUIPMENT AND ELECTRICAL ROOM PRECAUTIONS**

- A. Do not install piping, equipment, or ductwork, plumbing, or any piping systems not included as part of the electrical work in the following rooms: switchgear, transformer, generator, elevator equipment, telephone, fire command, security, dimmer or electrical equipment rooms.
- B. Do not install piping, equipment, or ductwork within the code required service space for switchboards, disconnects, panelboards, dimmers, control panels, VFDs, individual motor controllers, electronics, etc.

**3.016 LUBRICATION**

- A. Provide means for lubricating all bearings and other machine parts. If a part requiring lubrication is concealed or inaccessible, extend a metallic lubrication tube with suitable fitting to an accessible location and identify it with permanent laminated plastic nameplates. Identify this location in the maintenance manual.
- B. After installation, properly lubricate all parts requiring lubrication and keep them adequately lubricated with a lubricant recommended by the equipment manufacturer until Owner acceptance.

**3.017 EQUIPMENT GUARDS**

- A. Provide easily (without tools) removable expanded metal guards for all hot surfaces, belts, couplings, exposed fan inlets and outlets, and other moving parts or machinery. Provide access openings for greasing, oiling, adjusting, etc. All guards shall comply with OSHA requirements and applicable codes.

**3.018 CATHODIC PROTECTION**

- A. Install dielectric unions at points in piping where dissimilar metal pipes are connected together.

**3.019 PIPING AND EQUIPMENT IDENTIFICATION**

- A. Furnish and install engraved nameplates with 1/4" minimum lettering at panel mounted control devices, manual control stations, power disconnects, motor starters, and pieces of equipment. Nameplates shall be white lettering on black background. For outdoor locations, provide brass engraved nameplates or plastic rated for outdoor use.

- B. Label each thermostat and switch with equipment connected to the thermostat or switch with black lettering on white background.
- C. Each piping system installed under this work shall be identified and the direction of flow indicated. Markings shall be applied after all painting, priming, and cleaning of the piping and insulation is completed. Labels shall be black lettering on colored backgrounds. Lettering shall be easily readable from the floor and background colors easily discernible. Furnish labels in every room and every 20' of pipe length.
- D. Tag all valves with 2" diameter brass tags noting the valve number and contents in the pipe. At the completion of the project, provide Owner with a valve listing for all valves installed in the project. Valve listing shall note valve tag number, contents in the pipe and the areas (room numbers, etc.) that are impacted by valve.

### 3.020 GUARANTEE

- A. The Contractor shall guarantee the quality of all work and the quality of the equipment and materials in accordance with the provisions of the General Conditions and Special Conditions. Should any defects occur during this period, the Contractor shall promptly repair or replace defective items as directed by the Architect, without cost to the Owner.
- B. Contractor shall be responsible for damage to any part of premises during guaranteed period caused by leaks or breaks in work furnished and/or installed under this Section.

### 3.021 TESTING

- A. Test all ductwork, equipment, piping, and systems as called for in the Specifications. Notify Architect and inspection authorities prior to testing so that they may be witnessed. Protect all personnel and equipment during testing.

### 3.022 OPENINGS

- A. Locating and sizing of all openings for ductwork and piping through walls, roof, etc. shall be done under this Division. Framing of openings shall be done by the respective trades in whose work the opening is made.

### 3.023 CLEAN-UP

- A. During the course of work under this Division, all rubbish, debris, surplus materials, tools, etc. resulting from this work shall be removed from work area and shall be disposed of off-site at the end of each working day. The Owner's premises shall be left clean and in a condition acceptable to the Architect.
- B. Clean all work installed under this Contract to satisfaction of Owner.
- C. Remove debris and trash from ductwork, fan units, and all air handling equipment. Vacuum clean fan housing, coils, and ducts in vicinity of openings before grilles and registers are installed. Replace construction filters with new filters prior to project completion.

**3.024 ACCEPTANCE TESTING**

- A. Equipment and systems requiring acceptance testing certification for Code Compliance shall have Certificate of Acceptance completed and submitted to enforcement agency. See Drawings for equipment and systems requiring acceptance certification. Tests shall be performed by Certified Mechanical Acceptance Test Technician. Contractor shall be responsible for procuring the required test forms from the California Energy Commission website.

**3.025 OPERATING INSTRUCTIONS AND OPERATOR TRAINING**

- A. Provide the services of factory-trained specialists to supervise the operation of all equipment and train the Owner's operating and maintenance personnel.
- B. Instruct the Owner's operating personnel in the basis of design, the available documentation, the proper starting sequences, operation, shut-down, minor adjustments, troubleshooting, recommended spare parts, and regular maintenance procedures.
- C. Submit training agenda, schedule and list of representatives to the Owner for review ten (10) days prior to training. Confirm attendance at training by sign-in sheet. At a minimum, the training agenda shall cover all items required to be provided in the operating and maintenance manuals.

**3.026 OPERATING AND MAINTENANCE MANUALS**

- A. Provide operating instructions and maintenance manuals for all equipment and material furnished under this Division.
- B. Provide the following equipment and maintenance information where applicable:
  - 1. Systems and Equipment Controls – describe sequence of operation and diagram controls as required.
  - 2. Identifying equipment manufacturer, product name, and model number.
  - 3. Locations.
  - 4. Wiring Diagrams.
  - 5. Lubrication Charts.
  - 6. Manufacturer's recommended operating and maintenance instructions, with all non-applicable information deleted.
  - 7. Assembly and disassembly instructions.
  - 8. Startup procedures.
  - 9. Routine and normal operating instructions.
  - 10. Normal and emergency shutdown instructions.
  - 11. Troubleshooting diagnostic instructions.
  - 12. Parts list and recommended spare parts including name and address of source of supply.
- C. Contractor must start compiling above data immediately upon approval of submittals for equipment and materials.
- D. Submit one (1) electronic copy of operating and maintenance manuals, indexed and bookmarked, for review by Architect/Engineer.

- E. Submit three (3) complete sets of bound hard copies of operating and maintenance manuals, and one (1) electronic copy to Owner within thirty (30) days of issuance of final occupancy permit.

END OF SECTION

**SECTION 23 05 00  
HEATING, VENTILATING, AIR CONDITIONING**

**PART 1 – GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01, and Division 23 Sections apply to this Section.

**1.02 SCOPE OF WORK**

- A. Provide labor, materials, equipment, and services to furnish and install complete mechanical systems which shall include, but not limited to equipment, ductwork, piping, accessories, insulation, and supports.

**1.03 SUBMITTALS**

- A. Submit for review, within fifteen (15) days after signing Contract, the required number of copies of a complete list of materials proposed for use. This list includes:
  - 1. Ductwork.
  - 2. Duct Insulation and Lining.
  - 3. Dampers and Duct Accessories.
  - 4. Mechanical Supports.
  - 5. Controls.
- B. No substitute materials or equipment shall be installed without the written approval of the Architect.
- C. No increase in the contract price will be considered to accommodate the use of alternative equipment, including revisions required by other trades.
- D. Submit test reports on all systems tested. Tests required by Authorities Having Jurisdiction over the work shall be submitted on appropriate forms to the satisfaction of such authorities.

**PART 2 – PRODUCTS**

**2.01 HVAC EQUIPMENT**

- A. See Schedules on Drawings for equipment data. Furnish and install all equipment in accordance with Drawings, manufacturer's recommendations, and all applicable codes.

**2.02 DUCTWORK**

- A. Comply with latest edition of SMACNA HVAC Duct Construction Standards, Metal and Flexible for acceptable materials, material thicknesses, and duct construction methods, unless otherwise indicated. Comply with NFPA 90A when ducts traverse through smoke zones.
- B. Comply with UL 181 and California Energy Code Section 120.4 requirements for air distribution ducts and plenums.

- C. Ducts shall be minimum 24 gauge thickness. Ducts shall be constructed for 2500 FPM maximum velocity and static pressure classes as follows:
  - 1. Supply Ducts: +3 inch w.g.
  - 2. Return Ducts: - 2 inch w.g.
  - 3. Exhaust Ducts: -2 inch w.g.
- D. Longitudinal seams: Groove and Pittsburgh lock seams and slip joints shall be used.
- E. Duct Connections: Ductmate industries "Ductmate 35" and "Ductmate 45". Ductmate "Spiralmate" for round duct. Ductmate "Ovalmate" for oval duct.
- F. Duct sealing shall be DP 1010 water based duct sealant and SMACNA approved foil-backed pressure sensitive tape or Hardcast, Two Part II Duct Sealing System: DT-5400 tape with RTA-50 sealant.
- G. Flexible ducts shall be UL 181 and Class I air duct in compliance with SMACNA HVAC Duct Construction Standards, Metal and Flexible, and NFPA 90A and 90B.
- H. Flexible ducts shall be two-ply vinyl film supported by helically wound spring-steel wire, R4.2 fiberglass insulation, exterior reinforced laminated vapor barrier film. Duct shall be rated for +2 inch w.g., -1 inch w.g., 4000 FPM maximum velocity, and -10°F to +160°F. Flame Spread less than 25, Smoke Developed less than 50.

### 2.03 DUCT INSULATION AND LINING

- A. All duct insulation and lining shall comply with California Energy Code Section 120.4 requirements for air distribution ducts and plenums.
- B. Insulation shall conform to NFPA 90A and 90B, and UL 181, Class I. Insulation shall have Flame Spread not over 25 and Smoke Developed of not over 50.
- C. Wherever external duct insulation is specified and internal acoustic treatment of equivalent insulating effect is also required by the Drawings or Specification for the same location, the external insulation may be omitted.
- D. Acceptable Manufacturers: Johns Manville, Owens Corning or approved equal.
- E. Acoustic Duct Liner: 1" thick, R4.2 in directly conditioned space and 2" thick, R8.0 in unconditioned space or outdoors. Owens Corning Quiet R, or approved equal.
- F. Duct Insulation: 3" thick, R8.3 in unconditioned space and 1 1/2" thick, R4.2 for indirectly conditioned space. Owens Corning SoftR Ductwrap FRK, or approved equal.
- G. Duct Insulation Outdoor: 2" thick rigid board fiberglass, R8.7 with 0.016 inch thick sheet Aluminum jacket.

### 2.04 DAMPERS AND DUCT ACCESSORIES

- A. Acceptable manufacturers:
  - 1. Dampers: Ruskin, Air Balance Inc, Pottorff, or approved equal.
  - 2. Actuators: Belimo, Honweywell, or approved equal.
  - 3. Turning vanes: Ductmate industries, Duro Dyne, or approved equal.
  - 4. Flexible connectors: Duro Dyne, Ventafabrics, or approved equal.



5. Duct access doors: Ductmate industries, Ward industries, or approved equal.
  6. Backdraft dampers: Ruskin, Greenheck, Air Balance Inc, or approved equal.
- B. Provide volume dampers as specified or shown on the Drawings for proper balancing and distribution of air. Provide single blade dampers in ducts 24 inches in width or less, or 12 inches in height or less. Provide multiple blade, opposed blade design, dampers for all other duct sizes. Coordinate with the balancing contractor and provide additional dampers required for proper air balance.
  - C. Dampers shall be galvanized steel construction and shall be minimum 2 gauges thicker than duct gauge. Damper shall be pivoted to turn easily, provided with operating handles and locking devices mounted on the outside of the duct in an accessible location. Dampers shall be reinforced for rigidity.
  - D. Damper actuators for control dampers shall be modulating, 24V power supply, 0-10V DC control input, weatherproof construction.
  - E. Turning vanes shall comply with SMACNA HVAC Duct Construction Standards, Metal and Flexible for vanes and vane runners. Vane runners shall automatically align vanes.
  - F. Manufactured Turning Vanes: Fabricate 1 1/2" wide, double vane, curved blades of galvanized steel construction set to 3/4" o.c. Support with bars perpendicular to blades set 2" o.c. and set into vane runners suitable for duct mounting.
  - G. Flexible duct connectors shall be flame retardant fabrics, coatings, and adhesives complying with UL 181, Class I. Where exposed to weather, fabric shall be double coated with weatherproof, synthetic rubber resistant to UV rays.
  - H. Duct access doors shall be airtight and suitable for duct pressure class, constructed of galvanized steel with insulation fill as integral part of appropriate thickness. Include cam latches, sash locks, and hinges such that doors can easily be opened without tools. Seal around frame with neoprene or foam rubber.
  - I. Backdraft dampers shall be multi blade, parallel action gravity balanced, or adjustable counter-balance weighted dampers. Dampers shall have center pivoted blades of maximum 6" width, with sealed edges, assembled in rattle free manner with 90-degree stop. Provide with adjustment device to permit setting for varying differential static pressure.

## 2.05 HANGERS AND SUPPORTS

- A. Subject to compliance with requirements, provide products by one of the following manufacturers or other approved equal:
  1. B-Line.
  2. Mason West.
  3. Unistrut.
  4. Power Strut.
  5. Hilti.
- B. Qualify welding processes and operators according to ASME Boiler and Pressure Vessel Code. Comply with AWS D1.1 procedures for field welding.
- C. Duct attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.

**2.06 SLEEVES**

- A. Construct sleeves for pipes passing through walls, floors, partitions, hung or furred ceilings, etc. of minimum 18 gage galvanized steel, flanges on each side of wall, partition, hung or furred ceiling, etc.
- B. Provide standard weight galvanized steel pipe sleeves with welded anchor flanges at foundation walls and reinforced concrete or masonry walls.
- C. Provide 20 gage galvanized sheet metal sleeves for round ductwork passing through masonry or concrete construction. Rectangular ductwork shall be provided with framed openings through floor and wall construction.
- D. Install escutcheons at exposed piping through floors, ceilings, walls and partitions in finished areas, within cabinets and millwork, and piping through all fire-rated separations.

**2.07 CONTROLS**

- A. Furnish and install programmable thermostats where indicated. Coordinate exact locations with Architect.
- B. If indicated on Drawings, provide thermostats by specified manufacturer.
- C. Thermostats shall comply with latest edition of California Energy Code for demand responsive capabilities and occupancy monitoring if required.
- D. Mount thermostats 48 inches above finished floor.
- E. Control wiring shall be installed per manufacturer's instructions and wiring diagrams. Wiring in walls and exposed spaces shall be in conduit and in accordance with Division 26. Wiring above ceiling shall be plenum rated cable complying with NFPA 70.

**2.08 PAINTING**

- A. See Division 09 for painting.
- B. Prime and paint diffuser boot and duct interiors where visible through grilles with a matte black finish.
- C. Prime and paint exposed ductwork, supports, and registers where required by the Architect.
- D. Prime and paint louver or grille interiors where required by the Architect.

**PART 3 – EXECUTION****3.01 EXAMINATION**

- A. Examine areas and conditions for compliance with requirements for installation clearances, tolerances and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.02 EQUIPMENT INSTALLATION**

- A. Equipment shall be installed level, on curbs or supports as required and/or indicated on Drawings and in accordance with manufacturer's instructions and recommendations.

- B. Equipment shall be installed in locations shown and as complete assemblies with adequate service clearances for access and maintenance as required by codes and equipment installation manuals.

### 3.03 DUCTWORK INSTALLATION

- A. All ductwork gauges, joints, bracing, reinforcing, and other details shall be in accordance with latest edition of SMACNA manuals unless otherwise specified.
- B. Duct dimensions are net, inside, clear dimensions. For internally lined ducts, add lining thickness to determine metal duct dimensions.
- C. Provide minimum 24-gauge sheet metal construction for ducts. Construct ducts with NFPA 90A gauges when traversing smoke zones.
- D. Construct ducts of galvanized sheet metal, except where otherwise indicated or specified.
- E. Construct all ductwork to dimensions indicated, straight and smooth on the inside with neatly finished joints lapped in direction of travel.
- F. Fabricate changes in direction, both horizontal and vertical, to permit easy airflow.
- G. At exposed duct penetrations of walls, floors and ceilings, provide sheet metal angle type escutcheons fastened to the duct only.
- H. Duct Openings: Provide openings where required to accommodate thermometers, smoke detectors, controllers, wiring, conduit, tubing, etc. insert through air-tight rubber grommets.
- I. Provide pitot tube openings where required for testing of systems. Include threaded metal cap, spring loaded cap or threaded plug to eliminate any air leakage. Coordinate locations of openings with balancing contractor.
- J. Install ductwork to clear all obstructions, preserve headroom, and keep openings clear. Install exposed ducts as high as possible. Coordinate with other trades to maintain minimum 7'-6" clearance above finished floor, unless otherwise indicated.
- K. Install ducts unless otherwise indicated, vertically or horizontally and parallel and perpendicular to building lines; avoid diagonal runs.
- L. Coordinate layout with suspended ceiling, lighting layouts, and similar finished work.
- M. Install dampers in branch duct for all air inlets and outlets at accessible location. Dampers shall be capable of adjustments and of being locked into position.
- N. Use radius elbows in rectangular ductwork unless otherwise indicated. Centerline radius shall be a minimum 150 percent of duct width. Where space does not permit duct radius, install square elbow with turning vanes.
- O. Ends of ducts shall turn over 3/4" for airtight connections between ducts and grilles. The ducts and grilles shall have separate sets of screws. Register frames and ends of ducts shall be properly placed before finishing is begun.
- P. All ducts shall be supported per SMACNA HVAC Duct Construction Standards. Supports and seismic bracing shall be in accordance with OSHPD Preapproval of Manufacturer's Certification OPM-0043-13 and OPM-0052-13, and the California Building Code.

- Q. Ducts exposed to weather shall be completely waterproof with outdoor vapor barrier mastic over tape at all joints and seams. Slope entire top of duct down towards sides and coordinate duct slope with roof slope. Arrange standing seam, joints, and flanges to prevent accumulation, ponding or pooling of water.
- R. Seal joints and seams of ductwork airtight to SMACNA seal classifications.
- S. Protect all ductwork and interiors of ducts shall be clean and free from foreign materials until building is enclosed.
- T. All ductwork and sealing shall comply with California Energy Code Section 120.4 requirements for Air Distribution System Ducts and Plenums.

#### 3.04 DUCT INSULATION AND LINING INSTALLATION

- A. Concealed ductwork shall be insulated with fiberglass ductwrap.
- B. Provide acoustic lining where indicated on Drawings.
- C. All supply and return ductwork shall be insulated, or acoustically lined on the inside when ductwork is exposed.
- D. Exhaust duct need not be insulated. Outside air duct indoors need not be insulated. Outside air duct installed outdoors shall be insulated.

#### 3.05 DUCT ACCESSORIES INSTALLATION

- A. Flexible connections shall be installed on inlet and outlet duct connections of fans, air conditioning units, furnaces, and all other HVAC equipment. Fabric shall be of weight and strength for service required, properly fitted to render connection airtight. Fabric of sufficient width to provide minimum 4" between connected items.
- B. Install backdraft dampers on exhaust fans or exhaust ducts nearest to outside and where indicated. Install backdraft dampers at roof hoods or louvers connected to ductwork.
- C. Install duct access doors to allow for inspecting, adjusting, and maintaining accessories and terminal units. Access doors shall be large enough for maintenance.

#### 3.06 HANGERS AND SUPPORTS INSTALLATION

- A. All equipment, plenums, registers, ductwork, and piping shall be securely anchored to building structure and seismically braced as required by the Drawings and Specifications. Comply with OSHPD Preapproval of Manufacturer's Certification OPM-0043-13 and OPM-0052-13, and the California Building Code.
- B. Comply with SMACNA HVAC Duct Construction Standards – Metal and Flexible for hanger rod or sheet metal strap sizes and spacing for duct supports.
- C. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.
- D. Install lateral bracing with pipe hangers and supports to prevent swaying.
- E. Install hangers and supports so piping live and dead loads and stresses from movement will not be transmitted to connected equipment.

- F. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- G. Install hangers and supports to provide indicated pipe slopes.
- H. Adjust hangers to distribute loads equally on attachments.
- I. Trim excess length of continuous-thread hanger and support rods to 1 1/2 inches.
- J. Perform all welding in accordance with standards of the American Welding Society. Clean surfaces of loose scale, rust, paint or other foreign matter and properly align before welding. Use wire brush on welds after welding.

### 3.07 ADJUSTING

- A. Adjust equipment and components to function smoothly, and lubricate as recommended by manufacturer.
- B. Adjust initial temperature setpoints. Adjust initial airflow settings and discharge airflow patterns.
- C. Set field adjustable switches and circuit breaker trip ranges according to manufacturer's written instructions.

### 3.08 FIELD QUALITY CONTROL

- A. Engage a factory authorized service representative to inspect field assembled components and equipment installation, including piping and electrical connections. Provide a written report of inspection to the Architect.
- B. Engage a factory authorized service representative to perform startup service. Complete installation and startup checks according to manufacturer's written instructions. Provide completed startup sheets for each piece of equipment to the Architect.

### 3.09 TRAINING AND O&MS

- A. Refer to Section 23 00 00 Mechanical General Requirements and Division 01 for Training requirements, Operating and Maintenance Manuals, and other Closeout procedures.

**END OF SECTION**

**SECTION 23 05 93  
TESTING, ADJUSTING, AND BALANCING FOR HVAC**

**PART 1 – GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01, Division 22, and Division 23 Specification Sections, apply to this Section.

**1.02 WORK INCLUDED**

- A. Test and balance air distribution systems.

**1.03 QUALITY ASSURANCE**

- A. Work shall be performed by independent testing agency certified by AABC or NEBB. Work shall be performed by qualified technicians and trained personnel, using instruments certified accurate to its limits.
- B. Use standard forms from AABC's National Standards for Testing, Adjusting and Balancing or NEBB's Procedural Standards for Testing, Adjusting and Balancing.
- C. Calibrate instruments at least every twelve months or more frequently if required by the instrument manufacturer.

**1.04 COORDINATION**

- A. Coordinate efforts of HVAC controls installers, and other mechanics to operate HVAC systems and equipment to support and assist with testing, adjusting, and balancing activities.
- B. Check for and report defects or deficiencies that may affect balancing.
- C. Mechanical Contractor shall advise Balancing Contractor of changes made to the system during construction.
- D. Mechanical Contractor shall install test holes or wells complete with removable and replaceable plugs or caps, dampers as specified on Drawings and where required by Balancing Contractor to obtain final system balance.
- E. Mechanical Contractor shall make any changes in the pulleys, belts, and dampers, or the addition of dampers for the correct balance as recommended by Balancing Contractor at no additional cost to the Owner.
- F. Controls Contractor shall cooperate with and work with the Balancing Contractor when setting damper linkages, minimum outside air dampers, and other air volume devices, and shall be available for readjusting of dampers, devices or controls.

**1.05 SUBMITTALS**

- A. Within 30 days of Contractor's Notice to Proceed, submit the following documents:
  - 1. TAB agency and team member qualifications.
  - 2. Strategies and procedures plan.

3. Sample report forms intended for use on this project.
  4. Instrument calibration reports.
- B. Submit final, completed balance report prior to request for final mechanical observation of the project.

## PART 2 – PRODUCTS

### 2.01 INSTRUMENTS

- A. Utilize test instruments and equipment of type, precision, and capacity as recommended in the AABC or NEBB standards.
- B. Instruments for testing and balancing of air and hydronic systems shall have been calibrated within a period of 6 months and verified for accuracy prior to start of work.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Prior to construction, examine the Contract Documents to become familiar with the project requirements and to discover conditions in the systems' designs that may preclude proper testing, adjusting and balancing of systems and equipment.
- B. Examine system and equipment installations to verify that balancing devices are properly installed and accessible for effective balancing.
- C. Recommend adjustments and/or corrections to mechanical equipment and hydronic and air distribution systems that are necessary for proper balancing of systems.

### 3.02 GENERAL PROCEDURE

- A. Perform testing and balancing procedures on each system according to procedures contained in AABC or NEBB standards.
- B. Testing and balancing shall not begin until system has been completed and is in full working order.
- C. Cut insulation, ducts, pipes, and equipment cabinets for installation or test probes to the minimum extent necessary for balancing procedures. After testing and balancing, close probe holes and patch insulation with new materials identical to those removed. Restore vapor barrier and finish according to insulation Specifications for this project.
- D. Permanently mark settings on valves, splitters, dampers, and other adjustment devices.
- E. Balance to a maximum measured flow deviation from specified values of plus or minus 10 percent at terminal devices and outlets, and plus or minus 5 percent at equipment.
- F. At final inspection, recheck random selections of data recorded in report to verify balance has not been disrupted.

### 3.03 AIR SYSTEMS PROCEDURE

- A. Execute air systems balancing for each air system in accordance with AABC or NEBB standards and as described herein.

- B. Conduct tests with supply, return and exhaust systems operating and doors and windows closed or in their normal operating condition.
- C. Construction filters shall be removed before testing and balancing. Tests shall be done with final filters installed. Allowances shall be made for air filter resistance at time of tests. The main air supplies shall be set with filter resistance midway between clean and dirty filters.
- D. Test and adjust fan or blower speed to design requirements.
- E. Test and record motor full load amps. Record each installed motor manufacturer and motor efficiency.
- F. Traverse main supply air ducts, using a pitot tube and manometer.
- G. Submit data in support of fan deliveries by the following methods:
  - 1. By summation of the air quantity readings at inlets or outlets.
  - 2. By duct traverse of main ducts.
- H. Test and record required and measured system static pressures; filter differential, coil differential and fan total static pressure.
- I. Test and adjust systems for design recirculated airflow rates.
- J. Test and adjust system for outside airflow rates. Measure and adjust outside airflow rates for all fan speeds.
- K. Test and record entering and leaving air temperatures.
- L. Inspect and confirm all fire dampers are open, all smoke dampers and fire/smoke dampers are in the correct positions, all duct access doors are closed and fire damper fusible links are accessible.
- M. Adjust zones to proper design supply, return, and exhaust flow rates.
- N. Test and adjust each air inlet and air outlet and transfer duct to within 10 percent of design requirements.
- O. Adjust diffusers, grilles and registers to minimize drafts, dumping, and to prevent short circuiting between supply and return outlets.
- P. Vary total system airflow rates by adjustment of fan speeds. Vary branch air quantities by damper regulation.
- Q. Record installed fan drive assemblies; fans sheaves, motor sheaves, belts and motors.
- R. The final balanced condition of each area shall include testing and adjusting of pressure conditions. Test and record building pressurization levels in variable volume systems throughout full range of fan delivery rates, under both heating and cooling conditions. For multi-story buildings, test pressure conditions at ground, intermediate and upper levels. Front doors, stair and vestibule doors, exits and elevator shafts shall be checked for airflow so that leakage does not cause excessive or abnormal pressure conditions. Document abnormal building leakage conditions noted.
- S. Complete balancing to achieve positive building pressure unless otherwise instructed. A positive pressure relative to outside of 0.02 inch wg minimum and 0.05 inch wg maximum shall be achieved, measure with negligible outside wind velocity.



### 3.04 ACCEPTANCE

- A. Mechanical systems shall not be considered ready for final inspection until balancing results acceptable to the Architect are obtained.
- B. If it is found that specified airflows cannot be achieved on portions of the system, the actual conditions shall be reported to the Architect for consideration of corrective action.

### 3.05 BALANCE REPORT

- A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.
- B. General Report Data: In addition to form titles and entries, include the following data:
  - 1. Title page.
  - 2. Name and address of the TAB firm and specialist.
  - 3. Project name.
  - 4. Project location.
  - 5. Architect's name and address.
  - 6. Engineer's name and address.
  - 7. Contractor's name and address.
  - 8. Report date.
  - 9. Signature of TAB supervisor who certifies the report.
  - 10. Summary of contents including the following:
    - a. Design versus final performance.
    - b. Notable characteristics of systems.
    - c. Description of system operation sequence if it varies from the Contract Documents.
- C. Report shall be indexed as follows:
  - 1. Air

- a. Summary.
- b. Procedure.
- c. Instrumentation.
- d. Drawings.
- e. Equipment Summary.
- f. Fan Sheets.
- g. Fan Curves.
- h. Fan Profile Data.
- i. Static Data.
- j. Traverse Data and Schedule.
- k. Terminal Unit Summary.
- l. Outlet Data Summary and Schematics (per system).
- m. Building Pressurization Data.

END OF SECTION

**SECTION 23 09 22  
CLIMATE MANAGEMENT CONTROL FOR HVAC**

**PART 1 – GENERAL****1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01, Division 22, and Division 23 Specification Sections, apply to this Section.

**1.02 CONTROL SYSTEM DESCRIPTIONS**

- A. The Building Automation System (BAS) shall be as indicated on the drawings and described in these specifications. System shall include a network of commercial Internet-programmable thermostats, their accessories, and any other networked devices required for complete climate management. Devices shall communicate across a wireless network using IEEE 802.15.4 technical standards. A single Ethernet-connected Gateway shall be able to connect the wireless mesh network to the Internet, allowing for climate management through a cloud based web-application.
- B. Access and control of BAS shall be through a web-based graphical management platform. The BAS platform shall sit on a cloud server and be accessible on both local personal computers and remotely by use of a web-browser that supports HTML5 or later.
- C. No on-site servers are to be installed or used for the BAS. No licensing fees or future licensing fees shall be required as part of the BAS. These specifications and guidelines are to create a cohesive and secure network that provides full management over the facility's climate through the cloud BAS.
- D. The BAS shall accommodate an unlimited simultaneous multiple-user operation. Access to the BAS shall be limiting based on security permissions of each operator's role managed by owner site Administrators.

**1.03 CODES AND STANDARDS**

- A. Codes and Standards. Meet requirements of all applicable standards and codes, except when more detailed or stringent requirements are indicated by the Contract Documents, including requirements of this Section:
  - 1. California 2019 Title 24 Compliant
  - 2. California Energy Commission Occupant Control Smart Thermostat (OCST) certified
  - 3. OpenADR 2.0 certified

**1.04 APPROVED BUILDING AUTOMATION SYSTEM MANUFACTURERS**

- A. Pelican Wireless Systems.

**1.05 SUBMITTALS**

- A. Shop drawings and manufacturer's standard specification data sheets on all hardware shall be provided for this project. No work may begin on any segment of this project until the Engineer and Owner have reviewed submittals for conformity with the plan and specifications.

- B. Shop drawings shall include basic floor plans depicting locations of all equipment and wiring to be controlled by system and locations of thermostats, gateways, and other equipment provided under this section. Drawings shall also show location of electrical power, low voltage wiring and data ports required for proper installation of systems of this section.
- C. Shop drawings shall include wiring diagrams and sequences of operation.
- D. The Contractor prior to submitting shall check all documents for accuracy.
- E. The Engineer will make corrections, if required, and return to the Contractor. The Contractor will then resubmit with the corrected or additional data. This procedure shall be repeated until all corrections are made to the satisfaction of the Engineer and the submittals are fully approved.

## 1.06 WARRANTY

- A. The contractor shall warrant the system for 12 months after system acceptance and beneficial use by the owner. During the warranty period, the contractor shall be responsible for all necessary revisions as required to provide a complete and workable system consistent with the letter and intent of the Sequence of Operation section of the specification. BAS equipment shall include a limited-warranty by the manufacturer for a period of five (5) years from the time of system acceptance.
- B. Limited-warranty by manufacturer is limited to replacement of defective products.

## PART 2 – PRODUCTS

### 2.01 COMMUNICATION

- A. This project shall be comprised of a network of devices that use an IEEE 802.15.4 self-creating and self-healing wireless mesh communication network to reach an Ethernet Gateway.
- B. The Gateway shall communicate to cloud servers via a single Ethernet connection at the owner's wide area network (WAN) over a TCP/IP connection. The facility's firewall shall not require any inbound port assignments for the Gateway to connect to the cloud servers. The Gateway shall not require a Public IP.

### 2.02 OPERATOR INTERFACE

- A. The BAS shall be controlled, managed, and configured using a Web-App on any personal computer, smartphone, and/or tablet that runs a browser with HTML5 or newer.
- B. The Web-App platform shall run on cloud servers which allow for virtual access. Platform shall not run on a local on-site server.
- C. The Web-App shall support at a minimum, the following functions:
  - 1. Personal user log-on identifications (email addresses) and unique passwords shall be required.
  - 2. Custom HTML programming shall not be required to display any graphics, data, or build the Web-App. There shall be no development cost, commissioning costs, or software upgrade cost required to obtain and use the Web-App.
  - 3. Storage of historical data shall reside on the cloud server and shall not sit within the client's computer, internal network, or other devices.

4. System shall allow for administrator and user defined access privileges.
5. A Push/Pull OpenAPI interface with XML data output shall be available.

#### D. Control and Override

1. The BAS shall provide view, override, and edit of the status of any object and property in the system. The status of the device shall be defined graphically and shall not require any custom programs or programming.
2. Temporary Overrides. The BAS shall be able to provide temporary override (wherever an override is allowed) and automatically remove the override after a specified period of time.
3. Any override and edit of an object virtually or at the device, if allowable, shall be historically tracked.

#### E. Scheduling

1. The BAS shall provide users with scheduling of application devices through a graphical interface. Scheduling shall include, but is not limited to:
  - a. Occupied/Unoccupied Schedules. Shall allow 12 scheduled set-time changes in a single day, be configurable for Daily, Weekly, and Weekday/Weekend layouts, and shall be able to be unique to individual devices or easily shared between multiple devices, where applicable.
  - b. Event Schedules. Shall allow for advanced one-time or repeating event type schedules. Event schedules shall override Occupied/Unoccupied Schedules. After the Event schedule ends, the device shall revert back to the Occupied/Unoccupied Schedule automatically.
  - c. Vacation Schedules. A 360-day Calendar shall provide override of schedules during vacation days. Thermostats shall be able to automatically or be manually switched to follow Vacation Schedules instead of Occupied/Unoccupied Schedules.

#### F. Alarm Notification

1. Alarm Notification(s) shall be generated if there are failures detected by devices part of the BAS. These failures shall be, but are not limited to: temperature deviations, temperatures missing targets, temperatures too high or too low, failures of equipment, etc. Alarm Notification(s) shall be posted on the BAS and shall be able to be sent either via email or text message to an unlimited number of users.

#### G. Reports and Logs

1. Data shall be logged and stored on cloud servers for all devices part of BAS in real-time. Every device real-time "state change", when applicable, shall be stored and viewable for at least one week, with the option of up to two (2) years.

- a. Each space temperature
  - b. Each temperature set point(s)
  - c. Each current call: heat, cool, number of stages, fan, economizer, etc.
  - d. Each damper position
  - e. Each valve position
  - f. Each CO<sub>2</sub> change
  - g. Each CO<sub>2</sub> setting
  - h. Each current call for ventilation due to high CO<sub>2</sub>
  - i. Each Fan speed adjustment
  - j. Supply, Return, Outside air temperatures
2. Data shall be represented on historical graphs that allow for easy viewing of device state change at different times.

### 2.03 APPLICATION-SPECIFIC CONTROLLERS

- A. Application Specific Controllers shall not require custom programming and shall control specific equipment through simple configuration settings done through the cloud-based BAS. All configuration changes shall automatically upload into the device once set on the BAS and shall be stored by the device's internal memory.
- B. Configuration of Devices and System
  1. To meet the sequence of operation for each controller, the controller shall be configured through the BAS by the installing contractor. No custom programming or downloading by use of a service tool shall be required.
  2. Stand-Alone Operation: Each piece of equipment specified shall provide stand-alone operation. BAS devices shall not require web connection or communication to the BAS to run under normal operations.
- C. Gateways are devices which connect to an Ethernet port and act as a bridge between the BAS cloud servers and the wireless mesh network.
  1. Shall be capable of providing Internet connection to up to 2,000 devices.
  2. Shall be capable of automatically addressing routing tables to all devices part of wireless mesh network and shall not require manual programming or addressing.
  3. Shall communicate to cloud servers over a TCP/IP outbound-only connection.
  4. Shall not require a Public IP address, custom VPNs, or any on-site servers.
  5. Shall communicate to other BAS devices over the dedicated and isolated 802.15.4 IEEE technical standard.
  6. Shall be secured using AES (Advanced Encryption Standards).
- D. Internet-Enabled Thermostats are controllers which detect a space/zone temperature and operate equipment or dampers which supply heating, cooling, ventilation, or a combination of the three mechanical states, to their space/zone.
  1. Shall be capable of providing 24VAC outputs which can be configured to provide control of the following: two stages of fan, three stages of cooling, two stages of heating, one stage of auxiliary heat (heat pumps), floating point zone dampers, two position zone dampers.

2. Shall include a removable wiring terminal module that allows for thermostat installation even in situations where there are only three wires between equipment and where the thermostat is to be installed.
  3. Shall be available with the following internal sensors: temperature only, temperature and humidity, temperature, humidity, and CO<sub>2</sub>, and temperature and CO<sub>2</sub>. All sensors required by the specifications are to be internal to the thermostat and not require two devices on the wall.
  4. Shall be able to accept expansion accessories that allow for more advanced control sequences, and additional temperature detection.
  5. Shall communicate with the wireless mesh network through an internal wireless antenna that runs on the 802.15.4 technical standards.
  6. Shall be able to automatically repeat the wireless mesh network to additional devices part of the BAS.
  7. Shall automatically push, in real-time, to the BAS all "state changes" so as to be viewable historically and in real-time from BAS.
  8. Shall be able to lock-out heat pump compressor(s) based on outside air temperature.
  9. Shall provide set-point (heat & cool) temperature limitations through BAS.
  10. Shall provide full local keypad lock-out from BAS.
  11. Shall meet California Title 24 code standards.
  12. Shall have both a heat setpoint, cool setpoint, and auto-changeover.
  13. Shall have Optimum Start algorithms that will calculate start times based on at least seven (7) days of previous run-time temperature and rate-of-change historical data for its space. Optimum Start algorithm shall recalculate each optimized schedule time before each optimized schedule.
  14. Shall be able to be manually overridden through BAS.
  15. Shall be configured through BAS.
- E. Wired Temperature Inputs are to be available to provide external temperature detection for specific BAS devices.
1. Shall accept 10K type II thermistors.
  2. Shall push to the BAS real-time temperature changes so as to be viewable historically and in real-time from the BAS.
  3. Shall accept a thermistor at a maximum of up to 100 feet from input terminal.
  4. Shall be configured through the BAS.
- F. Internet-Enabled Economizer Controller are controllers that modulate an outside air damper to provide ventilation and economization to a single zone.
1. Shall only require a dry-bulb outside air temperature sensor and dry-bulb supply air temperature sensor.
  2. Shall communicate with thermostat to determine space temperature and space temperature setpoint in order to decide when economization can be used.
  3. Shall continue to economize as its only source of cooling as long as the outside air temperature is able to keep the space temperature within 1°F of the cool temperature setpoint.
  4. Shall be able to enable mechanical cooling at the same time as economization.

5. Shall be able to prevent the supply air temperature from dropping below a minimum temperature.
  6. If connected to a CO<sub>2</sub> thermostat, shall be able to provide demand ventilation control of outside air damper.
  7. Shall have a minimum ventilation damper position and a maximum ventilation damper position.
  8. Shall be able to be scheduled to not open the outside air damper for ventilation during unoccupied hours.
  9. Shall be able to control a Variable Frequency Drive (VFD) with up to five (5) fan speed inputs.
  10. Shall modulate an outside air damper by use of a 0-10VDC signal.
  11. Shall accept a 0-10VDC signal feedback input from the outside air damper actuator to confirm outside air damper is working correctly.
  12. Shall meet all California Title 24 codes, including Fault Detection and Diagnostic requirements.
  13. Shall send Fault Detection and Diagnostic information to the BAS.
  14. Shall accept a minimum of three (3) 10K type II thermistors.
  15. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from BAS.
  16. Shall be able to be manually overridden through the BAS.
  17. Shall be configured through the BAS.
- G. Internet-Enabled Power Relay Module are controllers which have dry-contact relays able to start/stop different electrical equipment. Examples are exhaust fans, lights, pumps, valves, boilers, chillers, etc.
1. Shall have relays with a max rating of 120 VAC @ 15 AMPs or 240/277 VAC @ 10 AMPs.
  2. Shall have a low-voltage terminal for momentary contact override inputs. Override time shall be configurable for a specific amount of minutes through a configuration from the BAS.
  3. Shall be able to provide Lead/Lag sequencing between relays.
  4. Shall be able to accept an external dry-contact input.
  5. Shall communicate with the wireless mesh network through an external wireless antenna that runs on the 802.15.4 technical standards. Antenna shall be able to communicate with Power Relay Module over three (3) 18-gauge wires up to 500 feet between device terminal inputs.
  6. Shall be able to automatically repeat the wireless mesh network to additional devices part of the BAS.
  7. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from the BAS. Examples are changes in relay positions On or Off.
  8. Shall be able to be manually overridden through the BAS.
  9. Shall be configured through the BAS.
- H. Make-up Air Controllers which operate equipment supplying ventilation to the building.



1. Shall communicate with the wireless mesh network through a removable wireless antenna that runs on the 802.15.4 technical standards.
  2. Remote mountable antenna shall be able to communicate to Controller over three (3) 18-gauge wires up to 500 feet between devices terminal inputs.
  3. Communication from the Controller to zone/space Thermostat(s) shall be over the wireless mesh network.
  4. Shall be capable of providing 24VAC outputs which can be configured to provide control of the following: multiple stages of fan, multiple stages of cooling, and multiple stages of heating.
  5. Shall be capable of providing 0-10VDC outputs which can be configured to provide control of the following: modulating variable speed fan (VFD), modulating outside air damper, modulating heating, modulating cooling.
  6. Shall be able to modulate a VFD to maintain a targeted building static pressure.
  7. Shall have integrated outside air damper control logic.
  8. Shall directly accept a building pressure probe. Shall have an integrated short-term and long-term learning PID loop algorithm for maintaining target building pressure. PID loop shall not require any type of cost for programming, is to be factory loaded into controller, and updatable virtually through EMS.
  9. Shall only require dry-bulb outside and supply air temperature sensors.
  10. If communicating to CO<sub>2</sub> thermostat(s), shall be able to provide demand ventilation control of outside air damper.
  11. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from the BAS. Examples are changes in equipment operation (heat, cool, fan, economization, ventilation), number of stages active, the supply air temperature, the return air temperature, the outside air temperature, hot water valve position, supply duct static reading, variable speed fan setting, etc.
  12. Shall be scheduled On or Off through the BAS.
  13. Shall be able to be manually overridden through the BAS.
  14. Shall be configured through the BAS.
- I. Wireless Proximity Sensors are thermostat accessories which are able to detect when a door or window is opened or closed, or be able to accept a dry-contact input from an occupancy sensor.
1. Shall be able to communicate to a single Internet-Programmable Thermostat over wireless mesh network.
  2. Shall communicate with the wireless mesh network through an internal wireless antenna that runs on the 802.15.4 technical standards.
  3. Shall run on two AA batteries and not require any unique type of battery to operate.
  4. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from the BAS.
  5. Shall be configured through the BAS.
- J. Remote Wireless Sensors are thermostat accessories which are used to either average temperatures between the sensors location and a master thermostat or to relocate the sensing location of the master thermostat without having to run new wire.

1. Shall be able to communicate to a single Internet-Programmable Thermostat over wireless mesh network.
  2. Shall communicate with the wireless mesh network through an internal wireless antenna that runs on the 802.15.4 technical standards.
  3. Shall run on two AA batteries and not require any unique type of battery to operate.
  4. Shall push all "state changes" to the BAS as to be viewable historically and in real-time from the BAS.
  5. Shall be configured through the BAS.
- K. Wireless Repeaters are devices which extend the 802.15.4 wireless mesh network across large expanses or where BAS devices are unable to repeat the wireless mesh network on their own.
1. Shall communicate with the wireless mesh network through an internal wireless antenna that runs on the 802.15.4 technical standards.
  2. Shall be able to automatically repeat the wireless mesh network to additional devices part of the BAS.
  3. Shall not require an Ethernet connection or any TCP/IP connection.
  4. Shall only require a single 120V outlet for power.

### PART 3 – EXECUTION

#### 3.01 EXAMINATION

- A. The Contract Documents shall be thoroughly examined for coordination of control devices, their installation, wiring, and commissioning. Coordinate and review mechanical equipment specifications, locations, and identify any discrepancies, conflicts, or omissions that shall be reported to the Architect/Engineer for resolution before rough-in work is started.
- B. The BAS manufacturer shall be available to provide assistance to contractor in order to verify that control equipment can be installed as required, and any discrepancies, conflicts, or omissions shall be reported to the Architect/Engineer for resolution before rough-in work is started.

#### 3.02 PROTECTION

- A. The installing contractor shall protect all work and material from damage by their work or personnel, and shall be liable for all damage thus caused.
- B. The installing contractor shall be responsible for their work and equipment until final inspection, testing, and acceptance. The BAS installing contractor shall protect their work against theft or damage, and shall carefully store material and equipment received on site that is not immediately installed. The Contractor shall close all open ends of work with temporary covers or plugs during storage and construction to prevent entry of foreign objects.
- C. Installation of BAS shall be performed by an approved Contractor. Approved contractor is one whom either has installed the BAS before or has been approved by the BAS manufacturer. The Contractor shall certify all work as proper and complete. Under no circumstance shall the design, scheduling, coordination, programming, training, and warranty requirements for the project be delegated to a subcontractor unless that subcontractor meets the BAS approved Contractor requirements as stated above.

- D. Demolition. Remove controls which do not remain as part of the BAS. The owner will inform the Contractor of any equipment which is to be removed that will remain the property of the owner. All other equipment which is remove will be disposed of by the Contractor.
- E. Code Compliance. All wiring shall be installed in accordance with all applicable electrical codes and will comply with equipment manufacturer's recommendations.
- F. Clean Up. During installation, contractor shall maintain a clean environment. At the completion of the work, all equipment pertinent to this contract shall be checked and thoroughly cleaned, and all other areas shall be cleaned around equipment provided under this contract.

### 3.03 HARDWARE INSTALLATION

- A. All devices are to be mounted level/plumb and per the manufacturer's installation documentation.
- B. Identification.
  - 1. Identify all control wires with labeling tape or sleeves using either words, letters, or numbers that can be exactly cross-referenced with as-built drawings.
  - 2. All field enclosures, other than controllers, shall be identified with a nameplate. The lettering shall be in white against a black or blue background.
  - 3. Junction box covers will be marked to indicate that they are a part of the BAS.
  - 4. All field devices (except space sensors) that are not mounted within FIP's shall be identified with name plates.
  - 5. All field devices inside FIP's shall be labeled.
- C. Existing controls are not to be reused. All BAS devices will be new.
- D. Location.
  - 1. The location of sensors is as indicated in the mechanical and architectural drawings.
  - 2. Space temperature, humidity, and CO<sub>2</sub> sensors will be mounted away from machinery generating heat, direct light, and/or diffuser air streams.
  - 3. If external temperature sensors are installed, sensors will be mounted away from machinery generating heat, direct light, and/or diffuser air streams.
  - 4. If outdoor air temperature sensors are installed, sensors are to be installed such that the effects of heat radiated from the building or sunlight is minimized.

### 3.04 SYSTEM CONFIGURATION

- A. General. The installing contractor shall provide all labor necessary to install, initialize, start-up and troubleshoot all system hardware and configurations described in this section. This includes any requirements necessary to access the web application on third-party devices.
- B. Installing contractor shall work with owner's representative to determine configuration parameters including but not limited to hours of operation, set points, system variables, naming of devices, and site naming. Naming of devices and the site shall be performed by the installing contractor. Naming convention of space thermostats shall be space served. Naming convention of zone controllers shall be the equipment serial number. All naming shall be provided by or agreed upon with the owner.

### 3.05 SYSTEM STARTUP & COMMISSIONING

- A. Each BAS component in the system shall be tested for both hardware and software functionality. In addition, each mechanical and electrical system under control of the BAS will be tested against the appropriate sequence of operation. Documentation shall be provided to the owner that proves installation and testing has been completed. Successful completion of the system tests shall constitute the beginning of the warranty period.
- B. The contractor shall provide all manpower required to assist the Balancing Contractor in testing, adjusting, and balancing all systems in the building. The contractor shall have a trained technician available on request during the balancing of the systems. The contractor shall include all labor and materials in his contract to assist with functional testing of system as it relates to the BAS.
- C. Upon completion of installation, the following documents shall be submitted for approval prior to final completion and include:
  - 5. Testing and Commissioning Reports and Checklists signed off by trained field commissioning personnel.
  - 6. Name, address and telephone number of Contractor personnel managing and installing equipment, along with service personnel responsible for supporting the ongoing warranty and services of the control system.
  - 7. Procedures for operating the BAS, including logging on/off, alarm management, reading reports, trends, modification of setpoints, scheduling, and other interactive system requirements.
  - 8. Provide information on how to receive support from Pelican Wireless Systems and communicate that they are a direct supporting resource.

### 3.06 TRAINING

- A. The Contractor shall provide training for owner representatives and/or maintenance personnel.
- B. On-site training shall consist of a minimum of (3) hours of hands-on instruction geared at the operation and maintenance of the systems. The curriculum shall include:
  - 1. System Overview
  - 2. System Application and Operation
  - 3. System Access
  - 4. Application Features Overview
  - 5. Changing Set Points and other attributes
  - 6. Scheduling
  - 7. Editing configurable variables
  - 8. Graphics
  - 9. Viewing Historical Reports
  - 10. Operational sequences including start-up, shutdown, adjusting and balancing
  - 11. Equipment maintenance

**3.07 OPERATING AND MAINTENANCE MANUALS**

- A. The operation and maintenance manuals shall contain all information necessary for the operation, maintenance, replacement, installation, and parts procurement for the entire BAS.
- B. Following project completion and testing, the BAS contractor will submit as-built documentation reflecting the exact installation of the system.

**END OF SECTION**

## **SECTION 260500**

### **GENERAL ELECTRICAL REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.01 Description of Work:**

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations that are shown on the Drawings, included in these specifications, or otherwise needed for a complete and fully operating facility.**
- B. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.**

##### **1.02 Related Work:**

- A. This Section provides the basic Electrical Requirements which supplement the General Requirements of Division 01 and apply to all Sections of Division 26.**

##### **1.03 Submittals:**

- A. As specified in Division 01. Submit to the Architect shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site. Partial submittals are not acceptable and will be returned without review. Furnish manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable Federal, Industry and Technical Society Publication References, and years of satisfactory service of each item required to establish contract compliance. Photographs of existing installations and data submitted in lieu of catalog data are not acceptable and will be returned without approval.**
- B. Organize submittals for equipment and items related to each specification section together as a package.**
- C. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.**
- D. Substitutions shall be proven to the Architect or Engineer to be equal or superior to the specified product. Architect's decision is final. The Contractor shall pay all costs incurred by the Architect and Engineer in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.**
- E. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.**
- F. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which are a result of the**

substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.

#### 1.04 Quality Assurance:

- A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions following applicable codes:
  - 1. California Electrical Code (CEC).
  - 2. Occupational Safety and Health Act (OSHA) standards.
  - 3. All applicable local codes, rules and regulations.
  - 4. Electrical Contractor shall possess a C-10 license and all other licenses as may be required. Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.
- B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.
- C. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).
- D. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.
- E. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.
- F. All work and materials covered by this specification shall be subject to inspection at any and all times by representatives of the owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.

#### 1.05 Contract Documents:

- A. Drawings and Specifications:
  - 1. In the case of conflict between the drawings and specifications, the specifications shall take precedence.
  - 2. Drawings and specifications are intended to comply with all law, ordinances, rules and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, said laws, ordinance, rules and regulations shall be considered as a part of said Contract Documents within the limits specified. The Contractor shall bear all expenses of correcting work done contrary to said laws, ordinance, rules and regulations if the Contractor knew or should have known that the work as performed is contrary to said laws, ordinances, rules and regulations and if the Contractor performed

same (1) without first consulting the Architect for further instructions regarding said work and/or (2) disregarded the Architect's instructions regarding said work.

- B. Drawings:** The Electrical Drawings shall govern the general layout of the completed construction.
1. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; verify locations with the Architect prior to installation.
  2. Review the Drawings and Specification Divisions of other trades and perform the electrical work that will be required for those installations.
  3. Should there be a need to deviate from the Electrical Drawings and Specifications, submit written details and reasons for all changes to the Architect for approval.
  4. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Architect.
  5. All drawings and divisions of these specifications shall be considered as whole. The contractor shall report any apparent discrepancies to the Architect prior to submitting bids.
  6. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.

#### 1.06 Closeout Submittals:

- A. Manuals:** Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 01.

#### 1.07 Coordination:

- A.** Coordinate the electrical work with the other trades, code authorities, utilities and the Architect.
- B.** Provide and install all trenching, backfilling, conduit, pull boxes, splice boxes, etc. for all Utility Company services to the locations indicated on the Drawings. All materials and construction shall be in accordance with the requirements for all the Utility Companies. Prior to performing any work, the Electrical Contractor shall coordinate with the various Utility Companies and obtain utility company engineering drawings. Verify that all such work and materials shown on the Drawings are of sufficient sizes and correctly located to provide services on the site. The Electrical Contractor shall verify with all the Utility Companies that additional contractor furnished and installed work is not required. If additional work, materials, or changes are required by any of the Utility Companies, the Electrical Contractor shall advise the Architect of



such changes and no further work shall then be performed until instructed to do so by the Architect. The Electrical Contractor shall coordinate with the various Utility Companies to schedule inspections and to obtain service connections.

- C. The Electrical Contractor shall schedule all utility work necessary for utility inspections, connections, cable installation, etc. for the new electrical service to meet the construction schedule.
- D. Utility Company charges shall be paid by the Owner.
- E. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
- F. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
- G. When two trades join together in an area, make certain that no electrical work is omitted.

#### 1.08 Job Conditions:

- A. Operations: Perform all work in compliance with Division 1[01]
  - 1. Keep the number and duration of power shutdown periods to a minimum.
  - 2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
  - 3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.
- B. Construction Power: Unless otherwise noted in Division 01 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power [from the owner's on site source. Energy costs shall be paid for by the Owner.] [to the site. Energy costs shall be paid by the General Contractor.]
- C. Storage: Provide adequate storage for all equipment and materials which will become part of the completed facility so that it is protected from weather, dust, water, or construction operations.

#### 1.09 Damaged Products:

- A. Notify the Architect in writing in the event that any equipment or material is damaged. Obtain approval from the Architect before making repairs to damaged products.

#### 1.10 Locations:

- A. General: Use equipment, materials and wiring methods suitable for the types of locations in which they are located.
- B. Dry Locations: All those indoor areas which do not fall within the definition below for Wet Locations and which are not otherwise designated on the Drawings.

- C. **Wet Locations:** All locations exposed to the weather, whether under a roof or not, unless otherwise designated on the Drawings.

#### 1.11 Safety and Indemnity:

- A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.
- B. No act, service, drawing review or construction review by the Owner, the Engineer or their Consultants is intended to include reviews of the adequacy of the Contractors safety measures in or near the construction site.
- C. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
- D. If a work area is encountered that contains hazardous materials, the contractor is advised to coordinate with the owner and it's abatement consultant for abatement of hazardous material by the Owner's Representative. "Hazardous materials" means any toxic substance regulated or controlled by OSHA, EPA, State of California or local rules, regulations and laws. Nothing herein shall be construed to create a liability for Aurum Consulting Engineers regarding hazardous materials abatement measures, or discovery of hazardous materials.

#### 1.12 Access Doors:

- A. The contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".
- B. All access doors installed lower than 7'-0" above finished floor and exposed to public access shall have keyed locks.
- C. Where specific information or details relating to access panels differ from Division 26 paragraph 1.12 of these specifications, or shown on the electrical drawings and details or under other Divisions of work, those requirements shall supersede these specifications.

#### 1.13 Arc Flash:

- A. The contractor shall install a clearly visible arc flash warning to the inside door of all panelboards and industrial control panels, as well as to the front of all switchboards and motor control centers that are a part of this project.

- B. The warning shall have the following wording: line 1 "WARNING" (in large letters), line 2 "Potential Arc Flash Hazard" (in medium letters), line 3 & 4 "Appropriate Personal Protective Equipment and Tools required when working on this equipment".

#### 1.14 Emergency Boxes:

- A. All boxes and enclosures for emergency circuits shall be permanently marked with a readily visible red spray painted mark.

### PART 2 - PRODUCTS

#### 2.01 Standard of Quality:

- A. Products that are specified by manufacturer, trade name or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are established to be equal to the specified product and approved by the Architect prior to installation.
- B. Material and Equipment: Provide materials and equipment that are new and are current products of manufacturers regularly engaged in the production of such products. The standard products shall have been in satisfactory commercial or industrial use for two years prior to bid opening. The two-year period includes use of equipment and materials of similar size under similar circumstances. For uniformity, only one manufacturer will be accepted for each type of product.
- C. Service Support: Submit a certified list of qualified permanent service organizations including their addresses and qualification for support of the equipment. These service organizations shall be convenient to the equipment installation and able to render service to the equipment on a regular and emergency basis during the warranty period of the contract.
- D. Manufacturer's Recommendations: Where installation procedures are required to be in accordance with manufacturer's recommendations, furnish printed copies of the recommendations prior to installation. Installation of the item shall not proceed until recommendations are received. Failure to furnish recommendation shall be cause for rejection of the equipment or material.

#### 2.02 Nameplates:

- A. For each piece of electrical equipment, provide a manufacturer's nameplate showing his name, location, the pertinent ratings, the model designation, and shop order number.
- B. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Where not otherwise specified, lettering shall be a minimum of 0.25 inch high normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.

#### 2.03 Fasteners:

- A. Fasteners for securing equipment to walls, floors and the like shall be either hot-dip galvanized after fabrication or stainless steel.

#### 2.04 Finish requirements:

- A. Equipment: Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is otherwise unsatisfactory, to the satisfaction of the Architect.
- B. Wiring System: In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

### PART 3 - EXECUTION

#### 3.01 Workmanship:

- A. Ensure that all equipment and materials fit properly in their installation.
- B. Perform any required work to correct improperly fit installation at no additional expense to the owner.
- C. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the "NECA-1 Standard Practices for Good Workmanship in Electrical Contracting". Workmanship of the entire job shall be first class in every respect.

#### 3.02 Equipment Installations:

- A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
- B. Do all the cutting and patching necessary for the proper installation of work and repair any damage done.
- C. Earthquake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per CBC Section 1616A Title 24, part 2 and ASCE7-10, Sections 13.3 and 13.6 and Table 13.6-1.
- D. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, pach-ometer, or prof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.

#### 3.03 Field Test:

- A. Test shall be in accordance with Acceptance testing specifications issued by the National Electrical Testing Association (NETA).
- B. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service. Make additional calibration and adjustments if it is determined later that the initial adjustments are not satisfactory for proper performance. Perform equipment field test for equipment where

equipment field tests are specified in the equipment Specifications. Give sufficient notice to the Architect prior to any test so that the tests may be witnessed.

- C. Provide instruments, other equipment and material required for the tests. These shall be of the type designed for the type of tests to be performed. Test instrument shall be calibrated by a recognized testing laboratory within three months prior to performing tests.
- D. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.
- E. Re-testing will be required for all unsatisfactory tests after the equipment or system has been repaired. Re-test all related equipment and systems if required by the Architect. Repair and re-test equipment and systems which have been satisfactorily tested but later fail, until satisfactory performance is obtained.
- F. Maintain records of each test and submit five copies to the Architect when testing is complete. All tests shall be witnessed by the Architect. These records shall include:
  - 1. Name of equipment tested.
  - 2. Date of report.
  - 3. Date of test.
  - 4. Description of test setup.
  - 5. Identification and rating of test equipment.
  - 6. Test results and data.
  - 7. Name of person performing test.
  - 8. Owner or Architect's initials.
- G. Items requiring testing shall be as noted in the additional electrical sections of these specifications.

#### 3.04 Cleaning Equipment:

- A. Thoroughly clean all soiled surfaces of installed equipment and materials.

#### 3.05 Painting of Equipment:

- A. Factory Applied: Electrical equipment shall have factory applied painting system which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test and the additional requirements specified in the technical section.
- B. Field Applied: Paint electrical equipment as required to match finish of adjacent surfaces.

#### 3.06 Records:

- A. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revising, deleting and adding to the Drawing Sheets as required. The following requirements shall be complied with:
1. Cable Size and Type: Provide the size and type of each cable installed on project.
  2. Substructure: Where the location of all underground conduits, pull boxes, stub ups and etc. where are found to be different than shown, carefully mark the correct location on the Drawings. Work shall be dimensioned from existing improvements.
  3. Size of all conduit runs.
  4. Routes of concealed conduit runs and conduit runs below grade.
  5. Homerun points of all branch circuit.
  6. Location of all switchgear, panels, MCC, lighting control panels, pullcans, etc.
  7. Changes made as a result of all approved change orders, addendums, or field authorized revisions.
  8. As Built: At the completion of the Work the Contractor shall review, certify, correct and turn over the marked up Drawings to the Architect for his use in preparing "as built" plans.
  9. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.

### 3.07 Clean Up:

- A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Architect.

### 3.08 Mechanical and Plumbing Electrical Work:

- A. The requirements for electrical power and/or devices for all mechanical and plumbing equipment supplied and/or installed under this Contract shall be coordinated and verified with the following:
1. Mechanical and Plumbing Drawings.
  2. Mechanical and Plumbing sections of these Specifications.
  3. Manufacturers of the Mechanical and Plumbing equipment supplied.
- B. The coordination and verification shall include the voltage, ampacity, phase, location and type of disconnect, control, and connection required. Any changes that are required as a result of this coordination and verification shall be a part of this Contract.
- C. The Electrical Contractor shall furnish and install the following for all mechanical and plumbing equipment:
1. Line voltage conduit and wiring.

2. Disconnect switches.
  3. Manual line motor starters.
- D. Automatic line voltage controls and magnetic starters shall be furnished by the Mechanical and/or Plumbing Contractor and installed and connected by the Electrical Contractor. When subcontracted for by the Mechanical and/or Plumbing Contractor, all line voltage control wiring installed by the Electrical Contractor shall be done per directions from the Mechanical and/or Plumbing Contractor.
- E. All low voltage control wiring for Mechanical and Plumbing equipment shall be installed in conduit. Furnishing, installation and connection of all low voltage conduit, boxes, wiring and controls shall be by the Mechanical and/or Plumbing Contractor.
- F. Disconnects (Motor And Circuit)
1. Disconnect switches shall be provided and located at all motors.
  2. Switches for three-phase motors shall be heavy-duty, horsepower rated three-pole, and surface mounted except as noted on drawings.
  3. Switches containing more than three poles shall be as specified on the drawings.
  4. Switches for single-phase, fractional horsepower motors shall be heavy-duty, horsepower rated.
  5. Disconnect switches shall be as manufactured by ITE- Siemens, General Electric or Square D.
- G. Disconnects (Motor: Fused):
1. Disconnect switches shall be provided and located at all motors.
  2. Switches for three-phase motors shall be heavy-duty, horsepower rated three-pole, and surface mounted except as noted on drawings.
  3. Switches containing more than three poles shall be as specified on the drawings.
  4. Switches for single-phase, fractional horsepower motors shall be heavy-duty, horsepower rated.
  5. Disconnect switches shall be as manufactured by ITE- Siemens, General Electric or Square D.
- H. Manual motor starters, where required, shall have toggle type operators with pilot light and melting alloy type overload relays, SQUARE D COMPANY, Class 2510, Type FG-1P (surface) or Type FS-1P (flush) or ITE, WESTINGHOUSE or GENERAL ELECTRIC equal.

END OF SECTION

**SECTION 260519**  
**LINE VOLTAGE WIRE AND CABLE**

**PART 1 - GENERAL**

**1.01 Description of Work:**

- A. The work of this Section consists of providing all wire and cable rated 600 volts or less, including splices and terminations, as shown on the Drawings and as described herein.

**1.02 Related Work:**

- A. See the following Specification Section for work related to the work in this Section:
  - 1. 260542 Conduits, Raceways and Fittings.
  - 2. 260533 Junction and Pull Boxes.

**1.03 Quality Assurance**

- A. Field tests shall be performed as specified in paragraph 3.04 of this Section.

**PART 2 - PRODUCTS**

**2.01 Conductors:**

- A. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 600 volt rated insulation.
- B. Conductors shall be stranded copper.
- C. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
- D. All conductors used on this Project shall be of the same type and conductor material.

**2.02 Cables:**

- A. All individual conductors shall be copper with type THHN/THWN, 600 volt rated insulation.
- B. [Non metallic – sheathed cable (Romex): Type “NM”, 600 volt rated with insulated copper conductors, No. 12 AWG minimum size, and internal copper ground wire.]
- C. [Type MC Armored Cable



1. Conductors shall be copper type THHN/THWN/MTW oil and gasoline resistant, 600 volt rated insulation.
2. Conductors shall be stranded copper No.8 AWG and above.
3. Minimum power and control wire shall be No.12 AWG unless otherwise noted.
4. All conductors used on this project shall be of the same type and conductor material.
5. Light weight aluminum interlocked armor.
6. Integral green insulated grounding conductor.]

D. Insulation Marking - All insulated conductors shall be identified with printing colored to contrast with the insulation color.

E. Color Coding - As specified in paragraph 3.03.

F. Special Wiring - Where special wiring is proposed by an equipment manufacturer, submit the special wiring requirements to the Owner's Representative and, if approved, provide same. Special wire shall be the type required by the equipment manufacturer.

G. Other Wiring - Wire or cable not specifically shown on the Drawings or specified, but required, shall be of the type and size required for the application and as approved by the Owner's Representative.

H. Manufacturer - Acceptable manufacturers including Cablec, Southwire, or equal.

#### 2.03 Terminations:

A. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.

B. Wire Terminations – Stranded conductors shall be terminated in clamping type terminations which serve to contain all the strands of the conductor. Curling of a stranded conductor around a screw type terminal is not allowed. For screw type terminations, use a fork type stake-on termination on the stranded conductor. Use only a stake-on tool approved for the fork terminals selected.

C. End Seals - Heat shrink plastic caps of proper size for the wire on which used.

#### 2.04 Tape:

A. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

### PART 3 - EXECUTION

#### 3.01 Cable Installation:

- A. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 260542 - Conduits Raceway and Fittings.
- B. All line voltage wiring shall be installed in conduit.
- C. All feeder conductors shall be continuous from equipment to equipment. Splices in feeders are not permitted unless specifically noted or approved by the Electrical Engineer.
- D. All branch circuit wiring shall be run concealed in ceiling spaces, walls, below floors or in crawl spaces unless noted otherwise.
- E. Cable Pulling - Exercise care in pulling wires and cables into conduit or wireways so as to avoid kinking, putting undue stress on the cables or otherwise abrading them. No grease will be permitted in pulling cables. Only soapstone, talc, or UL listed pulling compound will be permitted. The raceway construction shall be complete and protected from the weather before cable is pulled into it. Swab conduits before installing cables and exercise care in pulling, to avoid damage to conductors.
- F. Bending Radius - Cable bending radius shall be per applicable code. Install feeder cables in one continuous length.
- G. Equipment Grounding Conductors - Provide an equipment grounding conductor, whether or not it is shown on the Drawings, in all conduits or all raceways.
- H. Panelboard Wiring - In panels, bundle incoming wire and cables which are No. 6 AWG and smaller, lace at intervals not greater than 6 inches, neatly spread into trees and connect to their respective terminals. Allow sufficient slack in cables for alterations in terminal connections. Perform lacing with plastic cable ties or linen lacing twine. Where plastic panel wiring duct is provided for cable runs, lacing is not necessary when the cable is properly installed in the duct.

### 3.02 Cable Terminations and Splices:

- A. Splices - UL Listed wirenuts.
- B. Terminations - Shall comply with the following:
  - 1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
  - 2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.

### 3.03 Circuit and Conductor Identification:

- A. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Conductor colors shall be as follows:

<u>VOLTAGE</u>	<u>208/120V</u>	<u>480/277V</u>
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Grey
Ground	Green	Green

- B. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.
- C. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source transformer of the circuit and the building number(s) serviced by the circuit.

3.04 Field Tests:

- A. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.
- B. Insulation Resistance Tests: Perform insulation resistance tests on circuits with #2 AWG and larger conductors to be energized with a line-to-neutral voltage of 120 volts or more. Make these tests before all equipment has been connected. Test the insulation with a 500Vdc insulation resistance tester with a scale reading 100 megohms. The insulation resistance shall be 2 megohms or more. Submit results for review.

END OF SECTION

## SECTION 260526

### GROUNDING

#### PART 1 GENERAL

1.1 Section Includes:

- A. Conduits, wires, ground rods and other materials for the electrical grounding system.

1.2 Related Sections:

- A. Section 260500- Electrical General Requirements.

#### PART 2 PRODUCTS

2.1 Ground Rod:

- A. "Copperweld" ground rod conforming to or exceeding requirements of U.L. Specification No. 467 (ANSI C-33.8). Rod shall be 3/4" diameter and 10' in length, unless otherwise noted on the Drawings.

2.2 Below Grade Connections:

- A. Compression fittings, Thomas & Betts, Series 52000, 53000 or 54000 or approved equal.

2.3 Hardware:

- A. Bolts, nuts and washers shall be bronze, cadmium plated steel or other non-corrosive materials, approved for the purpose.

2.4 Waterproof Sealant:

- A. Use Kearney "Aqua Seal" mastic sealant on all below grade clamp or compression type connections.

#### PART 3 EXECUTION

3.1 Grounding and Bonding:

- A. Grounding and bonding shall be as required by codes and local authorities.
- B. All electrical equipment shall be grounded, including, but not limited to, panel boards, terminal cabinets and outlet boxes.
- C. The ground pole of receptacles shall be connected to their outlet boxes by means of a copper ground wire connecting to a screw in the back of the box.
- D. A green insulated copper ground wire, sized to comply with codes, shall be installed in all conduit runs.

- E. All metal parts of pull boxes shall be grounded per code requirements.
- F. All ground conductors shall be green insulated copper.
- G. The ground system electrodes shall be tested for resistance before the equipment ground conductors are connected. Maximum ground system resistance shall be 25 ohms. Install up to two additional ground rods to meet the 25 ohm requirement. Multiple ground rods shall not be less than 10 feet apart.
- H. Grounding of the panels [,] [and] buildings [and relocatables]. shall be completed as indicated on the Drawings.

END OF SECTION

**SECTION 26 05 33****OUTLET, JUNCTION AND PULL BOXES****PART 1 - GENERAL****1.01 Description of Work:**

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations shown on the drawings, included in these Specification, or otherwise needed for a complete and fully operating facility. The work shall include but not be limited to the following:
- B. Furnish and install all required material, supports and miscellaneous material for the satisfactory interconnection of all associated electrical systems.

**1.02 Related Work:**

- A. See the following specification sections for work related to the work of this section.
  - 1. 260500 General Electrical Requirements.
  - 2. 260542 Conduits, Raceway and Fittings.
  - 3. 260519 Line Voltage Wire and Cable.

**PART 2 - PRODUCTS****2.01 Outlet boxes, Junction and Pull boxes**

- A. Standard Outlet Boxes: Galvanized, steel, knock-out type of size and configuration best suited to the application indicated on the Drawings. Minimum box size shall be 4 inches square (octagon for most light fixtures) by 1-1/2 inches deep with mud rings as required.
- B. Switch boxes: Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.
- C. Conduit bodies: Cadmium plated, cast iron alloy. Conduit bodies with threaded conduit hubs and neoprene gasketed, cast iron covers. Bodies shall be used to facilitate pulling of conductors or to make changes in conduit direction only. Splices are not permitted in conduit bodies. Crouse-Hinds Form 8 Condulets, Appleton Form 35 Unilets or equal.
- D. Sheet Metal Boxes: Use standard outlet or concrete ring boxes wherever possible; otherwise use a minimum 16 gauge galvanized sheet metal, NEMA I box sized to Code requirements with covers secured by cadmium plated machine screws located six inches on centers. Circle AW Products, Hoffman Engineering Company or equal.
- E. Flush Mounted Pull boxes and Junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

**PART 3 - EXECUTION****3.01 Outlet Boxes****A. General:**

1. All outlet boxes shall finish flush with building walls, ceilings and floors except in mechanical and electrical rooms above accessible ceiling or where exposed work is called for on the Drawings.
2. Install raised device covers (plaster rings) on all switch and receptacle outlet boxes installed in masonry or stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
3. Leave no unused openings in any box. Install close-up plugs as required to seal openings.

**B. Box Layout:**

1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
2. Locate switch outlet boxes on the latch side of doorways.
3. Outlet boxes shall not be installed back to back nor shall through-wall boxes be permitted. Outlet boxes on opposite sides of a common wall shall be separated horizontally by at least one stud or vertical structural member.
4. For outlets mounted above counters, benches or backsplashes, coordinate location and mounting heights with built-in units. Adjust mounting height to agree with required location for equipment served.
5. On fire rated walls, the total face area of the outlet boxes shall not exceed 100 square inches per 100 square feet of wall area.

**C. Supports:**

1. Outlet Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Fixture outlet boxes installed in suspended ceiling of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
3. Fixture outlet boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above where pendant mounted lighting fixture are to be installed on the box.
4. Fixture Boxes above tile ceilings having exposed suspension systems shall be supported directly from the structure above.
5. Outlet and / or junction boxes shall not be supported by grid or fixture hanger wires at any locations.

### 3.02 Junction And Pull Boxes

#### A. General:

1. Install junction or pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.
2. Locate pull boxes and junction boxes in concealed locations above accessible ceilings or exposed in electrical rooms, utility rooms or storage areas.
3. Install raised covers (plaster rings) on boxes in stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
4. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
5. Identify circuit numbers and panel on cover of junction box with black marker pen.

#### B. Box Layouts:

1. Boxes above hung ceilings having concealed suspension systems shall be located adjacent to openings for removable recessed lighting fixtures.

#### C. Supports:

1. Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Boxes installed in suspended ceilings of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
3. Boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above.
4. Boxes mounted above suspended acoustical tile ceilings having exposed suspension systems shall be supported directly from the structure above.

**END OF SECTION**



**SECTION 260542**  
**CONDUITS, RACEWAYS AND FITTINGS**

**PART 1 - GENERAL**

**1.01 Description of Work:**

- A. The work of this section consists of furnishing and installing conduits, raceways and fittings as shown on the Drawings and as described herein.

**1.02 Related Work:**

- A. See the following specification sections for work related to the work in this section:
  - 1. 260543 Underground Ducts
  - 2. 260544 In Grade Pull Boxes
  - 3. 260519 Line Voltage Wire and Cable
  - 4. 260533 Junction and Pull Boxes

**PART 2 - PRODUCTS**

**2.01 Conduits, Raceways:**

- A. Electrical Metallic Tubing (EMT) shall be hot-dip galvanized after fabrication. Couplings shall be compression or set-screw type.
- B. Flexible Conduit: Flexible metal conduit shall be galvanized steel.
- C. Galvanized Rigid Steel Conduit (GRS) shall be hot-dip galvanized after fabrication. Couplings shall be threaded type.
- D. Rigid Non-metallic Conduit: Rigid non-metallic conduit shall be PVC Schedule 40 (PVC-40 or NEMA Type EPC-40) conduit approved for underground use and for use with 90° C wires.

**2.02 Conduit Supports:**

- A. Supports for individual conduits shall be galvanized malleable iron one-hole type with conduit back spacer.
- B. Supports for multiple conduits shall be hot-dipped galvanized Unistrut or Superstrut channels, or approved equal. All associated hardware shall be hot-dip galvanized.
- C. Supports for EMT conduits shall be galvanized pressed steel single hole straps.
- D. Clamp fasteners shall be by wedge anchors. Shot in anchors shall not be allowed.

**2.03 Fittings:**

- A. Provide threaded-type couplings and connectors for rigid steel conduits; provide steel compression (watertight), or steel set-screw type for EMT, (die-cast zinc or malleable iron type fittings are not allowed). Provide threaded couplings and Meyers hubs for rigid steel conduit exposed to weather.
- B. Fittings for flexible conduit shall be Appleton, Chicago, IL, Type ST, O-Z Gedney Series 4Q by General Signal Corp., Terryville, CT, T & B 5300 series, or approved equal.
- C. Fittings for use with rigid steel shall be galvanized steel or galvanized cast ferrous metal; access fittings shall have gasketed cast covers and be Crouse Hinds Condulets, Syracuse, NY, Appleton Unilets, Chicago, IL, or approved equal. Provide threaded-type couplings and connectors; set-screw type and compression-type are not acceptable.
- D. Fittings for use with rigid non-metallic conduit shall be PVC and have solvent-weld-type conduit connections.
- E. Union couplings for conduits shall be the Erickson type and shall be Appleton, Chicago, IL, Type EC, O-Z Gedney 3-piece Series 4 by General Signal Corp., Terryville, CT, or approved equal. Threadless coupling shall not be used.
- F. Bushings:
  - 1. Bushings shall be the insulated type.
  - 2. Bushings for rigid steel shall be insulated grounding type, O-Z Gedney Type HBLG, Appleton Type GIB, or approved equal.
- G. Conduit Sealants:
  - 1. Fire Retardant Types: Fire stop material shall be reusable, non-toxic, asbestos-free, expanding, putty type material with a 3-hour rating in accordance with UL Classification 35L4 or as specified on the Drawings.

### PART 3 - EXECUTION

#### 3.01 Conduit, Raceway and Fitting Installation:

- A. For conduit runs exposed to weather provide rigid metal (GRS).
- B. For conduit run underground, in concrete or masonry block wall and under concrete slabs, install minimum  $\frac{3}{4}$ " size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.
- C. For conduit runs concealed in steel or wood framed walls or in ceiling spaces or exposed in interior spaces above six feet over the finished floor, install EMT.
- D. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.
- E. The minimum size raceway shall be 1/2-inch unless indicated otherwise on the Drawings.

- F. Installation shall comply with the CEC.
- G. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 360 degrees.
- H. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.
  - 1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete structure by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.
    - a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.
    - b. Group exposed conduits together. Arrange such conduits uniformly and neatly.
  - 2. Support all conduits within three feet of any junction box, coupling, bend or fixture.
  - 3. Support conduit risers in shafts with Unistrut Superstrut, or approved equal, channels and straps.
- I. Moisture Seals: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).
- J. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20 mil tape and extend minimum 12" above grade.
- K. Provide a nylon pull cord in each empty raceway.
- L. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.
- M. Slope all underground raceways to provide drainage; for example, slope conduit from equipment located inside a building to the pull box or manhole located outside the building.
- N. Conduits shall be blown out and swabbed prior to pulling wires, or installation of pull cord in empty conduits.

END OF SECTION

**SECTION 26 05 50****THROUGH-PENETRATION FIRESTOPPING FOR ELECTRICAL SYSTEMS****PART 1 - GENERAL****1.1 Related Documents:**

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

**1.2 Definitions:**

- A. Firestopping: The process of restoring an hourly fire endurance rating back to a fire barrier that lost its rating from an opening created in it.

**1.3 General Description of the Work of This Section:**

Only tested firestop systems shall be used in specific locations as follows:

- A. Penetrations for the passage of cables, conduit, and other electrical equipment through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

**1.4 Related Work of Other Sections:**

- A. Coordinate work of this section with work of other sections as required to properly execute the work and as necessary to maintain satisfactory progress of the work of other sections, including (if available):

1. Section 03300 - Cast-In-Place Concrete
2. Section 04200 - Masonry Work
3. Section 07840 - Firestopping
4. Section 09250 - Gypsum Drywall Systems
5. Section 13080 - Sound, Vibration and Seismic Control
6. Section 13900 - Fire Suppression and Supervisory Systems
7. Section 26 05 00 – General Electrical Requirements
8. Section 15300 - Fire Protection

**1.5 References:**

- A. Test Requirements: ASTM E-814, "Standard Method of Fire Tests of Through Penetration Fire Stops" (July 1997).
- B. Underwriters Laboratories (UL) of Northbrook, IL runs ASTM E-814 under their designation of UL 1479 and publishes the results in their "FIRE RESISTANCE DIRECTORY" that is updated annually.
  1. UL Fire Resistance Directory:

- a. Through-Penetration Firestop Devices (XHCR)
  - b. Fire Resistance Ratings (BXUV)
  - c. Through-Penetration Firestop Systems (XHEZ)
  - d. Fill, Voids, or Cavity Material (XHHW)
  - e. Forming Materials (XHKU)
- C. International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgments
- D. ASTM E-84, Standard Test Method for Surface Burning Characteristics of Building Materials.
- E. All major building codes: ICBO, SBCCI, BOCA, and IBC.  
(Note to specifier: Retain or delete building codes listed above as applicable)
- F. NFPA 101 - Life Safety Code

#### 1.6 Quality Assurance:

- A. Firestop System installation must meet requirements of ASTM E-814, UL 1479 or UL 2079 tested assemblies that provide a fire rating equal to that of construction being penetrated.
- B. Proposed firestop materials and methods shall conform to applicable governing codes having local jurisdiction.
- C. Firestop Systems do not reestablish the structural integrity of load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.

#### 1.7 Project Conditions :

- A. Do not use materials that contain flammable solvents.
- B. Do not install penetration firestopping when ambient or substrate temperatures are outside limits permitted by penetration firestopping manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.
- C. Install and cure penetration firestopping per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.
- D. Scheduling
  - 1. Schedule installation of CAST IN PLACE firestop devices after completion of floor formwork, metal form deck, or composite deck but before placement of concrete.
  - 2. Schedule installation of other firestopping materials after completion of penetrating item installation but prior to covering or concealing of openings.

- E. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.
- F. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

## PART 2 - PRODUCTS

### 2.1 Firestopping, General:

- A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.
- B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.
- C. Fire rated pathway devices shall be the preferred product and shall be installed in all locations where frequent cable moves, add-ons and changes will occur.

### 2.2 Acceptable Manufacturers:

- A. Subject to compliance with through penetration firestop systems (XHEZ) listed in Volume II of the UL Fire Resistance Directory, provide products of the following manufacturers as identified below:
  - 1. Specified Technologies Inc., STI  
800-992-1180
  - 2. Hilti, Inc., Tulsa, Oklahoma  
800-879-8000
  - 3. Other manufacturers listed in the U.L. Fire Resistance Directory – Volume 2

### 2.3 Materials:

- A. Use only firestop products that have been UL 1479, ASTM E-814 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.
- B. Cast-in place firestop devices: Single component molded firestop device installed on forms prior to concrete placement with totally encapsulated, tamper-proof integral firestop system and smoke sealing gasket. Cast-in Place firestop devices are installed prior to concrete placement for use with non-combustible and combustible plastic pipe (closed and open piping systems), or electrical cable bundles, penetrating concrete floors, the following products are acceptable:
  - 1. Specified Technologies, Inc. (STI) SpecSeal CD Cast-In Firestop Device
  - 2. Hilti CP 680 Cast-In Place Firestop Device
  - 3. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 2

- C. **Latex Sealants:** Single component latex formulations that upon cure do not re-emulsify during exposure to moisture. Latex Sealants for use with non-combustible items including rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable:
1. Specified Technologies, Inc. (STI) SpecSeal Series SSS Intumescent Sealant
  2. Specified Technologies, Inc. (STI) SpecSeal Series LCI Intumescent Sealant
  3. Specified Technologies, Inc. (STI) SpecSeal Series LC Endothermic Sealant
  4. Hilti FS-ONE Intumescent Firestop Sealant
  5. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 2
- D. **Intumescent Latex sealants:** Single component latex formulations that upon cure do not re-emulsify during exposure to moisture. Intumescent Latex Sealants or caulking materials for use with combustible items (penetrants consumed by high heat and flame) including PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable:
1. Specified Technologies, Inc. (STI) SpecSeal Series SSS Intumescent Sealant
  2. Specified Technologies, Inc. (STI) SpecSeal Series LCI Intumescent Sealant
  3. Hilti FS-ONE Intumescent Firestop Sealant
  4. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 2
- E. **Intumescent sealants, foams, caulking or putty materials for use with flexible cable or cable bundles,** the following products are acceptable:
1. Specified Technologies, Inc. (STI) SpecSeal Series SSS Intumescent Sealant
  2. Specified Technologies, Inc. (STI) SpecSeal Series LCI Intumescent Sealant
  3. Specified Technologies, Inc. (STI) SpecSeal Series SSP Firestop Putty
  4. Specified Technologies, Inc. (STI) Ready Firestop Grommet
  5. Hilti FS-ONE Intumescent Firestop Sealant
  6. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 2
- F. **Non curing, re-penetrable intumescent sealants, caulking or putty materials for use with flexible cable or cable bundles,** the following products are acceptable:
1. Specified Technologies, Inc. (STI) SpecSeal Series SSP Firestop Putty
  2. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 2
- G. **Wall opening protective materials:** Intumescent, non-curing pads or inserts for protection of electrical switch and receptacle boxes to reduce horizontal separation to less than 24". Wall opening protective materials for use with U.L. listed metallic and specified nonmetallic outlet boxes, the following products are acceptable:
1. Specified Technologies, Inc. (STI) SpecSeal Series SSP Firestop Putty Pads
  2. Specified Technologies, Inc. (STI) SpecSeal Series EP PowerShield Insert Pads
  3. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 1

- H. Materials used for complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:
1. Specified Technologies, Inc. (STI) SpecSeal Series SSM Firestop Mortar
  2. Specified Technologies, Inc. (STI) SpecSeal Series SSB Firestop Pillows
  3. Hilti FS 635 Trowelable Firestop Compound
  4. Hilti FS 657 FIRE BLOCK
  5. Hilti CP 620 Fire Foam
  6. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 2
- I. Non curing, re-penetrable materials used for large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:
1. Specified Technologies, Inc. (STI) SpecSeal Series SSB Firestop Pillows
  2. Hilti FS 657 FIRE BLOCK
  3. Equivalent products listed in the U.L. Fire Resistance Directory – Volume 2
- J. Fire Rated Cable Pathways: STI EZ-PATH™ Brand device modules comprised of steel raceway with intumescent foam pads allowing 0 to 100 percent cable fill, the following products are acceptable:
1. Specified Technologies Inc. (STI) EZ-PATH™ Fire Rated Pathway
- K. Provide a firestop system with a "F" Rating as determined by UL 1479 or ASTM E814 which is equal to the time rating of construction being penetrated.

### PART 3 - EXECUTION

#### 3.1 Preparation:

- A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
1. Verify penetrations are properly sized and in suitable condition for application of materials.
  2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
  3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
  4. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
  5. Do not proceed until unsatisfactory conditions have been corrected.



**3.2 Coordination:**

- A. Coordinate location and proper selection of cast-in-place Firestop Devices with trade responsible for the work. Ensure device is installed before placement of concrete.

**3.3 Installation:**

- A. Regulatory Requirements: Install firestop materials in accordance with UL Fire Resistance Directory.
- B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration materials.
  - 1. Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
  - 2. Protect materials from damage on surfaces subjected to traffic.

**3.4 Field Quality Control:**

- A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.
- B. Keep areas of work accessible until inspection by applicable code authorities.
- C. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

**3.5 Adjusting and Cleaning:**

- A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.
- B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

**END OF SECTION**

**SECTION 26 24 16  
PANELBOARDS AND DISTRIBUTION PANELS**

**PART 1 – GENERAL**

**1.01 Description of Work:**

- A. The work of this Section consists of providing panelboards and circuit breakers as shown on the Drawings and as described herein.

**1.02 Related Work:**

- A. See the following specification sections for work related to the work in this Section.
  - 1. 260519 Line Voltage Wire and Cable
  - 2. 260526 Grounding
  - 3. 262816 Circuit Breakers

**1.03 Submittals:**

- A. Shop Drawings - As specified in Division 01 and Section 26 05 00. For each panelboard and distribution panel furnished under this Contract, submit manufacturer's name, catalog data, and the following information:
  - 1. Panelboard / distribution panel type.
  - 2. Main bus and terminal connection sizes.
  - 3. Location of line connections.
  - 4. Cabinet dimension.
  - 5. Gutter space.
  - 6. Gauge of boxes and fronts.
  - 7. Finish data.
  - 8. Voltage rating.
  - 9. Breaker manufacturer, types, trip rating, and interrupting ratings.
  - 10. When information is available on the Drawings, show breaker circuit numbers and locations along with trip ratings on a panelboard layout.
- B. Single Submittal - A single complete submittal is required for all products covered by this Section.
- C. Closeout Submittals: Submit operation and maintenance data for panelboards and circuit breakers including nameplate data, parts lists, factory and field test reports, recommended maintenance procedures and typewritten as-built panel schedules. Submit in accordance with Division 01.

**PART 2 – PRODUCTS****2.01 Panelboards:**

- A. **General:** Lighting and Receptacle Panelboards shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings or, if not shown, 42 circuits. All circuit breakers shall be quick-make, quick-break, thermal-magnetic, bolt-on type (unless otherwise noted on drawings), with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggy-back breakers shall not be used.
- B. **Nameplates:**
  - 1. Each panelboard shall have a field mounted identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings.
  - 2. Each panelboard shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.
- C. **Construction:**
  - 1. Door and trim shall be finished to match finish type and color of surrounding wall. Box shall be hot-dip galvanized, and field finished to match the front.
  - 2. Panelboards and enclosures shall conform to requirements of all relevant codes. Panelboards shall be suitable for use as service equipment.
  - 3. Panelboards shall be furnished with hinged trim fronts with key latch and a typed directory card and holder. Panelboard circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.
- D. **Busbars:** Panelboard busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper.
- E. **Circuit Breakers:** Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.
- F. **Manufacturer:**
  - 1. Panelboard manufacturer shall be Square D, Siemens, [I.E.M], [General Electric], [or] [Eaton Cutler Hammer]. Panelboards shall be of the same manufacturer as the switchboard.

**2.02 Distribution Panels:**

- A. **General:** Distribution panels shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings. All circuit breakers shall be quick-make, quick-break, thermal-magnetic bolt-on type, with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggy-back breakers shall not be used.
- B. **Nameplates:**

1. Each distribution panel shall have a field mounted, identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings.
  2. Each distribution panel shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.
- C. Construction:
1. Door and trim shall be finished to match color of surrounding wall. Box shall be hot-dip galvanized, field finished to match the front.
  2. Distribution panels and enclosures shall conform to requirements of all relevant codes. Distribution panels shall be suitable for use as service.
  3. Distribution panels shall have a front door with key latch and a typed directory card and permanently attached holder. Adhesive backed holders are not acceptable. Distribution panels circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.
- D. Busbars: Distribution panels busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper, sized for a maximum current density of 1000A psi.
- E. Circuit Breakers:
1. Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.
  2. Circuit breakers equipped with Ground-Fault Equipment Protection shall be capable of the following types of ground-fault protection: residual, source ground return, and modified differential.
    - a. Ground-fault settings for circuit breaker sensor sizes 1200 A or below shall be adjustable from 0.2 to 1.0 times  $I_n$  in 0.1  $I_n$  increments. The ground-fault settings for circuit breakers above 1200 A shall be adjustable from 500 to 1200 A.
  3. Circuit breakers with an arc Energy-Reducing Maintenance Switch (ERMS) setting shall be equipped with a separate trip curve to reduce incident energy.
    - a. The ERMS trip curve shall be selected through physical selector. Trip unit [remote indicator light] shall indicate when trip unit is operating in ERMS mode.
    - b. Trip unit shall operate in Fast Instantaneous trip mode, 25 to 30 mS, when ERMS trip curve is active.
    - c. Engaging/disengaging the ERMS mode or making settings changes to the ERMS settings shall be restricted to authorized personnel by limiting access to such features by padlocks or passwords to ensure safety of the personnel working with the equipment.
- F. Manufacturer:
4. Distribution panel manufacturer shall be Square D, Siemens, [I.E.M], [General Electric], [or] [Eaton Cutler Hammer]. [Distribution panels shall be of the same manufacturer as the switchboard.]

### PART 3 – EXECUTION

3.01 Installation: Panelboards and Distribution Panels shall be installed where indicated on the Drawings, and in accordance with the manufacturer's instructions.

3.02 Installation:

- A. Panelboards and Distribution Panels shall be installed where indicated on the Drawings, and in accordance with the manufacturer's instructions.
- B. Circuit breakers for solidly grounded Wye Electrical Systems of more than 150V to Ground and 1000A or larger shall be equipped with Ground-Fault Equipment Protection.
- C. Circuit breakers 1200A and larger shall be equipped with a separate trip curve for an arc Energy-Reducing Maintenance Switch (ERMS) setting to reduce incident energy.

3.03 Mounting:

- D. Panelboards and Distribution Panels shall be mounted with the top of the box 6'-6" above the floor. Panelboards and Distribution Panels shall be plumb within 1/8-inch. The highest breaker operating handle shall not be higher than 72 inches above the floor.

3.04 Field Tests:

- A. Insulation Resistance Tests: Perform insulation resistance tests on circuits with #2 AWG and larger conductors to be energized with a line-to-neutral voltage of 120 volts or more. Make these tests after all equipment has been connected, except that equipment which may be damaged by the test voltage shall not be connected. Test the insulation with a 500Vdc insulation resistance tester with a scale reading 100 megohms. The insulation resistance shall be 2 megohms or more. Submit results for review.
- B. Grounding: Grounding shall conform to Section 26 05 26.
- C. Continuity: Panelboard and Distribution Panel circuits shall be tested for continuity prior to energizing. Continuity tests shall be conducted using a dc device with a bell or buzzer.

END OF SECTION

**SECTION 26 27 26**

**DEVICES WIRING**

**PART 1 – GENERAL**

**1.01 Description of Work**

**A. The work of this section consists of:**

1. Furnishing, installing, and connecting all duplex receptacles complete with wall plates and/or covers, as shown on the Drawings.
2. Furnishing, installing and connecting all light switches complete with wall plates and or handle operators, as shown on the Drawings.

**1.02 Related Work:**

**A. See the following specification sections for work related to the work of this section:**

1. 26 05 42 Conduits, Raceways and Fittings.
2. 26 05 19 Line Voltage Wire and Cable.
3. 26 05 3] Junction and Pull Boxes.

**1.03 Submittals: As specified in Section 26 05 00 and Division 01.**

- A. Submit manufacturers published descriptive literature properly marked to identify the items to be supplied.
- B. A single complete submittal is required for all products covered by this Section.

**PART 2 – PRODUCTS**

**2.01 Receptacles:**

**A. General - Receptacles shall be heavy duty, high abuse, grounding type.**

**B. [Tamper Resistant] Duplex Receptacles:**

1. Receptacles shall be specification grade, rated 20 ampere, two-pole, 3-wire, 125 volt, NEMA 5-20 configuration, self-grounding with screw terminals. Color shall be as selected by the Architect.
2. Devices shall have a nylon face, back and side wired.
3. Manufacturer: Hubbell #DR20 Series [Hubbell #DR20\_\_ TR], Leviton #16352 Series [Leviton # 16352-TRE \_\_ Series].

**C. GFCI Receptacles[Tamper Resistant]:**

1. Device shall be rated 20 ampere, 2-pole, 3-wire, 120 volt, conforming to NEMA 5-20 configuration. Face shall be nylon composition. Unit shall have an LED type red indicator light, test and reset push buttons. Color shall be as selected by the Architect.
2. GFCI component shall meet UL 943 Class A standards with a tripping time of 1/40 second at 5 milliamperes current unbalance. Operating range shall extend from -31°F to 158°F. Unit shall have transient voltage protection and shall be ceramic encapsulated for protection against moisture.
3. Manufacturer: Hubbell #GF20\_\_LA Series [Hubbell # GFTR20 \_\_ Series], Leviton #GFNT2 Series [Leviton #GFTR2 Series].

**D. Automatically Controlled Receptacles [Tamper Resistant]**

1. Receptacles shall be specification grade, rated 20 amperes, two pole, 3-wire, 125V, NEMA 5-20 configuration, self-grounding with screw terminals. Color shall be selected by the Architect.
2. Devices shall have a nylon face, back and side wired. Marking permanently printed, molded, or stamped on the face of the receptacle and in compliance with controlled receptacle marking requirements stated in California Building Energy Efficiency Standards Section 130.5(d)(3).
3. Manufacturer: Pass & Seymour 26352CD (Dual Controlled Receptacle), 26352CH (Half Controlled Receptacle) [TR26352CD (Tamper Dual Controlled Receptacle), TR26352CH (Tamper Half Switched Receptacles); Leviton 16352-1 (Half Controlled Receptacle), Leviton 16352-2 (Dual Controlled Receptacle).

**E. Weather Resistant GFCI Receptacles:**

1. Device shall be rated 20 ampere, 2-pole, 3-wire, 120 volt, conforming to NEMA 5-20 configuration, Face shall be nylon composition. Unit shall have a LED type red indicator light, test and reset push buttons. Color shall be as selected by the architect.
2. GFCI component shall meet UL 943 Class A standards with a tripping time of 1/40 second at 5 milliamperes current unbalance. Operating range shall extend from -31°F to 158°F. Unit shall have transient voltage protection and shall be ceramic encapsulated for protection against moisture.
3. Manufacturer: Hubbell #GFTR20 \_\_ Series, Leviton #GFWR2 Series.

**F. Surge Suppression Receptacles:**

1. Device shall be rated 20 ampere, 2-pole, 3-wire, 120 volt. Face shall be nylon composition. Unit shall have an LED type "Power-on" indication light and damage-alert audible alarm. Color shall be as selected by the Architect.

2. Surge suppression protection shall be listed to UL standard 1449 and shall instantly absorb a transient surge of 6,000 volts minimum. A minimum of four (4) Metal Oxide Varistors shall be utilized to absorb transients.
3. Manufacturer: Hubbell #HBL8362S Series, Leviton #8380 Series.

#### 2.02 Switches:

- A. Switches shall be rated 20 amperes to 120/277 volts ac. Units shall be flush mounted, self-grounding, quiet operating rocker devices. Rocker color shall be as selected by the Architect.
  1. Manufacturer: Hubbell #DS\_20\_\_ Series, Leviton #5621 Series. See plans for single pole, three way and four way requirements.
- B. Timed switches: Shall be as designed by Paragon Electric Company # ET2000f or Watt Stopper TS-400 rated for the voltage specified on drawings. Time-out shall be adjustable from 5 minutes up to 12 hours. Unit shall be provided with warning alarm.
- C. Dimmer switches: Switch shall be as specified on drawings, color per architect. Heat fins shall not be removed, where dimmer switches are ganged together, care shall be taken to install correct size backbox to accommodate switches without removing fins.

#### 2.03 Plates:

- A. General - Plates shall be of the style and color to match the wiring devices, and of the required number of gangs. Plates shall conform with NEMA WD 1, UL 514 and FS W-P-455A. Plates on finished walls shall be non-metallic or stainless steel. Plates on unfinished walls and on fittings shall be of zinc plated steel or case metal and shall have rounded corners and beveled edges.
- B. Non-Metallic: Plates shall be plain with beveled edges and shall be nylon or reinforced fiberglass.
- C. Stainless Steel: Plates shall be .040 inches thick with beveled edges and shall be manufactured from No. 430 alloy having a brushed or satin finish.
- D. Cast Metal: Plates shall be cast or malleable iron covers with gaskets so as to be moisture resistant or weatherproof.
- E. Blank Plates: Cover plates for future telephone outlets shall match adjacent device wall plates in appearance and construction.
- F. Weatherproof Plate: Cover plates in wet and damp locations shall have recessed in-use covers, Taymac or equal. Back box shall be suitable for the wall material where it is installed.
- G. Labeling: All switch and receptacle plates shall be labeled on the top portion of the plate with the panelboard and circuit number serving that device. Lettering shall be 3/16" minimum high, black color, on clear Mylar 3/8" tape. Manufactured by P-touch or equal.

### PART 3 – EXECUTION

#### 3.01 Installation of Wiring Devices:



- A. **Interior Locations:** In finished walls, install each device in a flush mounted box with washers as required to bring the device mounting strap level with the surface of the finished wall. On unfinished walls, surface mount boxes level and plumb.
- B. **Mounting Heights:** Adjust boxes so that the front edge of the box shall not be farther back from the finished wall plane than 1/4-inch. Adjust boxes so that they do not project beyond the finished wall. Height of device shall be as follows unless otherwise noted on the drawings:
  - 1. Receptacles                      15 Inches from finished floor to bottom of box.
  - 2. Toggle Switches                48 Inches from finished floor to top of box.
- C. **Receptacles:**
  - 1. Ground each receptacle using a grounding conductor, not a yoke or screw contact.
  - 2. Install receptacles with connections spliced to the branch circuit wiring in such a way that removal of the receptacle will not disrupt neutral continuity and branch circuit power will not be lost to other receptacles in the same circuit.

### 3.02 Installation of Wall Plates:

- A. **General - Plates** shall match the style of the device and shall be plumb within 1/16-inch of the vertical or horizontal.
- B. **Interior Locations, Finished Walls:** Install non-metallic plates so that all four edges are in continuous contact with the finished wall surfaces. Plaster filling will not be permitted. Do not use oversized plates or sectional plates.
- C. **Interior (not wet) Locations, Unfinished Walls:** Install stainless steel or cast metal cover plates.
- D. **Wet Locations:** Install cast metal plates with gaskets on wiring devices in such a manner as to provide a rain tight weatherproof installation. Cover shall be [lockable] outdoor "in use" type.
- E. **Future Locations:** Install blanking cover plates on all unused outlets.

### 3.03 Tests:

- A. **Receptacles:**
  - 1. After installation of receptacles, energize circuits and test each receptacle to detect lack of ground continuity, reversed polarity, and open neutral condition.

**END OF SECTION**

**SECTION 26 28 16**  
**CIRCUIT BREAKERS**

**PART 1 - GENERAL**

**1.01 Description of Work:**

- A. The work of this Section consists of providing circuit breakers as shown on the Drawings and as described herein.

**1.02 Related Work:** See the following Specification Sections for work related to the work in this Section.

- A. 26 05 00      General Electrical Requirements
- B. 26 24 13      Switchboards
- C. 26 24 16      Panelboards and Distribution Panels

**1.03 Submittals:**

- A. Shop Drawings - Submittals shall be in accordance with Section 260500 and Division 01. For each circuit breaker furnished under this Contract, submit manufacturer's name, catalog data, and the following information:
  - 1. Terminal connection sizes.
  - 2. Voltage rating.
  - 3. Breaker manufacturer, types, trip ratings and interrupting ratings.
- B. Single Submittal - A single complete submittal is required for all products covered by this Section.
- C. Closeout Submittals: Submit in accordance with and Section 260500, operation and maintenance data for circuit breakers including nameplate data, parts lists, manufacturer's circuit breaker timer, current, coordination curves, factory and field test reports and recommended maintenance procedures.

**PART 2 - PRODUCTS**

**2.01 Circuit Breaker:** Each circuit breaker shall consist of the following:

- A. A molded case breaker with an over center toggle-type mechanism, providing quick-make, quick-break action. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. Multipole circuit breakers shall have variable magnetic trip elements which are set by a single adjustment to assure uniform tripping characteristics in each pole. Circuit breakers shall be of the bolt-on type unless otherwise noted.
- B. Breaker shall be calibrated for operation in an ambient temperature of 40° C.
- C. Each circuit breaker shall have trip indication by handle position and shall be trip-free.

- D. Three pole breakers shall be common trip.
- E. The circuit breakers shall be constructed to accommodate the supply connection at either end of the circuit breaker. Circuit breaker shall be suitable for mounting and operation in any position.
- F. Breakers shall be rated as shown on Drawings.
- G. Circuit breaker and/or Fuse/circuit breaker combinations for series connected interrupting ratings shall be listed by UL as recognized component combinations for use in the end use equipment in which it is installed. Any series rated combination used shall be marked on the end use equipment per CEC section 110-22.
- H. Breakers shall be UL listed. Circuit breakers shall have removable lugs.
- I. Lugs shall be UL listed for copper and aluminum conductors.
- J. Breakers shall be UL listed for installation of mechanical screw type lugs.
- K. Circuit breakers serving HACR rated loads shall be HACR type. Circuit breakers serving other motor loads shall be motor rated.

### PART 3 - EXECUTION

#### 3.01 Mounting:

- A. The highest breaker operating handle shall not be higher than 72 inches above the floor.

END OF SECTION

**SECTION 26 51 00**

**LIGHTING**

**PART 1 – GENERAL**

**1.01 Description of Work:**

- A. The work of this section consists of providing and installing a complete lighting system, including fixtures, LED light module, [ballasts], [sockets], [lamps], hangers, reflectors, glassware, lenses, auxiliary equipment, heat management components, LED driver (integral or remote), and housing.

**1.02 Related Work:**

- A. See the following specification sections for work related to the work of this section:
  - 1. 26 05 00 General Electrical Requirements.
  - 2. 26 05 42 Conduit, Raceway and Fittings.
  - 3. 26 05 19 Line Voltage Wire and Cable.
  - 4. 26 05 33 Junction and Pull Boxes.

**1.03 Submittals: In accordance with Division 01.**

- A. Submit descriptive data, photometric curves for each fixture configuration proposed.
- B. Submit shop drawings showing proposed methods for mounting lighting fixtures.
- C. Seismic Requirements: Submit:
  - 1. Sketch or description of the anchorage system if not provided on construction documents.
- D. Submit Operation and Maintenance Data per Division 01.

**1.04 Warranty:**

- A. LED light module, LED driver, [HID and Fluorescent lamps], [ballasts], batteries or other luminaire components which fail within the first year after final acceptance shall be replaced by the Contractor with the warranty clause of the General Provisions.
- B. Replacement components provided under warranty to be provided by contractor, not taken from project spare stock.

**PART 2 – PRODUCTS**

**2.1 General**

- A. Fixtures shall be of the types, wattages and voltages shown on the Drawings and be UL or equivalent classified and labeled for the intended use.
- B. Substitutions will not be considered unless the photometric distribution curve indicates the proposed fixture is equal to or exceeds the specified luminaire and the substitution is consistent with the design intent.

- C. Luminaire (factory or field installed) wire, and the current carrying capacity thereof shall be in accordance with the CEC.
- D. Luminaires and lighting equipment shall be delivered to the project site complete, with suspension accessories, aircraft cable, stems, hangers canopies, hickey, castings, sockets, holders, LED light engine, [lamps], [ballasts], diffusers, frames, and related items, including support and braces.

## 2.2 Light Emitting Diode (LED) Light Sources and Luminaires:

### A. General (Non-Emergency):

1. Provide identical power supply and driver within each luminaire type. Provide power supplies and drivers that are suitable and UL-listed for the electrical characteristics of the supply circuits to which they are to be connected and which are suitable for operating LED or relevant light sources.
2. Unless otherwise specified, provide power supplies of same type and same manufacturer for ease of stocking and replacement.
3. Components shall be configured and installed in luminaire by the luminaire manufacturer.
4. Luminaire housing shall be constructed of painted metal with no sharp edges unless otherwise noted.
5. Provide only luminaires whose design, fabrication and assembly prevent overheating or cycling of light engines or drivers/power supplies under any condition of use.
6. Electronic ballasts shall meet the requirements of the Federal Communications Commission Rules and Regulations, Part 18, Part C (RF Lighting Devices) Non-consumer equipment, regarding radio frequency interference (RFI) (radiated) and electromagnetic interference (EMI) (power line conducted).
7. Submit light fixture details with luminaire shop drawings.

### B. Emergency Lighting: Battery-backed emergency lighting luminaires shall consist of a normal LED luminaire with some or all of the LEDs connected to a battery and charger.

1. The battery shall be nickel cadmium and sized for a minimum of 90 minutes of luminaire operation unless otherwise noted.
2. The charger shall be solid-state and include overload, short circuit, brownout and low battery voltage protection.
3. The battery and charger shall include self-diagnostic and self-exercising circuitry to exercise and test itself for 5 minutes every month and for 30 minutes every 6 months.
4. The luminaire shall include a test/monitor module with status indicating lights mounted so as to be visible to the public.

5. The luminaire shall not contain an audible alarm.
  6. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery power and retransfer to normal.
- C: LED Performance and component manufacturer requirements.
1. All color characteristics, SPD (Special Power Distribution) CCT, CRI, CIE Chromaticity Coordinates shall be consistent across the entire dimming range.
  2. LEDs shall comply with ANSI/NEMA/ANSI C78.377-2008 – Specifications for the Chromaticity of Solid State Lighting Products. Color shall remain stable throughout the life of the source. The chromaticity of the installed product shall match IES LM-80 data showing that the LED's do not shift more than .005 DuV from submitted documentation.
  3. White LEDs shall have a minimum rated source life of 50,000 hours or as specified: Luminaire Schedule. Multicolor LEDs shall have a minimum rated source life of 100,000 hours. LED "rated source life" shall be determined per IES TM-21 - Projecting Long Term Lumen Maintenance of LED Light Sources based on LM-80 test data. Calculated lifetimes exceeding testing hours per TM-21 are not accepted.
  4. Luminaire assembly shall include a method of dissipating heat so as to not degrade life of source, electronic equipment, or lenses. LED luminaire housing shall be designed to transfer heat from the LED board to the outside environment. Luminaire housing shall have no negative impact on life of components. Manufacturer shall provide Luminaire Efficacy (lm/W), total luminous flux (lumens), luminous intensity (candelas), chromaticity coordinates, CCT, CRI, optical performance, polar diagrams, and relevant luminance and illuminance photometric data. Provide data in IES file format in accordance with testing standards IES LM-79-08 and IES LM-82-12, based on test results from an independent Nationally Recognized Testing Laboratory or National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory.
  5. Manufacturer will keep record of original chromaticity coordinates for each LED module and have replacement modules or luminaires from within three (3) MacAdam Ellipses/ steps of the same coordinates available for the duration of the warranty period.
  6. Manufacturer's LED light engine or equivalent system will be available for ten (10) years: Manufacturer will provide exact replacement parts, complete replacement luminaires, or provide upgraded parts that are designed to fit into the original luminaire and provide equivalent distribution and lumen output to the original, without any negative consequences.
  7. All LED sources used in the LED luminaire shall be of proven quality from established and reputable LED manufacturers and shall have been fabricated within 12 months before installation per the date code on the module. Acceptable LED component or module manufacturers unless otherwise noted are:
    - a. Cree, Inc.
    - b. Lumileds
    - c. Nichia Corporation

- d. Norlux
- e. Lextar
- f. Osram Optronics Semiconductors
- g. Xicato
- h. Bridgelux
- i. Epistar
- j. San'an
- k. Citizen Electronics
- l. General Electric Company
- m. Soraa
- n. Samsung
- o. Seoul Semiconductor
- p. Lumenetix
- q. Ledengin

**2.3 LED Power Supplies/ Drivers:**

1. LED driver shall have a minimum 50,000 hour published life while operating at maximum case temperature and 90 percent non-condensing relative humidity.
2. Driver shall be Sound Rated A+.
3. Driver shall be > 80% efficient at full load across all input voltages.
4. Driver shall include ability to turn off at low control input rather than holding at a minimum dimming level, and shall consume 0.5 Watts or less in standby/off mode. Control deadband at low control input shall be included to allow for voltage variation of incoming signal without causing noticeable variation in luminaire to luminaire output.
5. Drivers shall track evenly across multiple luminaires at all light levels, and shall have an input signal to output light level that allows smooth adjustment over the entire dimming range.
6. Control Input:
  - a. 4-Wire (0-10V DC Voltage Controlled) Dimming Drivers
    - (i) Must meet IEC 60929 Annex E for General White Lighting LED drivers.
    - (ii) Connect to devices compatible with 0 to 10V Analog Control Protocol, Class 2, capable of sinking 0.6 ma per driver at a low end of 0.3V.

- (iii) Must meet ESTA E1.3 for RGBW LED drivers.
  - b. Digital (DALI Low Voltage Controlled) Dimming Drivers
    - (i) Must meet IEC 62386.
  - c. Digital Multiplex (DMX Low Voltage Controlled) Dimming Drivers
    - (i) Must meet DMX / RDM: USITT DMX512A and ANSI E1.20 (Explore & Address).
    - (ii) Must be capable of signal interpolation and smoothing of color and intensity transitions.
- 7. Power Factor: The luminaire shall have a power factor of 90% or greater at all standard operating voltages and full luminaire output.
- 8. THD: Total harmonic distortion (current and voltage) induced into an AC power line by luminaire shall not exceed 10 percent at any standard input voltage and meet ANSI C82.11 maximum allowable THD requirements at full output. THD shall at no point in the dimming curve allow imbalance current to exceed full output THD.
- 9. In Rush Current: Meet or exceed NEMA 410 driver inrush standard of 430 Amps per 10 Amps load with a maximum of 370 Amps 2 – seconds.
- 10. RF Interference: The luminaire and associated on-board circuitry must meet Class A emissions limits referred in Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 Non-Consumer requirements for EMI/RFI emissions.
- 11. Light engines shall be [2700] [3000] [3500] [4000] °K [80] [90] CRI minimum, U.O.N. on drawings.
- 12. Drivers [and ballasts] shall be accessible for maintenance or replacement without removal of recessed light fixture and without destruction of the ceiling.

## 2.4 [Flourescent Light Sources and Luminaires:]

### A. General Fluorescent Ballasts:

1. Ballasts shall be of the types shown on the drawings. Ballasts shall be CBM certified and bear the UL label. Magnetic ballasts shall be the high power factor type. Electronic ballasts shall be suitable for lamps specified by Advance, Magnetek/Universal, Motorola or approved equal. Electronic ballast shall be CBM certified and have a 10% maximum total harmonic distortion.
2. All ballasts for fixtures installed outdoors shall provide reliable starting of lamps at 0°F at 90% of the nominal line voltage.
3. Ballasts producing excessive noise (above 36 dB) or vibration will be rejected and shall be replaced at no expense to the Owner.

### B. Fluorescent Lamps:



1. Lamps shall be new at the time of acceptance and shall be General Electric, Osram /Sylvania, Phillips, or approved equal.
2. Unless otherwise noted on the drawings, lamps shall be third generation T8, [2700] [3500] [4100] °K, and 85 CRI minimum.
3. Third Generation: Also known as High-Performance, Higher Lumen, or Super, the third generation of 32 Watt T8 lamps offers 3,100 lumens and a long-life rating of 24,000 hours. Efficacy is high, with lumens per watt in the range of 94 to 100. CRI is 82 to 86.

### PART 3 – EXECUTION

#### 3.01 Installation:

##### A. General:

1. All fixtures and luminaires shall be clean and lamps shall be operable at the time of acceptance.
2. Install luminaires in accordance with manufacturer's instructions, complete with lamps, ready for operation as indicated.
3. Align, mount, and level the luminaires uniformly.
4. Avoid interference with and provide clearance for equipment. Where an indicated position conflicts with equipment locations, change the location of the luminaire by the minimum distance necessary.
5. Recessed light fixtures in fire rated assemblies shall be installed per an approved UL rated fire rated penetration detail.

##### B. Mounting and Supports:

1. Mounting heights shall be as shown on the Architectural and Electrical Drawings. Unless otherwise shown, mounting height shall be measured to the centerline of the outlet box for wall mounted fixtures and to the bottom of the fixture for suspended fixtures and to the bottom of the fixture for all other types.
2. Luminaire supports shall be anchored to structural members.
3. Pendant stem mounted luminaires shall be provided with ball aligners to assure a plumb installation and shall have a minimum 45 degree clean swing from horizontal in all directions. Sway bracing shall be installed as required to limit the movement of the fixture. Fixtures shall be allowed to sway a maximum of 45° without striking any object.
4. Fixture supports shall be designed to resist earthquake forces of seismic zone 4.
5. Refer to fixture mounting details on drawings for installation requirements.
6. Pendant cable mounted luminaries shall be provided with fully adjustable stainless steel aircraft cable hangers unless otherwise noted on the Drawings.

END OF SECTION

**SECTION 271000**  
**STRUCTURED CABLING**

**PART 1 – GENERAL**

**1.01 RELATED DOCUMENTS:**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.
- B. Division 26, Basic Materials and Methods sections apply to work specified in this section.

**1.02 REFERENCE STANDARDS:**

- A. ANSI/TIA-492.AAAC-B – Detail Specification for 850-nm Laser-Optimized, 50-um Core Diameter/125-um Cladding Diameter Class 1a Graded-index Multimode Optical Fibers (OM3/OM4). Current Edition
- B. ANSI TIA-492.CAAB – Detail Specification for Class IVa Dispersion-Unshifted Single-Mode Optical Fibers with Low Water Peak. Current Edition
- C. ANSI/TIA-568-C.0 – Generic Communications Cabling for Customer Premises.
- D. ANSI/TIA-568-C.1 – Commercial Building Communications Cabling Standard Part 1: General Requirements.
- E. ANSI/TIA-568-C.2 – Balanced Twisted-Pair Telecommunications Cabling and Components Standards
- F. ANSI/TIA-568-C.3 – Optical Fiber Cabling Components Standard
- G. ANSI/TIA-569-C – Commercial Building Standard for Telecommunications Pathways and Spaces.
- H. ANSI/TIA-606-B – Administration Standard for the Commercial Telecommunications Infrastructure.
- I. ANSI/JSTD-607-B – Commercial Building Bonding and Grounding (Earthing) Requirements for Telecommunications.
- J. NFPA 70 – National Electrical Code (NEC).
- K. BICSI – TDMM, Building Industries Consulting Services International, Telecommunications Distribution Methods Manual (TDMM)

**1.03 DESCRIPTION OF WORK:**

- A. The extent of telephone/data system work is indicated and is hereby defined to include, but not be limited to cable, raceway, outlet boxes, device plates, backboard, cabinets, grounding and miscellaneous items required for complete system.
- B. Provide complete cable and outlet system as indicated and described herein. Work includes cable, jacks, terminal blocks, wire management, labeling, transient voltage surge suppression,

patch cords, and all terminations. Every cable, conductor and fiber strand installed under this Project shall be properly terminated at both ends and tested.

- C. Refer to other Division sections for requirements for raceways, boxes and fittings, wiring devices, and supporting devices, and other sections, as applicable.
- D. Provide system testing as described herein.

#### 1.04 QUALITY ASSURANCE:

- A. Comply with applicable portions of NEC as to type products used and installation of components. Provide products and materials, which have been UL-listed and labeled. Comply with NEMA standards for low loss extended frequency cable and EIA/TIA TSB-36. Comply with EIA/TIA 568-A, EIA/TIA 569 and manufacturer's recommendations. Comply with EIA/TIA testing standards for horizontal cabling.

#### 1.05 SUBMITTALS AND SUBSTITUTIONS:

- A. Submit manufacturer's data and installation details for all devices, plates, cable, terminal blocks, patch cords, TVSS, wire management, labels and similar equipment.
- B. Submit a copy of certification documents.
- C. Any substitution requests must be submitted in writing, and approved by Owner or Owner's Representative in writing prior to acceptance of bid.
- D. Substitution requests may only be made for products equal to or better than as specified in this document. Proof of "equal or better" status is imposed on the contractor, not the Owner.
- E. Where a specific manufacturer is called out by name, this is the preferred standard. If substitutions are allowed, they are at the discretion of the Owner and based on performance, suitability, quality, administrative requirements, warranty and other factors deemed important to the Owner.
- F. For the purposes of this Specification, "or approved equal" is implied for all specified, named products.

#### 1.06 CONTRACTOR QUALIFICATIONS AND TRAINING:

- A. The contractor shall be fully conversant and capable in the cabling of low voltage applications such as, but not limited to data, voice and imaging network systems. The Contractor shall at a minimum possess the following qualifications:
  - 1. Possess those licenses/permits required to perform telecommunications installations in the specified jurisdiction.
  - 2. Provide references of the type of installation detailed in this specification.
  - 3. Personnel trained and certified in fiber optic cabling, splicing, termination and testing techniques. Personnel must have experience using a light meter and OTDR.
  - 4. Personnel trained in the installation of pathways and support for housing horizontal and backbone cabling.
  - 5. Personnel knowledgeable in local, state, province and national codes, and regulations. All work shall comply with the latest revision of the codes or regulations. When conflict exists

between local or national codes or regulations, the most stringent codes or regulations shall be followed.

6. Be in business a minimum of five (5) continuous years with a Contractor's license in the state where the project is located, and appropriate for the type of work expected herein.
7. Member in good standing of the Certified Installer network associated with the products listed in this Specification and authorized for use in this Project. Contractor must be a member of this installer program before, during, and through completion of the system installation. Supporting documentation will be required as part of the submittal.
8. Maintain a certified RCDD on staff and utilize certified BICSI Installers for this project.

#### 1.07 WARRANTY:

- A. A Limited Lifetime Product & Performance Warranty covering all components, equipment and workmanship shall be provided to the Owner, submitted in writing with system documentation. The warranty period shall begin on the system's first use by the owner.
  1. Horizontal channels shall be completed with end to end solutions, such as the Berk-Tek Leviton Technologies Solutions. Factory-terminated copper and/or fiber optic patch cords from the solutions provider must be used in order to be eligible for the applicable channel performance guarantees.
  2. The Contractor must pre-register the project with the Manufacturer before installation has begun. Following project completion, contractor is responsible for completing all warranty registration procedures on behalf of Owner.
  3. Should the cabling system fail to perform its expected operation within this warranty period due to inferior or faulty material and/or workmanship, the contractor shall promptly make all required corrections without cost to the owner.
- B. Certified Installer shall provide labor, materials, and documentation in accordance with Manufacturer requirements necessary to ensure that the Owner will be furnished with the maximum available Manufacturer's Warranty in force at the time of this project.
- C. The installed structured cabling system shall provide a warranty guaranteeing a minimum channel performance above the ANSI/TIA 568-C requirements for all category-rated solutions in this Specification. See Products section for performance criteria. Standards-compliant channel or permanent link performance tests shall be performed in the field with a Manufacturer-approved certification tester in the appropriate channel or permanent link test configuration.
- D. Necessary documentation for warranty registration shall be provided to the manufacturer by the installer (within 10 days) following 100 percent testing of cables.
  1. Installer shall submit test results to Manufacturer in the certification tester's original software files.
  2. Installer shall ensure that the warranty registration is properly submitted, with all required documentation within 10 days of project completion.
  3. Certified Contractor/Integrator must adhere to the terms and conditions of the respective manufacturer's warranty programs.
- E. Installer shall ensure that the Owner receives the manufacturer issued project warranty certificate within 60 calendar days of warranty registration.

#### 1.08 BACKBONE SUBSYSTEMS:

- A. 19" racks, cabinets, patch panels, rack mounting kits for switch and hubs, wire management components, and patch cables shall be furnished and installed by Contractor.
- B. Backbone copper and fiber systems form an interconnected infrastructure between MDF, IDF, and zone enclosures, both inside and between buildings. All cable, connectors, panels and support systems shall be installed and tested by contractor.
- C. Typical Fiber backbone will be Singlemode low-water-peak (OS2) fiber optic cable or Laser-Optimized Multimode (OM3) fiber optic cable as noted below and on plan drawings. Singlemode is typically run between buildings and Multimode fiber is run within the building. Singlemode fiber will be terminated on LC connectors using pre-polished connectors or fusion splice pigtails. Multimode fiber may be terminated on LC connectors using pre-polished connectors or fusion splice pigtails, or may be factory pre-terminated onto MTP multi-fiber connectors.
- D. No splicing of cables will be required or allowed between endpoints. Armored cable must be grounded at both ends if run outdoors. With armored fiber, no innerduct will be required. Check plans for clarification or exceptions.

#### 1.09 WORK AREA SUBSYSTEM:

- A. The connection between the information outlet and the station equipment in the work area is provided by the Work Area Subsystem. It consists of cords, outlets, adapters, and other filters/impedance matching devices.

#### 1.010 HORIZONTAL SUBSYSTEM:

- A. The Horizontal Subsystem is the portion of the telecommunications cabling system that extends from the work area telecommunications outlet/connector to the horizontal cross-connect in the telecommunications room/closet. It consists of the telecommunications outlet/connector, the horizontal cables, optional consolidation point, wireless access point cabling, and that portion of the cross-connect in the telecommunications room/closet serving the horizontal cable. Each floor of a building should be served by its own Horizontal Subsystem.

#### 1.011 ADMINISTRATION SUBSYSTEMS:

- A. The Administration Subsystem links the Horizontal Subsystem and the Backbone Subsystem together. It consists of labeling hardware for providing circuit identification and patch cords or cross connect wire used for creating circuit connection at the cross connects.

### PART 2 - PRODUCTS

#### 2.01 GENERAL:

- A. Provide complete raceway, outlet boxes and miscellaneous items as required.
- B. Provide minimum 4-<sup>11</sup>/<sub>16</sub>" square outlet box at each outlet location with single gang plaster or tile ring and 1.25" conduit to cable tray, backboard, or accessible ceiling or floor space.
- C. Provide a complete data cabling and device system as described herein.

#### 2.02 HORIZONTAL CABLING SYSTEMS:

- D. NETWORK DATA CABLES

4 - 27 10 00 Structured Cabling

1. Provide 4-pair, 100-Ohm balanced unshielded twisted pair (UTP) Cables for each data outlet designated.
2. All UTP cables passing through air handling space shall be PLENUM-rated (CMP). Cables not passing through air handling spaces may be PVC (CMR) jacketed. Some buildings will require the use of Plenum cable. The contractor is solely responsible for verifying the construction requirements and installing the correct cable. Failure to provide CMP cable in Plenum required spaces will result in the contractor removing and replacing the cable at their own expense.
3. CAT6A UTP cable shall conform to the following requirements:
  - a. All cables shall be made in the USA of solid annealed copper conductors, 23 AWG, with four individually twisted pairs in a single round cable sheath.
  - b. Characterized to 750 MHz, 250 MHz greater than the standard
  - c. Outer diameter 0.300" (7.6mm), CMP
  - d. Be made by an ISO 9001 and 14001 Certified Manufacturer.
  - e. Channel margin guarantees for ANSI/TIA 568-C.2 CAT6A and ISO/IEC 11801 Class EA (margin vs. ANSI/TIA-568-C.2 and margin guarantees are for a standard 2-connector channel).

Insertion Loss	3%
NEXT	2 dB
PSNEXT	3 dB
ACR-F (ELFEXT)	5 dB
PSACR-F (PSELFEXT)	6 dB
Return Loss	1 dB
ACR-N	4 dB
PSACR-N	5 dB

**Approved Products:**

**Berk-Tek:**

Category 6A LANmark XTP, CMP #11082057 (1000' reel)

Category 6A LANmark XTP, CMR #11082062 (1000' reel)

Category 6 Premium LM2000, CMP # 10163222 (1000' reel)

Category 6 Premium LM2000, CMR # 10167476 (1000' reel)

\* Color as noted on drawings/district standard (verify prior to submittal)

**E. DATA INFORMATION OUTLETS:**

**1. COPPER PATCH PANELS**

- a. Integrated 110-style patch panels shall exceed requirements for Category 6A described in ANSI/TIA-568-C.2 and Class EA and Class E component requirements (respectively) as described in ISO/IEC 11801 in a typical standard-density (48 ports per 2RU) configuration.
- b. Integrated 110-style patch panels shall be available in flat or angled styles, 24 ports per RU in an un-staggered horizontal layout.
- c. Modular (unloaded) patch panels shall accept the same Universal jacks as are used at the workstation area outlets. No special "panel jacks" shall be required.
- d. Modular patch panels shall be available in flat, angled, Recessed and recessed angled varieties, in 1RU 24 and 48-port versions or 2RU 48 and 72-port configurations.
- e. Patch panels shall be sized to fit an EIA standard, 19 inch relay rack, and made of 16-gauge steel and powder-coated black with white silkscreened lettering.

Approved Product examples:

Leviton CAT6A 110-style Flat 1RU 24-port Patch Panel, # 6A586-U24  
Leviton CAT6A 110-style Angled 2RU 48-port Patch Panel, # 6A9587-U48  
Leviton QuickPort® 1RU Flat 48-port Patch Panel, # 49255-Q48

2. **CAT6A JACKS:** Provide modular type Category 6A information outlets for 23-AWG copper cable. These Category 6A (CAT6A) connectors shall be individual snap-in style, and exceed compliance with TIA/EIA-568-C.2 specifications. The connectors shall comply with the following:
- a. Be 8-position/ 8 conductor (8P8C, RJ45-style) modular jacks.
  - b. Utilize a universal Keystone-style insertion footprint as the manufacturer's main "flagship" line of products.
  - c. Comply with FCC Part 68; UL listed and CSA Certified. Verified to exceed all channel performance requirements in TIA-568-B.2-10 from 1 MHz to 500MHz to support the IEEE 802.3an standard for 10 Gigabit Ethernet over UTP Cable.
  - d. Each 10G connector is to feature an injection molded Cone of Silence™ technology to eliminate alien crosstalk (AXT).
  - e. Every 10G connector to include polymer springs above the tines ("Retention Force Technology" or similar functionality) to promote return of tines to original position and protect against deformation due to stress of patch cords or inappropriate materials insertion
  - f. Connector shall have Pair Separation Towers on IDC to facilitate quick, easy terminations without a complete untwist of each pair of conductors.
  - g. The connector shall be rear 110-type insulation displacement connectors (IDC) with solder-plated phosphor bronze contacts, configured in a 180° orientation such that the punch down field is in the back, allowing for rear termination.
  - h. The connector shall provide a ledge directly adjacent to the 110-style termination against which the wires can be directly terminated and cut in one action by the installation craftsman.
  - i. Connector wiring label shall provide installation color codes for both T568A and T568B wiring schemes on separate labels.

**Approved Products:**

Leviton Atlas-X1 CAT6A QuickPort Module # 61UJK--R\*6

Where \* = one of 13 colors. See drawings or check with Owner for application.

3. **FACEPLATES:** Faceplates provide information outlets to the work area. Contractor shall provide and install single gang faceplate kits to allow up to six data or voice jacks as required for all work area outlets, workstation base feeds, and unused telecom backboxes and furniture openings. Faceplates shall:
- a. Utilize a Quickport ("keystone"-style) footprint to match the approved connectivity manufacturer, and be made by the same manufacturer as the connectors.
  - b. Match colors and materials of the power wiring device plates.
  - c. Support any connectivity media type, including fiber and copper applications.
  - d. Have write-on designation labels for circuit identification together with a clear plastic cover.
  - e. Be available in single-gang and double-gang configurations.
  - f. Have surface-mount boxes and standoff rings available for both single and double gang faceplates.
  - g. Have single-port matching color blank inserts available in packs of 10.
  - h. Shall be stainless steel when installed above accessible ceiling.

**Approved Products:**

Leviton QuickPort Single-Gang, Plain, # 41080-#xP

Leviton QuickPort Single-Gang with ID Windows, # 42080-#xS

Leviton QuickPort Blank Inserts, pack of 10, # 41084-BxB

Leviton QuickPort Stainless Steel wallphone plate, # 4108VV-0SP



Where:

# = number of ports: 1, 2, 3, 4, 6

x = color: White (W), Ivory (I), Light Almond (T), Gray (G), Black (E)

Check drawings for requirements

## 2.03 BACKBONE CABLING SYSTEMS

### F. BACKBONE CABLES:

#### 1. GENERAL

- a. The cable route within a building, connecting closet to closet or closet to the equipment room is the Intra-building Backbone Subsystem. It links the Main Distribution Frame (MDF) in the equipment room to Intermediate Distribution Frame (IDF) and Horizontal Cross-connects (HC) in the Telecommunications Room/Closets (TC). It consists of the backbone transmission media between these locations and the associated connecting hardware terminating this media. These fiber optic cables are typically Multimode.
- b. Cables run from building to building in a campus, or from campus to campus are part of the Interbuilding Backbone System. It consists of the backbone transmission media between these locations and the associated connecting hardware terminating these media. These fiber optic cables are typically Singlemode.
- c. Cables allowed for use in the backbone shall support voice, data, video, wireless and building infrastructure applications. The bending radius and pulling strength requirements of all backbone cables shall be observed during handling and installation. All cables shall conform to ANSI/TIA/EIA-568-C Commercial Building Telecommunications Cabling Standard. These cables include:
  - 1) 4-pair 100-ohm unshielded twisted-pair 100% annealed-copper solid-conductor cables, 100-ohm UTP multi-pair copper cables
  - 2) 50/125 $\mu$ m (micron) Laser-Optimized Multi-Mode Fiber (LOMMF) cables (OM3 or better)
  - 3) 8.3 $\mu$ m low-water peak singlemode optical fiber cables compliant with ITU-T G.652D (OS2).

#### 2. VOICE COPPER BACKBONE CABLE

- a. Power-Sum Multi-Pair Category 3 cable, 24 AWG solid-copper conductors in 25-pair binder groups to support 10BASE-T, 100BASE-T and Analog Voice communications at 16Mhz.

Approved Products:

Berk-Tek # 10032111, 25-pr CMP, Gray.

Berk-Tek # 10032396, 25-pr CMR, Gray

Other multiples of 25 acceptable (50, 100, 200, 300 pair as required)

#### 3. SINGLEMODE FIBER OPTIC CABLE

- a. Singlemode fiber optical fiber cables shall meet all of the requirements delineated within the specifications of ANSI/TIA/EIA-568-A. Must be a minimum of 12 strands of nominal 8.3 micron optical fiber, and must be appropriate for the environment in which it is installed (Indoor, Indoor/Outdoor, Outside Plant, OFNP or OFNR).
- b. Fiber optic cables will utilize an interlocking armor outer cover around an integrated Loose-Tube (indoor/outdoor) cable construction.
- c. Loose tube fibers shall utilize a fan-out kit to fit 250 micron fibers into a 900 micron protective sheath when terminating.

- d. See plans and scope of work for total strand count between locations.

**Approved Manufacturers**

Berk-Tek Adventum Indoor/Outdoor Dry Loose-Tube Plenum cable,  
12-strand SM, armored, # LTPK12AB0403  
Berk-Tek Adventum Indoor/Outdoor Dry Loose-Tube Plenum cable,  
24-strand SM, armored, # LTPK12B024AB0403  
Berk-Tek Adventum Indoor/Outdoor Dry Loose-Tube OFNR cable,  
12-strand SM, armored, # LTRK12AB0403  
Berk-Tek Adventum Indoor/Outdoor Dry Loose-Tube OFNR cable,  
24-strand SM, armored, # LTRK12B024AB0403  
Leviton 12-fiber, 24" fan-out Kit, # 49887-12S

**G. COPPER TERMINATION BLOCKS**

1. Provide termination blocks for Category 3 Backbone Cabling Systems that support up to Category 5e applications and facilitate cross-connection using twisted pair wiring.
2. The connecting hardware block shall support the appropriate Category 3 to 5e voice (non-VOIP) applications and facilitate cross-connection and/or inter-connection using cross-connect wire. The cross-connect hardware shall be of 66-type (telephone) AND:
3. The cross-connect shall be Category 5e 110-style wiring bases, mountable to wall or backboard to provide 110 termination capable of supporting voice, security, and Category 5e data applications, including high megabit and shared-sheath applications when used with Category 5e rated cabling.
4. The components shall be UL listed and ANSI/TIA-568-C compliant. Bases shall support 50, 100 or 300 pair densities with provision for ANSI/TIA-606-B compliant labeling. Plastic bases and blocks shall be made of fire-retardant plastic rated UL 94V-0.
5. Cross-connect blocks shall be available in a variety of insulation displacement clips (IDC) with and without tails, and support wire sizes: Solid: Wire Ranges 22-26 AWG (0.64mm - 0.40mm).

**Approved Products:**

Leviton 110 Connecting Block, 100-pair w/legs # 41AW2-100  
Leviton Wire Manager w/legs, # 41A10-HCM

**H. FIBER OPTIC ENCLOSURES, PANELS AND TRAYS**

1. All Fiber interconnect centers, panels, enclosures and trays (units) shall provide cross-connect, inter-connect, and splicing capabilities and contain cable management for supporting and routing the fiber cables/jumpers.
2. Rack-Mounted, High Density Fiber Interconnect Center: The high density, rack mounted fiber interconnect center shall:
  - a. Fiber enclosure shall be available in 1, 2 and 4RU versions to accommodate termination and splicing of fiber. Enclosure depth shall be 17".
  - b. Enclosure shall feature a sliding tray which removes completely, front or rear, from enclosure to facilitate field terminations and splicing.
  - c. Rack-mount enclosure shall have removable transparent hinged doors and slide away covers allow easy access during install and visibility of interior after install.
  - d. Fiber Adapter Plates (bulkheads) shall accept SC and LC connectors, MTP® adapters, and plug-n-play MTP modules/cassettes.

- e. Fiber cable management for routing, storage, and protection shall accept patch cords, tight-buffer fiber, and backbone cables. Rear fiber cable management rings shall be stackable and configurable in ¼, ½, or full ring arrangements. Enclosure shall be constructed of 16-gauge steel with a powder-coated black finish and be mountable in a 19" rack or cabinet frame. An optional locking door feature shall be available.
- f. Enclosure shall be available either empty or in custom pre-loaded configurations, with or without locking doors.

**Approved Products:**

- Leviton Opt-X Ultra Rack-Mount 1RU Enclosure, # 5R1UH-S03
- Leviton Opt-X Ultra Rack-Mount 2RU Enclosure, # 5R2UH-S06
- Leviton Opt-X Ultra Rack-Mount 4RU Enclosure, # 5R4UH-S12
- Leviton lock and key # 5L000-KAL
- Leviton armored cable ground kit, # DPGRD-KIT

**3. FIBER OPTIC WALL-MOUNT ENCLOSURES**

- a. The enclosure shall mount on a wall in an 8"x13", 12"x14" or 17"x15" footprint.
- b. Adapters shall be mounted in metal mounting plates and attached to the enclosure using plastic plungers.
- c. There shall be cable entrance ports in the top and bottom of the patch panel on both the distribution and patch sides.
- d. Cable entrance ports are designed with a strain relief post with a slot capable of holding a tie wrap.
- e. The enclosure shall provide strain relief in the form of a grounding lug and multiple tie wrap points.
- f. The enclosure shall have a plastic fiber management ring made of high impact UL 94V-0 rated fire-retardant plastic. This ring shall be stackable and adjustable. A port identification label/card shall be provided.
- g. The enclosure shall be made of 16-gauge steel powder coated black.

**Approved Manufacturers**

- Leviton Wall Mount Fiber Enclosure, 2-panel, split-metal door w/key, # 5W120-00N, or larger size as appropriate.

**I. FIBER TERMINATION PRODUCTS**

**1. FIBER ADAPTER PLATES**

- a. Fiber Adapter Plates shall be used to present field-terminated or pre-terminated discrete, single-strand connectors (e.g. LC) to a fiber enclosure panel.
- b. The fiber adapter plate shall be modular and functional for use in either a wall-mount or rack-mount enclosure. The adapter plate shall be provided in LC styles, in 12- or 24-fiber configurations. 12-fiber adapter plates are used to terminate 12-fiber cables, and 24-fiber adapter plates are used to terminate 24-fiber (or greater) cables. Avoid deployment of adapter plates with unused ports at the rear.
- c. 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.
- d. LC adapter plates shall be precision-molded in the USA and integrated to eliminate "rattle" and loose fit. All ferrules shall be zirconia-ceramic. Adapter plates shall be

offered in standard fiber type colors. Singlemode colors are typically BLUE, Multimode are typically AQUA.

**Approved Products:**

Leviton Opt-X Fiber Adapter Plate, 12 LC SM Blue, #5F100-2LL  
Leviton Opt-X Fiber Adapter Plate, 24 LC SM Blue, #5F100-4LL  
Leviton Opt-X Fiber Adapter Plate, 12 LC MM Aqua, #5F100-2QL  
Leviton Opt-X Fiber Adapter Plate, 24 LC MM Aqua, #5F100-4QL

**2. FIBER CONNECTORS**

- a. The fiber optic connector shall meet or exceed the requirements described in ANSI/TIA-568-C.3 and ANSI/TIA-604-3 (LC) Connector Intermateability Standards
- b. Connector shall be pre polished and field installable to eliminate the need for hand polishing, bonding, or epoxy in the field.
- c. Connector shall be provided in LC, single-mode or multimode (laser optimized) configurations, terminated on 250 or 900 µm buffered fiber and/or 2mm or 3 mm jacketed fiber.
- d. Maximum connector insertion loss shall be no greater than 0.5 dB, with an average of 0.1 dB (MM) or 0.2dB (SM). Typical connector return loss shall be 35 dB (multimode) and 56 dB (single mode). All versions shall allow continuity to be verified by use of a visual fault locator (VFL).
- e. Connector shall utilize a precision zirconia ceramic ferrule, and be re-terminable up to 3 times during testing without loss of performance.
- f. Connector shall require the use of a cleaver with a guaranteed maximum cleaving angle of 2 degrees for multimode and 1 degree for singlemode fibers.

**Approved Products:**

Leviton FastCAM LC Singlemode, # 49991-SLC  
Leviton FastCAM LC Multimode, # 49991-LLC  
Leviton / Lynx cleaver # 49886-LNX or equal

**3. MTP® MODULES FOR PRE-TERMINATED CABLES**

- a. 24-strand Multi-Mode Fiber optic MTP-MTP configured trunks which terminate in LC connectors will land on a 24-strand (12 LC Duplex Port) MTP-LC Cassette module and will utilize a 24-strand MTP connector at each end of the trunk. 12-strand Multi-Mode Fiber optic MTP-MTP configured trunks which terminate in LC connectors will land on a 12-strand (6 LC Duplex Port) MTP-LC Cassette module using 12-strand MTP connectors.
- b. 24-strand Multi-Mode Fiber optic MTP-MTP configured trunks which terminate in MTP 40G connectors will land on an MTP - MTP Cassette module with (3) 8-strand MTP connectors on the front. Trunks utilizing 2 or more 24-strand MTP connectors may land on a MTP module displaying (2) 24-strand MTP connectors in the rear, and (6) 8-strand (40G) MTP connectors in the front. Multiple modules may be required if trunk cables are configured with greater strand counts or connectors.
- c. The MTP modules shall meet the following requirements:
  - 1) Insertable directly into fiber enclosure panel openings with a push-pin/grommet latch.
  - 2) Rated for Laser Optimized Multi-mode OM3 optical fiber.
  - 3) Shall utilize a Red male MTP connection at the rear to designate the 24-strand MTP.
  - 4) Shall utilize Method B Polarity.
  - 5) Shall require one Core module at one end of a fiber trunk segment, and one Edge module at the second end to maintain correct polarity across the system.

- 6) Core modules will be used at the MDF and Edge modules at the IDF ends of the cable for consistency of design.
- 7) 40G MTP connector housings at front of module shall be Black.

**Approved Products:**

Leviton Method B polarity, 24-fiber MTP to LC, OM3, Core module  
 # FM-E024CDC0BC  
 Leviton Method B polarity, 24-fiber MTP to LC, OM3, Edge module  
 # FM-E024CDC0BE  
 Leviton Method B polarity, 24-fiber MTP to 3x8-fiber MTP, OM3 module  
 # FM-E024NDC0E  
 Leviton Method B polarity, 2x24-fiber MTP to 6x8-fiber MTP, OM3 module  
 # FM-F048NDC0B

**4. SPLICE TRAYS AND CASSETTES**

- a. Fiber splice trays shall mount to rear of enclosure for terminating bulk fiber optic cable to factory terminated fiber optic pigtailed.
  - 1) Splice trays shall be offered in mini and high density versions with removable clear covers for viewing and inspection of fibers.
  - 2) Incoming fiber shall be secured utilizing a ratchet action foam rubber padding clamp feature or tie-down points to minimize crushing of fiber.
  - 3) The trays shall accommodate slack management of both single-mode and multimode 250 or 900µm fiber and protection of (up to) 12 or 24 fiber heat shrink style fusion splices.
  - 4) Heat shrink splice sleeves shall be included. Splice tray shall be made by the fiber enclosure manufacturer.
- b. Fiber pigtail fusion splice modules shall mount to front of fiber enclosure for terminating bulk fiber optic cable to factory terminated fiber optic pigtailed, and shall be front-removable.
  - 1) Splice Modules shall be offered in 12- or 24-fiber LC for OS2 (Singlemode) and OM3 (Multimode) fiber types. Construction of module shall be of 14-gauge aluminum for robustness and light weight.
  - 2) Splice Modules shall be pre-loaded and routed with respective 3-meter, color-coded, 12-strand pigtail assembly.
  - 3) Individual pigtailed shall have maximum insertion loss of 0.4 dB and 0.35 dB for OM3 and OS2 fiber types, respectively. Return Loss shall be greater than 25 dB (for OM3), 55 dB (for OS2/UPC), and 60 dB (for OS2/APC).
  - 4) Individual compartments in splice module shall provide slack storage and bend radius protection for incoming backbone fibers, 900 µm tight-buffer fibers, and fusion-spliced fibers. Incoming 250 µm backbone fibers shall be protected by an included braided mesh sleeve. Heat shrink style splice sleeves and tie wraps shall also be included with module.

**Approved Products:**

Leviton Mini Splice Tray, 12-strand # T5PLS-12F  
 Leviton High-Density Mini Splice Tray, 24-strand # T5PLS-24F  
 Leviton LC 12-Fiber pigtail kit, OS2, #UPPLC-KIT  
 Leviton LC 12-Fiber pigtail kit, OM3, #5LPLC-KIT  
 Or  
 Leviton Opt-X 12-Fiber LC OS2 Splice Module # SPLCS-12L  
 Leviton Opt-X 24-Fiber LC OS2 Splice Module # SPLCS-24L  
 Leviton Opt-X 12-Fiber LC OM3 Splice Module # SPLCS-12A  
 Leviton Opt-X 24-Fiber LC OM3 Splice Module # SPLCS-24A

**J. COPPER AND FIBER OPTIC PATCH CORDS**

## 1. CAT6A PATCH CORDS

- a. Provide factory terminated and tested patch cords from the manufacturer of the structured cabling components. Patch cords must meet or exceed all criteria specified in the horizontal cabling standard subsection above.
- b. Copper patch cords shall exhibit the following characteristics:
  - 1) Slimline, integrated snag-less plug design without incorporating the use of a rubber molded boot.
  - 2) A narrow profile for less congestion in higher density applications and a strain relief boot ensures long-term network performance
  - 3) Copper Category 6A patch cords shall be Component-rated per TIA 568-C.2-10 for CAT 6 and CAT6A component performance and Independently tested and verified by Intertek (ETL).
  - 4) Outside diameter of 0.225" (CAT6) or 0.240" (CAT6A).
  - 5) 26 AWG stranded conductors for maximum flexibility
  - 6) CAT6A cord complies with TIA 568-C.2-10 component requirements for connecting hardware from 1 MHz to 500 MHz, ISO 11801 Class EA, IEEE 802.3an to support 10GBASE-T networks and cULus listed.
  - 7) Available Lengths: 3', 5', 7', 10', 15', or 20'
- c. Provide factory assembled patch cords meeting or exceeding all criteria specified in the horizontal cabling standard subsection above, in the following quantities:
  - 1) (1) 10' CAT 6A patch cable per outlet location/faceplate (drop) for use at the workstation.
  - 2) (1) 5' (average) CAT 6A patch cable per outlet location/faceplate (drop) for use at the network switch in the MDF and IDF.
  - 3) (1) 3' CAT 6A patch cable per outlet location/faceplate (drop) for use at wireless access points.

### Approved Products:

Leviton Slimline CAT6A Component-rated Patch Cord, #6AS10-xx\*  
Leviton Slimline CAT6 Patch Cord, # 6D460-xx\*

### Where:

xx = Length in Feet

\* = color: White (W), Yellow (Y), Red (R), Blue (L), Green (G), Grey (S), Black (E)

## 2. FIBER JUMPERS AND ARRAY CORDS

- a. Fiber optic LC-LC patch cords, or jumpers, will make LC connections from the rack termination points to the equipment. The jumpers will meet the following requirements:
  - 1) Factory-manufactured using 50/125  $\mu$ m Laser Optimized Multi-Mode OM3 optical fiber. Field terminations on fiber jumpers are not acceptable.
  - 2) Shall utilize A-B polarity.
  - 3) Shall exhibit <0.3 dB insertion loss and -25 dB return loss.
  - 4) Shall be thin, round, 2-strand 2mm fiber cable with duplex "Uni-boot" reversing polarity LC connector at both ends to minimize congestion at rack and in cable managers.
  - 5) Shall be available in standard lengths of 1, 2, 3, 5 and 10 meters and custom-orderable up to any length of feet or meters
- b. Fiber-Optic MTP-MTP "array cords" shall utilize 8-strand MTP (female) to 8-strand MTP (male) connectors in a 3mm breakout jacket. The array cords will meet the following requirements:

- 1) Array cords shall meet an optical insertion loss not to exceed 0.35 dB per mated connector pair.
  - 2) Array cords shall be available in 1-, 2-, 3-, 5-, and 10-meter lengths.
  - 3) Array cords shall be compliant with TIA-568-C.3 and IEEE 802.3ba and available in UL Riser or Plenum rated cables (Riser is acceptable for in-rack patching)
  - 4) Meets TIA-568-C.3 and IEEE 802.3ba standards (40/100GbE), and adheres to TIA-942 data center design guidelines.
  - 5) Boot color for 8-strand MTP array cords shall be Dark Gray.
  - 6) MTP shall be pinned on one end, unpinned on the other, and utilize Method B polarity.
- c. Provide factory assembled patch cords meeting or exceeding all criteria specified in the horizontal cabling standard subsection above, in the following quantities:
- 1) (2) 2m LC duplex fiber jumper for each backbone cable terminated in IDF and MDF
  - 2) (2) 2m MTP-MTP 8-strand fiber array cord for each backbone cable terminated in MTP ports at IDF or MDF
  - 3) Verify quantities and configuration with owner prior to delivery.

**Approved Products:**

Leviton LC-LC OM3 Reversing Uniboot duplex jumper, #FPC-M3RR1VVxxxMAB  
 Leviton LC-LC SM Reversing Uniboot duplex jumper, #FPC-S2RR1VVxxxMAB  
 Leviton 8-Fiber MTP(f)-MTP(m) Method B OM3 array cord, #5L8MN-BxxM

**Where:**

xxx or xx = Length in Meters, for example, 010 or 03 as required

**K. WIRE MANAGEMENT**

1. Provide wiring spindles and channels as necessary to allow neat bundling of all wire and cable on backboard. Provide wiring channel (horizontal) above and/or below each termination block or patch panel, or on the side (vertical) as appropriate. Provide wiring channels by same manufacturer of termination blocks or patch panels. Provide nylon or Velcro type ties for all cables at telephone backboard not run in conduit or channels.
2. Provide 1RU ring-style horizontal wire managers between every 2 patch panels as space allows. Provide 2RU horizontal wire manager between the Orange and Blue sets of patch panels if in the same rack, and above and below each similarly-apportioned bank of patch panels.
  - a. Cable managers shall be flat, open ring style.
  - b. Do not coil or wind patch cords inside ring-style wire managers.
  - c. Use recessed flat wire manager as needed within enclosed cabinets to route patch cords to opposite sides, where the rings of the flat wire managers would interfere with cabinet door closure.

**Approved Products:**

Leviton Horizontal manager, 1RU, # 49253-LPM  
 Leviton Horizontal manager, 2RU, # 49253-BCM  
 Leviton Recessed Flat Horizontal manager, 1RU, # 49253-RCM

3. Provide full height, front-and-rear, 8" wide Vertical Wire Managers at the side of and between each 2-post and/or 4-post termination rack or frame. If space will not allow, the 5" wide wire manager may be substituted at row ends only, leaving the 8" vertical wire manager between each rack. Owner approval in writing is required prior to this substitution.

- a. The vertical cable management system shall be cULus listed, PCI rated for 94V-O, ABS rated for UL94HB, and compliant with ANSI/TIA/EIA 568-B standards.
- b. Mounting hardware shall be included to insure the proper installation to infrastructure. It shall mount onto a standard TIA/EIA recognized equipment rack.
- c. The management system shall offer an assortment of accessories, including a bend radius slack loop organizer, cable retainers, and shall accommodate top, bottom, side and pass-through cable routing. Dual hinged, cable concealing covers shall be included.

**Approved Products:**

Leviton Vertical 80"L x 8"W x 8"D channel, black cover, #8980L-VFR

- 4. For enclosed cabinets, provide horizontal wire management as specified above and vertical or integrated vertical wire management as described below, pertinent to the cabinet manufacturer.

**L. Power Distribution Units (PDU)**

- 1. Provide (2) vertical PDU per rack or wall cabinet. Unswitched, non-surge suppressed. 30" length for wall cabinets and 48" for floor-mounted cabinets.
- 2. Utilize plug and receptacle style appropriate for installation circuits and equipment interfaces.

**Approved Products**

Leviton P1000 series # P1042-10L

Leviton P1000 series # P1044-10L

**M. Equipment and Ladder Rack System:**

- A. UL listed Chatsworth 19"W x 84"H x 15" D 45 RMU Aluminum 2 post rack P.N. 55053-703
- B. Ladder rack to wall support, Chatsworth Wall Angle Support Kit P.N. 11421-712
- C. Rack to runway support Chatsworth mounting plate P.N. 10595-712
- D. Ladder rack support system, Chatsworth Universal Cable Runway P.N. 10250-712
- E. Straight through ladder rack splice, Chatsworth Butt-Splice Kit P.N. 11301-701
- F. Ladder rack junction splice, Chatsworth Junction Splice Kit P.N. 11302-702
- G. Ladder rack protective end caps, Chatsworth Protective Rubber End Caps P.N.10642-001
- H. Wall support for cable runway Chatsworth Triangular Support Bracket P.N. 11312-712
- I. Provide two single sided equipment shelves on each rack installed, Chatsworth P.N. 40074-700.
- J. Equipment rack bonding material Chatsworth Green Ground Jumper P.N. 40159-009 and Chatsworth Green Cable Runway Ground Strap Kit P.N. 40164-001

**N. LABELING:**

- A. The contractor shall provide tags, straps, and adhesive labels. These tags, straps, and adhesive labels shall be of high quality that will endure heat, water, and time.



- B. Shall meet the legibility, defacement, exposure, and adhesion requirements of UL 969.
- C. Shall be pre-printed using a mechanical means of printing.
- D. Where used for cable marking, provide vinyl substrate with a white printing area and a clear "tail" that self laminates the printed area when wrapped around the cable. The cable marking shall be immediately visible and within two inches from termination point.
- E. Where insert type labels are used, provide clear plastic cover over label.
- F. Copper patch panel labeling shall be completed with adhesive labeling kit specifically designed for the panel, Leviton 49257-QHD.
- G. Labeling P-touch font size 4MM bold, black on White, 3/8" labeling tape on all work stations, panels and devices.
- H. A round Avery label green in color Product Number: 5463 and a station label utilizing the same font size as on work station face plate must be installed on ceiling grid below each wireless cable location for identification. See type "D" Wireless Location Detail.
- I. Labels shall be numbered consecutively and separate for each type of use. Refer to Work Station Details for additional information.
- J. The contractor shall develop and submit for approval a labeling scheme for the cable installation. The Owner will negotiate an appropriate labeling scheme with the successful contractor. At a minimum, the labeling system shall clearly identify all components of the system: 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. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme. Labeling shall conform to the owner's Labeling Grammar and the TIA/EIA-606A standard.
- K. CAT6 Labeling:
  1. IDF side labeling should follow RM.(Room number).(X port number) example RM01.1
  2. Station side cabling should follow IDF(Letter).RM.(Room number).(X port number) example IDF-A.RM01.1
  3. IDF side WAP/Bell Locations shall be labeled RM(Room number).(W for wireless/B for bell) example RM01.W
  4. Station side WAP/Bell Locations shall be labeled IDF.(Letter).RM(Room number). (W for wireless / B for Bell) example IDF-A.RM01.W

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION OF TELEPHONE/DATA SYSTEM:**

- A. Install raceway and cable system and specified equipment as indicated to comply with NEC and recognized industry practices.
- B. PRE-INSTALLATION CONFERENCE:
  1. Schedule a conference a minimum of five calendar days prior to beginning work of this section.
  2. Agenda: Clarify questions related to work to be performed, scheduling, coordination, etc.

3. Attendance: Communications system installer, General Contractor, Owners Representatives and any additional parties affected by work of this section.
4. Copy of Manufacturer warranty pre-application, RCDD qualifications, and other material not include in submittals will be provided by Contractor at this time.

C. WARRANTY:

1. A lifetime performance warranty covering all components, equipment and workmanship shall be submitted in writing with system documentation. The warranty period shall begin on the systems first use by the Owner.
2. The project must be pre-registered with Manufacturer before installation has begun.
3. Should the cabling system fail to perform within its expected operation within this warranty period due to inferior or faulty material and/or workmanship, the Contractor shall promptly make all required corrections without cost to Owner.

D. PATHWAYS AND TOPOLOGY:

1. Prior to placing any cable pathways or cable, the contractor shall survey the site to determine job conditions will not impose any obstructions that would interfere with the safe and satisfactory placement of the cables. The arrangements to remove any obstructions with the Project Manager need to be determined at that time.
2. Provide NEC-sized pullboxes for any run greater than 100 feet, or with more than two ninety-degree bends.
3. Maintain a distance of at least 12 inches from all power conduits and cables, and 6 inches from all fluorescent lighting fixtures. Do not install power feeders 100 amps or greater above or within 5 feet of telecommunications backboard. Do not install telecommunications conduits above power panels or switchboards.
4. The backbone subsystem shall include cable installed in a vertical manner between floor telecommunications room/closets (TCs or IDFs) and the main or intermediate cross-connect in a multi-story building and cable installed horizontally between telecommunications room/closets and the main or intermediate cross-connect in a long single story building.
5. Unless otherwise recommended by the Owner, all fiber cables will be encased in interlocking armor. All fibers will be terminated in the Telecom Rooms or Cabinets in new fiber enclosures equipped with sufficient ports, slack storage space and splice trays if required to terminate and secure all fibers.
6. Adequate riser sleeve/slot space shall be available with the ability to ingress the area at a later date in all Telecommunications rooms/closets, such that no drilling of additional sleeves/slots is necessary.
7. The backbone cables shall be installed in a star topology, emanating from the main cross-connect to each telecommunications room/closet. An intermediate cross-connect may be present between the main cross-connect and the horizontal cross-connect. This is known as a hierarchical star topology.

8. Backbone pathways shall be installed or selected such that the minimum bend radius of backbone cables is kept within manufacturer specifications both during and after installation.
9. Do not run fiber cables in conduits which are less than 2" in diameter.
10. All horizontal cables, regardless of media type, shall not exceed 90 m (295 ft) from the telecommunications outlets in the work area to the horizontal cross connect.
11. The combined length of jumpers, or patch cords and equipment cables in the telecommunications room/closet and the work area shall not exceed 10m (33 ft).
12. Horizontal pathways shall be installed or selected such that the minimum bend radius of horizontal cables is kept within manufacturer specifications both during and after installation.
13. For voice or data applications, 4-pair UTP or fiber optic cables shall be run using a star topology from the telecommunications room/closet serving that floor to every individual information outlet.
14. The Contractor shall observe the bending radius and pulling strength requirements of the 4-pair UTP and fiber optic cable during handling and installation.
15. Each run of UTP cable between horizontal portions of the cross-connect in the telecommunication closet and the information outlet shall not contain splices.
16. In a false ceiling environment, a minimum of 3 inches (75 mm) shall be observed between the cable supports and the false ceiling.
17. All horizontal pathways shall be designed, installed and grounded to meet applicable local and national building and electrical codes.
18. J-hooks shall be provided for all suspended cable, at a semi-irregular spacing not to exceed 5 feet between supports.
19. Install ¾" x 4' x 8' fire-rated plywood across all walls in telecom rooms, from 6" AFF to 8'-6" AFF. Coat with 2 coats of white paint. Do not paint over fire rating stamp.
20. Contractor shall firestop all used pathways which enter or leave the telecom rooms via conduit, cable tray or slot. Contractor is responsible for installing sleeves at each wall or partition penetration, and firestopping all fire-rated penetrations. Intumescent caulk shall be applied around the outside of each sleeve, and intumescent putty inside the sleeve or conduits around the cables. Appropriate fill ratios must be followed when penetrating fire rated walls.

**E. GROUNDING:**

1. All grounding / earthing and bonding shall be done to applicable codes, standards and regulations.
2. Telecom Contractor shall bond and ground all telecom room metals. Telecom Contractor shall provide and install TIA-rated Telecommunications Grounding Busbar (TGB) at all MDF and IDF locations, and an in-cabinet grounding busbar at each remote wall-mounted cabinet or telecom enclosure. All ground lugs shall be 2-hole make-up.
3. Electrician will provide connection between TGB and building ground; Telecom contractor (if separate, otherwise electrician) will provide a busbar and ground all equipment and telecom metals to the busbar.

4. Telecom installer will ground and bond all armored and/or shielded cables, racks, cabinets, cable tray, ladder racking, and shielded panels to telecom grounding busbar.
5. All grounding and bonding conductors shall be copper and may be insulated. When conductors are insulated, the sheath shall be green or marked with a distinctive green color, and shall be listed for the application. The minimum bonding conductor size shall be #6 AWG.
6. The Telecommunications Ground Busbar (TGB) shall be dedicated and pre-drilled copper busbar provided with holes for use with standard sized lugs. This busbar shall have minimum dimensions of .25 inch thick, 4 inches wide, and be variable in length.
7. Two-hole compression ground lugs shall be Chatsworth 40162-901, 40162-904, 40162-909, and 40162-911, or equal, based on the size of the copper conductor to be terminated.
8. All low voltage systems in this project shall be grounded and bonded.

**F. CABLES AND TERMINATIONS:**

1. Check plans and symbology for final determination of faceplate constitution or consult with Owner prior to bid.
2. Install additional cables as indicated on the drawings. Do not exceed manufacturers' recommendations for maximum allowable pulling tension, side wall pressure or minimum bending radius. Use pulling compound as recommended by cabling manufacturer.
3. Install CAT6A cables for Wireless Access Points and cameras, and CAT6 everywhere else unless otherwise noted.
4. Provide a full-size service loop (at least once around the inside edge of the box) in each J-box in the communications system.
5. Install all cable in plenum spaces with J-hooks of at least 1" in width to disperse the weight on the bottom cables. Homerun all cable to nearest TR Cabinet.
6. Coordinate with EIA/TIA 569 tables 4.4-1 and 4.4-2 for conduit and splice box sizing.
7. Install modular jacks at all outlets shown; one data jack for each data cable at each faceplate or termination point. Install additional cables and modular jacks as indicated on the drawings.
8. Terminate cables at each jack location and at termination board or patch panel. Follow industry guidelines and manufacturers' recommendations and procedures as required. All termination hardware shall be rated to exceed Category 6 specifications as specified above.
9. Label and identify each outlet and cable for data circuits. Label at outlet end and at termination board or patch panel with matching designations.
10. Provide data outlets in surface raceway at 26" on center unless otherwise indicated.

**3.02 TERMINAL BLOCKS AND PATCH PANELS:**

- A. Arrange all terminal blocks in a manner that allows natural wiring progression and minimizes crossing of wires.

**3.03 PATCH CORDS:**

- A. Contractor to provide fiber and copper patch cords in quantities as described as outlined above in section 2.4.G. Neatly install (minimum) one 3', 5' or 7' CAT6 or CAT6A patch cord (as appropriate to reduce unnecessary length in wire managers) at the equipment cabinet between patch panel and owner-provided switches for each classroom and computer location. Dress and bundle patch cords as appropriate for final installation. Provide unused patch cables to Owner upon completion of project.
- B. Patch cables and fiber optic jumpers must be supplied and installed by the vendor for all terminated data drops, between network switches, building hubs, etc. so that building-wide networking will be operational once all installation is complete.
- C. All fiber patch cords and required workstation/equipment patch cords not installed shall be provided in hand to Owners Representative prior to project closeout.

**3.04 LABELING:**

- A. Provide labels appropriate for all components supplied and installed.
- B. Each faceplate, cable or data outlet (drop) will be numbered with a unique identifier based on coordination with Owner prior to labeling. Contractor must present labeling system for approval, with all shop drawings, prior to start of construction.

**3.05 TESTING:**

- A. Test all equipment and each outlet, horizontal cable, termination block, patch cords, etc. to verify compliance with requirements. Testing shall consist of attenuation and NEXT across all splices and devices installed in the field and shall meet latest requirements of EIA/TIA. Re-terminate any cable or connection found to be defective.
- B. Tester is to be configured with the specific cable installed, and the Permanent Link test will be performed according to the CAT6A standard methodology. All parameters must exhibit a PASS test result prior to project completion. PASS\*, FAIL\* or FAIL test results will not be accepted.
- C. Repair and resolve any shortcomings in the test results. Mitigation efforts may require re-termination or replacement of the jack, outlet or cable. Repairs or attempts to resolve test failures will be completed solely at the expense of the Contractor.
- D. Provide test results to Manufacturer and Owner representative in native Tester format. Upon request, provide a copy of the tester software and license, if needed, at no charge to Owner representative.
- E. Include PDF of full test results, summary index in electronic format on CD or memory stick in the O&M package upon project completion.

**Approved Tester Products:**

Fluke DTX or VERSIV platform Cable Certification testers  
Linkware Record Management Software

**3.06 PROJECT CLOSEOUT:**

- A. Operating and maintenance manuals shall be submitted prior to testing of the system. A total of (4) manuals shall be delivered to the Owner. Manuals shall include all service, installation, and programming information.

- B. Provide a full set of "as-built" (redline) drawings in AutoCAD DWG and PDF format. Drawings to depict final location and drop/cable identification numbers and labels which match the test reports. Include (1) hard copy paper format of all as-builts in 30"x42" size or equivalent.
- C. Contractor to provide all warranty information to Leviton for processing. Leviton will send warranty document direct to Owner.

**3.07 TRAINING:**

- A. Provide four (8) hours training on the operation and installation of the data system, at job site, at no cost to owner.

**END OF SECTION**

SECTION 27 51 17  
ASSISTIVE LISTENING SYSTEM  
(Portable)

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Work Included: Materials, equipment, fabrication, installation and tests a portable Assistive Listening System in assembly areas, including conference and meeting rooms, cafeterias, and multi-purpose rooms. Refer to plans for room locations indicated by ALS signage.

## 1.2 RELATED WORK

- A. Division 26 Section "Electrical General Requirement".

## 1.3 QUALITY ASSURANCE

- A. System shall comply with CBC 11B-219, 219.4, 706 and 706.3.

## 1.4 SUBMITTALS

- A. Provide submittals for materials and equipment in accordance with Division 1 submittal requirements.
  - 1. Assistive listening system equipment and components.

## PART 2 - PRODUCTS

## 2.1 ASSISTIVE LISTENING SYSTEM

- A. Provide a portable assistive listening system for use at areas listed below including wireless transmitters, microphones, receivers, headphones, associated hardwires and connection to the local sound system. **Williams Sound, Gentner (Starin), Listen or equal.**
- B. FM transmitter: One (1) wireless FM transmitter with digital tuning and lapel microphone, one for each identified area and each conference rooms and assemblyspace. Provide 2-AA Duracell or equal batteries for transmitter.
- C. Receivers: Per code provide min. 4% of the total number of seats allowed in each assembly area, but in no case less than two (2) FM receivers, single channel, wrist strap and adjustable headphones. Provide hearing-aid compatible receivers equal to 25% of the total number of receivers required in each area, but no fewer than two. If assembly rooms do not have fixed seating, calculate the number of seats using 7sf per occupant. Provide 2-AA Duracell or equal batteries per each receiver.
- D. One (1) ALS sign at each identified area noted on the plans.
- E. Provide a "pelican" type portable case large enough to contain and organize all materials and equipment with closed cell foam material to securely hold and protect all contents in place. Provide and attach engraved phenolic label "Assistive Listening System" label with lettering not smaller than 3/4" in height and mechanically fastened to the exterior of the case. Provide a laminated system operation instruction and a list of system contents contained in the case. Case color to be yellow or orange. Store system in or near the assembly area.

**PART 3 - EXECUTION**

**3.1 INSTALLATION, TESTING, AND TRAINING**

- A. Test the transmitter and each receiver for proper operation. Store the transmitter and receiver in the original packages and store at a site location determined by the District.
- B. Provide a training seminar of minimum one hour duration to instruct school personnel in the operation of the system. Provide three copies of the Owner's Manual with individual catalog and specification sheets, and maintenance instructions at this time.

**3.2 WARRANTY**

- A. Provide documentation of the manufacturer's standard warranty of the equipment.

**END OF SECTION**



**SECTION 28 31 00**

**FIRE ALARM SYSTEM**

**PART 1 - GENERAL**

**1.01 Description of Work:**

- A. Furnish and install all materials and equipment including all required equipment, panels, raceways, conductors and connections. Provide all labor required and necessary to complete the work shown on the drawings and/or specified in all Sections of Division 26 and all other work and miscellaneous items, not specifically mentioned, but reasonably inferred for the extension of the existing addressable fire alarm system installation including all accessories and appurtenances required for testing the systems. It is in the intent of the drawings and specifications that all systems will be complete, and ready for operation. No extra charge will be paid for furnishing items required by regulations, but not specified herein, or on drawings.
- B. The contractor scope of work shall not degrade any function or operation of the remaining site fire alarm system.

**1.02 Related work:**

- A. Division 00 General Conditions, Division 01 General Requirements.
- B. See the following specification sections for work related to the work in this section.
  - 1. All other sections of Division 26.

**1.03 Codes and Standards:**

- A. Devices and equipment for fire alarm systems shall be U.L. listed.
- B. UL 864 Control Units, Fire Protective Signaling Systems.
- C. Devices and equipment for fire alarm system shall be listed by the California State Fire Marshal for the specific purpose the device or equipment is used.
- D. Work and material shall be in compliance with and according to the requirements of the latest version of the following standards and codes:
  - 1. California Fire Code (CFC) based on the International Fire Code (IFC) with California Amendments.
  - 2. California Building Code (CBC) based on the International Building Code (IBC) with California Amendments.

3. California Electric Code (CEC) based on the National Electric Code (NEC) and California Amendments.
4. California Mechanical Code (CMC) based on the Uniform Mechanical Code (UMC) and California Amendments.
5. California Plumbing Code (CPC) based on the Uniform Plumbing Code (UPC) and California Amendments.
6. Title 19 C.C.R., Public Safety, State Fire Marshals Regulations.
7. NFPA 72, National Fire Alarm and Signaling Code.

#### 1.04 Submittals:

- A. In accordance with Division 26.
- B. Submit the following items:
  1. Manufacturer's Catalog Data: Manufacturer's original catalog cuts and original description of data of all material and equipment with sufficient information provided so that the exact function of each device is known. Each item supplied shall be clearly identified including both U.L. number and a copy of the State Fire Marshal's listing.
- C. Description of conductors to be used with a statement that all wire shall be in conduit. Where accessible ceiling occurs, plenum rated wire on J-hooks are acceptable.

#### 1.05 Quality Assurance:

- A. Installer: The installation firm shall be an established communications and electronics contractor with at least 10 years successful installation experience of products utilizing integrated communications systems and equipment specific to that required for this project. The firm shall currently maintain and locally run and operated business. Only California Certified fire alarm technicians or California Certified electrician shall be used to install the fire alarm system. Provide proof to district that all employees are California Certified to install the fire alarm system.
- B. All materials, unless otherwise specified, shall be new, and free from any defects. All items of equipment including wire and cable shall be designed by the manufacturer unless otherwise specified, shall function as a complete system and shall be accompanied by the manufacturer's complete service notes and drawings detailing all interconnections.
- C. The Contractor shall show satisfactory evidence, upon request, that he maintains a fully equipped service organization capable of furnishing adequate inspection and service to the system. The

contractor shall maintain at his facility the necessary spare parts in the proper proportion as recommended by the manufacturer to maintain and service the equipment being supplied.

#### 1.06 Warranties:

- A. The contractor shall warrant all equipment and wiring free from inherent mechanical and electrical defect for one year (365 days) from the date of final acceptance. The contractor shall without additional expense to the owner, replace any defective materials or equipment provided by him under this contract within the warranty period.

### PART 2 – PRODUCTS

#### 2.01 Fire Alarm Control Panel:

- A. The FACP is existing to remain.

#### 2.02 Detection Devices:

##### A. Manual Pull Stations:

1. Provide non coded, addressable, semi-recessed, double-action type manual pull station with mechanical reset features. Where installed in existing buildings, boxes may be surface-mounted. Surface mounted boxes shall be the same color as the pull stations.
2. Provide separate screw terminal for each conductor connected to the manual alarm pull station. Break-glass-front pull stations will not be permitted. Provide red aluminum, housing labeled "fire". The pull stations shall not be resettable without the use of a key. [Provide Stopper II Guards for all manual stations in public areas].

##### B. Detectors:

1. Each photoelectric smoke detector and heat detector shall be interchangeable via twist-lock mounting base, to ensure matching the proper sensor to the potential hazards of the areas being protected. The system shall recognize when an improper sensor type has been installed in a previously programmed sensor type location.

##### C. Photoelectric Smoke Detector:

1. Provide white flame retardant plastic, addressable, analog, photoelectric type, smoke detectors. Detectors shall operate using an optical sensing chamber principal which complies with UL 268.
2. Each detector shall be capable of being set at two sensitivity settings.

3. Each detector shall have two LED visual indicators providing local 360 degree visibility of operating status and alarm indication.
4. Each detector shall be supported independently of wiring connections, and connected by separate screw terminals of each conductor.
5. The detector screen and cover assembly must be easily removable for field cleaning.

**D. Combination Fixed Temperature, rate of Rise Heat Detectors:**

1. Provide off-white flame retardant plastic, addressable, combination 140 degree F fixed temperature, rate of rise heat dual thermistor detectors. Detector shall initiate an alarm when temperature rises at a rate of over 15 degrees F per minute or above 140 degrees F.
2. Each detector shall have two LED visual indicators providing local 360 degree visibility of operating status and alarm indication.
3. Contacts shall be self-resetting after response to rate or rise principal. Locate detectors in accordance with UL FPD or FM P7825 listing and the requirements of NFPA 72. Temperature rating of detectors shall be in accordance with NFPA 72.

**E. Addressable Monitor Module: provide addressable monitor module wired as style B (class "B") to provide an address for normally open contact devices.**

1. Provide Addressable Monitor Module to monitor status of all Water flow Switches, Valve tamper Switches and Post Indicator Valves.

**2.03 Alarm Notification Devices:**

- A. Color of notification appliances shall be red [white], unless otherwise noted by [District] [Owner].
- B. All alarm notification devices shall be synchronized throughout the school campus [building].
- C. Strobe Lights: Provide recessed mounted strobe light assembly suitable for use in electrically supervised circuit. Lamps shall be xenon flashtube type, powered from the fire alarm control panel alarm signaling circuit. Strobes shall provide candela ratings as indicated on the drawings candelas and flash 60 times per minute unless otherwise noted. Strobes in toilets shall provide a minimum of 15 candelas. Lamps shall be protected by a clear polycarbonate lens. Housing shall be labeled "FIRE" in red vertical lettering.
- D. Horns/Strobes: Provide recessed mounted, grille face, vibrating diaphragm type, audio alarm devices consisting of an electro-mechanical horn suitable for use in an electrically supervised circuit. Horn/Strobes shall be provided with a red, tamper resistant grill. Horn shall have a minimum sound rating of 90 DBA at 10 feet and have field selectable sound levels. Horns shall be capable of providing a synchronized, field selectable, temporal code 3 tone. Horns shall have

a separate minimum candela as shown on the drawings and flash 60 times per minute unless otherwise noted. Lamps shall be protected by a clear polycarbonate lens. Housing shall be labeled "FIRE" in red vertical lettering.

- E. Horns: Provide recessed mounted, grille face, vibrating diaphragm type, audio alarm devices consisting of an electro-mechanical horn suitable for use in an electrically supervised circuit. Horns shall be provided with a red, tamper resistant grill. Horn shall have a minimum sound rating of 90 DBA at 10 feet and have field selectable sound levels. Horns shall be capable of providing a synchronized, field selectable, temporal code 3 tone. Horns shall have a separate screw terminal for each conductor connection.
- F. Exterior Horns: Provide recessed mounted, grille face, vibrating diaphragm type, audio alarm devices consisting of an electro-mechanical horn suitable for use in an electrically supervised circuit. Horns shall be provided with a red, tamper resistant grill, and a weatherproof backbox. Horn shall have a minimum sound rating of 90 DBA at 10 feet and have field selectable sound levels. Horns shall be capable of providing a synchronized, field selectable, temporal code 3 tone. Horns shall have a separate screw terminal for each conductor connection. Horns located in areas subject to moisture or exterior atmospheric conditions, shall be approved for such locations.
- G. Field Charging Power Supply (FCPS):
  - 1. The FCPS is a device designed for use as either a remote 24 volt power supply or used to power Notification Appliances.
  - 2. The FCPS shall offer up to 6.0 amps (4.0 amps continuous) of regulated 24 volt power. It shall include an integral charger designed to charge 7.0 amp hour batteries and to support 60 hour standby.
  - 3. The Field Charging Power Supply shall have two input triggers. The input trigger shall be a Notification Appliance Circuit (from the fire alarm control panel) or a relay. Four outputs (two Style Y or Z and two style Y) shall be available for connection to the Notification devices.
  - 4. The FCPS shall include an attractive surface mount backbox.
  - 5. The Field Charging Power Supply shall include the ability to delay the AC fail delay per NFPA requirements.
  - 6. The FCPS include power limited circuitry, per 1995 UL standards.

#### 2.04 Wiring and Conduit:

- A. Provide wiring in accordance with NFPA 72.

B. Conductors shall be solid copper. Conductors for 120 volt circuits shall be No. 12 AWG minimum; conductors for low-voltage DC circuits shall be No. 14 AWG minimum for annunciation circuits and No. 14 AWG minimum for initiation circuits. All cables shall be rated and code compliant for their use.

1. All low voltage wiring not installed in conduits shall be plenum rated.
2. Provide color-coded conductors. Identify conductors by plastic-coated, self-sticking, printed markers or by heat-shrink type sleeves. Each conductor used for the same specific function shall be distinctly color coded. Use different color codes for each interior circuit. Each circuit color code wire shall remain uniform throughout the circuit.
3. Pigtail or "T" tap connections to the evacuation alarm horns, horn/strobes and strobes are not acceptable.
4. Underground circuit or circuits in wet areas shall be gel filled cables in scheduled 40 PVC conduit. There shall be no splicing of any underground cables.

C. Conduits:

1. Identification of Conduit: New conduits containing fire alarm system conductors shall be [red], ¾" minimum. Junction-boxes, covers, gutters, and terminal cabinets, containing fire alarm system conductors, shall be painted red or provided red in color with engraved plastic identification signs permanently attached to the equipment.
2. Do not run fire alarm circuits in the same conduit with the non-fire alarm circuits.
3. Do not run AC circuits in the same conduit with the fire alarm circuits.
4. Provide wiring in rigid metal conduit for exterior installations or where exposed to damage.
5. Conceal conduit in finished areas of new construction and wherever practical in existing construction. Conduit runs shall be straight, neatly arranged properly supported and parallel or perpendicular to walls and partitions. Identify conductors within each enclosure where a tap, splice, or termination is made.

### PART 3 - EXECUTION

#### 3.01 Installation:

- A. Equipment, materials, installation, workmanship, inspection, and testing shall be in accordance with the NFPA publications and as modified herein.
- B. Follow manufacturer's directions in all cases for installation, testing and energizing.
- C. Accurately set, level, support, and fasten all equipment.

**D. Smoke and heat detectors:**

1. No detector shall be located closer than 12 inches to any part of any lighting fixture. Detectors, located in areas subject to moisture or exterior atmospheric conditions, or hazardous locations as defined by NFPA 70, shall be approved for such locations.
2. [Provide wire guards for all detectors mounted in any high athletic activity areas such as gym's, wrestling rooms, shower rooms.]

**E. Conduit where exposed shall be installed parallel with the walls or structural elements; vertical runs to be plumb; horizontal runs to be level or parallel with structure; conduit grouped neatly together with straight runs, all bends parallel and uniformly spaced.****F. Earthquake Resistant installation/fastening of all electrical equipment shall conform to the general requirements of section 1614A of the California Building Code.****G. [Existing field devices and FACP shall remain in place until new field devices are installed and ready for operation. Coordinate the relocation of the FACP to minimize the down time of fire alarm system. As required by CFC 901.7, Contractor shall coordinate with [building owner] [school district] to provide an approved fire watch until the new fire alarm system is operational.]****3.02 Preliminary Tests:**

- A. Conduct the following tests during installation of wiring and system components. Correct deficiency pertaining to these requirements prior to formal functional and operational tests of the system, preliminary tests shall be performed in the presence of the Local Fire Authority and Project inspector of Record to determine the conformance with the specified requirements.
- B. Ground Resistance: Measure the resistance of each connection to ground. Ground resistance shall not exceed 10 ohms.
- C. Dielectric Strength insulation Resistance: Test the dielectric strength and the Insulating resistance of the system interconnecting wiring by means of an instrument capable of generating 500 volts of DC and equipped to indicate leakage current 1000 megohms. For the purpose of this test, connect the instrument between each conductor on the line and between each conductor and ground at the control panel end of the line, with the other extremity open circuited and all series-connected devices in place. The system shall withstand the test without breakdown and shall indicate a resistance of not less than 1.0 minute with a DC potential of not less than 100 volts and not more than 500 volts.
- D. Standby Battery Test: prior to formal inspection and tests, place the fire alarm system on standby battery power for 24 [60] hours; immediately thereafter, sound the building evacuation alarm signaling devices for 5 minutes. When the test is complete, the fire alarm system battery charger shall be fully recharged within 24 hours.

**E. Field Inspection and Test:**

1. Before final acceptance of the work, pre-test system to demonstrate compliance with the contract requirements. System shall be subjected to complete functional and operational tests, including tests in place of each detector. When tests have been completed and corrections made, submit a signed and dated NFPA Certificate of Completion along with a completed testing matrix with the request for formal inspection and tests.
2. Where application of heat would destroy a heat detector, it may be manually activated.
3. Verify the proper receipt of the alarm signals at the central station for the UDACT provide printout of test reports. It shall be the sole obligation of the contractor to coordinate and to provide all testing documentation from the central station.
4. The communication loops and the indicating appliance circuits shall be opened in at least two locations per zone to check for the presence of correct supervisory circuitry.
5. Perform the field inspection and test in the presence of the manufacturer's representative, the owner's representative, local Fire Authority and Project Inspector of Record (IOR).
6. Test equipment: It shall be the responsibility of the installing Contractor to furnish tools, instruments, and materials required for a thorough test of the system. This includes, but is not limited to, the following:
  - a. VOM meter
  - b. Manufacturer's recommended smoke detector testing device and sensitivity test equipment.
  - c. Heat source for testing heat detectors.
  - d. Keys to all control panels.
  - e. Ladders

**3.03 Project Closeout:****A. As Built Drawings:**

1. Provide a complete set (full size scalable) of reproducible "as-built" and AutoCAD format drawings showing installed wiring, color coding, and wire tag notations for exact locations of all installed equipment, specific interconnections between all equipment, and internal wiring of the equipment upon completion of system.

**B. Operating and Instruction Manuals:**



1. Operating and Instruction manuals shall be submitted prior to testing of the system. Four complete sets of operation and instructions manuals shall be delivered to the owner upon request.
  2. Complete, accurate, step-by-step testing instructions giving recommended and required testing frequency of all equipment, methods for testing each individual piece of equipment, and troubleshooting manual explaining how to test the preliminary internal parts or each piece of equipment shall be delivered upon completion of the system.
- C. Maintenance instructions shall be complete, easy to read, understandable, and shall provide the following information:
1. Instructions on replacing any components of the system, including internal parts.
  2. Instructions on periodic cleaning and adjustment of equipment with a schedule of these functions.
  3. A complete list of all equipment and components with information as to the address and telephone number of both the manufacturer and local supplier of each item.
  4. User operating instructions shall be provided prominently displayed on a separate sheet located next to the control unit in accordance with U.L. Standard 864.

END OF SECTION

**SECTION 31 00 00  
EARTHWORK****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Project Soils Report when available.

**1.2 SUMMARY**

- . This Section includes the following:

1. Preparing and grading sub-grades for slabs-on-grade, walks and pavements.
2. Excavating and backfilling for buildings and structures.
3. Drainage and moisture-control fill course for slabs-on-grade.
4. Base course for walks and pavements.
5. Subsurface drainage backfill for trenches.
6. Excavating and backfilling for underground mechanical and electrical utilities and appurtenances.

- A. Related Sections: The following Sections when included contain requirements that relate to this Section.

1. Division 31 Section "Site Clearing" for site stripping, grubbing, topsoil removal, and tree protection.
2. Division 32 Section "Landscape Work" for finish grading, including placing and preparing topsoil for lawns and planting.

**1.3 DEFINITIONS**

- A. Excavation consists of the removal of material encountered to sub-grade elevations and the reuse or disposal of materials removed.
- B. Sub-grade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below base, drainage fill, or topsoil materials.
- C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- D. Sub-base Course: The layer placed between the sub-grade and base course in a paving system or the layer placed between the sub-grade and surface of a pavement or walk.
- E. Base Course: The layer placed between the sub-base and surface pavement in a paving system.
- F. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.
- G. Unauthorized excavation consists of removing materials beyond indicated sub-grade elevations or dimensions without direction by the Architect. Unauthorized excavation, as well as remedial work directed by the Architect, shall be at the Contractor's expense.
- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- I. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

**1.4 SUBMITTALS**

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Test Reports: In addition to test reports required under field quality control, submit the following:
1. Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrow sources.
  2. One optimum moisture-maximum density curve for each soil material.
  3. Report of actual unconfined compressive strength and/or results of bearing tests

- of each stratum tested.
- C. Photographs of existing adjacent structures and site improvements.

## 1.5 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.
- B. Testing and Inspection Service: Owner will employ a qualified independent geotechnical engineering testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.
- C. Pre-installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings."
  - 1. Before commencing earthwork, meet with representatives of the governing authorities, Owner, Architect, consultants, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

## 1.6 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Architect and then only after acceptable temporary utility services have been provided.
  - 1. Provide a minimum 48-hours notice to the Architect and receive written notice to proceed before interrupting any utility.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations. Soils used from on-site excavations shall adhere to the requirements of the project Soils Report. If no soils report is provided, the borrowed soil shall have the same general characteristics equal to or better than the native soil. A sample of each material proposed for import fill should be delivered to the Geotechnical Engineer or his representative for testing and approval at least three working days prior to being transported to the site.
- C. Backfill and Fill Materials: Satisfactory soil materials as outlined above.
- D. Base Material: Shall conform to Caltrans Class II aggregate base material, 3/4" maximum gradation, min R-value of 78. Recycled material is acceptable only under site concrete or AC paving and approved by Soils Engineer or Architect. Base rock under buildings shall be clean virgin material.
- E. Engineered Fill: Shall adhere to the requirements of the project soils report as outlined above.
- F. Bedding Material: Base materials with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve or as indicated in the soils report.
- G. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate grading size 57, with 100 percent passing a 1-1/2-inch sieve and not more than 5 percent passing a No. 8 sieve or as indicated in the soils report.
- H. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 50 sieve or as indicated in the soils report.
- I. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

## PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, or drainage facilities.
- C. Tree protection as specified in other areas of these specifications.

## 3.2 DEWATERING

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared sub-grades, and from flooding Project site and surrounding area.
- B. Protect sub-grades and foundation soils from softening and damage by rain or water accumulation.

## 3.3 EXCAVATION

- A. Explosives: Do not use explosives.
- B. Unclassified Excavation: Excavation is Unclassified and includes excavation to required sub-grade elevations regardless of the character of materials and obstructions encountered.

## 3.4 STABILITY OF EXCAVATIONS

- A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

## 3.5 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections but no less than 5'-0".
  - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

## 3.6 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

## 3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated slopes, lines, depths, and invert elevations.
- B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
  - 1. Clearance: 6 inches each side of pipe or conduit unless otherwise noted.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape sub-grade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid point loading.
  - 1. For pipes or conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed sub-grade.
  - 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with

tamped sand backfill.

3. Where encountering rock or another unyielding bearing surface, carry trench excavation 6 inches below invert elevation to receive bedding course.

### 3.8 APPROVAL OF SUBGRADE

- A. Notify Architect when excavations have reached required sub-grade.
- B. When Architect determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
  1. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.
- C. Reconstruct sub-grades damaged by rain, accumulated water, or construction activities, as directed by the Architect. Grades damaged by rains, water, etc. after start of work are the responsibility of the contractor and shall be repaired at no cost to the owner.

### 3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to the Architect.
  1. Fill unauthorized excavations under other construction as directed by the Architect.
- B. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Architect.

### 3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.
  1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.11 BACKFILL

- A. Backfill excavations promptly, but not before completing the following:
  1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
  2. Surveying locations of underground utilities for record documents.
  3. Testing, inspecting, and approval of underground utilities.
  4. Concrete formwork removal.
  5. Removal of trash and debris from excavation.
  6. Removal of temporary shoring and bracing, and sheeting.
  7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

### 3.12 UTILITY TRENCH BACKFILL

- A. Place and compact bedding course on rock and other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Concrete backfill trenches that carry below or pass under footings and that are excavated within 18 inches of footings unless noted otherwise. Place concrete to level of bottom of footings.
- C. Place and compact initial backfill of satisfactory soil material free of particles larger than 1 inch, to a height of 12 inches over the utility pipe or conduit unless noted otherwise.
  1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- D. Coordinate backfilling with utilities testing.

- E. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.
- F. Place and compact final backfill of satisfactory soil material to final sub-grade.

**3.13 FILL**

- A. Preparation: Remove vegetation, topsoil, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
  - 1. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
- B. When sub-grade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and re-compact to required density.
- C. Place fill material in layers to required elevations for each location listed below.
  - 1. Under grass, use satisfactory excavated or borrow soil material.
  - 2. Under walks and pavements, use base material, or satisfactory excavated or borrow soil material.
  - 3. Under steps and ramps, use base material.
  - 4. Under building slabs, use drainage fill material.
  - 5. Under footings and foundations, use engineered fill.

**3.14 MOISTURE CONTROL**

- A. Uniformly moisten or aerate sub-grade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
  - 1. Do not place backfill or fill material on surfaces that are muddy.
  - 2. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
    - a. Stockpile or spread and dry removed wet satisfactory soil material

**3.15 COMPACTION**

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to the requirements outlined in the project soils report or as shown on drawings.

**3.16 GRADING**

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between existing adjacent grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish sub-grades to required elevations within the following tolerances:
  - 1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.
  - 2. Walks: Plus or minus 1/2 inch.
  - 3. Pavements: Plus or minus 1/2 inch.
- C. Grading Inside Building Lines: Finish sub-grade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

**3.17 BASE COURSES**

- A. Under pavements and walks, place base course material on prepared sub-grades.
  - 1. Compact base courses at optimum moisture content to required grades, lines,

cross sections and thickness as required by the plans and the project soils report.

2. Shape base to required crown elevations and cross-slope grades.
3. When thickness of compacted base course is 6 inches or less, place materials in a single layer.

### 3.18 DRAINAGE FILL

- A. Under slabs-on-grade, place drainage fill course on prepared sub-grade.
  1. Compact drainage fill to required cross sections and thickness.
  2. When compacted thickness of drainage fill is 6 inches or less, place materials in a single layer.

### 3.19 FIELD QUALITY CONTROL

- A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
  1. Perform field in-place density tests according to ASTM D.
  2. Footing Sub-grade: At footing sub-grades, perform at least one test of each soil stratum to verify design bearing capacities. Subsequent verification and approval of other footing sub-grades may be based on a visual comparison of each sub-grade with related tested strata when acceptable to the Architect.
  3. Paved and Building Slab Areas: At sub-grade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2,000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
  4. Foundation Wall Backfill: In each compacted backfill layer, perform at least one field in-place density test for each 100 feet or less of wall length, but no fewer than two tests along a wall face.
  5. Trench Backfill: In each compacted initial and final backfill layer, perform at least one field in-place density test for each 150 feet or less of trench, but no fewer than two tests.
- B. When testing agency reports that sub-grades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, re-compact and retest until required density is obtained.

### 3.20 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
  1. Scarify or remove and replace material to depth directed by the Architect; reshape and re-compact at optimum moisture content to the required density.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
  1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible at no cost to the owner.

### 3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION

SECTION 32 12 16  
ASPHALT PAVING

## PART 1 - GENERAL

## 1.1 SUMMARY

- . This Section includes provisions for hot-mixed asphalt paving over prepared base and overlay over existing asphalt paving.
- A. Prepared base is specified in SECTION 31 00 00 - EARTHWORK.
- B. Proof rolling of prepared base is included in this Section.
- C. Saw-cutting of edges of existing pavement is specified in site-clearing section.
- E. Header Board installation at edges of new asphalt pavement.
- F. Crack Filler
- G. Seal Coat

## 1.2 SUBMITTALS

- A. Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.

## 1.3 SITE CONDITIONS

- A. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg F (10 deg C) and when temperature has not been below 35 deg F (1 deg C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
- B. Construct hot-mixed asphalt surface course when atmospheric temperature is above 40 deg F (4 deg C) and when base is dry. Base course may be placed when air temperature is above 30 deg F (minus 1 deg C) and rising.
- C. Grade Control: Establish and maintain required lines and elevations.

## PART 2 - PRODUCTS

## 2.1 MATERIALS

- A. General: Use locally available materials and gradations that exhibit a satisfactory record of previous installations.
- B. Asphalt Concrete: Type B, 1/2" maximum aggregate size as specified in Section 39 of the Caltrans Standard Specifications
- C. Prime Coat: SC-70 Liquid Asphalt as specified in Section 39 and 93 of the Caltrans Standard Specifications.
- D. Tack Coat: SS1 Asphaltic Emulsion as specified in Section 39 and 94 of the Caltrans Standard Specifications.
- E. Herbicide Treatment: Commercial chemical for weed control, registered by Environmental Protection Agency. Provide granular, liquid, or wettable powder form.
- H. Header Board: 2x6 Pressure treated Douglas Fir or Redwood for all lumber shown on the Drawings. Stakes shall be 1"x2"x18" wood or 2' long metal forming stakes. If metal stakes are used be sure at least two holes within stakes are provided against the header board. Fasteners shall be galvanized screws.
- I. Crack Filler: OverKote Crack Filler by Reed & Graham or approved equal.
- J. Seal Coat: OverKote by Reed & Graham or approved equal.



## PART 3 - EXECUTION

## 3.1 SURFACE PREPARATION

- A. General: Remove loose material from compacted base surface immediately before applying herbicide treatment or prime coat.
- B. Proof-roll prepared subgrade surface to check for unstable areas and areas requiring additional compaction.
- C. Notify Owner/Architect of unsatisfactory conditions. Do not begin paving work until deficient subgrade and base areas have been corrected and are ready to receive paving.
- D. Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturer's recommended dosages and application instructions. Apply to compacted, dry base prior to application of prime coat.
- E. Prime Coat: Apply at rate of 0.20 to 0.50 gal. per sq. yd., over compacted subgrade. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.
- F. Tack Coat: Apply to contact surfaces of previously constructed asphalt or Portland cement concrete and surfaces abutting or projecting into hot-mixed asphalt pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.
- G. Allow to dry until at proper condition to receive paving.
- H. Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.
- I. Install Header Board in the locations and as shown on the Drawings.
- K. Crack Filler: On existing AC paving, prepare cracks as recommended by the manufacturer of the crack filler product, but typically all cracks are to be cleaned, moist and damp prior to filling. Fill all cracks. Cracks 1/4" or larger must be dug out by removing the AC paving around the crack to an area approximately 4'-0" x 4'-0" minimum. Compact the baserock to 95%. Apply tack coat (SS1H oil) to all edges and patch back with 3" minimum of AC paving. Where drawings do not indicate specific crack locations and the job walk is not mandatory, contractor is to include three (3) areas of this 1/4" crack repair method in the base bid in addition to all areas identified on the plans.
- L. Seal Coat: New AC paving including patching and large crack repair areas must be in place and cured as per A.S.M.A standard specifications, typically a minimum of fourteen (14) days prior to application of the seal coat. Power wash entire area to receive seal coat. Excessive oil spots are to be removed with a scraper, stiff brush and detergent. OverKote Oil Spot Sealer should be applied to prepared oil spots.

## 3.2 PLACING MIX

- A. General: Place hot-mixed asphalt mixture on prepared surface, spread, and strike off. Spread mixture at minimum temperature of 225 deg F (107 deg C). Place areas inaccessible to equipment by hand. Place each course (2" maximum lift) to required grade, cross-section, and compacted thickness.
- B. Pavement Placing: Place in strips not less than 8 feet wide, unless otherwise acceptable to Architect. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.
- C. Immediately correct surface irregularities in finish course behind paver. Remove excess material forming high spots with shovel or lute.
- D. Joints: Make joints between old and new pavements, or between successive

- days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density, and smoothness as other sections of hot-mixed asphalt course. Clean contact surfaces and apply tack coat.
- E. **Seal Coat:** New AC paving including patching and large crack repair areas must be in place and cured as per A.S.M.A standard specifications, typically a minimum of fourteen (14) days prior to application of the seal coat. Power wash entire area to receive seal coat. Excessive oil spots are to be removed with a scraper, stiff brush and detergent. OverKote Oil Spot Sealer should be applied to prepared oil spots. Install OverKote per manufacturers recommendations, but install a minimum of two (2) coats at a minimum rate of 30 gallons per 1,000sf of surface area. Dilute per manufacturers recommendations.
  - F. **Overlay:** When installing asphalt paving over existing asphalt paving prepare existing surface per Caltrans or manufactures' requirements prior to installation of new asphalt paving.

### 3.3 ROLLING

- A. **General:** Begin rolling when mixture will bear roller weight without excessive displacement.
- B. **Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.**
- C. **Breakdown Rolling:** Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling and repair displaced areas by loosening and filling, if required, with hot material.
- D. **Second Rolling:** Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been evenly compacted.
- E. **Finish Rolling:** Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained 95 percent laboratory density.
- F. **Patching:** Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot hot-mixed asphalt. Compact by rolling to specified surface density and smoothness.
- G. **Protection:** After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. **Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.**

### 3.4 FIELD QUALITY CONTROL

- A. **General:** Testing in-place hot-mixed asphalt courses for compliance with requirements for thickness and surface smoothness will be done by Owner's testing laboratory. Repair or remove and replace unacceptable paving as directed by Architect.
- B. **Thickness:** In-place compacted thickness tested in accordance with ASTM D 3549 will not be acceptable if exceeding following allowable variations:
  - 1. **Base Course:** Plus or minus 1/4 inch.
  - 2. **Surface Course:** Plus or minus 1/4 inch.

- C. **Surface Smoothness:** Test finished surface of each hot-mixed asphalt course for smoothness, using 10-foot straightedge applied parallel with and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:
1. **Base Course Surface:** 1/4 inch.
  2. **Wearing Course Surface:** 3/16 inch.
- D. Check surface areas at intervals as directed by Architect.

END OF SECTION

## SECTION 32 13 13 PORTLAND CEMENT CONCRETE PAVING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- . This Section includes exterior portland cement concrete paving for the following:
  1. Curbs and gutters and aprons.
  2. Slab on Grade walkways
  3. Steps and nosing
  4. Cutting and Replacing of Existing Concrete
- A. Related Sections: The following Sections contain requirements that relate to this Section:
  1. Division 31 Section "Earthwork" for sub-grade preparation, grading and base course.
  2. Division 7 Section "Joint Sealants" for joint fillers and sealants within concrete paving and at joints with adjacent construction.

#### 1.2 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Section 01 30 00 / 01 33 00.
- B. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, joint systems, curing compounds, and others if requested by Architect.
- C. Design mixes for each class of concrete. Include revised mix proportions when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- D. Material certificates in lieu of material laboratory test reports when permitted by Architect. Material certificates shall be signed by manufacturer and Contractor certifying that each material item complies with or exceeds requirements. Provide certification from admixture manufacturers that chloride content complies with requirements.
- E. Field Sample at least 2'x2' of finish (medium broom) to remain on-site until closeout is complete. Field Sample can become part of finished work, but no work shall proceed until finish sample is approved by Architect. Failure to provide finish sample will result in possible removal of all concrete.

#### 1.3 QUALITY ASSURANCE

- A. Concrete Standards: Comply with provisions of the following standards, except where more stringent requirements are indicated.
  1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
  2. ACI 318, "Building Code Requirements for Reinforced Concrete."
  3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."
- B. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- C. Concrete Testing Service: The owner will engage a qualified independent testing agency to perform materials evaluation tests.
- D. Pre-installation Conference: Conduct conference at Project site to comply with the following:
  1. Before installing portland cement concrete paving, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, independent testing agency, and other concerned entities to review requirements. Notify participants at least 3 working days before conference.

**1.4 PROJECT CONDITIONS**

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

**PART 2 - PRODUCTS****2.1 FORMS**

- A. Form Materials: Wood, plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
- B. Form Release Agent: Provide commercial formulation form-release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

**2.2 REINFORCING MATERIALS**

- A. Reinforcing Bars and Tie Bars: ASTM A 615, Grade 60, deformed.
- B. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60. Cut bars true to length with ends square and free of burrs.
- C. Supports for Reinforcement: Chairs, spacers, dowel bar supports and other devices for spacing, supporting, and fastening reinforcing bars in place. Use wire bar-type supports complying with CRSI specifications.

**2.3 CONCRETE MATERIALS**

- A. Portland Cement: ASTM C 150, Type II.
1. Use one brand of cement throughout Project unless otherwise acceptable to Architect.
- B. Fly Ash: ASTM C 618, Type F.
- C. Normal-Weight Aggregates: ASTM C 33, Class 4, and as follows. Provide aggregates from a single source.
1. Maximum Aggregate Size: 3/4 inch.
  2. Do not use fine or coarse aggregates that contain substances that cause spalling.
  3. Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Architect.
- D. Water: Potable.

**2.4 ADMIXTURES**

- A. Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
- B. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- C. Water-Reducing Admixture: ASTM C 494, Type A.

**2.5 CURING MATERIALS**

- A. Clear Solvent-Borne Liquid Membrane-Forming Curing Compound: ASTM C 309, Type Class A or B, wax free.
- B. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.

**2.6 RELATED MATERIALS**

- A. Bonding Agent: Acrylic or styrene butadiene.

**2.7 CONCRETE MIX**

- A. Prepare design mixes for each type and strength of normal-weight concrete by either

## PORTLAND CEMENT CONCRETE PAVING

laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use a qualified independent testing agency for preparing and reporting proposed mix designs.

1. Do not use the Owner's field quality-control testing agency as the independent testing agency.
2. Limit use of fly ash to 25 percent of cement content by weight.
- B. Proportion mixes according to ACI 211.1 and ACI 301 to provide normal-weight concrete with the following properties:
  1. Compressive Strength (28-Day): 3,000 psi.
  2. Maximum Water-Cement Ratio at Point of Placement: 0.50.
  3. Slump Limit at Point of Placement: 4 inches.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows with a tolerance of plus or minus 1-1/2 percent:
  1. Air Content: 6.0 percent for 3/4-inch maximum aggregate.
- D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, project conditions, weather, test results, or other circumstances warrant.
- E. Not used.
- F. Not used.

## 2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94.
  1. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## 2.9 STAIR NOSING

- A. Not used

## PART 3 - EXECUTION

### 3.1 SURFACE PREPARATION

- A. Remove loose material from compacted base surface immediately before placing concrete.

### 3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, and bulkheads, for paving to required lines, grades, and elevations. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork and screeds for grade and alignment to following tolerances:
  1. Top of Forms: Not more than 1/8 inch in 10 feet.
  2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.
- C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

### 3.3 PLACING REINFORCEMENT

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing reinforcing Bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

**3.4 JOINTS**

- A. **General:** Construct contraction, construction, and expansion joints true to line with faces perpendicular to surface plane of concrete as shown on the Drawings. Construct transverse joints at right angles to the centerline, unless indicated otherwise.
1. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.
- B. **Contraction Joints:** Provide weakened-plane contraction joints, sectioning concrete at 20 ft intervals. Construct contraction joints for a depth equal to at least 1/4 of the concrete thickness, as follows:
1. **Tooled Joints:** Form contraction joints in fresh concrete by grooving and finishing each edge of joint with a radlused jointer tool.
  2. **Inserts:** Form contraction joints by inserting pre-molded plastic, hardboard, or fiberboard strips into fresh concrete until top surface of strip is flush with paving surface. Radius each joint edge with a jointer tool. Carefully remove strips or caps of two-piece assemblies after concrete has hardened. Clean groove of loose debris and install sealant per Division 7. Be sure joint is deep enough to receive sealant to comply with the sealant manufacturer's installation requirements.
  3. Not used.
  4. Not used.
- C. **Construction Joints:** Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than 1/2 hour, unless paving terminates at isolation joints.
1. Continue reinforcement across construction joints unless indicated otherwise. Do not continue reinforcement through sides of strip paving unless indicated.
  2. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- D. **Expansion Joints:** Form expansion joints of preformed joint filler strips abutting concrete curbs, inlets, structures, walks, other fixed objects, and where indicated.
1. Locate expansion joints at intervals of 50 feet, unless indicated otherwise.
  2. Extend joint fillers full width and depth of joint, not less than 1/2 inch or more than 1 inch below finished surface where joint sealant is indicated. Place top of joint filler flush with finished concrete surface when no joint sealant is required.
  3. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.
  4. Protect top edge of joint filler during concrete placement with a metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- E. Installation of joint fillers and sealants is specified in Division 7 Section "Paving Joint Sealants."
- F. Install dowel bars and support assemblies at expansion joints. Lubricate or asphalt-coat one half of dowel length to prevent concrete bonding to one side of joint.

**3.5 CONCRETE PLACEMENT**

- A. **Inspection:** Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. **Moisten base** to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.
- C. Comply with requirements and with ACI 304R for measuring, mixing, transporting, and placing concrete.
- D. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

## PORTLAND CEMENT CONCRETE PAVING

- E. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- F. Consolidate concrete by hand-spading, rodding, or tamping. Use procedures to consolidate concrete complying with ACI 309R.
  - 1. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcing, dowels, and joint devices.
- G. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.
- H. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.
- I. Hot-Weather Placement: Place concrete complying with ACI 305R and as specified when hot weather conditions exist.
  - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F (32 deg C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  - 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
  - 3. Fog spray forms, reinforcing steel, and sub-grade just before placing concrete. Keep sub-grade moisture uniform without standing water, soft spots, or dry areas.

## 3.6 CONCRETE FINISHING

- A. Float Finish: Begin floating when bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface by hand-floating. Finish surfaces to true planes within a tolerance of 1/4 inch in 10 feet as determined by a 10-foot-long straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.
  - 1. Medium Textured Broom (slip resistant) Finish (for slopes  $\leq 6\%$ ): Draw a soft bristle broom across concrete surface in direction of flow to provide a uniform fine line texture finish.
  - 2. Heavy Textured Broom (slip resistant) Finish (for slopes  $\geq 6\%$ )
  - 3. Not used.
- B. Final Tooling:
  - 1. Tool edges of gutters, curbs, and joints formed in fresh concrete with a jointing tool to a 1/4" radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces.
  - 2. Not used.
  - 3. Not used.

## 3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendations of ACI 306R for cold weather protection and ACI 305R for hot weather protection during curing.
- B. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before floating.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.



## PORTLAND CEMENT CONCRETE PAVING

- D. Curing Methods: Cure concrete by curing compound:
1. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

**3.8 FIELD QUALITY CONTROL TESTING**

- A. The owner will employ a qualified independent testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement as follows:
- B. The Owner will employ a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include the following:
- a. Compression Test Specimens: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless directed otherwise. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
  - b. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd. but less than 25 cu. yd., plus one set for each additional 50 cu. yd. Test one specimen at 7 days, test two specimens at 28 days, and retain one specimen in reserve for later testing if required. When total quantity of a given class of concrete is less than 50 cu. yd., Architect may waive strength testing if adequate evidence of satisfactory strength is provided. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi.
- C. Test results will be reported in writing to Architect, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in paving, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day and 28-day tests.
- D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
- E. Additional Tests: The testing agency will make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

**3.9 REPAIRS AND PROTECTION**

- A. Remove and replace concrete paving that is broken, damaged, or defective, or does not meet the requirements of this Section.
- B. Drill test cores where directed by Architect when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep concrete paving not more than 2 days prior to date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 32 17 23  
PAVEMENT MARKINGS – PARKING LOTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Parking Stall Painting.
- B. Not Used

1.02 RELATED SECTIONS

- A. Asphalt Concrete Paving.

1.03 QUALITY ASSURANCE

- A. Materials and work of this section shall conform to Owner standards and specifications.

1.04 REGULATIONS

- A. Conform to regulations of Bay Area Air Quality Management District and California Air Resources Board regarding use of architectural coatings (paint).

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Do no painting when temperatures on the surface and of air in vicinity of the painting work are below 40 degrees F or below those temperatures recommended by the paint manufacturer.

PART 2 PRODUCTS .

2.01 STANDARD CATALOG PRODUCTS

- A. Symbol Marking Paint and Traffic Marking Paint: Water borne product conforming to State Specification PTWB-01R2; Dunn-Edwards Traffic Paint W801, Sinclair 160 Vinyl Traffic Paint, or equal product substituted under provisions of Section 01630.

- 1. Parking Stalls: White color.
- 2. Accessible Parking: Blue & White to meet current code requirements

PART 3 EXECUTION 3.01 EXAMINATION

- A. Examine receiving surfaces and verify that surfaces are proper for installation.
- B. Do not start work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Remove dirt, oil, grease, and other foreign matter from the areas of the pavement and curbs to be painted.
- B. Do not apply traffic paint to surfaces which are excessively dirty, damp and cold.

3.03 INSTALLATION

- A. Apply traffic paint with atomizing spray type striping machine equipped with separate thermostatically controlled heating devices for each paint pot and capable of applying paint whereby the lines and markings have clear-cut edges, true and smooth alignments and uniform thickness.
- B. Apply paint with completed lines and markings shall be clean, sharp and to dimensions.
  - 1. Ragged ends of segments, fogginess along the sides or objectionable dribbling of paint along the unpainted portions of the stripes will not be permitted.
  - 2. The finished paint shall have an opaque, well painted appearance with no black or other discolorations showing through.
- C. Apply striping to the following widths:
  - 1. Parking Stall Lines: As shown on drawings or to meet current code.
  - 2. Not used.

3.04 PROTECTION

- A. Exercise reasonable precautions to protect the paint, as applied, during drying time. Remove objectionable tracking.

END OF SECTION